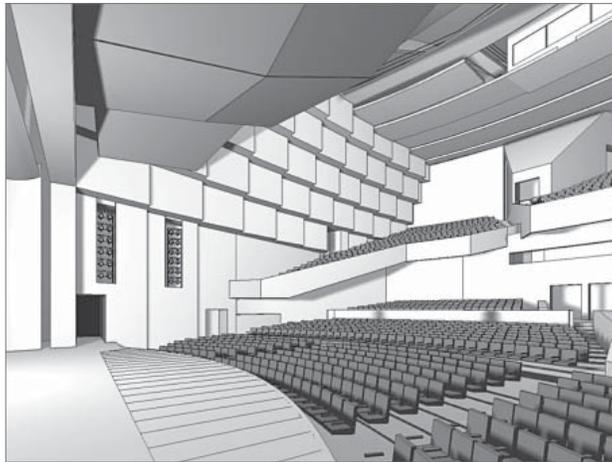


PUBLIC REVIEW DRAFT

**DOWNTOWN SPECIFIC PLAN
AMENDMENTS AND REGIONAL
PERFORMING ARTS THEATER
SUBSEQUENT ENVIRONMENTAL IMPACT REPORT**

STATE CLEARINGHOUSE NO. 2008092085



LSA

January 2009

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STATE CLEARINGHOUSE NO. 2008092085

Submitted to the:

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I. INTRODUCTION

A. PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this Draft Subsequent Environmental Impact Report (EIR) describes the environmental consequences of the Downtown Specific Plan Amendments and Regional Performing Arts Theater project, which together are considered the “proposed project.” Additionally, the potential effects associated with realignment of Railroad Avenue are also evaluated in this EIR. This EIR is designed to fully inform decision-makers in the City of Livermore, other responsible agencies, and the general public of the project and the potential environmental consequences of approval and implementation. The EIR also examines various alternatives to the proposed project and recommends a set of mitigation measures to reduce or avoid potentially significant impacts.

The City of Livermore (City) is the lead agency for environmental review of the proposed project. This EIR will be used by City of Livermore staff and the public in their review of the proposed project and future approvals. It may also be used by other agencies whose discretionary approval may be required to allow the project to be constructed (see Table III-1 in Chapter III, Project Description).

In 2004, the City of Livermore adopted a Downtown Specific Plan for approximately 272 acres of the Downtown area. The Downtown Specific Plan details land uses and their distribution, proposed infrastructure improvements, development standards, and design guidelines and proposed standards. On February 9, 2004, the Livermore City Council certified the *Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report* (General Plan EIR).¹ The potential impacts associated with implementation of the Downtown Specific Plan were evaluated within this document.

This Subsequent EIR analyzes the potential environmental impacts of the proposed Downtown Specific Plan Amendments (Amendments) as well as the development of the Regional Performing Arts Theater (Theater) and associated realignment of Railroad Avenue. An Initial Study was prepared to identify the scope and focus of this Subsequent EIR, and is included in Appendix A.

As required by *CEQA Guidelines* Section 15162, no subsequent EIR shall be prepared unless one or more of the following conditions is present:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration

¹ LSA Associates, Inc., 2003. *Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report*. June.

due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following: (a) the project will have one or more significant effects not discussed in the previous EIR or negative declaration; (b) significant effects previously examined will be substantially more severe than shown in the previous EIR; (c) mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or (d) mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The City of Livermore has determined that a Subsequent EIR to the General Plan EIR would be the most appropriate document to analyze the potential impacts associated with the Amendments and Theater project.

B. PROPOSED PROJECT

The project analyzed within this Draft EIR is comprised of the following components described below.

Downtown Specific Plan Amendments (Amendments). In 2004, the City of Livermore adopted a Downtown Specific Plan for approximately 272 acres of the Downtown area. The Downtown Specific Plan details land uses and their distribution, proposed infrastructure improvements, development standards, and design guidelines and standards intended to amend existing City policies and change zoning code standards. The City proposes amending the Downtown Specific Plan as follows:

- Increase the size of a proposed regional performing arts theater from 1,500 seats to 2,000 seats;
- Increase the number of movie screens in the Downtown from 12 screens to 15 screens;
- Increase the number of hotel/bed and breakfast rooms in the Downtown area to 300 rooms;
- Increase the amount of commercial development from 855,000 square feet to 1,000,000 square feet;
- Increase the amount of office development from 217,000 square feet to 356,000 square feet;
- Include a parking structure on L Street within the Downtown Core Area;
- Include the addition of a new chapter (Financing) to the Downtown Specific Plan; and
- Revise the General Plan and Downtown Specific Plan to reflect the above changes.

Regional Performing Arts Theater (Theater). This component would result in the construction of a 2,000 seat Theater on one of three potential locations within the Downtown. One of

the potential Theater sites (the First Street/Maple Street site) would be created via the realignment of Railroad Avenue which is also evaluated in this EIR as described in Chapter III, Project Description.

The information and analysis contained in this EIR will assist City decision makers in determining potential impacts associated with buildout of the Amendments, the preferred location for the Theater within the Downtown, and the potential effects associated with realigning Railroad Avenue at the intersection with First Street to improve circulation within the Downtown. Since specific projects associated with the Amendments have not been finalized, potential impacts associated with the Specific Plan Amendments are analyzed at a programmatic level within this EIR. Because conceptual plans have been submitted for the Theater and the Railroad Avenue realignment, any impacts associated with the Theater and the Railroad Avenue realignment are analyzed at a project level in this EIR.

C. EIR SCOPE

The City of Livermore circulated a Notice of Preparation (NOP) and Initial Study that included a list of potential environmental effects that could result from the proposed project. The NOP was published on September 22, 2008 and was distributed to local, regional, and State agencies. Comments received by the City on the NOP were taken into account during the preparation of the EIR. The NOP and written comments received on the NOP and Initial Study are included in Appendix A.

This Draft EIR focuses on the areas of concern identified in the NOP and comments received on the NOP. The following environmental topics are addressed in this EIR:

- A. Land Use and Planning Policy
- B. Population, Employment and Housing
- C. Transportation and Circulation
- D. Air Quality
- E. Global Climate Change
- F. Noise
- G. Cultural Resources
- H. Hazards and Hazardous Materials
- I. Utilities and Infrastructure
- J. Visual Resources

The following topics were not included as a separate topic within this EIR: Agricultural Resources; Biological Resources; Geology and Soils; Hydrology and Water Quality; Mineral Resources; Public Services; and Recreation. These topics were evaluated in an Initial Study (found in Appendix A), and the City as Lead Agency determined that the project would not cause significant impacts related to these topics. These topics are also discussed in the Effects Found Not to Be Significant section of Chapter VI.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I – Introduction:* Discusses the overall EIR purpose, provides a summary of the proposed project, describes the EIR scope, and summarizes the organization of the EIR.
- *Chapter II – Summary:* Provides a summary of the impacts that would result from implementation of the proposed project, and describes mitigation measures recommended to reduce or avoid significant impacts.
- *Chapter III – Project Description:* Provides a description of the project, the project site, the project objectives, project alternatives, discretionary actions, and uses of this EIR.
- *Chapter IV – Setting, Impacts and Mitigation Measures:* Describes the following for each environmental technical topic: existing conditions (setting), potential environmental impacts and their level of significance, and mitigation measures recommended to mitigate identified impacts. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance of each impact is categorized before and after implementation of any recommended mitigation measures(s).
- *Chapter V – Alternatives:* Provides an evaluation of six alternatives to the proposed project.
- *Chapter VI – CEQA-Required Assessment Conclusions:* Provides an analysis of effects found not to be significant, growth-inducing impacts, unavoidable significant environmental impacts, significant irreversible changes, and cumulative impacts.
- *Chapter VII – Report Preparation:* Identifies preparers of the EIR, references used, and the persons and organizations contacted.
- *Appendices:* The appendices contain the NOP and comments on the NOP and the Initial Study, technical calculations, and other documentation prepared in conjunction with this EIR.

II. SUMMARY

A. PROJECT UNDER REVIEW

In compliance with the California Environmental Quality Act (CEQA), this Draft Subsequent Environmental Impact Report (EIR) describes the environmental consequences of Amendments to the Downtown Specific Plan and a 2,000 seat Regional Performing Arts Theater project, which together are considered the “proposed project”. Additionally, the potential effects associated with the realignment of Railroad Avenue are also evaluated in this EIR. Since specific projects associated with the Amendments have not been finalized, potential impacts associated with the Specific Plan Amendments are analyzed at a programmatic level within this EIR. Because conceptual plans have been submitted for the Theater and the Railroad Avenue realignment, any impacts associated with the Theater and the Railroad Avenue realignment are analyzed at a project level in this EIR. Additionally, to assist the City in determining the preferred site for the Theater, this EIR evaluates impacts associated with the Theater at three alternative sites within the Downtown. A more detailed description of the proposed project is provided in Chapter III, Project Description.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter IV, Setting, Impacts and Mitigation Measures. CEQA requires a summary to include discussion of: (1) potential areas of controversy; (2) significant impacts; (3) cumulative impacts; (4) significant irreversible and unavoidable impacts; and (5) alternatives to the proposed project.

1. Potential Areas of Controversy

Six letters were received in response to the Notice of Preparation (NOP) circulated on September 22, 2008. Letters received as comments on the NOP raised a number of topics that the commenters wanted addressed in the EIR, including: traffic and circulation; water supply; railroad safety; and hazardous material transport.

2. Significant Impacts

Under CEQA, a significant impact on the environment is defined as, “...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” Development of the Amendments and Theater has the potential to result in adverse environmental impacts in several environmental areas. Impacts in the following areas would be significant without the implementation of mitigation measures, but would be reduced to a less-than-significant level if the mitigation measures noted in this EIR are implemented:

- Air Quality
- Noise
- Global Climate Change

- Cultural and Paleontological Resources
- Hazards and Hazardous Materials
- Utilities and Infrastructure

3. Significant Unavoidable Impacts

The following describes the unavoidable significant environmental impacts associated with implementation of the Amendments and the Theater. As the analysis within this EIR evaluates three potential sites for the Theater project, certain unavoidable significant impacts may be associated with the development of the Theater at a certain site. In these cases, the location where the unavoidable significant impact would occur is identified.

Implementation of the Amendments and the Theater project (including the realignment of Railroad Avenue at First Street) would result in the following significant unavoidable impacts:

- Construction of the Theater in the Downtown would significantly affect operations of the Stanley Boulevard/Murrietta Boulevard intersection under existing plus Theater conditions.
- Construction of the Theater in the Downtown would significantly affect operations of the Eastbound I-580 Off-Ramp at Portola Avenue under existing plus Theater conditions.
- Construction of the Theater at the First Street/South Livermore Avenue site would result in the relocation of the PT&T building, resulting in a change to a scenic resource.
- Construction of the Theater at the First Street/Maple Street site would alter the visual character of the First Street gateway/entry into Downtown.
- Construction of the Theater at either the First Street/South Livermore Avenue site or the First Street/Maple Street site, in addition to projects in the Downtown developed under the cumulative conditions, would result in a cumulative visual resources impact.

4. Alternatives to the Project

The following alternatives to the proposed project are considered in this EIR:

- **Alternative 1:** Regional Theater at the southeast corner of First Street/South Livermore Avenue and Realignment of Railroad Avenue and First Street
- **Alternative 2:** Regional Theater at the Livermore Village site just south of Railroad Avenue and west of South Livermore Avenue
- **Alternative 3:** Regional Theater at the Livermore Village site just south of Railroad Avenue and west of South Livermore Avenue and the Realignment of Railroad Avenue and First Street
- **Alternative 4:** Regional Theater at the southeast corner of First Street/Maple Street and Realignment of Railroad Avenue and First Street
- **Alternative 5:** Buildout of Existing Downtown Specific Plan and construction of a 1,500 seat Regional Theater at the First Street/South Livermore Avenue site (No Project Alternative)

In order to compare the project to the potential alternatives and for the purposes of the alternatives analysis, the project is considered the Amendments and the Theater at the First Street/South Livermore Avenue site without the Railroad Avenue realignment. Alternatives 2 and 3 are identified

as the environmentally superior alternatives as these alternatives would not result in the significant and unavoidable visual resources impacts that would occur if the Theater is located at either the First Street/South Livermore Avenue site or the First Street/Maple Street site. Additionally, the realignment of Railroad Avenue was determined not to be necessary to reduce potential impacts to a less-than-significant level related to construction of the Theater or the Amendments. Each of the alternatives is discussed in detail in Chapter V of this EIR.

5. Cumulative Impacts

The proposed project in conjunction with other foreseeable projects within the region would result in a significant cumulative impact to visual resources, transportation and circulation, and noise. While the cumulative transportation and circulation and noise impacts would be reduced to a less-than-significant level with implementation of recommended mitigation measures, there are no available mitigation measures to reduce the cumulative visual resources impact to a less-than-significant level.

C. SUMMARY TABLE

Information in Table II-1, Summary of Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapters IV and VI. The table is arranged in three sections: project specific impacts and mitigation measures; cumulative impacts of the proposed project; and impact and mitigation measures identified in the Initial Study (Appendix A). The table is arranged in five general columns: (1) impacts; (2) the project component or alternative site that the impact applies to; (3) level of significance prior to mitigation; (4) mitigation measures; and (5) level of significance after mitigation. Levels of significance are categorized as follows: SU = Significant and Unavoidable; S = Significant; and LTS = Less Than Significant. A series of mitigation measures is noted where more than one mitigation measure is required to achieve a less-than-significant impact, and alternative mitigation measures are identified when available. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapters IV and VI.

Table II-1: Summary of Impacts and Mitigation Measures

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
PROJECT SPECIFIC IMPACTS AND MITIGATION MEASURES							
A. Land Use and Planning Policy							
<i>There are no significant Land Use and Planning Policy impacts</i>							
B. Population, Employment and Housing							
<i>There are no significant Population, Employment and Housing impacts</i>							
C. Traffic, Circulation and Parking							
<u>TRANS-1:</u> Construction of the Theater in the Downtown would significantly affect operations of the Stanley Boulevard/Murrieta Boulevard (#10) intersection under existing plus Theater conditions.	●	●	●	●	S	<u>TRANS-1:</u> Widen Stanley Boulevard to six lanes through the Murrieta Boulevard intersection as defined in the City General Plan. This action will improve operations by maintaining LOS D but reducing the delay from greater than 45 seconds to less than 45 seconds. While this measure is identified in the city's Traffic Impact Fee program and is identified in the Capital Improvement Program, it is likely to be constructed several years after the Theater is constructed. During this interim time period, the impact would remain significant and unavoidable.	SU
<u>TRANS-2:</u> Construction of the Theater in the Downtown would significantly affect operations of the Eastbound I-580 Off-Ramp at Portola Avenue under existing plus Theater conditions.	●	●	●	●	S	<u>TRANS-2:</u> Complete the Isabel Interchange Project including the removal of the Portola Avenue Interchange. This is a regional project. Downtown development will pay its fair share of this improvement through the City Traffic Impact Fees. This measure is fully funded and construction documents are being prepared. At this time, the interchange construction is expected to be complete in 2011. Should the Theater open prior to 2011, the impact would remain significant and unavoidable until 2011 when the Isabel Interchange Project is complete.	SU
<u>TRANS-3:</u> Construction of the Theater plus continued redevelopment of Downtown will result in an increased demand for pedestrians to cross Downtown intersections and streets.	●	●	●	●	S	<u>TRANS-3a:</u> For construction of the Theater at the First Street/South Livermore site, realign Second Street at South Livermore Avenue and install enhanced pedestrian crossing features. <u>TRANS-3b:</u> For construction of the Theater at any alternative site or redevelopment of the Livermore Village site, install enhanced pedestrian crossing features on South Livermore Avenue between First Street and Railroad Avenue. <u>TRANS-3c:</u> For construction of the Theater at the Livermore Village site or prior to buildout of the Livermore Village site, install enhanced pedestrian crossing features on South L Street between First Street and Railroad Avenue. <u>TRANS-3d:</u> For construction of the Theater at First Street/Maple Street site, provide a 6- to 10-foot sidewalk along the south side of Fourth Street from Madeira Way to Church Street, and construct a pedestrian pathway through the site along the Church Street alignment to accommodate pedestrian flows between the site and the neighborhood to the south.	LTS
<u>TRANS-4:</u> If the Theater is constructed at the First Street/South Livermore Avenue site, existing angled on-street parking is incompatible with passenger loading activities at the Theater.	●	●			S	<u>TRANS-4:</u> If the Theater is constructed at the First Street/South Livermore Avenue site, design the passenger loading zones as follows: <ul style="list-style-type: none"> • Convert the on-street angled parking spaces on First Street (between Livermore Avenue and McLeod Street) to parallel parking. • Maintain a minimum 150-foot passenger loading zone on both First Street and South Livermore Avenue. • Design the passenger loading zones to have a 12-foot width measured from face-of-curb. 	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
<u>TRANS-5:</u> The passenger loading zone could disrupt traffic flow on South Livermore Avenue if the Theater is constructed at the Livermore Village site.			●		S	<u>TRANS-5:</u> If the Theater is constructed at the Livermore Village site, design the passenger loading zones as follows: <ul style="list-style-type: none"> • Maintain a minimum 150-foot passenger loading zone on South Livermore Avenue. • If feasible, provide a second 100-foot passenger loading zone on the internal circulation road adjacent to the Theater. • Design the passenger loading zones to have a 12-foot width measured from face-of-curb. 	LTS
<u>TRANS-6:</u> If the Theater is constructed at the First Street/Maple Street site, the passenger loading zone could be incompatible with the Class II bike facility.				●	S	<u>TRANS-6:</u> If the Theater is constructed at the First Street/Maple Street site, design the passenger loading zones as follows: <ul style="list-style-type: none"> • Maintain a minimum 150-foot passenger loading zone on Maple Street. • Design the passenger loading zones to have a 12-foot width measured from face-of-curb. • Maintain a striped bike lane through the passenger loading zone on Maple Street. 	LTS
<u>TRANS-7:</u> If the Theater is constructed at the First Street/South Livermore site, trucks maneuvering to and from the loading area via Livermore Avenue are incompatible with the movement of automobile traffic on Livermore Avenue.		●			S	<u>TRANS-7:</u> If the Theater is constructed at the First Street/South Livermore Avenue site, shift the loading dock further east on Second Street, away from Livermore Avenue, while maintaining the same loading dock orientation. Prohibit on-street parking along the Theater frontage of Second Street and convert the on-street angled parking spaces on Second Street (opposite the Theater frontage) to parallel parking spaces.	LTS
<u>TRANS-8:</u> If the Theater is constructed at the Livermore Village site, truck maneuvers to and from the loading area via the internal road may be incompatible with the internal street layout.			●		S	<u>TRANS-8:</u> If the Theater is constructed at the Livermore Village site, ensure that the loading dock is situated on the site such that trucks with trailers can maneuver in and out of the loading dock without encroaching onto the sidewalk on the opposite side of the internal street.	LTS
<u>TRANS-9:</u> If the Theater is constructed at the First Street/Maple Street site, truck maneuvers to and from the loading area via Second Street are incompatible with the current street width and on-street parking.				●	S	<u>TRANS-9:</u> If the Theater is constructed at the First Street/Maple Street site, prohibit on-street parking on Second Street (opposite Theater frontage) so that trucks can maneuver in and out of the loading dock. Ensure that the loading dock is situated on the site such that trucks with trailers can maneuver in and out of the loading dock without encroaching onto the sidewalk on the opposite side of the street.	LTS
<u>TRANS-10:</u> There will be inadequate parking supply to accommodate buildout of the Downtown Specific Plan and the project.	●	●	●	●	S	<u>TRANS-10a:</u> Monitor parking supply and demand over time and provide the following or equivalent parking facilities to meet identified demands: <ul style="list-style-type: none"> • Depending on the location of the Performing Arts Theater, construct a 500 space parking garage (rather than 350 spaces) at the Livermore Village site, adding 150 more parking spaces to the Downtown, or construct a 200 space parking garage east of the Downtown; • Increase on-street parking within the Livermore Village site, adding about 40 parking spaces to the Downtown; • Implement angled parking on First Street between South L Street and South P Street. Optimize the parking by limiting parcel access to and from First Street, adding about 50 parking spaces to the Downtown; • Implement angled parking on Maple Street between First Street and Railroad Avenue, after realignment, adding about 10 spaces to the supply; • Implement phase II of the Livermore Valley Center parking garage, adding up to 300 more parking spaces to the Downtown supply; and • Implement additional parking facilities south of the core area by purchasing property or partnering with private development to provide additional public parking. <u>TRANS-10b</u> Pursue partnerships with businesses to ensure that the private parking supply is open to the public after daytime business hours. A substantial number of off-street parking spaces are privately owned and operated. As the Downtown becomes more popular these off-street parking supplies will become more attractive to people looking for a limited number of public parking spaces. The initial response from	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
TRANS-10 <i>Continued</i>						<p>business owners might be to close their parking lots after hours. As parking demands increase property owners will begin to realize that their parking supply is an asset that has value, especially if the City pursues pay parking strategies.</p> <p>TRANS-10c: Promote valet parking operations in Downtown. The large number of restaurants and the two performing arts Theaters are excellent candidates for valet parking. As the Downtown parking supplies are more fully utilized, visitors will self-select valet parking to minimize their time to search for an available parking space. Valet parking operators may enter into agreements with businesses to use their privately owned parking areas. Valet parked facilities can accommodate about 10 percent more vehicles than a self parked facility. For example, valet operators may be able to add an additional 30 parked vehicles on the top floor of the Livermore Valley Center garage.</p> <p>TRANS-10d: Consider utilizing time-limited and pay parking strategies to manage employee parking behavior, increasing available parking spaces for customers. As Livermore's Downtown transforms into a more vibrant community with a diverse mix of land uses, there will be more pressure to actively manage the parking resources in the area. Employees tend to use the most convenient on-street parking spaces which forces customers to park further from their ultimate destination. Time-limited parking can alter employee parking behavior, but requires diligent enforcement. As Downtowns mature, pay parking strategies (or a Business Improvement District (BID) to secure a location(s) solely for employee use) become a more effective tool to manage employee parking behavior. Employees are expected to utilize 15 percent to 20 percent of the Downtown parking spaces, so shifting employee parking away from the Downtown core has the net effect of increasing parking supply near destinations by 15 percent to 20 percent for customers. The revenue generated by pay parking strategies can be re-invested into the Downtown. For example, the revenue could be used to provide employee parking or operate a valet parking program.</p> <p>TRANS-10e: Provide handicap accessible on-street parking spaces in the Downtown. Handicap accessible parking in Downtown environments is challenging. Parking spaces are dispersed and some individual land uses do not have any parking, but rely on public parking nearby. The Institute of Transportation Engineers publication Special Report: Accessible Public Rights-of-Way Planning and Design for Alterations (July 2007) provides good design parameters for on-street handicap accessible parking spaces.</p>	
TRANS-11: Construction-related activities associated with the project could adversely impact the existing transportation corridors.	●	●	●	●	S	<p>TRANS-11: The City shall require development of a construction traffic management plan for each new development proposed within the Downtown area. The construction traffic management plan could include: timing of construction and deliveries; travel routes for large construction vehicles; control and monitoring by flaggers for construction vehicle ingress and egress; a regular street cleaning program; and an employee parking program. The provisions of such a plan shall address the adverse effects, to the satisfaction of the City, on vehicular, pedestrian, bicycle, and transit of construction-related traffic associated with each particular project.</p>	LTS
D. Air Quality							
AIR-1: Construction period activities could generate significant dust, exhaust and organic emissions.	●	●	●	●	S	<p>AIR-1a: Consistent with guidance from the BAAQMD, the following actions shall be required of all construction contracts and specifications for the project:</p> <p>Demolition. The following controls shall be implemented during demolition:</p> <ul style="list-style-type: none"> • Water during demolition work, including the break-up of pavement and infrastructure, to control dust generation; • Cover all trucks hauling demolition debris from the site; and • Use dust-proof chutes to load debris into trucks whenever feasible. <p>Construction. The following controls shall be implemented at all construction sites:</p> <ul style="list-style-type: none"> • Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or 	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
AIR-1 <i>Continued</i>						<p>shall be treated with non-toxic stabilizers to control dust;</p> <ul style="list-style-type: none"> • Cover all trucks hauling soil, sand, and other loose materials; Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites; • Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality; • Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets; • Apply non-toxic soil stabilizers to inactive construction areas; • Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.); • Diesel equipment standing idle for more than 5 minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks may keep their engines running continuously as long as they are onsite; • Properly tune and maintain equipment to reduce emissions; • Avoid staging equipment within 200 feet of residences; • Limit traffic speeds on unpaved roads to 15 mph; • Install sandbags or other erosion control measures to prevent silt runoff to public roadways; • Replant vegetation in disturbed areas as quickly as possible; • Any temporary haul roads to soil stockpile areas shall be routed away from existing neighboring land uses; • Water sprays shall be utilized to control dust when material is being added or removed from stockpiles. When stockpiles are undisturbed for more than one week, storage piles shall be treated with a dust suppressant or crusting agent to eliminate wind-blown dust generation; • Install baserock at entryways for all exiting trucks, and wash off the tires or tracks of all trucks and equipment in designated areas before leaving the site; and • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph. <p><u>AIR-1b:</u> Development applicants shall provide a construction dust control coordinator as part of a construction-period air pollution control plan (required under General Plan Policy OSC-6.1P1). All neighboring properties located within 500 feet of property lines of a construction site shall be provided with the name and phone number of a designated construction dust control coordinator who will respond to complaints within 24 hours by suspending dust-producing activities or providing additional personnel or equipment for dust control as deemed necessary. The phone number of the BAAQMD pollution complaints contact shall also be provided. The dust control coordinator shall be on-call during construction hours. The coordinator shall keep a log of complaints received and remedial actions taken in response. This log shall be made available to City staff upon its request.</p>	

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
E. Global Climate Change							
<p>GCC-1: Implementation of the proposed project could result in greenhouse gas emission levels that would conflict with implementation of the greenhouse gas reduction goals under AB 32 or other State regulations.</p>	●	●	●	●	S	<p>GCC-1: To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the projects seeking City approval and developed as part of the Amendments:</p> <p>Construction and Building Materials</p> <ul style="list-style-type: none"> • Use locally produced and/or manufactured building materials for construction of the project; • Recycle/reuse demolished construction material; and • Use “green building materials,” such as those materials which are resource efficient, and recycled and manufactured in an environmentally friendly way, including low volatile organic compound (VOC) materials. <p>Energy Efficiency Measures</p> <ul style="list-style-type: none"> • Design all new buildings to be consistent with the City’s Green Building Ordinance, as currently written or as amended in the future. Encourage energy efficient building techniques including: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized; ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption; and ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances or other applicable electrical equipment. • Design, construct and operate all newly constructed and renovated buildings and facilities to meet the City’s Green Building Ordinance requirements as currently written or as amended in the future; • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping; • Use combined heat and power in appropriate applications; • Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings; • Install light colored “cool” roofs and cool pavements; • Install energy efficient heating and cooling systems, appliances and equipment, and control systems; and • Install light emitting diodes (LEDs) for outdoor lighting. <p>Water Conservation and Efficiency Measures</p> <ul style="list-style-type: none"> • Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include the following, plus other innovative measures that might be appropriate: <ul style="list-style-type: none"> ○ Create water-efficient landscapes within the development; ○ Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls; ○ Design buildings to be water-efficient. Install water-efficient fixtures and appliances, including low-flow faucets, dual-flush toilets and waterless urinals; and ○ Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. 	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
GCC-1 <i>Continued</i>						<p>Transportation and Motor Vehicle Measures</p> <ul style="list-style-type: none"> Commercial trucks, including construction and delivery vehicles, shall limit idling time and will be subject to state anti-idling regulations adopted by ARB in 2005; Provide bicycle lanes and/or paths, incorporated into the proposed street systems and connected to a community-wide network; Provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking. Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network; Size parking capacity to not exceed the City's zoning requirements AND provide infrastructure and support programs to facilitate shared vehicle usage such as carpool drop-off areas, designated parking for vanpools, or car-share services, ride boards, and shuttle service to mass transit. 	
F. Noise							
<p>NOISE-1: Noise levels from construction activities associated with project implementation could range up to 93 dBA L_{max} at the nearest existing residential land uses to the project site for limited periods due to pile driving activities and up to 93 dBA L_{max} due to earthmoving equipment activity during the site preparation phase of construction.</p>	●	●	●	●	S	<p>NOISE-1: Construction activities associated with implementation of the Amendments and the Theater shall comply with the following noise reduction measures:</p> <ul style="list-style-type: none"> General construction noise shall be limited to the hours of 7:00 a.m. to 8:00 p.m. Monday through Friday, 9:00 a.m. to 6:00 p.m. on weekends, and no noise producing construction activities shall be allowed on City-observed holidays in conformance with the Noise Ordinance. All heavy construction equipment that is used shall be maintained in good operating condition, with all internal combustion, engine-driven equipment equipped with intake and exhaust mufflers that are in good condition. All stationary noise-generating equipment shall be located as far away as possible from neighboring property lines, especially residential uses. The construction contractor shall locate equipment staging in areas that would create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors nearest the development sites during all project construction. 	LTS
<p>NOISE-2: Under cumulative conditions, train and project-related traffic would generate combined long-term exterior noise exceeding the City's normally acceptable interior noise levels for proposed residential land uses within the Downtown Specific Plan area.</p>	●	●	●	●	S	<p>NOISE-2a: All residential land use development on the Livermore Village site located within 390 feet of the centerline of Railroad Avenue or within 105 feet of the centerline of South Livermore Avenue shall include an alternate form of ventilation, such as an air conditioning system, in order to ensure that windows can remain closed for a prolonged period of time.</p> <p>NOISE-2b: All residential land use development on the First Street/South Livermore Avenue site located within 80 feet of the centerline of South Livermore Avenue shall include an alternate form of ventilation, such as an air conditioning system, in order to ensure that windows can remain closed for a prolonged period of time.</p> <p>NOISE-2c: Project-specific acoustical studies shall be performed for all proposed residential development projects at any other location within the Downtown Specific Plan area. The impact assessment shall be submitted to the Community Development Department for review and approval prior to issuance of grading permits. Measures shall be identified and implemented that would reduce exterior noise level impacts to meet the City's interior noise level criteria of 45 dBA CNEL for residential land uses within the Downtown Area.</p>	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
<u>NOISE-3</u> : Implementation of the Amendments, including construction of the Regional Performing Arts Theater, could result in stationary noise impacts within the Downtown Specific Plan area.	●	●	●	●	S	<p><u>NOISE-3a</u>: Project-specific stationary noise impact studies shall be performed for all proposed noise-sensitive development within the Downtown Specific Plan area. The noise impact studies shall describe how the City's Downtown exterior and interior acceptable noise level standards will be achieved for the proposed development. For any proposed multi-family residential, motel, or hotel development projects, the acoustical study must also satisfy the requirements set forth in Title 24, Part 2, of the California Administrative Code, Noise Insulation Standards, for multiple-family attached residential units, hotels and motels. These studies must be performed and submitted to the Community Development Department for review prior to issuance of any permits.</p> <p><u>NOISE-3b</u>: Project-specific stationary noise impact studies shall be performed for all proposed development projects within the Downtown Specific Plan area which include any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device, or delivery docks, that would generate noise levels in excess of the City's exterior noise standards. These noise impact studies shall include mitigation measures that would reduce project-related stationary noise impacts to comply with the City's Downtown exterior and interior acceptable noise level standards. These studies must be performed and submitted to the Community Development Department for review and approval prior to issuance of any permits.</p>	LTS
<u>NOISE-4</u> : Implementation of the Amendments and Theater project may result in a significant groundborne vibration impact.	●	●	●	●	S	<p><u>NOISE-4</u>: For all proposed development constructed as part of the proposed project, the project applicants shall prepare a vibration impact assessment to determine potential construction-related groundborne vibration impacts for any structure located within 50 feet of proposed earthmoving or pile driving activities. The vibration impact assessment shall be submitted to the Community Development Department for review and approval prior to issuance of grading permits. Measures shall be identified and implemented that would reduce groundborne vibration impacts from extreme noise generators (such as heavy construction equipment or pile driving) and to prescribe methods of construction to be utilized so as not to exceed the identified thresholds. Such measures may include restrictions on the number or types of construction equipment that may operate at a time within 100 feet of structures, restrictions on equipment hours of operation, or requirements to use alternative construction techniques such as auger cast piles in lieu of driven piles.</p>	LTS
G. Cultural Resources							
<u>CULT-1</u> : Ground-disturbing construction associated with development allowed under the Downtown Specific Plan Amendments may result in impacts to unidentified archaeological deposits that may qualify as historical or archaeological resources under CEQA.	●				S	<p><u>CULT-1</u>: A qualified cultural resources professional shall review additional project developments allowed under the Downtown Specific Plan Amendments once project-specific plans are available. At a minimum, these reviews shall include a records search to determine the presence of recorded cultural resources within a proposed project development site, a project site survey to identify cultural resources, and the determination if a qualified archaeologist is required to monitor ground disturbing activities associated with the project. The results of the assessment shall be presented in a report submitted to the City of Livermore Community Development Department Planning Division and include recommendations for mitigation of project impacts to significant cultural resources, as appropriate. The City shall ensure that mitigation measures proposed as part of the cultural resources assessments are implemented as a condition to site development.</p>	LTS
<u>CULT-2</u> : Construction of the Theater at the First Street/South Livermore Avenue site may impact the Pacific Telephone & Telegraph building. Construction of the Theater at the Livermore Village site may impact the Southern Pacific Railroad Depot. Both of these structures are historical resources under CEQA.		●	●		S	<p><u>CULT-2</u>: If the proposed First Street/South Livermore Avenue or the Livermore Village alternative site is selected for development of the regional Theater, the Pacific Telephone & Telegraph (PT&T) or Southern Pacific Railroad Depot buildings, respectively, shall be moved from its current location to prevent its demolition. The relocated building shall retain its general physical context, including its orientation and relationship to the street as it has in its current location and shall be moved to a similar location within the Downtown Core. The recommendations provided by Carey & Co. Inc., for the PT&T building also shall apply to the SPRR Depot:</p>	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
CULT-2 <i>Continued</i>						<p>A relocation plan should be prepared by an architect and engineer, retained by the project applicant and approved by the Redevelopment Agency, with a minimum of five years experience in the rehabilitation of historic buildings. The plan would address the issues of documenting historic fabric prior to the move, protecting historic fabric during the move, and restoration following the relocation.</p> <p>If feasible, non-historic additions to the PT&T and Southern Pacific Railroad Depot buildings shall not be moved, and the building shall be restored to its original condition. Restoration of the building shall be done in accordance with the Design Standards and Guidelines (Chapter 6) of the <i>City of Livermore Downtown Specific Plan</i> and the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>.</p> <p>A report shall be prepared that includes photographic documentation of the building's current location and character defining elements and post-relocation conditions. The report shall also detail the building's significance in local and regional history. The report shall be submitted to local historical archives, libraries, and the Northwest Information Center.</p>	
CULT-3: Ground-disturbing construction associated with the Theater may result in impacts to unidentified historical archaeological deposits that may qualify as historical or archaeological resources under CEQA.		●	●	●	S	<p>CULT-3: A qualified archaeologist shall monitor ground-disturbing project activities at the proposed Theater sites due to the possibility of encountering subsurface historical archaeological deposits at one of the three potential locations. Archaeological monitors must be empowered to halt construction activities at the location of the discovery to review possible archaeological materials and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, archaeological deposits are not likely to be encountered.</p> <p>If archaeological materials are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the archaeological monitor assesses the situation, consults with agencies as appropriate, and provides recommendations for the treatment of the discovery.</p> <p>If archaeological deposits are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the archaeological monitor assesses the situation, consults with agencies as appropriate, and provides recommendations for the treatment of the discovery. Adverse effects to archaeological deposits should be avoided by project activities. If such deposits cannot be avoided, they shall be evaluated for their California Register of Historical Resources eligibility. If the deposits are not eligible, a determination shall be made as to whether it qualifies as a "unique archaeological resource" under CEQA. If the deposits are neither a historical nor unique archaeological resource, avoidance is not necessary. If the deposits qualify as either a historical or archaeological resource, they will need to be avoided and, in accordance with General Plan policy CC-3.4.P4, archaeological sites should be preserved for research and educational programs. Adverse effects to significant sites that cannot be avoided, or sites that cannot be preserved, must be mitigated. Mitigation can include, but is not necessarily limited to, excavation of the deposit in accordance with a data recovery plan (see <i>CEQA Guidelines</i> Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility. Educational public outreach may also be appropriate.</p> <p>Upon completion of the monitoring, the archaeologist should prepare a report that describes the results of the monitoring, including any measures that may have been implemented for mitigation of impacts to significant archaeological deposits identified during monitoring. The report should be submitted to the City of Livermore Planning Division and the Northwest Information Center.</p>	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
<u>CULT-4</u> : Ground disturbing activities associated with project implementation may destroy unique paleontological resources.	●	●	●	●	S	<u>CULT-4</u> : The project applicant shall inform its contractor(s) of the sensitivity of the project area for paleontological resources by including the following directive in contract documents: The subsurface at the construction site may be sensitive for paleontological resources. If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks. The City shall verify that the language has been included in the contract documents before issuing a grading permit. Adverse effects to such deposits shall be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, project activities shall avoid disturbing the deposits, or the adverse effects of disturbance shall be mitigated. Upon completion of the paleontological assessment, a report shall be prepared documenting the methods, results, and recommendations of the assessment. The report shall be submitted to the City of Livermore Planning Division and, if paleontological materials are recovered, a paleontological repository, such as the University of California Museum of Paleontology.	LTS
<u>CULT-5</u> : Project ground disturbing activities may disturb human remains, including those interred outside of formal cemeteries, and may result in impacts to cultural resources under CEQA.	●	●	●	●	S	<u>CULT-5</u> : If human remains are encountered, these remains shall be treated in accordance with Health and Safety Code Section 7050.5 and <i>CEQA Guidelines</i> Section 15064.5(e). The project applicant shall inform its contractor(s) of the appropriate protocols in the event that human remains are unearthed by including the following directive in contract documents: If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the Alameda County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. The City shall verify that the language has been included in the contract documents before issuing a grading permit. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the City of Livermore Planning Division and the Northwest Information Center.	LTS
H. Hazards and Hazardous Materials							
<u>HAZ-1</u> : Development within the Downtown Specific Plan area may expose construction workers and future site patrons, residents, or workers to hazardous concentrations of contaminants from soils and groundwater at the site.	●				S	<u>HAZ-1</u> : Prior to development within the Downtown Specific Plan area, a Phase I investigation shall be conducted in accordance with ASTM standards (E1527-05) to determine whether past land uses could potentially have affected the subsurface. If potential effects are identified, a licensed professional shall provide recommendations	LTS

Table II-1 *Continued*

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
HAZ-1 <i>Continued</i>						for a subsurface investigation (Phase II). The results of the Phase II investigation shall be evaluated by a licensed professional and recommendations provided regarding remediation of soil and/or groundwater in consultation with a local or state regulatory agency.	
HAZ-2: Development of the Theater at any of the alternative sites may expose construction workers and future site patrons, residents, or workers to hazardous concentrations of contaminants from soils and groundwater.		●	●	●	S	HAZ-2: Prior to the issuance of grading permits for any of the three Theater sites and realignment of Railroad Avenue, a Soil Management Plan (SMP) shall be prepared to address potential hazardous material issues during construction of the project. The SMP shall include any available environmental data from sampling at the specific site, a worker health and safety plan, and requirements for soil management and off-site disposal. The applicant shall ensure that appropriate response measures are included in the SMP to protect human health and the environment if evidence (e.g., odors or visual staining) of previously unknown contaminated soil and/or groundwater or buried debris are encountered during project construction. A contingency plan for sampling and analysis of previously unknown hazardous materials and reporting of the results shall be prepared by the applicant as part of the SMP. In addition, site development shall be coordinated with ACEHS regarding potential effects to site development from the currently active sites, i.e. the Chevron/Mills Square Park and the Desert Petroleum BP sites.	LTS
HAZ-3: Demolition of any structure containing lead-based paint and asbestos-containing building materials could release airborne lead and asbestos particles, which may adversely affect construction workers and the public.		●	●	●	S	HAZ-3: A hazardous building materials survey shall be conducted by a qualified professional for structures proposed for demolition during development at any of the three Theater sites and realignment of Railroad Avenue. All loose and peeling lead-based paint and asbestos-containing material shall be abated by a certified contractor(s) in accordance with local, state, and federal requirements. All other hazardous materials must be removed from buildings prior to demolition in accordance with DOSH regulations. The findings of the abatement activities shall be documented by a qualified environmental professional(s) and submitted to the City of Livermore prior to the issuance of construction and demolition permits.	LTS
HAZ-4: Historic operations of the Southern Pacific Railroad and Quality Cleaners could have impacted soils and/or groundwater at the Livermore Village site.			●		S	HAZ-4: A soil and/or groundwater investigation workplan shall be prepared and implemented by a licensed professional to evaluate potential hazardous material impacts from operation of the Southern Pacific Railroad at the Livermore Village site and Quality Cleaners adjacent to the Livermore Village site. The workplan shall include representative sampling and analysis of soil and/or groundwater samples for heavy metals, petroleum hydrocarbons, pesticides, and chlorinated solvents. Depending on the results of the subsurface investigation, regulatory agency oversight shall be requested, if contamination is identified that could affect public health and the environment. Future remedies for identified contamination could include removal of contaminated materials, on-site treatment and/or institutional or engineering controls (i.e., deed restrictions on certain land uses or capping of development sites).	LTS
HAZ-5: Historic operations of the Southern Pacific Railroad and former Marine Service Facility could have impacted soils and/or groundwater at the First Street/Maple Street site.				●	S	HAZ-5: A soil investigation workplan shall be prepared and implemented by a licensed professional to evaluate the extent of soils impacted by lead at the former marine service facility and potential hazardous material impacts in the former Southern Pacific Railroad right-of-way on the Railroad Avenue realignment or the First Street/Maple Street site. The workplan shall include representative sampling and analysis of soil samples for heavy metals, petroleum hydrocarbons, and pesticides. Depending on the results of the subsurface investigation, regulatory agency oversight shall be requested, if contamination is identified that could affect public health and the environment. Future remedies for identified contamination could include removal of contaminated materials, on-site treatment and/or institutional or engineering controls (i.e., deed restrictions on certain land uses or capping of development sites).	LTS

Table II-1 Continued

Environmental Impacts	Applicable Project Components				Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
	Potential Theater Sites						
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site			
I. Utilities and Infrastructure							
<u>UTIL-1</u> : Fire flows may not be adequate for the Regional Theater if it is constructed on the Livermore Village site.			●		S	<u>UTIL-1</u> : When detailed site plans for the Livermore Village site are submitted, City staff, the Livermore Pleasanton Fire District, and Cal Water shall review and approve the plans to ensure the provision of adequate water fire flows. Should increasing the size of the water main in Railroad Avenue be required, the City and the water providers shall require and approve a plan for infrastructure improvements prior to issuance of grading permits. The project applicant shall be required to contribute their fair share towards this improvement, to the satisfaction of the City staff. An occupancy permit for the Theater shall not be issued until the Livermore Pleasanton Fire District has confirmed adequate fire flow is available.	LTS
<u>UTIL-2</u> : The realignment of Railroad Avenue could have construction period impacts on the use, operation, or maintenance of existing utility lines				●	S	<u>UTIL-2</u> : When detailed site plans for the Railroad Avenue realignment are available, the City should coordinate with all utility providers to prepare plans for relocation of existing utility lines as necessary. Prior to issuance of any grading or demolition permits, the city and utilities providers shall approve plans for utility line relocation.	LTS
J. Visual Resources							
<u>VIS-1</u> : Construction of the Theater at the First Street/South Livermore Avenue site would result in the relocation of the PT&T building, changing a scenic resource.		●			S	<u>VIS-1</u> : There are no feasible mitigation measures to reduce the potential scenic resource impact caused by removal of the PT&T building from the First Street/South Livermore Avenue Theater site. If another site were considered for the Theater, this impact would be less than significant.	SU
<u>VIS-2</u> : Construction of the Theater at the First Street/Maple Street site would alter the visual character of the First Street entry into Downtown.				●	S	<u>VIS-2</u> : There are no feasible mitigation measures to reduce the potential visual resource impact caused by construction of the Theater at the First Street/Maple Street site. If another site is chosen, this impact would be less than significant.	SU
<u>VIS-3</u> : Construction of the Theater could result in a new source of glare within the Downtown.		●	●	●	S	<u>VIS-3</u> : The applicant shall incorporate into the Theater project glass surfaces that are non-mirrored or include non-reflective films, coatings and shading devices to reduce glare. The architectural detail regarding lighting and glass shall be reviewed and approved by the City during the Design Review process.	LTS
<u>VIS-4</u> : Development of the Theater at either the First Street/South Livermore Avenue site or the First Street/Maple Street site, in addition to projects developed under the cumulative conditions, would result in a cumulative visual resources impact.		●		●	S	<u>VIS-4</u> : There are no mitigation measures available to reduce this impact to a less-than-significant level. If the Livermore Village site is chosen, this impact would be less than significant.	SU
INITIAL STUDY IMPACTS AND MITIGATION MEASURES							
VI. GEOLOGY AND SOILS							
<u>Initial Study Impact GEO-1</u> : The Downtown Specific Plan is located within an area having the potential for ground shaking.	●	●	●	●	S	<u>GEO-1</u> : A site-specific design-level geotechnical investigation for the Theater project shall be prepared by a licensed professional and shall provide design criteria for construction in response to the moderately high ground shaking potential. In addition, the design criteria for construction of a development project shall comply with the current 2007 CBC standards and local regulations. All final design and engineering plans for either the project or project alternatives shall be reviewed and approved by the City of Livermore prior to issuance of a grading permit.	LTS
<u>Initial Study Impact GEO-2</u> : The Downtown Specific Plan area is identified as an area having a moderate level of hazard for liquefaction.	●	●	●	●	S	<u>GEO-2</u> : A site-specific design-level geotechnical investigation report prepared by a licensed professional is required for the project by the City of Livermore prior to issuance of a grading permit. The report shall identify potential liquefiable sediments and include recommendations to minimize the potential for damage from liquefiable sediments. The applicant shall implement design elements as recommended in the investigation report to reduce the potential impact from liquefaction.	LTS

Source: LSA Associates, Inc, 2008

III. PROJECT DESCRIPTION

In 2004, the City of Livermore adopted a Downtown Specific Plan for approximately 272 acres of the Downtown area. The Downtown Specific Plan details land uses and their distribution, proposed infrastructure improvements, development standards, and design guidelines and proposed standards. In 2004, the Livermore City Council certified the General Plan EIR. The potential impacts associated with implementation of the Downtown Specific Plan were evaluated within this document. This EIR analyzes the potential environmental impacts of the proposed Downtown Specific Plan Amendments as well as the development of the Regional Performing Arts Theater and the associated realignment of Railroad Avenue at First Street.

A. INTRODUCTION

The project analyzed within this Subsequent EIR is comprised of the following components:

- *Downtown Specific Plan Amendments (Amendments)*. The City proposed Amendments to the Specific Plan and General Plan are:
 - Increase the size of a proposed regional performing arts theater from 1,500 seats to 2,000 seats;
 - Increase the number of movie screens in the Downtown from 12 screens to 15 screens;
 - Increase the number of hotel and bed and breakfast rooms in the Downtown area to 300 rooms;
 - Increase the amount of commercial development from 855,000 square feet to 1,000,000 square feet;
 - Increase the amount of office development from 217,000 square feet to 356,000 square feet;
 - Include a parking structure on L Street within the Downtown Core Area;
 - Add a new chapter (Financing) to the Downtown Specific Plan; and
 - Revise the General Plan and Downtown Specific Plan to reflect the above changes.
- *Regional Performing Arts Theater (Theater)*. This EIR analyzes the construction of a 2,000 seat Theater on one of three specific locations within the Downtown. One of the potential Theater sites (the First Street/Maple Street site) would be created via the realignment of Railroad Avenue which also is evaluated in this EIR.

The information and analysis contained in this EIR will assist City decision makers in determining potential impacts associated with buildout of the Amendments, the preferred location for the Theater within the Downtown, and the potential effects associated with realigning Railroad Avenue at the intersection with First Street to improve circulation within the Downtown. Since specific projects associated with the Amendments have not been finalized, potential impacts associated with the Specific Plan Amendments are analyzed at a programmatic level within this EIR. Because conceptual plans have been submitted for the Theater and the Railroad Avenue realignment, any impacts associated with the Theater and the Railroad Avenue realignment are analyzed at a project level in this EIR.

A discussion of the proposed project components, including the location, project objectives, project components, alternative sites for the Theater and uses of the EIR follows.

B. PROJECT AREA

The Downtown Specific Plan area and potential Theater sites are described below. Figure III-1 shows a regional location map, boundaries of the Downtown Specific Plan area, and the potential locations of the Theater project. An aerial of the Theater site identified in the Downtown Specific Plan is shown in Figure III-2.

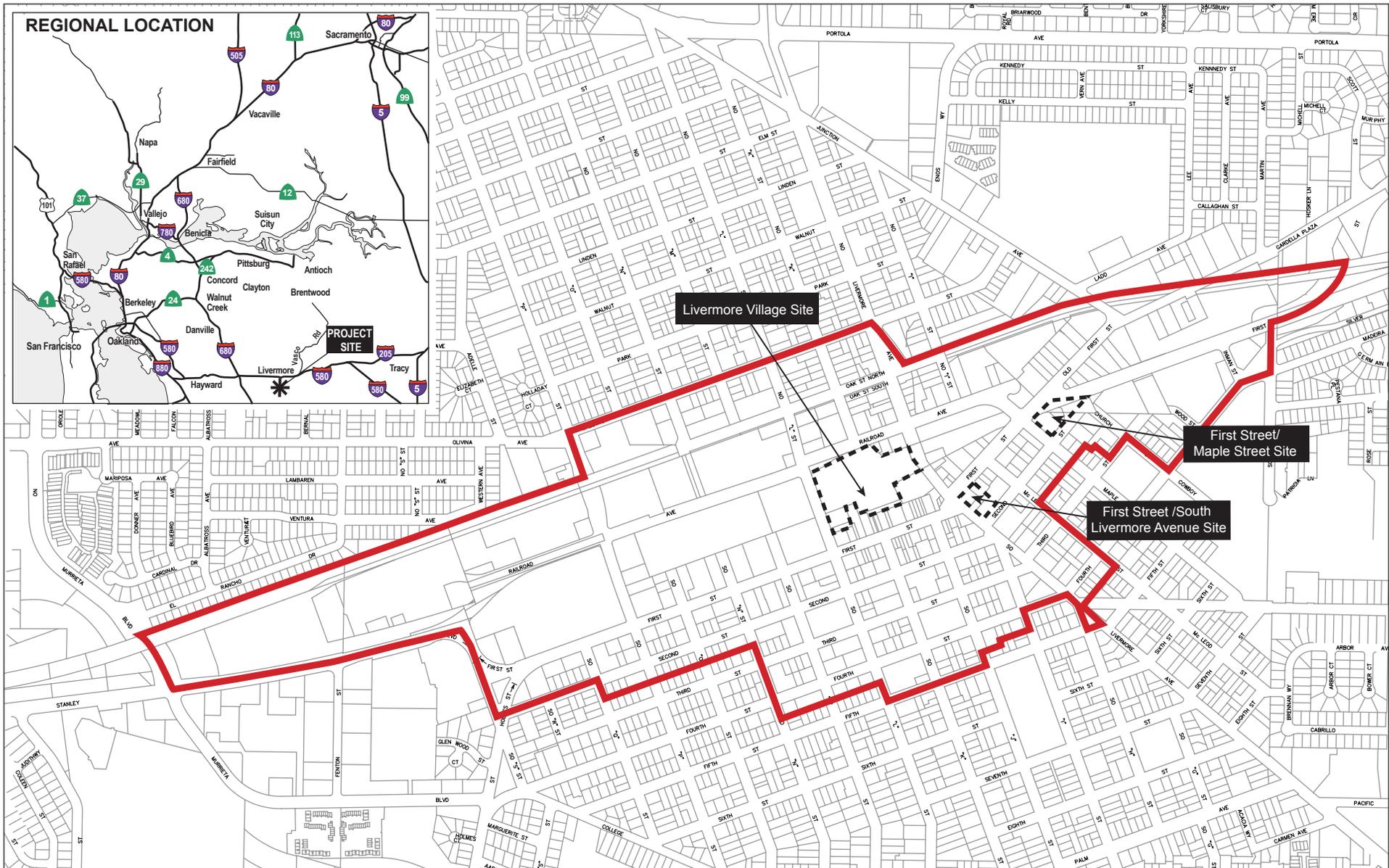
1. Location

The City of Livermore occupies approximately 24 square miles in the Livermore Valley, in eastern Alameda County, approximately 43 miles east of San Francisco. Livermore is located in the Tri-Valley area, a geographic and economic sub-region of the Bay Area that includes the cities of Pleasanton (directly west of Livermore), Dublin, Danville and San Ramon (to the northwest). The Tri-Valley is bounded on the west by the Las Trampas/Pleasanton/Sunol ridge system, and on the east by the foothills of Mount Diablo. Unincorporated areas of Alameda County lie to the north, east, and south of the City limits.

The Downtown Specific Plan area consists of approximately 272 acres located near the geographic center of the City of Livermore. The Downtown Specific Plan area is Livermore's historic Downtown area, located approximately 1.5 miles south of I-580. As shown on Figure III-1, the Downtown area is bounded on the north by the Union Pacific railroad tracks from Murrieta Boulevard to P Street, continues along Chestnut Street from P Street to North Livermore Avenue, and the railroad tracks from North Livermore Avenue to First Street. The northward curve of First Street forms the eastern boundary of the plan area. The southern boundary is more irregular, shifting as it moves from east to west from Fourth Street to mid-block between Second and Third Streets, to mid-block between Fourth and Fifth Streets, back to mid-block between Second and Third Streets, then north to Railroad Avenue at S Street and continuing west along Stanley Boulevard to Murrieta Boulevard.

The proposed Amendments identify development modifications to existing structures and land uses within the Downtown area. As no specific locations have been proposed with the increase in hotel/bed and breakfast rooms, commercial development, and office development, a description of the location and site characteristics for these land uses are not included in this chapter. The proposed Amendments with potential locations are described below.

- *Regional Performing Arts Theater.* The Theater would be constructed at one of three locations in the Downtown: the First Street/South Livermore Avenue site; the Livermore Village site; or the First Street/Maple Avenue site. These three sites are shown in Figure III-1.
- *Hotel/Bed and Breakfast Rooms.* The southeast corner of South Livermore Avenue and Railroad Avenue has been identified as a potential location for a hotel. A hotel at this location could accommodate approximately 80-120 rooms. The potential Downtown area locations for the additional 180 to 220 hotel/bed and breakfast rooms evaluated in this EIR have not been identified at this time.



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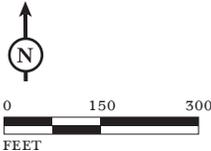
SOURCE: CITY OF LIVERMORE, 2003.

FIGURE III-1
Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Downtown Specific Plan Boundary and Alternative
Regional Performing Arts Theater Sites



LSA

FIGURE III-2



THEATER PROJECT SITE IN 2004
DOWNTOWN SPECIFIC PLAN

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR*
Performing Arts Theater Project Site
Identified in Downtown Specific Plan

SOURCE: GLOBEXPLORER, APRIL 2007.

- *Movie Screens.* There are currently two movie theaters within the Specific Plan area. These theaters are Livermore Cinemas, located at 2490 First Street, and Vine Cinema, located at 1722 First Street. The additional movie screens included as part of the Amendments have already been constructed at Livermore Cinemas.
- *New Parking Structure.* A new 350-space parking structure is proposed on South L Street between First Street and Railroad Avenue.

2. Site Characteristics

A discussion of the existing site conditions for the three potential locations for the Theater project and the associated realignment of Railroad Avenue at First Street is presented below. Where a specific location is known for the proposed Amendments, existing site characteristics are described.

a. Regional Performing Arts Theater. The Theater project would be constructed at one of three locations: the First Street/South Livermore Avenue site; the Livermore Village site; and the First Street/Maple Street site. These three potential locations are described below.

(1) First Street/South Livermore Avenue Site. There are four parcels that comprise this potential Theater site which is located southeast of the First Street/South Livermore Avenue intersection.¹ These parcels, and the buildings/uses that are located on them, are described below in order of their location on the site, from south to north. A location of this Theater site is shown in Figure III-1, and an aerial of this Theater site is included as Figure III-2.

PT&T Building. The PT&T Building (also commonly referred to as the AT&T building) is located on the southern most parcel on this site at 2324 Second Street. The parcel and the building front both Second Street and South Livermore Avenue. The PT&T Building is a one and a half story stucco structure that is currently vacant and owned by the City of Livermore Redevelopment Agency. This building has been identified by the Downtown Specific Plan as a National Historic Resource. Parking is provided on the site behind the building and is accessed off of Second Street.



PT&T Building

152-160 South Livermore Avenue. The 152-160 South Livermore Avenue building is a one-story commercial structure. Food service establishments are located at the front of the building along South Livermore Avenue and offices are located at the rear of the building.

¹ The project site is technically located to the east of the South Livermore Avenue/First Street intersection as South Livermore Avenue runs northwest/southeast and First Street generally runs northeast to southwest at that location. To facilitate discussion within the EIR, South Livermore Avenue site will be described as having a north/south orientation and First Street as having an east/west orientation at this Theater site. The simplified directions used in this EIR have been chosen in order to be consistent with conventions used in Livermore.



Mill Square Park

Mill Square Park. Mill Square Park is located on the corner of the First Street/South Livermore Avenue Intersection. This park includes grass, benches, lighting, a pergola, trees, mature landscaping, and a short path which cuts across the park.

Henry Beam's Blue Bar Building. The parcel that contains the Henry Beam's Blue Bar Building is located east of Mill Square Park and fronts on First Street. The building is a one story block structure located at the back of the parcel; parking is located on the front of the parcel and is accessed off of First Street.



Livermore Village Site

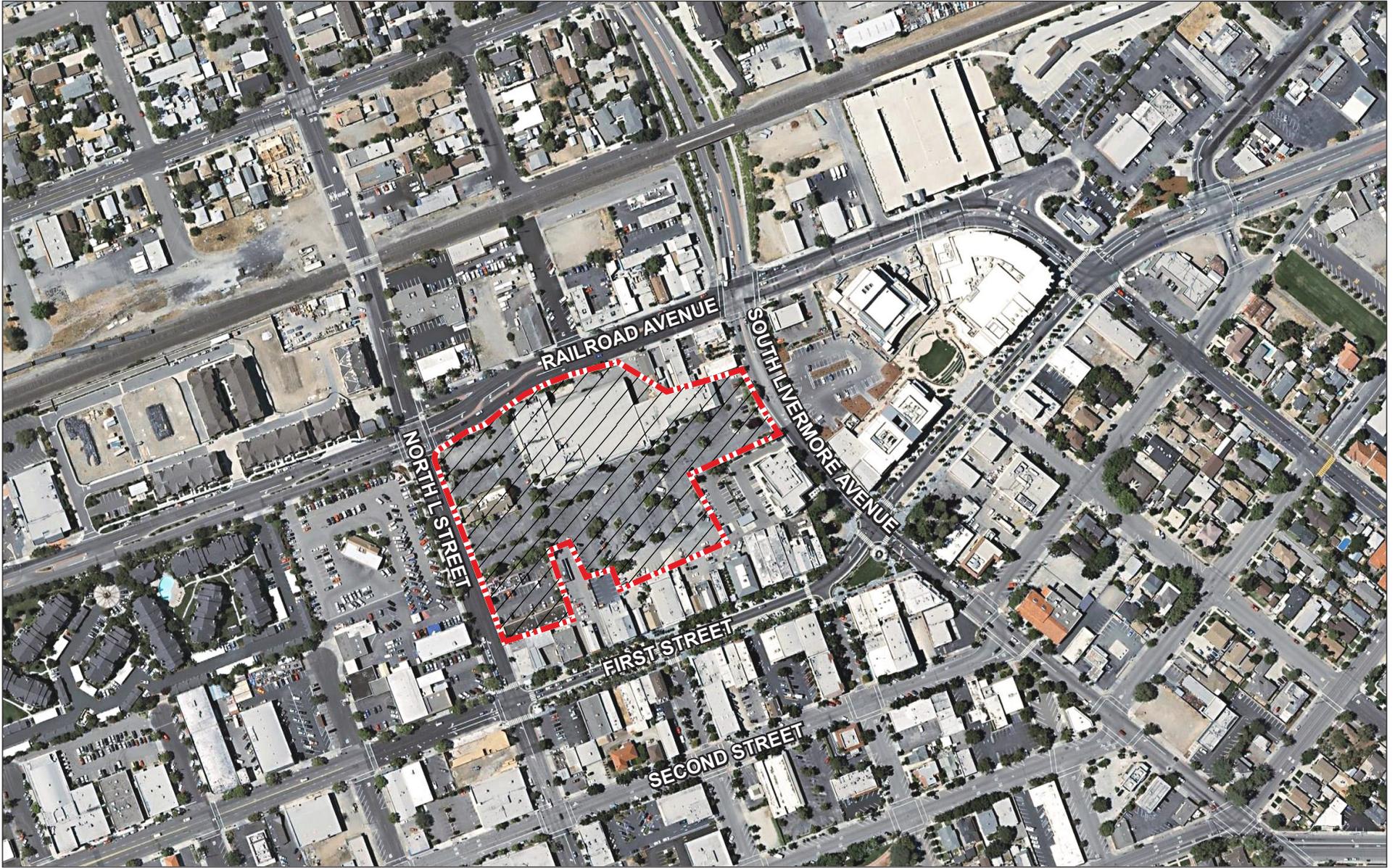
(2) Livermore Village Site. The Livermore Village site is located on the northern portion of the block bound by Railroad Avenue, South L Street, First Street, and South Livermore Avenue. There are three Agency-owned parcels and one City-owned parcel within this site which totals approximately 5.5 acres. Figure III-1 shows the location of this site, and Figure III-3 shows an aerial of the site.

The Livermore Village Site contains several existing buildings and a large surface parking lot. The largest building is located on the northern portion of the site, and at one time contained a Lucky's Supermarket, eating and drinking, retail, and commercial uses; this building is now largely vacant and the eastern portion was demolished in November 2008. The two-story building (Southern Pacific Railroad Depot building) on the western edge of the site contains office uses. The remainder of the site is surface parking and ornamental landscaping. Some buildings on the western portion of the site are planned to be demolished in February 2009. Two single-story buildings on the southwest corner of the project site contain a Kentucky Fried Chicken and three-in-line stores including a pizza restaurant, liquor store, and butcher shop. These parcels are identified as the location for the future parking structure.

(3) Railroad Avenue Realignment and the First Street/Maple Street Site. This potential Theater site would be created with the realignment of Railroad Avenue. The realignment and creation of the new parcel would require the removal of the 3 structures on Railroad Avenue and First Street as well as the removal of existing pavement and landscaping and the relocation of utility lines within the Railroad Avenue and First Street. After realignment, a new parcel would be bound by Maple Street, Second Street, and First Street. Figure III-4 shows an aerial of the road realignment and the site. The land that would become this new project site currently contains approximately three structures and a portion of First Street.



First Street/Maple Street Intersection



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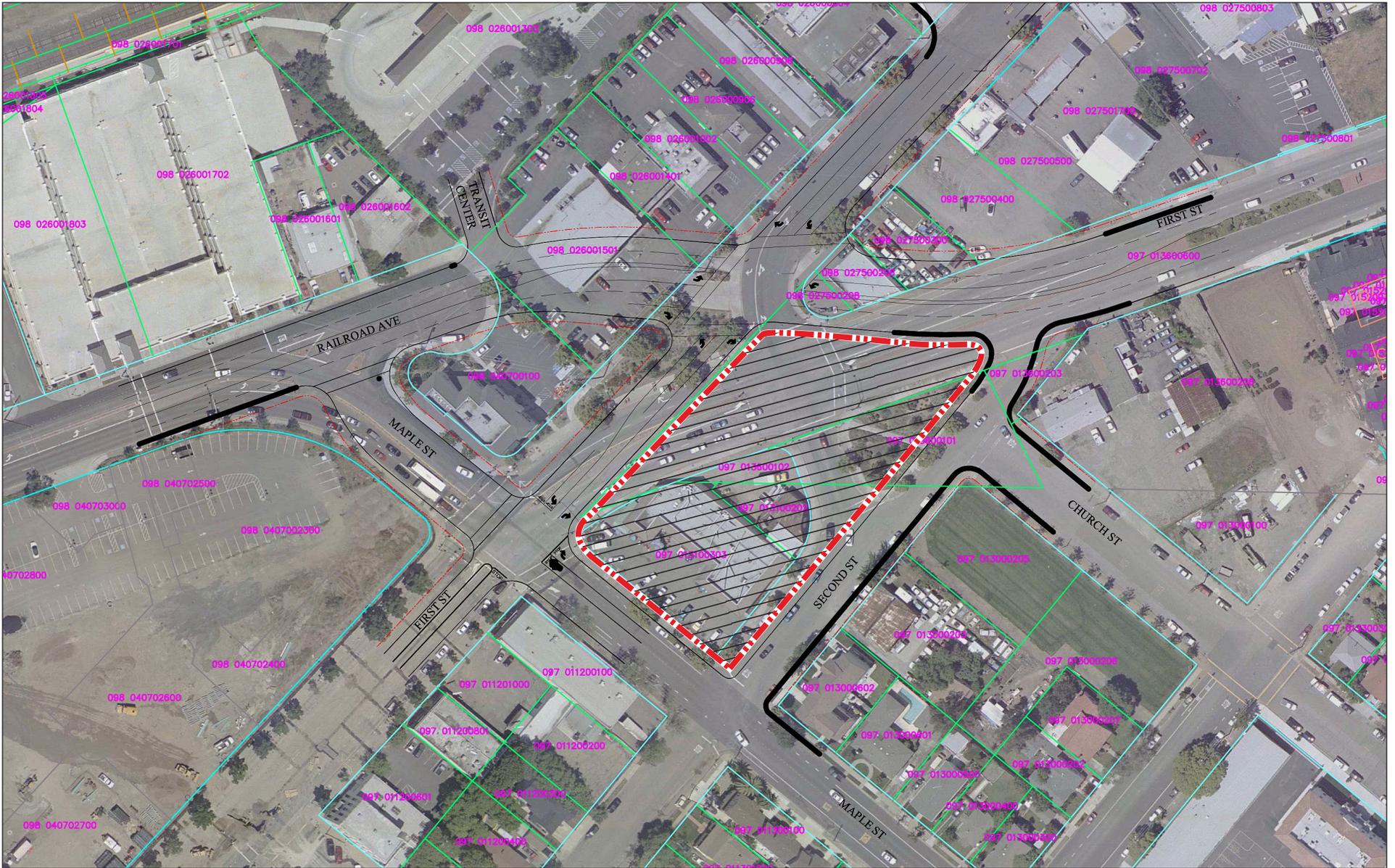
LIVERMORE VILLAGE ALTERNATIVE SITE

FIGURE III-3

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR*
Regional Performing Arts Theater Site Alternative

SOURCE: GOOGLE EARTH, 2008.

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LSA

FIGURE III-4



FIRST STREET/MAPLE STREET SITE

NOT TO SCALE

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
New Parcel Created by
Railroad Avenue Realignment*

SOURCE: CITY OF LIVERMORE, 2008

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The one-story buildings occupying this area contain retail and restaurant uses. A landscaped island is located within the proposed site bounded by First Street, Second Street, and Old First Street.

b. Hotel/Bed and Breakfast. A potential hotel location has been identified at the southeast corner of the Railroad Avenue/South Livermore intersection, adjacent to the Bankhead Theater. The site currently includes a one-story auto servicing building, site landscaping, and surface parking. A hotel at this location could accommodate approximately 80-120 rooms. The potential Downtown area locations for the additional 180 to 220 hotel and bed and breakfast rooms evaluated in this EIR have not been identified at this time.

c. Additional Movie Screen Location. Three additional movie screens have been added to the Downtown area. These additional screens are at Livermore Cinemas located at 2490 First Street, to the west of the Railroad Avenue/First Street intersection. The cinema building is a two-story structure and has a total of 13 movie screens.

d. Proposed Parking Structure Site. The proposed site of a new 350-space parking structure is located on South L Street between Railroad Avenue and First Street. The site currently includes two one-story buildings that contain fast-food and retail uses, landscaping, and surface parking.

3. General Plan and Zoning Designation

The General Plan land use designation for the Downtown Specific Plan area is Downtown Area (DA). The DA designation is a general designation that applies to the area traditionally known as Downtown Livermore. The DA seeks to provide a unique, locally-oriented, pedestrian-friendly shopping environment.

The zoning designation for the Downtown Specific Plan area is Downtown Specific Plan (DSP). The purpose of the DSP zoning district is to implement the community's desire for a revitalized historical Downtown area which includes: a more defined, intense retail core area allowing mixed uses on First Street; an enhanced, pedestrian-oriented public realm along First Street including slower traffic, more shade trees and seating, pocket plazas, outdoor eating areas, and public places for art and special events; emphasis on a Downtown arts and cultural district; additional housing of varied types and densities; and preservation of the historical characteristics and structures that make the Downtown area unique. In order to facilitate revitalization of the Downtown and carry out the community's goals, a detailed Downtown Specific Plan has been prepared to implement this zoning district.

C. PROJECT OBJECTIVES

The objectives for the Downtown Specific Plan Amendments would include:

- Increase the seating capacity of a proposed Regional Performing Arts Theater in the Downtown to allow for large shows and performances with a regional draw.
- Increase the amount of office/commercial square footage allowed in the Downtown to encourage a mix of uses and an active Downtown area.
- Provide adequate parking for existing and proposed land uses within the Downtown including a 2,000-seat Regional Performing Arts Theater.

- Encourage in-fill development in the Downtown so as to protect undeveloped land elsewhere in the City, especially area outside the Urban Growth Boundary.
- Enhance Downtown's role as a center for retail activity and employment.
- Provide economic enrichment to the community and the region.

The objectives for the Regional Performing Arts Theater project include:

- Develop a 2,000 seat Theater in the Downtown to accommodate performances with a regional draw.
- Build a modern state-of-the-art regional cultural events facility for the Downtown.
- Provide a high quality designed building to augment the Downtown Livermore area.
- Support and enhance arts education.
- Play a significant role in the continued growth and development of Downtown Livermore as a shopping, dining and entertainment destination for area residents and visitors.
- Expand the attraction of Livermore and the entire Tri-Valley as a destination for tourism, both cultural and recreational.

D. DOWNTOWN SPECIFIC PLAN AMENDMENTS AND THE REGIONAL PERFORMING ARTS THEATER PROJECT

As noted previously, this EIR will evaluate potential environmental impacts associated with the proposed Amendments as well as the Theater project. Both the Amendments and the Theater are described in more detail below.

1. Downtown Specific Plan Amendments

The Downtown Specific Plan is both a policy document and an implementation tool for the General Plan; it contains strategies for change and regulatory policies to guide and govern future development within the Downtown. The Downtown Specific Plan details proposed land uses and their distribution, proposed infrastructure improvements, development standards, and design guidelines and standards intended to amend existing City policies and change zoning code standards. The Downtown Specific Plan also includes standards for circulation, parking, and utilities needed for development.

As stated previously, the City proposes Amendments to the Downtown Specific Plan and the General Plan to allow for an increase in specific types of development. The proposed Amendments include the following:

- Increase the size of a proposed regional performing arts theater from 1,500 seats to 2,000 seats;
- Increase the number of movie screens in the Downtown from 12 screens to 15 screens;
- Increase the number of hotel and bed and breakfast rooms in the Downtown area to 300 rooms;
- Increase the amount of commercial development from 855,000 square feet to 1,000,000 square feet;
- Increase the amount of office development from 217,000 square feet to 356,000 square feet;

- Include a parking structure on L Street within the Downtown Core Area; and
- Add a new chapter (Financing) to the Downtown Specific Plan. This new Chapter is included as Appendix B.
- Revise the General Plan and Downtown Specific Plan to reflect the above changes.

As has been noted previously, the potential environmental impacts of these proposed Amendments will be analyzed at a more general “program” level of review due to the lack of specific level of detail and the ultimate location and intensity of development associated with these Amendments.

Subsequent development projects and other actions associated with the increase in development allowed by these Amendments could be subject to additional environmental review under CEQA, if necessary, once sufficient information is available to conduct project-specific analyses. The exception to this is the Regional Performing Arts Theater and the associated realignment of Railroad Avenue, which will be analyzed at a “project” level of review within this EIR.

2. Regional Performing Arts Theater

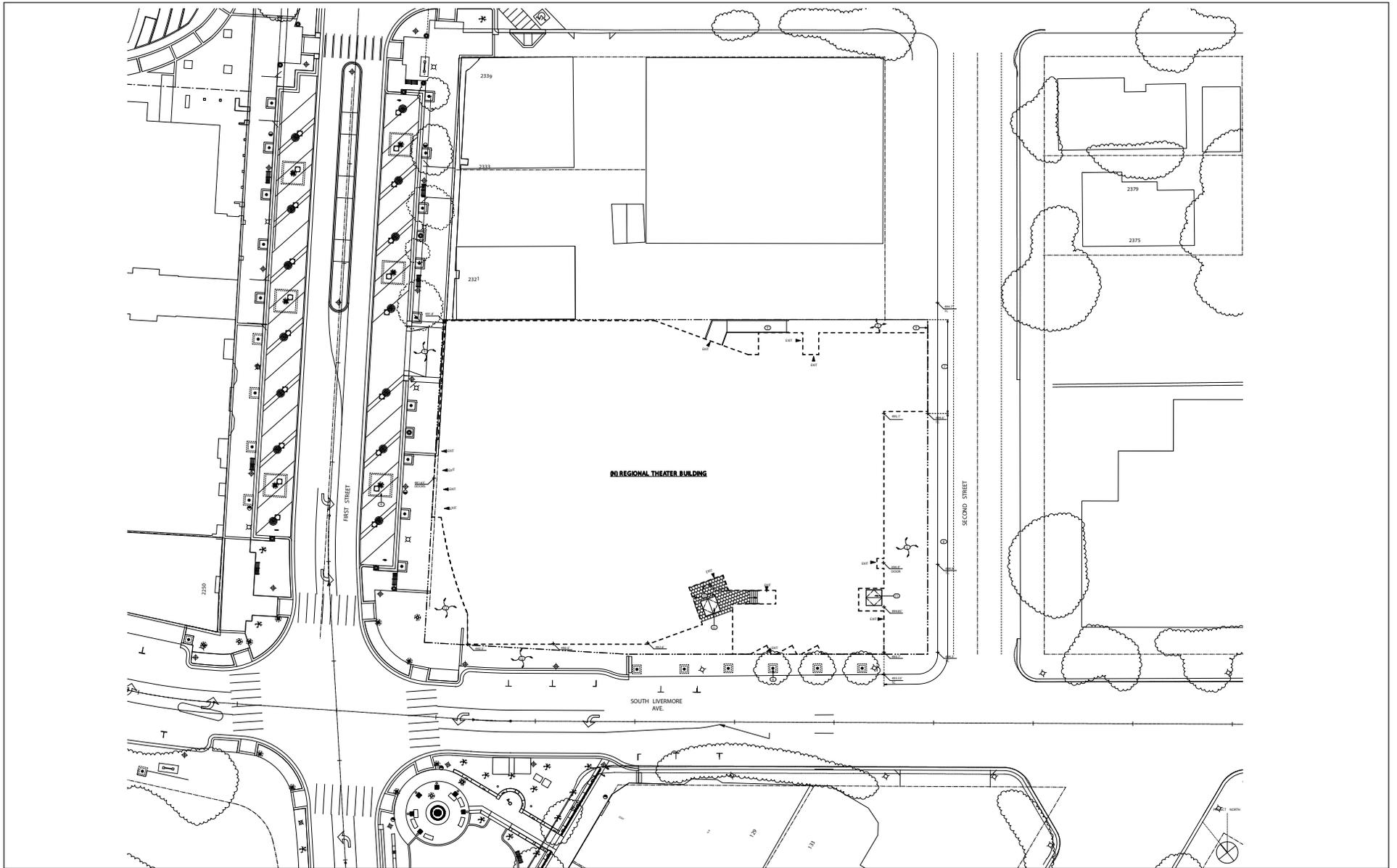
The construction of a three-level, 2,000 seat Theater is proposed for the Downtown area. The Theater project is a joint collaboration between the City of Livermore/Redevelopment Agency and the Livermore Valley Performing Arts Center (LVPAC). This Theater would be located at one of three sites identified on Figure III-1 and would be similar in size to other regional theaters, such as the U.C. Berkeley Zellerbach Hall, the San Jose Center for Performing Arts, and the Orpheum Theater in San Francisco. Figure III-5 shows a conceptual site plan, and Figures III-6, III-7, III-8 show the schematic design of the various levels of the Theater. Conceptual elevations of the Theater are shown in Figure III-9. The exterior of the Theater is likely to be different at the various Theater sites in order to accommodate different site constraints. The highest portion of the building would be up to 100 feet tall. The three levels of the Theater are described below.

a. Ground Level. Figure III-6 shows a schematic design for the ground floor of the Theater. The main entrance and the Theater box office would be located on the ground floor. The main entrance would provide access to the main lobby, which visitors would pass through to enter the auditorium (main Theater hall), concession area, café, ground floor bathrooms, and to use stairs/elevators to access the other levels of the Theater.

The ground floor of the auditorium would be elevated, and would be accessed either by the staircases or elevators adjacent to the main lobby. There would be three groupings of seats on the ground floor of the auditorium which are accessed by one central aisle or aisles located at the ends of the rows of seat.

The stage would be approximately 46 feet by 92 feet. The area behind the stage includes a staging/loading area, dressing rooms, bathrooms, and maintenance area. A loading and delivery area and truck ramp is located behind the Theater.

b. Second Level. The second level of the Theater contains limited patron seating within the auditorium, restrooms, and Theater management offices. Figure III-7 shows the plan of the second level of the Theater.



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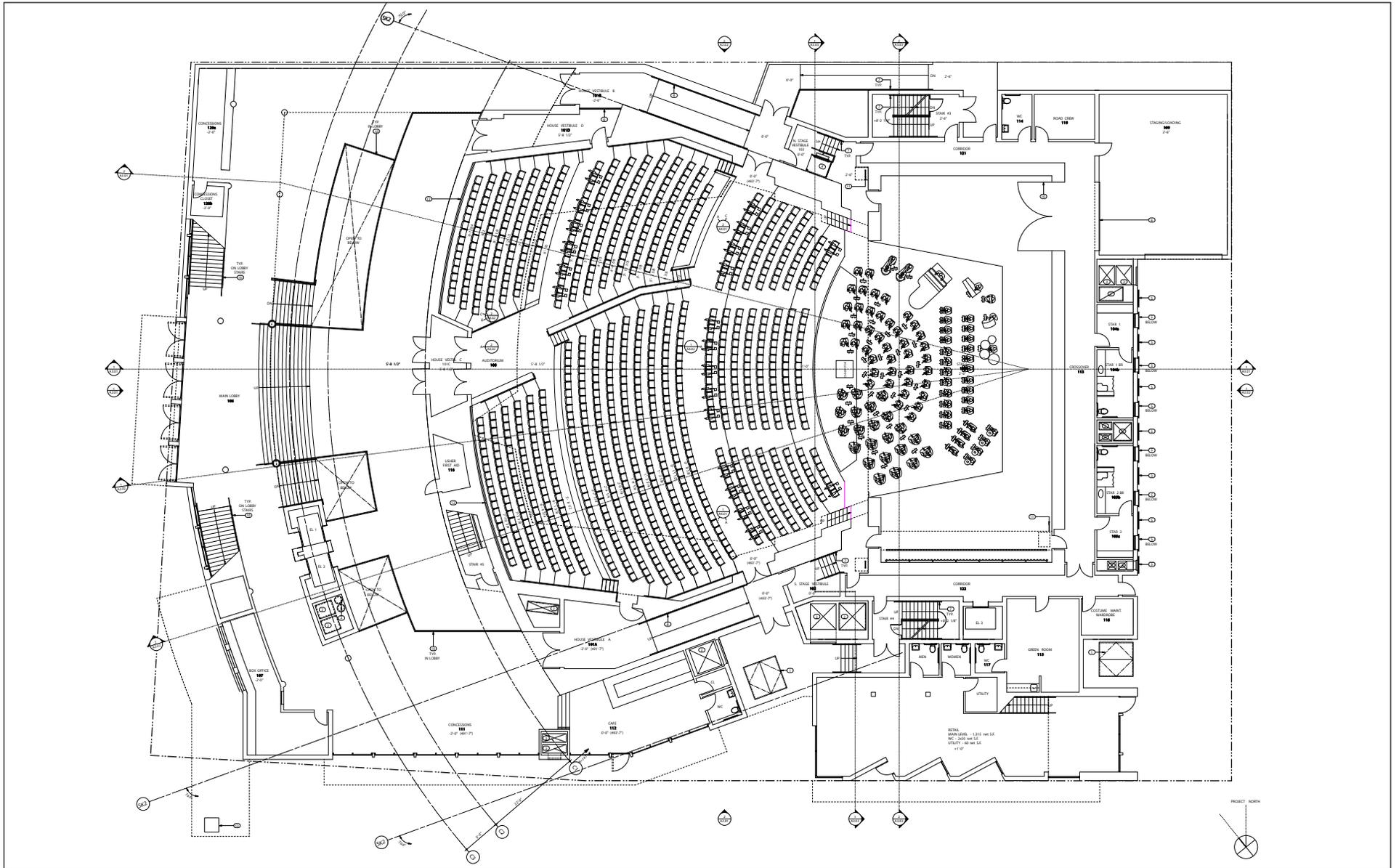


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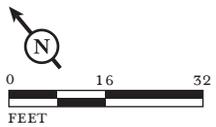
SOURCE: MacCRACKEN ARCHITECTS, APRIL 2008
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FIGURE III-5

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Conceptual Site Plan for the
 Performing Arts Theater*



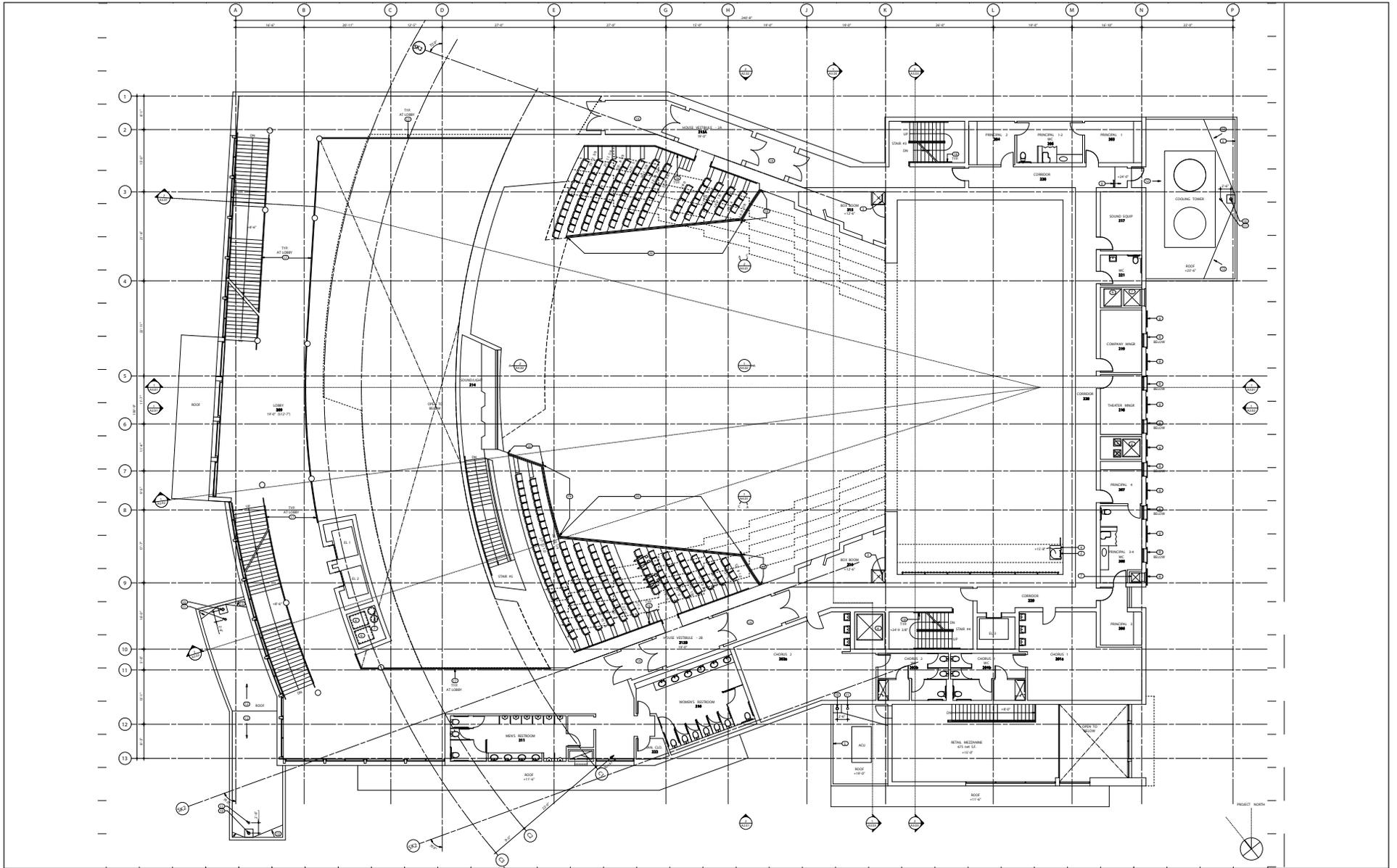
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SOURCE: MacCRACKEN ARCHITECTS, APRIL 2008
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FIGURE III-6

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Ground Level Conceptual Plan
 for the Performing Arts Theater*



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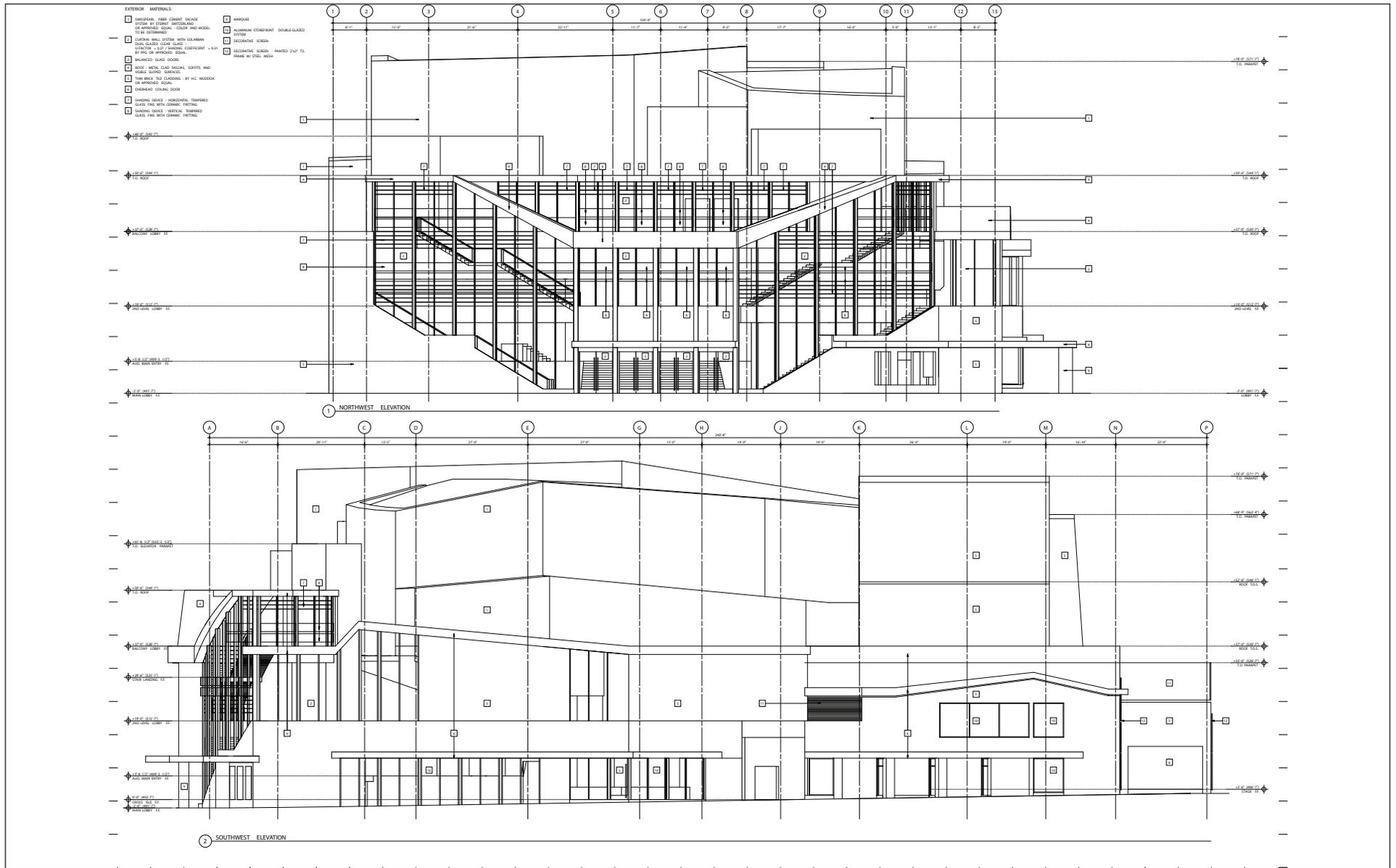
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SOURCE: MACCRACKEN ARCHITECTS, 2008.

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FIGURE III-7

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Second Level Conceptual Plan for the
Performing Arts Theater*



LSA



NOT TO SCALE

SOURCE: MACCRACKEN ARCHITECTS, 2008.
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FIGURE III-9

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Conceptual Elevation of the
 Performing Arts Theater*

c. Balcony Level. The balcony level of the Theater contains approximately 26 rows of seating. Patrons can access the balcony level by five sets of staircases and 2 elevators. Figure III-8 shows the plan of the balcony level of the Theater.

d. Site Preparation and Construction Schedule. Due to the differences between the potential Theater sites, specific actions necessary to prepare the site for construction of the Theater will vary depending on the site. However, all potential sites are currently developed, so demolition of existing structures and removal of pavement and existing landscaping will occur. A component of the project that is being evaluated in this EIR is the realignment of Railroad Avenue to improve Downtown circulation. The roadway realignment and site preparation at the First Street/Maple Street site would require the removal of structures and pavement and the relocation of utility lines that are currently within Railroad Avenue and First Street.

While no defined construction schedule has been proposed, it is anticipated that site preparation would take approximately 3 months, and construction would take approximately 18 months.

E. ALTERNATIVE THEATER SITES

In an effort to identify the preferred location for the Theater, the City has identified three alternative sites on which a 2,000 seat Theater could be located, as described below:

- Regional Theater at the southeast corner of First Street/South Livermore Avenue;
- Regional Theater at the Livermore Village site south of Railroad Avenue/South Livermore Avenue; and
- Regional Theater at the southeast corner of First Street/Maple Street (this site would be created with the realignment of Railroad Avenue and First Street as described previously).

This EIR analysis the potential environmental impacts relative to locating the Theater at each of these potential sites. The potential environmental affects associated with realigning Railroad Avenue are also addressed in this EIR. The analysis and comparison of alternative sites generally focuses on the topics where the impacts would be different from or would avoid impacts associated with locating the Theater at the First Street/South Livermore Avenue site (with or without realignment of Railroad Avenue) which is the site identified in the Downtown Specific Plan. The proposed project evaluated in this EIR (the Amendments and the Theater project) does not include any additional residential development. However, as part of the buildout of the Downtown Specific Plan and regardless of which alternative site for the Theater is being evaluated, the analysis in this EIR assumes development on the Livermore Village site would include approximately 295 residential units and a 350-space parking structure.

The following provides additional information concerning locating the Theater at each of the alternative sites.

1. Regional Theater at the Southeast Corner of First Street/South Livermore Avenue

If the Theater were to be located at the southeast corner of First Street/South Livermore Avenue, it would require the demolition of two structures and relocation of the historic PT&T Building. The

entrance to the Theater would front on First Street. A patron pick-up and drop-off zone would be located on South Livermore Avenue.

To facilitate traffic circulation within the Downtown area, the realignment of Railroad Avenue could also occur if the Theater were located at this site. To accomplish the realignment, a portion of Railroad Avenue would be realigned to connect with First Street. The realignment would require the demolition of approximately three structures, removal of pavement and landscaping, the abandonment of a portion of First Street, the creation of a new Railroad Avenue/First Street intersection, and the creation of a new parcel bound by Maple Street, Second Street, and First Street (as shown in Figure III-4).

If the realignment were to occur, the following land use assumptions would also be analyzed as part of siting the Theater at the First Street/South Livermore Avenue site:

- The new First Street/Maple Street parcel created by the roadway realignment would be developed with office space, consumer services and retail space.

2. Regional Theater at the Livermore Village Site south of Railroad Avenue and west of South Livermore Avenue

The Theater could also be located on a portion of the Livermore Village site, a 5.5 acre former Lucky's shopping center bounded by Railroad Avenue, South Livermore Avenue, First Street, and L Street (shown in Figure III-3). The entrance to the Theater would front on South Livermore Avenue, and would include a small plaza and a patron pick-up and drop-off zone. Additionally, the following land use assumptions would be analyzed as part of this alternative:

- The historic Railroad Depot building would be relocated to the LAVTA Transit Center on Old First Street.
- The First Street/South Livermore Avenue site would be developed with commercial space, office space, and residential. Mills Square Park would remain at its current location.
- The historic PT&T Building would remain and would be redeveloped with space for City and/or non-profit sponsored art-related uses.

The realignment of Railroad Avenue could also occur if the Theater were located at this site. If the realignment were to occur, the following land use assumptions would also be analyzed as part of siting the Theater at the Livermore Village site:

- The new First Street/Maple Street parcel created by the roadway realignment would be developed with office space, consumer services and retail space.

3. Regional Theater at the Southeast Corner of First Street/Maple Street and Realignment of Railroad Avenue and First Street

The Theater could be located at the First Street/Maple Street site which would be created by the realignment of Railroad Avenue (shown in Figure III-4). The entrance to the Theater would front on Maple Street/First Street and include a patron pick-up and drop-off zone on Maple Street.

Additionally, the following land use assumptions would be analyzed as part of this alternative:

- The new First Street/Maple Street parcel created by the roadway realignment would be developed with office space in addition to the Theater.
- The First Street/South Livermore Avenue site would be developed with the following uses: commercial space, office space, and residential. Mills Square Park would remain at its current location.
- The PT&T Building would remain and be redeveloped with space for City and/or non-profit sponsored art-related uses.

F. DISCRETIONARY ACTIONS

A series of discretionary actions are associated with the Theater. These would include Site Plan Approval/Design Review, a Disposition and Development Agreement, tree removal permits, demolition permits, and a Certificate of Appropriateness.

When considering the Amendments to the General Plan and the Downtown Specific Plan, the Livermore Planning Commission and the City Council will review this EIR along with drafts of the proposed Amendments. After reviewing the EIR, the Planning Commission will consider whether to certify it as adequate and complete. When the Planning Commission provides recommendations on the EIR, the City Council will consider certification of the EIR and adoption of the Amendments to the General Plan and Downtown Specific Plan.

G. USES OF THIS EIR

A number of permits and approvals, including the discretionary actions listed above, would be required before the development of this project could proceed. The descriptive materials and impact analysis in this EIR would be used as part of those processes. As lead agency for the proposed project, the City of Livermore would be responsible for the majority of the approvals required for development. Other agencies may have some authority related to the project and its approvals. A list of the required permits and approvals that may be required by the City and other agencies is provided in Table III-1.

Table III-1: Required Permits and Approvals

Lead Agency	Permit/Approval
City of Livermore	<ul style="list-style-type: none"> • General Plan Amendments • Downtown Specific Plan Amendments • Site Plan Approval/Design Review • Disposition and Development Agreement • Approval of sewer connections and sewer treatment capacity • Tree Removal Permits • Demolition Permits • Certificate of Appropriateness
Responsible Agencies	
Zone 7 Water Agency/City of Livermore, Cal Water	<ul style="list-style-type: none"> • Approval of water lines, water hookups and review of water needs • Approval of storm drainage system
California Regional Water Quality Control Board (RWQCB)	<ul style="list-style-type: none"> • National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge
Other Agencies	
SBC	<ul style="list-style-type: none"> • Approval of communication line improvements and connection permits
Pacific Gas & Electric (PG&E)	<ul style="list-style-type: none"> • Approval of natural gas and electricity improvements and connection permits
California Department of Toxic Substances Control (DTSC)	<ul style="list-style-type: none"> • Approval and oversight of hazardous material remediation

Source: LSA Associates Inc., 2008

A. LAND USE AND PLANNING POLICY

This section describes the existing land uses within and adjacent to the Downtown Specific Plan area and its vicinity and summarizes relevant plans and policies. Potential land use and planning impacts that would result from the adoption of the Downtown Specific Plan Amendments and implementation of the Regional Performing Arts Theater project are evaluated.

This section also contains a discussion of relevant land use policies. However, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct physical impacts. Therefore, land use policies are discussed in this section for informational purposes only. All other associated physical impacts are discussed in this EIR in specific topical sections such as noise, air quality and transportation.

1. Setting

The following section describes the existing land use conditions within the Downtown Specific Plan area and the potential Theater sites.

a. Overview. The Downtown Specific Plan area consists of approximately 272 acres located near the geographic center of the City of Livermore. The Downtown Specific Plan area is Livermore's historic Downtown area, located approximately 1.5 miles south of I-580. As shown on Figure III-1, the Downtown Specific Plan area is bounded on the north by the Union Pacific railroad tracks from Murrieta Boulevard to P Street, continues along Chestnut Street from P Street to North Livermore Avenue, and the railroad tracks from North Livermore Avenue to First Street. The northward curve of First Street forms the eastern boundary of the Downtown Specific Plan area. The southern boundary is more irregular, shifting as it moves from east to west from Fourth Street to mid-block between Second and Third Streets, to mid-block between Fourth and Fifth Streets, back to mid-block between Second and Third Streets, then north to Railroad Avenue at S Street and continuing west along Stanley Boulevard to Murrieta Boulevard.

b. Downtown Specific Plan Area Existing Land Uses. The existing land uses within the Downtown area and the potential Theater sites are described below and shown in Figure IV.A-1.

(1) Downtown Specific Plan Area. Land uses in the Downtown Specific Plan area are generally described below. Figure IV.A-1 shows an aerial of the Downtown area and provides an overview of existing uses.

Commercial/Retail Uses. First Street is the Downtown's main commercial street, and includes a variety of restaurants, bars, and shops. Larger strip-malls containing multiple retail/commercial tenants and large paved parking areas are located in the western portion of Downtown. Smaller commercial/retail spaces are located throughout the Downtown.

Residential Uses. There are three types of residential uses within the Downtown Specific Plan area: single-family residential, multi-family residential, and senior assisted living facilities. Single-family residential units are generally located along the northern and southern boundary of the Downtown Specific Plan area. Multi-family, including townhomes and apartments, are generally

located within the center of the Downtown along Railroad Avenue. The senior assisted living facility is located in the western portion of the Downtown.

Institutional Uses. Institutional uses are generally located in the eastern portion of the Downtown area, but are not concentrated in any one area. These uses include public and quasi-public buildings; recreation, religious or cultural uses; day/child care; and adult education.

Office Uses. Office uses are located throughout the Downtown area, and include business, medical service, and financial service space.

Industrial. Industrial services, which include auto services as well as warehousing and storage, are located in the central and northern portion of the Downtown.

(2) Theater Locations. The following describes the land uses at the proposed Theater sites, which are shown on Figure IV.A-1.

First Street/South Livermore Avenue Site. There are four parcels that comprise the First Street/South Livermore Avenue potential Theater project site. The PT&T Building is located on the southernmost parcel on the project site, and is currently vacant. The 152-160 South Livermore Avenue building is a one-story commercial structure with food service establishments located at the front of the building along South Livermore Avenue and offices located at the rear of the building. Mill Square Park is located on the corner of the First Street/South Livermore Avenue intersection. The parcel that contains the Henry Beam's Blue Bar Building is located east of Mill Square Park and fronts on First Street.

Livermore Village Site. There are approximately four parcels within the Livermore Village site which contains several existing buildings and a large surface parking lot. The largest building is located on the northern portion of the site, and at one time contained a Lucky's Supermarket, eating and drinking, retail, and commercial uses; the eastern portion of the building has been demolished. There are two single-story buildings on the southern corner of the project site. One building contains a Kentucky Fried Chicken, while the other building include a pizza shop, liquor store, and butcher shop. The two-story building (Southern Pacific Railroad Depot) on the western edge of the site contains office uses. The remainder of the site is surface parking and ornamental landscaping.

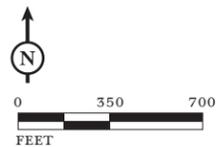
First Street/Maple Street Site. The First Street/Maple Street potential Theater site would be created with the realignment of Railroad Avenue and First Street. After realignment, a new parcel would be bound by Maple Street, Second Street, and First Street (see Figure III-4 in the Project Description). The land that would become this new project site currently contains approximately three retail structures and a portion of First Street. The area that would become the new roadway associated with the realignment of Railroad Avenue and First Street currently includes retail uses, parking areas, landscaping and sidewalks.

c. Existing Land Uses Adjacent to the Downtown Specific Plan Area. General land uses to the north, east, south and west of the Downtown are outlined below.



LSA

FIGURE IV.A-1



-  DOWNTOWN SPECIFIC PLAN AREA BOUNDARY
-  POTENTIAL REGIONAL PERFORMING ARTS THEATER SITES

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Downtown Specific Plan Aerial
Existing Land Use Overview*

SOURCE: GOOGLE EARTH, 2007.

I:\CLV0801 Downtwn Livermore\figures\Fig_IVA1.ai (11/25/08)

North. Residential neighborhoods are located immediately to the north of the Downtown. Uses located further north include residential land uses, office, parks, Interstate 580 (I-580), and regional-serving shopping centers. Unincorporated Alameda County is located north of I-580.

East. A mix of residential and commercial uses are located to the east. Civic, recreation, industrial, and residential uses are located further east. The Lawrence Livermore National Laboratory and unincorporated Alameda County are also located to the east.

South. Primarily residential neighborhoods are located to the south of the Downtown area. Additional residential neighborhoods, parks, institutional uses and Arroyo Mocho are located further south.

West. ValleyCare Memorial Hospital, commercial and office uses are located immediately southwest of the Downtown area. Schools, residential neighborhoods, and the City of Pleasanton are located further west.

d. Relevant Policy Documents. The following includes a discussion of applicable land use policy documents, including the City of Livermore General Plan, the Downtown Specific Plan, and the Livermore Planning and Zoning Code.

(1) City of Livermore General Plan. The General Plan provides a blueprint for land use, development, and conservation policies in the City of Livermore. It serves as a basis for future decision-making by municipal officials, including City staff, the Planning Commission, and the City Council.

The General Plan includes land use designations for all land within the City. The land use designation for the Downtown Specific Plan area is Downtown Area (DA), which is shown in Figure IV.A-2. The DA designation is a general designation that seeks to provide a unique, locally-oriented, pedestrian-friendly shopping environment. The area supports a variety of mixed uses, including commercial, office, entertainment, cultural arts, lodging and residential. Higher-intensity retail development of a density that will support the predominantly commercial environment is integral to the economic viability of the district.

The General Plan presents a series of goals, objectives, policies and actions to address key issues. Goals are a description of the general desired result; objectives are specific conditions or ends that serve as a concrete step towards attaining a goal; policies are specific statements that guide decision-making to achieve an objective; and actions are a program, implementation measure, procedure, or technique intended to help achieve a specific objective. The General Plan objectives and policies that are specific to the Downtown Area are listed below.

Land Use Element

- **Objective LU-1.4:** Encourage commercial development that will support and enhance a vibrant Downtown and serve existing neighborhoods.
- **Policy LU-1.4.P1:** The Downtown shall serve as the primary local commercial area and as the City's historic and pedestrian-oriented retail shopping area within the period of the General Plan.
- **Policy LU-1.4.P2:** The City shall encourage a combination of specialty retail, office, entertainment (e.g. movie and performing art theaters), and other retail uses that serve a daily and occasional need in the

Downtown. Such uses are those in neighborhood-service retail centers, as well as stores selling specialty goods, quality goods, and quality and specialty restaurants.

- Policy LU-1.4.P3: Downtown shopping shall be supplemented by neighborhood shopping centers, consisting of retail convenience and personal service uses. Neighborhood shopping centers should be located so that the “trade area” residents are within relatively easy walking distance. Neighborhood centers should be more than one-mile apart so as not to overlap with adjacent trade areas. Regional and community serving uses are to be located in areas designated as Business and Commercial Park or Community Serving General Commercial.
- Policy LU-2.1.P9: To promote development and redevelopment in the Downtown, 200 units per year shall be authorized within the Downtown Area, for a maximum of 2,000 units for the period beginning February 2004 and ending December 31, 2013. For this period of time, Downtown Area units are not required to participate in the competitive review process. Please refer to the Downtown Specific Plan for the implementation details of this policy.

Community Character Element

- Action CC-2.1.A1: Prepare and adopt ordinances, guidelines, and/or procedures in order to implement these policies including design review procedures, creation of development design standards, a specific plan for Downtown development and revitalization, and establishment of public improvement standards including landscaping and related programs which address these policies. These ordinances, guidelines, and procedures shall address, at a minimum, the following:
 - (a) Building materials;
 - (b) Building scale, bulk, and facade treatment;
 - (c) Streetscapes;
 - (d) Lighting;
 - (e) Landscaping and trees;
 - (f) Visual impacts of multi-unit housing on nearby single-family residences and historical buildings;
 - (g) Visual resources;
 - (h) Signs.
- Policy CC-2.3.P3: The City shall adopt public improvement standards to implement improvements of high quality public facilities. Excellence in the appearance of public facilities shall be of utmost importance and consideration. New development and redevelopment shall be designed with complimentary public and private amenities. Streetlights, benches, accessory structures, and public and private spaces shall be designed in a complimentary fashion. Landscaping shall be an important and significant design component of development. Areas visible from public streets shall be landscaped as part of the initial development. The City’s design guidelines and standards shall establish the objectives, techniques, and programs to implement the location, amount, and type of landscaping material appropriate to these objectives. Additionally, the Downtown Specific Plan’s design guidelines shall provide direction on how to address these issues for new development or redevelopment within the Downtown Area, as defined in the Specific Plan.

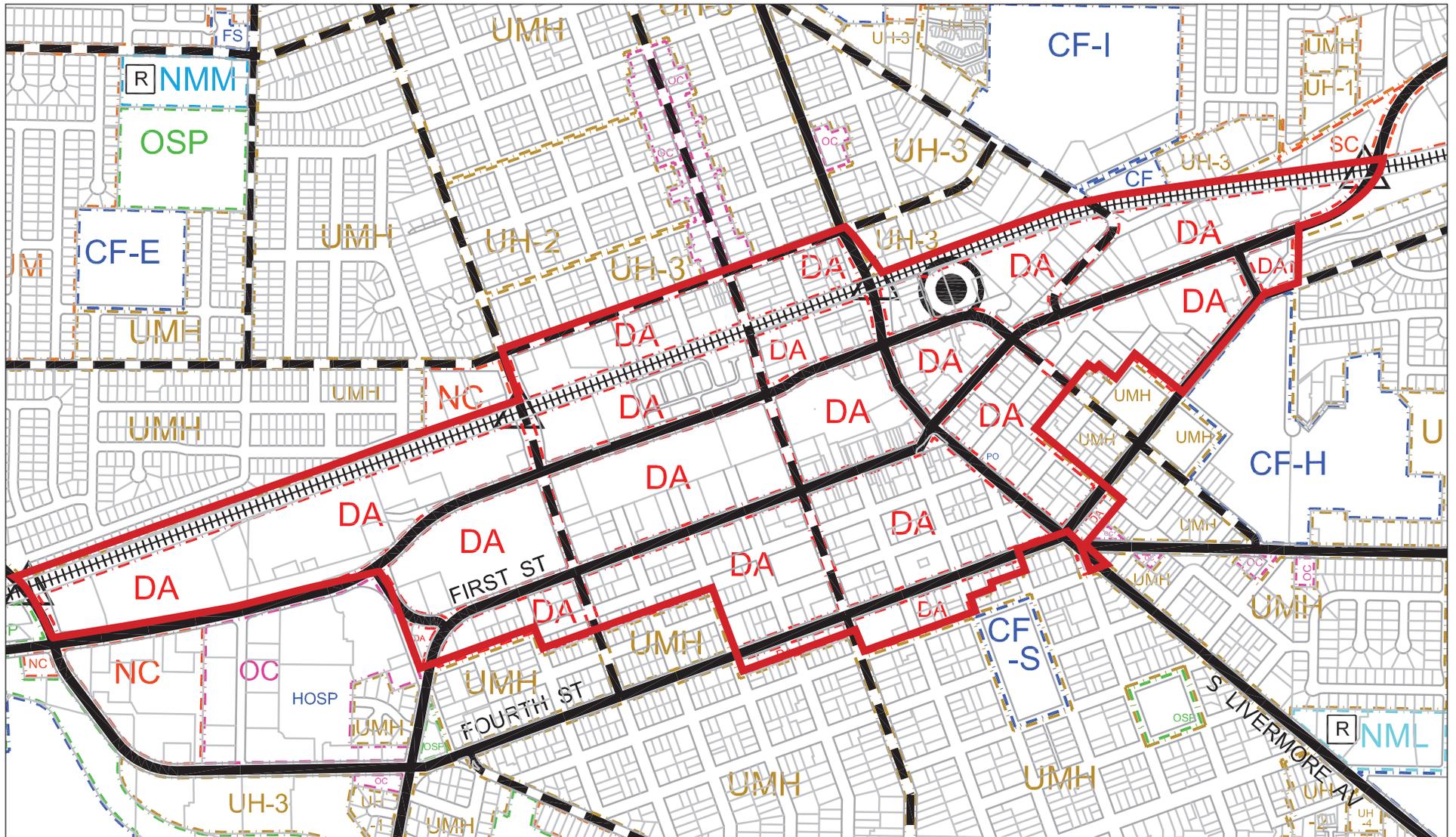
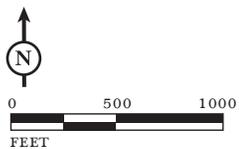


FIGURE IV.A-2

LSA



- RESIDENTIAL**
- URBAN MEDIUM RESIDENTIAL 3.0 - 4.5 d.u./ac.
- URBAN MEDIUM HIGH RESIDENTIAL 4.5 - 6.0 d.u./ac.
- URBAN HIGH RESIDENTIAL
 - 1 = 6 - 8 d.u./ac. 4 = 18 - 22 d.u./ac.
 - 2 = 9 - 14 d.u./ac. 5 = 25 - 35 d.u./ac.
 - 3 = 14 - 18 d.u./ac. 6 = 38 - 55 d.u./ac.
- COMMERCIAL**
- NEIGHBORHOOD COMMERCIAL .3 FAR
- SERVICE COMMERCIAL .3 FAR
- OFFICE COMMERCIAL .3 FAR
- MIXED USES**
- NEIGHBORHOOD MIXED LOW DENSITY 12 - 15 d.u./ac.
- NEIGHBORHOOD MIXED MEDIUM DENSITY 15 - 24 d.u./ac.
- DOWNTOWN AREA (See DSP)

- OPEN SPACE**
- PARKS, TRAIL WAYS, RECREATION CORRIDORS, AND PROTECTED AREAS
- COMMUNITY FACILITIES**
- ELEMENTARY SCHOOL K-6
- INTERMEDIATE SCHOOL 7-8
- HIGH SCHOOL 9-12
- SCHOOL - GENERAL
- POST OFFICE
- FIRE STATION
- HOSPITAL
- CIVIC CENTER
- GOVERNMENT SERVICES

- OTHER DESIGNATIONS**
- TDC RECEIVER SITE
- CIRCULATION**
- MAJOR STREET
- COLLECTOR STREET
- LOCAL STREET
- RAIL CORRIDOR
- GRADE SEPARATED INTERSECTION
- ACE Station
- DOWNTOWN SPECIFIC PLAN AREA BOUNDARY

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR
General Plan Map

- Policy CC-3.1.P7: The City shall recognize the historic significance of Downtown Livermore through a specific plan for the Downtown. The Downtown Specific Plan shall include provisions to balance historic resource preservation and adaptive re-use with revitalization efforts. The Downtown Specific Plan shall establish a development review process and design guidelines for historic resource rehabilitation as well as require new construction to be designed such that it is compatible with and sensitive to the historic identity of Downtown Livermore.

Circulation Element

- Policy CIR-4.1.P1: For the purposes of development associated traffic studies, road improvement design, and capital improvement priorities, the upper limit of acceptable service at signalized intersections shall be mid-level D, except in the Downtown Area and near freeway interchanges.
- Policy CIR-4.1.P2: There shall be no level of service standard for the Downtown Area (see General Plan Land Use Map for Downtown Area location).
- Goal CIR-6: Develop a Downtown circulation system that is pedestrian-oriented and supports Downtown as a destination.
- Objective CIR-6.1: Design and maintain a safe and interconnected pedestrian-oriented Downtown circulation system.
- Policy CIR-6.1.P1: Promote pedestrian activity as the primary mode of travel in Downtown.
- Policy CIR-6.1.P2: Provide a roadway system that is subordinate to the pedestrian environment.
- Policy CIR-6.1.3: Prohibit through trucks on First Street in the Downtown Area and divert truck traffic away from the Downtown Area.
- Policy CIR-6.1.P4: Establish alternative routes for through truck traffic and for truck delivery.
- Policy CIR-6.1.P5: Reduce the speed of roadway traffic moving through the Downtown Area to be more compatible with pedestrians.
- Action CIR-6.1.A1: Reduce the number of lanes along First Street to provide additional on-street parking, and to slow roadway traffic moving through the Downtown Area.
- Policy CIR-6.1.A2: Encourage alternatives modes of travel to and within the Downtown Area, including transit and bicycles.
- Policy CIR-9. A1: Encourage, and where possible facilitate, the use of shared parking arrangements to ensure that existing parking is efficiently utilized, especially in the Downtown Area.

Open Space and Conservation Element

- Policy OSC-5.1.P7: The City and LARPD shall work to update the in-lieu park fee ordinance, which will include an evaluation of park needs Citywide, as well as the Downtown Area. The update shall include the development of park in-lieu fees for all residential types, as well as commercial and industrial development, within the community. The City and LARPD shall work together to develop park locations in the City, as well as the Downtown Area.

Noise Element

- Policy N-1.1.P6: In an effort to support active uses in the Downtown Area, the Downtown Area shall be subject to a different noise standard than the rest of the City, as follows:
 - *Downtown Core District*: Between 7 a.m. and 12 a.m., exterior noise levels of up to 75 dBA would be considered Normally Acceptable for all uses; and, between 12 a.m. and 7 a.m., exterior noise levels up to 65 dBA would be considered Normally Acceptable for all uses.

- *Boulevard and Transit Gateway Districts:* Between 7 a.m. and 12 a.m., exterior noise levels up to 70 dBA would be considered Normally Acceptable for all uses; and, between 12 a.m. and 7 a.m., exterior noise levels up to 60 dBA would be considered Normally Acceptable for all uses.
- *North and South Side Neighborhood Districts:* Between 7 a.m. and 12 a.m., exterior noise levels of up to 65 dBA would be considered Normally Acceptable for all uses; and between 12 a.m. and 7 a.m., exterior noise levels up to 60 dBA would be considered Normally Acceptable for all uses.
- For all residential development in the Downtown Area, interior noise levels of up to 45 dBA with windows closed would be considered Normally Acceptable.

Economic Development and Fiscal Element

- **Policy ED-1.1.P1:** To strengthen the economic base and to develop a central focus for the City, the Downtown Area (DA) shall be the exclusive location within the City for the development of all retail and commercial stores and services except those specifically allowed in neighborhood shopping centers, industrial, highway, service commercial, and community commercial areas.
- **Action ED-1.1.A7:** Develop a business retention and relocation program to facilitate and support implementation of the Downtown Specific Plan.
- **Policy ED-1.2.P1:** Support visitor attraction services and amenities in the wine country and Downtown, including full service hotels and restaurants.
- **Policy ED-1.2.P3:** Support the restoration of natural habitat and the revitalization of Downtown, including cultural arts facilities, to serve as significant visitor attractions.

(2) City of Livermore Downtown Specific Plan. The Livermore Downtown Specific Plan is a document to guide and govern the future development within the Downtown. It states the City's goals, objectives, and expectations for the future of the Downtown and serves to instigate the transformation of its character. The Downtown Specific Plan outlines proposed land uses and their distribution, proposed infrastructure improvements, development standards, and implementation measures required to achieve its goals.

The Downtown Specific Plan was prepared concurrently with the General Plan update in 2004 to ensure the Specific Plan was consistent with the City's 2004 General Plan. The Downtown Specific Plan implements the broad, long-term General Plan goals of the community for the Downtown Area.

The primary goal of the Downtown Specific Plan is to revitalize the Downtown. Revitalization strategies include the following:

- Promote the concentration of activity-generating uses in a compact cluster in the center of Downtown.
- Maximize investment in new housing construction throughout the Specific Plan Area.
- Dramatically transform the character of the Downtown's primary pedestrian space, First Street, along its length in the Downtown Core between M Street and Maple.
- Focus immediate attention on opportunity sites capable of delivering dramatic short-term beneficial change.
- Promote the development of an arts and culture component, to make Livermore's Downtown a "Center For The Arts".

- Identify, target and recruit uses with a wide regional appeal that are undersupplied in the Tri-Valley.
- Place high priority on the design, financing and construction of a new Performing Arts Center in the heart of Downtown.
- Revive the role of the First Street and Livermore Avenue intersection as the Heart of the City.
- Build on the high quality stock of historic structures to set the tone for design in the district.
- Leverage the high amenity value of the Carnegie Block to promote investment in the residential neighborhood south of the Downtown Core.
- Enhance the convenience of Downtown parking and access.
- Take every opportunity to concentrate civic (and quasi-civic) buildings in the Downtown.
- Take every opportunity to revive Downtown's role as a primary job center.
- Maximize transit opportunities for commuters to conveniently travel to Downtown Livermore.

The Downtown Specific Plan divides the Downtown into Plan Areas. Each of these Plan Areas have specific purposes and development standards. Figure IV.A-3 shows the Plan areas, as well as the potential locations of the Regional Theater. The First Street/South Livermore Avenue site and the Livermore Village site are located in the Downtown Core; the First Street/Maple Street site would be located in the Downtown Core and the Downtown Transit Gateway.

The Downtown Specific Plan also identifies the maximum development capacity for the Downtown Specific Plan area as follows:

- Residential: 3,600 dwelling units
- Commercial: 855,000 square feet
- Office: 217,000 square feet
- Entertainment: 2,000 performing arts theater and up to 12 movie screens
- Lodging: 150 rooms

(3) Livermore Planning and Zoning Code. The broad purpose of the City's zoning code is to implement the policies of the City's General Plan. The zoning code establishes land use districts that regulate the location, size, bulk, and uses of land and buildings, requires permits for certain buildings and land uses, and imposes penalties for the violation of any provisions set by the zoning code.

The zoning code identifies the Downtown as the Downtown Specific Plan District (DSP), as shown in Figure IV.A-4. The purpose of this district is to implement the community's desire for a revitalized historical Downtown area which includes: a more defined, intense retail core area allowing mixed uses on First Street; an enhanced, pedestrian-oriented public realm along First Street including slower traffic, more shade trees and seating, pocket plazas, outdoor eating areas, and public places for art and special events; emphasis on a Downtown arts and culture district; additional housing of varied types and densities; and preservation of the historical characteristics and structures that make the

Downtown area unique. The use, development and design standards and guidelines contained within the 2004 Downtown Specific Plan apply in this zoning district.

2. Impacts and Mitigation Measures

This subsection analyzes impacts related to land use and land use-related planning policy that could result from implementation of the proposed project. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

Questions of policy consistency are used to inform analysis of the physical environmental implications of a project. That is, a policy inconsistency is considered to be a significant adverse environmental impact only when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect, and it is anticipated that the inconsistency would result in a significant adverse *physical* impact based on the established significance criteria. The proposed project's consistency with regional policies related to physical environmental topics (e.g., air quality, transportation, and noise) is fully analyzed and discussed in those topical sections of this EIR.

a. Criteria of Significance. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Theater would result in a significant impact on land use if it would:

1. Physically divide an established community;
2. Introduce new land uses that would conflict with established uses within the vicinity of the planning area;
3. Alter the type or intensity of land use on a proposed site, causing it to be substantially incompatible with surrounding land uses or the overall character of surrounding neighborhoods;
or
4. Conflict with applicable land use plans or policies adopted by agencies with jurisdiction over the project.

Impacts are discussed in the following section and summarized in Table IV.A-1.

b. Impact Analysis. The following discussion describes the potential land use impacts associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential land use impacts associated with the Amendments will be at a general program-level. Given that there are more defined plans for the three potential Theater locations and the Railroad Avenue realignment, potential impacts will be analyzed at the project level. Potential difference in impact based on the different locations will be specifically called out.

(1) Physically Divide a Community (Criteria 1). This physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one

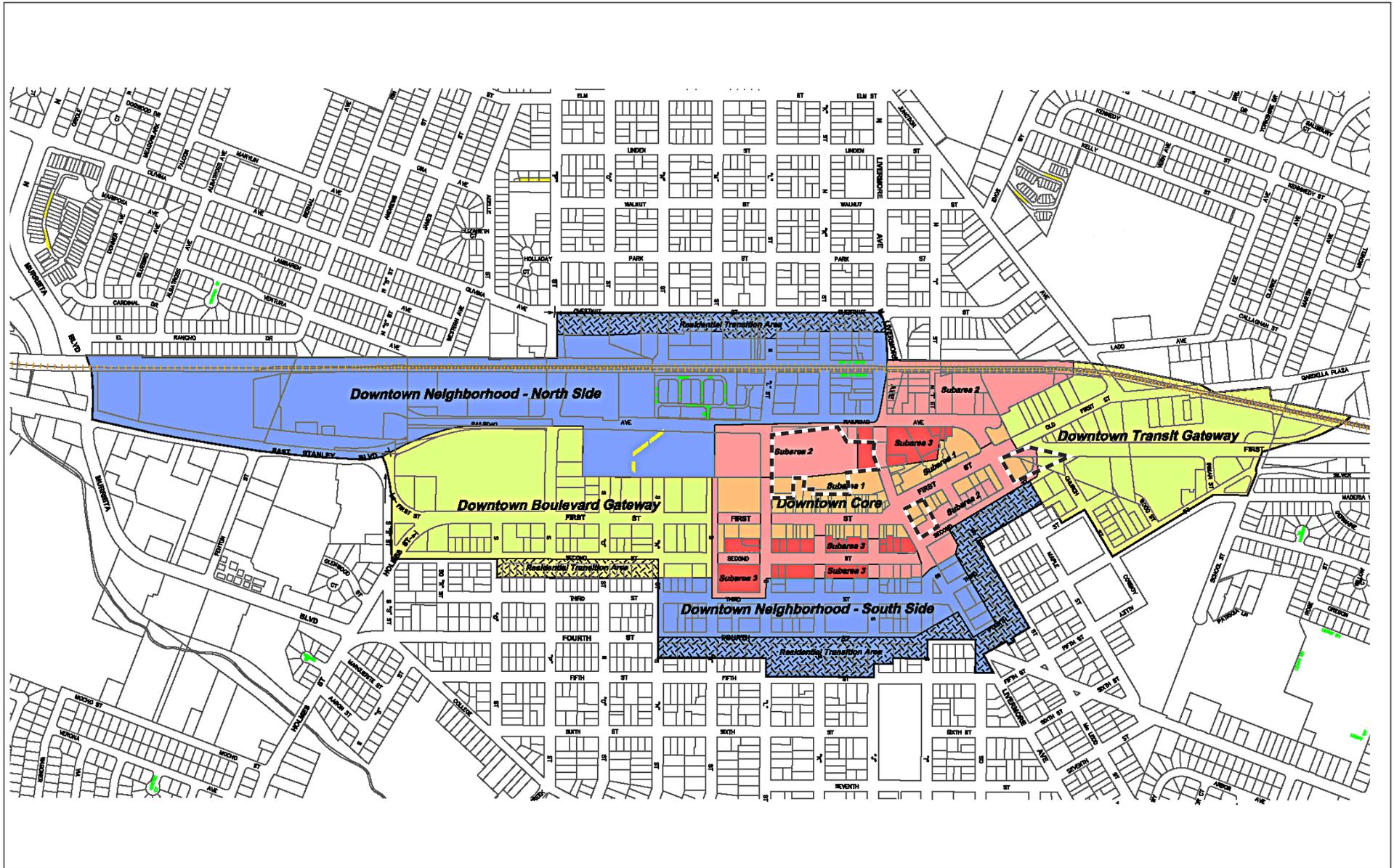
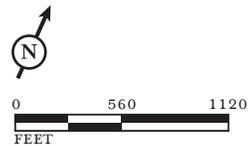


FIGURE IV.A-3

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----- Potential Regional Performing Arts Theater Locations

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Land Use Plan Areas*

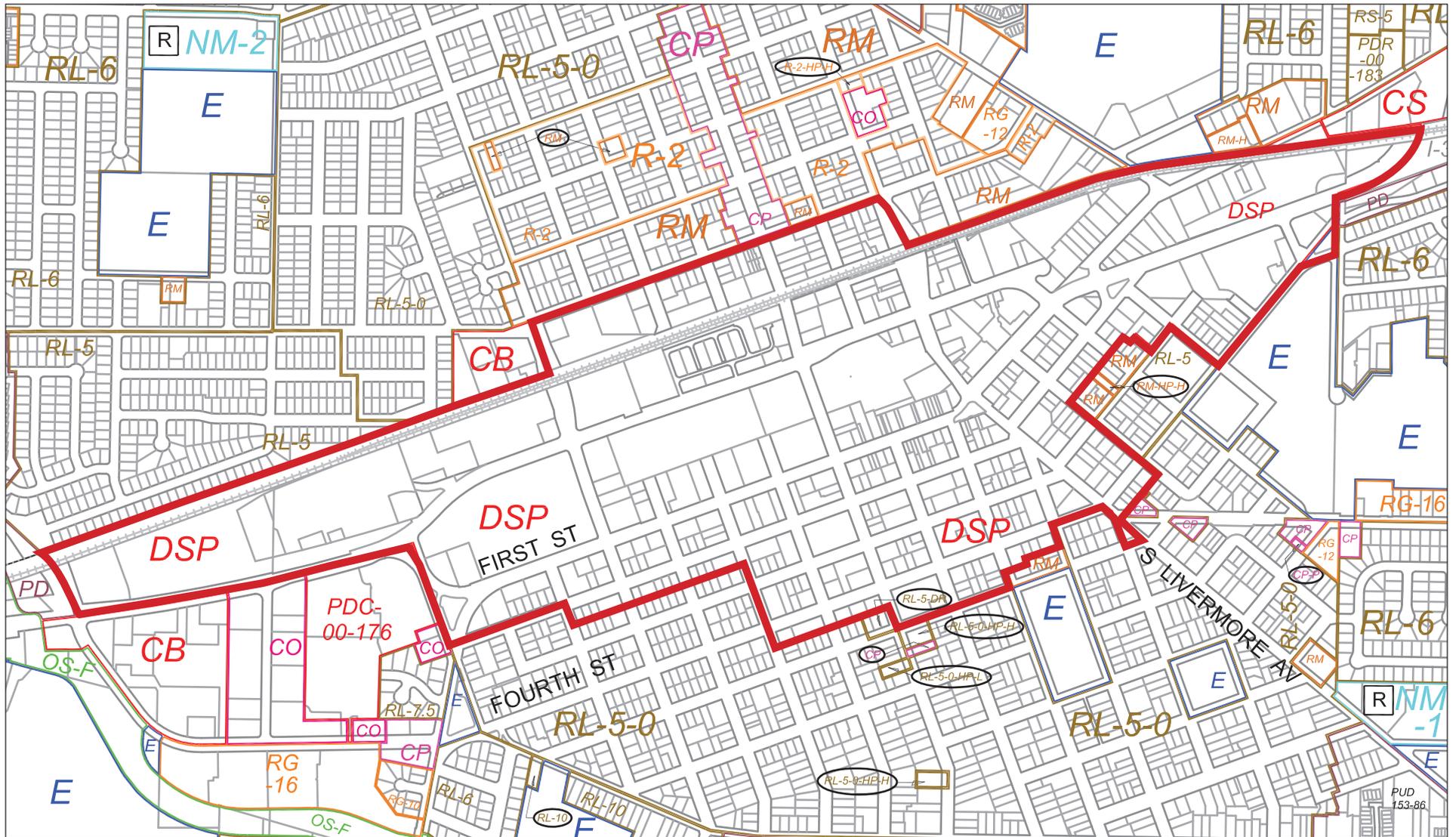
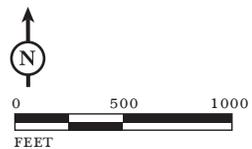


FIGURE IV.A-4

LSA



ZONING DISTRICTS

OPEN SPACE

OS-F Flood Plain

RESIDENTIAL

RS-(b) Residential
 RL-(c) Low Density Residential
 RG-(d) Suburban Multiple Residential
 RM Medium Density Residential
 R-2 Duplex Residential

COMMERCIAL

CP Professional Office
 DSP Downtown Specific Plan
 CO Commercial Office
 CB Central Business

MIXED USE

NM-1 Neighborhood Mixed Use Low
 NM-2 Neighborhood Mixed Use Medium

PUBLIC AND QUASI-PUBLIC

E Education & Institutions

PLANNED DEVELOPMENT

PD Planned Development
 PDC-(f) Planned Development Commercial
 PDR-(f) Planned Development Residential

COMBINING

DR Design Review
 H Highway
 P Parking
 HP-L Historic Preservation (Landmark)
 HP-H Historic Preservation (Heritage)

— Downtown Specific Plan Boundary
 - - - City Boundary (a)
 — Zoning Boundary
 - - - PUD Boundary
 [R] TDC Receiver Site

NOTES:

- (a) Approximates the location of the City Limits.
- (b) Numeral designates maximum density in dwelling units per acre.
- (c) Numeral designates minimum lot size in thousands of feet.
- (d) Numeral designates approximate density in dwelling units per acre.
- (e) Numeral designates approximate minimum lot size in acres.
- (f) Numeral designates Planned Development Zoning District Number.

SOURCE: CITY OF LIVERMORE, 2003.

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*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Zoning Map*

Table IV.A-1: Summary of Potential Impacts –Land Use and Planning Policy

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St./S. Livermore Ave. Site	Livermore Village Site	First St./Maple St. Site
Would the Project:				
1. Physically divide an established community?	○	○	○	○
2. Introduce new land uses that would conflict with established uses within the vicinity of the planning area?	○	○	○	○
3. Alter the type or intensity of land use on a proposed site, causing it to be substantially incompatible with surrounding land uses or the overall character of surrounding neighborhoods?	○	○	○	○
4. Conflict with applicable land use plans or policies adopted by agencies with jurisdiction over the project?	○	○	POL-1 POL-2	POL-3 POL-4

^a The Amendments are analyzed in this EIR at a “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:
 == No impact
 ○ Less-than-Significant
 ● Reduced to Less-than-Significant with recommended mitigation
 ● Significant and Unavoidable
 LAND-1, etc. identifies the mitigation measure, if any, that addresses the impact.
 POL-1, etc identifies a policy conflict.

Source: LSA Associates, 2008

side of the community to another; similarly, such construction may also impair travel to areas outside of the community. A discussion of the potential impact related to implementation of the Amendments and Theater are located below.

Downtown Specific Plan Amendments. The proposed Amendments would include increasing the allowed amount of movie screens, hotel/bed and breakfast rooms, commercial development, office development, and seats for the regional performing arts theater, as well as adding an additional parking structure to the Downtown. These uses would be developed within an area that is an urban mixed use space, and the addition of these uses would be consistent with existing uses in the Downtown.

The proposed Amendments would not result in a barrier within the Downtown that would impede access, nor would it result in a removal of a major means of access. Implementation of the Amendments would not result in the physical division of an established community, and would therefore result in a less-than-significant impact.

First Street/South Livermore Avenue Site. If the Theater is constructed at the First Street/South Livermore Avenue site, stretches of the site along First Street, Second Street, and South Livermore Avenue may be altered to facilitate passenger drop-off/loading as well as truck deliveries. While these changes could result in a slowing of traffic, overall connectivity and traffic patterns to and within the area would be maintained, and would result in a less-than-significant impact related to

the physical connectivity of the area. The Theater on the First Street/South Livermore Avenue site would not restrict travel within an area, or create a physical division within the Downtown preventing access from one side of the Downtown to the other, and would result in a less-than-significant impact.

Livermore Village Site. If the Theater is constructed on the Livermore Village site, it is likely that new roadways (a north/south roadway and an east/west roadway) would be constructed within the site. The construction of these roadways would facilitate movement within, around and through the site, and would not create a physical division within the community.

First Street/Maple Street Site. Construction of the Theater on the First Street/Maple Street site would result from the realignment of Railroad Avenue/First Street, the construction of a new intersection, and the creation of a new parcel. While use of this site would result from a roadway realignment, this realignment is proposed by the City to facilitate and enhance traffic movement within the Downtown area. Therefore, construction of the Theater at the site would result in a less-than-significant land use impact related to the physical division of an established community.

(2) Conflicts with New Land Uses and Changes in Land Use Intensity (Criteria 2 and 3). There are a variety of land uses within the Downtown Specific Plan area, including commercial, retail, restaurant, entertainment, and civic uses. Please see Figure IV.A-1 which generally identifies land uses within the Downtown area.

Downtown Specific Plan Amendments. Downtown Livermore is currently characterized by a wide range of uses including commercial, industrial, civic, residential, recreation, and open space uses. Implementation of the Amendments would allow for more development within the Downtown, but does not change the types of development that are currently permitted in the Downtown. A mix of land use types in the Downtown area is supported by several General Plan policies, including Policy LU-1.4.P2, which encourages combination of uses in the Downtown, and Policy ED-1.1.P1, which describes strengthening the economic base of the City with a focus on development in the Downtown area. Additionally, the development standards outlined in the Downtown Specific Plan would be applicable and would help to reduce potential land use conflicts between existing and proposed development. As such, implementation of the Amendments would result in a less-than-significant impact related to new and more intense land uses.

Proposed Theater Locations. All three locations (First Street/South Livermore Avenue site, Livermore Village site, and First Street/Maple Street site) for the proposed Theater would be located within the Downtown area of Livermore, an area that contains a variety of land uses. Construction of the Theater at any of the three sites would not conflict with the existing land uses within the area as the stated purpose of the Downtown Specific Plan is to establish a vibrant destination and pedestrian oriented area that provides a variety of uses (Urban Design Framework Guiding Principle 1). Additionally, the Downtown Specific Plan identifies the potential construction of a regional Theater and includes development standards for its construction. Construction of the Regional Theater at any of the three proposed sites would not result in a significant land use impact related to the compatibility with surrounding land uses.

(3) Conflict with applicable Land Use Plans or Policies (Criteria 4). The following describes the potential land use plan and policy conflicts associated with the Amendments and Theater.

Downtown Specific Plan Amendments. The proposed project includes Amendments to the existing Downtown Specific Plan to allow for increased level of development within the Downtown. The Amendments also provide for an additional parking garage within the Downtown.

The desire to bring development to the Downtown area, and to facilitate the development of a pedestrian oriented area are primary goals of the Downtown Specific Plan. Development within the Downtown would be subject to design guidelines and standards called out within the Downtown Specific Plan. The Downtown Specific Plan area is divided into Land Use Plan areas, each with their specific development guidelines and criteria. Development associated with the Amendments would adhere to these guidelines.

First Street/South Livermore Avenue Site. The Downtown Specific Plan identifies the development of a 1,500 seat Regional Performing Arts Theater in Downtown Livermore. Figure 4-6 of the Downtown Specific Plan identifies the First Street/South Livermore Avenue site as the proposed location of the regional theater.

This site is located within Subarea 1 and Subarea 2 of the Downtown Core Land Use Plan Area of the Downtown Specific Plan. “Performing Arts Facility” is a permitted use within both of the subareas. The maximum height of a Regional Performing Arts Theater at the First Street/South Livermore Avenue site, as identified by the Downtown Specific Plan, is 100 feet. As of October 2008, conceptual plans for the First Street/South Livermore Theater site show that the Theater would be less than 100 feet in height. Selected development standards and guidelines from the Downtown Specific Plan for the project site are outlined in Table IV.A-2. Finalized site plans for the Theater would be evaluated during the Site Plan Approval/Design Review process. Implementation of the Theater at the First Street/South Livermore Avenue site would result in a less-than-significant conflict with land use plans and policies.

Table IV.A-2: Selected Development Standards and Guidelines

Land Use Plan Area	Performing Arts Facility Use Permitted	Maximum Height ^a	Setback
Downtown Core Area	Subareas 1 and 2: Yes Subarea 3: No	First St./S. Livermore Ave site: 100 feet	Exempt
		Livermore Village site: 55 feet	
Downtown Transit Gateway	Not identified as permitted or conditional use	First Street/Maple Street site: ^b 45 Feet	No minimum setback

^a The Regional Theater is specifically addressed in the Downtown Specific Plan at the First Street/South Livermore Avenue site and the use and height identified in this table are allowable. The Regional Theater at the Livermore Village site or the First Street/Maple Street sites would require a Downtown Specific Plan amendment for the location and height.

^b Please note the majority of the First Street/Maple Street site is located in the Core Subarea 1, and a minority of the site is in the Downtown Transit Gateway area per the realignment of Railroad Avenue.

Source: City of Livermore, 2004. Downtown Specific Plan.

Livermore Village Site. The Livermore Village site includes all three subareas of the Downtown Core area. While “Performing Arts Facility” is a permitted use within the Subareas 1 and 2, it is not a permitted use in Subarea 3, and represents a policy conflict.

Policy Conflict POL-1: The Performing Arts Facility is not a permitted or conditional use on a portion of the Livermore Village Site.

Recommended Measures POL-1: Should the City Council determine that the preferred site for the Regional Performing Arts Theater is the Livermore Village site, the City should amend the Downtown Specific Plan to allow for a Performing Arts Facility within Subarea 3 of the Downtown Core Area.

Currently the Downtown Specific Plan identifies the Livermore Village Site as having a maximum allowable height of four floors/or up to 55-feet. As of October 2008, conceptual plans for the Theater at the Livermore Village site show a building height which exceeds the maximum height identified in the Downtown Specific Plan, and represents a policy conflict.

Policy Conflict POL-2: The height shown in the October 2008 conceptual plans for the Theater at the Livermore Village site exceeds the maximum allowable height as identified in the Downtown Specific Plan.

Recommended Measures POL-2: Should the City Council determine that the preferred site for the Regional Performing Arts Theater is the Livermore Village site, the City should amend the Downtown Specific Plan to increase the maximum height allowed to 100 feet for a Regional Performing Arts Theater at that site.

Finalized site plans for the Theater would be evaluated during the Site Plan Approval/Design Review process. Implementation of the policy changes identified above would reduce the potential policy conflicts and would result in a less-than-significant impact related to conflicts with land use plans or policies.

First Street/Maple Street Site. The First Street/Maple Street site would fall within the Downtown Core and the Downtown Transit Gateway Land Use Areas. While “Performing Arts Facility” is an allowed use within the Downtown Core Land Use Area, it is not identified as a permitted or conditional use within the Downtown Transit Gateway Land Use Areas, which would represent a policy conflict.

Policy Conflict POL-3: The Performing Arts Facility is not a permitted or conditional use within the Downtown Transit Gateway Land Use Area.

Recommended Measures POL-3: Should the City Council determine that the preferred site for the Regional Performing Arts Theater is the First Street/Maple Street site, the City should amend the Downtown Specific Plan to allow for a Performing Arts Facility use within the Downtown Transit Gateway.

Currently the Downtown Specific Plan identifies the maximum allowable height within the Downtown Transit Gateway as three floors/or a maximum of 45-feet. The current conceptual plans for the Theater at the Livermore Village site show a building height which exceeds the maximum height identified in the Downtown Specific Plan and represents a policy conflict.

Policy Conflict POL-4: The height shown in the current conceptual plans for the Theater at the First Street/Maple Street site exceeds the allowable maximum height as identified in the Downtown Specific Plan.

Recommended Measures POL-4: Should the City Council determine that the preferred site for the Regional Performing Arts Theater is the First Street/Maple Street site, the City should amend the Downtown Specific Plan to increase the maximum height allowed to 100 feet for a Regional Performing Arts Theater at that site.

A roadway realignment would occur if the Theater is built at the First Street/Maple Street site, creating a new block within the Downtown. Additionally, the realignment could occur if the Theater is located at the First Street/South Livermore Avenue site or the Livermore Village site. The Downtown Specific Plan states the following regulations regarding block patterns:

6.1 Block Pattern

A. New streets shall conform to a pattern of generally rectilinear blocks, with new streets and access drives linking orthogonally to surrounding City streets.

B. For sites having more than 200 feet of street frontage, all new development shall match the typical block increment of three hundred (300) feet in length by two hundred (200) feet in depth, and shall not exceed a maximum block size of four hundred (400) feet in length by three hundred (300) feet in depth. Where achievement of this block size is not feasible, blocks should be subdivided by separating continuous buildings with alley streets or pedestrian spaces.

The block created by the roadway realignment is estimated to be approximately 207 feet deep with a length of 403 feet at its deepest point and an average length of 347 feet. While the new block would not achieve the maximum block size of 400 feet in length, the average length of the irregularly shaped block would meet the standard and the project would include a plaza along Maple Street to break up the mass of the building if the Theater is located at this site.

Additionally, there are several positive aspects relating to the roadway realignment. The realignment would facilitate traffic circulation in the Downtown. Additionally, the realignment would extend the grid pattern within the Downtown area, and would result in the creation of a block that would be large enough to accommodate the Theater as well as other uses. Finalized site plans for the Theater would be evaluated during the Site Plan Approval/Design Review process.

Implementation of the policy changes identified above would reduce the potential policy conflicts and would result in a less-than-significant impact related to conflicts with a land use plans or policies.

B. POPULATION, HOUSING AND EMPLOYMENT

This section describes population, housing and employment statistics in the City of Livermore and Alameda County and evaluates potential environmental impacts that could result from implementation of the Amendments and Theater project.

1. Setting

The following section utilizes data from the U.S. Census Bureau (Census), California Department of Finance (DOF), and the Association of Bay Area Governments (ABAG).¹ Information from the City of Livermore General Plan² is also included.

a. Population. Incorporated as a City in 1876, Livermore’s population has nearly doubled over the 30 year period from 1970 to 2000. In 2005, Livermore had a residential population of 80,400. It is expected that there would be 101,000 residents at the time of General Plan buildout.³

Table IV.B-1: Livermore Population Growth

Year	Population	Annual Average Growth Rate
1970	37,703	--
1980	48,349	2.47 %
1990	56,741	1.60 %
2000	74,841	2.75 %
2010 ^a	88,200	1.64 %

^a Population as estimated by ABAG, 2006.

Source: LSA Associates, Inc., 2008; U.S. Census, 2000

ABAG also projects the amount of growth that will occur within Livermore over the next 30 year period. Because the Draft General Plan and ABAG utilized different multipliers, the projections are different. Both sets of numbers are included in this EIR for informational purposes. ABAG estimated the 2005 population at 80,400 and a projected 2010 population of 88,200. This represents a 9.7 percent increase over the five year period.⁴ In 2035, it is projected that the population will reach 120,900, representing a 50.4 percent increase over the 2005 population.

Alameda County’s estimated 2005 population is 1,505,300, and it is projected to increase by 4.4 percent, to 1,571,400, by 2010. Between 2005 and 2035, the population of the County is projected to increase by 28.7 percent, from 1,505,300 to 1,938,600.⁵ Average annual growth rates for the County under such projections would be approximately 0.82 percent.

b. Housing. This section describes existing housing conditions in Livermore and Alameda County.

(1) Households. In 2005, there were 28,550 households in Livermore, comprising approximately 5 percent of the 543,790 households in Alameda County. The Livermore General Plan projects that at buildout the City will have a total of 38,440 dwelling units, which is an increase of 35 percent. ABAG defines a household as an occupied dwelling unit, and does not include vacant

¹ All ABAG data in this section includes the City and its sphere of influence.

² Livermore, City of, 2004. *City of Livermore General Plan*. February.

³ Ibid.

⁴ Association of Bay Area Governments, 2006. *Projections 2007, Forecasts for the San Francisco Bay Area to the Year 2035*. December.

⁵ Ibid.

housing units. By 2035, ABAG estimates that the number of Livermore households will increase by 50 percent to 42,820 households.⁶

ABAG estimates that the average household size for Livermore was 2.81 persons in 2005, which was slightly more than the Alameda County average of 2.72 persons per household. ABAG projections for 2035 household sizes would remain virtually the same as the 2005 household size with Livermore and Alameda County projected to be at 2.82 and 2.72, respectively, in 2035.⁷

(2) Existing Housing Stock. Livermore's estimated 2005 housing stock of 29,955 total units is characterized by a majority of single-family detached and attached homes (81 percent of total), and much smaller percentages of multi-family units (18 percent of total) and mobile homes (1 percent of total). The City has a relatively low vacancy rate of 1.83 percent.⁸ In 2008, the median sales price for an owner-occupied single-family home in Livermore was \$510,000⁹ (which represents an increase of 60 percent over the 2000 median home price of \$318,500¹⁰). The median sales price for a condo was \$327,500.¹¹

(3) Regional Housing Needs. As required by State law, the Housing Element of the General Plan discusses the City's "fair share allocation" of regional housing need by income group as projected by ABAG. ABAG's determination of the local share of regional housing needs takes into consideration the following factors: market demand for housing; employment opportunities; availability of suitable sites and public facilities; commuting patterns; type and tenure of housing need; loss of units contained in assisted housing development that changed to non-low-income use; and special needs housing requirements. The Livermore General Plan Housing Element was last updated in September 2003.

The ABAG Regional Housing Needs Determination (RHND) for Livermore and its sphere of influence for the period of 1999-2006 was 5,107 additional new housing units. The RHND is allocated by income category: very low, low, moderate, and above moderate. The RHND allocated the 5,107 units for Livermore as follows: 875 units for very low income residents; 482 units for low income residents; 1,403 units for moderate income residents; and 2,347 units for above moderate income residents.¹² Compared to surrounding communities of East Alameda County, Livermore has produced a large supply of senior and affordable housing through the use of in-lieu fees, Inclusionary Housing Ordinance (requiring the set aside of 10 percent of housing units), City rental agreements, and other planning efforts.

⁶ Ibid.

⁷ Association of Bay Area Governments, 2006, op. cit.

⁸ California Department of Finance, 2008. *Table 2: E-5 City/County Population and Housing Estimates*. Website: www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/. January 1.

⁹ EDAW, 2008. *Draft Housing Needs Assessment*. October.

¹⁰ Livermore, City of, 2003. *City of Livermore General Plan, Housing Element*.

¹¹ EDAW, 2008, op. cit.

¹² Ibid.

In May 2008, ABAG adopted the Final Regional Housing Needs Allocation for the years 2007-2014.¹³ Livermore's allocation for this period reflects the City's anticipated growth during this period, as well as its continued need for affordable housing. Livermore's allocation for the period of 2007-2014 calls for a total of 3,394 housing units with the following allocation: 1,038 units for very low income; 660 units for low income residents; 683 units for moderate income residents; and 1,013 units for above moderate income residents.

c. Employment. Two types of employment data are described below: 1) total jobs – which indicate the number of jobs within the community; and 2) employed residents – which indicate the number of residents of working age who actively participate in the civilian labor force. A comparison of these data can provide an indication of commute patterns in a community (i.e., whether significant out-commuting or in-commuting occurs)

The civilian labor force includes: 1) those who are employed (except in the armed forces); and 2) those who are unemployed but actively seeking employment. Those who have never held a job, who have stopped looking for work, or who have been unemployed for a long period of time are not considered to be in the labor force. According to ABAG, 41,110 persons in Livermore (51 percent of the total City population) were in the labor force in 2005.

(1) Total Jobs. The Livermore General Plan projects that the number of jobs in the City will grow from 34,880 jobs to 86,490 jobs by General Plan buildout, and continue to grow after buildout. According to ABAG, Livermore is expected to add 34,880 jobs between 2005 and 2035.¹⁴ Total jobs in the subregional study area are projected to increase from 48,110 in 2005 to 82,990 in 2035. Total jobs in the County are projected to increase from 750,160 in 2000 to 1,099,550 in 2035.

(2) Employed Residents. According to ABAG, in 2005 there were 41,110 employed residents in Livermore. ABAG defines employed residents as employed people who “live in the identified community or county but do not necessarily work there.” Unemployed residents are not counted as employed residents, even if they are actively seeking employment. ABAG projects that the number of employed residents in the City will increase to 51,270 in 2015, 63,060 in 2025, and 77,000 in 2035. This increase represents an approximately 87 percent increase from 2005 to 2035, which is greater than the County-wide increase of 60 percent expected during the same time period. The number of employed residents in the County is expected to increase from 705,900 in 2005 to 1,131,200 in 2035.

d. Jobs-to-Housing Balance. The jobs-to-housing units ratio is used to determine whether a community has an adequate number of jobs available to provide employment for all the residents within the community seeking employment. The jobs-to-housing units ratio can be useful in understanding the interconnections among housing affordability, traffic flows and congestion, and air quality within a community and its larger region. However, the jobs-to-housing units ratio is best

¹³ Association of Bay Area Governments, 2008. *San Francisco Bay Area Housing Needs Plan 2007-2014*. June.

¹⁴ ABAG uses subregional study areas which includes areas within the city limits and the unincorporated areas that correspond to Local Agency Formation Commission (LAFCO) Spheres of Influence (SOI). The SOI represents the “probable ultimate physical boundaries and service area of a local agency” to reflect areas that are outside of the city's limits but may eventually be annexed by the city in the future.

analyzed at the sub-regional or regional level due to tendency of people to commute to jobs outside of their community.

(1) Methodology. Typically, the term “jobs-to-housing units balance” is used to refer to a relationship between jobs and housing units within a community. A jobs-to-housing units ratio of 1.5 is considered ideal, which takes into account residents who do not participate in the labor force (e.g., those who are retired, disabled, or students). The 1.5 jobs-to-housing units ratio indicates a community has an adequate number of jobs to meet the demand for employment by its residents, and therefore is in balance.

A more helpful indicator of balance, however, is the relationship between the number of jobs provided to the number of employed residents. An ideal jobs-to-employed residents ratio is 1.0, which indicates that every resident seeking a job can ostensibly find one within the community.

A jobs-to-employed residents ratio that is greater than 1.0 indicates that the community provides more jobs than it has residents seeking jobs. In this situation, the community is likely to experience traffic congestion associated with people coming to jobs from outside the area, as well as intensified pressure for additional residential development to house the labor force. Conversely, a jobs-to-employed residents ratio of less than 1.0 indicates that a community has fewer jobs than employed residents demanding employment, indicating many residents would need to commute outside of the community (i.e., out-commute) for employment. The resulting commuting patterns can lead to traffic congestion and adverse effects on both local and regional air quality.

(2) Jobs-to-Housing Units in Livermore and Alameda County. According to the historic and projected jobs-to-housing units ratio for Livermore and Alameda County for the period of 2005-2035 is shown in Table IV.B-2. In 2005, the City’s jobs-to-housing units ratio was estimated to be 1.69, and ABAG projects the City’s ratio to be 1.87 in 2020 and 1.93 in 2035. These ratios indicate that the City will provide more jobs than residents seeking employment. Alameda County’s jobs-to-housing units ratio was estimated to be 1.34 in 2005, indicating a slightly more balanced mix of jobs and employed residents than the City. The City’s ratio is projected to remain “jobs rich” in the next three decades, while the County’s jobs-to-housing units ratio is projected to be more balanced with a rate of 1.51 in 2020 and 1.57 in 2035.

Table IV.B-2: Housing and Employment Data – City of Livermore and Alameda County

	2005		2025		2035	
	City	County	City	County	City	County
Total Jobs	48,110	730,270	71,240	968,590	82,990	1,099,550
Employed Residents	41,110	705,990	63,060	956,500	77,000	1,131,200
Housing Units	28,550	543,790	38,090	643,030	42,820	700,090
Jobs-to-housing units Unit Ratio (Ideal is 1.5)	1.44	1.34	1.87	1.51	1.80	1.57
Jobs-to-Employed Residents Ratio (Ideal is 1)	1.17	1.03	1.13	1.01	1.07	0.97

*Note: Data shown for the Livermore Subregional Study Area

^a The General Plan buildout is estimated to occur in 2025.

Source: ABAG, 2006. *Projections 2007*; LSA Associates, Inc., 2008

One of the shortcomings of this ratio is that it does not account for regional in- or out-commuting due to job/labor mismatches or housing affordability. Even if a community has a numerical balance between jobs and housing/employed residents, sizeable levels of in- and out-commuting are still possible, especially where employment opportunities do not match skills and educational characteristics of the local labor force. In such instances, regional commuting tends to occur. For example, a numerically balanced community may have high housing costs and low-wage jobs, thus encouraging its residents to out-commute for high wage jobs, and its workers to in-commute from places outside the community where housing costs are affordable in relation to low-wage incomes. This condition is often referred to as a jobs-to-housing units *mismatch*. A jobs-to-housing units match occurs when the types of jobs provided in a community “match” the income needs of the employed workers within the community. Thus jobs-to-housing units ratio evaluations are more useful in examining the potential for “self-containment:” the ability of an area’s population to live and work in the same place. Because of the tendency of people to commute, potential for self-containment is best understood at the sub-regional level.

(3) Jobs-to-Employed Residents in Livermore and Alameda County. According to ABAG, the City had slightly more jobs than employed residents in 2005, indicating a somewhat higher-than-balanced level of in-commuting. However, this imbalance is projected to gradually decrease in the coming decades. The City’s existing and projected jobs/employed residents ratio, from 2005 to 2035, is shown in Table IV.B-2. Alameda County’s jobs-to-employed resident ratio was estimated to be 1.17 in 2005, indicating a more balanced mix of jobs and employed residents than the City. Between 2005 and 2035, the jobs/employed residents ratio for the City is projected to become more balanced with a decrease from 1.17 to 1.07. The City’s ratio is projected to become more balanced over the next three decades. Alameda County’s jobs-to-employed residents ratio is also projected to decrease from 1.03 in 2005 to 0.97 in 2035.

e. General Plan and Downtown Specific Plan Policies. The Land Use Element and Housing Element, Economic Development Element and Open Space and Conservation Element of the City of Livermore General Plan address issues related to providing housing and jobs within the City. Land Use and Housing Element goals that are applicable to the proposed project are listed below.

- Objective LU 1: Achieve a level of population and employment which preserves and enhances the desired character of the City.
- Policy LU-1.1.P2: Residential development shall be limited to those areas within the UGB.
- Policy LU-2.1.P2: The City shall strive to achieve a balanced relationship between residential development and commercial and industrial development to provide local employment and to realize an adequate tax base.
- Policy LU-2.1.P9: To promote development and redevelopment in the Downtown, 200 units per year shall be authorized within the Downtown Area, for a maximum of 2,000 units for the period beginning January 1, 2004 and ending December 31, 2013 (allocation years 2005-2014). For this period of time, Downtown Area units are not required to participate in the competitive review process. Please refer to the Downtown Specific Plan for the implementation details of this policy.
- Policy OSC-6.1.P5: The City shall attempt to increase the employment to population ratio to reduce commuting rates and associated vehicle-related pollution emissions. The City shall approve only those development proposals which are designed and located to minimize energy consumption and adverse impacts on air, land and water resources. High-density, transit-oriented developments shall be strongly

encouraged and promoted through the use of specific planning, density transfer, the planned development concept, and zoning designations.

- Action ED-1.1.A3: Develop an economic development strategy that identifies a desirable mix of businesses that will attract high wage jobs and enhance tax revenues on a continuing basis.
- Action ED-1.1.A4: Work with businesses and employment recruiters to establish a process to employ Livermore and other local residents for Livermore-based employment opportunities.
- Action ED-1.1.A5: Encourage and actively attract businesses in key industries that build upon Livermore's competitive advantages and offer high wage jobs.
- Policy ED-2.1.P2: Support and encourage businesses that provide jobs that would have a positive effect on Livermore's job/housing match.

The following Downtown Specific Plan strategies and policies related to population, employment and housing issues are listed below.

- Revitalization Strategy 1 of the Downtown Specific Plan. Promote the concentration of activity-generating uses in a compact cluster in the center of Downtown.
 - a. Assess the potential demand for retail in Downtown, in order to gauge the likely market share of the City's population that can choose to spend their dollars there.
 - b. Designate a Downtown Core within the Specific Plan Area as the location for Downtown's retail activity. Size this Core area larger than necessary to support the potential demand based on its likely market share in order to accommodate growth as the number of people living Downtown increases. Limit ground floor uses in this Core to those that can be counted on to generate the most pedestrian activity, including retail shops, restaurants, entertainment venues, galleries, personal and business services.
 - c. Direct investment towards the Downtown Core, through the following policies:
 - Remove retail entitlements for properties *within* the Specific Plan area located outside of the Downtown Core. Existing retail uses outside of the Core will become legal non-conforming uses that may be continued; however, no existing structure devoted to retail (or any other use not permitted in the Plan Area) shall be enlarged, extended, reconstructed or structurally altered according to the provisions of LPZC Section 3-05-020.
 - Consider limiting the development of uses that are competitive with Downtown (i.e. specialty retail, restaurant, entertainment and services) *outside* of the Specific Plan Area. Policies include directing personal or business services, video rental or family restaurants to the Downtown and to other neighborhood centers, and restricting these uses within regional centers.
 - Create business relocation programs to assist existing community businesses that could be an asset to Downtown to relocate to the Core.
 - Develop business recruitment programs to create incentives for outside businesses with a guaranteed loyal clientele to locate in Downtown.
 - Support those establishments already downtown, and make efforts to retain those that are an important part of Downtown's retail community.
 - Work with business organizations to market Downtown as "the place to be" with a diversity of retail, restaurants, shopping, entertainment, arts & cultural activities.
 - Focus capital improvements Downtown to provide a highly visible demonstration of the City Council's commitment to Downtown revitalization (see below).

- Maximize connections from major destinations such as the Livermore Valley Center, the Downtown retail core, and the new cineplex to Downtown transit facilities by providing clear pedestrian connections.
- Revitalization Strategy 13 of the Downtown Specific Plan. Take every opportunity to revive Downtown's role as a primary job center.
 - a. Identify opportunity sites for office development. Encourage office uses above retail in the Core to maximize land use and value, and to bring more people to Downtown Livermore on a daily basis.
 - b. Use the amenities and assets of Downtown – its proximity to transit, nearby stores and restaurants, and services facilities within walking distance – to attract desirable small-scale office tenants (i.e. smaller independent businesses and services, architects, engineers, doctors, lawyers).

2. Impacts and Mitigation Measures

This section discusses potential impacts to population, housing and employment that could result from the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section evaluates the proposed project and identifies mitigation measures, as necessary.

a. Criteria of Significance. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Theater would have a significant impact related to population, housing and employment if it would:

1. Induce substantial, unanticipated population growth within the City of Livermore, either directly (by proposing new homes and businesses) or indirectly (through extension of roads or other infrastructure);
2. Substantially alter the location, distribution, or density of the population of the City;
3. Displace existing housing, especially affordable housing;
4. Create a substantial demand for additional housing;
5. Hinder the accomplishment of projected “fair share” housing needs; or
6. Create a substantial jobs/housing imbalance.

Impacts are discussed in the following section and summarized in Table IV.B-3.

b. Impacts Analysis. The following discussion describes the population, housing and employment impacts associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater Project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential population, housing and employment impacts associated with the Amendments will be at a general program-level. Given that there are more defined plans for the three potential Theater locations, potential impacts will be analyzed at the project level.

Table IV.B-3: Summary of Potential Impacts – Population, Housing and Employment

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site
Would the Project:				
1. Induce substantial, unanticipated population growth within the City of Livermore, either directly (by proposing new homes and businesses) or indirectly (through extension of roads or other infrastructure)?	○	○	○	○
2. Substantially alter the location, distribution, or density of the population of the City?	○	○	○	○
3. Displace existing housing, especially affordable housing?	○	○	○	○
4. Create a substantial demand for additional housing?	○	○	○	○
5. Hinder the accomplishment of projected “fair share” housing needs?	○	○	○	○
6. Create a substantial jobs/housing imbalance?	○	○	○	○

^a The Amendments are analyzed in this EIR at a “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:

- == No impact
- Less-than-Significant
- Reduced to Less-than-Significant with recommended mitigation
- Significant and Unavoidable

POP-1, etc. identifies the mitigation measure, if any, that addresses the impact.

Source: LSA Associates, 2008

As has been noted previously, the potential impacts associated with implementation of the Downtown Specific Plan were evaluated in the General Plan EIR certified in 2004.¹⁵ Policies and actions were identified in this EIR that would reduce the potential impacts associated with development proposed under the Downtown Specific Plan. Current General Plan polices and actions that would be applicable to development proposed under the Downtown Specific Plan Amendments, and would reduce population, housing or employment related impacts, are included in the following discussion as appropriate.

(1) Induce Substantial Population Growth (Criteria 1). Each component of the project is discussed below in relation to the less-than-significant impacts on population growth.

Downtown Specific Plan Amendments. Implementation of the Amendments would increase the number of movie screens, the number of hotel rooms, the amount of commercial development by 145,000 square feet, the amount of office space by 139,000 square feet, and would add a new parking structure, but they would not increase the amount of housing units in Downtown Livermore. Therefore, the Amendments would not directly induce housing-related population growth. However, population growth could be induced by development of land uses which would generate new employment opportunities, thus increasing the demand for housing within the community.

¹⁵ LSA Associates, Inc., 2003. *Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report*. June.

Employment generation for the Amendments was developed using empirical data collected as part of a comprehensive study prepared for the Southern California Association of Governments, which estimates employment densities for various land uses.¹⁶

ABAG projects that the City will gain approximately 5,540 jobs between 2005 and 2010, and approximately 34,880 jobs between 2005 and 2035. Based on employment generation numbers from the above mentioned report, the increased commercial and office square footage associated with the Amendments would generate approximately 905 new jobs. An increase of 150 hotel or B&B rooms (approximately 140,000 square feet) is proposed which could generate approximately 122 new jobs. Implementation of the proposed Amendments would result in an increase of 1,027 employees. This number represents approximately 1.2 percent of the anticipated job growth by 2035. As the increase in employment associated with the Amendments would only represent a small portion of the expected 2035 employment growth, new jobs generated by the Amendments would not be likely to generate substantial population growth in the Downtown Specific Plan area.

Regional Performing Arts Theater. The Theater would be constructed at one of three locations in the Downtown: the First Street/South Livermore Avenue site; the Livermore Village site; or the First Street/Maple Avenue site. At each location, the Theater would have the same impacts to population growth. As with the Amendments, the Theater would not increase the housing supply in the Downtown Specific Plan area and would not induce direct population growth. However, as previously stated, population growth could be induced by uses that generate new employment opportunities. The Theater proposes 500 more seats than the Theater approved under the Downtown Specific Plan. At any of the three locations, the additional 500 seats would not create significantly more jobs than the previously approved Theater.

The creation of new jobs in the Downtown Specific Plan area could indirectly induce population growth by causing people to move to Livermore for the 10 new paid jobs generated by the Theater. This assumes that all new jobs would be filled by people outside Livermore. Even in the unlikely event that all employees generated by the Amendments and the Theater project decided to relocate to the City, this increase would represent less than one percent of the anticipated population growth in 2035. This increase in population would be marginal. The Amendments and Theater would not result in substantial population growth beyond what is projected for the City, and would have a less-than-significant impact on population growth.

(2) Substantially Alter City Population (Criteria 2). Each component of the project would have a less-than-significant impact on the location, distribution, and density of the population of the City, as is discussed below.

Downtown Specific Plan Amendments. As previously stated, an increase in the number of housing units is not proposed as part of the Amendments. Since the proposed Amendments would not

¹⁶ The Natelson Company, Inc., 2001. *Employment Density Study*. October 31. Although employee-per-square-foot ratios are very common inputs for regional planning and economic analyses, relatively little formal research has been done to compile such statistics. This study is intended for use in estimating employment impacts from certain types of development projects and for projecting the demand for new office and industrial space. The study derives "building area per employee" factors for ten major land use categories. Although the land use categories used in the study do not directly correspond to the land uses described in this EIR, the study is a useful tool in developing assumptions for employee generation that would occur with implementation of the proposed project.

directly induce population growth, it would not impact the location or density of population in the City.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As with the Amendments, construction of the Theater project would not increase the housing supply in the Downtown Specific Plan area and would not directly introduce new population to the City. The proposed Theater project would not impact the location or density of population in the City.

(3) Displace Existing Housing Units or People (Criteria 3). Each component of the project would not displace existing housing units or people, and is discussed below.

Downtown Specific Plan Amendments. The Downtown Specific Plan Amendments allow for an increase in development within the Downtown area. Increasing housing within the Downtown is one of the guiding principals of the Downtown Specific Plan, so it is unlikely new development allowed per adoption of Amendments would displace large numbers of units or people. Additionally specific locations have not been identified for the majority of the development associated with the Amendments.

Regional Performing Arts Theater. None of the potential Theater locations currently include housing units. Implementation of the proposed project would not displace residents or housing.

(4) Create a Substantial Demand for Additional Housing (Criteria 4). The proposed project would not create a substantial demand for additional housing as described below.

Downtown Specific Plan Amendments. Implementation of the proposed Amendments would result in the generation of approximately 1,027 new jobs. This would represent 1.2 percent of job growth by 2035. As previously discussed, new jobs could induce indirect population growth within the City and increase the demand for new housing. ABAG projects an increase of 14,270 housing units by 2035, which could accommodate any increase in demand due to an increase in jobs. Since the Amendments would not substantially induce population growth within the City, any population increase related to the new jobs is also not be expected to result in a substantial demand for additional housing.

Regional Performing Arts Theater. As previously discussed, the proposed Theater could indirectly cause some population growth in the City through the creation of 10 new jobs. The creation of new jobs would marginally increase the demand for additional housing in the City. As the Theater would not substantially induce population growth in the City, the project is also not expected to create a substantial demand for additional housing.

(5) Hinder the accomplishment of projected “fair share” housing needs (Criteria 5). The proposed project would not hinder the accomplishment of the projected “fair share” housing needs as described below.

Downtown Specific Plan Amendments. New housing units are not proposed as part of the Amendments. As specific locations have not been identified for the majority of the development associated with the Amendments, it is unknown at this time if implementation could displace existing

housing units. Since increasing housing within the Downtown is one of the guiding principals of the Downtown Specific Plan, it is unlikely new development allowed per adoption of Amendments would displace large numbers of units or people. While the Amendments would not increase the supply of affordable housing the Downtown Specific Plan area, it is unlikely that implementation of the Amendments would hinder accomplishment of this fair share housing goal.

Regional Performing Arts Theater. Implementation of the Theater project would not result in the construction of new housing units and the Theater would not displace existing units at any of the potential project sites. While the Theater project would not help the City achieve its projected fair share housing needs, it would not hinder the City's accomplishment of this goal.

(6) Create a Substantial Jobs/Housing Imbalance (Criteria 6). The proposed project would not create a substantial job/housing imbalance.

As noted in the discussion above, ABAG estimates that the City of Livermore's jobs-to-housing units ratio in 2005 was 1.69 (1.5 being ideal). Table IV.B-3 shows that the City's jobs-to-housing units ratio is projected to rise by 2020 and 2035 to 1.87 and 1.93, respectively. The proposed project would not substantially alter the existing or projected jobs-to-housing units ratio.

C. TRANSPORTATION AND CIRCULATION

This section evaluates potential transportation and circulation impacts that may result from implementing the Downtown Specific Plan Amendments (Amendments) and the 2,000 seat Regional Performing Arts Theater (Theater). Additionally, the potential realignment of Railroad Avenue at First Street is evaluated. The evaluation of environmental effects presented in this section focuses on the potential transportation and circulation impacts associated with the full range of transportation concerns, including vehicle traffic circulation, pedestrian circulation, bicycle circulation, public transit use, railroad crossings, and parking. Assessments of construction impacts are also included. Mitigation measures to reduce or eliminate potential significant impacts of the project are included, where feasible and necessary.

A Traffic Impact Study (TIS) on this proposed project was prepared by Fehr & Peers and is included as Appendix C to the EIR. Technical documentation supporting the findings in this section, as well as intersection and freeway service calculation worksheets and the Downtown Livermore Parking Study (2008 Parking Study) prepared by Fehr & Peers are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

1. Setting

The Downtown Specific Plan (adopted in 2004) encompasses about 272 acres of the Livermore Downtown area. Figure IV.C-1 illustrates the area and its relationship to the surrounding road system.

Three alternative locations for the Theater are under consideration: First Street/South Livermore Avenue site; Livermore Village site; and First Street/Maple Street site. The preferred Theater location has not been identified. The Downtown Specific Plan identifies the First Street/South Livermore Avenue site as the location of a regional Theater. So, for the purposes of defining the “project” evaluated in this EIR, the City selected the First Street/South Livermore Avenue site for the Theater. A full discussion of all the considered alternatives is included in the Traffic Impact Study which is attached as Appendix C of this EIR.

The scope of this analysis, the methodology used for the analysis, the existing setting for transportation and circulation issues, and an analysis of future transportation and circulation impacts that would likely occur without the Theater or implementation of the Downtown Specific Plan Amendments are documented in this section as described below.

a. Scope of Study. This study was conducted according to the requirements of the City of Livermore and the Alameda County Congestion Management Agency. The basis of analysis is peak hour level of service calculations for key intersections and freeway segments in the area, and road segment volume-to-capacity (v/c) ratios for the Metropolitan Transportation System (MTS). The peak hours are defined as those between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. These peak hours will be identified as the AM and PM peak hours, respectively.

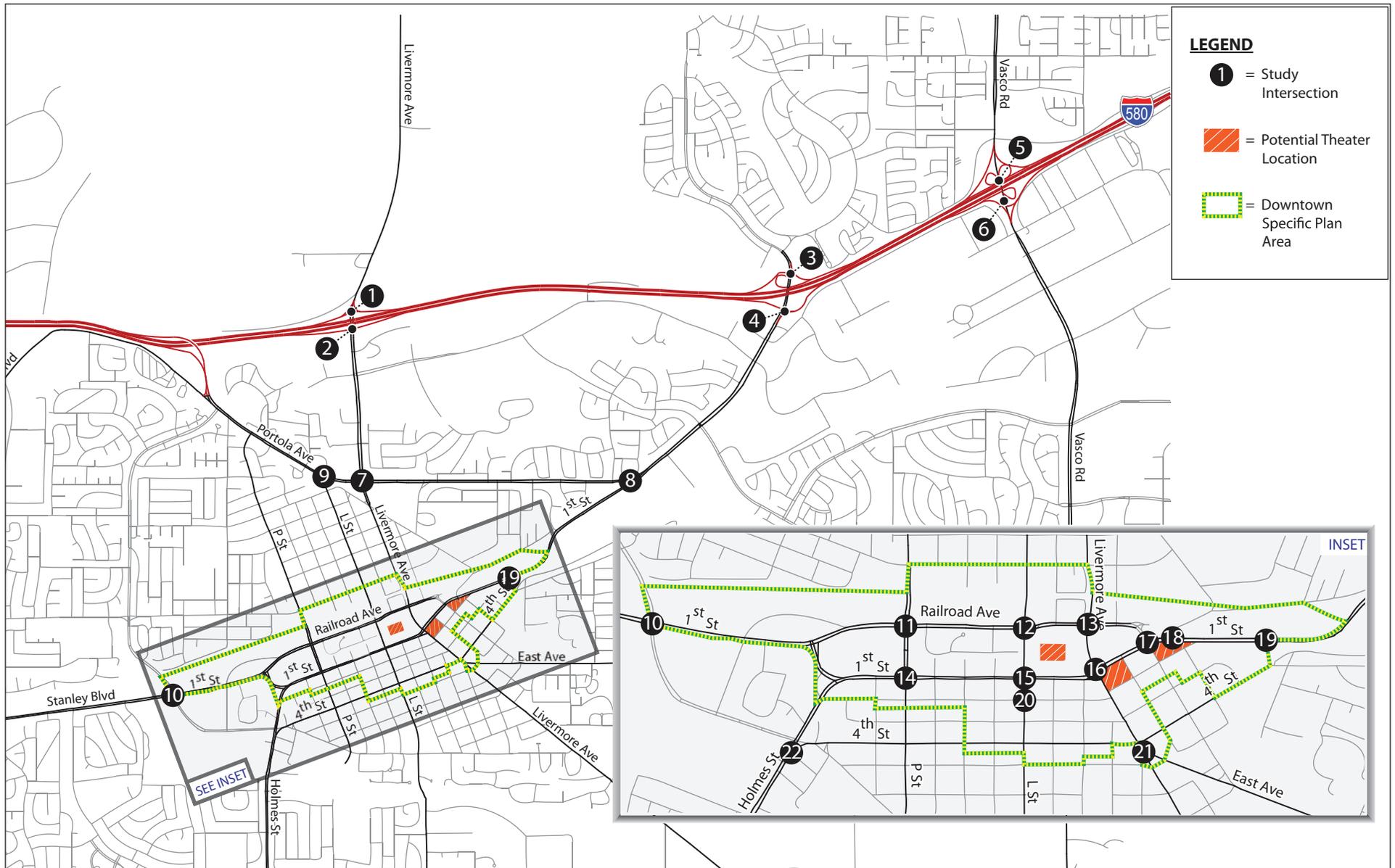
The study intersections were selected after preliminary analysis of model forecast results at 115 major intersections throughout the City. The 22 intersections selected for evaluation are intersections that are expected to operate at or near unacceptable conditions and where the Amendments and the Theater (regardless of its location) are also expected to have an impact by adding traffic. The 22 study intersections are listed below and shown in Figure IV.C-1.

1. I-580 Westbound Ramps/Livermore Avenue
2. I-580 Eastbound Ramps/Livermore Avenue
3. I-580 Westbound Ramps/First Street
4. I-580 Eastbound Ramps/First Street
5. I-580 Westbound Ramps/Vasco Road
6. I-580 Eastbound Ramps/Vasco Road
7. Portola Avenue/Livermore Avenue
8. Portola Avenue/First Street
9. Portola Avenue/L Street
10. Stanley Boulevard/Murrieta Boulevard
11. Railroad Avenue/P Street
12. Railroad Avenue/L Street
13. Railroad Avenue/Livermore Avenue
14. First Street/P Street
15. First Street/L Street
16. First Street/Livermore Avenue
17. First Street/Maple Street
18. First Street/Old First Street
19. First Street/Inman Street
20. Second Street/L Street
21. Fourth Street/Livermore Avenue/East Avenue
22. Murrieta Boulevard/Holmes Street

Freeway operations were evaluated for mainline segments and ramp merge/diverge points on Interstate 580 (I-580) from west of Livermore Avenue to east of Vasco Road.

As previously noted above, for this EIR the “project conditions” include the potential effects of locating the 2,000 seat Theater at the First Street/South Livermore Avenue site (this site was identified for a 1,500-seat Theater in the Downtown Specific Plan). Additional analysis was undertaken to evaluate potential transportation impacts under existing conditions associated with location of the Theater at either the Livermore Village site or the First Street/Maple Street site, realignment of Railroad Avenue, and construction of the Amendments plus Theater for the cumulative conditions. This analysis assumes that the Theater would be built in the near term (5 to 10 years) while buildout of all the development anticipated under the Amendments would take place by 2030. The operations of the key intersections and I-580 freeway segments were evaluated during the weekday morning (AM) and evening (PM) peak hours for the following four scenarios:

- *Scenario 1: Existing Conditions.* Existing conditions were established using traffic counts obtained from the City of Livermore. At the time counts were taken, local schools were in session and conditions are assumed to be representative of typical weekday conditions.
- *Scenario 2: Existing Plus Theater Conditions.* Existing plus Theater conditions were developed by adding the 2,000 seat Theater-related traffic to existing counts.
- *Scenario 3: Future (Year 2030) Without Project Conditions.* Future (Year 2030) traffic forecasts were developed using traffic volumes from the City of Livermore Traffic Model, which represents buildout of the Livermore General Plan and the 2004 adopted Downtown Specific Plan, including a 1,500 seat Theater.



LSA



NOT TO SCALE

FIGURE IV.C-1

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Project Vicinity and
Study Intersection Locations*

SOURCE: FEHR & PEERS, NOVEMBER 2008

I:\CLV0801 Dwtwn Livermore\figures\Fig_IVC1.ai (11/26/08)

- *Scenario 4: Future (Year 2030) Plus Project Conditions.* Future (Year 2030) plus project traffic forecasts were developed by adding the additional Theater traffic (2,000 versus 1,500 seats) and traffic from implementing the Amendments to Scenario 3.

b. Methodology. The methods used to evaluate the traffic conditions are described in the following sections. This discussion includes descriptions of the data requirements, analysis methodologies, and applicable level of service standards.

(1) Data Requirements. Intersection lane configurations, intersection turning movement counts, pedestrian and bicycle facilities, and public transit routes and facility locations were collected and signal timing plans were obtained from the City of Livermore.

(2) Analysis Methodologies and Level of Service Standards. To measure and describe the operational status of a local roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS). LOS is an indicator of roadway or intersection operational characteristics, ranging from LOS A (indicating free-flowing traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long delays). In Livermore's General Plan, Objective CIR-4.1, Policy 1, established that the lowest acceptable LOS at a signalized intersection is midlevel LOS D (an average total stop delay per vehicle of 45 seconds), except in the Downtown area which is exempt, and on specified intersections near freeway interchanges which allow LOS E. The General Plan also lists seven signalized intersections located at freeway ramps and along east/west major streets carrying a high percentage of regional cut-through traffic which may exceed established LOS thresholds.

Signalized Intersections. Operations of the signalized study intersections were calculated using the methodology in Chapter 16 of the Transportation Research Board's *Highway Capacity Manual 2000* (HCM2000). This methodology correlates the LOS to the average control delay experienced at the intersection in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. LOS definitions for signalized intersections are presented in Table IV.C-1. The analysis of signalized intersections was conducted using the SYNCHRO software package.

Unsignalized Intersections. For unsignalized (all-way stop- and side street stop-controlled) intersections, the LOS calculations were conducted using methods from Chapter 17 of the HCM2000. The LOS rating is based on the average control delay expressed in seconds per vehicle. At all-way stop intersections, LOS is based on the average delay experienced on all approaches. At side-street stop intersections, LOS is calculated for the stopped movements. Typically the movement (or lane, if more than one movement occurs in a lane) with the worst LOS rating is reported. Table IV.C-2 presents the LOS definitions for unsignalized intersections. Similar to signalized intersections, the analysis of unsignalized intersections was conducted using the SYNCHRO software package.

Mainline Segments. For the freeways, LOS was calculated using the method from Chapter 23 of the 2000 HCM2000. This method takes into consideration peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles, and number of travel lanes. These factors are used to determine the vehicle density, measured in passenger cars per mile per lane. Table IV.C-3 presents the LOS definitions and the relationship between vehicle density and LOS for mainline freeway segments.

Table IV.C-1: Signalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay Seconds/Vehicle
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to ≥ 20.0
C	Operations with average delay resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to ≥ 35.0
D	Operations with longer delay due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to ≥ 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to ≥ 80.0
F	Operation with delay unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: Transportation Research Board, 2000. *Highway Capacity Manual 2000*.

Table IV.C-2: Unsignalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay Seconds/Vehicle
A	Little or no delay.	≤ 10.0
B	Short traffic delays.	> 10.0 to ≥ 15.0
C	Average traffic delays.	> 15.0 to ≥ 25.0
D	Long traffic delays.	> 25.0 to ≥ 35.0
E	Very long traffic delays.	> 35.0 to ≥ 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Source: Transportation Research Board, 2000. *Highway Capacity Manual 2000*.

Table IV.C-3: Mainline Freeway Segment Level of Service Definitions

Level of Service	Description	Density Range (pc/mi/ln)
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0 to 11
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	> 11 to 18
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	> 18 to 26
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	> 26 to 35
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	> 35 to 45
F	Breakdown in vehicle flow.	> 45

Note: pc/mi/ln = passenger car/ per mile/ per lane.

Source: *Highway Capacity Manual* (Transportation Research Board 2000).

Table IV.C-4: Ramp Junction Level of Service Definitions

Level of Service	Description	Average Control Delay Seconds/Vehicle
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream.	≤ 10.0
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted.	> 10.0 to ≥ 20.0
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted.	> 20.0 to ≥ 28.0
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited.	> 28.0 to ≥ 35.0
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow.	> 35.0
F	Breakdown in vehicle flow.	Demand Exceeds Capacity

Source: Transportation Research Board, 2000. *Highway Capacity Manual 2000*.

Ramp Junction. A ramp junction is an area where vehicles compete for space as they either merge onto the freeway mainline from an on-ramp or diverge from the freeway mainline to an off-ramp. For ramp junctions, LOS was calculated using the Chapter 25 2000 HCM method. This method considers peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles, and the number of travel lanes as well as the interaction between the merge and diverge areas and the freeway mainline. These factors are used to correlate the LOS ratings to computed vehicle density (passenger cars/per mile/per lane). Table IV.C-4 summarizes the relationship between vehicle density and LOS for freeway ramp junctions.

Mainline Weave Sections. Weave sections occur when an on-ramp lane continues as its own lane on the mainline and then becomes the exit only lane at the next off-ramp. For weave sections, LOS was determined using the Leisch Method as outlined in Figure 504.7A in Caltrans' Highway Design Manual (HDM), 5th Edition. The Leisch Method calculates the level of service based on the service flow (passenger cars/per hour/per lane [pc/ph/pl]) through the weaving section. Table IV.C-5 presents the summary of the relationship between LOS and service flow depending on the number of mainline lanes entering the weaving section.

c. Existing Transportation Setting. The Downtown Specific Plan area encompasses about 272 acres of the Livermore Downtown area. Figure IV.C-1 illustrates the area and its relationship to the surrounding road system including the intersections that were analyzed. The following section generally describes the transportation system in the area, including key facilities of the roadway, transit, pedestrian, and bicycle networks.

(1) Existing Roadway Network. Regional access to the City of Livermore and the Downtown area is provided by I-580. Local access to the Downtown is provided by a variety of arterial roads and local streets. A description of key roadways follows:

- *Interstate 580 (I-580)* is a major east-west freeway that begins in Marin County at Highway 101 and traverses east across the Altamont Pass into San Joaquin County where it joins with Interstate 5 southeast of the City of Tracy near the Stanislaus County border. In Alameda County, I-580 is a

Table IV.C-5: Freeway Weave Level of Service Definitions Based on Leisch Method

Level of Service	Service Flow (passenger cars/per hour/per lane)		
	2 Lanes	3 Lanes	4 Lanes
A	750	800	850
B	1,000	1,100	1,200
C	1,250	1,350	1,450
D	1,550	1,450	1,650
E	1,900	1,900	1,900
F	Demand Exceeds Capacity	Demand Exceeds Capacity	Demand Exceeds Capacity

Source: Caltrans, Highway Design Manual (HDM), 5th Edition.

major commute route connecting residents in the San Joaquin Valley with employment centers in the San Francisco Bay Area. Through Livermore, I-580 has four mixed-flow lanes in each direction. Access to the Downtown from I-580 is provided via interchanges at Airway Boulevard, Portola Avenue, North Livermore Avenue, First Street, and Vasco Road.

- *First Street* is a four-lane arterial for most of its length, except through Downtown Livermore where it narrows to two lanes with angled parking along both sides. Further to the east, First Street widens to six lanes east of Portola Avenue and provides direct access to the Downtown via an interchange at I-580.
- *Railroad Avenue* is a four-lane arterial, which provides east/west access to and through Downtown. It connects to First Street east of Downtown and to Stanley Boulevard to the west of Downtown, and acts as a bypass route for First Street traffic.
- *Fourth Street* is a four-lane major east/west arterial that runs through the southern part of Downtown. It connects to First Street east of Downtown and to Holmes Street at Murrieta Boulevard and acts as a bypass route for First Street traffic.
- *Livermore Avenue* is a four-lane arterial between I-580 and Railroad Avenue. Livermore Avenue is two lanes north of I-580 and south of Railroad Avenue. Livermore Avenue provides direct access to the Downtown via an interchange at I-580. At the south end of the City, Livermore Avenue connects to Tesla Road, which runs eastward into San Joaquin County.
- *L Street* is a two-lane collector street south of Second Street and four lanes north of Second Street, and provides access to Downtown from the north and south. North of Downtown, L Street intersects with Portola Avenue.
- *Portola Avenue* is a four-lane east-west roadway, which runs north of the Downtown and connects to First Street in the east and I-580 in the west.
- *P Street* is a four-lane collector street between Chestnut Street and Second Street, and a two-lane collector street north of Chestnut Street and south of Second Street.

(2) Existing Pedestrian Facilities. The Downtown Livermore area is characterized by a relatively fine-grained grid of streets, with sidewalks provided on all streets and marked crosswalks at all intersections. As a result, pedestrian connections throughout the Downtown are convenient and relatively direct. The City recently completed a major streetscape enhancement project along First Street between L Street and Maple Street, narrowing the street to one-lane of traffic in each direction

and installing angled parking, street trees, decorative lighting and other streetscape features to slow traffic and enhance the pedestrian experience. All of the intersections along this section of First Street have high-visibility crosswalk striping. Fourth Street and Railroad Avenue, however, are four-lane major streets and can be difficult for pedestrians to cross outside of the signalized intersections at P Street, L Street, and South Livermore Avenue due to the wide travel way and the vehicular speed. Pedestrians have difficulty during peak traffic times accessing Carnegie Park, which is bounded by Fourth Street, J Street, Third Street, and K Street.

(3) Existing Bicycle Facilities. Bicycle facilities can be classified into several general types, including:

- Class I Paths – These facilities are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class I facilities. Class I paths are typically 8 to 10 feet wide excluding shoulders and are generally paved.
- Class II Bicycle Lanes – These facilities provide a dedicated area for bicyclists within the paved street width through the use of striping and appropriate signage. These facilities are typically 4 to 6 feet wide.
- Class III Bicycle Routes – These facilities are found along streets that do not provide sufficient width for dedicated bicycle lanes. The street is then designated as a bicycle path through the use of signage informing drivers to expect bicyclists.

In the Downtown, First Street is a designated bike route east of Maple Street. Class II bike lanes are provided on First Street east of Inman Street, on Third Street west of L Street and east of Livermore Avenue, and on Maple Street between First Street and East Avenue. Discontinuous segments of the Class I Iron Horse Trail exist adjacent to the south side of the U.P. Railroad right of way east of Murrieta Boulevard and west of South L Street.

(4) Existing Bus Transit Service. Local bus service in the area is provided by the Livermore Valley Transit Authority (LAVTA) which operates WHEELS service.

Wheels. WHEELS provides fixed-route service to the Cities of Dublin, Livermore, and Pleasanton, as well as to the adjacent unincorporated areas of Alameda County. The service operates seven days per week between 4:30 AM and 12:30 AM. WHEELS fixed route service branches out from the Livermore Transit Center, located on Railroad Avenue near the intersection of First and Maple Streets, where connections to Altamont Commuter Express (ACE) service can be made. The Downtown Transit Center is served by seven fixed routes; four provide service throughout the Downtown area, and are described further below. Figure IV.C-2 illustrates the routes through Downtown.

- *Route 10 (Dublin/Pleasanton/Livermore)* traverses Railroad Avenue and stops near K, N, and P Streets. Route 10 connects Downtown Livermore to the Stoneridge Mall in Pleasanton via the Dublin/Pleasanton BART station to the west, and to Lawrence Livermore Lab in the east. It operates with 15-minute peak-hour and 30-minute non-peak headways. It has a daily ridership of about 3,500 riders.
- *Route 12 (Las Positas College/BART)* traverses Railroad Avenue and stops near K, N, and P streets. Route 12 connects Downtown Livermore to the Dublin/Pleasanton BART station via Las

Positas College. It operates with 30 minute headways throughout the day. Daily ridership is about 740 riders.

- *Route 14 (North Central Livermore/Civic Center)* loops around the Downtown via Old First Street, Junction Avenue, Chestnut Street, P Street, and Fourth Street. Route 14 also provides service to the Livermore Library and Civic Center. It operates with 30 minute headways throughout the day. Daily ridership is about 220 riders.
- *Route 18 (Holmes/El Caminito/Murrieta)* traverses Fourth Street and stops near K, M and P streets. This route has a daily ridership of about 150 riders.

(5) Existing Rail Transit Service. There are two rail transit services in the area: the Altamont Commuter Express and BART.

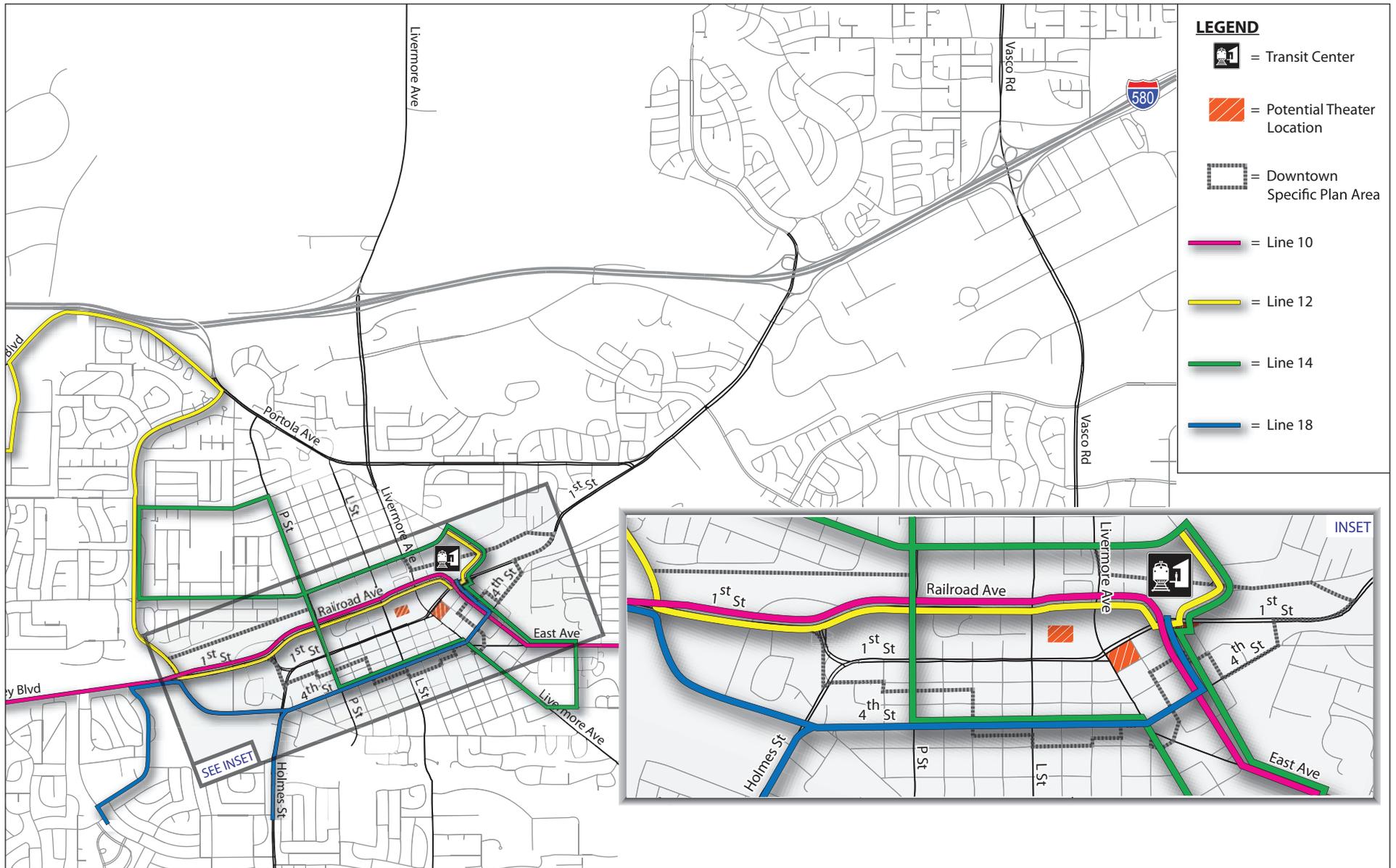
Altamont Commuter Express. The Altamont Commuter Express provides passenger rail service from Stockton to San Jose via the Altamont Pass. Four morning and four evening trips provide connections to the stations in Livermore and Pleasanton. Livermore has two ACE stations: Vasco Road near Brisa Street, and Railroad Avenue at the Downtown Transit Center served by WHEELS buses.

Bay Area Rapid Transit. BART provides regional transit service to Alameda, San Francisco, Contra Costa, and San Mateo Counties. Weekday service begins at 4:00 a.m., while Saturday and Sunday service begins at 6:00 a.m. and 8:00 a.m., respectively. Trains typically run every 15 minutes, except Saturdays before 7:00 p.m., when trains run every 20 minutes. The Dublin/Pleasanton station is currently the end station on the Dublin/Pleasanton-SFO/Millbrae line. BART is currently considering alternative alignments to extend service to Livermore and provide a convenient connection to ACE.

(6) Existing Parking Characteristics. As part of the 2008 Parking Study, parking supply was surveyed at 4,427 parking spaces (1,705 on-street spaces and 2,722 off-street spaces) within the Downtown area. Off-street dedicated residential parking spaces were excluded from the demand surveys because these spaces are restricted to a single user. The off-street parking spaces included both public and private parking spaces, and excluded parking lots for churches, private schools, the phone company, and the post office. The Parking Study is available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

The collected data was evaluated and three time periods were established that represent the times when overall parking demand in the Downtown is greatest. The three time periods include the Friday afternoon (1:00 PM to 2:00 PM), Friday evening (8:00 PM to 9:00 PM), and Saturday evening (8:00 PM to 9:00 PM).

While the overall Downtown study area had adequate parking supply to meet the observed parking demands, there were blocks that experience significantly more parking congestion than other blocks. However, even in these more congested areas, there were available parking spaces within a one block walking distance from any destination. The lack of parking space availability in emerging Downtown environments is often contained within specific blocks or areas that have redeveloped. This condition



LSA



NOT TO SCALE

FIGURE IV.C-2

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Existing Transit Routes*

SOURCE: FEHR & PEERS, NOVEMBER 2008

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is further complicated by patron expectations to park adjacent to their ultimate destination in an emerging Downtown such as Livermore, while that same patron may expect to walk in a more established Downtown like Walnut Creek.

(7) Existing Conditions Intersection Configurations, Control and Traffic Volumes.

Weekday AM and PM peak period intersection turning movement counts were obtained from the City of Livermore. The City maintains a database of traffic counts and updates them regularly. Most traffic counts were collected in 2007 and 2008, but some date back to 2005. Field observations were also performed to aid in understanding the existing traffic operations. The existing intersection configurations, control, and volumes are provided in Figures IV.C-3a and IV.C-3b. The study intersections, traffic control, and the count year are also listed in Table IV.C-6.

(8) Existing Conditions Intersection Analysis. Intersection service levels were calculated using the existing signal timings (for signalized intersections), turning movement counts, and lane configurations during the AM and PM peak periods. The results are summarized in Table IV.C-6. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

As shown in Table IV.C-6, one study intersection operates below the City's General Plan target.

- Stanley Boulevard/Murrietta Boulevard (#10) currently operates at LOS D with 47 and 50 seconds of delay in the AM and PM peak hour, respectively. The target is LOS D with 45 seconds of delay.

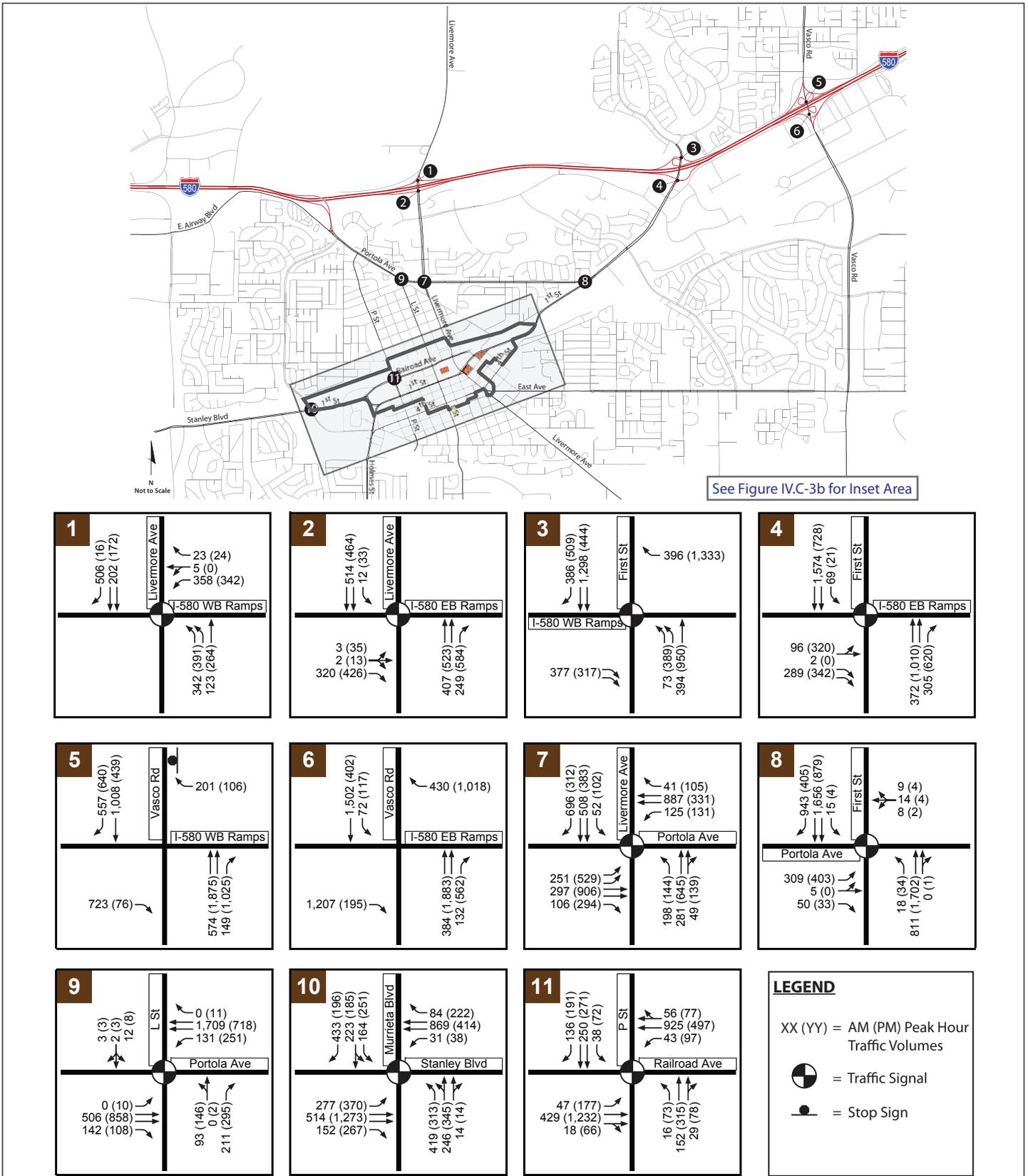
The City does not have General Plan target LOS for unsignalized intersections such as the I-580 Westbound Ramps/Vasco Road (#5) intersection. The LOS F noted in Table IV.C-6 reflects the service level for the stop-sign controlled approach. However, the majority of the traffic traversing this intersection is not required to stop which reflects LOS A, which is not shown in the table.

(9) Existing Mainline, Ramp Junction, and Weave Analysis. Weekday AM and PM peak hour mainline and ramp junction operations (without ramp metering) were calculated based on existing traffic volumes and freeway geometrics. The calculated existing mainline densities (vehicles per lane per mile) and corresponding LOS are shown in Table IV.C-7. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue). All freeway segments operate at LOS E or better, consistent with thresholds identified in the *Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance*.

d. Future (Year 2030) Without Project Conditions Analysis. This subsection discusses future (Year 2030) without project traffic conditions.¹

(1) Traffic Volumes. The traffic forecasts used in this analysis were developed using the Livermore Traffic Model. The traffic model was updated, calibrated, and validated to industry standards in 2008. The 2030 model generates trips from the Bay Area region outside of the Tri-Valley based on socioeconomic data consistent with ABAG's *Projections 2005* for 2030. For the cities of Dublin and Pleasanton, the model uses land use data consistent with each City's General Plan. For the City of Livermore, the City maintains a land use database encompassing buildout of the General Plan including the buildout of the adopted Downtown Specific Plan.

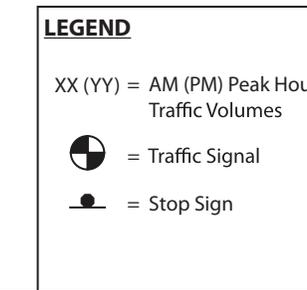
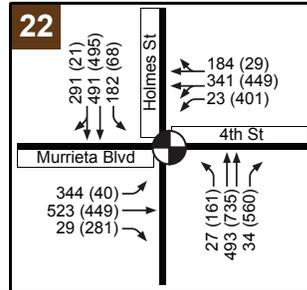
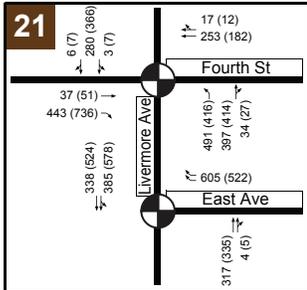
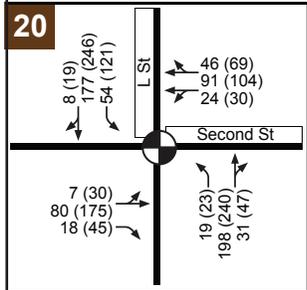
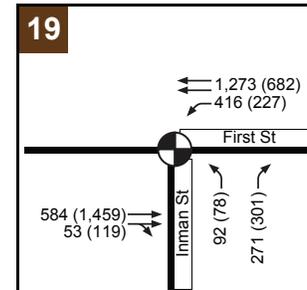
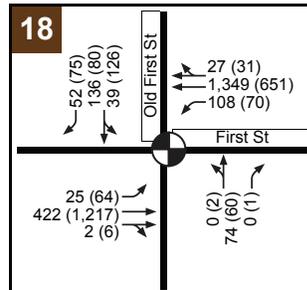
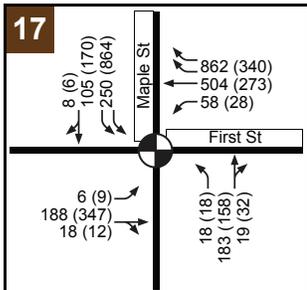
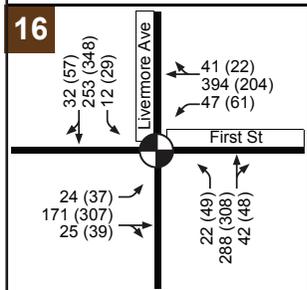
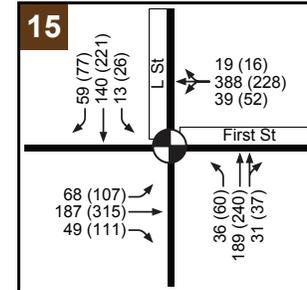
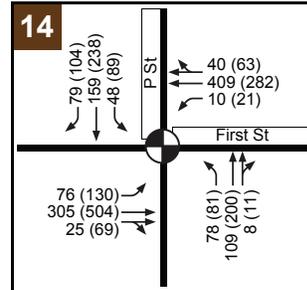
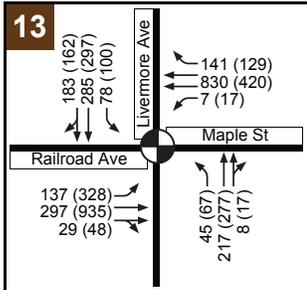
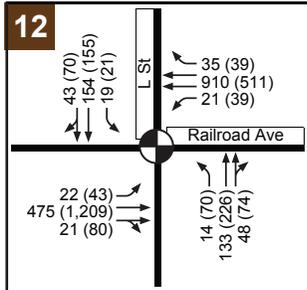
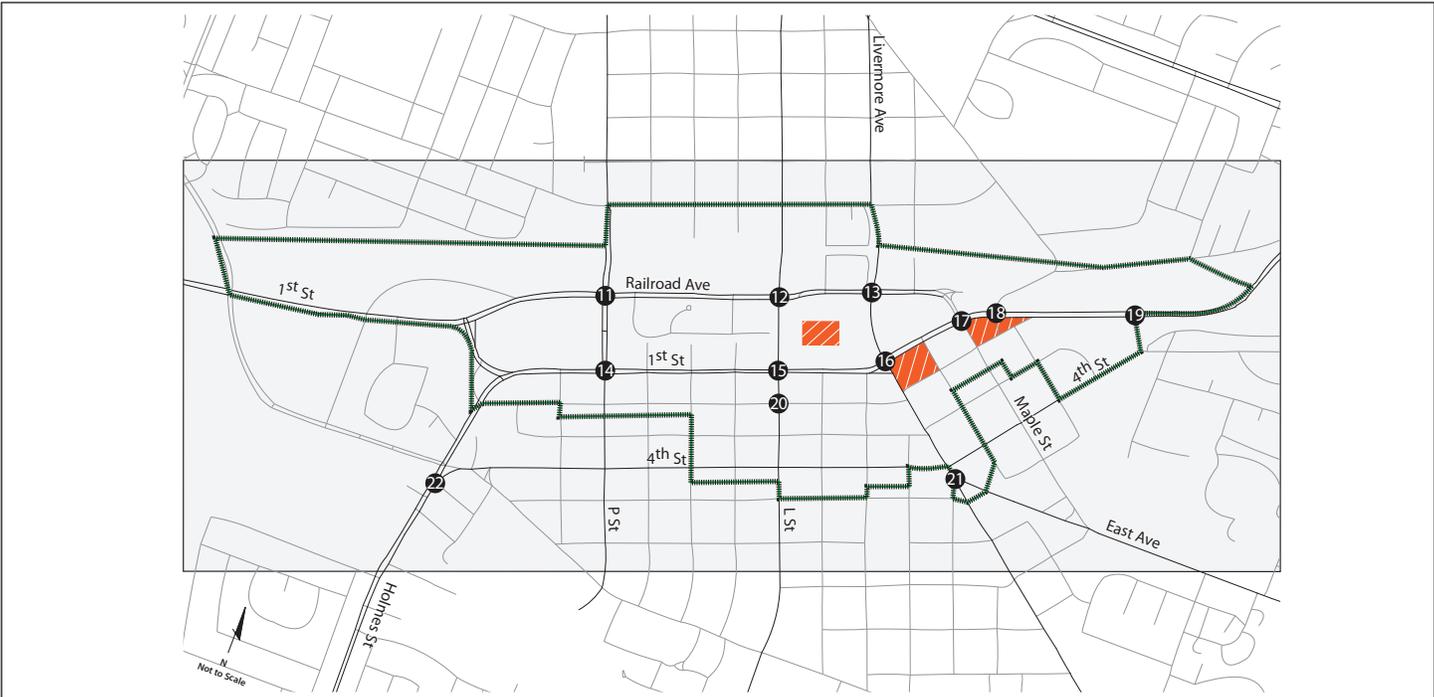
¹ The Year 2030 without project includes the 1,500 seat Theater because it is part of the adopted Downtown Specific Plan.



LSA

FIGURE IV.C-3a

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Existing Peak Hour Volumes
 and Intersection Geometries*



LSA

FIGURE IV.C-3b

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR Existing Peak Hour Volumes and Intersection Geometries

SOURCE: FEHR & PEERS, NOVEMBER 2008
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Table IV.C-6: Existing Conditions Peak Hour Intersection Level of Service

	Intersection	LOS Target ^a	Control ^b	Count Year	Peak Hour	Delay ^c (sec)	LOS
1	I-580 Westbound Ramps/Livermore Avenue	E	Signal	2008	AM PM	21 32	C C
2	I-580 Eastbound Ramps/Livermore Avenue	E	Signal	2008	AM PM	18 13	B B
3	I-580 Westbound Ramps/First Street	E	Signal	2008	AM PM	12 12	B B
4	I-580 Eastbound Ramps/First Street	E	Signal	2008	AM PM	15 15	B B
5	I-580 Westbound Ramps/Vasco Road	none	SSS	2008	AM PM	>100 28	F D
6	I-580 Eastbound Ramps/Vasco Road	none	No Control	2008	AM PM	-	-
7	Portola Avenue/Livermore Avenue	Mid D	Signal	2005	AM PM	37 34	D D
8	Portola Avenue/First Street	Mid D	Signal	2005	AM PM	23 19	C B
9	Portola Avenue/L Street	Mid D	Signal	2005	AM PM	13 24	B C
10	Stanley Boulevard/Murrieta Boulevard	Mid D	Signal	2005	AM PM	47 50	D D
11	Railroad Avenue/P Street	Exempt	Signal	2008	AM PM	19 26	B C
12	Railroad Avenue/L Street	Exempt	Signal	2008	AM PM	17 20	B C
13	Railroad Avenue/Livermore Avenue	Exempt	Signal	2008	AM PM	25 25	C C
14	First Street/P Street	Exempt	Signal	2007	AM PM	26 31	C C
15	First Street/L Street	Exempt	Signal	2007	AM PM	31 29	C C
16	First Street/Livermore Avenue	Exempt	Signal	2007	AM PM	29 37	C C
17	First Street/Maple Street	Exempt	Signal	2008	AM PM	14 32	B C
18	First Street/Old First Street	Exempt	Signal	2008	AM PM	17 22	B B
19	First Street/Inman Street	Exempt	Signal	2005	AM PM	15 19	B B
20	Second Street/L Street	Exempt	Signal	2007	AM PM	17 21	B C
21	Fourth Street/East Avenue/Livermore Avenue ^d	Exempt	Signal	2008	AM PM	35 45	C D
22	Murrieta Boulevard/Holmes Street	Mid D	Signal	2005	AM PM	45 38	D D

Deficient intersections indicated in **bold**.

^a LOS targets reflect the Livermore General Plan, Objective CIR-4.1, Policy 1, Policy 3, Policy 4..

^b Signal = Signalized intersection, SSS = Side street stop-controlled intersection

^c For side-street stop-controlled intersections, delay for worst movement (in seconds per vehicle) is presented. For all-way stop-controlled and signalized intersections, average delay for all movements is presented. All calculations reflect the 2000 *Highway Capacity Manual* methodologies.

^d Intersection analyzed with SimTraffic software.

Source: Fehr & Peers, 2008.

The traffic model was used to develop traffic growth increments which were applied to the existing volumes to estimate 2030 intersection volumes. The amount of incremental traffic growth between the base year and future cumulative year was estimated at each of the study intersections. This growth was applied to the existing intersection turning movement volumes to estimate intersection volumes for 2030.

Future (Year 2030) traffic forecasts were developed using the Livermore Traffic Model. The future (Year 2030) without project intersection volumes are illustrated in Figure IV.C-4a and Figure IV.C-4b.

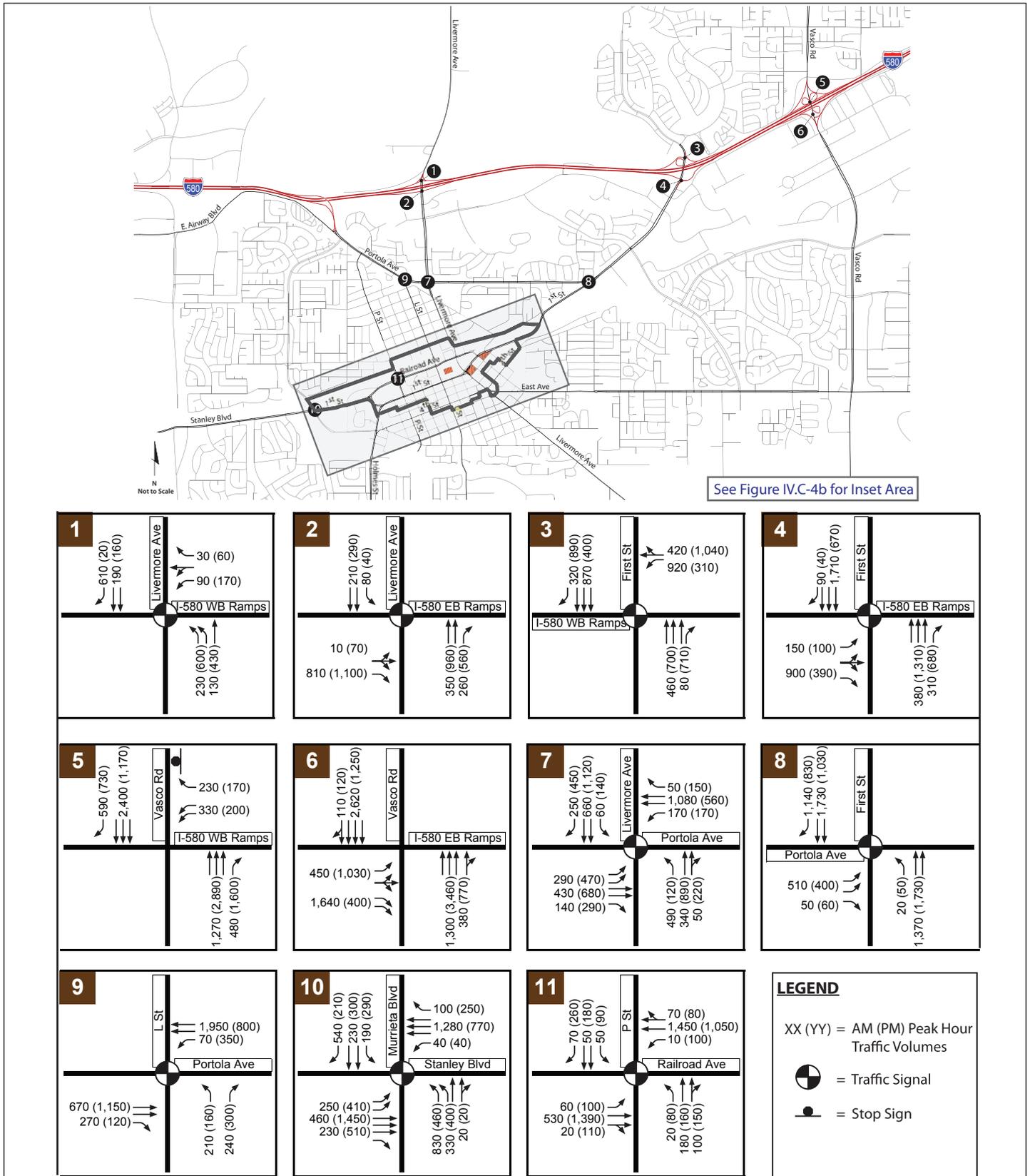
(2) Planned Roadway Improvements. The *2005 Regional Transportation Plan* for the San Francisco Bay Area specifies improvements to the regional transportation system and identifies funding for these improvements. “Committed” projects are improvements that are fully funded and are assumed constructed by 2030. Committed projects in Livermore include HOV and auxiliary lanes on I-580 between Tassajara Road and Greenville Road, and I-580 interchange improvements at Isabel Avenue, First Street, Vasco Road, and Greenville Road.

Several major roadway improvements are also planned in the City that may cause traffic patterns to change by creating new connections or increasing roadway capacity. These improvements are summarized in Table IV.C-8. Funding for these improvements will be provided through a combination of local and regional fees.

The City has a Traffic Impact Fee (TIF) program in place to charge new development the cost of transportation improvements listed in Table IV.C-8. As is the case with any new development in the City, development associated with the Amendments or Theater would be responsible for paying its fair share toward these improvements to ensure improvements are constructed as new development occurs. In addition to roadway improvements, intersection improvements that include signalization or additional through or turn lanes have been assumed, consistent with expectations for roadway capacity. The assumed lane configurations in year 2030 at the study intersections are shown on Figures IV.C-4a and IV.C-4b.

(3) Planned Bicycle Improvements. In addition to the roadway and intersection improvements, the City of Livermore has a Bikeways and Trails Master Plan which provides for a comprehensive bikeway and trail system. The following are proposed through the Downtown:

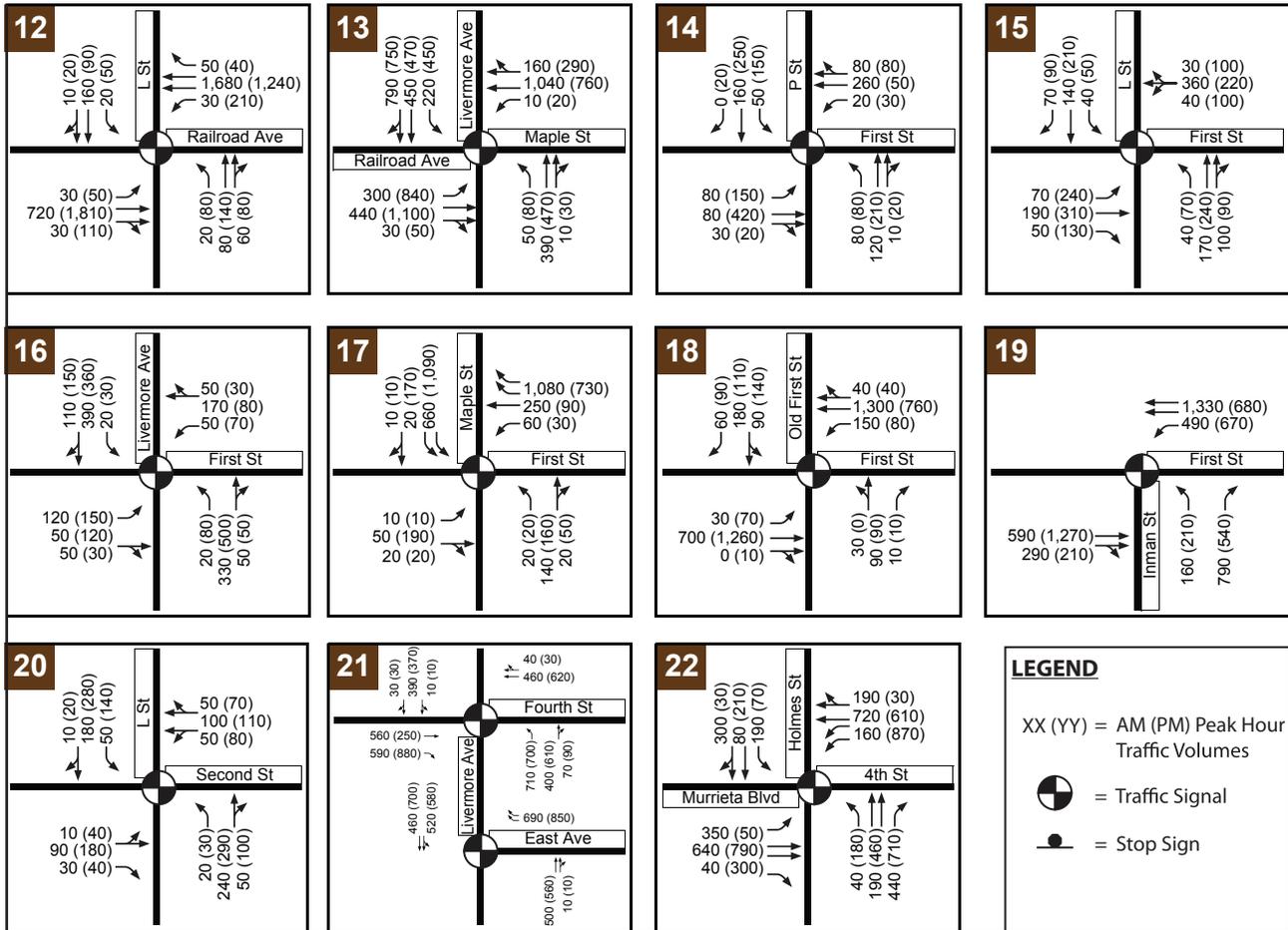
- Class I Multi-Use Trail (Iron Horse Trail) is planned to extend from its existing alignment along Stanley Boulevard east to Livermore Avenue along the south side of the railroad right-of-way. Between Livermore Avenue and Junction Avenue there are alternative alignments on either side of the railroad right-of-way. East of Junction Avenue, the trail would continue east along the south side of the railroad tracks through Downtown. When complete, this trail will connect existing and future transit facilities in the Downtown.
- Class II Bike Lane is planned on Third Street (M Street to South Livermore Avenue) to connect the gap between existing bike lanes on Third Street east and west of the proposed segment.



LSA

FIGURE IV.C-4a

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
2030 Without Project Peak Hour
Intersection Volumes and Geometries*



LSA

FIGURE IV.C-4b

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 2030 Without Project Peak Hour
 Intersection Volumes and Geometries*

Table IV.C-7: Existing Conditions Mainline and Ramp Level of Service

Mainline or Ramp	Lanes	AM Peak Hour		PM Peak Hour	
		Density ^a	LOS	Density ^a	LOS
Mainline Analysis					
WB I-580 East of Vasco Road	4	24.9	C	16.9	B
WB I-580 Vasco Road to First Street	4	23.9	C	22.8	C
WB I-580 First Street to Livermore Avenue	4	22.6	C	19.8	C
WB I-580 Livermore Avenue to Portola Avenue	4	24.6	C	20.0	C
WB I-580 West of Portola Avenue	4	37.2	E	23.2	C
EB I-580 West Portola Avenue	4	22.2	C	37.0	E
EB I-580 Portola Avenue to Livermore Avenue	4	20.2	C	29.9	D
EB I-580 Livermore Avenue to First Street	4	19.9	C	30.8	D
EB I-580 First Street to Vasco Road	4	19.9	C	30.7	D
EB I-580 East of Vasco Road	4	14.2	B	27.8	D
Ramp Junction Analysis					
WB I-580 Vasco Road Off-Ramp	1	27.9	C	16.5	B
WB I-580 Vasco Road On-Ramp	1	23.7	C	26.7	C
WB I-580 First Street Off-Ramp	1	29.9	D	33.1	D
WB I-580 First Street On-Ramp	1	22.3	C	21.7	C
WB I-580 Livermore Avenue Off-Ramp	1	25.8	C	23.0	C
WB I-580 Livermore Avenue On-Ramp	1	24.8	C	19.2	B
WB I-580 Portola Avenue On-Ramp	1	25.1	C	23.5	C
EB I-580 Portola Avenue Off-Ramp	1	26.1	C	39.0	E
EB I-580 Livermore Avenue Off-Ramp	1	23.1	C	32.4	D
EB I-580 Livermore Avenue On-Ramp	1	18.6	B	27.9	C
EB I-580 First Street Off-Ramp	1	22.7	C	33.5	D
EB I-580 First Street On-Ramp	1	19.0	B	27.9	C
EB I-580 Vasco Road Off-Ramp	1	29.2	D	36.6	E
EB I-580 Vasco Road On-Ramp	1	13.6	B	26.3	C

^a Density is expressed in terms of passenger cars per mile per lane.

Source: Fehr & Peers, 2008.

Table IV.C-8: Future (2030) Major Roadway Improvements Assumed with General Plan Buildout

Roadway	Location	Lane Configuration
Greenville Road	Northfront to National	6 lanes
Greenville Road	National to Patterson Pass	4 lanes
Holmes Street	Wetmore to Alden	4 lanes
Isabel Avenue	Portola to Stanley	6 lanes
Isabel Avenue	Stanley to Vallecitos	4 lanes
Jack London Boulevard	Isabel to El Charro	4 lanes
Las Positas Road	N. Livermore to Vasco	4 lanes
Las Colinas Road	Las Colinas to Redwood	2 lanes
North Canyons Pkwy.-Dublin Blvd.	Doolan Canyon to Fallon	4 lanes
North Canyons Parkway	Airway to Collier Canyon	6 lanes
Portola Avenue	Isabel to I-580	4 lanes
Portola Avenue	Collier Canyon to Isabel	6 lanes
Scenic Avenue	East end to Laughlin	2 lanes
Stanley Boulevard	Western City limits to Murrieta	6 lanes
Vallecitos Road	Isabel to west of Ruby Hills-Pigeon Pass	4 lanes
Vasco Road	Patterson Pass to Las Positas; I-580 to Scenic	6 lanes
Vasco Road	Las Positas to I-580	8 lanes

Source: City of Livermore General Plan Circulation Element

(4) Future (Year 2030) Without Project Conditions Intersection Analysis. Levels of service were calculated for the study intersections using future lane configurations and 2030 without project traffic volumes shown on Figures IV.C-4a and IV.C-4b. Table IV.C-9 presents the LOS results for the study intersections. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue). The results indicate that the added demand due to future growth will result in two study intersections operating below General Plan targets.

- Portola Avenue/North Livermore Avenue (#7), would operate at LOS F with over 100 seconds of delay during the AM peak hour, and LOS D with 39 seconds of delay during the PM peak hour. The City's General Plan target for this intersection is LOS D with 45 seconds of delay.
- Stanley Boulevard/Murrietta Boulevard (#10), would operate at LOS E with 72 seconds of delay during the AM peak hour, and LOS D with 47 seconds of delay during the PM peak hour. The City's General Plan target for this intersection is LOS D with 45 seconds of delay.

There are several intersections in the Downtown that would operate LOS E or F in 2030. Downtown intersections are exempted from LOS standards per General Plan Objective CIR-4.1, Policy 1. The City will consider feasible improvements (such as additional turn lanes) that balance Downtown Specific Plan development and pedestrian goals with the need to access Downtown and facilitate vehicle flow. These improvements should be considered in conjunction with major redevelopment activities.

(5) Future (2030) Without Project Conditions Mainline, Ramp Junction, and Weave Analysis. Levels of service were calculated for the mainline, ramp junction, and weave I-580 study segments. Table IV.C-10 presents the LOS results for the study segments. The results indicate that the added demand due to future growth without the project will result in one location operating below LOS E, which is the threshold identified in the *Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance*. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

- Westbound I-580 (mainline and select ramp junctions) between the Vasco Road On-Ramp and the First Street Off-Ramp would operate at LOS F during the PM peak hour.

e. Regulatory Setting. Applicable State, county, and municipal transportation/traffic plans and regulations that apply to the study area are summarized below. Streets in the study area are generally under the jurisdictions of the City of Livermore, except State highways that are under Caltrans' jurisdiction.

(1) State Regulations. Caltrans is responsible for planning, designing, constructing, and maintaining all interstate freeways and State routes. I-580 in the study area is under Caltrans' jurisdiction. Caltrans requirements are described in their *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2001), which covers the information needed for Caltrans to review the impacts on state highway facilities, including freeway segments, on- and off-ramps, and signalized intersections.

(2) Regional Transportation Agencies and Plans. Regional transportation agencies and plans are described below.

Table IV.C-9: Future (2030) Without Project Peak Hour Intersection Level of Service

Intersection		LOS Target ^a	Peak Hour	Without Project	
				Delay ^b (sec)	LOS
1	I-580 Westbound Ramps/Livermore Avenue	E	AM	11	B
			PM	16	B
2	I-580 Eastbound Ramps/Livermore Avenue	E	AM	28	C
			PM	24	C
3	I-580 Westbound Ramps/First Street	E	AM	24	C
			PM	23	C
4	I-580 Eastbound Ramps/First Street	E	AM	22	C
			PM	11	B
5	I-580 Westbound Ramps/Vasco Road ^c	E	AM	8	A
			PM	23	C
6	I-580 Eastbound Ramps/Vasco Road	E	AM	31	C
			PM	46	D
7	Portola Avenue/Livermore Avenue	Mid D	AM	>100	F
			PM	39	D
8	Portola Avenue/First Street	Mid D	AM	15	B
			PM	13	B
9	Portola Avenue/L Street	Mid D	AM	13	B
			PM	45	D
10	Stanley Boulevard/Murrieta Boulevard	Mid D	AM	47	E
			PM	50	D
11	Railroad Avenue/P Street	Exempt	AM	22	C
			PM	27	C
12	Railroad Avenue/L Street	Exempt	AM	27	C
			PM	67	E
13	Railroad Avenue/Livermore Avenue	Exempt	AM	71	E
			PM	>100	F
14	First Street/P Street	Exempt	AM	34	C
			PM	33	C
15	First Street/L Street	Exempt	AM	30	C
			PM	33	C
16	First Street/Livermore Avenue	Exempt	AM	30	C
			PM	32	C
17	First Street/Maple Street	Exempt	AM	40	D
			PM	29	C
18	First Street/Old First Street	Exempt	AM	23	C
			PM	24	C
19	First Street/Inman Street	Exempt	AM	35	C
			PM	80	F
20	Second Street/L Street	Exempt	AM	20	B
			PM	24	C
21	Fourth Street/East Avenue/Livermore Avenue ^d	Exempt	AM	>100	F
			PM	>100	F
22	Murrieta Boulevard/Holmes Street	Mid D	AM	42	D
			PM	43	D

Deficient intersections indicated in **bold**.

All intersections are signalized in 2030.

^a LOS targets reflect the Livermore General Plan, Objective CIR-4.1, Policy 1, Policy 3, Policy 4..

^b For side-street stop-controlled intersections, delay for worst movement (in seconds per vehicle) is presented. For all-way stop-controlled and signalized intersections, average delay for all movements is presented. All calculations reflect the 2000 *Highway Capacity Manual* methodologies.

^c The I-580 Westbound Ramp/Vasco Road intersection is unsignalized under existing conditions.

^d Intersection analyzed with SimTraffic software.

Source: Fehr & Peers, 2008.

Table IV.C-10: Future (2030) Without Project Mainline and Ramp Level of Service

	Number of Lanes ^a	Without Project			
		AM Peak Hour		PM Peak Hour	
		Density ^b	LOS	Density ^b	LOS
Mainline Segments					
WB I-580 East of Vasco Road	4 + Aux Lane	19.5	C	17.3	B
WB I-580 Vasco Road to First Street	4 + Aux Lane	Leisch ^c	E	Leisch ^c	E
WB I-580 First Street to Livermore Avenue	4 + Aux Lane	17.9	C	22.0	C
WB I-580 West of Livermore Avenue	4 + Aux Lane	20.2	C	23.3	C
EB I-580 West of Livermore Avenue	4 + Aux Lane	21.3	C	27.0	D
EB I-580 Livermore Avenue to First Street	4 + Aux Lane	19.8	C	24.9	C
EB I-580 First Street to Vasco Road	4 + Aux Lane	Leisch ^c	E	Leisch ^c	E
EB I-580 East of Vasco Road	4 + Aux Lane	12.2	B	23.2	C
Ramp Junction and Weave Segments					
WB I-580 Vasco Road Off-Ramp	2	12.7	B	10.6	B
WB I-580 Vasco Road On-Ramp	2	Leisch ^c	E	Leisch ^c	E
WB I-580 First Street Off-Ramp	2	Leisch ^c	E	Leisch ^c	E
WB I-580 First Street On-Ramp	2	21.9	C	28.6	D
WB I-580 Livermore Avenue Off-Ramp	2	16.5	B	19.3	B
WB I-580 Livermore Avenue On-Ramp	2	25.8	C	28.1	D
EB I-580 Livermore Avenue Off-Ramp	2	18.6	B	23.4	C
EB I-580 Livermore Avenue On-Ramp	2	23.4	C	29.5	D
EB I-580 First Street Off-Ramp	2	17.5	B	20.8	C
EB I-580 First Street On-Ramp	2	Leisch ^c	C	Leisch ^c	E
EB I-580 Vasco Road Off-Ramp	2	Leisch ^c	C	Leisch ^c	E
EB I-580 Vasco Road On-Ramp	2	15.5	B	28.7	D

Deficient segments indicated in **bold**.

^a Number of lanes excludes HOV lanes because these lanes are not considered in the analysis of general purpose lanes. ^b Density is expressed in terms of passenger cars per mile per lane.

^c Segment analyzed as a weave section based on the Leich Method updated to 2000 HCM capacities.

Source: Fehr & Peers, 2008.

Metropolitan Transportation Commission (MTC). The MTC regional organization is responsible for prioritizing transportation projects in a Regional Transportation Improvement Program (RTIP) for federal and State funding. The process is based on evaluating each project for need, feasibility, and adherence to federal transportation policies and to the Alameda County Congestion Management Program (CMP). The CMP requires each jurisdiction to identify existing and future transportation facilities that would operate below an acceptable service level and provide mitigation where future growth would degrade that service level on the Metropolitan Transportation System (MTS) roadways and transit systems. Designated MTS roadways in the vicinity include I-580, SR 84, First Street between I-580 and Inman Street, Stanley Boulevard, Livermore Avenue between East Avenue and I-580, and Holmes Street.

Alameda County Transportation Authority (ACTA). The ACTA was created to administer Measure B, Alameda County's half-cent transportation sales tax, approved by the voters in 1986. Voters reauthorized the half-cent sales tax in November 2000, and the Alameda County Transportation Improvement Authority (ACTIA) was created to deliver the new projects and programs while ACTA finalizes the projects promised to the voters in 1986.

Approximately 60 percent of the ACTIA Measure B net sales tax funds are allocated to the local jurisdictions (cities, the County, transit agencies, and paratransit providers in Alameda County). The remaining 40 percent of the funds are used to leverage additional funding for a variety of projects, including the addition of auxiliary lanes on I-580, the construction of the Isabel Avenue–SR 84/I-580 interchange, and I-580 corridor/BART to Livermore Study.

The ACTA Expenditure Plan lists the projects and programs approved in 1986 over the life of the plan, and the ACTIA Expenditure Plan describes the projects and programs for the next 20 years provided by the reauthorization of Measure B. The ACTIA Strategic Plan is a document that is updated every year to provide additional detail on the strategic Plan elements and to allocate funds to Measure B programs and projects. Funds for programs are estimated for the fiscal year in the Strategic Plan and allocations to capital projects are considered for the fiscal year to ensure that funds will be available when they are needed. Funding availability at both the state and federal levels affects capital project delivery.

Tri-Valley Transportation Council (TVTC). The TVTC was created upon the passage of the Measure C initiative to address area-wide transportation issues in locations straddling the two counties of Alameda and Contra Costa, which include the Cities of Livermore, Dublin, Pleasanton, Danville, and San Ramon, as well as some unincorporated areas of each county. TVTC produced the *1995 Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance*, which identifies transportation service objectives and funding priorities for designated roadways.

The Action Plan establishes shared traffic service objectives and presents a list of 11 high-priority transportation improvement projects to ease regional traffic congestion. The Tri-Valley Transportation Development (TVTD) fee on new developments will partially fund the improvements. It is expected that the remainder of the funding will come from other local, state, and federal funding sources. This fee, which was adopted by the seven TVTC jurisdictions in 1998, and amended through June 2006, applies to all developments in the Tri-Valley. The fee is applied and collected by all of the TVTC jurisdictions, including the City of Livermore.

(3) Local Regulations. The Livermore General Plan was adopted in 2004. The Circulation Element provides the policy framework for the regulation and development of transportation systems, balancing demands for moving people and goods through the City while revitalizing the Downtown and limiting non-local, cut-through traffic on the roadway network. The General Plan contains overall goals and specific recommendations for facilitating traffic circulation, maintaining an acceptable level of service at signalized intersections, traffic demand management programs, parking management, and improving transit service and facilities for nonmotorized transportation. Specific policies relevant to the proposed project are discussed under “Criteria of Significance” below.

In the City General Plan, Objective CIR-4.1, Policy 1, established that the lowest acceptable LOS at a signalized intersection is midlevel LOS D (delay per vehicle greater than 45 seconds), except in the Downtown area and on specified intersections near freeway interchanges. Additionally, Objective CIR-4.1, Policy 3, allows for LOS E at identified signalized intersections located near freeway interchanges. The General Plan also accepts the need to balance competing objectives, as stated in Objective CIR-4.1, Policy 4, and some signalized intersections may exceed the established LOS standard due to right-of-way constraints and regional roadway network needs. Livermore does not have an LOS standard for unsignalized intersections.

The City adopted a Traffic Impact Fee (TIF) program in 1988 and updated it most recently in 2004 to charge new development a portion of the cost of transportation improvements (identified in the General Plan) necessary to mitigate the impacts of new development. The Livermore TIF fee on new developments, along with the contribution of identified outside funding sources such as Measure B and federal earmarks, will fully fund the improvements identified. This fee applies to all new developments in Livermore.

2. Impacts and Mitigation Measures

This section identifies potential adverse impacts to transportation and circulation that may result from the Theater and implementation of the Amendments, as well as appropriate mitigation measures, where feasible. Significant impacts are identified according to the significance criteria identified below. The significance criteria are followed by a discussion of the project's potential less-than-significant and significant impacts to transportation and circulation in the area.

a. Criteria of Significance. According to *CEQA Guidelines*, a traffic increase from the project or from cumulative development is considered to be a significant impact if the associated changes to the transportation system conflict with adopted environmental plans or goals of the community, or cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. The *CEQA Guidelines* also include general statements applicable for identifying impacts on parking and alternative modes of travel.

Based on CEQA, as well as ACCMA, the Alameda County Congestion Management Program (CMP) and City of Livermore guidelines and requirements, a set of significance criteria for transportation and circulation impacts has been established for this study. The project would have a significant impact on transportation and circulation if it would:

1. Cause an intersection to operate below its target LOS, as defined by the City's General Plan policies:
 - At a signalized study intersection, the project would cause the level of service to degrade below mid-level D (45 seconds of average control delay per vehicle), except in the Downtown area, near freeway interchanges, or at other select locations exempt by General Plan policy.
 - At a signalized study intersection where the level of service is below mid-level D, the project would cause the total intersection average vehicle delay to increase by one (1) or more seconds.
 - At selected intersections near freeway interchanges the project would cause the level of service to degrade below LOS E. There are 27 such intersections, and they are identified in the City General Plan.
 - At selected intersections near freeway interchanges where the LOS is below E, the project would cause the total intersection average vehicle delay to increase by one (1) or more seconds.
 - At seven intersections (listed below) located at I-580 ramps and along east/west major streets carrying a high percentage of regional cut-through traffic, the established LOS target may be exceeded.

- First Street/N. Mines Road
- Isabel Avenue/Airway Boulevard
- Isabel Avenue/Jack London Boulevard
- Vasco Road/Northfront Road
- Vasco Road/I-580 Eastbound Ramps
- Concannon Boulevard/S. Livermore Avenue
- Holmes Street/Fourth Street

(Note: While Downtown intersections are exempt from LOS targets, feasible improvements, such as additional turn lanes, that balance Downtown Specific Plan development and pedestrian goals with the need to access Downtown and facilitate vehicle traffic flow should be considered at locations exceeding LOS targets.)

2. Cause a mainline or ramp junction defined in the Alameda County Congestion Management Program to deteriorate from LOS E or better to LOS F, or increase the volume-to-capacity ratio on a mainline segment already operating at LOS F by more than 3 percent.
3. Cause a roadway segment on the Metropolitan Transportation System to operate at LOS F or increase the volume-to-capacity ratio by more than 3 percent for a roadway segment that would operate at LOS F without the project.
4. Generates transit ridership that, when added to existing or future ridership, exceeds available or planned system capacity.
5. Hinders or eliminates an existing designated bikeway, or interferes with implementation of a proposed bikeway.
6. Results in unsafe conditions for bicyclists, including unsafe increase in bicycle/pedestrian or bicycle/motor vehicle conflicts.
7. Results in unsafe conditions for pedestrians, including unsafe increase in pedestrian/bicycle or pedestrian/motor vehicle conflicts.
8. Causes normal operations of automobile and truck access to adversely impact the adjacent streets or sidewalks.
9. Provides inadequate sight distance at a project driveway.
10. Provides an inadequate parking supply.

Impacts are discussed in the following section and summarized in Table IV.C-11.

Downtown intersections are exempted from LOS standards per the City General Plan. Through the General Plan process, the City determined that it is not feasible to provide enough lane capacity to achieve LOS D because Downtown Specific Plan goals and objectives, environmental constraints, right-of-way constraints or cut-through traffic volumes would prevent the implementation of improvements to achieve LOS D or better. Even so, this analysis identifies Downtown intersections exceeding the LOS D threshold, and feasible improvements that do not conflict with Downtown Specific Plan goals are identified for consideration.

Table IV.C-11: Summary of Potential Impacts – Transportation and Circulation

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St./S. Livermore Ave. Site	Livermore Village Site	First St./Maple St. Site
Would the Project:				
1. Cause an intersection to operate below its target, as defined by the City’s General Plan policies?	○	● TRANS-1	● TRANS-1	● TRANS-1
2. Cause a mainline or ramp junction defined in the Alameda County Congestion Management program to deteriorate from LOS E or better to LOS F, or increase the v/c ratio on a mainline segment already operating at LOS F by more than three (3) percent?	○	● TRANS-2	● TRANS-2	● TRANS-2
3. Cause a roadway segment on the Metropolitan Transportation System to operate at LOS F or increase the v/c ratio by more than three (3) percent for a roadway segment that would operate at LOS F without the project?	○	○	○	○
4. Generates transit ridership that, when added to existing or future ridership, exceeds available or planned system capacity?	○	○	○	○
5. Hinders or eliminates an existing designated bikeway, or interferes with implementation of a proposed bikeway?	○	○	○	● TRANS-6
6. Results in unsafe conditions for bicyclists, including unsafe increase in bicycle/pedestrian or bicycle/motor vehicle conflicts?	○	○	○	○
7. Results in unsafe conditions for pedestrians, including unsafe increase in pedestrian/bicycle or pedestrian/motor vehicle conflicts?	○ TRANS-3 TRANS-4	○ TRANS-3 TRANS-4	○ TRANS-3 TRANS-5	○ TRANS-3 TRANS-6
8. Causes normal operations of automobile and truck access to adversely impact the adjacent streets or sidewalks?	○ TRANS-11	○ TRANS-7 TRANS-11	○ TRANS-8 TRANS-11	○ TRANS-9 TRANS-11
9. Provides inadequate sight distance at a project driveway?	○	○	○	○
10. Provides an inadequate parking supply?	○ TRANS-10	○ TRANS-10	○ TRANS-10	○ TRANS-10

^a The Amendments are analyzed in this EIR at a “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:

- == No impact
- Less-than-Significant
- Reduced to Less-than-Significant with recommended mitigation
- Significant and Unavoidable
- NA Not Applicable
- TRANS-1, etc. identifies the mitigation measure, if any, that addresses the impact.

Source: Fehr & Peers Associates, 2008.

b. Impact Analysis. The following discussion describes impacts related to transportation and circulation associated with implementation of the Theater (assumed to be developed in the near term and evaluated against existing conditions) and Amendments (assumed to be developed by 2030). As previously noted above, for this EIR the “project conditions” include the potential effects of locating the 2,000-seat Theater at the First Street/South Livermore Avenue site without the realignment of Railroad Avenue. Additional analysis was undertaken to evaluate potential

transportation impacts under existing conditions associated with location of the Theater at either the Livermore Village site or the First Street/Maple Street site and construction of the Amendments plus Theater for the cumulative conditions. This analysis assumes that the Theater would be built in the near term (5 to 10 years) while buildout of all the development anticipated under the Amendments would take place by 2030.

(1) Project Trip Estimates. Traffic projections for the proposed project were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the amount of traffic added to the surrounding roadway system by the proposed project is estimated. In the second step, the general directions of approach and departure are determined. In the third step, the trips are assigned to specific street segments and intersection turning movements.

Trip Generation. The Amendments anticipate and encourage various types of development in the Downtown area. Including existing development anticipated by the Downtown Specific Plan, the Amendments would allow Downtown buildout to comprise of 3,600 residential units, 356,000 square feet of office development, 1,000,000 square feet of commercial development, 300 hotel/bed-and-breakfast rooms, 2,979 movie theater seats, the 500 seat Bankhead Theater, a 2,000-seat Regional Performing Arts Theater, and miscellaneous governmental/service facilities.

Theater Trip Generation. A vehicle occupancy rate was applied to the number of seats of the proposed Theater to determine vehicle trip generation. The vehicle occupancy rate of 2.15 persons per vehicle was determined by surveying a comparable facility (the Leshner Center for the Arts in Walnut Creek, California). The Theater would generate 930 vehicle trips at a sold-out event (2,000 seats/2.15 persons per vehicle). It was assumed that all 930 vehicles would arrive at the Theater during the PM peak hour studied in this analysis.

Amendment Trip Generation. The Livermore Traffic Model was used to determine the additional vehicle trips due to the Amendments (not including the Theater). The model was first employed to determine the vehicle trip generation for the Downtown area without Amendments. The model was then used to determine the vehicle trip generation for the area with Amendments to identify the net new vehicle trips.

As shown in Table IV.C-12, the Amendments (including the Theater) were estimated to generate 342 new AM peak hour and 555 new PM peak hour vehicle trips compared to the buildout of the adopted Downtown Specific Plan.

Trip Distribution. The regional distribution of Theater patrons was estimated based on the existing geographic distribution of households in and around the Tri-Valley area. It is reasonable to assume that residents living closer to the Theater will be more likely to attend events there than those who live farther away, both because of convenience as well as the presence of competing performance venues in San Jose and San Francisco.

Theater Trip Distribution. Table IV.C-13 presents the distribution of the total number of households located within a 25-mile radius of the Theater, representing about a 30-minute drive time to the Theater. The 25-mile radius was divided into four regions: the Tri-Valley region (Livermore, Pleasanton, Dublin, San Ramon, and Danville), the 10- to 15-mile region (excluding the Tri-Valley area), the 15- to 20-mile region, and the 20- to 25-mile region. Adjustments were made to reflect the

Table IV.C-12: Proposed Project Vehicle Trip Generation

Land Use	AM Peak Hour	PM Peak Hour
Downtown Specific Plan Buildout with Amendments (excluding 2,000 Seat Theater)	2,925	4,953
2,000 Seat Theater	0	930
Total – Downtown Specific Plan Buildout with Amendments	2,925	5,883
Downtown Specific Plan Buildout Without Amendments (excluding 1,500 Seat Theater)	2,583	4,630
1,500 Seat Theater	0	698
Total – Downtown Specific Plan Buildout Without Amendments	2,583	5,328
Net New Vehicle Trips	342	555

Source: Fehr & Peers, 2008.

Table IV.C-13: Theater Vehicle Trip Distribution

Location	Household Distribution ^a	Reduction Factor	Regional Trip Distribution
Tri-Valley region ^b	22%	-	59%
10-15 mile region ^c	9%	-	24%
15-20 mile region	56%	0.75	14%
20-25 mile region	13%	0.75	3%

^a Household distribution represents the percent of total households in region within each sub-region.^b The Tri-Valley region represents Livermore, Pleasanton, Dublin, San Ramon, and Danville.^c The 10 to 15 mile region excludes The Tri-Valley region

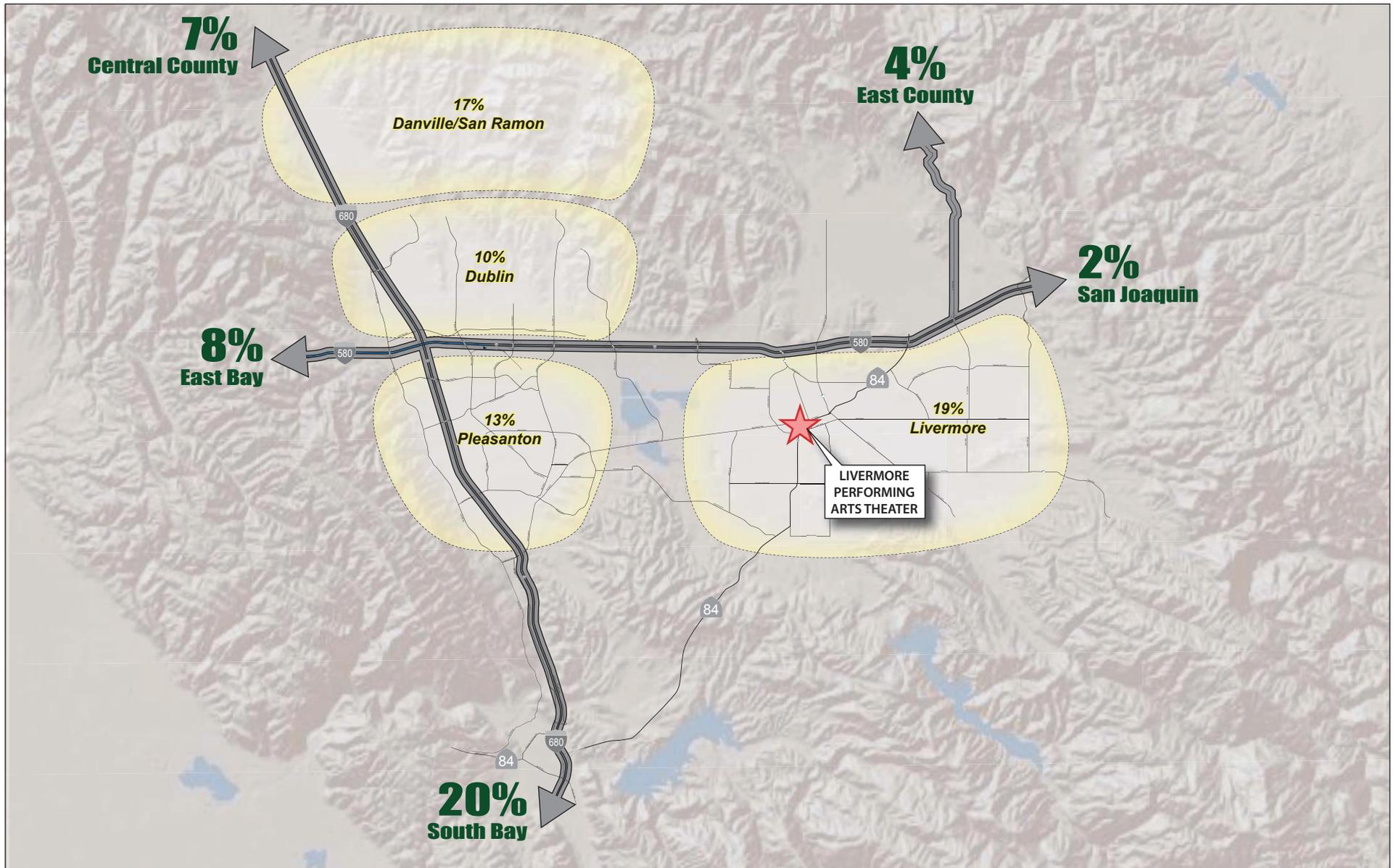
Source: Fehr & Peers, 2008.

relative location of competing facilities and the evening traffic congestion on both I-580 and I-680 that could deter patrons living further away from traveling to Livermore. To account for these factors, a 75 percent reduction was applied to households located more than 15 miles away from the Theater. The resulting regional Theater trip distribution is visually presented on Figures IV.C-5.

Amendments Trips Distribution. The Livermore Traffic Model was used to distribute vehicle trips associated with the Amendments, excluding the Theater.

Trip Assignment. New trips generated by the Theater were manually assigned to the roadway network. The assigned Theater trips are shown on Figures IV.C-6 and IV.C-6b. The trips associated with the Amendments were assigned to the road system by the Livermore Traffic Model.

(2) Existing Plus Theater Intersection Operations (Criteria 1). To determine the service levels for existing plus Theater conditions (at the First Street/South Livermore Avenue Theater site), the assigned Theater trips were added to the existing traffic volumes. The resulting volumes and the lane configurations shown on Figure IV.C-7a and Figure IV.C-7b were used in LOS calculations to determine intersection operations for existing plus Theater conditions. Existing plus Theater conditions are summarized in Table IV.C-14 along with the existing conditions for comparison. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).



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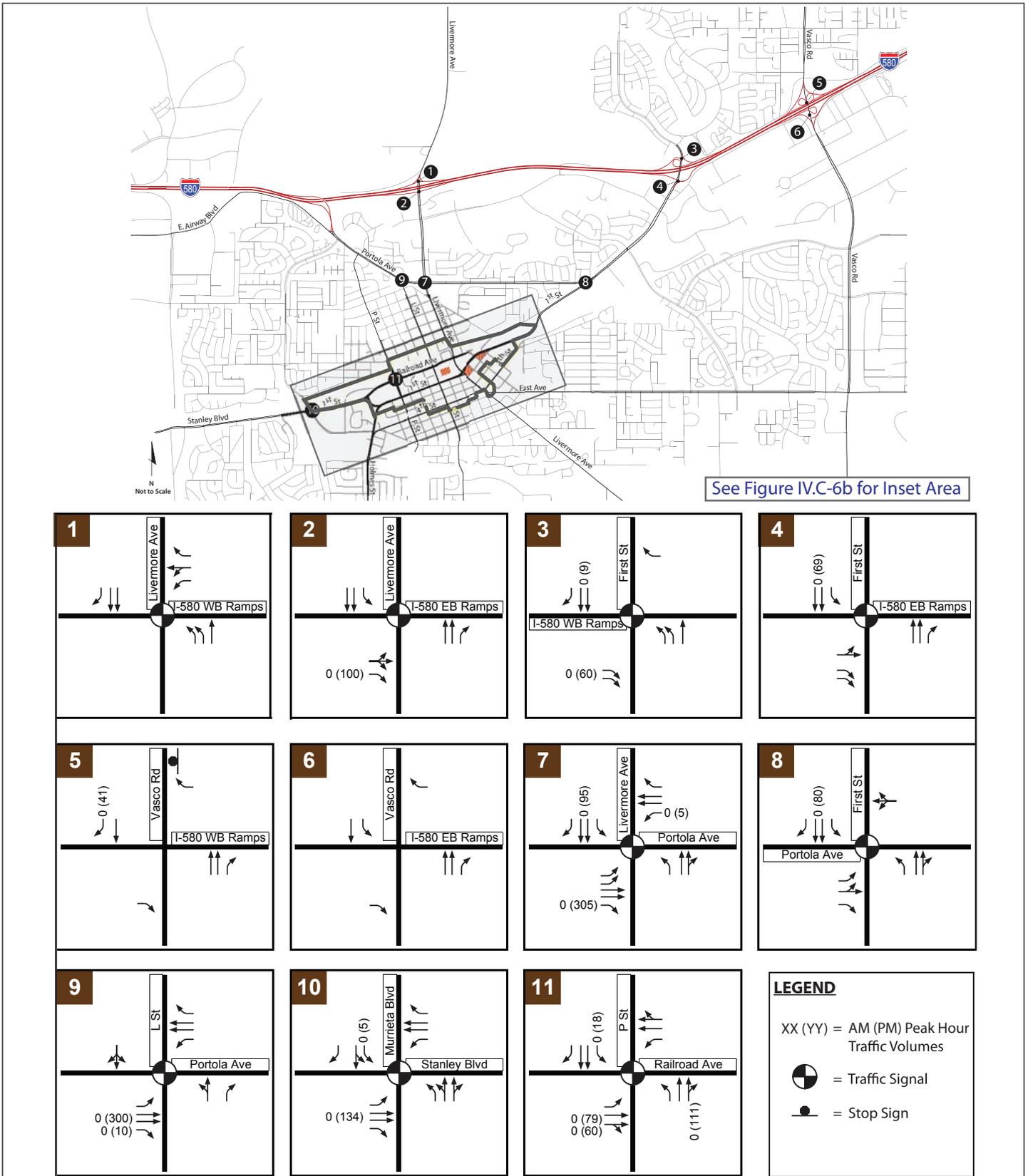
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FIGURE IV.C-5

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR*
Regional Theater Vehicle Traffic Distribution

SOURCE: FEHR & PEERS, NOVEMBER 2008

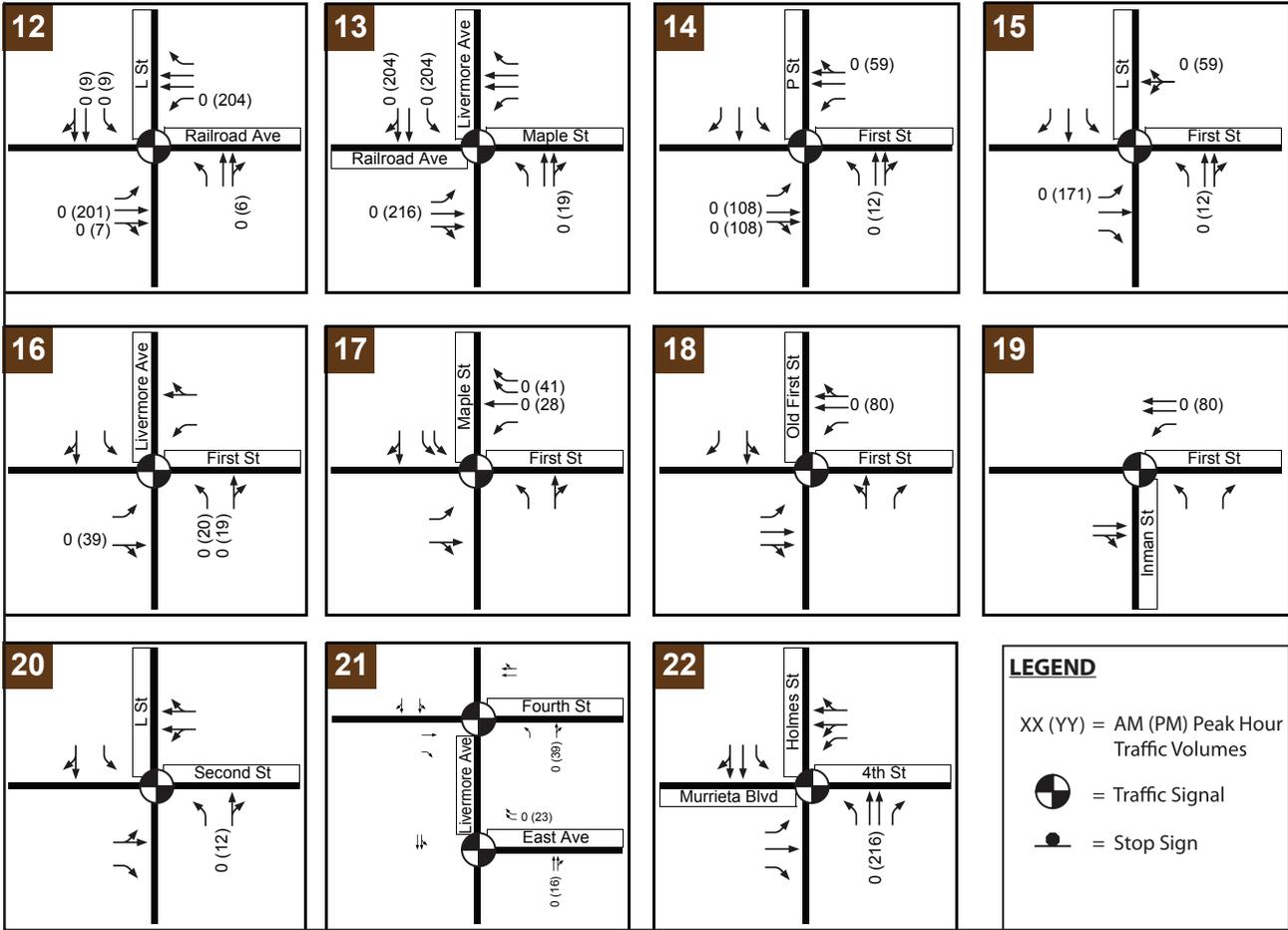
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FIGURE IV.C-6a

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Theater Vehicle Trips*

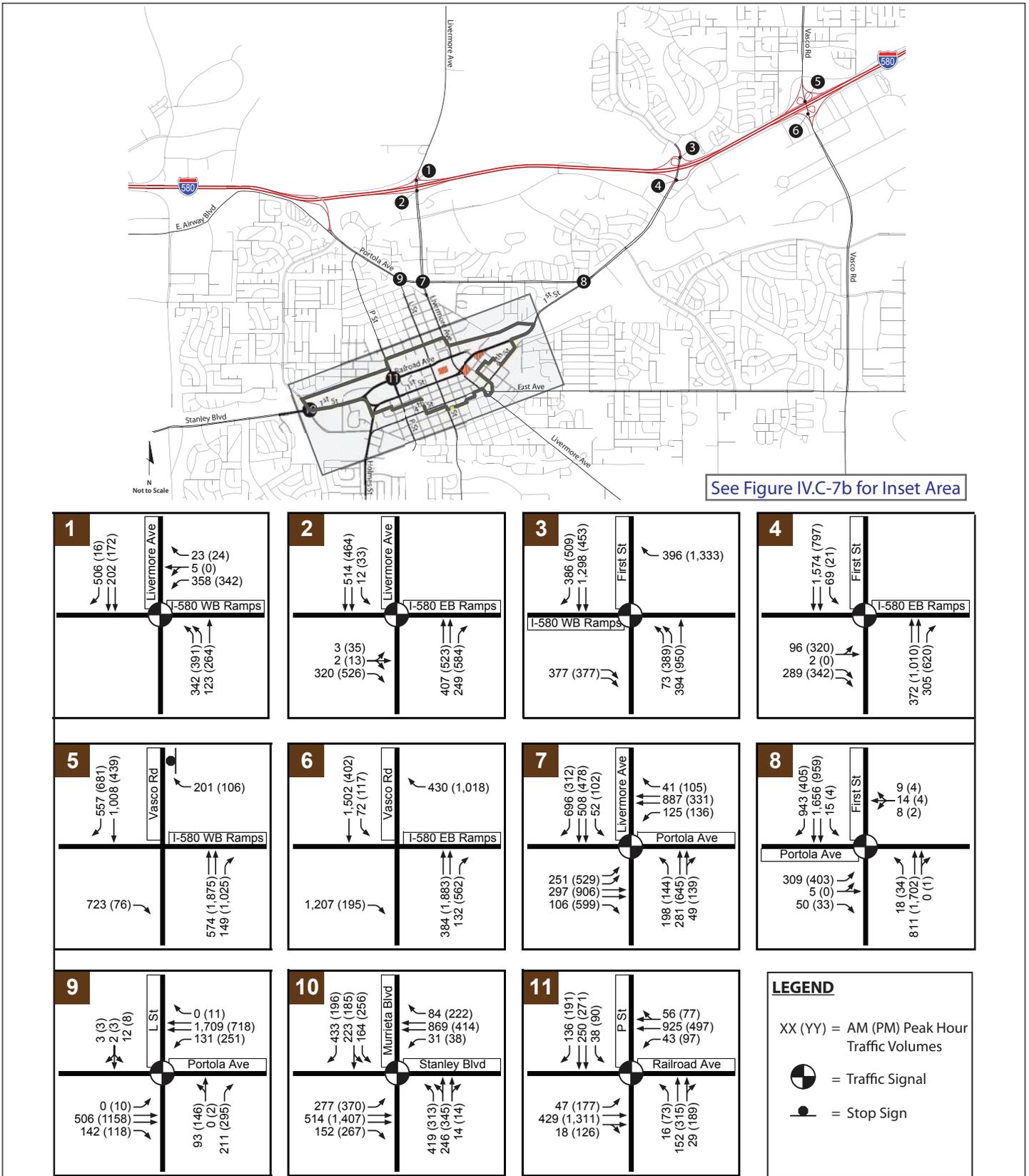


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FIGURE IV.C-6b

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Theater Vehicle Trips*

SOURCE: FEHR & PEERS, NOVEMBER 2008
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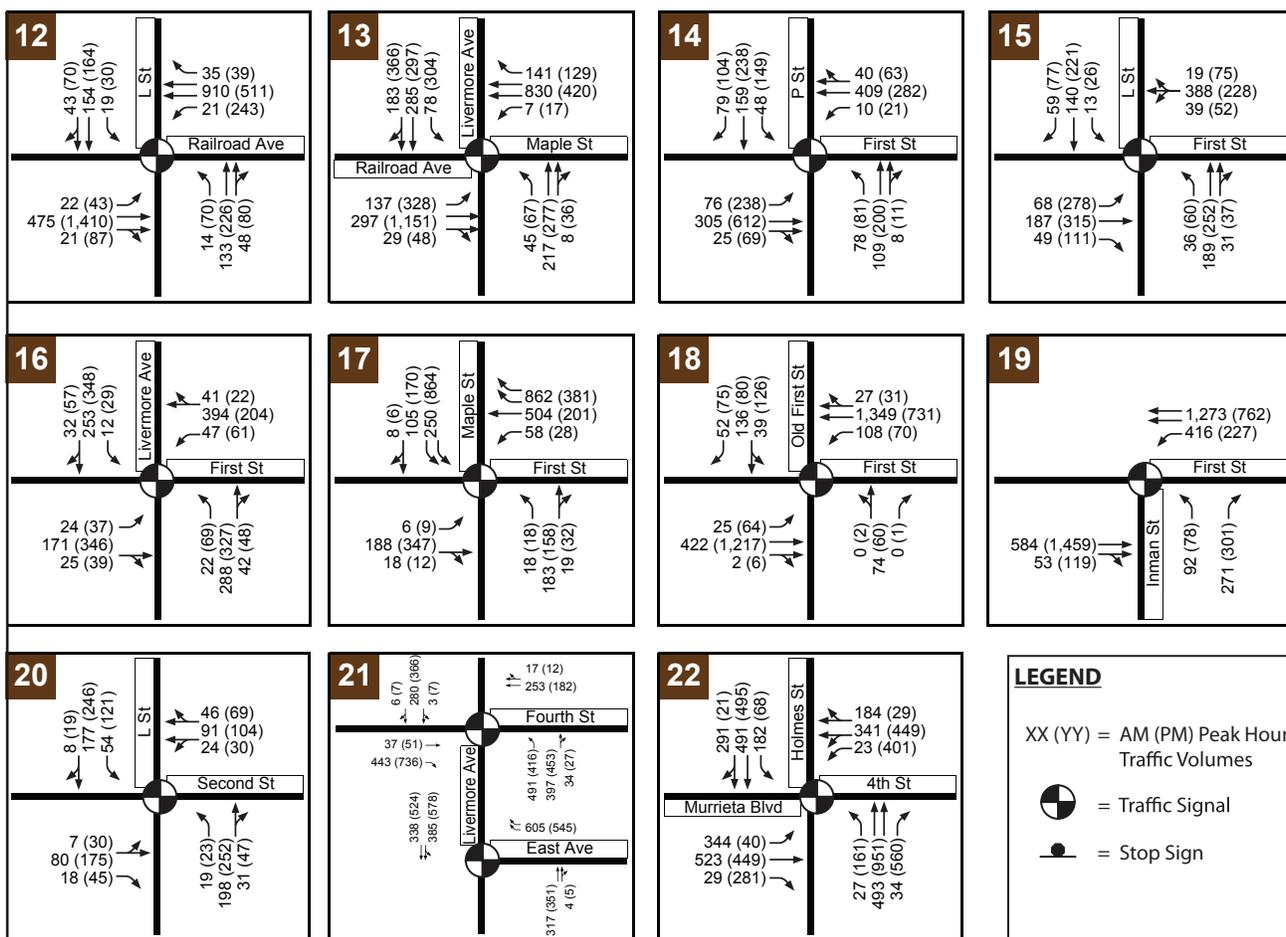
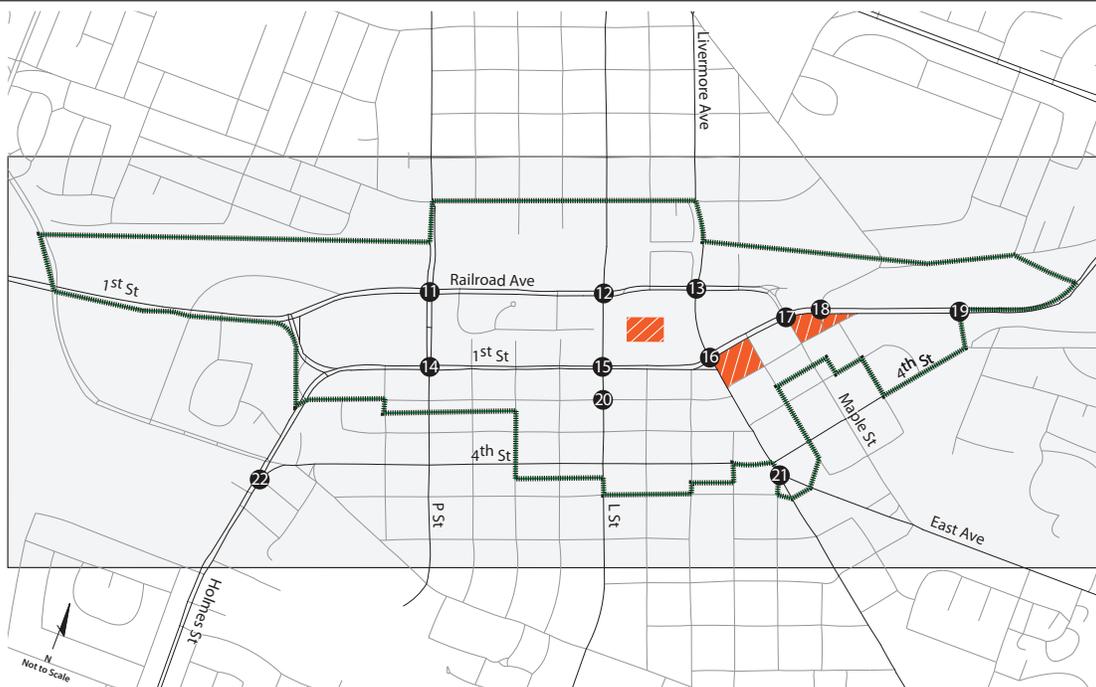
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FIGURE IV.C-7a

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Existing Plus Theater Peak Hour
 Volumes and Intersection Geometries*

SOURCE: FEHR & PEERS, NOVEMBER 2008

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FIGURE IV.C-7b

Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Existing Plus Theater Peak Hour
Volumes and Intersection Geometries

Table IV.C-14: Existing Plus Theater Conditions Intersection Level of Service

Intersection		LOS Target ^a	Control ^b	Peak Hour	Existing		Existing Plus Theater	
					Delay ^c (sec)	LOS	Delay ^c (sec)	LOS
1	I-580 Westbound Ramps/Livermore Avenue	E	Signal	AM PM	21 32	C C	21 32	C C
2	I-580 Eastbound Ramps/Livermore Avenue	E	Signal	AM PM	18 13	B B	18 15	B B
3	I-580 Westbound Ramps/First Street	E	Signal	AM PM	12 12	B B	12 12	B B
4	I-580 Eastbound Ramps/First Street	E	Signal	AM PM	15 15	B B	15 15	B B
5	I-580 Westbound Ramps/Vasco Road	none	SSS	AM PM	>100 28	F D	>100 28	F D
6	I-580 Eastbound Ramps/Vasco Road	none	No Control	AM PM	-	-	-	-
7	Portola Avenue/Livermore Avenue	Mid D	Signal	AM PM	37 34	D D	37 33	D C
8	Portola Avenue/First Street	Mid D	Signal	AM PM	23 19	C B	23 19	C B
9	Portola Avenue/L Street	Mid D	Signal	AM PM	13 24	B C	13 24	B C
10	Stanley Boulevard/Murrieta Boulevard	Mid D	Signal	AM PM	47 50	D D	47 51	D D
11	Railroad Avenue/P Street	Exempt	Signal	AM PM	19 26	B C	19 30	B C
12	Railroad Avenue/L Street	Exempt	Signal	AM PM	17 20	B C	17 42	B D
13	Railroad Avenue/Livermore Avenue	Exempt	Signal	AM PM	25 25	C C	25 39	C D
14	First Street/P Street	Exempt	Signal	AM PM	26 31	C C	26 35	C C
15	First Street/L Street	Exempt	Signal	AM PM	31 29	C C	31 30	C C
16	First Street/Livermore Avenue	Exempt	Signal	AM PM	29 37	C C	29 37	C C
17	First Street/Maple Street	Exempt	Signal/ Stop	AM PM	14 32	B C	14 16	B C
18	First Street/Old First Street	Exempt	Signal	AM PM	17 22	B B	17 22	B B
19	First Street/Inman Street	Exempt	Signal	AM PM	15 19	B B	15 19	B B
20	Second Street/L Street	Exempt	Signal	AM PM	17 21	B C	17 21	B C
21	Fourth Street/East Avenue/Livermore Avenue ^d	Exempt	Signal	AM PM	35 45	C D	35 48	C D
22	Murrieta Boulevard/Holmes Street	Mid D	Signal	AM PM	45 38	D D	45 40	D D

Deficient intersections indicated in **bold**.

^a LOS targets reflect the Livermore General Plan, Objective CIR-4.1, Policy 1, Policy 3, Policy 4.

^b Signal = Signalized intersection, SSS = Side street stop-controlled intersection

^c For side-street stop-controlled intersections, delay is for worst movement (in seconds per vehicle). For signalized intersections, delay for all movements is presented. Methods are consistent with 2000 *Highway Capacity Manual*.

^d Intersection analyzed with SimTraffic software.

Source: Fehr & Peers, 2008.

As shown in Table IV.C-14, one study intersection operates below the City's General Plan target:

- Stanley Boulevard/Murrietta Boulevard (#10) currently operates at LOS D with 47 and 50 seconds of delay in the AM and PM peak hour, respectively. The Theater would increase the PM peak hour delay from 50 to 51 seconds. The target is LOS D with 45 seconds of delay.

Impact TRANS-1: Construction of the Theater in the Downtown would significantly affect operations of the Stanley Boulevard/Murrietta Boulevard (#10) intersection under existing plus Theater conditions. (S)

The addition of Theater traffic would result in operations at the Stanley Boulevard/Murrietta Boulevard intersection continuing at LOS D with an increase in delay of 1 second during the PM peak hour. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure TRANS-1: Widen Stanley Boulevard to six lanes through the Murrieta Boulevard intersection as defined in the City General Plan. This action will improve operations by maintaining LOS D but reducing the delay from greater than 45 seconds to less than 45 seconds. While this measure is identified in the city's Traffic Impact Fee program and is identified in the Capital Improvement Program, it is likely to be constructed several years after the Theater is constructed. During this interim time period, the impact would remain significant and unavoidable. (SU)

The City does not have a General Plan target LOS for unsignalized intersections such as the I-580 Westbound Ramps/Vasco Road (#5) intersection. The LOS F noted in Table IV.C-14 reflects the service level for the stop-sign controlled approach. The majority of the traffic traversing this intersection is not required to stop which reflects LOS A.

Downtown intersections are exempted from LOS standards per the City General Plan. Through the General Plan process, the City determined that it is not feasible to provide enough lane capacity to achieve LOS D at all Downtown intersections because Downtown Specific Plan goals and objectives, environmental constraints, right-of-way constraints or cut-through traffic volumes would prevent the implementation of improvements to achieve LOS D or better. Even so, this analysis identifies Downtown intersections exceeding the LOS D threshold, and feasible improvements that do not conflict with Downtown Specific Plan goals are identified for consideration. Only one Downtown intersection is expected to operate below the LOS D threshold under existing plus Theater conditions.

- Fourth Street/East Avenue/Livermore Avenue Boulevard (#21) intersection currently operates at LOS D with 45 seconds of delay in the PM peak hour. The Theater traffic would increase delay to 48 seconds.

Alternatives Intersection Operations. As noted previously, three alternative sites are considered for the Theater location. The differences in vehicle trip distribution among the alternative Theater sites are negligible. Therefore, as determined by this analysis, there are no significant differences between the Theater location alternatives with respect to traffic operations at the study intersections outside the Downtown area including intersections, I-580, and the MTS roadways.

Railroad Avenue Realignment at First Street. Locating the Theater at the First Street/Maple Street site would require the realignment of Railroad Avenue and First Street to provide a parcel

sufficiently large enough for the 2,000 seat Theater. Three existing structures and the abandonment of a portion of First Street would be needed to create the Theater parcel. Realigned Railroad Avenue would intersect First Street at Old First Street. Refer to Figure III-4 for an illustration of the realignment. The realignment is not predicated on the Theater being located at the First Street/Maple Street site. Rather it could occur whether or not the Theater is constructed or the Theater is located at one of the alternative sites.

The effects on traffic with the realignment would be confined to the First Street/Maple Street and First Street/Old First intersections where traffic was re-assigned to account for the realignment. The realignment is not expected to impact travel patterns through the Downtown. The AM and PM peak hour traffic volumes at the First Street/Maple Avenue and First Street/Old First intersection with and without the realignment are shown on Figure IV.C-8.

Realigning Railroad Avenue and First Street would provide a direct route onto Railroad Avenue for vehicles to travel through the Downtown with the added benefit of providing easier access to the existing parking garage on Railroad Avenue for drivers entering the Downtown from the First Street corridor. The realignment extends the pedestrian-orientation of First Street further east, beyond Maple Street, enhancing the pedestrian experience around the existing movie theater. Table IV.C-15 presents the key intersection LOS without and with the Railroad Avenue realignment. The resulting intersections would operate at LOS C during the AM and PM peak hours. Therefore, the realignment of Railroad Avenue and First Street would result in a less-than-significant impact on intersection operations. The realignment would not affect operations at other study intersections.

Table IV.C-15: Existing Plus Theater Conditions Intersection Level of Service (Without and With Railroad Avenue Realignment)

Intersection	LOS Target ^a	Control ^b	Peak Hour	Existing Plus Theater (No Realignment)		Existing Plus Theater (Plus Realignment)	
				Delay ^c (sec)	LOS	Delay ^c (sec)	LOS
17 First Street/Maple Street	Exempt	Signal/AWS	AM PM	14 32	B C	23 19	C C
18 First Street/Old First Street First Street/Old First Street/Railroad Avenue	Exempt	Signal	AM PM	17 22	B B	31 32	C C

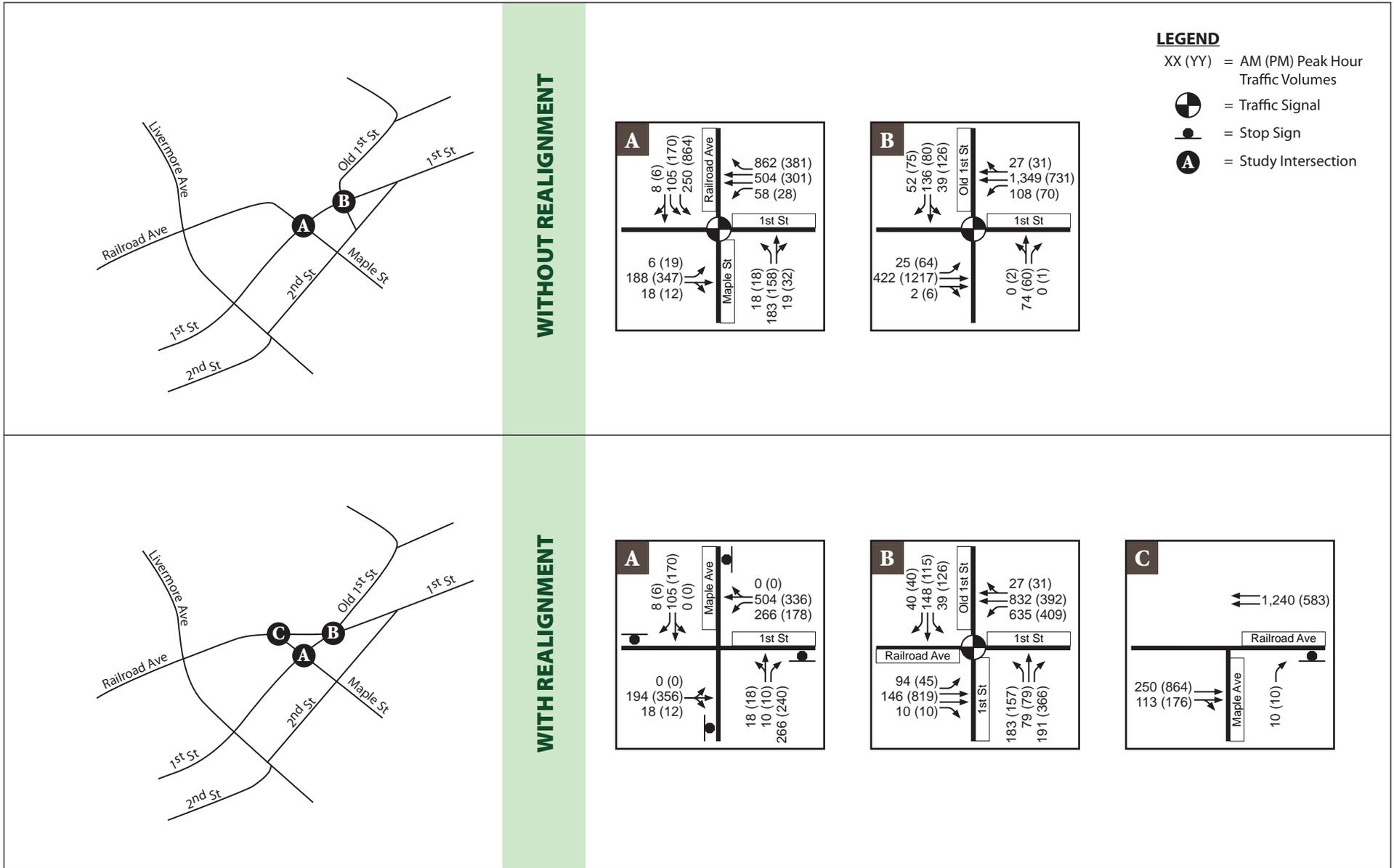
Deficient intersections indicated in **bold**.

^a LOS targets reflect the Livermore General Plan, Objective CIR-4.1, Policy 1, Policy 3, Policy 4.

^b Signal = Signalized intersection, AWS = Allway stop-controlled intersection

^c For signalized and all-way stop-controlled intersections, delay for all movements is presented. Methods are consistent with 2000 *Highway Capacity Manual*.

Source: Fehr & Peers, 2008.



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SOURCE: FEHR & PEERS, DECEMBER 2008

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FIGURE IV.C-8

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Existing Plus Theater Trips
 With and Without Railroad Avenue Realignment*

(3) Future (Year 2030) Plus Project Intersection Operations (Criteria 1). The Livermore Traffic Model was used to develop the 2030 traffic forecast (with the Amendments and excluding the Theater). The assigned Theater trips were then added to the forecasts to obtain future plus Theater traffic volumes. Therefore, the proposed project for the following cumulative condition (Year 2030) analysis is considered to be the buildout of the Amendments and the Theater. The resulting volumes and lane configurations shown on Figure IV.C-9a and Figure IV.C-9b were used in LOS calculations to determine intersection operations for 2030 future plus project conditions. The results are summarized in Table IV.C-16 along with the future conditions without the project for comparison. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

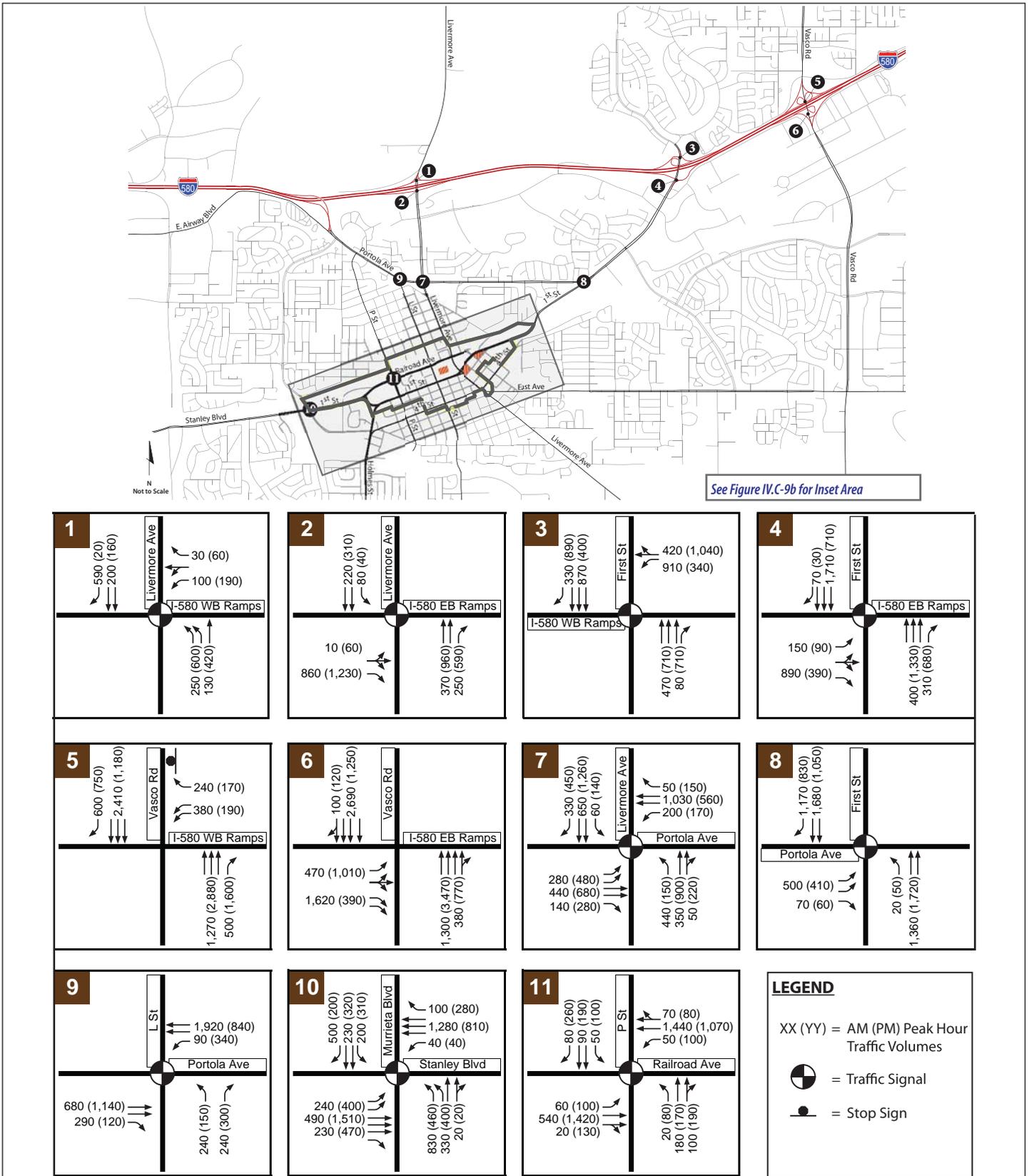
Table IV.C-16 shows two study intersections (Portola Avenue/Livermore Avenue #7, and Stanley Boulevard/Murrieta Boulevard #10) would operate below the City's General Plan target, but that the added project traffic does not result in a significant impact at either intersection.

The City General Plan, Objective CIR-4.1, Policy 1, established that the lowest acceptable LOS at a signalized intersection is midlevel LOS D (delay per vehicle greater than 45 seconds), except in the Downtown area and on specified intersections near freeway interchanges. Additionally, Objective CIR-4.1, Policy 3, allows for LOS E at identified signalized intersections located near freeway interchanges. The General Plan also accepts the need to balance competing objectives, as stated in Objective CIR-4.1, Policy 4, and some signalized intersections may exceed the established LOS standard due to right-of-way constraints and regional roadway network needs.

Downtown intersections are exempted from LOS standards per the City General Plan. Through the General Plan process, the City determined that it is not feasible to provide enough lane capacity to achieve LOS D at all Downtown intersections because Downtown Specific Plan goals and objectives, environmental constraints, right-of-way constraints or cut-through traffic volumes would prevent the implementation of improvements to achieve LOS D or better. Even so, this analysis identifies Downtown intersections exceeding the Mid-LOS D threshold, and feasible improvements that do not conflict with Downtown Specific Plan goals are identified for consideration.

- Portola Avenue/Livermore Avenue (#7) would operate at LOS F with 145 seconds of delay in the AM peak hour. Implementation of the project would cause a redistribution of Downtown traffic and improve the delay to 120 seconds. The target is LOS D with 45 seconds of delay.

Recommendation – Construct a second northbound to westbound left-turn lane for traffic turning left from Livermore Avenue onto Portola Avenue. The additional lane requires widening Livermore Avenue, south of Portola Avenue, along the public park frontage. After implementation of this measure, the intersection would operate at LOS D in the AM and PM peak hours.



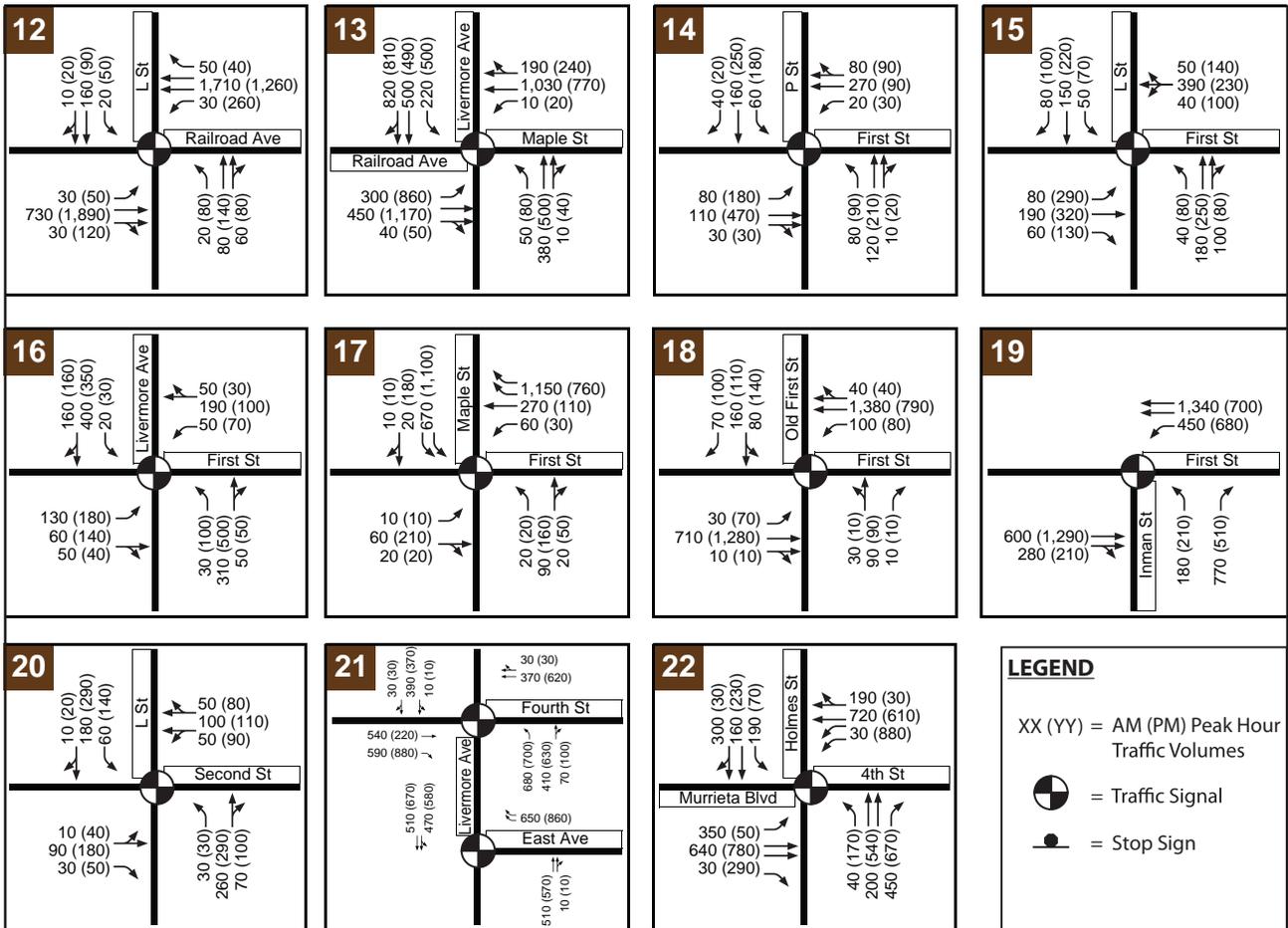
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FIGURE IV.C-9a

*Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 2030 Plus Project Peak Hour
 Intersection Volumes and Geometries*

SOURCE: FEHR & PEERS, NOVEMBER 2008

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LSA

FIGURE IV.C-9b

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
2030 Plus Project Peak Hour
Intersection Volumes and Geometries*

SOURCE: FEHR & PEERS, NOVEMBER 2008

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Table IV.C-16: Future (2030) Plus Project Intersection Level of Service

	Intersection	LOS Target ^a	Control ^b	Peak Hour	2030 Without Project		2030 Plus Project	
					Delay ^c (sec)	LOS	Delay ^c (sec)	LOS
1	I-580 Westbound Ramps/Livermore Avenue	E	Signal	AM PM	11 15	B B	11 16	B B
2	I-580 Eastbound Ramps/Livermore Avenue	E	Signal	AM PM	27 23	C C	28 25	C C
3	I-580 Westbound Ramps/First Street	E	Signal	AM PM	24 23	C C	23 23	C C
4	I-580 Eastbound Ramps/First Street	E	Signal	AM PM	21 11	C B	21 11	C B
5	I-580 Westbound Ramps/Vasco Road	none	Signal	AM PM	7 22	A C	8 22	A C
6	I-580 Eastbound Ramps/Vasco Road	none	No Control	AM PM	31 46	C D	31 45	C D
7	Portola Avenue/Livermore Avenue	Mid D	Signal	AM PM	> 100 39	F D	> 100 45	F D
8	Portola Avenue/First Street	Mid D	Signal	AM PM	15 13	B B	15 11	B B
9	Portola Avenue/L Street	Mid D	Signal	AM PM	12 44	B D	13 41	B D
10	Stanley Boulevard/Murrieta Boulevard	Mid D	Signal	AM PM	72 47	E D	64 46	E D
11	Railroad Avenue/P Street	Exempt	Signal	AM PM	22 27	C C	24 28	C C
12	Railroad Avenue/L Street	Exempt	Signal	AM PM	27 63	C E	21 85	C F
13	Railroad Avenue/Livermore Avenue	Exempt	Signal	AM PM	70 > 100	E F	95 > 100	F F
14	First Street/P Street	Exempt	Signal	AM PM	34 33	C C	32 31	C C
15	First Street/L Street	Exempt	Signal	AM PM	29 33	C C	33 38	C D
16	First Street/Livermore Avenue	Exempt	Signal	AM PM	30 35	C C	30 34	C C
17	First Street/Maple Street	Exempt	Signal	AM PM	40 32	D C	44 28	D C
18	First Street/Old First Street	Exempt	Signal	AM PM	22 25	C C	20 26	B C
19	First Street/Inman Street	Exempt	Signal	AM PM	35 80	C F	33 85	C F
20	Second Street/L Street	Exempt	Signal	AM PM	19 23	B C	18 25	B C
21	Fourth Street/East Avenue/Livermore Avenue ^d	Exempt	Signal	AM PM	> 100 > 100	F F	> 100 > 100	F F
22	Murrieta Boulevard/Holmes Street	Mid D	Signal	AM PM	41 43	D D	38 44	D D

Deficient intersections indicated in **bold**.

^a LOS targets reflect the Livermore General Plan, Objective CIR-4.1, Policy 1, Policy 3, Policy 4.

^b Signal = Signalized intersection, SSS = Side street stop-controlled intersection

^c For side-street stop-controlled intersections, delay is for worst movement (in seconds per vehicle). For signalized intersections, delay for all movements is presented. Methods are consistent with 2000 *Highway Capacity Manual*.

^d Intersection analyzed with SimTraffic software.

Source: Fehr & Peers, 2008.

- Stanley Boulevard/Murrietta Boulevard (#10) would operate at LOS E with 72 seconds of delay in the AM peak hour. The project would cause a redistribution of Downtown traffic and improve the delay to 64 seconds. The PM peak hour operations would be LOS D with 46 seconds of delay with the project, and 47 seconds of delay without the project. The target is LOS D with 45 seconds of delay.

Recommendation – None. In addition to the planned improvements identified in the Traffic Impact Fee Program and the Capital Improvement Program, a second eastbound to northbound left-turn lane for traffic turning left from Stanley Boulevard onto Murrieta Boulevard would need to be constructed. The additional lane requires widening Stanley Boulevard resulting in substantial right-of-way acquisition including commercial and residential properties, and may not be a desirable improvement due to the high cost for relatively little benefit.

As noted previously, Downtown intersections are exempted from LOS standards per General Plan policy. Even so, Downtown intersections exceeding the LOS D threshold should be identified, and feasible improvements that do not conflict with Downtown Specific Plan goals should be considered. This analysis identifies the following four intersections and provides recommendations for the City's consideration. The following Downtown intersections are expected to operate below the LOS D target.

- Railroad Avenue/L Street (#12) would operate at LOS E with 63 seconds of delay in the PM peak hour. Implementation of the project would cause the operations to deteriorate to LOS F with 85 seconds of delay.

Recommendation – None. Railroad Avenue would need to be widened to a six lane cross-section through the Downtown in order to provide adequate vehicle capacity in the corridor to accommodate expected demands. Substantial right-of-way purchase would be necessary along the corridor through Downtown to accommodate a six-lane cross-section. A six lane cross section through the Downtown would conflict with General Plan and Downtown Specific Plan policies which support walking in the Downtown. For these reasons additional capacity is not recommended along the Railroad Avenue corridor.

- Railroad Avenue/Livermore Avenue (#13) would operate at LOS E with 70 seconds of delay in the AM peak hour. Implementation of the project would reduce operations to LOS F with 95 seconds of delay. The PM peak hour operations would be LOS F with 152 seconds of delay without the Amendments, and 161 seconds with the project.

Recommendation – Restripe southbound Livermore Avenue at Railroad Avenue to provide one left-turn lane, one through lane, and one right-turn lane. Change the signal operation so that the southbound to westbound right-turn movement has a green light at the same time as the eastbound to northbound left-turn movement. Widen Livermore Avenue between the railroad tracks and Railroad Avenue to provide a second left-turn lane at Railroad Avenue. (Note: This would require right-of-way acquisition on both sides of Livermore Avenue between the railroad tracks and the Railroad Avenue intersection. In addition, the landscaping and sidewalks along this road segment would need to be redesigned.) While this recommendation reduces vehicle delay, the overall LOS remains the same during the AM and PM peak hours. A six-lane cross-section on Railroad Avenue is needed to improve the LOS grade to D.

- First Street/Inman Street (#19) would operate at LOS F with 80 seconds of delay in the PM peak hour. Implementation of the project would cause the operations to deteriorate to LOS F with 85 seconds of delay.

Recommendation – Construct a second westbound to southbound left-turn lane on First Street for traffic turning onto Inman Street. This would require widening Inman Street from two-lanes to four-lanes. In addition, traffic signals may be needed at the Fourth Street/Inman Street, Fourth Street/Cowboy Alley, and Fourth Street/Maple Street intersections which are currently controlled by stop signs on all approaches. These intersections should be evaluated periodically to determine if they meet Caltrans warrants for Traffic Signal installations. After implementation of this measure, the intersection would operate at LOS C and LOS D in the AM and PM peak hours, respectively.

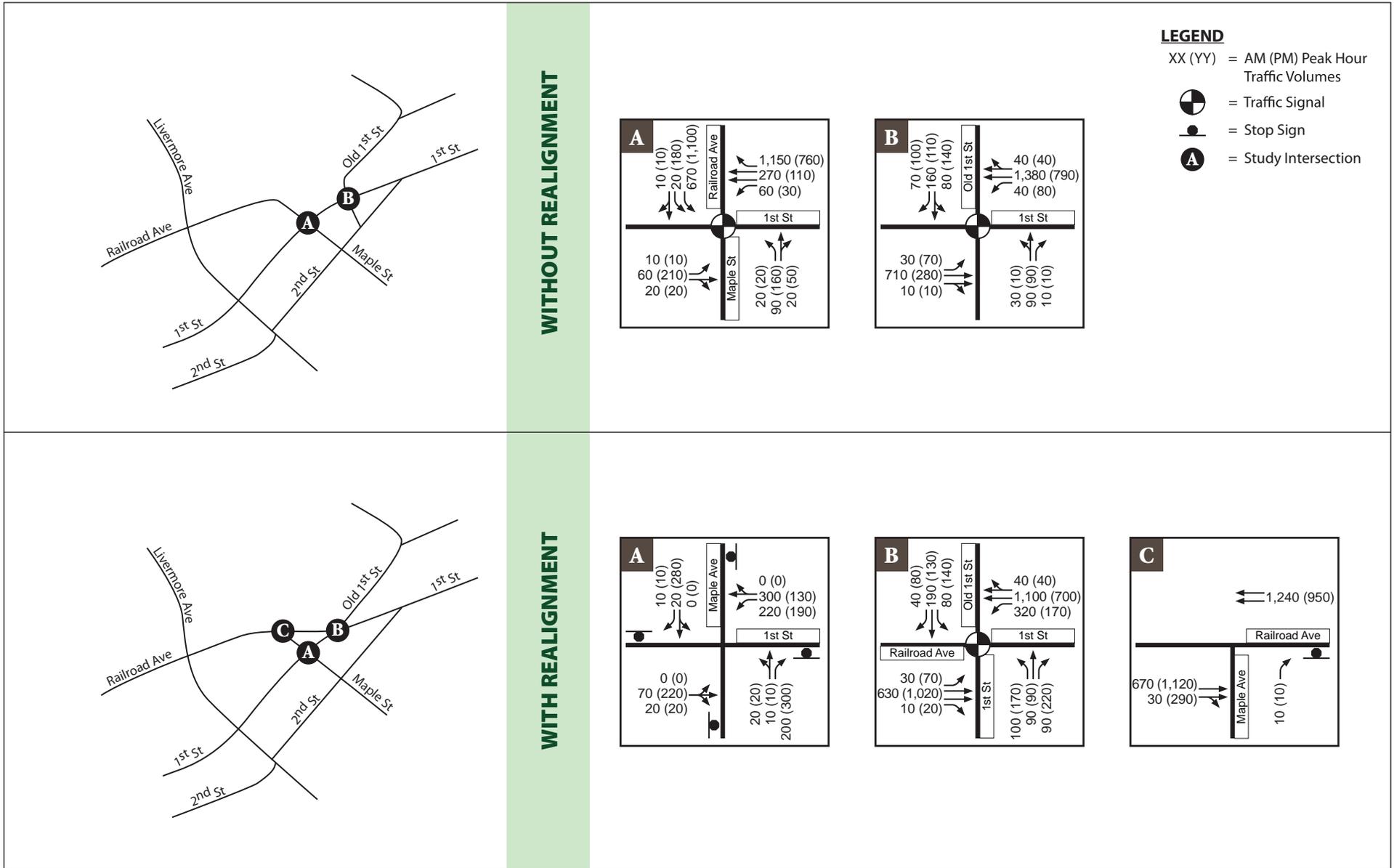
- Fourth Street/East Avenue/Livermore Avenue (#21) would operate at LOS F in the AM peak hour without or with the project. The PM peak hour operations would also be LOS F. The analysis methodology does not accurately measure the seconds of delay at this intersection.

Recommendation – None. All road approaches to this intersection carry substantial amounts of traffic. The intersection's traffic signal system is designed to accommodate this traffic to the greatest extent possible, given the lane geometric constraints. No feasible measures have been identified (to date) to improve traffic flow through the intersection. Given the skewed road alignments and traffic patterns, additional lanes would not improve traffic flow. Road realignment to direct traffic away from the area would necessitate substantial right-of-way that would impact residential neighborhoods. A two-lane roundabout, while it would accommodate the traffic volumes, would require purchasing several businesses and residential properties.

Future Alternative Sites Intersection Operations. As noted previously, the differences in vehicle trip distribution among the alternative Theater sites are negligible. Therefore, as determined by this analysis, there are no significant differences between the alternative sites with respect to traffic operations at the study intersections outside the Downtown area including intersections, I-580, and the MTS roadways in the future year condition.

Future Railroad Avenue Realignment at First Street. Locating the Theater at the First Street/Maple Street site would require the realignment of Railroad Avenue and First Street. The realignment would be optional if the Theater were located at either the First Street/South Livermore Avenue site or the Livermore Village site. The effects on traffic with the realignment would be confined to the First Street/Maple Street and First Street/Old First Street intersections where traffic was re-assigned to account for the realignment. Based on the analysis, the realignment is not expected to impact travel patterns through the Downtown in the future year condition. The future AM and PM peak hour traffic volumes at the First Street/Maple Avenue and First Street/Old First intersection with and without the realignment are shown on Figure IV.C-10.

Realigning Railroad Avenue and First Street would provide a direct route onto Railroad Avenue for vehicles to travel through the Downtown with the added benefit of providing easier access to the existing parking garage on Railroad Avenue for drivers entering the downtown from the First Street corridor. Table IV.C-17 presents the future key intersection LOS without and with the Railroad Avenue realignment. The resulting intersections would operate at LOS C (or better) during the AM and PM peak hours. Therefore, the realignment of Railroad Avenue and First Street would result in a less-than-significant impact on intersection operations. The realignment would not affect operations at other study intersections.



LEGEND
 XX (YY) = AM (PM) Peak Hour Traffic Volumes
 = Traffic Signal
 = Stop Sign
 = Study Intersection

LSA

FIGURE IV.C-10

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR 2030 With Project With and Without Railroad Avenue Realignment

NOT TO SCALE

Table IV.C-17: Future (2030) Conditions Intersection Level of Service (Without and With Railroad Avenue Realignment)

Intersection	LOS Target ^a	Control ^b	Peak Hour	Future (2030) Plus Project (No Realignment)		Future (2030) Plus Project (Plus Realignment)	
				Delay ^c (sec)	LOS	Delay ^c (sec)	LOS
17 First Street/Maple Street	Exempt	Signal/AWS	AM	44	D	11	B
			PM	28	C	28	C
18 First Street/Old First Street First Street/Old First Street/Railroad Avenue	Exempt	Signal	AM	20	B	29	C
			PM	26	C	15	B

Deficient intersections indicated in **bold**.

^a LOS targets reflect the Livermore General Plan, Objective CIR-4.1, Policy 1, Policy 3, Policy 4.

^b Signal = Signalized intersection, AWS = Allway stop-controlled intersection

^c For signalized and all-way stop-controlled intersections, delay for all movements is presented. Methods are consistent with 2000 *Highway Capacity Manual*.

Source: Fehr & Peers, 2008.

(4) Existing and Future Freeway Operations (Criteria 2). To determine the I-580 mainline segment service levels for existing plus Theater conditions, the assigned Theater trips were added to the existing traffic volumes. The resulting volumes were used in LOS calculations to determine freeway operations for existing plus Theater conditions. Existing plus Theater conditions are summarized in Table IV.C-18 along with the existing conditions for comparison. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

As shown in Table IV.C-18, all I-580 mainline and ramp junction operations will be LOS E or better, except the Eastbound I-580 Off-Ramp at Portola Avenue. This ramp junction operates at LOS E currently and would deteriorate to LOS F with the Theater traffic.

Impact TRANS-2: Construction of the Theater in the Downtown would significantly affect operations of the Eastbound I-580 Off-Ramp at Portola Avenue under existing plus Theater conditions. (S)

The addition of Theater traffic and would result in operations at the Eastbound I-580 Off-Ramp at Portola Avenue to deteriorate from LOS E to LOS F during the PM peak hour. This is considered a temporary impact until such time that the Isabel Interchange (a committed project as described previously) is constructed and the Portola Interchange is removed from the system. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Table IV.C-18: Existing Plus Theater Conditions I-580 Mainline and Ramp Level of Service

Mainline or Ramp	Lanes	Existing				Existing Plus Theater			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density ^a	LOS	Density ^a	LOS	Density ^a	LOS	Density ^a	LOS
Mainline Analysis									
WB I-580 East of Vasco Road	4	24.9	C	16.9	B	24.9	C	17.0	B
WB I-580 Vasco Road to First Street	4	23.9	C	22.8	C	23.9	C	23.1	C
WB I-580 First Street to Livermore Avenue	4	22.6	C	19.8	C	22.6	C	19.8	C
WB I-580 Livermore Avenue to Portola Avenue	4	24.6	C	20.0	C	24.6	C	20.0	C
WB I-580 West of Portola Avenue	4	37.2	E	23.2	C	37.2	E	23.2	C
EB I-580 West Portola Avenue	4	22.2	C	37.0	E	22.2	C	41.0	E
EB I-580 Portola Avenue to Livermore Avenue	4	20.2	C	29.9	D	20.2	C	30.5	D
EB I-580 Livermore Avenue to First Street	4	19.9	C	30.8	D	19.9	C	30.8	D
EB I-580 First Street to Vasco Road	4	19.9	C	30.7	D	19.9	C	30.7	D
EB I-580 East of Vasco Road	4	14.2	B	27.8	D	14.2	B	27.8	D
Ramp Junction Analysis									
WB I-580 Vasco Road Off-Ramp	1	27.9	C	16.5	B	27.9	C	16.5	B
WB I-580 Vasco Road On-Ramp	1	23.7	C	26.7	C	23.7	C	27.1	C
WB I-580 First Street Off-Ramp	1	29.9	D	33.1	D	29.9	D	33.6	D
WB I-580 First Street On-Ramp	1	22.3	C	21.7	C	22.3	C	21.7	C
WB I-580 Livermore Avenue Off-Ramp	1	25.8	C	23.0	C	25.8	C	23.0	C
WB I-580 Livermore Avenue On-Ramp	1	24.8	C	19.2	B	24.8	C	19.2	B
WB I-580 Portola Avenue On-Ramp	1	25.1	C	23.5	C	25.1	C	23.5	C
EB I-580 Portola Avenue Off-Ramp	1	26.1	C	39.0	E	26.1	C	>45	F
EB I-580 Livermore Avenue Off-Ramp	1	23.1	C	32.4	D	23.1	C	33.3	D
EB I-580 Livermore Avenue On-Ramp	1	18.6	B	27.9	C	18.6	B	27.9	C
EB I-580 First Street Off-Ramp	1	22.7	C	33.5	D	22.7	C	33.5	D
EB I-580 First Street On-Ramp	1	19.0	B	27.9	C	19.0	B	27.9	C
EB I-580 Vasco Road Off-Ramp	1	29.2	D	36.6	E	29.2	D	36.6	E
EB I-580 Vasco Road On-Ramp	1	13.6	B	26.3	C	13.6	B	26.3	C
WB I-580 Vasco Road Off-Ramp	1	27.9	C	16.5	B	27.9	C	16.5	B
WB I-580 Vasco Road On-Ramp	1	23.7	C	26.7	C	23.7	C	27.1	C

Deficient segments indicated in **bold**.

^a Density is expressed in terms of passenger cars per mile per lane.

Source: Fehr & Peers, 2008.

Mitigation Measure TRANS-2: Complete the Isabel Interchange Project including the removal of the Portola Avenue Interchange. This is a regional project. Downtown development will pay its fair share of this improvement through the City Traffic Impact Fees. This measure is fully funded and construction documents are being prepared. At this time, the interchange construction is expected to be complete in 2011. Should the Theater open prior to 2011, the impact would remain significant and unavoidable until 2011 when the Isabel Interchange Project is complete. (SU)

The Livermore Traffic Model was used to develop the future 2030 traffic forecasts with the Amendments (excluding the Theater). The assigned Theater trips were then added to the forecasts to obtain future (Year 2030) plus project traffic volumes. The resulting volumes were used in LOS calculations to determine I-580 mainline and ramp junction operations for cumulative conditions. The results are summarized in Table IV.C-19 along with the future conditions without project for

comparison. The calculation worksheets are available for review at the Livermore City Hall, Engineering Division (1052 South Livermore Avenue).

As shown in Table IV.C-19, all I-580 mainline and ramp junction operations will be LOS E or better with the project.

(5) ACCMA MTS Roadway Analysis (Criteria 2 and 3). This section considers the impact of the project on freeways, major arterials, and other major roadways in Alameda County in response to the notice of preparation (NOP) comments from the ACCMA. The geographic scope of the ACCMA roadway analysis, the analysis methodology, and the results for 2015 and 2030 are described in this section. The complete analysis of the MTS roadways, as requested by the ACCMA, is included in Appendix C of this EIR.

Traffic Forecasts. The ACCMA model was used to forecast 2015 and 2030 traffic volumes on the MTS roadway system. The forecasts for the MTS system differ from the intersection forecasts previously discussed because:

- Land use data sets used for intersection forecasts and the MTS forecasts are different. The intersection forecasts, which are used to assess project traffic impacts on City of Livermore intersections, are based on land use data provided by the City of Livermore, which differs from the data in the ACCMA model.
- The intersection forecasts use the output of the Livermore Traffic Model and the existing intersection counts to develop future intersection turning movement. The MTS roadway analysis reports the outputs of the ACCMA model directly on a roadway segment level.

Due to the differences in the land use data and future volume development, the results from the two analyses are not directly comparable.

The results of the ACCMA model were used to forecast the without project condition for 2015 and 2030. Project trips were manually distributed to the MTS roadway segments (including both freeways and surface streets) identified above using the City of Livermore Traffic Model to determine traffic volume differences between the no project and plus project forecasts. The distribution of project trips onto the MTS segments results in the plus project volumes for 2015 and 2030.

Analysis Methodology. Operations of the MTS freeway and surface street segments were assessed based on volume-to-capacity (v/c) ratios. For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used. This capacity is consistent with 2007 ACCMA Congestion Management Program documents. For surface streets, a per-lane capacity of 800 vph was used. Roadway segments with a v/c ratio greater than 1.0 are assigned LOS F.

Table IV.C-19: Future (2030) Plus Theater Mainline and Ramp Level of Service

Mainline or Ramp	Lanes ^a	Without Project				With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Density ^b	LOS						
Mainline Analysis									
WB I-580 East of Vasco Road	4 + Aux Lane	19.5	C	17.3	B	19.7	C	17.5	C
WB I-580 Vasco Road to First Street	4 + Aux Lane	Leisch ^c	E						
WB I-580 First Street to Livermore Avenue	4 + Aux Lane	17.9	C	22.0	C	18.1	C	22.2	C
WB I-580 West of Livermore Avenue	4 + Aux Lane	20.2	C	23.3	C	20.3	C	23.4	C
EB I-580 West of Livermore Avenue	4 + Aux Lane	21.3	C	27.0	D	21.5	C	27.5	D
EB I-580 Livermore Avenue to First Street	4 + Aux Lane	19.8	C	24.9	C	19.8	C	25.0	D
EB I-580 First Street to Vasco Road	4 + Aux Lane	Leisch ^c	C	Leisch ^c	E	Leisch ^c	C	Leisch ^c	E
EB I-580 East of Vasco Road	4 + Aux Lane	12.2	B	23.2	C	12.2	B	23.5	D
Ramp Junction Analysis									
WB I-580 Vasco Road Off-Ramp	2	12.7	B	10.6	B	12.9	B	10.7	B
WB I-580 Vasco Road On-Ramp	2	Leisch ^c	E						
WB I-580 First Street Off-Ramp	2	Leisch ^c	E						
WB I-580 First Street On-Ramp	2	21.9	C	28.6	D	22.1	C	28.7	D
WB I-580 Livermore Avenue Off-Ramp	2	16.5	B	19.3	B	16.7	B	19.4	B
WB I-580 Livermore Avenue On-Ramp	2	25.8	C	28.1	D	25.9	C	28.2	D
EB I-580 Livermore Avenue Off-Ramp	2	18.6	B	23.4	C	18.8	B	23.7	C
EB I-580 Livermore Avenue On-Ramp	2	23.4	C	29.5	D	23.4	C	29.7	D
EB I-580 First Street Off-Ramp	2	17.5	B	20.8	C	17.5	B	28.5	D
EB I-580 First Street On-Ramp	2	Leisch ^c	C	Leisch ^c	E	Leisch ^c	C	Leisch ^c	E
EB I-580 Vasco Road Off-Ramp	2	Leisch ^c	C	Leisch ^c	E	Leisch ^c	C	Leisch ^c	E
EB I-580 Vasco Road On-Ramp	2	15.5	B	28.7	D	15.5	B	28.9	D

Deficient segments indicated in **bold**.

^a Number of lanes excludes HOV lanes because these lanes are not considered in the analysis of general purpose lanes.

^b Density is expressed in terms of passenger cars per mile per lane.

^c Segment analyzed as a weave section based on the Leisch Method updated to 2000 HCM capacities.

Source: Fehr & Peers, 2008.

Analysis Results. The roadway segment AM and PM peak hour MTS roadway analyses under 2015 and 2030 conditions are summarized in Appendix C. The addition of trips due to the project would increase the volume-to-capacity ratio by less than 3 percent on all study segments operating at LOS F and would not cause any segments operating at LOS E or better to deteriorate to LOS F. Therefore, implementation of the project would have a less-than-significant effect on the MTS roadway system.

(6) Railroad Crossing Analysis. At-grade railroad crossings are located on L Street and Junction Avenue within the Downtown. These crossings serve the Altamont Commuter Express trains and freight trains. Double tracks are provided for eastbound and westbound travel. Train activated safety gates, flashing lights, and audible warnings are provided at the crossings.

The USDOT FRA Office of Safety Analysis¹ data was obtained and reviewed for the crossings. Since 1990, there was one accident at the L Street crossing which resulted in a fatality. This accident occurred in 1994. The Incident Report indicates that the driver of an automobile attempted to go around the railroad gate arms which were down and was struck and killed by a passing freight train. It is not known how the level of train activity along the corridor will change in the future; however, automobile traffic is expected to remain about 5,000 vehicles per day at the crossing with buildout of the Downtown Specific Plan.

Recommendation – While there are no indications of safety problems at these grade crossings, there are crossing enhancements that the Public Utilities Commission has developed that the City in cooperation with the Public Utilities Commission and Alameda County could consider. The provision of a median island for about 100 feet on either side of the tracks is recommended to prevent gate jumping.²

If the median is not feasible, other measures can be implemented, including a four quadrant gate system. Four quadrant gates consist of two exit gates used in combination with standard entrance gates to restrict access to the track crossing area. The second gate arm across the opposing travel lane prevents wrong way movements across the track.

(7) Alternative Transportation Modes Analysis. The project's potential impacts on pedestrian, bicycle, and transit modes of travel are discussed in this section.

Pedestrian Operations (Criteria 7). The pedestrian circulation system encompasses the sidewalks and walking paths within and surrounding the Downtown area as well as the intersection crosswalks, pedestrian signals, and curb ramps. Safe facilities are continuous and well signed with adequate warning measures at hazardous locations such as higher-volume motor vehicle driveways and intersections. The pedestrian network should be accessible to all users and integrated with the surrounding environment to connect destinations within the Downtown. An effective pedestrian circulation system incorporates a primary walking corridor along each facility that is unencumbered by objects such as landscaping, street furniture, vehicles, and signs.

Impact TRANS-3: Construction of the Theater plus continued redevelopment of Downtown will result in an increased demand for pedestrians to cross Downtown intersections and streets. (S)

Locating the Theater at any of the alternative sites would increase both pedestrian activity and vehicular traffic in and around the area. Pedestrian activity would also increase commensurate with redevelopment of the Downtown including the Amendments. Because this is a Downtown with diverse uses, the need for pedestrians to cross the street becomes inevitable.

The Theater at the First Street/South Livermore Avenue site would introduce additional parking demand in an area of Downtown that is anticipated to be impacted by the nearby existing uses including the cinema, Bankhead Theater, and restaurants. While the area's parking supply (including the Transit Center Parking Garage) is adequate to accommodate these uses, the additional Theater use would extend the parking demand south toward East Avenue and east toward Inman Street. Theater

¹ <http://safetydata.fra.dot.gov>

² California Public Utilities Commission, Guidelines for the use of Four Quadrant Gate Arms, August 2002 (<http://docs.cpuc.ca.gov/Published/Graphics/1830.PDF>).

patrons would also be required to park at the Livermore Village site and on the streets west of South Livermore Avenue to about L Street. This will increase crossing demands along the South Livermore Avenue corridor.

At the Livermore Village site, it is likely that Theater patrons would use the internal circulation road through the Livermore Village site to access South Livermore Avenue and South L Street. This road is expected to have significant pedestrian flows as people walk to the various destinations in Downtown including shops, parking, restaurants, entertainment and residences. As a result, there will be an increase in pedestrian crossing demand at mid-block locations on South L Street and South Livermore Avenue. In addition, Theater patrons are likely to park south of First Street and walk along South L Street to the Livermore Village Site. This will increase crossing demands along the South L Street corridor and across South Livermore Avenue between First Street and Railroad Avenue.

At the First Street/Maple Street site, given the location of the Theater site in relation to the public parking garages, it is likely that Theater patrons will search for available on-street parking within the neighborhood south and east of the site. This will increase pedestrian travel in the neighborhood. Given the relative location of the Theater and redevelopment of the Livermore Village site, including a public parking garage, there will be an increased need for pedestrians to cross South Livermore Avenue, north and south of the First Street corridor.

Implementation of the following multi-part mitigation measure would reduce the impact to less-than-significant level.

Mitigation Measure TRANS-3a: For construction of the Theater at the First Street/South Livermore site, realign Second Street at South Livermore Avenue and install enhanced pedestrian crossing features.

Mitigation Measure TRANS-3b: For construction of the Theater at any alternative site or redevelopment of the Livermore Village site, install enhanced pedestrian crossing features on South Livermore Avenue between First Street and Railroad Avenue.

Mitigation Measure TRANS-3c: For construction of the Theater at the Livermore Village site or prior to buildout of the Livermore Village site, install enhanced pedestrian crossing features on South L Street between First Street and Railroad Avenue.

Mitigation Measure TRANS-3d: For construction of the Theater at First Street/Maple Street site, provide a 6- to 10-foot sidewalk along the south side of Fourth Street from Madeira Way to Church Street, and construct a pedestrian pathway through the site along the Church Street alignment to accommodate pedestrian flows between the site and the neighborhood to the south. (LTS)

Recommendation: For construction of the Theater at the Livermore Village site, install curb extensions for the north/south intersecting streets on South L Street from the Livermore Village Site south to Fourth Street. Prior to installing curb extensions conduct an evaluation of truck turning requirements to insure curb extensions do not adversely impact delivery trucks to the Downtown businesses or bicycle users.

Bicycle Operations (Criteria 5 and 6). The bicycle circulation system encompasses the public street system and site access facilities. Safe facilities are continuous, well delineated with striping and signs, and designed to accommodate the expected bicycle speeds. The City plans to maintain existing and planned bicycle facilities through Downtown as redevelopment occurs. Therefore, construction of the Theater at any of the sites would be considered a less-than-significant impact. Please see the discussion of passenger loading below which describes a potential conflict between passenger loading zones and a bike path adjacent to the First Street/Maple Street site.

Transit Operations (Criteria 4). The Downtown is well served by transit, with a Transit Center located on Railroad Avenue near the First Street/Maple Street intersection, where connections to ACE and other regional transit services can be made. The WHEELS Route 10 carries the greatest ridership with about 3,500 daily riders. This corridor is being evaluated and designed to improve operations as a Bus Rapid Transit route. It is not anticipated that either the Theater (at any of the alternative sites) or the Amendments will generate transit ridership that would exceed the available capacity of the system. Therefore, implementation of the project would have a less-than-significant effect on transit ridership.

(8) Passenger Loading and Truck Deliveries. The following describes the site specific passenger loading and truck delivery components of the Theater project.

Theater Passenger Loading Areas (Criteria 7 and 8). The following describes the Theater passenger loading areas at the three potential Theater locations.

First Street/South Livermore Avenue Site. There are two passenger loading zones identified at the First Street/South Livermore Avenue site. One is located on First Street and the other is located on South Livermore Avenue. These zones are used to pick-up and drop-off passengers and generally have a high turnover as drivers spend only a few minutes loading passengers.

Impact TRANS-4: If the Theater is constructed at the First Street/South Livermore Avenue site, existing angled on-street parking is incompatible with passenger loading activities at the Theater. (S)

First Street Passenger Loading. About five existing angled parking spaces along the proposed Theater frontage would be converted to passenger loading spaces. Drivers on First Street would pull into an angled space drop-off/pick-up passengers and then back out of the space. This concept allows passengers to enter/exit their car away from the First Street traffic flow, and is generally considered a benefit for angled parking; unless the angled parking is intended for high turnover such as passenger loading zones at Theaters. The parking duration at a passenger loading zone is typically three to four minutes so it is likely that passengers will enter/exit a car while an adjacent car is being maneuvered in/out of its space. Driver visibility can be compromised when backing out of an angled parking space into traffic due to other parked vehicles. This condition is an added distraction for drivers as they negotiate around passengers getting in/out of other vehicles.

South Livermore Avenue Passenger Loading. Three existing parallel parking spaces along the proposed First Street/South Livermore Avenue site Theater frontage would be converted to passenger loading spaces. Drivers on Livermore Avenue would pull into a space drop-off/pick-up passengers

and then maneuver out of the space. This is a typical layout for passenger loading zones as it provides flexibility for drivers to maneuver in and out of the area while passengers are behind the curb.

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

Mitigation Measure TRANS-4: If the Theater is constructed at the First Street/South Livermore Avenue site, design the passenger loading zones as follows:

- Convert the on-street angled parking spaces on First Street (between Livermore Avenue and McLeod Street) to parallel parking.
- Maintain a minimum 150-foot passenger loading zone on both First Street and South Livermore Avenue.
- Design the passenger loading zones to have a 12-foot width measured from face-of-curb. (LTS)

Livermore Village Site. At this site the Theater would be located near the southwest corner of the Railroad Avenue/South Livermore Avenue intersection. One passenger loading area would be provided on South Livermore Avenue, south of Railroad Avenue. A truck loading dock would be located on an internal street with access to Railroad Avenue.

South Livermore Avenue Passenger Loading. There is currently no parking on South Livermore Avenue along the project frontage. The proposal would be to provide parallel passenger loading spaces. Drivers on Livermore Avenue would pull into a space drop-off/pick-up passengers and then maneuver out of the space. This is a typical layout for passenger loading zones as it provides flexibility for drivers to maneuver in and out of the area while passengers are behind the curb. While drivers will disrupt traffic flow on Livermore Avenue entering/exiting a space, the spaces are located such that driver's would have easy access via an internal circulation road to the proposed parking garage on L Street. With this internal circulation road drivers will not be required to use First Street for parking circulation.

Impact TRANS-5: The passenger loading zone could disrupt traffic flow on South Livermore Avenue if the Theater is constructed at the Livermore Village site. (S)

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

Mitigation Measure TRANS-5: If the Theater is constructed at the Livermore Village site, design the passenger loading zones as follows:

- Maintain a minimum 150-foot passenger loading zone on South Livermore Avenue.
- If feasible, provide a second 100-foot passenger loading zone on the internal circulation road adjacent to the Theater.
- Design the passenger loading zones to have a 12-foot width measured from face-of-curb. (LTS)

First Street/Maple Street Site. At this site the Theater would be located at the southeast corner of the First Street/Maple Street intersection. This site location requires Railroad Avenue to be realigned with First Street while Maple Street between First Street and Railroad Avenue would become a local street with angled parking. The passenger loading area would be on Maple Street. A truck loading dock would be on Second Street near Church Street.

Maple Street Passenger Loading. About three existing parallel parking spaces along the proposed Theater frontage would be converted to passenger loading spaces. Drivers on Maple Street would pull into a space drop-off/pick-up passengers and then maneuver out of the space. This is a typical layout for passenger loading zones as it provides flexibility for drivers to maneuver in and out of the area while passengers are behind the curb. Maple Street is a designated Class II bike facility.

Impact TRANS-6: If the Theater is constructed at the First Street/Maple Street site, the passenger loading zone could be incompatible with the Class II bike facility. (S)

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

Mitigation Measure TRANS-6: If the Theater is constructed at the First Street/Maple Street site, design the passenger loading zones as follows:

- Maintain a minimum 150-foot passenger loading zone on Maple Street.
- Design the passenger loading zones to have a 12-foot width measured from face-of-curb.
- Maintain a striped bike lane adjacent to the passenger loading zone on Maple Street. (LTS)

Theater Truck Delivery Characteristics (Criteria 8 and 9). Truck delivery characteristics at all three potential Theater sites are described below.

First Street/South Livermore Avenue Site. Truck deliveries to regional Theaters vary depending on the type and frequency of performances. While trucks do not make regular deliveries each day, the delivery facilities should be designed to minimize to the greatest extent possible the impact to vehicle traffic on adjacent streets.

Impact TRANS-7: If the Theater is constructed at the First Street/South Livermore site, trucks maneuvering to and from the loading area via Livermore Avenue are incompatible with the movement of automobile traffic on Livermore Avenue. (S)

The proposed truck delivery area for the Theater at the First Street/South Livermore Avenue site is identified along the building frontage adjacent to Second Street with truck access via a driveway on Livermore Avenue. Traffic flow in both directions of Livermore Avenue would be disrupted when trucks access the loading dock, and there may be insufficient width on Livermore Avenue for trucks (with trailers greater than 40 feet) to maneuver in and out of the loading dock.

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

Mitigation Measure TRANS-7: If the Theater is constructed at the First Street/South Livermore Avenue site, shift the loading dock further east on Second Street, away from Livermore Avenue, while maintaining the same loading dock orientation. Prohibit on-street parking along the Theater frontage of Second Street and convert the on-street angled parking spaces on Second Street (opposite the Theater frontage) to parallel parking spaces. (LTS)

Livermore Village Site. The proposed truck delivery area for the Theater at the Livermore Village site is identified via an internal street with access to Railroad Avenue. Depending on the layout, trucks with trailers may have a difficult time maneuvering in and out of the loading dock. In addition, trucks would be restricted to right turns in and out of Railroad Avenue. Thus, trucks would likely need access to either L Street or Livermore Avenue as an alternative to Railroad Avenue.

Impact TRANS-8: If the Theater is constructed at the Livermore Village site, truck maneuvers to and from the loading area via the internal road may be incompatible with the internal street layout. (S)

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

Mitigation Measure TRANS-8: If the Theater is constructed at the Livermore Village site, ensure that the loading dock is situated on the site such that trucks with trailers can maneuver in and out of the loading dock without encroaching onto the sidewalk on the opposite side of the internal street. (LTS)

First Street/Maple Street Site. The proposed truck delivery area for the Theater is identified along the east side of the building with loading dock access via Second Street near Church Street. The width of Second Street varies along the project frontage and may not be sufficiently wide to accommodate large trucks (with trailers greater than 40 feet) turning to and from the loading dock. Loading dock access would be further compounded by the on-street parking in the area which reduces the available road width for trucks to maneuver. Traffic flow in both directions of Second Street would be disrupted when trucks access the loading dock. Given the relatively low traffic volume on Second Street the disruption is not expected to adversely impact traffic flow through the area.

Impact TRANS-9: If the Theater is constructed at the First Street/Maple Street site, truck maneuvers to and from the loading area via Second Street are incompatible with the current street width and on-street parking. (S)

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

Mitigation Measure TRANS-9: If the Theater is constructed at the First Street/Maple Street site, prohibit on-street parking on Second Street (opposite Theater frontage) so that trucks can maneuver in and out of the loading dock. Ensure that the loading dock is situated on the site such that trucks with trailers can maneuver in and out of the loading dock without encroaching onto the sidewalk on the opposite side of the street. (LTS)

(9) Parking Characteristics (Criteria 10). This section addresses parking supply and demand in Downtown.

Theater Parking Characteristics. The 2008 Parking Study concluded that under existing plus the Theater conditions there will be adequate overall parking supply to meet the expected parking demands during the weekday. There will also be sufficient parking supply on both Friday and Saturday evening to accommodate expected demand, but parking demand will exceed the available parking supply in the immediate vicinity in many areas within Downtown. The impacted areas depend on the location of the Theater.

First Street/South Livermore Avenue Site. Constructing the Theater at this site would introduce additional parking demand in an area of Downtown that is already impacted by the existing cinema, Bankhead Theater, and restaurants. With the Theater at this location parking impacts will extend to all areas of the Downtown east of Livermore Avenue, along East Avenue and the high school frontage to First Street. Patrons will park at the Livermore Village site and in areas west of Livermore Avenue, from First Street to Fourth Street. Walking distances will be up to 1,200 feet from a parked car. This is equivalent to the ¼ mile (1,300 feet) deemed as an acceptable walking distance by the Downtown Specific Plan. The planned Livermore Village garage will be on the fringe of the required walking distance, whereas, the Livermore Valley Center garage is within the required walking distance.

Livermore Village Site. Given the Downtown land use characteristics and location of available parking supply, patrons to the Theater at the Livermore Village site (including the adjacent businesses along First Street) will likely use the parking spaces in the area bound by the railroad tracks, Livermore Avenue, Fourth Street, and N Street. Walking distances to the Livermore Village site will be less than 1,000 feet from a parked car. This site is situated between the existing Livermore Valley Center garage and the planned Livermore Village garage and is within the ¼ mile (1,300 feet) deemed as an acceptable walking distance by the Downtown Specific Plan.

First Street/Maple Street Site. The Theater at this site introduces parking demand at the east end of the Downtown. Theater patrons will walk greater distances from their parked cars, and there will be more demand for parking in the area bound by the high school, East Avenue, and Livermore Avenue. Because of the limited parking supplies in the vicinity of this site, Theater patrons may be required to walk up to 2,000 feet from a parking space. This exceeds the ¼ mile (1,300 feet) deemed as an acceptable walking distance by the Downtown Specific Plan. Therefore, additional parking would need to be located within 1,200 feet.

Amendment Parking Characteristics. The 2008 Parking Study also evaluated the expected parking conditions at buildout of the Downtown with the Amendments.

Impact TRANS-10: There will be inadequate parking supply to accommodate buildout of the Downtown Specific Plan and the project. (S)

The effective parking supply in the Downtown will be inadequate to accommodate the Friday and Saturday evening parking demand associated with buildout plus project conditions. There will be sufficient parking in Downtown to accommodate daytime parking demands.

To accommodate the Saturday evening parking demand, about 797 more parking spaces will be needed in Downtown. About 426 parking spaces are needed to address the Friday evening demand. The likely impact of not providing the additional parking spaces will be that Downtown patrons filter into the neighborhoods south of Fourth Street in search of an available parking space or may avoid coming to the Downtown. Parking supply and demand is expected to be balanced west of P Street without much parking overflow from Downtown east of P Street.

This conclusion differs from the 2006 *Parking Study* because of different land use assumptions. As indicated in Table IV.C-20, the current study assumes that the Downtown will have more office, cinema/Theater, and hotel uses. In addition, a larger

Table IV.C-20: Land Use Differences Between the 2006 and 2008 Parking Study

Land Use	2006 Parking Study	2008 Parking Study
Office	264,200 s.f.	321,220 s.f.
Retail/Service/Shop	638,620 s.f.	556,000 s.f.
Dining	92,800 s.f.	156,000 s.f.
Cinema and Theater	4,615 seats	5,479 seats
Hotel	80 rooms	300 rooms

Source: Fehr & Peers, 2008.

proportion of the commercial development in the current study is considered dining. Dining land uses generate three to six times more parking demand per unit area than non-dining commercial uses.

There are specific parking strategies that can be implemented in the Downtown to maximize parking space utilization. Even with these strategies, the Downtown at buildout is likely to need additional parking supplies to meet expected demands.

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

Mitigation Measure TRANS-10a: Monitor parking supply and demand over time and provide the following or equivalent parking facilities to meet identified demands:

- Depending on the location of the Performing Arts Theater, construct a 500 space parking garage (rather than 350 spaces) at the Livermore Village site, adding 150 more parking spaces to the Downtown, or construct a 200 space parking garage east of the Downtown;
- Increase on-street parking within the Livermore Village site, adding about 40 parking spaces to the Downtown;
- Implement angled parking on First Street between South L Street and South P Street. Optimize the parking by limiting parcel access to and from First Street, adding about 50 parking spaces to the Downtown;
- Implement angled parking on Maple Street between First Street and Railroad Avenue, after realignment, adding about 10 spaces to the supply;
- Implement phase II of the Livermore Valley Center parking garage, adding up to 300 more parking spaces to the Downtown supply; and
- Implement additional parking facilities south of the core area by purchasing property or partnering with private development to provide additional public parking.

Mitigation Measure TRANS-10b: Pursue partnerships with businesses to ensure that the private parking supply is open to the public after daytime business hours. A substantial number of off-street parking spaces are privately owned and operated. As the Downtown becomes more popular these off-street parking supplies will become more attractive to people looking for a limited number of public parking spaces. The initial response from business owners might be to close their parking lots after hours. As parking demands increase property owners will begin to realize that their parking supply is an asset that has value, especially if the City pursues pay parking strategies.

Mitigation Measure TRANS-10c: Promote valet parking operations in Downtown. The large number of restaurants and the two performing arts Theaters are excellent candidates for valet parking. As the Downtown parking supplies are more fully utilized, visitors will self-select valet parking to minimize their time to search for an available parking space. Valet parking operators may enter into agreements with businesses to use their privately owned parking areas. Valet parked facilities can accommodate about 10 percent more vehicles than a self parked facility. For example, valet operators may be able to add an additional 30 parked vehicles on the top floor of the Livermore Valley Center garage.

Mitigation Measure TRANS-10d: Consider utilizing time-limited and pay parking strategies to manage employee parking behavior, increasing available parking spaces for customers. As Livermore's Downtown transforms into a more vibrant community with a diverse mix of land uses, there will be more pressure to actively manage the parking resources in the area. Employees tend to use the most convenient on-street parking spaces which forces customers to park further from their ultimate destination. Time-limited parking can alter employee parking behavior, but requires diligent enforcement. As Downtowns mature, pay parking strategies (or a Business Improvement District (BID) to secure a location(s) solely for employee use) become a more effective tool to manage employee parking behavior. Employees are expected to utilize 15 percent to 20 percent of the Downtown parking spaces, so shifting employee parking away from the Downtown core has the net effect of increasing parking supply near destinations by 15 percent to 20 percent for customers. The revenue generated by pay parking strategies can be re-invested into the Downtown. For example, the revenue could be used to provide employee parking or operate a valet parking program.

Mitigation Measure TRANS-10e: Provide handicap accessible on-street parking spaces in the Downtown. Handicap accessible parking in Downtown environments is challenging. Parking spaces are dispersed and some individual land uses do not have any parking, but rely on public parking nearby. The Institute of Transportation Engineers publication Special Report: Accessible Public Rights-of-Way Planning and Design for Alterations (July 2007) provides good design parameters for on-street handicap accessible parking spaces.

While there is currently no requirement for number and location of on-street accessible parking spaces, the City currently provides on-street accessible parking spaces at the corners of blocks. Each accessible on-street parking space could then serve two block faces; whereas, a mid-block parking space only serves one block face. Thus, two accessible parking spaces could serve the four block faces of a typical block. The City should continue to look for opportunities to provide handicap accessible parking spaces with a consistent design. (LTS)

(10) Construction Characteristics (Criteria 8). Construction activity is going to occur over several years as the Downtown redevelops. The construction activities will generate vehicle trips associated with workers and trips associated with materials and equipment delivery and operation. Construction activities also generate the need for worker parking and material and equipment staging. There are on- and off-site construction safety issues related to construction activities, and it may be necessary to close portions of adjacent roadways during construction deliveries or to detour pedestrians and vehicles around a construction site. Closures of any transportation facility, such as a roadway, sidewalk, or bike lane, require proper signing and warning devices.

Impact TRANS-11: Construction-related activities associated with the project could adversely impact the existing transportation corridors. (S)

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

Mitigation Measure TRANS-11: The City shall require development of a construction traffic management plan for each new development proposed within the Downtown area. The construction traffic management plan could include: timing of construction and deliveries; travel routes for large construction vehicles; control and monitoring by flaggers for construction vehicle ingress and egress; a regular street cleaning program; and an employee parking program. The provisions of such a plan shall address the adverse effects, to the satisfaction of the City, on vehicular, pedestrian, bicycle, and transit of construction-related traffic associated with each particular project. (LTS)

D. AIR QUALITY

This section describes the existing air quality setting for the Downtown Specific Plan Amendments and the Regional Performing Arts Theater and has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).¹ In keeping with these guidelines, this chapter describes existing air quality, impacts of future traffic on local carbon monoxide levels and impacts of land use related vehicular emissions that have regional effects. Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate. Air quality modeling results are included in Appendix D.

1. Setting

The following discussion provides an overview of existing air quality conditions in the region and the Livermore area. Ambient air quality standards and the regulatory framework relating to air quality are summarized. Climate, air quality conditions, and typical air pollutant types and sources are also described.

a. Air Quality Standards, Regulatory Framework and Attainment Status. Air quality standards, the regulatory framework, and State and federal attainment status are discussed below.

(1) Air Quality Standards. Both the State and federal governments have established health-based Ambient Air Quality Standards for six air pollutants: carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to primary and secondary Ambient Air Quality Standards, the State of California has established a set of episode criteria for O₃, CO, NO₂, SO₂, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three.

California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants are listed in Table IV.D-1. Health effects of these criteria pollutants are described in Table IV.D-2.

(2) Regulatory Framework. The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. The BAAQMD's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa—and portions of Solano and Sonoma counties. The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) regulate direct emissions from motor vehicles.

¹ Bay Area Air Quality Management District, 1999. *BAAQMD CEQA Guidelines*.

Table IV.D-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ^a		Federal Standards ^b		
		Concentration ^c	Method ^d	Primary ^{c,e}	Secondary ^{c,f}	Method ^g
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	No federal standard	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		–		
Fine Particulate Matter (PM _{2.5})	24-Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		–		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.03 ppm (56 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (338 µg/m ³)		–		
Lead	30-day average	1.5 µg/m ³	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m ³	Same as Primary Standard	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m ³)	–	Spectropho- tometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m ³)	
	1-Hour	0.25 ppm (655 µg/m ³)		–	–	
Visibility- Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ^h	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: CARB, 2008.

Notes continued on next page.

- ^a California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ^b National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
- ^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ^d Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
- ^e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ^f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ^g Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
- ^h The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table IV.D-2: Health Effects of Air Pollutants

Pollutant	Health Effects	Examples of Sources
Suspended Particulate Matter (PM _{2.5} and PM ₁₀)	<ul style="list-style-type: none"> • Reduced lung function • Aggravation of the effects of gaseous pollutants • Aggravation of respiratory and cardio respiratory diseases • Increased cough and chest discomfort • Soiling • Reduced visibility 	<ul style="list-style-type: none"> • Stationary combustion of solid fuels • Construction activities • Industrial processes • Atmospheric chemical reactions
Ozone (O ₃)	<ul style="list-style-type: none"> • Breathing difficulties • Lung damage 	<ul style="list-style-type: none"> • Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	<ul style="list-style-type: none"> • Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels 	<ul style="list-style-type: none"> • Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Lead (Pb)	<ul style="list-style-type: none"> • Organ damage • Neurological and reproductive disorders • High blood pressure 	<ul style="list-style-type: none"> • Metals processing • Fuel combustion • Waste disposal
Nitrogen Dioxide (NO ₂)	<ul style="list-style-type: none"> • Lung damage 	<ul style="list-style-type: none"> • See carbon monoxide sources
Toxic Air Contaminants	<ul style="list-style-type: none"> • Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders 	<ul style="list-style-type: none"> • Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Source: CARB and EPA, 2005.

Federal Clean Air Act. The Federal 1970 Clean Air Act authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal Clean Air Act Amendments of 1990 changed deadlines for attaining National Ambient Air Quality Standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the National Ambient Air Quality Standards are required to develop State Implementation Plans to show how they will achieve the National Ambient Air Quality Standards for O₃ by specific dates.

The Clean Air Act requires that projects receiving federal funds demonstrate conformity to the approved State Implementation Plan and local air quality attainment plan for the region. Conformity with the State Implementation Plan requirements would satisfy the Clean Air Act requirements.

Bay Area Clean Air Plan. BAAQMD, along with the other regional agencies (i.e., Association of Bay Area Governments and the Metropolitan Transportation Commission), has prepared an Ozone Attainment Plan to address the 1-hour NAAQS for ozone. Although US EPA revoked the 1-hour NAAQS, commitments made in the Ozone Attainment Plan along with emissions budgets remain valid until the region develops an attainment demonstration/maintenance plan for the 8-hour NAAQS for ozone. The region will be required to submit a maintenance plan and demonstration of attainment with a request for redesignation to EPA when the 8-hour ozone NAAQS is met. A Carbon Monoxide Maintenance Plan was approved in 1998 by US EPA, which demonstrated how NAAQS for CO standard would be maintained.

Air quality plans addressing the California Clean Air Act are developed every three years. The plans are meant to demonstrate progress toward meeting the more stringent 1-hour ozone CAAQS. The latest plan, which was adopted in January 2006, is called the *Bay Area 2005 Ozone Strategy*. This plan includes a comprehensive strategy to reduce emissions from stationary, area, and mobile sources. The plan indicates how the region would make progress toward attaining the stricter State air quality standards, as mandated by the California Clean Air Act. The plan is designed to achieve a region-wide reduction of ozone precursor pollutants through the expeditious implementation of all feasible measures. The plan proposes expanded implementation of transportation control measures (TCMs) and programs such as Spare the Air.

The clean air planning efforts for ozone will also reduce particulate matter (PM₁₀ and PM_{2.5}), since a substantial amount of this air pollutant comes from combustion emissions such as vehicle exhaust. In addition, BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs to educate the public to reduce PM₁₀ and PM_{2.5} emissions. Senate Bill (SB) 656 requires further action by CARB and air districts to reduce public exposure to PM₁₀ and PM_{2.5}. Efforts identified by BAAQMD in response to SB 656 are primarily targeted reductions in wood smoke emissions and adoption of new rules to further reduce NO_x and particulate matter from internal combustion engines and reduce particulate matter from commercial charbroiling activities. NO_x emissions contribute to ammonium nitrate formation that resides in the atmosphere as particulate matter, so a reduction in NO_x emissions would also reduce wintertime PM_{2.5} levels. The Bay Area experiences the highest PM₁₀ and PM_{2.5} in winter when wood smoke and ammonium nitrate contributions to particulate matter are highest.

(3) Attainment Status Designations. The California Air Resources Board is required to designate areas of the State as attainment, nonattainment or unclassified for any State standard. An

“attainment” designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An “unclassified” designation signifies that data does not support either an attainment or nonattainment status. The California Clear Air Act divides districts into moderate, serious and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for O₃, CO, and NO₂ as either “does not meet the primary standards,” or “cannot be classified” or “better than national standards.” For SO₂, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified” or “better than national standards.” In 1991, new nonattainment designations were assigned to areas that had previously been classified as Group I, II, or III for PM₁₀ based on the likelihood that they would violate national PM₁₀ standards. All other areas are designated “unclassified.”

Table IV.D-3 provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

b. Existing Climate and Air Quality. The following provides a discussion of the regional air quality, local climate and air quality in the Livermore Valley.

(1) Regional Air Quality. The City of Livermore is located in the San Francisco Bay Area, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City of Livermore is within the jurisdiction of the BAAQMD, which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. In June 1995, the Bay Area was designated as being in attainment for the federal O₃ standard. However, the EPA changed the Bay Area back to nonattainment status in August 1998 due to new exceedances of the standard in 1995 and 1996. In 2001, the BAAQMD developed and adopted a new Ozone Attainment Plan (2001 Ozone Plan) to correct the deficiencies of the 1999 Ozone Plan and respond to the finding of failure to achieve attainment status for O₃. The new plan was adopted in October 2001 by the BAAQMD’s Governing Board and was approved by the CARB in November 2001.

Under the Federal CAA, the US EPA has classified the region as marginally nonattainment for the 8-hour ozone standard. The Bay Area has met the CO standards for over a decade and is classified attainment maintenance by the US EPA. The US EPA grades the region unclassified for all other air pollutants, which include PM₁₀ and PM_{2.5}.

Table IV.D-3: Bay Area Attainment Status

Pollutant	Averaging Time	California Standards ^a		National Standards ^b	
		Concentration	Attainment Status	Concentration ^c	Attainment Status
Ozone (O ₃)	8-Hour	0.07 ppm (137 µg/m ³)	Nonattainment ^h	0.075 ppm	Nonattainment ^d
	1-Hour	0.09 ppm (180 µg/m ³)	Nonattainment	Not Applicable	Not Applicable ^c
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Attainment ^f
	1-Hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Attainment
Nitrogen Dioxide (NO ₂)	Annual Mean	0.030 ppm (56 mg/m ³)	Attainment	0.053 ppm (100 µg/m ³)	Attainment
	1-Hour	0.18 ppm (339 µg/m ³)	Attainment	Not Applicable	Not Applicable
Suspended Particulate Matter (PM ₁₀)	Annual Mean	20 µg/m ³	Nonattainment ^g		
	24-Hour	50 µg/m ³	Nonattainment	150 µg/m ³	Unclassified
Suspended Particulate Matter (PM _{2.5})	Annual Mean	12 µg/m ³	Nonattainment ^g	15 µg/m ³	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m ³ ⁱ	Unclassified
Sulfur Dioxide (SO ₂)	Annual Mean	Not Applicable	Not Applicable	0.03 ppm (80 µg/m ³)	Attainment
	24-Hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	1-Hour	0.25 ppm (655 µg/m ³)	Attainment	Not Applicable	Not Applicable

Notes: Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.

ppm = parts per million

mg/m³ = milligrams per cubic meter

µg/m³ = micrograms per cubic meter

- ^a California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM₁₀, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM₁₀ annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
- ^b National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM₁₀ standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 g/m³. The 24-hour PM_{2.5} standard is attained when the 3-year average of 98th percentiles is less than 35 g/m³. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM₁₀ is met if the 3-year average falls below the standard at every site. The annual PM_{2.5} standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.
- ^c National air quality standards are set by EPA at levels determined to be protective of public health with an adequate margin of safety.
- ^d In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard. EPA lowered the national 8-hour ozone standard from 0.80 to 0.75 PPM (i.e. 75 ppb) effective May 27, 2008. EPA will issue final designations based upon the new 0.75 ppm ozone standard by March 2010.
- ^e The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

^f In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

^g In June 2002, CARB established new annual standards for PM_{2.5} and PM₁₀.

^h The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.

ⁱ EPA lowered the 24-hour PM_{2.5} standard from 65 g/m³ to 35 g/m³ in 2006. EPA is required to designate the attainment status of BAAQMD for the new standard by December 2009.

Source: Bay Area Air Quality Management District, 2008. Bay Area Attainment Status.

At the State level, the region is considered serious non-attainment status for ground level ozone and non-attainment status for PM₁₀. California ambient air quality standards are more stringent than the national ambient air quality standards.

Levels of PM₁₀ in the Bay Area currently exceed California Clean Air Act standards and, therefore, the area is considered a nonattainment area for this pollutant relative to the State standards. PM₁₀ levels monitored at the Livermore – 793 Rincon Avenue station (closest monitoring station with PM₁₀ data) exceeded the State's standard 17 times in 2006 and 12 times in 2007. The Bay Area is an unclassified area for the federal PM₁₀ standard. The federal standard was not exceeded at this monitoring station in the past 3 years.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

The BAAQMD's Bay Area 1991, 1994, 1997 and 2000 Clean Air Plans contain district-wide control measures to reduce CO and O₃ precursor emissions. Generally, the State standards for these pollutants are more stringent than the national standards. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

(2) Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment.

The City of Livermore is located in the Livermore Valley, a sheltered inland valley near the eastern border of the Bay Area. The western side of the valley is bordered by 1,000- to 1,500-foot hills with two gaps connecting the valley to the central Bay Area: the Hayward Pass and Niles Canyon. The eastern side of the valley also is bordered by 1,000- to 1,500-foot hills with one major passage to the San Joaquin Valley called the Altamont Pass and several secondary passages. To the north lie the Black Hills and Mount Diablo. A northwest to southeast channel connects the Diablo Valley to the Livermore Valley. The south side of the Livermore Valley is bordered by mountains approximately 3,000 to 3,500 feet high.

During the summer months, when there is a strong inversion with a low ceiling, air movement is weak and pollutants become trapped and concentrated. Maximum summer temperatures in the Livermore Valley range from the high-80s to the low-90s, with extremes above 100. At other times in the summer, a strong Pacific high pressure cell from the west coupled with hot inland temperatures

causes a strong onshore pressure gradient that produces a strong, afternoon wind. With a weak temperature inversion, air moves over the hills with ease, dispersing pollutants.

In the winter, with the exception of an occasional storm moving through the area, air movement is dictated by local conditions. At night and early morning, especially under clear, calm, and cold conditions, gravity drives cold air downward. The cold air drains off the hills and moves into the gaps and passes. On the eastern side of the valley, the prevailing winds blow from the north, the northeast, and the east out of the Altamont Pass. Winds are light during the late night and early morning hours. Winter daytime winds sometimes flow from the south through the Altamont Pass to the San Joaquin Valley. Average winter maximum temperatures range from the high-50s to the low-60s, while minimum temperatures are from the mid-to-high-30s, with extremes in the high teens and low-20s.

Air pollution potential is high in the Livermore Valley, especially for photochemical pollutants in the summer and fall. High temperatures increase the potential for ozone buildup. The valley not only traps locally generated pollutants but can be the receptor of ozone and ozone precursors from San Francisco, Alameda, Contra Costa, and Santa Clara counties. On northeasterly wind flow days, most common in the early fall, ozone may be carried west from the San Joaquin Valley to the Livermore Valley.

During the winter, the sheltering effect of the valley, its distance from moderating water bodies, and the presence of a strong high pressure system contribute to the development of strong, surface-based temperature inversions. Pollutants such as carbon monoxide and particulate matter, generated by motor vehicles, fireplaces and agricultural burning, can become concentrated. Air pollution problems could intensify because of population growth and increased commuting to and through the subregion.

Pollutant monitoring results for the years 2005 to 2007 at the Livermore ambient air quality monitoring station indicate that air quality in the project area has generally been good. Tables IV.D-4 summarizes the last three years of published data from this monitoring station. As indicated, 17 exceedances of the State PM₁₀ standard in 2006 were recorded, 12 exceedances in 2007 were recorded and no violation of federal PM₁₀ standard was recorded. Federal and state ozone standards have been exceeded every year. CO, SO₂, NO₂ and PM_{2.5} standards were not exceeded in the project area during the three-year period.

The amount of a given air pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and/or dilute that pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and for photochemical pollutants, sunshine.

c. Air Quality Issues. Five key air quality issues—CO hotspots, vehicle emissions, fugitive dust, odors, and construction equipment exhaust—are described below.

Table IV.D-4: Ambient Air Quality at the Rincon Avenue, Livermore Monitoring Station

Pollutant	Standard	2005	2006	2007
Carbon Monoxide (CO)				
Maximum 1 hour concentration (ppm)		3.4	3.3	3.3
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8 hour concentration (ppm)		1.8	1.8	1.8
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O₃)				
Maximum 1 hour concentration (ppm)		0.120	0.127	0.120
Number of days exceeded:	State: > 0.09 ppm	6	13	2
	Federal: > 0.08 ppm	1	5	1
Maximum 8 hour concentration (ppm)		0.090	0.101	0.091
Number of days exceeded:	State: > 0.07 ppm	ND	ND	ND
	Federal: > 0.08 ppm	1	5	1
Coarse Particulates (PM₁₀)				
Maximum 24 hour concentration (µg/m ³)		49	69	75
Number of days exceeded:	State: > 50 µg/m ³	0	17	12
	Federal: > 150 µg/m ³	0	0	0
Annual arithmetic average concentration (µg/m ³)		18	22	20
Exceeded for the year:	State: > 20 µg/m ³	No	Yes	No
	Federal: > 50 µg/m ³	No	No	No
Fine Particulates (PM_{2.5})				
Maximum 24 hour concentration (µg/m ³)		56	52	55
Number of days exceeded:	Federal: > 35 µg/m ³	0	0	0
Annual arithmetic average concentration (µg/m ³)		10.2	11.1	9.0
Exceeded for the year:	State: > 12 µg/m ³	No	No	No
	Federal: > 15 µg/m ³	No	No	No
Nitrogen Dioxide (NO₂)				
Maximum 1 hour concentration (ppm)		0.072	0.064	0.052
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.014	0.014	0.013
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO₂)^a				
Maximum 1 hour concentration (ppm)		0.017	0.017	0.018
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3 hour concentration (ppm)		0.010	0.011	0.013
Number of days exceeded:	Federal: > 0.5 ppm	0	0	0
Maximum 24 hour concentration (ppm)		0.006	0.007	0.005
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.002	0.002	0.002
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Source: CARB and EPA Web sites.

ppm = parts per million

µg/m³ = micrograms per cubic meter

ND = No data. There was insufficient (or no) data to determine the value.

^a 5551 Bethel Island Road, Bethel Island, CA was the closest monitoring station with SO₂ data.

(1) Local Carbon Monoxide Hotspots. Local air quality is most affected by CO emissions from motor vehicles. CO is typically the pollutant of greatest concern because it is created in abun-

dance by motor vehicles and it does not readily disperse into the air. Because CO does not readily disperse, areas of vehicle congestion can create “pockets” of high CO concentration called “hot spots.” These pockets have the potential to exceed the State 1-hour standard of 20 ppm and/or the 8-hour standard of 9.0 ppm.

While CO transport is limited, it does disperse with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project’s effect on local CO levels.

(2) Vehicle Emissions. Long-term air emission impacts are those associated with changes in automobile travel within the City. Mobile source emissions would result from vehicle trips associated with increased vehicular travel. As is true throughout much of the United States, motor vehicle use is projected to increase substantially in the region. The BAAQMD, local jurisdictions, and other parties responsible for protecting public health and welfare will continue to seek ways of minimizing the air quality impacts of growth and development in order to avoid further exceedances of the standards.

(3) Fugitive Dust. Fugitive dust emissions are generally associated with demolition, land clearing, exposure of soils to the air, and cut and fill operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations and weather conditions.

The EPA has developed an approximate emission factor for construction-related emissions of total suspended particulate of 1.2 tons per acre per month of activity. This factor assumes a moderate activity level, moderate silt content in soils being disturbed and a semi-arid climate. The CARB estimates that 64 percent of construction-related total suspended particulate emissions is PM₁₀. Therefore, the emission factors for uncontrolled construction-related PM₁₀ emissions are 0.77 tons per acre per month of PM₁₀, or 51 pounds per acre per day of PM₁₀.

However, construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. There are a number of feasible control measures that can be reasonably implemented to significantly reduce PM₁₀ emissions from construction. Rather than attempting to provide detailed quantification of anticipated construction emissions from projects, the BAAQMD suggests the following:

“The determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From the Districts’ [BAAQMD] perspective, quantification of emissions is not necessary, although a lead agency may elect to do so. If all of the control measures indicated as appropriate, depending on the size of the project are implemented, then air pollution from emissions from construction activities would be considered a less-than-significant impact.”²

² Bay Area Air Quality Management District, 1996. *BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans*. April. (Amended in December 1999.)

(4) **Odors.** During construction, the various diesel powered vehicles that would be used would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the construction area.

(5) **Construction Equipment Exhaust.** Construction activities cause combustion emissions from utility engines, heavy-duty construction vehicles, equipment hauling materials to and from construction sites and motor vehicles transporting construction crews. Exhaust emissions from construction activities vary daily as construction activity levels change. The use of construction equipment results in localized exhaust emissions.

d. Relevant Policies. The following policies and actions from the Open Space and Conservation Element of the City of Livermore General Plan that specifically address air quality are applicable to the proposed project.

- OSC-6.1.P1: The City shall require project developers to develop and implement a construction-period air pollution control plan, consistent with dust and emission-abatement actions outlined in the CEQA handbook of the Bay Area Air Quality Management District.
- OSC-61.P5: The City shall attempt to increase the employment to population ratio to reduce commuting rates and associated vehicle-related pollution emissions. The City shall approve only those development proposals, which are designed and located to minimize energy consumption and adverse impacts on air, land and water resources. High-density, transit-oriented developments shall be strongly encouraged and promoted through the use of specific planning, density transfer, the planned development concept, and zoning designations.
- OSC-6.1.A2: Provide incentives to reduce vehicle trips and increase ridesharing so as to reduce pollutants generated by vehicular combustion engines.
- LU-4.2.P.3: Encourage all additions and new development to follow green building practices for design, construction, and operation and to incorporate as many LEED prerequisites and credits as feasible.
- CIR-7.1.A3: Support regional air quality objectives through effective management of the City's transportation system.
- PS-4.1.P5: When reviewing applications for new development in areas historically used for commercial or industrial uses, the City shall require environmental investigation as necessary to ensure that soils, groundwater, and buildings affected by hazardous material releases from prior land uses, and lead and asbestos potentially present in building materials, would not have the potential to affect the environment or the health and safety of future property owners or users.

2. Impacts and Mitigation Measures

This section analyzes air quality impacts that could result from implementation of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

a. Criteria of Significance. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Center would result in a significant impact on air quality if it would:

1. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation;

2. Violate the District's air quality standards or contribute substantially to an existing or projected air quality violation by:
 - Contributing to CO concentrations exceeding the State ambient air quality standards of 9 ppm averaged over 8 hours and 20 ppm for 1 hour; or
 - Generating criteria air pollutant emissions of ROG, NO_x, or PM₁₀ in excess of 15 tons per year, or 80 pounds per day.
3. Frequently expose members of the public to objectionable odors;
4. Conflict with or obstruct implementation of an applicable air quality plan;
5. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emission which exceed quantitative thresholds for ozone precursors);
6. Expose sensitive receptors (including residential areas) or the general public to toxic air contaminants in excess of the following thresholds:
 - Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million; or
 - Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.
7. Result in a cumulative air quality impact. Projects that would individually have a significant air quality impact due to project operations would also result in a cumulative air quality impact. For projects that do not individually have significant operational air quality impacts, a cumulative impact would result if the project would cause the City's General Plan to conflict with the Clean Air Plan (CAP) or, if the City's General Plan is already inconsistent with the Clean Air Plan and the project would combine with other reasonably foreseeable future projects to either: 1) exceed the BAAQMD individual operational thresholds of significance, or 2) exceed the CAP population and vehicle miles traveled (VMT) assumptions for growth in the City or County.

b. Impact Analysis. The following discussion describes the air quality impacts associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential air quality impacts associated with the Amendments is undertaken at a general program-level. Additionally, the following analysis assumes that air quality impacts related to the Theater project would be comparable at the First Street/South Livermore Avenue, Livermore Village, and First Street/Maple Street sites given: the dispersive nature of air quality emissions; the proximity of the alternative sites to one another (within two blocks); and the project-related traffic volumes, trip generation, intersection level-of-service results and vehicular turning movements were determined to be essentially the same for each Theater alternative site (per the Traffic Impact Study included in Appendix C). Therefore, in the following discussion of air quality, impacts and mitigations are not called out as being applicable to one Theater site or another, except in the case of CO emission "hot spots" related to vehicular turning movements. The reader should note, however, that the proposed project evaluated in this section assumes that the Theater is constructed at the First Street/South Livermore Avenue site as a base case condition.

(1) Violate Air Quality Standards (Criteria 1, 2, and 5). Long-term air emissions and carbon monoxide effects of traffic are described below.

Long-Term Air Emissions (Criteria 5). New emissions from the proposed project would derive from both direct and indirect sources. Direct emissions are generated by on-site combustion for heating building interiors and other minor sources. Most emissions would be indirect (i.e., related to auto and truck traffic generated by project land uses).

The Urban Emissions Model (URBEMIS2007)³ computer model, which is the most current air quality model available in California for estimating emissions associated with land use development projects, was used to calculate emissions from all trips associated with the Amendments and Theater project. This analysis was based on the proposed land uses and assumed a year 2011 vehicle mix (i.e., a standard vehicle fleet mix relative to year 2011). The model's default trip lengths for the proposed land uses associated with the Amendments were used.

Daily emissions generated by project-related vehicle trips are shown in Table IV.D-5 for carbon monoxide (CO), reactive organic gases (ROG) and oxides of nitrogen (NO_x) (two precursors of ozone), PM_{2.5} (particulate matter, 2.5 microns or less in diameter) and PM₁₀ (particulate matter, 10 microns or less in diameter). The BAAQMD has established thresholds of significance for CO, ROG, NO_x, and PM₁₀ emissions. The BAAQMD has not established a threshold of significance for PM_{2.5}. As shown, emissions associated with the proposed project are well below the BAAQMD thresholds of significance, and air quality impacts related to regional vehicle emissions generated by the project would be less-than-significant.

Table IV.D-5: Regional Vehicular Emissions Generated by Project

	Emissions (Pounds/Day)				
	CO	ROG	NO _x	PM ₁₀	PM _{2.5}
Trip Emission Totals	505	43	69	78	14
BAAQMD Thresholds	550	80	80	80	N/A
Exceed?	No	No	No	No	N/A

Source: LSA Associates, Inc., 2008.

Carbon Monoxide Effects of Traffic. Traffic generated by the project would contribute to local carbon monoxide (CO) concentrations along roadway segments and near intersections. As previously described, because CO does not readily disperse, areas of vehicle congestion can create pockets of high CO concentrations, called "hot spots." CALINE-4⁴ computer simulation model was used to evaluate 17 intersections within and adjacent to the Downtown Specific Plan area. These intersections were selected based on afternoon peak hour level of service (LOS) modeling described in Section IV.C, Transportation and Circulation, of this EIR.

The year 2008 CO emission factors were used for the existing conditions and existing plus project conditions as a worst case scenario (since these emission factors decrease in the future as a result of technological advancement). The existing conditions and existing plus project conditions for the 17 selected intersections are shown in Table IV.D-6. Table IV.D-7 shows predicted CO concentrations for the cumulative conditions (2030) and cumulative plus project conditions.

³ Rimpo and Associates, Jones & Stokes, 2008. Urban Emissions Model (URBEMIS2007).

⁴ University of California, Davis Institute of Transportation Studies and the California Department of Transportation, 1998. Caline4 Model.

The projected 1-hour CO concentrations in Table IV.D-6 and Table IV.D-7 were compared to the State and federal ambient 1-hour air quality standards of 20 ppm and 35 ppm, respectively to determine if CO emissions for the project exceeded State or federal thresholds. As the federal CO concentration standards are equal to or less stringent than the State standards, they are not shown on Table IV.D-6 or Table IV.D-7. Predicted 8-hour concentrations in Table IV.D-6 and Table IV.D-7 were compared to the State and federal 8-hour standards of 9 ppm. As shown in Tables IV.D-6 and IV.D-7, existing CO concentrations at the study intersections do not exceed State, and therefore federal, standards.

Despite increased traffic levels in 2030, Table IV.D-7 shows that CO concentrations are predicted to be lower than in year 2008 due to gradual reductions in emission rates for vehicles resulting from State-mandated emission control programs. CO concentrations in the cumulative 2030 plus project conditions also would remain below the applicable standards. Therefore, the impact of the proposed project on local CO concentrations in the cumulative condition would be less than significant.

To ensure that any changes in vehicular movement patterns associated with the Theater if it were to be constructed at the two other alternative sites (First Street/Maple Street site or Livermore Village site both with and without the realignment of Railroad Avenue) did not create CO hotspots, LSA used the results of the traffic analysis for each alternative site to determine resulting CO concentrations at the 17 study intersections using the CALINE4 model. The results of the CALINE4 modeling for each of the alternatives (provided in Appendix D) shows that the projected 1-hour and 8-hour CO concentrations would be less-than or equal to those of the proposed project if the Theater were located at the First Street/South Livermore Avenue site (shown in Table IV.D-7). As stated previously, the cumulative plus project CO concentrations would remain well below the applicable standards, and the impact of the proposed project on local CO concentrations in the cumulative condition under any alternative would be considered less than significant.

(2) Odor Impacts (Criteria 3). Some objectionable odors may be generated from the operation of diesel-powered construction equipment and/or asphalt paving during the project construction period. However, these odors would be short term in nature and would not result in permanent impacts to surrounding land uses, including sensitive receptors within and adjacent to the project site.

While it is unknown at this point what types of specific uses would be developed under implementation of the Amendments, it is possible that some uses (e.g., fast food restaurants) could have the potential to produce odors. However, potential odor generating uses would be regulated through the City's Standard Conditions of Approval for specific use types. Therefore, the proposed project would result in a less-than-significant odor impact.

Table IV.D-6: Existing Plus Project Conditions CO Concentrations

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards ^a	
					1-Hr	8-Hr
Livermore Avenue and Portola Avenue	21 / 21	0.2 / 0.1	5.8 / 6.0	3.5 / 3.6	No	No
	21 / 21	0.5 / 0.3	5.4 / 5.9	3.2 / 3.5	No	No
	19 / 19	0.2 / 0.1	5.4 / 5.6	3.2 / 3.3	No	No
	17 / 17	0.2 / 0.1	5.3 / 5.5	3.1 / 3.2	No	No
First Street and Portola Avenue	15 / 15	0.0 / 0.0	6.4 / 6.4	3.9 / 3.9	No	No
	14 / 14	0.1 / 0.1	6.2 / 6.3	3.7 / 3.8	No	No
	14 / 14	0.1 / 0.1	6.2 / 6.3	3.7 / 3.8	No	No
	14 / 14	0.0 / 0.0	6.2 / 6.2	3.7 / 3.7	No	No
L Street and Portola Avenue	17 / 17	0.1 / 0.1	4.9 / 5.0	2.8 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
	17 / 17	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
	15 / 15	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
Murrieta Boulevard and Stanley Boulevard	17 / 17	0.2 / 0.1	6.4 / 6.6	3.9 / 4.0	No	No
	17 / 17	0.1 / 0.1	6.2 / 6.3	3.7 / 3.8	No	No
	15 / 15	0.1 / 0.1	6.2 / 6.3	3.7 / 3.8	No	No
	15 / 15	0.1 / 0.1	6.0 / 6.1	3.6 / 3.7	No	No
P Street and Railroad Avenue	15 / 15	0.3 / 0.2	5.6 / 5.9	3.3 / 3.5	No	No
	14 / 14	0.2 / 0.2	5.6 / 5.8	3.3 / 3.5	No	No
	14 / 14	0.2 / 0.1	5.3 / 5.5	3.1 / 3.2	No	No
	14 / 14	0.3 / 0.2	5.0 / 5.3	2.9 / 3.1	No	No
L Street and Railroad Avenue	14 / 14	0.3 / 0.2	5.4 / 5.7	3.2 / 3.4	No	No
	14 / 14	0.4 / 0.3	5.3 / 5.7	3.1 / 3.4	No	No
	14 / 14	0.3 / 0.2	5.2 / 5.5	3.0 / 3.2	No	No
	14 / 14	0.5 / 0.3	4.8 / 5.3	2.8 / 3.1	No	No
Livermore Avenue and Railroad Avenue	17 / 14	0.4 / 0.3	5.2 / 5.6	3.0 / 3.3	No	No
	14 / 14	0.4 / 0.2	5.1 / 5.5	3.0 / 3.2	No	No
	14 / 14	0.5 / 0.4	4.9 / 5.4	2.8 / 3.2	No	No
	14 / 14	0.5 / 0.3	4.8 / 5.3	2.8 / 3.1	No	No
P Street and First Street	14 / 14	0.2 / 0.1	4.4 / 4.6	2.5 / 2.6	No	No
	14 / 14	0.2 / 0.1	4.4 / 4.6	2.5 / 2.6	No	No
	14 / 14	0.3 / 0.2	4.3 / 4.6	2.4 / 2.6	No	No
	14 / 14	0.2 / 0.1	4.3 / 4.5	2.4 / 2.5	No	No
L Street and First Street	14 / 14	0.2 / 0.1	4.3 / 4.5	2.4 / 2.5	No	No
	14 / 14	0.2 / 0.2	4.2 / 4.4	2.3 / 2.5	No	No
	14 / 14	0.2 / 0.2	4.2 / 4.4	2.3 / 2.5	No	No
	14 / 14	0.1 / 0.1	4.2 / 4.3	2.3 / 2.4	No	No
Livermore Avenue and First Street	14 / 14	0.0 / 0.0	4.2 / 4.2	2.3 / 2.3	No	No
	14 / 14	0.1 / 0.0	4.1 / 4.2	2.3 / 2.3	No	No
	14 / 14	0.1 / 0.0	4.1 / 4.2	2.3 / 2.3	No	No
	14 / 14	0.1 / 0.0	4.1 / 4.2	2.3 / 2.3	No	No
Maple Street and First Street	17 / 17	0.1 / 0.0	5.4 / 5.5	3.2 / 3.2	No	No
	17 / 17	0.0 / 0.0	5.4 / 5.4	3.2 / 3.2	No	No
	14 / 14	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	14 / 14	0.1 / 0.0	5.1 / 5.2	3.0 / 3.0	No	No
Old First Street and First Street	14 / 14	0.0 / 0.0	5.4 / 5.4	3.2 / 3.2	No	No
	14 / 14	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	14 / 14	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	14 / 14	0.0 / 0.0	4.9 / 4.9	2.8 / 2.8	No	No

Table IV.D-6 *Continued*

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards ^a	
					1-Hr	8-Hr
Inman Street and First Street	14 / 14	0.0 / 0.0	5.7 / 5.7	3.4 / 3.4	No	No
	13 / 13	0.0 / 0.0	5.6 / 5.6	3.3 / 3.3	No	No
	12 / 12	0.0 / 0.0	5.6 / 5.6	3.3 / 3.3	No	No
	12 / 12	0.0 / 0.0	5.4 / 5.4	3.2 / 3.2	No	No
L Street and Second Street	14 / 14	0.0 / 0.0	4.1 / 4.1	2.3 / 2.3	No	No
	14 / 14	0.0 / 0.0	4.1 / 4.1	2.3 / 2.3	No	No
	14 / 14	0.0 / 0.0	4.1 / 4.1	2.3 / 2.3	No	No
	14 / 14	0.0 / 0.0	4.0 / 4.0	2.2 / 2.2	No	No
Livermore Avenue and Fourth Street	14 / 14	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	11 / 11	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	10 / 10	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
	10 / 10	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
Livermore Avenue and East Avenue	14 / 14	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	13 / 13	0.0 / 0.0	5.2 / 5.2	3.0 / 3.0	No	No
	13 / 13	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
	7 / 7	0.0 / 0.0	4.8 / 4.8	2.8 / 2.8	No	No
Holmes Street and Murrieta Boulevard	17 / 17	0.1 / 0.1	6.0 / 6.1	3.6 / 3.7	No	No
	16 / 17	0.3 / 0.2	5.8 / 6.1	3.5 / 3.7	No	No
	15 / 16	0.2 / 0.2	5.6 / 5.8	3.3 / 3.5	No	No
	14 / 15	0.1 / 0.1	5.5 / 5.6	3.2 / 3.3	No	No

Note: This analysis includes ambient one-hour concentration of 3.3 ppm and ambient eight-hour concentration of 1.7 ppm, measured at the 793 Rincon Ave., Livermore Station in Alameda County.

^a The State one-hour standard is 20 ppm and the eight-hour standard is 9 ppm.

Source: LSA Associates, Inc. 2008.

(3) Local Plan Consistency (Criteria 4). The population in the City of Livermore grew from 74,851 in 2000 to 80,400 people in the year 2005 (5,549 people over a 5-year period), or approximately 1.5 percent per year.⁵ As described previously, the Clean Air Plan (CAP) is based on the population and traffic growth projected in the general plans prepared by the cities and counties within the Bay Area air basin.

Figure 3 on page 6 of the Bay Area 2000 CAP depicts the growth in population, vehicles, and vehicle miles traveled in the Bay Area. This figure shows that VMT growth (80 percent growth from 1980 to 2006, or approximately 2.3 percent a year) outpaced population growth (40 percent growth from 1980 to 2006, or approximately 1.3 percent a year) in the Bay Area. Although there is no comparable figure to show such growth for the City of Livermore, it is assumed that the City generally has similar growth rates.

⁵ Association of Bay Area Governments, 2006. *Projections 2007, Forecasts for the San Francisco Bay Area to the Year 2035*. December.

Table IV.D-7: Cumulative 2030 Plus Project Conditions CO Concentrations

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards ^a	
					1-Hr	8-Hr
Livermore Avenue and Portola Avenue	21 / 21	0.1 / 0.1	3.9 / 4.0	2.1 / 2.2	No	No
	19 / 19	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	17 / 17	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	17 / 17	0.1 / 0.0	3.8 / 3.9	2.1 / 2.1	No	No
First Street and Portola Avenue	17 / 16	0.1 / 0.1	3.9 / 4.0	2.1 / 2.2	No	No
	16 / 15	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	15 / 14	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	14 / 14	-0.1 / 0.0	3.9 / 3.8	2.1 / 2.1	No	No
L Street and Portola Avenue	17 / 17	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	15 / 15	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	15 / 15	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
Murrieta Boulevard and Stanley Boulevard	21 / 21	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	21 / 21	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	19 / 19	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	19 / 19	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
P Street and Railroad Avenue	17 / 17	0.1 / 0.0	3.8 / 3.9	2.1 / 2.1	No	No
	15 / 15	0.1 / 0.0	3.8 / 3.9	2.1 / 2.1	No	No
	14 / 14	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	14 / 14	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
L Street and Railroad Avenue	14 / 14	0.1 / 0.1	3.9 / 4.0	2.1 / 2.2	No	No
	14 / 14	0.1 / 0.1	3.9 / 4.0	2.1 / 2.2	No	No
	14 / 14	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	14 / 14	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
Livermore Avenue and Railroad Avenue	17 / 17	0.1 / 0.1	4.0 / 4.1	2.2 / 2.3	No	No
	15 / 15	0.0 / 0.0	4.0 / 4.0	2.2 / 2.2	No	No
	14 / 14	0.1 / 0.1	3.9 / 4.0	2.1 / 2.2	No	No
	14 / 14	0.1 / 0.1	3.9 / 4.0	2.1 / 2.2	No	No
P Street and First Street	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
L Street and First Street	14 / 14	0.0 / 0.0	3.6 / 3.6	1.9 / 1.9	No	No
	14 / 14	0.1 / 0.1	3.5 / 3.6	1.8 / 1.9	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
Livermore Avenue and First Street	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
Maple Street and First Street	14 / 14	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
Old First Street and First Street	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No

Table IV.D-7 *Continued*

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards ^a	
					1-Hr	1-Hr
Inman Street and First Street	14 / 14	0.0 / 0.0	4.0 / 4.0	2.2 / 2.2	No	No
	14 / 14	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	12 / 12	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	10 / 10	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
L Street and Second Street	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	1.8 / 1.8	No	No
Livermore Avenue and Fourth Street	14 / 14	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	14 / 14	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	13 / 13	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	13 / 13	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
Livermore Avenue and East Avenue	14 / 14	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	13 / 13	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.0 / 2.0	No	No
Holmes Street and Murrieta Boulevard	21 / 21	0.0 / 0.0	3.9 / 3.9	2.1 / 2.1	No	No
	17 / 20	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	17 / 17	0.0 / 0.0	3.8 / 3.8	2.1 / 2.1	No	No
	15 / 17	-0.1 / -0.1	3.8 / 3.7	2.1 / 2.0	No	No

Note: This analysis includes ambient one-hour concentration of 3.3 ppm and ambient eight-hour concentration of 1.7 ppm., measured at the 793 Rincon Ave., Livermore Station in Alameda County.

^a The State one-hour standard is 20 ppm and the eight-hour standard is 9 ppm.

Source: LSA Associates, Inc. 2008.

The proposed project would allow for increased development in the Downtown Specific Plan area. The land uses identified as part of the Amendments do not include an increase in residential development in the Downtown. Development associated with the project would be consistent with what is anticipated under the population projections prepared by Association of Bay Area Governments (ABAG).

The Downtown Specific Plan area is served by regional freeways and has local and regional bus and train transit service. While additional development associated with implementation of the project would increase the generation of local trips, this project is within a central Downtown area with locally-serving amenities which could reduce regional vehicle trips. Development of the proposed project is not anticipated to conflict with regional projections of population growth or the rate of growth in vehicle miles traveled in the region that were used to develop the latest CAP. As a result, it would not conflict with the Bay Area 2000 Clean Air Plan or the 2005 Bay Area Ozone Strategy and would not delay either plan's attainment goals for the Basin.

(4) Toxic Air Contaminants (Criteria 6). In 1998 the CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled

engines.⁶ The BAAQMD identified the following types of facilities as sources for high levels of diesel exhaust: truck stop; warehouse distribution center; large retail or industry facility; high volume transit center; school with high volume bus or traffic; high volume highway; and high volume arterial/roadway with high level of diesel traffic. High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as having the highest associated risk.

Health risks from toxic air contaminants are a function of both concentration and duration of exposure. The closest major source of potential toxic air contaminants is the Livermore Transit Center which is located 500 feet north of the First Street/Maple Street site (the closest alternative Theater site to the Transit Center). The Livermore Transit Center serves as the major transfer point for the local routes in Livermore and a connection point for the Altamont Commuter Express train, Amtrak motor coach buses, and Greyhound buses. The proposed project would not add any additional residential units to the Downtown area. Commercial, office and Theater development associated with implementation of the project would not be considered sensitive receptors affected by the TACs created by diesel emissions as the duration of their exposure would be much less than for a residential use. With natural air dispersion of pollutants from the Transit Center, the concentrations of TACs at the First Street/Maple Street site would not be noticeably higher than the existing ambient concentrations. The nearest sensitive receptors are the single-family residential homes located approximately 80 feet southeast of the First Street/Maple Street site. Due to their substantial distance from the Transit Center, there would be no significant health risks from TACs resulting from implementation of the proposed project on these homes. Additionally, the project meets the CARB "Air Quality and Land Use Handbook: A Community Health Perspective" recommendation to "avoid sitting new sensitive land uses within 500 feet of a freeway or high-traffic road".⁷

Construction activities are a source of organic gas emissions. During construction various diesel-powered vehicles and equipment would be in use. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction-related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a distance from nearby receptors. Because of its short duration, health risks from construction emissions of diesel particulate would be considered a less-than-significant impact.

Truck deliveries associated with equipment, food and other items related to operation of the Theater would occur. However, truck deliveries would occur intermittently and not on a regular daily basis (for example like deliveries associated with a warehouse use or major retail or grocery use). Truck deliveries at the Theater would be subject to State anti-idling regulations adopted by CARB in 2005, which prohibit operators of diesel-fueled trucks with a gross vehicle weight rating greater than 10,000 pounds from idling for more than 5 minutes.⁸ The regulations state that on or after February 1, 2005, the driver of any vehicle subject to this regulation: (1) shall not idle the vehicle's primary diesel

⁶ California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

⁷ California Air Resources Board, 2005. *Air Quality and Landuse Handbook: A Community Health Perspective*.

⁸ California Code of Regulations. Title 13. Section 2485

engine for greater than 5.0 minutes at any location⁹, and (2) shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 100 feet of a restricted area. Therefore, truck deliveries to the Theater would not be a significant source of TACs resulting from diesel-fueled engines.

The implementation of the proposed project would not result in any new sources of Toxic Air Contaminants (TACs) or be located near any existing major sources of TACs. The project would not expose sensitive receptors or the general public to substantial levels of TACs and would be considered a less-than-significant impact.

(5) Construction Emissions (Criteria 6). Construction dust would affect local air quality at various times during construction of the proposed project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed. Clearing, grading and earthmoving activities have a high potential to generate dust whenever soil moisture is low, and particularly when the wind is blowing.

Impact AIR-1: Construction period activities could generate significant dust, exhaust and organic emissions. (S)

The proposed project would require excavation, grading, and other site preparation work. The breaking up of pavement, removal of trees, excavation of soils and existing infrastructure are activities that have a high potential to generate air emissions.

Construction activities are also a source of organic gas emissions. Solvents in adhesives, non-water-based paints, thinners, some insulating materials and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

The effects of construction activities would be increased dust fall and locally elevated levels of particulates downwind of construction activity. Construction dust has the potential to create a nuisance at nearby properties or at previously completed portions of the proposed project.

The following mitigation measures include feasible measures for construction emissions identified by the BAAQMD. Implementation of the following two-part mitigation measure would reduce construction impacts of the proposed project to a less-than-significant level.

⁹ Certain exceptions are noted in California Code of Regulations, Title 13, Section 2485 Subsection (d), including, but not limited to (1) idling if the vehicle must remain motionless due to traffic conditions over which the driver has no control; (2) idling when the vehicle is queuing that at all times is beyond 100 feet from any restricted area; or (3) idling when positioning or providing a power source for equipment or operations, other than transporting passengers or propulsion, which involve a power take off or equivalent mechanism and is powered by the primary engine for (a) controlling cargo temperature, operating a lift, crane, pump, drill, hoist, mixer (such as a ready mix concrete truck), or other auxiliary equipment, or (b) providing mechanical extension to perform work functions for which the vehicle was designed and where substitute alternate means to idling are not reasonably available.

Mitigation Measure AIR-1a: Consistent with guidance from the BAAQMD, the following actions shall be required of all construction contracts and specifications for the project:

Demolition. The following controls shall be implemented during demolition:

- Water during demolition work, including the break-up of pavement and infrastructure, to control dust generation;
- Cover all trucks hauling demolition debris from the site; and
- Use dust-proof chutes to load debris into trucks whenever feasible.

Construction. The following controls shall be implemented at all construction sites:

- Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers to control dust;
- Cover all trucks hauling soil, sand, and other loose materials;
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- Apply non-toxic soil stabilizers to inactive construction areas;
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);
- Diesel equipment standing idle for more than 5 minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks may keep their engines running continuously as long as they are on a construction site;
- Properly tune and maintain equipment to reduce emissions;
- Avoid staging equipment within 200 feet of residences;
- Limit traffic speeds on unpaved roads to 15 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Replant vegetation in disturbed areas as quickly as possible;
- Any temporary haul roads to soil stockpile areas shall be routed away from existing neighboring land uses;
- Water sprays shall be utilized to control dust when material is being added or removed from stockpiles. When stockpiles are undisturbed for more than one week, storage piles shall be treated with a dust suppressant or crusting agent to eliminate wind-blown dust generation;

- Install baserock at entryways for all exiting trucks, and wash off the tires or tracks of all trucks and equipment in designated areas before leaving the site; and
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.

Mitigation Measure AIR-1b: Development applicants shall provide a construction dust control coordinator as part of a construction-period air pollution control plan (required under General Plan Policy OSC-6.1P1). All neighboring properties located within 500 feet of property lines of a construction site shall be provided with the name and phone number of a designated construction dust control coordinator who will respond to complaints within 24 hours by suspending dust-producing activities or providing additional personnel or equipment for dust control as deemed necessary. The phone number of the BAAQMD pollution complaints contact shall also be provided. The dust control coordinator shall be on-call during construction hours. The coordinator shall keep a log of complaints received and remedial actions taken in response. This log shall be made available to City staff upon its request. (LTS)

Implementation of this mitigation measure would reduce construction period air quality impacts to a less-than-significant level.

(6) Cumulative Emissions (Criteria 7). The proposed project is located in a federal and State non-attainment area for 1-hour ozone emissions and in a State non-attainment area for PM₁₀. The BAAQMD CEQA Guidelines state that a project would result in significant emissions (on both the project and cumulative scales) of criteria pollutants if the project results in the emission of more than 80 pounds per day of ROG, NO_x, or PM₁₀. Emissions associated with implementation of the Amendments and the Theater project would not exceed the BAAQMD's emission thresholds. Development of the proposed project is not anticipated to conflict with regional projections of population growth or the rate of growth in vehicle miles traveled in the region that were used to develop the latest Clean Air Plan. As a result, it would not conflict with the Bay Area 2000 Clean Air Plan (CAP) or the *2005 Bay Area Ozone Strategy* and would not delay either plan's attainment goals for the Basin. Therefore, implementation of the proposed project would not result in a substantial cumulative air quality impact.

(7) Projects, Criteria Pollutants and Public Health. Despite great progress in air quality improvement, approximately 146 million people nationwide lived in counties with pollution levels above the national standards in 2002. Out of the 230 nonattainment areas identified during the 1990 Clean Air Act Amendment designation process, 124 areas remain under nonattainment status or designation today. In these nonattainment areas, however, the severity of air pollution episodes has decreased. Air quality in the San Francisco Bay Area Air Basin in the past 20 years has improved steadily and dramatically, even with the increase in population and vehicles and other sources.

As shown in Table IV.D-2, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, as stated in the thresholds of significance, emission thresholds established by the air district are used to manage total regional emissions within an air basin, based on the air basin attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations that may affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no direct correlation of a single project to localized health effects. One individual project having emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like NO_x and ROG.

Based on the above discussion, the potential for an individual project to significantly degrade regional air quality or contribute to significant health risk is small, even if the emission thresholds are exceeded by the project. Because of the overall improvement trend in air quality in the air basin, it is unlikely the regional air quality would worsen or health risk increase from the current condition due to emissions from an individual project.

E. GLOBAL CLIMATE CHANGE

Increasing public awareness and general scientific consensus that global climate change is occurring have placed a new focus on the California Environmental Quality Act (CEQA) as a means to address a project's effects on greenhouse gas (GHG) emissions. This section evaluates the proposed project's potential effects on global climate change. CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects considered for approval. According to a recent letter from California's Office of the Attorney General¹ and other State guidance, global climate change can be considered an "effect on the environment" and an individual project's incremental contribution to global climate change can have a cumulatively considerable impact.

Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in GHGs and (b) global growth is continuing to contribute large amounts of GHGs across the globe. Therefore, this section addresses climate change primarily as a cumulative impact.

This section begins by providing general background information on climate change and meteorology. It then discusses the regulatory framework for global climate change, provides data on the existing global climate setting, and evaluates potential global climate-related emissions associated with the proposed project. Modeled project emissions are estimated based on the land uses proposed as part of the proposed project, vehicle data, and project trip generation, among other variables. The section then evaluates the cumulative impact of the project by analyzing whether the project conflicts with or obstructs the implementation of greenhouse gas reduction measures under AB 32 or other State regulations.

1. Setting

The following discussion provides an overview of global climate change, its causes, and its potential effects. The regulatory framework relating to global climate change is also summarized.

a. Global Climate Change Background. A description of global climate change and its sources are provided below.

(1) Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose $0.6 \pm 0.2^\circ$ Celsius ($^\circ\text{C}$) or $1.1 \pm 0.4^\circ$ Fahrenheit ($^\circ\text{F}$) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.²

¹ State of California, Department of Justice, 2008. *Comment letter to the City of Concord re "Concord Community Reuse Plan Draft Environmental Impact Report – SCH #2007052094"*. August 8.

² The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the naturally occurring greenhouse effect is beneficial.

GHGs are present in the atmosphere naturally, are released by natural sources, or formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to global climate change are as follows:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydroflourocarbons (HFCs)
- Perflourocarbons (PFCs)
- Sulfur Hexaflouride (SF₆)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO₂, methane, and N₂O, some gases, like HFCs, PFCs, and SF₆, are completely new to the atmosphere.

Some gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this EIR, the term “GHGs” will refer collectively to the above six gases only.

These gases vary considerably in terms of Global Warming Potential (GWP): the relative effectiveness of a gas to absorb infrared radiation, remain in the atmosphere, and contribute towards global warming. The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; thus, GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂eq). Table IV.E-1 shows the GWPs for each type of GHG. For example, sulfur hexaflouride is 22,800 times more potent at contributing to global warming than carbon dioxide.

The following discussion summarizes the characteristics of the GHGs listed above.

Carbon Dioxide (CO₂). In the atmosphere, carbon generally exists in its oxidized form as CO₂. Natural sources of CO₂ include the respiration (breathing) of humans, animals, and plants, and evaporation from the oceans. Increased CO₂ concentrations in the atmosphere have been primarily linked to increased combustion of fossil fuels. Natural sources release approximately 150 billion tons of CO₂ each year, far outweighing the 7 billion tons of manmade emissions from fossil fuel burning, waste incineration, deforestation, and other manmade sources. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of manmade CO₂, and consequently, the gas is building up in the atmosphere.

Table IV.E-1: Global Warming Potentials

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF ₄)	50,000	7,390
PFC: Hexafluoromethane (C ₂ F ₆)	10,000	12,200
Sulfur Hexafluoride (SF ₆)	3,200	22,800

Source: IPCC, 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

Fossil fuel combustion accounted for 98 percent of gross California CO₂ emissions. California's total CO₂ emissions from fossil fuel combustion in 2002 were 360 million metric tons of CO₂, which accounts for approximately 7 percent of the U.S. emissions from this source. The transportation sector accounted for the largest portion of CO₂ emissions, with gasoline consumption making up the greatest portion of these emissions.

Methane (CH₄). Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH₄ emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH₄ in California. Methane accounted for approximately 6 percent of gross climate change emissions (CO₂eq) in California in 2002. Total annual emissions of methane are approximately 500 million tons, with manmade emissions accounting for the majority. As with CO₂, the major removal process of atmospheric methane—chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

Nitrous Oxide (N₂O). Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N₂O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N₂O emissions in California. Nitrous oxide emissions accounted for nearly 7 percent of climate change emissions (CO₂eq) in California in 2002.

Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF₆). HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.³ PFCs and SF₆ are generally emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium

³ The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF₆ accounted for about 3.5 percent of gross climate change emissions (CO₂eq) in California.

The latest projections, based on state-of-the art climate models, indicate that temperatures in California are expected to rise 3 to 10.5°F by the end of the century.⁴ Because primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the point of emission.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun
- Natural processes within the climate system (e.g., changes in ocean circulation and reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions)
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., from deforestation, reforestation, urbanization, and desertification)

The impact of anthropogenic activities on global climate change is readily apparent in the observational record. For example, surface temperature data show that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature. In addition, the atmospheric water vapor content has increased since at least the 1980s over land, sea, and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snow pack in both hemispheres, and polar ice, and ice sheets in both the Arctic and Antarctic regions.

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO₂, CH₄ and N₂O, from before the start of industrialization (around 1750) to over 650,000 years ago. For that period, it was found that CO₂ concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from around 1750 to the present, global CO₂ concentrations increased from a pre-industrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the preindustrial period range.

The primary effect of global climate change has been a rise in the average global tropospheric⁵ temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming could occur, which would induce further changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and California would include, but would not be limited to:

⁴ California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California*. July.

⁵ The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;
- Decline of the Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

(2) Emissions Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and carbon sinks (i.e., places where carbon is trapped such as in plants and forests) of GHGs is essential for addressing climate change. This section summarizes the latest information on global, United States, California, and local human-generated GHG emission inventories.

Global Emissions. Worldwide emissions of GHGs in 2004 were 30 billion tons of CO₂eq per year⁶ (including both ongoing emissions from industrial and agricultural sources, but excluding emissions from land-use changes).

U.S. Emissions. In 2004, the United States emitted about 8 billion tons of CO₂eq or about 25 tons/year/person. Of the four major sectors nationwide — residential, commercial, industrial and transportation — transportation accounts for the highest fraction of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion.⁷

State of California Emissions. According to ARB emission inventory estimates, California emitted approximately 480 million metric tons⁸ of CO₂eq in 2004.⁹ This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth lowest per-capita carbon dioxide emission rate from fossil fuel combustion in the country, due

⁶ United Nations Framework Convention on Climate Change (UNFCCC), 2007. *Sum of Annex I and Non-Annex I Countries Without Counting Land-Use, Land-Use Change and Forestry (LULUCF). Predefined Queries: GHG total without LULUCF (Annex I Parties)*. Bonn, Germany, http://unfccc.int/ghg_emissions_data/predefined_queries/items/3814.php, accessed May 2.

⁷ US EPA, 2008. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2006*. April 15.

⁸ A metric ton is equivalent to approximately 1.1 tons.

⁹ California Air Resources Board, Greenhouse Gas Inventory Data - 1990 to 2004. Available at <http://www.arb.ca.gov/cc/inventory/data/data.htm> Accessed November 2008. Emissions referenced are 2004 "Net California Emissions."

to the success of its energy-efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.¹⁰ Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The California EPA Climate Action Team stated in its March 2006 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO₂eq) were as follows:

- Carbon dioxide (CO₂) accounted for 83.3 percent;
- Methane (CH₄) accounted for 6.4 percent;
- Nitrous oxide (N₂O) accounted for 6.8 percent; and
- Fluorinated gases (HFCs, PFC, and SF₆) accounted for 3.5 percent.¹¹

The California Air Resources Board (ARB) estimates that transportation is the source of approximately 38 percent of the State's GHG emissions in 2004, followed by electricity generation (both in-State and out-of-State) at 25 percent, and industrial sources at 20 percent. Agriculture is the source of approximately 6 percent, as are residential and commercial activities.¹²

ARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory accounts for all GHG emissions within the state of California and supports the AB 32 Climate Change Program. ARB's current GHG emission inventory is based on State-wide fuel use, processing, and activity data. These estimates are based on the actual amount of all fuels combusted in the State, which accounts for over 85 percent of the greenhouse gas emissions within California.

ARB staff has projected 2020 business-as-usual GHG emissions, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions. ARB staff estimates the State-wide 2020 business-as-usual GHG emissions will be 596 million metric tons (MMT) of CO₂eq. Emission reductions that are projected to result from the recommended measures in the Scoping Plan (to be prepared by ARB and adopted by the State in support of the AB 32 Climate Change Program¹³) total 174 MMT of CO₂eq, which would allow California to attain the 2020 emissions goal of 427 MMT of CO₂eq.

GHG emissions in 2020 from the transportation sector as a whole are expected to increase to 225.4 MMT of CO₂eq. The industrial sector consists of large stationary sources of GHG emissions and includes oil and gas production and refining facilities, cement plants, and large manufacturing facilities. Emissions for this sector are forecast to grow to 100.5 MMT of CO₂eq by 2020, an increase

¹⁰ California Energy Commission (CEC), 2007. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report*, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

¹¹ California Environmental Protection Agency, 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March

¹² ARB. 2008. <http://www.climatechange.ca.gov/inventory/index.html>. September.

¹³ California Air Resources Board. 2008. *Climate Change Proposed Scoping Plan: a framework for change*. October. Also see the regulatory context discussion (section b.2) below for more detail.

of approximately 5 percent from the average emissions level of 2002-2004. The commercial and residential sectors are expected to contribute 46.7 MMT of CO₂eq, or about 8 percent of the total State-wide GHG emissions in 2020.

Bay Area Emissions. In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of the Bay Area's GHG emissions, accounting for just over half of the Bay Area's 85 million tons of GHG emissions in 2002. Industrial and commercial sources were the second largest contributors of GHG emissions with about 25 percent of total emissions. Domestic sources (e.g., home water heaters, furnaces, etc.) account for about 11 percent of the Bay Area's GHG emissions, followed by power plants at 7 percent. Oil refining currently accounts for approximately 6 percent of the total Bay Area GHG emissions.¹⁴

City of Livermore. Using methodologies recommended by Local Governments for Sustainability - ICLEI, the City of Livermore completed a 2005 greenhouse gas emissions inventory in October 2008.¹⁵ Community emissions for the City of Livermore totaled approximately 691,000 metric tons of CO₂eq in 2005. Vehicles are the largest source of greenhouse gas emissions, accounting for 62.6 percent of the total emissions. Emissions from the residential, commercial and industrial sectors account for approximately one-third, or 32.7 percent, of the CO₂eq emissions. The remaining emissions are related to solid waste management and disposal.

b. Regulatory Framework. The regulatory framework for GHG emissions and global climate change is discussed in this section.

(1) Federal Regulations. In February 2002, the United States government announced a comprehensive strategy to reduce the GHG intensity of the American economy by 18 percent over the 10-year period from 2002 to 2012. GHG intensity measures the ratio of GHG emissions to economic output. New and refined technologies offer great promise to reduce GHG emissions significantly. The federal government established the multi-agency Climate Change Technology Program (CCTP) in February 2002 to accelerate the development and deployment of key technologies.

In February 2002, the United States government also announced a climate change research initiative to focus on key remaining gaps in climate change science. To meet this goal, the federal multiagency Climate Change Science Program (CCSP) was established to investigate natural and human-induced changes in the Earth's global environmental system; to monitor, understand, and predict global change; and to provide a sound scientific basis for national and international decision-making. The CCTP works closely with CCSP to make further progress in understanding and addressing global climate change. The United States Environmental Protection Agency's (EPA's) primary role in CCSP is evaluating the potential consequences of climate variability and the effects on air quality, water quality, ecosystems, and human health in the United States.

¹⁴ BAAQMD, 2006. *Source Inventory of Bay Area Greenhouse Gas Emissions*. November.

¹⁵ ICF Jones & Stokes for City of Livermore. 2008. *Livermore General Plan Proposed Climate Change Element and Draft Supplemental Environmental Impact Report and General Plan Amendment*. November 2008. Appendix D. 2005 Greenhouse Gas Inventory.

Currently there are no adopted federal regulations to control global climate change. However, recent authority has been granted to the EPA that may change the voluntary approach taken under the current administration to address this issue. On April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO₂ emissions under the federal Clean Air Act (CAA).

Over a decade ago, many countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), in an effort to begin to consider what can be done to reduce global warming and to cope with the physical and socioeconomic effects of climate change. In 2005, a number of nations approved an addition to the treaty: the Kyoto Protocol, which has more powerful (and legally binding) measures.

Because it will affect virtually all major sectors of the economy, the Kyoto Protocol is considered to be the most far-reaching agreement on environment and sustainable development ever adopted. Most of the world's countries eventually agreed to the Protocol, but some nations (including the United States) chose not to ratify it. Following ratification by Russia, the Kyoto Protocol entered into force on February 16, 2005, for signatory nations.

As of July 2008, 182 countries have ratified the agreement. Participating nations are separated into Annex 1 countries (i.e., industrialized nations) and Non-Annex 1 countries (i.e., developing nations) that have different requirements for GHG reductions. The goal of the Protocol is to achieve overall emissions reduction targets for six GHGs by 2012. The six GHGs regulated under the Protocol are CO₂, CH₄, N₂O, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. Each nation must reduce GHG emissions by a certain percentage below 1990 levels (e.g., 8 percent reduction for the European Union, 6 percent reduction for Japan). The average reduction target for nations participating in the Kyoto Protocol is approximately 5 percent below 1990 levels. Although the United States has not ratified the Protocol, on February 14, 2002, it established a goal of an 18 percent reduction in GHG emissions intensity by 2012. GHG intensity is the ratio of GHG emissions to economic output (i.e., gross domestic product).

(2) State Regulations. In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus, the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board, to establish the Air Resources Board (ARB). Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. The resulting State air quality standards set by the ARB continue to outpace the rest of the nation and have prompted the development of new antismog technology for industrial facilities and motor vehicles.

In a response to the transportation sector's significant contribution to California's CO₂ emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 requires ARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles whose primary use is noncommercial personal transportation in the state manufactured in 2009 and all subsequent model years. In setting these standards, the ARB considered cost-effectiveness, technological feasibility, and economic impacts. ARB adopted the standards in September 2004. When fully phased in, the near-term (2009 to 2012) standards would result in a reduction of approximately 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013 to 2016) standards would result in a reduction of approximately 30 percent. To set its own GHG emissions limits on motor vehicles, California must receive a waiver from the U.S. EPA. However, in December

2007, the U.S. EPA denied the request from California for the waiver. In January 2008, the California Attorney General filed a petition for review of the U.S. EPA's decision in the Ninth Circuit Court of Appeals; however, no decision on that petition has been published as of November 2008.

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "Global Warming Solutions Act," passed by the California State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020, a reduction of approximately 25 percent, and then an 80 percent reduction below 1990 levels by 2050. The ARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO₂eq. The emissions target of 427 MMT requires the reduction of 169 MMT from the state's projected business-as-usual 2020 emissions of 596 MMT. ARB is required to develop a Scoping Plan by January 1, 2009, or earlier, that outlines the main State strategies for attaining these reductions; in October 2008 a Proposed Scoping Plan was released.¹⁶ The Scoping Plan, when completed and adopted, will include a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Pursuant to the requirements of AB 32, the State's reduction in GHG emissions will be accomplished through an enforceable State-wide cap on GHG emissions that will be phased-in starting in 2012. However, as immediate progress in reducing GHGs can and should be made, AB 32 directed ARB and the newly created Climate Action Team (CAT)¹⁷ to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs ARB to consider the Low Carbon Fuel Standard as a discrete early action measure.

In June 2007, ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture).¹⁸ Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by the Health and Safety Code (HSC) Section 38560.5 that requires ARB to adopt discrete early actions. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, Port electrification, reduction of perfluorocarbons from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and sulfur hexafluoride (SF₆) reductions from the non-electricity sector. The

¹⁶ California Air Resources Board. 2008. *Climate Change Proposed Scoping Plan: a framework for change*. October.

¹⁷ CAT is a consortium of representatives from State agencies who have been charged with coordinating and implementing GHG emission reduction programs that fall outside of ARB's jurisdiction.

¹⁸ California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

combination of early action measures is estimated to reduce state-wide GHG emissions by nearly 16 MMT.¹⁹

To address GHG emission and global climate change in General Plans and CEQA documents, Senate Bill 97 (Chapter 185, 2007) requires the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how to address global warming emissions and mitigate project-specific GHG. OPR is required to prepare, develop, and transmit these guidelines on or before July 1, 2009. The Resources Agency would be required to certify and adopt these guidelines by January 1, 2010. Preliminary guidance released by OPR in June 2008 suggests that global climate change analyses in CEQA documents should be conducted for all projects that release GHGs, and that mitigation measures to reduce emissions should be incorporated into projects, to the extent feasible.

SB 375 was signed into law on October 1, 2008, which provides emissions-reduction goals and provides incentives for local governments and developers to follow new conscientiously planned growth patterns. SB 375 enhances the ARB's ability to reach AB 32 goals by directing ARB to develop regional greenhouse gas emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. ARB will also work with California's 18 metropolitan planning organizations to align their regional transportation, housing, and land use plans and prepare a "sustainable communities strategy" to reduce the number of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its greenhouse gas reduction targets.

Additionally, SB 375 provides incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The bill allows home builders to get relief from certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. It will also encourage the development of more alternative transportation options, which will promote healthy lifestyles and reduce traffic congestion.

As noted above, AB 32 requires ARB to prepare a Scoping Plan that contains the main strategies California will use to reduce the GHGs that cause climate change. In October 2008 ARB released an initial draft of the Proposed Scoping Plan, including measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures.²⁰ According to the Proposed Scoping Plan, reductions in GHGs could be achieved through enhancements to existing programs such as increased incentives, and even more stringent building codes and appliance efficiency standards. In addition, the use of solar water heaters can reduce natural gas use in homes and businesses. Buildings are the second largest contributor to California's GHG emissions. Green buildings offer a comprehensive approach to reducing GHG emissions that take into account multiple economic sectors including energy, water, waste, and transportation. Green buildings exceed minimum energy efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and incorporate sustainable and low-emitting materials that contribute to healthy indoor air quality. The Proposed Scoping Plan will be presented to the ARB Board for approval at its meeting in December 2008. After which, the measures in the Scoping Plan must be adopted through the normal rulemaking process, with the necessary public input.

¹⁹ California Air Resources Board, 2007. "ARB approves tripling of early action measures required under AB 32". New Release 07-46. <http://www.arb.ca.gov/newsrel/nr102507.htm>. October 25.

²⁰ California Air Resources Board, 2008. *Climate Change Proposed Scoping Plan: a framework for change*. October.

(3) Local Policies. The City of Livermore published a Draft Climate Change Element for inclusion in the General Plan in October 2008. As of November 2008, this element had not been adopted by the Livermore City Council. The Climate Change element proposes a new goal to reduce greenhouse gas emissions within the community consistent with the targets of AB 32. Goal CLI-1 states that “By 2020, the City of Livermore shall seek to reduce greenhouse gas emissions under the control of the City to a level 28% less than 2020 “Business as Usual” to support State implementation of the Global Warming Solutions Act of 2006 (AB 32).” Seven new objectives included in the Element that are intended to assist in accomplishing the new goal follow:

- Objective CLI-1.1: Adopt a Climate Action Plan by 2010 that will help the City address climate change.
- Objective CLI-1.2: Encourage and provide greater support for infill, mixed use, and higher density development in order to reduce GHG emissions associated with vehicle traffic.
- Objective CLI-1.3: Support measures that encourage alternative modes of transportation and alternative fuels in order to reduce emissions associated with vehicle traffic.
- Objective CLI-1.4: Enhance existing water efficiency and conservation measures and adopt new programs that encourage recycled water use and water efficiency in order to reduce energy and GHGs associated with water use.
- Objective CLI-1.5: Expand and adopt new polices and programs that will help to provide energy efficiency alternatives to fossil fuel use and reduce consumption in order to reduce greenhouse gas emissions.
- Objective CLI-1.6: Expand the number of trees in Livermore in order to provide a larger carbon sink or area containing natural sources that retain more carbon than what those sources emit.
- Objective CLI-1.7: Expand methods to increase waste diversion and recycling goals in order to reduce GHGs associated with waste disposal.

2. Impacts and Mitigation Measures

This section evaluates impacts to global climate change that could result from implementation of the proposed project, the Downtown Specific Plan Amendments and Regional Performing Arts Theater project. The evaluation of environmental effects presented in this section focuses on potential climate change impacts associated with the project’s increase in GHG emissions. Mitigation measures are proposed as appropriate.

There is no CEQA statute, regulation, or judicial decision that requires an EIR to analyze the GHG emissions of a project, or whether a project will have a significant impact on global warming. Senate Bill 97 directs OPR to develop CEQA Guidelines to address GHG emissions, and for the Resources Agency to adopt these Guidelines by January 1, 2010. OPR has not issued any formal regulations as of November 2008.

However, OPR did issue informal guidance in the form of a Technical Advisory in June 2008 on how to address climate change through CEQA review. The recommended approach for GHG analysis included in OPR’s June 2008 release is to: (1) identify and quantify GHG emissions; (2) assess the significance of the impact on climate change; and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below significance.²¹

²¹ California, State of, 2008. Governor’s Office of Planning and Research. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*. June 19.

As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential global climate change impacts associated with the Amendments is undertaken at a general program-level. Additionally, the following analysis assumes that air quality impacts related to the Theater project would be comparable at the First Street/South Livermore Avenue, Livermore Village, and First Street/Maple Street sites given: the dispersive nature of GHG emissions; the proximity of the alternative sites to one another; and the global nature of climate change. The reader should note, however, that the proposed project evaluated in this section assumes that the Theater is constructed at the First Street/South Livermore Avenue site as a base case condition.

a. Criteria of Significance. Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global warming. AB 32 requires State-wide GHG emissions to be reduced to 1990 levels by 2020. Although these State-wide reductions are now mandated by law, no generally applicable GHG emission threshold has yet been established, nor is formal regulatory agency guidance on global climate change analysis in CEQA documents anticipated to be available until mid-2009.

CEQA Guidelines Section 15064(b) provides that the “determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data,” and further, states that an “ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.” Furthermore, neither the CEQA statute nor Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis, and no State agency or local air quality management district has issued any regulations or standards of significance for the analysis of GHGs under CEQA; as with most environmental topics, significance criteria are left to the judgment and discretion of the lead agency.

Some policy makers and regulators suggest that a zero emissions threshold would be appropriate when evaluating GHGs and their potential effect on climate change. However, most feel that such an absolute threshold would be analytically impractical and would interfere with the ability of the economy to function. Further, prior CEQA case law makes clear that the “one additional molecule” rule is not consistent with CEQA.²² Such a rule also appears inconsistent with the State’s approach to mitigation of climate change impacts. AB 32 does not prohibit all new GHG emissions; rather, it requires a reduction in State-wide emissions to a given level. Thus, AB 32 recognizes that GHG emissions will continue to occur; increases will result from certain activities, but reductions must occur elsewhere.

Bearing in mind that CEQA does not require “perfection” but instead “adequacy, completeness, and a good faith effort at full disclosure,” the analysis below is based on methodologies and information available to the City at the time the study was prepared. Estimation of GHG emissions in the future does not account for all changes in technology that may reduce such emissions; therefore, the estimates are based on past performance and represent a scenario that is worse than that which is likely to be encountered (after energy-efficient technologies have been implemented). Additionally, as explained in greater detail below, many uncertainties exist regarding the precise relationship between specific levels of GHG emissions and the ultimate impact on the global climate. Significant uncertain-

²² *Communities for a Better Environment v. California Resources Agency*, 103 Cal. App. 4th 98, 2002

ties also exist regarding potential mitigation strategies. Thus, while information is presented below to assist the public and the City's decision makers in understanding the project's potential contribution to global climate change impacts, the information available to the City is not sufficiently detailed to allow a direct comparison between particular project characteristics and particular climate change impacts, nor between any particular proposed mitigation measure and any reduction in climate change impacts.

Because no applicable numeric thresholds have yet been defined, and because the precise causal link between an individual project's emissions and global climate change has not been developed, it is reasonable to conclude that an individual development project cannot generate a high enough quantity of GHG emissions to affect global climate change. However, individual projects do incrementally contribute to the potential for global climate change on a cumulative basis in concert with all other past, present, and reasonably foreseeable future projects. This analysis identifies qualitative factors to determine whether the proposed project's emissions should be considered cumulatively significant. Until the City or other regulatory agency devises a generally applicable climate change significance threshold, the analysis used in this study may or may not be applicable to other City projects.

This report analyzes whether the project would make a cumulatively significant contribution to the impact of global climate change under the following qualitative standard:

- The proposed project would result in a significant global climate change impact if it would conflict with or obstruct the implementation of GHG reduction goals under AB 32 or other State regulations.

If a project implements reduction strategies identified in AB 32, the Governor's Executive Order S-3-05, or other strategies to assist in reducing GHGs to the level proposed by the Governor, it could reasonably follow that the project would not result in a significant contribution to the cumulative impact of global climate change.

(1) Project-Related Emissions. GHG emissions estimates are provided herein for informational purposes only, as there is no established quantified GHG emissions threshold. Construction and operation of the proposed project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation (as opposed to its construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings and less than 20 percent is consumed during construction.²³

Overall, the following activities associated with the proposed project could contribute to the generation of GHG emissions:

- **Removal of Vegetation:** The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. However, planting of additional vegetation would result in additional carbon sequestration and lower the carbon footprint of the project.
- **Construction Activities:** Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment.

²³ United Nations Environment Programme (UNEP), 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*, Paris, France.

- **Gas, Electric and Water Use:** Natural gas use results in the emissions of two GHGs: CH₄ (the major component of natural gas) and CO₂ from the combustion of natural gas. Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy intensive. Preliminary estimates indicate that the total energy used to pump and treat this water exceeds 6.5 percent of the total electricity used in the State per year.²⁴
- **Solid Waste Disposal:** Solid waste disposal contributes to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH₄ from the anaerobic decomposition of organic materials. CH₄ is 25 times more potent a GHG than CO₂. However, landfill CH₄ can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use:** Transportation associated with the proposed project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

GHG emissions associated with the project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with project-related vehicular trips and stationary source emissions such as natural gas used for heating. Preliminary guidance from OPR and recent letters from the State Attorney General critical of CEQA documents that have taken different approaches indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, and construction activities. The calculation presented below includes construction emissions in terms of CO₂, and annual CO₂eq GHG emissions from increased energy consumption, water usage, solid waste disposal, as well as estimated GHG emissions from vehicular traffic that would result from implementation of the proposed project.

GHG emissions generated by the proposed project would predominantly consist of CO₂. In comparison to criteria air pollutants (see Section IV.D, Air Quality), such as ozone and PM₁₀, CO₂ emissions persist in the atmosphere for a substantially longer period of time. While emissions of other GHGs, such as CH₄, are important with respect to global climate change, emission levels of other GHGs are less dependent on the land use and circulation patterns associated with the proposed land use development project than are levels of CO₂.

(2) Construction Impacts. Construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

It is anticipated that development of the Amendments and the Theater project would require demolition of existing buildings, removal of street paving, and hauling of demolished materials. The only GHG with well-studied emissions characteristics and published emissions factors for con-

²⁴ California Energy Commission (CEC), 2004. *Water Energy Use in California* (online information sheet) Sacramento, CA, August 24, <http://energy.ca.gov/pier/iaw/industry/water.html>, accessed July 24, 2007.

struction equipment is CO₂. Using the URBEMIS 2007 model, the average daily CO₂ emissions associated with construction equipment exhaust for the proposed Theater would be approximately 122 tons per year, with total project construction-related CO₂ emissions of 243 tons. Because the specific size, location, and construction techniques and scheduling that will be utilized for development related to the Amendments are not currently known, calculating precise emissions associated with future development is not currently practicable and would require the City to speculate regarding future projects' potential environmental impacts. The City is not required to engage in such speculation (CEQA Guidelines, Section 15145); however, the following construction emission estimates are provided for informational purposes only. CO₂ emissions for construction of the proposed Amendments, including construction of the Theater, are estimated to be approximately 499 tons per year, with total project construction-related CO₂ emissions of 1,496 tons. A summary of the model output sheets are included in Appendix D.

Any development proposed per the Amendments would be required to implement the construction exhaust control measures listed in Mitigation Measure AIR-1 of Section IV.D, Air Quality, including minimization of construction equipment idling and proper engine tuning and exhaust controls. Both of these measures would reduce GHG emissions during the construction period.

Architectural coatings used in construction of the proposed project may contain volatile organic compounds (VOCs) that are similar to reactive organic gases (ROG) and are part of ozone precursors. However, there are no significant emissions of GHGs from architectural coatings.

(3) Long-Term Project-Related Emission Impacts. Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from stationary sources associated with energy consumption, water use, and solid waste disposal. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with employee commutes, and visitor and delivery vehicle trips to the project sites. Area-source emissions would be associated with activities such as landscaping and maintenance of proposed land uses, natural gas for heating, and other sources. Increases in stationary source emissions would also occur at off-site utility providers as a result of demand for electricity, natural gas, and water by the proposed uses. The GHG emission estimates presented in Table IV.E-2 are based on the increase in emissions that would occur with implementation of the proposed project.

Energy and Natural Gas Use. Buildings represent 39 percent of United States primary energy use and 70 percent of electricity consumption.²⁵ The proposed project would increase the demand for electricity and natural gas. The project would indirectly result in increased GHG emissions from off-site electricity generation at power plants.

Water Use. Water-related energy use consumes 19 percent of California's electricity use every year.²⁶ Energy use and related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. Water use is projected to increase by approximately 39 acre-feet per year.

²⁵ United States Department of Energy. 2003. *Buildings Energy Data Book*.

²⁶ California, State of, 2005. California Energy Commission. California's Water-Energy Relationship. November.

Table IV.E-2: Long Term Project Operational Emissions of GHGs

Emission Source	Emissions (tons per year)				Percent of Total Project Emissions
	CO ₂	CH ₄	N ₂ O	CO ₂ eq	
Vehicles ^a	7,671	0.56	0.92	7,959	73%
Electricity Production ^b	1,700	0.019	0.011	1,700	16%
Natural Gas Combustion ^a	742	0.0063	0.006	744	7%
Solid Waste	N/A	N/A	N/A	427	4%
Other Area Sources ^c	2	N/A	N/A	2	0%
Total Annual Emissions	10,115	0.59	0.94	10,832	100%

^a CO₂ emissions for vehicles and natural gas input from URBEMIS 2007 outputs.

^b Includes water-related electricity consumption for project as planned.

^c Includes emissions from hearth combustion and landscaping equipment.

Source: LSA Associates, Inc., 2008.

Solid Waste Disposal. The proposed project would also generate solid waste during the operation phase of the project. As is described in Section IV.I, Utilities and Infrastructure, the California Integrated Waste Management Agency (CIWMB) estimates an average waste generation rate of 18.8 pounds per employee per day. The 1,037 new employees resulting from buildout of the proposed Amendments and Theater would generate approximately 9.75 tons per day of solid waste. To determine the net GHG emissions from landfilling, the CO₂eq emissions from CH₄ generation, carbon storage (treated as negative emissions), and transportation CO₂ emissions were considered.

Mobile Sources. Mobile sources (vehicle trips and associated miles traveled) would be the largest emission source of GHGs associated with the proposed project. Transportation is also the largest source of GHG emissions in California and represents approximately 38 percent of annual CO₂ emissions generated in the State. Like most land use development projects, vehicle miles traveled (VMT) is the most direct indicator of CO₂ emissions from the proposed project and associated CO₂ emissions function as the best indicator of total GHG emissions. The proposed project would generate approximately 6,500 daily trips based on the Traffic Impact Study included in Appendix C.

The proposed project would generate up to 11,000 tons of CO₂eq per year of new emissions, as shown in Table IV.E-2. The emissions from vehicle exhaust comprise approximately 73 percent of the project’s total CO₂eq emissions. The emissions from vehicle exhaust are controlled by the State and federal governments and are outside the control of Livermore. Approximately 16 percent of the CO₂eq emissions are primarily associated with building heating systems and increased regional power plant electricity generation due to the project’s electrical demands. Development of the project would comply with existing State and federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the project’s electricity demand.

Impact GCC-1: Implementation of the proposed project could result in greenhouse gas emission levels that would conflict with implementation of the greenhouse gas reduction goals under AB 32 or other State regulations. (S)

The California Environmental Protection Agency Climate Action Team (CAT) and the ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT's 2006 "*Report to Governor Schwarzenegger and the Legislature*," ARB's 2007 "*Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California*," and ARB's "*Climate Change Proposed Scoping Plan: a Framework for Change*."

The reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32 that are applicable to proposed project. The Proposed Scoping Plan is the most recent document, and the strategies included in the Proposed Scoping Plan that apply to the project are contained in Table IV.E-3, which summarizes the extent to which the project complies with the strategies to help California reach the emission reduction targets.

The strategies listed in Table IV.E-3 are either part of the project, required mitigation measures, or requirements under local or State ordinances. With implementation of these strategies and measures, the project's contribution to cumulative GHG emissions would be reduced to a less-than-significant level.

In order to ensure that the proposed project complies with and would not conflict with or impede implementation of reduction goals identified in AB 32, the Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, the following mitigation measure shall be implemented as part of the project. Many of the individual elements of this measure are already included as part of the proposed project or are required as part of project-specific mitigation measures recommended throughout this EIR.

Mitigation Measure GCC-1: To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the projects seeking City approval and developed as part of the Amendments:

Construction and Building Materials

- Use locally produced and/or manufactured building materials for construction of the project;
- Recycle/reuse demolished construction material; and
- Use "green building materials," such as those materials which are resource efficient, and recycled and manufactured in an environmentally friendly way, including low volatile organic compound (VOC) materials.

Energy Efficiency Measures

- Design all new buildings to be consistent with the City's Green Building Ordinance, as currently written or as amended in the future. Encourage energy efficient building techniques including:
 - Increase insulation such that heat transfer and thermal bridging is minimized;
 - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption; and

- Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances or other applicable electrical equipment.
- Design, construct and operate all newly constructed and renovated buildings and facilities to meet the City's Green Building Ordinance requirements as currently written or as amended in the future;
- Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping;
- Use combined heat and power in appropriate applications;²⁷
- Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings;
- Install light colored "cool" roofs and cool pavements;
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems; and
- Install light emitting diodes (LEDs) for outdoor lighting.

Water Conservation and Efficiency Measures

- Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include the following, plus other innovative measures that might be appropriate:
 - Create water-efficient landscapes within the development;
 - Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls;
 - Design buildings to be water-efficient. Install water-efficient fixtures and appliances, including low-flow faucets, dual-flush toilets and waterless urinals; and
 - Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.

Transportation and Motor Vehicle Measures

- Commercial trucks, including construction and delivery vehicles, shall limit idling time and will be subject to state anti-idling regulations adopted by ARB in 2005;
- Provide bicycle lanes and/or paths, incorporated into the proposed street systems and connected to a community-wide network;
- Provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking.

²⁷ Combined heat and power (CHP) systems (also known as "cogeneration") generate electricity (and/or mechanical energy) and thermal energy in a single, integrated system. The thermal energy recovered in a CHP system can be used for heating or cooling in buildings (e.g., heat recovery from diesel generators to provide space heating). CHP captures the heat that would otherwise be rejected in traditional separate generation of electric or mechanical energy, increasing overall efficiency.

- Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network;
- Size parking capacity to not exceed the City's zoning requirements AND provide infrastructure and support programs to facilitate shared vehicle usage such as carpool drop-off areas, designated parking for vanpools, or car-share services, ride boards, and shuttle service to mass transit.²⁸ (LTS)

With implementation of the elements listed above that are feasible for incorporation into development associated with the Downtown Specific Plan Amendments and the Theater, the project's contribution to cumulative GHG emissions would be reduced to a less-than-significant level.

In addition, the project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. After implementation of Mitigation Measure GCC-1 and application of regulatory requirements, the proposed project would implement appropriate GHG reduction strategies and not conflict with or impede implementation of reduction goals identified in AB 32, the Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor.

(4) Impacts to the Proposed Project from Global Climate Change. Local temperatures could increase in time as a result of global climate change, with or without development as envisioned by the proposed project. This increase in temperature could lead to other climate effects including, but not limited to, increased flooding due to increased precipitation and runoff, a reduction in the Sierra snowpack, and impacts on the available water supply. Water supply is discussed in Section IV.I, Utilities and Infrastructure. Because development associated with the project would all be located within Downtown Livermore, it would be not subject to increased flooding due to tidal changes. While a certain amount of environmental change is inevitable due to increases in greenhouse gas emissions, the extent of such a change at the local level is not fully understood at the current time. Given the planning efforts underway (e.g., General Plan Climate Change Element, etc.) by the City of Livermore, the potential effects of climate change on the proposed project would not be significant.

²⁸ Based on U.S. Green Building Council, LEED, 2005. *Green Building Rating System for New Construction & Major Renovations*. Version 2.2. October.

Table IV.E-3: Project Compliance with Greenhouse Gas Emission Reduction Strategies

Strategy	Project Compliance
<i>Energy Efficiency Measures</i>	
<p>Energy Efficiency Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).</p> <p>Renewables Portfolio Standard Achieve 33 percent renewable energy mix statewide.</p> <p>Green Building Strategy Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.</p>	<p>Compliant with Mitigation Incorporated. The proposed project would be required to comply with the updated Title 24 standards for building construction. In addition, the project would be required to comply with the requirements of Mitigation Measure GCC-1, identified below, including measures to incorporate energy efficient building design features.</p>
<i>Water Conservation and Efficiency Measures</i>	
<p>Water Use Efficiency Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.</p>	<p>Compliant with Mitigation Incorporated. The project would be required to comply with the requirements of Mitigation Measure GCC-1, identified below, including measures to increase water use efficiency.</p>
<i>Solid Waste Reduction Measures</i>	
<p>Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste. Increase waste diversion from landfills beyond the 50 percent mandate to provide for additional recovery of recyclable materials. Composting and commercial recycling could have substantial GHG reduction benefits. In the long term, zero-waste policies that would require manufacturers to design products to be fully recyclable may be necessary.</p>	<p>Compliant. On June 15, 2005, the California Integrated Waste Management Board certified that the City had diverted 61 percent of its solid waste and had met the requirements of the California Integrated Waste Management Act.</p>
<i>Transportation and Motor Vehicle Measures</i>	
<p>Vehicle Climate Change Standards. AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.</p> <p>Light-Duty Vehicle Efficiency Measures. Implement additional measures that could reduce light-duty GHG emissions. For example, measures to ensure that tires are properly inflated can both reduce GHG emissions and improve fuel efficiency.</p> <p>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures. Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure could also include hybridization of and increased engine efficiency of vehicles.</p>	<p>Compliant. The proposed project does not involve the manufacture, sale, or purchase of vehicles. However, vehicles that operate within and access the project site would comply with any vehicle and fuel standards that the ARB adopts.</p>

Table IV.E-3 *Continued*

Strategy	Project Compliance
<p>Low Carbon Fuel Standard. ARB identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California's transportation fuels by at least 10% by 2020.</p>	
<p>Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle greenhouse gas emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces greenhouse gases associated with vehicle travel.</p>	<p>Compliant with Mitigation Incorporated. The project would be required to comply with the requirements of Mitigation Measure GCC-1, and would be sited within Downtown Livermore which is served by transit, rail, pedestrian and bicycle facilities.</p>
<p>Measures to Reduce High Global Warming Potential (GWP) Gases. ARB has identified Discrete Early Action measures to reduce GHG emissions from the refrigerants used in car air conditioners, semiconductor manufacturing, and consumer products. ARB has also identified potential reduction opportunities for future commercial and industrial refrigeration, changing the refrigerants used in auto air conditioning systems, and ensuring that existing car air conditioning systems do not leak.</p>	<p>Compliant. Products used, sold, or serviced in the project site would be comply with current and future ARB rules and regulations.</p>

Source: LSA Associates, Inc., 2008.

F. NOISE

This section describes existing noise conditions in the vicinity of the Theater sites, describes criteria for determining the significance of noise impacts, and estimates the likely noise that would result from construction activities, vehicular traffic, aircraft, and other noise sources. Where appropriate, mitigation measures are recommended to reduce project-related noise impacts to a less-than-significant level.

1. Setting

This setting section begins with an introduction to several key concepts and terms that are used in evaluating noise. It then explains the various agencies that regulate the noise environment in the City of Livermore and summarizes key standards that are applicable to the proposed project. This setting section concludes with a description of current noise sources that affect the project site and the noise conditions that are experienced in the project vicinity.

a. Characteristics of Sound. Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: *pitch* and *loudness*. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

(1) Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. Table IV.F-1 contains a list of typical acoustical terms and definitions. Table IV.F-2 shows representative outdoor and indoor noise levels in units of dBA.

A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

Table IV.F-1: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of measurement that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L ₀₁ , L ₁₀ , L ₅₀ , L ₉₀	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L _{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L _{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L _{max} , L _{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, 1991.

Table IV.F-2: Typical A-Weighted Sound Levels

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments
Near Jet Engine	140	Deafening
Civil Defense Siren	130	Threshold of pain
Hard Rock Band	120	Threshold of feeling
Accelerating Motorcycle at a Few Feet Away	110	Very loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very loud
Ambulance Siren; Food Blender	95	Very loud
Garbage Disposal	90	Very loud
Freight Cars; Living Room Music	85	Loud
Pneumatic Drill; Vacuum Cleaner	80	Loud
Busy Restaurant	75	Moderately loud
Near Freeway Auto Traffic	70	Moderately loud
Average Office	60	Moderate
Suburban Street	55	Moderate
Light Traffic; Soft Radio Music in Apartment	50	Quiet
Large Transformer	45	Quiet
Average Residence Without Stereo Playing	40	Faint
Soft Whisper	30	Faint
Rustling Leaves	20	Very faint
Human Breathing	10	Very faint

Source: Compiled by LSA Associates, Inc., 2008.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} , the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in Table IV.F-2.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, L_n , are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the level exceeded ten percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dBA that are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

(2) Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of

noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

b. Characteristics of Ground-borne Vibration.

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as “VdB.” Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

Table IV.F-3: Typical Vibration Source Levels for Construction Equipment

Equipment		Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	112
	Typical	104
Pile Driver (sonic)	Upper range	105
	Typical	93
Clam shovel drop (slurry wall)		94
Hydromill (slurry wall)	In soil	66
	In rock	75
Vibratory roller		94
Hoe ram		87
Large bulldozer		87
Caisson drilling		87
Loaded trucks		86
Jackhammer		79
Small bulldozer		58

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in Table IV.F-3. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data do provide a reasonable estimate for a wide range of soil conditions. In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. The damage threshold for buildings considered of particular historical significance or that are particularly fragile structures is approximately 96 VdB; the damage threshold for other structures is 100 VdB.¹

c. Noise Regulatory Framework. The following section provides brief discussions of the regulatory framework related to noise.

(1) U.S. Environmental Protection Agency (EPA). In 1972 Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound “requisite to protect the public welfare with an adequate margin of safety.” These levels are separated into health (hearing loss levels) and welfare (annoyance levels) as shown in Table IV.F-4. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels. For protection against hearing loss, 96 percent of

¹ Harris, C.M. 1998. *Handbook of Acoustical Measurements and Noise Control*.

the population would be protected if sound levels are less than or equal to an $L_{eq(24)}$ of 70 dB. The “(24)” signifies an L_{eq} duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dB are summarized in Table IV.F-5. At 55 dB L_{dn} , 95 percent sentence clarity (intelligibility) may be expected at 3.5 meters, and no community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

(2) State of California. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the “State Noise Insulation Standard,” it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA L_{dn} in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA L_{dn} .

Table IV.F-4: Summary of EPA Noise Levels for Protection of Public Health and Welfare with an Adequate Margin of Safety

Effect	Level	Area
Hearing loss	$L_{eq(24)} \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq(24)} \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq(24)} \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency, “Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.” March 1974.

Table IV.F-5: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effects	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meters. 99 percent sentence intelligibility (average) at 1.0 meters. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below “vigorous action.”
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: U.S. Environmental Protection Agency, “Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.” March 1974.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses.² The City has adopted and modified the State's land use compatibility guidelines as shown in Table IV.F-6 and discussed below. This bar chart also recommends steps to be taken if one of the specified land uses (e.g., a residence) is proposed in an area exposed to a high noise level (e.g., >80 dB): "Clearly unacceptable. New construction or development should generally not be undertaken."

(3) Local Regulations. The City of Livermore addresses noise in the Noise Element of the General Plan and in Chapter 9.36 of the Municipal Code. The City's land use compatibility standards for exterior noise for new development are shown in Table IV.F-6. The standards show that environments with ambient noise levels of up to 70 dBA CNEL are considered normally acceptable for new auditorium and concert hall development.

In an effort to support active uses in the Downtown Area, the City has designated that the Downtown Area is subject to a different noise standard than the rest of the City, as follows:

- *Downtown Core District:* Between 7:00 a.m. and 12:00 a.m., exterior noise levels of up to 75 dBA CNEL would be considered Normally Acceptable for all uses; and, between 12:00 a.m. and 7:00 a.m., exterior noise levels up to 65 dBA CNEL would be considered Normally Acceptable for all uses.
- *Boulevard and Transit Gateway Districts:* Between 7:00 a.m. and 12:00 a.m., exterior noise levels up to 70 dBA CNEL would be considered Normally Acceptable for all uses; and, between 12:00 a.m. and 7:00 a.m., exterior noise levels up to 60 dBA CNEL would be considered Normally Acceptable for all uses.
- *North and South Side Neighborhood Districts:* Between 7:00 a.m. and 12:00 a.m., exterior noise levels of up to 65 dBA CNEL would be considered Normally Acceptable for all uses; and between 12:00 a.m. and 7:00 a.m., exterior noise levels up to 60 dBA CNEL would be considered Normally Acceptable for all uses.

For all residential development in the Downtown Area, interior noise levels of up to 45 dBA CNEL with windows closed would be considered Normally Acceptable.

The Municipal Code restricts the operation of loud noise producing equipment used in construction or demolition on weekdays to the hours of 7:00 a.m. to 8:00 p.m. and on weekends to the hours of 9:00 a.m. to 6:00 p.m. No such activities are permitted on City-observed holidays.

² State of California, Governor's Office of Planning and Research, *General Plan Guidelines, 1998* (Appendix A, Figure 2).

Table IV.F-6: Land Use Compatibility Standards for Exterior Noise

Land Use Category	Community Noise Exposure (CNEL) dBA or Day/Night Average Noise Level (L _{dn}) dBA					
	55	60	65	70	75	80
Residential Low Density Single-Family, Duplex, Mobile Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable
Residential Multi-Family	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Transient Lodging Motels, Hotels	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Office Buildings, Business Commercial and Professional	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable

NORMALLY ACCEPTABLE
Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent land uses.

NORMALLY UNACCEPTABLE
Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to reduce the exposure of people to unacceptable noise levels.

CONDITIONALLY ACCEPTABLE
A specified land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required.

CLEARLY UNACCEPTABLE
New construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to adequately reduce exposure of people to unacceptable noise levels.

Note: Where dBA levels overlap between these categories, determination of noise level acceptability will be made on a project-by-project basis.

Source: Livermore, City of, 2003. *City of Livermore General Plan, Noise Element, Table 9-7.*

City of Livermore General Plan Policies. The Noise Element of the General Plan includes the following Noise related policies and actions.

- Policy N-1.1.P1: The City shall emphasize noise considerations when making land use planning decisions.
- Policy N-1.1.P3: The City shall maintain a pattern of land uses that separates noise-sensitive land uses from major noise sources to the extent possible.
- Policy N-1.1.P4: The City shall use the Land Use Compatibility Guidelines for Exterior Noise (measured in dBA CNEL or Ldn) contained in Table 9-7 in this Element (of the General Plan) to direct the siting, design, and insulation of new development to reduce exposure to excessive noise. Where warranted, the City shall employ discretionary review of new development to ensure that the community will be protected from excessive noise levels. The City shall evaluate potential noise impacts and recommend mitigation measures through discretionary review procedures such as environmental review, design review, and evaluation of use permits.
- Policy N-1.1.P5: Review development proposals with respect to the Land Use Compatibility Guidelines for Exterior Noise in Table 9-7 as follows:
 - (a) Normally Acceptable: If the noise level is within the “normally acceptable” level, noise exposure would be acceptable for the intended land use. Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent uses.
 - (b) Conditionally Acceptable: If the noise level is within the “conditionally acceptable” level, noise exposure would be conditionally acceptable; a specified land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise-sensitive outdoor activity areas (e.g., at residences, schools, or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors.
 - (c) Normally Unacceptable: If the noise level is within the “normally unacceptable” level, analysis and mitigation are required. Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to reduce the exposure of people to unacceptable noise levels.
 - (d) Clearly Unacceptable: If the noise level is within the “clearly unacceptable” level, new construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to adequately reduce exposure of people to unacceptable noise levels.
- Policy N-1.1.P6: In an effort to support active uses in the Downtown Area, the Downtown Area shall be subject to a different noise standard than the rest of the City, as follows:
 - *Downtown Core District*: Between 7 a.m. and 12 a.m., exterior noise levels of up to 75 dBA would be considered Normally Acceptable for all uses; and, between 12 a.m. and 7 a.m., exterior noise levels up to 65 dBA would be considered Normally Acceptable for all uses.
 - *Boulevard and Transit Gateway Districts*: Between 7 a.m. and 12 a.m., exterior noise levels up to 70 dBA would be considered Normally Acceptable for all uses; and, between 12 a.m. and 7 a.m., exterior noise levels up to 60 dBA would be considered Normally Acceptable for all uses.
 - *North and South Side Neighborhood Districts*: Between 7 a.m. and 12 a.m., exterior noise levels of up to 65 dBA would be considered Normally Acceptable for all uses; and between 12 a.m. and 7 a.m., exterior noise levels up to 60 dBA would be considered Normally Acceptable for all uses.

For all residential development in the Downtown Area, interior noise levels of up to 45 dBA with windows closed would be considered Normally Acceptable.

- Policy N-1.2.P1: When crafting mitigation programs for adverse noise exposure from new development, the City shall encourage the use of noise attenuation programs that avoid constructing sound walls.

- Policy N-1.2.P2: The City shall require applicants for new noise-sensitive development, such as private schools, residences, and private hospitals, in areas subject to noise levels greater than 65 dBA CNEL to obtain the services of a professional acoustical engineer to provide a technical analysis and to design mitigation measures to attenuate noise to acceptable levels.
- Policy N-1.2.P3: The City shall require the control of noise at the source for new development deemed to be noise generators through site design, building design, landscaping, hours of operation, and other techniques.
- Policy N-1.2.P4: The City shall require operational limitations and feasible noise buffering for new uses that generate significant noise impacts near sensitive uses.
- Policy N-1.2.P5: During all phases of construction, the City shall take measures to minimize the exposure of neighboring properties to excessive noise levels from construction related activity.
- Policy N-1.2.P6: The City shall require mitigation measures to minimize noise impacts on surrounding areas as part of the permit review process for land uses of a temporary nature, such as fairs or exhibits. The noise level from the temporary use should be in conformance with the noise level guidelines for nearby land uses.
- Policy N-1.2.P8: It shall be the responsibility of new development or new land uses to be consistent with noise standards appropriate and sensitive to adjacent land uses.
- Policy N-1.5.P1: The City shall require that industrial and commercial uses be designed and operated so as to avoid the generation of noise effects on surrounding sensitive land uses (e.g., residential, churches, schools, hospitals) from exceeding the following noise levels for exterior environments:
 - (a) 55 dBA L50 (7:00 a.m. to 10:00 p.m.)
 - (b) 45 dBA L50 (10:00 p.m. to 7:00 a.m.)
- Policy N-1.5.P2: In order to allow for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary source noise standards in Policy N-1.5.P1, above, may be exceeded within the receiving land use by:
 - (a) 5 dBA for a cumulative period of no more than fifteen (15) minutes in any hour.
 - (b) 10 dBA for a cumulative period of no more than five (5) minutes in any hour.
 - (c) 15 dBA for a cumulative period of no more than one (1) minute in any hour.

d. Overview of the Existing Noise Environment. The project is located in an urban environment. Noise sources that affect the baseline noise levels of the area include the following:

(1) Existing Ambient Noise Levels. Primary noise sources that affect the background noise level of the Downtown Specific Plan area include vehicular traffic on East Stanley Boulevard, Railroad Avenue and First Street. Railroad noise and rail transit activities on the Union Pacific rail lines also contribute to the Downtown ambient noise environment.

An LSA noise technician conducted short-term ambient noise monitoring at six locations chosen by the City in the Downtown Specific Plan area on Thursday, October 2, 2008, between the hours of 10:00 a.m. and 2:00 p.m. (when traffic was free-flowing and train by-passes are expected). The purpose of this noise monitoring was to document the existing noise environment and capture the noise levels associated with typical daily operations and activities in the Downtown Specific Plan area. Table IV.F-7 lists the noise levels measured during the short-term 20-minute noise monitoring. Maximum and minimum noise levels were recorded as well as the equivalent continuous noise level L_{eq} . The meteorological conditions at the time of the short-term noise measurements are shown in Table IV.F-8. The noise monitoring locations are shown in Figure IV.F-1.

Table IV.F-7: Short-Term Ambient Noise Monitoring Results, dBA

Site Number	Start Time	L _{eq} ^a	L _{max} ^b	L _{min} ^c	Primary Noise Sources
1	10:21 a.m.	66.6	87.1	51.5	Traffic on P Street and First Street
2	10:58 a.m.	63.3	85.2	47.6	Traffic on Second Street and McLeod Street
3	11:31 a.m.	67.0	86.9	51.1	Traffic on Second Street and Maple Street
4	12:06 p.m.	67.6	85.8	54.0	Traffic on First Street and Inman Street
5	12:53 p.m.	64.9	80.8	50.0	Traffic on Livermore Avenue and Chestnut, Freight Train by-pass
6	1:25 p.m.	68.1	85.7	53.7	Traffic on Railroad Avenue and Livermore Avenue

^a L_{eq} represents the average of the sound energy occurring over the 20-minute time period.

^b L_{max} is the highest instantaneous sound level measured during the 20-minute time period.

^c L_{min} is the lowest instantaneous sound level measured during the 20-minute time period.

Source: LSA Associates, Inc., November 2008.

Table IV.F-8: Meteorological Conditions During Short-Term Monitoring

Site Number	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temperature (F)	Relative Humidity (%)
1	5.0	1.9	71.5	51.4
2	4.8	1.2	72.9	59.2
3	7.2	3.5	70.0	58.4
4	3.3	0.8	71.6	59.6
5	4.6	2.0	75.7	59.0
6	3.7	1.3	75.9	58.8

Source: LSA Associates, Inc., November 2008.

(2) Existing Aircraft Noise Levels. The Livermore Municipal Airport is located approximately 1.5 miles northwest of the Downtown Specific Plan area which is well beyond the airport's anticipated 60 dBA CNEL noise contours for the year 2020 as shown in Figure 9-2 of the City's General Plan Noise Element. While aircraft noise is occasionally audible within the Downtown Specific Plan area, it is not a significant influence on the Downtown's ambient noise environment.

(3) Existing Traffic Noise Levels. Existing traffic noise levels were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model. This model requires parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. Traffic data used in the Noise Prediction model were obtained from the traffic impact analysis prepared by Fehr & Peers (November 2008) for this EIR. The resultant noise levels were weighted and summed over 24-hour periods to determine the Community Noise Equivalent Noise Level (CNEL) values. The CNEL is the 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening between 7:00 p.m. and 10:00 p.m. and 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m. Table IV.F-9 lists the traffic noise levels in the project study area under the existing (2008) conditions without the project. As shown in the table, existing traffic noise in the project vicinity is generally low to moderate with the noisiest roadway segment in the Downtown Specific Plan area being along Holmes Street south of Fourth Street which has a calculated CNEL of 67.3 dBA at 50 feet from the centerline of the outermost lane. Appendix F contains modeling worksheets for the traffic noise analysis.

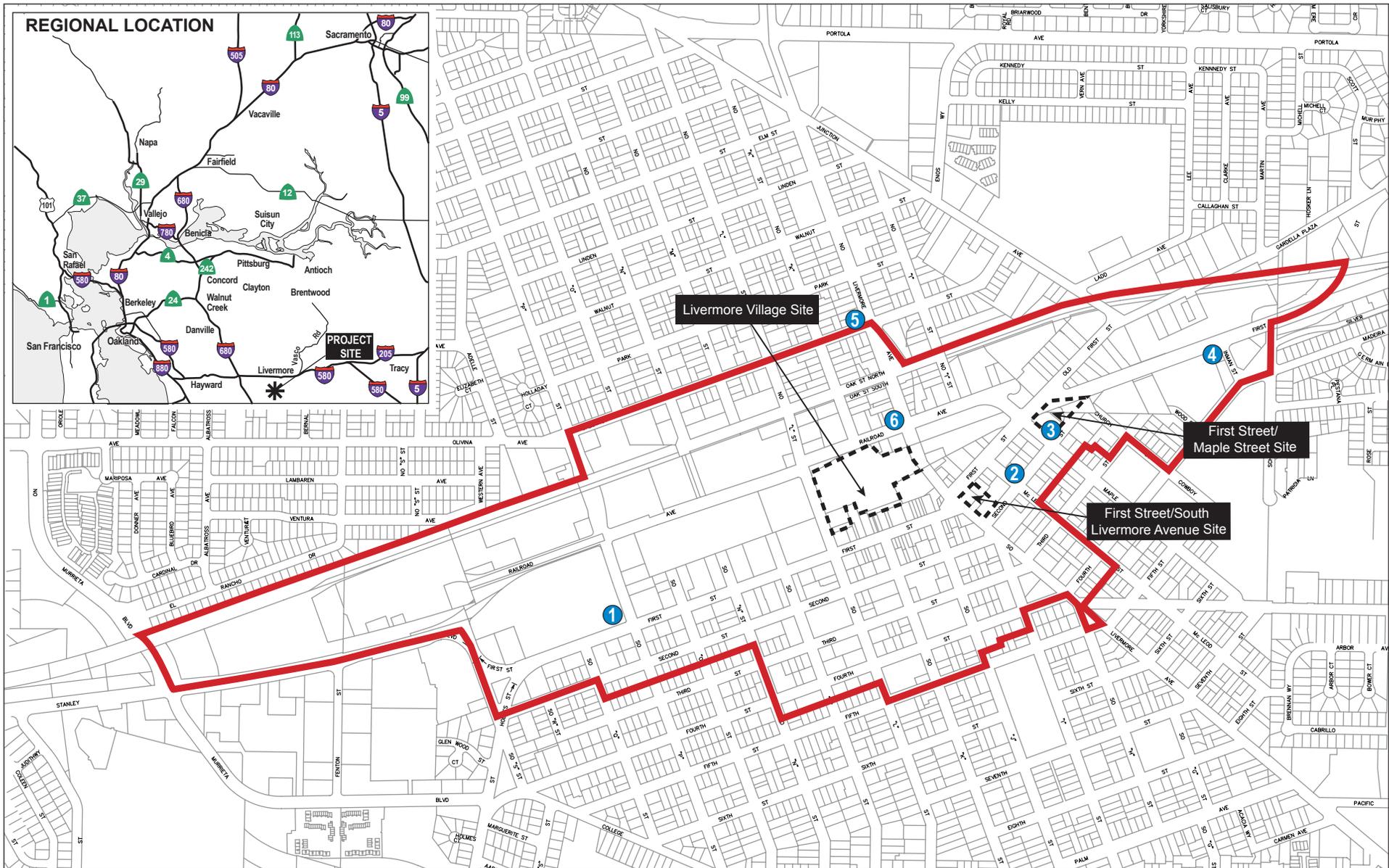


FIGURE IV.F-1

LSA

 DOWNTOWN SPECIFIC PLAN BOUNDARY (DA)
 POTENTIAL REGIONAL PERFORMING ARTS THEATER LOCATIONS
 NOISE MONITORING LOCATIONS

0 500 1000
FEET

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Noise Monitoring Locations*

SOURCE: CITY OF LIVERMORE, 2003; LSA ASSOCIATES, INC., 2008.
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Table IV.F-9: Existing (2008) Traffic Noise Levels

Roadway Segment	Average Daily Traffic	Center-line to 70 dBA CNEL (feet)	Center-line to 65 dBA CNEL (feet)	Center-line to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Murieta Boulevard - North of East Stanley Boulevard	15,700	< 50 ^a	69	144	65.1
East Stanley Boulevard - Murieta Boulevard to Fenton Street	22,200	< 50	85	181	66.6
Railroad Avenue - L Street to Livermore Avenue	19,000	< 50	62	128	64.3
Railroad Avenue - Livermore Avenue to Maple Street	16,200	< 50	56	115	63.6
First Street - S Street to P Street	11,700	< 50	57	119	63.8
First Street - P Street to L Street	9,700	< 50	< 50	105	63.0
First Street - L Street to Livermore Avenue	6,800	< 50	< 50	< 50	59.1
First Street - Livermore Avenue to Maple Street	6,800	< 50	< 50	< 50	59.1
First Street - Old First Street to Inman Street	21,000	< 50	83	174	66.3
Livermore Avenue - Railroad Avenue to First Street	8,100	< 50	< 50	72	61.7
Livermore Avenue - First Street to Fourth Street	8,100	< 50	< 50	72	61.7
P Street - First Street to Second Street	6,200	< 50	< 50	< 50	58.6
Holmes Street - First Street to Fourth Street	13,900	< 50	64	133	64.5
Holmes Street - South of Fourth Street	26,400	< 50	96	203	67.3

^a Traffic noise within 50 feet of the roadway centerline requires site-specific analysis.
Source: LSA Associates Inc., November 2008.

2. Impacts and Mitigation Measures

This section analyzes noise impacts that could result from implementation of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

a. Criteria of Significance. A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the City's Noise Element of the General Plan. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Center would result in a significant impact on noise if it would:

- 1) Expose persons to or generate noise levels in excess of standards established in the City's Noise Ordinance, or applicable standards of other agencies;
- 2) Expose persons to or generate excessive groundborne vibration or groundborne noise levels; or
- 3) Substantially increase permanent, temporary, or periodic ambient noise levels by over 4 dBA in the project vicinity above levels existing without the project.

Impacts are discussed in the following section and summarized in Table IV.F-10.

Table IV.F-10: Summary of Potential Impacts –Noise Impacts

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site
Would the Project:				
1. Expose persons to or generate noise levels in excess of standards established in the City’s Noise Ordinance, or applicable standards of other agencies?	● NOISE-1 NOISE-2 NOISE-3	● NOISE-1 NOISE-2 NOISE-3	● NOISE-1 NOISE-2 NOISE-3	● NOISE-1 NOISE-2 NOISE-3
2. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	● NOISE-4	● NOISE-4	● NOISE-4	● NOISE-4
3. Substantially increase permanent, temporary, or periodic ambient noise levels by over 4 dBA in the project vicinity above levels existing without the project?	○	○	○	○

^a The Amendments are analyzed in this EIR at a “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:
 == No impact
 ○ Less-than-Significant
 ● Reduced to Less-than-Significant with recommended mitigation
 ● Significant and Unavoidable
 NOISE-1, etc. identifies the mitigation measure, if any, that addresses the impact.

Source: LSA Associates, 2008

b. Impact Analysis. The following discussion describes the noise impacts associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential noise impacts associated with the Amendments will be at a general program-level. Potential impacts associated with the Theater project and the Railroad Avenue realignment will be at the project level.

As has been noted previously, the potential impacts associated with implementation of the Downtown Specific Plan were evaluated in General Plan EIR. Policies and actions were identified in this EIR that could reduce the potential noise impacts associated with development proposed under the Downtown Specific Plan. Current General Plan policies and actions that would be applicable to development proposed under the Specific Plan Amendments, and would reduce noise related impacts, are included in the following discussion.

(1) Exposure to Noise (Criteria 1 and 3). The following describes the construction, aircraft, traffic, railroad, and stationary noise impacts.

Construction Noise Impacts. Construction associated with implementation of the Amendments and Theater project would result in short-term noise impacts on adjacent land uses. The level and types of noise impacts that would occur during construction are described below.

Impact NOISE-1: Noise levels from construction activities associated with project implementation could range up to 93 dBA L_{max} at the nearest existing residential land uses to the project site for limited periods due to pile driving activities and up to 93 dBA L_{max} due to earthmoving equipment activity during the site preparation phase of construction. (S)

Noise levels from grading and other construction activities associated with construction of projects related to the Amendments and the Theater project may range up to 93 dBA L_{max} at the closest noise sensitive receptors for limited periods when construction occurs. Short-term noise impacts would result from excavation, grading, and erecting of buildings within the Downtown Specific Plan area during construction of project associated with implementation of the Amendments, including the Theater. Construction related short-term noise levels would be higher than existing ambient noise levels in the Downtown Specific Plan area but would no longer occur once construction is completed.

Two types of short-term noise impacts could occur during the construction. First, construction crew commutes and the transport of construction equipment and materials would incrementally increase noise levels on access roads leading to the site. The transport of workers and construction equipment and materials to project sites within the Downtown Specific Plan area would incrementally increase noise levels on access roads leading to the sites. Because workers and construction equipment would use existing routes, noise from passing trucks (87 dBA L_{max} at 50 feet) would be similar to existing truck-generated noise and would be spread over many sites in the Downtown. The effect on the longer term (hourly or daily) ambient noise levels would be small. Therefore, short-term construction-related impacts associated with worker and equipment transport to proposed project sites within the Downtown Specific Plan area would result in a less-than-significant impact on sensitive receptors along the access routes leading to potential development sites.

The second type of short-term noise impact is related to noise generated during excavation, grading, and the phased construction. Existing sensitive receptors, including residential land uses, in the Downtown would be subject to short-term noise generated by construction equipment and activities when construction occurs.

Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These phases would change the character of the noise generated on the project site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table IV.F-11 lists typical construction equipment noise levels recommended for use in noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor. Typical construction noise levels vary up to a maximum of 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, draglines, and front loaders, and earthmoving and compacting equipment, which includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings.

Buildout associated with implementation of the Amendments, including construction of the Theater project, is expected to require the use of earthmovers such as bulldozers and scrapers, loaders and graders, water trucks, and pickup trucks. As shown in Table IV.F-11, the typical maximum noise level generated by backhoes is assumed to be 86 dBA L_{max} at 50 feet from the operating equipment. The maximum noise level generated by bulldozers is approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and other trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength would increase the noise level by 3 dBA. Assuming each piece of construction equipment operates at some distance apart from the other equipment, the worst-case combined noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from an active construction area.

Table IV.F-11: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers	81 to 96	93
Rock Drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman, 1987. *Noise Control for Buildings and Manufacturing Plants.*

In addition to earthmoving equipment, construction of projects associated with implementation of the Amendments may require the use of pile driving or other high impact construction techniques. Noise associated with pile driving is a very loud and impulsive sound, resulting from a large hammer that drops on steel or reinforced concrete piles. Individual noise impacts are of short duration (under one second), but the noise is repetitive, occurring about once every two seconds. The maximum noise level generated by pile driving is approximately 93 dBA L_{max} at 50 feet from the operating equipment.

The closest existing noise sensitive receptors to the First Street/South Livermore Avenue Theater site are the residential land uses located near the intersection of Second Street and McLeod Street, approximately 100 feet from the site boundary. At this distance, these residences would potentially be exposed to construction noise levels of up to 85 dBA L_{max} during the site preparation phase of construction, and up to 87 dBA L_{max} if pile driving is used. Other land uses adjacent to this alternative site include office and commercial land uses located along South Livermore Avenue, First Street, and Second Street. Such land uses would potentially be exposed to construction noise levels of up to 91 dBA L_{max} when construction occurs along the site's boundaries and up to 93 dBA L_{max} if pile driving is used.

The closest existing noise sensitive receptors to the Livermore Village site are located northwest of the site along Railroad Avenue at a distance of approximately 200 feet from the site's boundary (assumes that no new sensitive noise receptors would be added to the area prior to construction at this site). At this distance, these residences would potentially be exposed to construction noise levels of up to 79 dBA L_{max} during the site preparation phase of construction, and up to 82 dBA L_{max} if pile driving is used.

The closest existing noise sensitive receptors to the First Street/Maple Street site are located along Maple Street south of Second Street, approximately 80 feet from the site boundary. At this distance, noise from construction activities would attenuate to approximately 87 dBA L_{max} during the site preparation phase of construction, and up to 89 dBA L_{max} if pile driving is used.

These construction noise levels could result in potential short-term noise impacts on the existing residential land uses and other sensitive land uses in the vicinity of the alternative sites. Implementation of Mitigation Measure NOISE-1 would reduce project-related construction noise impacts to a less-than-significant level.

Mitigation Measure NOISE-1: Construction activities associated with implementation of the Amendments and the Theater shall comply with the following noise reduction measures:

- General construction noise shall be limited to the hours of 7:00 a.m. to 8:00 p.m. Monday through Friday, 9:00 a.m. to 6:00 p.m. on weekends, and no noise producing construction activities shall be allowed on City-observed holidays in conformance with the Noise Ordinance.
- All heavy construction equipment that is used shall be maintained in good operating condition, with all internal combustion, engine-driven equipment equipped with intake and exhaust mufflers that are in good condition. All stationary noise-generating equipment shall be located as far away as possible from neighboring property lines, especially residential uses.
- The construction contractor shall locate equipment staging in areas that would create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors nearest the development sites during all project construction. (LTS)

Aircraft Noise Impacts. The Downtown Specific Plan area is located approximately 1.5 miles southeast of the Livermore Airport. This distance is well beyond the projected 60 dBA CNEL noise contour of the airport for the year 2020 as shown in Figure 9-2 of the City's Noise Element of the General Plan. Due to the Downtown's distance from the standard airport flight paths, implementation of the proposed project would not expose persons to aircraft noise levels in excess of established standards. No significant aircraft-related noise impact, in terms of 24-hour averaged noise level such as CNEL or L_{dn} , would occur.

Traffic and Railroad Noise Impacts. Implementation of the proposed Amendments, including construction of the Regional Performing Arts Theater, would result in an increase in vehicle trips in the Downtown Specific Plan area. Combined project-related traffic and railroad noise levels in the Downtown Specific Plan area would result in the following impacts.

Impact NOISE-2: Under cumulative conditions, train and project-related traffic would generate combined long-term exterior noise exceeding the City's normally acceptable interior noise levels for proposed residential land uses within the Downtown Specific Plan area. (S)

Existing Plus Project Traffic Noise Impacts. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions in the vicinity of the Downtown. The traffic noise levels under the Existing (2008) conditions with the project are shown in Table IV.F-12. As shown, there would be minor changes in the traffic noise levels associated with

the implementation of the proposed project. The roadway segments that demonstrate the largest increase in traffic-related noise as a result of the project are at Railroad Avenue between Livermore Avenue and Maple Street (a 1 dBA increase) and Railroad Avenue between L Street and Livermore Avenue (a 0.9 dBA increase). This increase would not be perceptible by the human ear in an outdoor environment and is well below the significance threshold of a greater than 4 dBA increase.

Cumulative Plus Project Traffic Noise Impacts. The traffic noise levels in the Downtown under the Cumulative (2030) conditions without and with the project are shown in Tables IV.F-13, and IV.F-14, respectively. This analysis includes the Theater at the site identified by the Downtown Specific Plan (First Street/South Livermore Avenue site). The cumulative traffic volumes were obtained from the traffic analysis prepared for the proposed project by Fehr & Peers (November 2008) and reflect buildout conditions under the General Plan. As shown in Table IV.F-14, the roadway segments that would experience the greatest increase in the traffic noise levels under the cumulative conditions with the project would be along First Street between S Street and P Street (0.8 dBA increase) and between P Street to L Street (0.6 dBA increase). The increases in noise levels associated with project-related traffic would not be perceptible by the human ear in an outdoor environment and are well below the significance threshold of a greater than 4 dBA increase. As the project would not result in a significant increase in project-related traffic noise, no mitigation is required to address traffic noise impacts.

Noise modeling was completed to assess noise impacts associated with the Theater under four different alternative scenarios. The greatest potential increase in noise between the alternatives and the Theater project at the First Street/South Livermore Avenue site without the Railroad Avenue realignment is 0.2 dBA. This increase in noise is not perceptible to the human ear and would not result in a new noise impacts. Summary tables for the alternatives noise analysis are included in Appendix F.

According to the City's Land Use Compatibility Standards shown in Table IV.F-6, environments with ambient noise levels up to 70 dBA CNEL are "normally acceptable" for office buildings and commercial land use development, and are considered "conditionally acceptable" for development of new auditorium land uses. A conditionally acceptable land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required. Additionally, General Plan Policy N-1.2.P2 requires applicants for new development in areas subject to noise levels greater than 65 dBA CNEL to obtain the services of a professional acoustical engineer to provide a technical analysis and to design mitigation measures to attenuate noise to acceptable levels.

Additionally, the City's policy for the Downtown Core District states that between 7:00 a.m. and 12:00 a.m., exterior noise levels of up to 75 dBA CNEL would be considered "normally acceptable" for all uses; and, between 12:00 a.m. and 7:00 a.m., exterior noise levels up to 65 dBA CNEL would be considered Normally Acceptable for all uses.

Table IV.F-12: Existing (2008) Traffic Noise Levels with the Project

Roadway Segment	Average Daily Traffic	Center-line to 70 dBA CNEL (feet)	Center-line to 65 dBA CNEL (feet)	Center-line to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Existing No Project Conditions
Murieta Boulevard - North of East Stanley Boulevard	15,800	< 50 ^a	69	145	65.1	0.0
East Stanley Boulevard - Murieta Boulevard to Fenton Street	23,600	< 50	89	188	66.8	0.2
Railroad Avenue - L Street to Livermore Avenue	23,200	< 50	70	146	65.2	0.9
Railroad Avenue - Livermore Avenue to Maple Street	20,600	< 50	65	135	64.6	1.0
First Street - S Street to P Street	13,900	< 50	64	133	64.5	0.7
First Street - P Street to L Street	11,400	< 50	57	117	63.7	0.7
First Street - L Street to Livermore Avenue	7,400	< 50	< 50	51	59.4	0.3
First Street - Livermore Avenue to Maple Street	7,100	< 50	< 50	< 50	59.2	0.1
First Street - Old First Street to Inman Street	21,800	< 50	85	179	66.5	0.2
Livermore Avenue - Railroad Avenue to First Street	8,200	< 50	< 50	73	61.7	0.0
Livermore Avenue - First Street to Fourth Street	8,500	< 50	< 50	75	61.9	0.2
P Street - First Street to Second Street	6,200	< 50	< 50	< 50	58.6	0.0
Holmes Street - First Street to Fourth Street	16,100	< 50	70	146	65.2	0.7
Holmes Street - South of Fourth Street	28,500	< 50	100	213	67.7	0.4

^a Traffic noise within 50 feet of the roadway centerline requires site-specific analysis.
Source: LSA Associates Inc., November 2008.

Table IV.F-13: Cumulative (2030) Traffic Noise Levels without the Project

Roadway Segment	Average Daily Traffic	Center-line to 70 dBA CNEL (feet)	Center-line to 65 dBA CNEL (feet)	Center-line to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Murieta Boulevard - North of East Stanley Boulevard	18,600	< 50 ^a	76	161	65.8
East Stanley Boulevard - Murieta Boulevard to Fenton Street	28,200	< 50	100	212	67.6
Railroad Avenue - L Street to Livermore Avenue	34,300	< 50	89	189	66.9
Railroad Avenue - Livermore Avenue to Maple Street	26,500	< 50	76	159	65.7
First Street - S Street to P Street	7,400	< 50	< 50	88	61.8
First Street - P Street to L Street	7,500	< 50	< 50	89	61.9
First Street - L Street to Livermore Avenue	8,700	< 50	< 50	57	60.1
First Street - Livermore Avenue to Maple Street	3,800	< 50	< 50	< 50	56.5
First Street - Old First Street to Inman Street	22,900	< 50	87	185	66.7
Livermore Avenue - Railroad Avenue to First Street	12,200	< 50	< 50	95	63.4
Livermore Avenue - First Street to Fourth Street	10,500	< 50	< 50	86	62.8
P Street - First Street to Second Street	6,100	< 50	< 50	< 50	58.6
Holmes Street - First Street to Fourth Street	8,500	< 50	< 50	97	62.4
Holmes Street - South of Fourth Street	27,300	< 50	98	207	67.5

^a Traffic noise within 50 feet of the roadway centerline requires site-specific analysis.
Source: LSA Associates Inc., November 2008.

Table IV.F-14: Cumulative (2030) Traffic Noise Levels with the Project

Roadway Segment	Average Daily Traffic	Center-line to 70 dBA CNEL (feet)	Center-line to 65 dBA CNEL (feet)	Center-line to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Cumulative No Project Conditions
Murieta Boulevard - North of East Stanley Boulevard	19,100	< 50 ^a	78	164	65.9	0.1
East Stanley Boulevard - Murieta Boulevard to Fenton Street	29,700	< 50	103	219	67.8	0.2
Railroad Avenue - L Street to Livermore Avenue	35,800	< 50	92	194	67.0	0.1
Railroad Avenue - Livermore Avenue to Maple Street	27,400	< 50	77	163	65.9	0.2
First Street - S Street to P Street	8,800	< 50	< 50	99	62.6	0.8
First Street - P Street to L Street	8,800	< 50	< 50	99	62.6	0.7
First Street - L Street to Livermore Avenue	9,400	< 50	< 50	60	60.5	0.4
First Street - Livermore Avenue to Maple Street	4,200	< 50	< 50	< 50	57.0	0.5
First Street - Old First Street to Inman Street	23,400	< 50	88	187	66.8	0.1
Livermore Avenue - Railroad Avenue to First Street	12,500	< 50	< 50	96	63.6	0.2
Livermore Avenue - First Street to Fourth Street	10,700	< 50	< 50	87	62.9	0.1
P Street - First Street to Second Street	8,800	< 50	< 50	57	60.2	1.6
Holmes Street - First Street to Fourth Street	9,500	< 50	< 50	104	62.9	0.5
Holmes Street - South of Fourth Street	27,800	< 50	99	210	67.6	0.1

^a Traffic noise within 50 feet of the roadway centerline requires site-specific analysis.
Source: LSA Associates Inc., November 2008.

Railroad Noise Impacts. Activity on the Union Pacific rail line represents a significant source of noise and groundborne vibration in the Downtown Specific Plan area. Train whistles and engine noise from freight trains and the Altamont Commuter Express, with six trips a day, are the primary noise associated with trains. Freight trains generally emit higher noise levels than passenger or commuter trains. Therefore, in areas where the tracks are used more frequently by freight trains, the single event noise exposure levels and total train noise would be higher than in areas with less frequent freight train use. In Livermore an estimated five freight trains per day with an average of 60 to 80 cars per train traveling 40 to 60 miles per hour use the Union Pacific rail lines.³ Train-related noise levels reach up to 60 dBA CNEL at approximately 660 feet from the railroad centerline in the Downtown Specific Plan area (approximately 300 feet south of the centerline of Railroad Avenue).

First Street/South Livermore Avenue Site. Traffic noise levels along South Livermore Avenue, adjacent to the First Street/South Livermore Avenue site, would range up to 62.9 dBA CNEL at 50 feet from the outermost travel lane under cumulative plus project conditions. This level is well below the City's "conditionally acceptable" threshold of 70 dBA CNEL for new auditorium development as stated in the Land Use Compatibility Standards. It would also be well below the City's "normally acceptable" exterior noise thresholds for new development within the Downtown Core District. Thus, traffic noise impacts for the proposed development of the Theater at the First Street/South Livermore Avenue site would be less-than-significant.

Residential Uses at First Street/South Livermore Avenue Site. If residential land uses are constructed on the First Street/South Livermore Avenue site instead of the Theater, per buildout of the Downtown Specific Plan, cumulative project-related traffic noise levels could impact these

³ Livermore, City of, 2003. *City of Livermore 2003 General Plan*, Noise Element, 9-14.

sensitive land uses. The tables for the cumulative traffic noise modeling results for all modeled alternatives are contained in Appendix F. Cumulative traffic noise levels on roadway segments adjacent to this site would increase only slightly under Alternative 4 conditions, but would remain the same or decrease slightly under Alternatives 2 and 3 compared to the Theater at the First Street/South Livermore Avenue site.

The highest traffic noise increase over cumulative plus project conditions would occur under Alternative 4 (which assumes the Theater would be constructed at the First Street/Maple Street site) along First Street from Livermore Avenue to Maple Street. Cumulative traffic noise levels under this alternative would range up to 57.1 dBA CNEL at 50 feet from the centerline of the outermost travel lane, an increase of only 0.1 dBA over cumulative plus project traffic noise levels. Cumulative traffic noise levels along South Livermore Avenue would show no increase over the proposed project conditions, ranging up to 62.9 dBA CNEL at 50 feet from the centerline of the outermost travel lane under all considered cumulative conditions. This level is well below the City's "normally acceptable" exterior noise thresholds for new development within the Downtown Core District. However, all residential development in the Downtown Core District must meet the City's interior noise level standard of 45 dBA CNEL with windows closed.

Residential land uses could be constructed within 975 feet of the centerline of the Union Pacific rail line at the First Street/South Livermore Avenue site. Assuming a direct line of sight to the railroad tracks, train-related noise levels would be reduced due to distance attenuation to 58.4 dBA CNEL.⁴ Due to distance attenuation and shielding from existing structures, impacts from railroad noise sources on proposed development at the First Street/South Livermore Avenue site would be less-than-significant.

Based on the EPA's Protective Noise Levels (EPA 550/9-79-100, November 1978), with a combination of walls, doors, and windows, standard construction for northern California residential buildings would provide approximately 25 dBA in exterior to interior noise reduction with windows closed and approximately 15 dBA with windows open. Residential land uses constructed at the First Street/South Livermore Avenue site would be exposed to traffic noise levels of up to 66.7 dBA CNEL⁵ under cumulative conditions along the property boundary next to South Livermore Avenue. Beyond 80 feet from the roadway centerline traffic noise levels would attenuate to below 60 dBA CNEL; thus open windows would provide sufficient reduction to meet the interior residential living space noise level standard. However, with windows open, any interior residential living spaces constructed within 80 feet of South Livermore Avenue would not meet the interior noise standard of 45 dBA CNEL (i.e., 66.7 dBA – 15 dBA = 51.7 dBA). All residential façades within 80 feet of the centerline of South Livermore Avenue would require an alternate ventilation system, such as air conditioning, to ensure that windows can remain closed for a prolonged period of time in order to meet the interior noise standard of 45 dBA CNEL. This noise reduction feature would reduce on-site

⁴ This estimate assumes a worst-case scenario of 5 daily freight trains consisting of 80 cars and 2 locomotives traveling at 60 mph and 6 daily commuter trains consisting of 8 cars and 1 locomotive traveling at 60 mph, each with warning horns sounding at all at-grade rail crossings in the project vicinity. The estimate is based upon the calculation methodology outlined in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment*, May 2006.

⁵ This combined noise level assumes the worst case conditions with a direct line of sight to the Union Pacific rail line and Railroad Avenue. Existing buildings or structures built as part of the Specific Plan development would further reduce this noise level.

traffic noise impacts to meet the City's interior residential living space noise level standard of 45 dBA CNEL (i.e., $66.7 \text{ dBA} - 25 \text{ dBA} = 41.7 \text{ dBA}$).

Livermore Village Site. Traffic noise levels along Railroad Avenue from L Street to Livermore Avenue, adjacent to the proposed Livermore Village Site, would range up to 67.0 dBA CNEL at 50 feet from the outermost travel lane under cumulative plus project conditions. Project-related traffic noise levels under the cumulative condition would range up to 63.6 dBA CNEL at 50 feet from the outermost travel lane of South Livermore Avenue from Railroad Avenue to First Street. These noise levels are well below the City's "conditionally acceptable" threshold of 70 dBA CNEL for new auditorium development as stated in the Land Use Compatibility Standards. It would also be well below the City's "normally acceptable" exterior noise thresholds for new development within the Downtown Core District. Thus, traffic noise impacts for the proposed development of the Theater at the Livermore Village site would be less-than-significant. Even if the Theater is constructed at this site instead of one of the other two considered sites, traffic noise levels under cumulative conditions would still range up to 63.7 dBA CNEL at 50 feet from the centerline of the outermost travel lane of South Livermore Avenue from Railroad Avenue to First Street (as shown in the alternatives modeling results tables in Appendix F).

Residential Uses at the Livermore Village Site. Residential land uses could be constructed within 360 feet of the centerline of the Union Pacific rail line at the Livermore Village site. At this distance, train-related noise levels would range up to 62.1 dBA CNEL.⁶ The combined railroad and project-related roadway noise level along the northern boundary of the Livermore Village site would range up to approximately 70 dBA CNEL (at approximately 60 feet from the roadway centerline). These noise levels are below the City's "normally acceptable" exterior noise threshold of 75 dBA CNEL for all new development within the Downtown Core District. However, all residential development in the Downtown Core District must meet the City's interior noise level standard of 45 dBA CNEL with windows closed.

Based on the EPA's Protective Noise Levels (EPA 550/9-79-100, November 1978), with a combination of walls, doors, and windows, standard construction for northern California residential buildings would provide approximately 25 dBA in exterior to interior noise reduction with windows closed and approximately 15 dBA with windows open. Residential land uses constructed at the Livermore Village site would be exposed to combined railroad and project-related traffic noise levels of up to 70 dBA CNEL⁷ under cumulative conditions along the property boundary next to Railroad Avenue. At 750 feet from the railroad centerline the combined railroad and traffic noise levels would reduce to below 60 dBA CNEL due to distance attenuation; thus open windows would provide sufficient reduction to meet the interior residential living space noise level standard. Similarly, traffic noise levels along South Livermore Avenue would attenuate to below 60 dBA CNEL at a distance of 105 feet from the roadway centerline. However, with windows open, any interior residential living space constructed on the Livermore Village site within 750 feet of and with a direct line of sight to

⁶ This estimate assumes a worst-case scenario of 5 daily freight trains consisting of 80 cars and 2 locomotives traveling at 60 mph and 6 daily commuter trains consisting of 8 cars and 1 locomotive traveling at 60 mph, each with warning horns sounding at all at-grade rail crossings in the project vicinity. The estimate is based upon the calculation methodology outlined in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment*, May 2006.

⁷ This combined noise level assumes the worst case conditions with a direct line of sight to the Union Pacific rail line and Railroad Avenue. Existing buildings or structures built as part of the Specific Plan development would further reduce this noise level.

Railroad Avenue, or within 105 feet of and with a direct line of sight to South Livermore Avenue, would not meet the interior noise standard of 45 dBA CNEL (i.e., 70 dBA – 15 dBA = 55 dBA). All residential façades within 750 feet of the railroad centerline (approximately equivalent to 390 feet south of the Railroad Avenue centerline) and with a direct line of sight to Railroad Avenue, or within 105 feet of and with a direct line of sight to South Livermore Avenue would require an alternate ventilation system, such as air conditioning, to ensure that windows can remain closed for a prolonged period of time in order to meet the interior noise standard of 45 dBA CNEL. This noise reduction feature would reduce on-site traffic noise impacts to meet the City's interior residential living space noise level standard of 45 dBA CNEL (i.e., 70 dBA – 25 dBA = 45 dBA).

First Street/Maple Street Site. Traffic noise levels along First Street, from Livermore Avenue to Maple Street, would range up to 57.0 dBA CNEL at 50 feet from the outermost travel lane under cumulative plus project conditions. This level is well below the City's "conditionally acceptable" threshold of 70 dBA CNEL for new auditorium development as stated in the Land Use Compatibility Standards. It would also be well below the City's "normally acceptable" exterior noise thresholds for all new development within the Downtown Transit Gateway. It should be noted that no residential development is proposed for the First Street/Maple Street site for any of the alternatives considered. Thus, traffic noise impacts for the proposed development of the Theater, or any of the other proposed commercial, office, or retail land uses, at the First Street/Maple Street site would be less-than-significant.

In addition to the sites described above, residential land uses could be constructed at other locations within the Downtown Specific Plan area and could be impacted by combined railroad and project-related traffic noise levels. Therefore, any future proposed residential land use development at other locations within the Downtown Specific Plan area must demonstrate to the satisfaction of the City that the interior noise level standard of 45 dBA would be met. Implementation of multi-part Mitigation Measure NOISE-2 would sufficiently mitigate railroad and cumulative project-related traffic noise impacts to a less-than-significant level.

Mitigation Measure NOISE-2a: All residential land use development on the Livermore Village site located within 390 feet of the centerline of Railroad Avenue or within 105 feet of the centerline of South Livermore Avenue shall include an alternate form of ventilation, such as an air conditioning system, in order to ensure that windows can remain closed for a prolonged period of time.

Mitigation Measure NOISE-2b: All residential land use development on the First Street/South Livermore Avenue site located within 80 feet of the centerline of South Livermore Avenue shall include an alternate form of ventilation, such as an air conditioning system, in order to ensure that windows can remain closed for a prolonged period of time.

Mitigation Measure NOISE-2c: Project-specific acoustical studies shall be performed for all proposed residential development projects at any other location within the Downtown Specific Plan area. The impact assessment shall be submitted to the Community Development Department for review and approval prior to issuance of grading permits. Measures shall be identified and implemented that would reduce exterior noise level impacts to meet the City's interior noise level criteria of 45 dBA CNEL for residential land uses within the Downtown Area. (LTS)

Stationary Noise Impacts. Stationary noise sources that would be associated with implementation of the project include additional parking lot activities (such as slamming car doors and talking), additional mechanical ventilation systems, and occasional delivery truck idling and unloading noise.

Impact NOISE-3: Implementation of the Amendments, including construction of the Regional Performing Arts Theater, could result in stationary noise impacts within the Downtown Specific Plan area. (S)

Specific future commercial uses that could be constructed as part of the buildout under the Amendments are yet to be determined. Commercial and retail land uses would generate noise from occasional truck delivery, loading/unloading activities, HVAC system condensers and fans, and typical parking lot activities. These are all potential point sources of noise that could affect noise-sensitive receptors in the Downtown. Of these noise sources, noise generated by delivery truck activity would generate the highest maximum noise levels. Representative parking activities, such as people conversing or doors slamming, would generate approximately 60 dBA to 70 dBA L_{max} at 50 feet. Delivery truck loading and unloading activities can result in maximum noise levels from 75 dBA to 85 dBA L_{max} at 50 feet.

First Street/South Livermore Avenue Site. Preliminary conceptual designs for the Theater at First Street/South Livermore Avenue site indicate that delivery docks for the potential Theater location would be located on the east side of the Theater at this site with access from Second Street. The closest existing sensitive receptors are located near the intersection of Second Street and McLeod Street, approximately 100 feet from the site boundary. At this distance, noise from delivery activities would attenuate to approximately 69 dBA to 79 dBA L_{max} . Delivery noise at the Theater would be intermittent and short term in nature. When averaged over a one hour or longer time period, it is expected these stationary noise levels would be reduced by the mostly lower ambient noise levels to below the Downtown Core District's "normally acceptable" exterior noise level threshold of 75 dBA CNEL for activities occurring between 7:00 a.m. and 12:00 a.m., or the threshold of 65 dBA CNEL for activities occurring between 12:00 a.m. and 7:00 a.m. Furthermore, it is expected such stationary noise levels would not expose persons to or generate noise levels in excess of standards established in the City's Noise Ordinance, or applicable standards of other agencies, nor would they substantially increase permanent, temporary, or periodic ambient noise levels by over 4 dBA in the site vicinity above levels existing without the project. However, as the conceptual designs are only preliminary, the necessary level of construction detail is not yet available to determine for certain whether impacts from stationary noise sources would occur or what mitigation measures would be required to reduce any impacts to less-than-significant levels. Therefore, a stationary noise impact study would be required when final design details are determined.

Livermore Village Site. Preliminary conceptual designs for the Theater at the Livermore Village site indicate that the delivery area would be located behind the Theater and accessed via a new internal roadway within the Livermore Village site. The closest existing sensitive receptors are located near the intersection of Railroad Avenue and North L Street, approximately 500 feet from the potential delivery dock area. At this distance, noise from delivery activities would attenuate to approximately 55 dBA to 65 dBA L_{max} . When averaged over a one hour or longer time period, it is expected these stationary noise levels would be reduced by the mostly lower ambient noise levels to below the Downtown Core District's "normally acceptable" exterior noise level threshold of 75 dBA

CNEL for activities occurring between 7:00 a.m. and 12:00 a.m., or the threshold of 65 dBA CNEL for activities occurring between 12:00 a.m. and 7:00 a.m. Furthermore, it is expected such stationary noise levels would not expose persons to or generate noise levels in excess of standards established in the City's Noise Ordinance, or applicable standards of other agencies, nor would they substantially increase permanent, temporary, or periodic ambient noise levels by over 4 dBA in the site vicinity above levels existing without the project. However, as the conceptual designs are only preliminary, the necessary level of construction detail is not yet available to determine for certain whether impacts from stationary noise sources would occur or what mitigation measures would be required to reduce any impacts to less-than-significant levels. Therefore, a stationary noise impact study would be required when final design details are determined. In addition, if residential development were to occur on this site, prior to development of the Theater, the future stationary noise impact study shall include mitigation measures that would reduce project-related stationary noise impacts to these sensitive receptors to comply with the City's Downtown exterior and interior acceptable noise level standards.

First Street/Maple Street Site. Detailed conceptual designs are not yet available for the Theater at First Street/Maple Street site. However, for the purposes of this analysis it is assumed that the delivery area for this site would be located behind the Theater. The closest sensitive receptors are located along Maple Street south of Second Street, approximately 80 feet from the site boundary. At this distance, noise from delivery activities would attenuate to approximately 71 dBA to 81 dBA L_{max} . Delivery noise at the Theater would be intermittent and short term in nature. When averaged over a one hour or longer time period, it is expected these stationary noise levels would be reduced by the mostly lower ambient noise levels to below the Transit Gateway District's "normally acceptable" exterior noise level threshold of 70 dBA CNEL for activities occurring between 7:00 a.m. and 12:00 a.m., or the threshold of 60 dBA CNEL for activities occurring between 12:00 a.m. and 7:00 a.m. Furthermore, it is expected such stationary noise levels would not expose persons to or generate noise levels in excess of standards established in the City's Noise Ordinance, or applicable standards of other agencies, nor would they substantially increase permanent, temporary, or periodic ambient noise levels by over 4 dBA in the site vicinity above levels existing without the project. However, as the conceptual designs are only preliminary, the necessary level of construction detail is not yet available to determine for certain whether impacts from stationary noise sources would occur or what mitigation measures would be required to reduce any impacts to less-than-significant levels. Therefore, a stationary noise impact study would be required when final design details are determined.

Similarly, for other development that would result from implementation of the Amendments, the necessary level of construction detail is not yet available to determine whether impacts from project-related stationary noise sources would occur or what mitigation measures would be required to reduce any impacts to less-than-significant levels. Therefore, stationary noise impact studies would be required when final design details are determined for these future proposed projects.

Implementation of multi-part Mitigation Measure NOISE-3 would sufficiently reduce project-related stationary noise impacts to a less-than-significant level to comply with the City's General Plan and Municipal Code requirements

Mitigation Measure NOISE-3a: Project-specific stationary noise impact studies shall be performed for all proposed noise-sensitive development within the Downtown Specific Plan

area. The noise impact studies shall describe how the City's Downtown exterior and interior acceptable noise level standards will be achieved for the proposed development. For any proposed multi-family residential, motel, or hotel development projects, the acoustical study must also satisfy the requirements set forth in Title 24, Part 2, of the California Administrative Code, Noise Insulation Standards, for multiple-family attached residential units, hotels and motels. These studies must be performed and submitted to the Community Development Department for review prior to issuance of any permits.

Mitigation Measure NOISE-3b: Project-specific stationary noise impact studies shall be performed for all proposed development projects within the Downtown Specific Plan area which include any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device, or delivery docks, that would generate noise levels in excess of the City's exterior noise standards. These noise impact studies shall include mitigation measures that would reduce project-related stationary noise impacts to comply with the City's Downtown exterior and interior acceptable noise level standards. These studies must be performed and submitted to the Community Development Department for review and approval prior to issuance of any permits. (LTS)

(2) **Vibration Impacts (Criteria 2)**. Construction activities associated with implementation of the project could temporarily expose persons in the vicinity of construction sites to excessive ground-borne vibration or ground-borne noise levels.

Impact NOISE-4: Implementation of the Amendments and Theater project may result in a significant groundborne vibration impact. (S).

Pile driving is a potential source of groundborne vibration. Construction activities resulting from implementation of the Amendments, including construction of the Theater, may include construction techniques such as pile driving. Pile driving is a potential source of groundborne vibration and can generate vibration levels of up to 112 VdB at 25 feet. Groundborne vibration due to pile driving can be perceptible at distances of up to 100 feet.

Other groundborne vibration sources include earthmoving equipment. Typical groundborne vibration levels measured at a distance of 25 feet from heavy construction equipment in full operation, such as vibratory rollers, range up to approximately 94 VdB. This is below the damage threshold for historic or fragile buildings. However, at the First Street/South Livermore Avenue site groundborne vibration-producing construction activities would occur immediately adjacent to the commercial building located at 2321 First Street during construction of the Theater. The damage threshold for this sensitive structure, constructed in 1960, would be 94 VdB. In addition, construction of the Theater at this location could require utility work to occur within the right of way of South Livermore Avenue and First Street and, thus, possibly less than 50 feet from nearby structures.

Development of other sites as part of the implementation of Amendments (including development at the Livermore Village site or the First Street/Maple Street site), would also result in construction activities that would include the use of heavy construction equipment and could also include the use of pile driving. A detailed vibration impact assessment would be required to reduce these potential groundborne vibration impacts on sensitive receptors in the vicinity. However, the necessary level of construction detail is not yet available to conduct this analysis so implementation of the project may result in a significant vibration impact. Therefore, the following mitigation measure shall be

implemented. Implementation of Mitigation Measure NOISE-4 would reduce construction-related groundborne vibration impacts to a less-than-significant level.

Mitigation Measure NOISE-4: For all proposed development constructed as part of the proposed project, the project applicants shall prepare a vibration impact assessment to determine potential construction-related groundborne vibration impacts for any structure located within 50 feet of proposed earthmoving or pile driving activities. The vibration impact assessment shall be submitted to the Community Development Department for review and approval prior to issuance of grading permits. Measures shall be identified and implemented that would reduce groundborne vibration impacts from extreme noise generators (such as heavy construction equipment or pile driving) and to prescribe methods of construction to be utilized so as not to exceed the identified thresholds. Such measures may include restrictions on the number or types of construction equipment that may operate at a time within 100 feet of structures, restrictions on equipment hours of operation, or requirements to use alternative construction techniques such as auger cast piles in lieu of driven piles. (LTS)

In addition to construction activities, railroad activities are also a common source of groundborne vibration. According to the Federal Transit Administration (FTA)⁸ the screening distance for vibration impact assessment from conventional commuter rail line sources is 200 feet for sensitive land uses such as residential development, and 120 feet for land uses such as institutions or offices that do not use vibration-sensitive equipment but still have potential for activity interference. Implementation of the Amendments, including the construction of the Regional Performing Arts Theater, would result in development as close as 360 feet to the Union Pacific rail line (at the Livermore Village site). This is well beyond the screening distance for even sensitive (such as residential) land use development near rail lines according to the FTA. Therefore, groundborne vibration from railroad sources would be less-than-significant for development associated with implementation of the Amendments, including the construction of the Regional Performing Arts Theater.

⁸ Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*, May.

G. CULTURAL AND PALEONTOLOGICAL RESOURCES

The findings and information in this section summarize the results of a technical study prepared for the proposed Downtown Specific Plan Amendments (Amendments) and Regional Performing Arts Theater project (Theater) by LSA Associates, Inc.¹, which is contained in Appendix G. The purpose of this section is to: (1) describe the baseline conditions for cultural and paleontological resources in the project area; (2) identify potentially-significant impacts to such resources that may result from project implementation; and (3) provide mitigations to reduce the severity of significant impacts.

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for the historical significance they possess. Cultural resources include a broad range of resources, examples of which include archaeological materials, historic roadways and railroad tracks, and buildings of architectural significance. Generally, for a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources) it must be 50 years or older.²

Paleontological resources include fossil plants and animals, and evidence of past life such as trace fossils and tracks. Ancient marine sediments may contain invertebrate fossils representing snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Terrestrial sediments may contain the fossils that represent such vertebrate land mammals as mammoth, camel, saber tooth cat, horse, and bison.

The California Environmental Quality Act (CEQA) requires that effects to cultural and paleontological resources be considered in the planning process for discretionary projects.

1. Setting

This section provides an overview of the cultural and paleontological resources of the Downtown Specific Plan Area. The *cultural resources* portion consists of: (1) a brief overview of the area's prehistoric, ethnographic, and historical settings; (2) a summary of recorded cultural resources in the project area; and (3) an assessment of the project area's prehistoric and historical archaeological sensitivity. The *paleontological resources* portion consists of: (1) a brief overview of the project area and vicinity's paleontological history; and (2) an assessment of the project area's paleontological sensitivity. This section concludes with a summary of State and local legislative and regulatory contexts applicable to cultural and paleontological resources.

a. Cultural Resources Methods. The methods used to develop the baseline conditions for cultural resources within the Downtown Specific Plan area are described below.

¹ LSA Associates, Inc., 2008. *A Cultural and Paleontological Resources Study for The Livermore Downtown Specific Plan Amendments and Performing Arts Theater Project*. October 23.

² California Office of Historic Preservation, 2006:3. *California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)*. Technical Assistance Series No. 6. California Department of Parks and Recreation, Sacramento.

(1) **Records Searches.** A records search was conducted on July 29, 2008, at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California.³ Other cultural resource inventories reviewed include:

- *California Inventory of Historic Resources*;⁴
- *Five Views: An Ethnic Historic Sites Survey for California*;⁵
- *Directory of Properties in the Historic Property Data File for Alameda County*.⁶ The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest; and
- *Downtown Specific Plan Appendix G: Historic Resources Inventory*.⁷

On July 31, 2008, LSA faxed a letter describing the project and a map depicting the project area to the Native American Heritage Commission (NAHC) in Sacramento requesting a review of the Sacred Lands File for any Native American cultural resources that might be affected by the proposed project.⁸

(2) **Literature Review.** A literature review was conducted by LSA for the project area. Archaeological, environmental, and ethnographic sources were reviewed to gather information about the project area's baseline conditions and cultural setting. The City's General Plan and Downtown Specific Plan were reviewed to identify policies and guidelines pertinent to the legal and planning framework in which project area cultural resources are considered.

(3) **Consultation.** On July 31, 2008, LSA sent a letter describing the project and a map depicting the project area to the Livermore Heritage Guild (Guild) requesting information or concerns regarding historical sites in the project area. On August 1, 2008, Garrett B. Drummond of the Guild contacted LSA via e-mail to request addresses for Specific Plan amendment project sites and performing arts center locations depicted on the map sent to the Guild. On October 23, 2008, LSA provided Mr. Drummond with an updated and revised project map, potential development site addresses, and additional information on the proposed Amendments and Theater locations.

b. Paleontological Resources Methods. Background research was done to determine if paleontological resources (fossils) and geologic units known to contain fossils are within the project area. This research, which consisted of a review of the fossil locality search conducted for the project

³ The NWIC is an affiliate of the California Office of Historic Preservation and is the official state repository of cultural resources reports and records for Alameda County.

⁴ California Department of Parks and Recreation, 1976. *California Inventory of Historic Resources*. Sacramento.

⁵ California Department of Parks and Recreation, Office of Historic Preservation, 1988. *Five Views: An Ethnic Historic Site Survey for California*. Sacramento.

⁶ California Department of Parks and Recreation, Office of Historic Preservation, March 7, 2008. *Directory of Properties in the Historic Property Data File*. Sacramento.

⁷ City of Livermore, 2004.

⁸ The NAHC is the official state repository of Native American sacred site location records.

area in 2002⁹ and a literature review, was done to identify the geologic units, paleontological studies, fossil localities (i.e., a location at which paleontological resources have been documented), and the types of fossils that may be within the project area. The fossil locality search was conducted by the staff of the University of California Museum of Paleontology (UCMP), Berkeley. LSA reviewed paleontological and geological maps and literature pertaining to the project area. The maps and literature reviewed are presented in the Paleontological subsection below.

c. Cultural Resources. This section briefly describes the existing conditions for cultural resources in the project area as determined by the records searches, literature review, and consultation described above.

(1) Prehistory and Ethnography. The Paleo-Archaic-Emergent cultural sequence developed by Fredrickson^{10, 11} is commonly used to interpret the prehistoric occupation of Central California. The sequence consists of three broad periods: the Paleoindian Period (10,000-6000 B.C.); the three-staged Archaic Period, consisting of the Lower Archaic (6000-3000 B.C.), Middle Archaic (3000-500 B.C.), and Upper Archaic (500 B.C.-A.D. 1000); and the Emergent Period (A.D. 1000-1800).

The Paleo Period began with the first entry of people into California. These people probably subsisted mainly on big game, minimally processed plant foods, and had few or no trade networks. Current research, however, is indicating more sedentism, plant processing, and trading than previously believed. During the Lower Archaic, milling stones for plant processing are abundant and hunting is less important than obtaining plant foods. Artifacts are predominantly of local materials, suggesting that few if any extensive trade networks were established at this time. During the Middle Archaic, the subsistence base begins to expand and diversify with a developing acorn economy, as evidenced by the mortar and pestle, and the growing importance of hunting. Status and wealth distinctions are evidenced in the Upper Archaic archaeological record, and regional trade networks are well established at this time for the exchange of goods and ideas, such as obsidian and Kuksu ceremonial practices involving spirit impersonations. Increasing social complexity continued during the Lower Emergent. Territorial boundaries were well established by this time with regularized inter-group exchanges involving more and varied goods, people, and ideas. Bow and arrow technology was also introduced. By the Upper Emergent, a monetary system based on the clamshell disk bead had been established. Native population reached its zenith during this time, as evidenced by high site densities and large village sites in the archaeological record.

Native American occupation of the Livermore-Amador Valley area dates from at least the Middle Archaic and continues until the Upper Emergent. Middle Archaic occupation is evidenced at prehistoric archaeological site CA-ALA-483 near Pleasanton, where radiocarbon dates of 1320 B.C.

⁹ LSA Associates, Inc., 2003. *Volume I: Master Environmental Assessment for the Livermore General Plan and Downtown Specific Plan*. LSA Associates, Inc., Berkeley, California.

¹⁰ Fredrickson, David A., 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. *Journal of California Anthropology* 1(1):41-53.

¹¹ Fredrickson, David A., 1994. Archaeological Taxonomy in Central California Reconsidered. In *Toward a New Taxonomic Framework for Central California Archaeology*, pp. 91-103. Contributions of the University of California Archaeological Research Facility, Number 52, edited by Richard E. Hughes, Berkeley.

and 3370 B.C. were obtained.¹² Upper Emergent occupation and use of the valley is evidenced at sites CA-ALA-28 and CA-ALA-29 near the mouth of Arroyo Mocho and at CA-ALA-483 and CA-ALA-555. Archaeological evidence suggests a regional settlement pattern characterized by occupation focused on exploiting resources associated with Willow Marsh and its feeder drainages.

During the Emergent and Euro-American contact periods, the project area is within territory once occupied by Costanoan—also commonly referred to as Ohlone—language groups. The Ohlone language spoken by groups living in the Livermore Valley area was probably Chochenyo, which was spoken by about 2,000 people.¹³ Ohlone settlements were organized according to “tribelet”, which constituted the basic ethnic and political land-holding units throughout much of California. Within each tribelet's territory were several semi-permanent settlements, along with campsites in outlying areas that were used on a seasonal basis. Settlement locations were chosen for such factors as proximity to water, firewood, food resources, and well-drained soils. Smaller occupation sites were often clustered around a tribelet's principal village, which was the location of the ceremonial roundhouse. The *Seunen* and *Souyen* tribelets occupied the Livermore Valley and surrounding areas at the time of Spanish contact.¹⁴

(2) History.¹⁵ The City of Livermore was established in 1869 by William Mendenhall, who named the town after his friend Robert Livermore. The original town was laid out between Livermore Avenue to the east, Q Street to the west, Railroad Avenue to the north, and Fifth Street to the south. In its early days, Livermore was primarily an agricultural community; it also became a station stop for the Central Pacific Railroad after Mendenhall donated land for a depot at L Street and Railroad Avenue. Nearby Pleasanton ended up with a train depot as well, but Livermore was the first stop in the Tri-Valley area for trains coming west and the last stop for trains headed east. Livermore quickly became the hub of the Tri-Valley, and developed into a banking and commerce center for the local agricultural economy.

Establishments serving the numerous businessmen coming to the area sprang up around the depot. Land adjacent to the tracks filled with warehouses benefiting from the proximity to the railroad. First Street from Livermore Avenue to L Street was the locus of shops, restaurants, hotels, livery stables, theaters, as well as residences. Civic uses also contributed to the lively scene. Several buildings around the intersection of Livermore Avenue and First Street were used at various times as City Hall before it moved to South Livermore and Pacific Avenues in 1974. Until then, the comings and goings of the community and city staff were part of the town's daily activity. As the town grew, commercial uses extended east across Livermore Avenue to the McLeod Tract, which became part of the town in 1875. Commercial uses also spilled over to Second Street. First Street, between Maple and L streets, however, was undeniably Livermore's Downtown and center.

¹² Bard, James C., et al., 1992. *Archaeological Site Testing Report, CA-Ala-483, Laguna Oaks Project, Pleasanton, Alameda County, California*. Basin Research Associates, Inc., San Leandro, California.

¹³ Levy, Richard, 1978:485. In *California*, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, Volume 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

¹⁴ Milliken, Randall, 1995:254-255. *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810*. Ballena Press, Menlo Park, California.

¹⁵ This section adapted from the *City of Livermore Downtown Specific Plan* (2004:2-3).

In Livermore's early days, the lack of transportation and the need to be near the railroad required building close to the Downtown core, but by the 1930s, the automobile allowed people to live farther from the center. The city began to expand in a low-density pattern. Many of its original farm fields were replaced with residential, shopping, office, and industrial areas, all served primarily by the automobile.

The establishment of Lawrence Livermore Laboratory and other major research facilities in the 1950s affected the character of the area in other ways. The population quadrupled in the first decade after establishment of the labs. The population increase was not as extreme in succeeding years, but a high level of growth was maintained and supported a continuing demand for housing. The completion of the interstate freeway system in the 1960s and early 1970s opened unincorporated areas near Livermore to extensive single-family suburban development, and new residents began to migrate to the periphery of the city.

The labs and other workplaces on the outskirts of town were followed by more facilities, which pulled jobs away from the center. The development of large office parks helped fuel job growth in the Tri-Valley area during the 1980s. With few sites suitable for such development, office and other large-scale commercial uses abandoned Downtown in favor of the large land parcels available along the I-580 corridor. Shopping centers likewise found their way along major transportation corridors.

(3) Identified Cultural Resources. No recorded prehistoric archaeological resources or recorded Native American sacred sites are within the Downtown Specific Plan area. A historical archaeological resource (P-01-010433), consisting of a circa-1940s warehouse foundation, was recorded at 2330 Railroad Avenue in 2001¹⁶ in advance of the proposed Livermore Park and Ride Garage Project. An evaluation of P-01-010433 determined that the site did not appear eligible for listing in the National Register of Historic Places or the California Register of Historical Resources.

The NWIC database indicates two built environment resources have been recorded in areas proposed as possible locations for development of the Theater. These resources are also identified in the *City of Livermore Downtown Specific Plan* and the *Downtown Historical Assessment*.¹⁷

- The circa-1929 Pacific Telephone & Telegraph (PT&T) Repeater Station at 2324 Second Street (P-01-003532). This building is within the First Street/South Livermore Avenue Theater site and consists of a 1.5-story stucco plaster, tile-roofed Mediterranean Revival style structure. It was originally constructed as a repeater station to connect long distance communication lines between northern and southern California.¹⁸ It has been assigned a National Register Status Code rating of "7N" by the California Office of Historic Preservation: "Needs to be reevaluated" (formerly National Register Status Code 4—appears to be eligible for National Register or California Register through survey evaluation). Under the *City of Livermore Downtown Specific Plan*,

¹⁶ McKale, George, 2002. *Archaeological Survey Report (Positive), Livermore Park and Ride Garage Project*. LSA Associates, Inc., Point Richmond, California.

¹⁷ Carey & Co. Inc., 1999. *Downtown Historical Assessment, City of Livermore, Livermore, California*. Carey & Co. Inc., San Francisco, California.

¹⁸ Bamberg, Bonnie, 1988. State of California Department of Parks and Recreation Historic Resources Inventory record for the PT&T Co. Repeater Station, 2324 Second Street, Livermore. Urban Programmers, San Jose, California.

however, the building has been assigned a historic rating of “3”, indicating it is a “National Historic Resource.” The PT&T building is a historical resource for purposes of CEQA.

- The circa-1905 Southern Pacific Railroad Depot at 20 South L Street (P-01-003398/P-01-005902). This building is within the Livermore Village site and consists of a two-story, rectangular building done in a vernacular style commonly associated with train stations of the time period. It has been assigned National Register Status Code ratings of “7N” (“needs to be reevaluated”) and “7K” (“resubmitted to OHP for action but not reevaluated”) by the California Office of Historic Preservation. Under the *City of Livermore Downtown Specific Plan*, however, the building has been assigned a historic rating of “3”, indicating it is a “National Historic Resource.” The Railroad Depot is a historical resource for purposes of CEQA. A railroad car has been sited next to the Railroad Depot, but this cultural resources analysis has determined that the railroad car is not considered to be a historic structure in and of itself, and it is not considered an integral part of the historic Railroad Depot building.

The buildings at and adjacent to the First Street/Maple Street site are not identified as historical resources in Appendix G of the Downtown Specific Plan nor did the records search at the NWIC identify previously recorded cultural resources at this location. No known historical architectural resources at the First Street/Maple Street site will be impacted by the current project or the potential realignment of Railroad Avenue.

(4) Archaeological Sensitivity. A preliminary assessment of the Downtown Specific Plan area’s archaeological sensitivity indicates that there is a low to moderate possibility for prehistoric and a high possibility of encountering historical archaeological deposits during ground-disturbing activities.

Prehistoric Archaeological Sensitivity. The Livermore-Amador Valley area, with its broad, flat terrain, abundant water sources, and diverse animal and plant resources, was ideally suited for prehistoric and ethnographic settlement and use, as indicated by recorded prehistoric archaeological and ethnographic sites in the region. Sites in this region typically are near feeder creeks of Willow Marsh—a large water body once situated adjacent to where the city of Pleasanton is today—and can be buried under several feet of alluvium.^{19,20,21,22} The closest major water source to the project area, however, is Arroyo Mocho, situated just west of the Downtown Specific Plan area. Due to the absence of a major natural drainage and recorded prehistoric archaeological sites, there is a low to moderate possibility of encountering prehistoric archaeological resources in the project area. The possibility of encountering prehistoric deposits buried beneath alluvium in areas affected by project ground-disturbing activities, however, cannot be entirely discounted.

Historical Archaeological Sensitivity. Sanborn Insurance maps published in 1884, 1893, and 1917 were reviewed to determine the land use history of sites slated for possible development under

¹⁹ Bard, et al., 1992.

²⁰ Parkman, E. Breck, 1975. *A summary of Archaeological Work Conducted at the Pleasanton Meadows Site, Alameda County*. Manuscript on file, Department of Anthropology, Hayward State University.

²¹ Wiberg, Randy S., 1984. *The Santa Rita Village Mortuary Complex (CA-ALA-413): Evidence and Implications of a Meganos Intrusion*. M.A. thesis, Department of Anthropology, San Francisco State University, California.

²² Wiberg, Randy A., 1996. *Archaeological Excavations and Burial Removal at Sites CA-ALA-483, CA-ALA-483 Extension, and CA-ALA-555, Pleasanton, Alameda County, California*. Holman and Associates, San Francisco, California.

the current project. These maps indicate buildings and structures within the First Street/South Livermore site, the Livermore Village site, and the new parcel created by the realignment of Railroad Avenue and First Street. These sites included commercial and/or residential structures by at least 1884. A summary of the Sanborn Insurance map review is included in the Cultural and Paleontological Resources technical report (Appendix G).

Several types of historical archaeological features or deposits may occur within the project area. Although it is likely that modern development has destroyed some of the deposits, many others may remain under a relatively thin layer of surface development that did not require extensive subsurface excavation (e.g., parking lots) and in areas that have not been substantially affected by ground disturbance. Backfilled wells and privies, subsurface architectural remains, and trash deposits are examples of the kinds of deposits that may exist. Such deposits can be viewed as “time capsules” that may contain a wealth of information about the social, economic, and technological development of historical Livermore.

d. Paleontological Resources. This section briefly describes the existing conditions for paleontological resources in the Downtown Specific Plan area as determined by a literature review and fossil locality search.

(1) Paleontological Setting. The Livermore Valley area is predominantly composed of sedimentary and weakly metamorphosed rocks that range in age from 159 million years old to 10,000 years old. The area is filled with Miocene and younger gravel-bearing formations and is bounded on the west by the Calaveras Fault and on the east by the Greenville Fault. The Diablo Range hills adjacent to Livermore Valley consist of Jurassic and Cretaceous sedimentary rocks with Cenozoic sedimentary rocks flanking the sides.²³

A number of fossiliferous deposits exist in the general area. This section describes these formations and indicates the types of resources they are likely to contain. The project area consists of the following geological units, described in stratigraphic sequence from youngest (top) to oldest (bottom):

Quaternary Deposits. Unnamed Quaternary deposits of Pleistocene (1.8 million to 10,000 years ago) and Holocene (10,000 years ago to present) age occur in the Livermore Valley. These deposits consist of loosely consolidated sand and gravel deposited in fluvial (river or stream) systems.²⁴ Older Pleistocene deposits typically occur as terraces incised by Holocene fluvial drainages. The Pleistocene deposits contain boulders and Rancholabrean (10,000 years and older) fossils.²⁵ Typical Rancholabrean fossils include the remains of camels, mammoths, bison, horses, and ground sloths.

²³ Barlock, Vincent E., 1988. *Sedimentology of the Livermore Gravels (Miocene-Pleistocene), Southern Livermore Valley, California*. Masters Thesis, Department of Geology, San Jose State University.

²⁴ Helley, E.J., K.R. La Joie, W.E. Spangle, and M.L. Blair, 1979. *Flatland Deposits of the San Francisco Bay Region - their geology and engineering properties, and their importance to comprehensive planning*. Geological Survey Professional Paper 943. U.S. Geological Survey and Department of Housing and Urban Development, Washington, D.C.

²⁵ Blake, M.C., R. W. Graymer, and D. L. Jones, 2000. *Geologic Map and Database of Parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California*. United States Geological Survey Miscellaneous Field Studies MF-2337, Version 1.0.

Upper and Lower Livermore Formation. The Pliocene to Pleistocene Upper Livermore Formation, formed between 3 and 1 million years ago, is composed of sandstone and conglomerate deposited in a fluvial environment.²⁶ Vertebrate fossil localities occur in the Upper Livermore Formation in the general area. The late Miocene to Pliocene Lower Livermore Formation formed about 5.2 to 2.5 million years ago. These loosely consolidated rocks crop out within the Livermore Valley plain and to the south and north of Livermore. Several invertebrate and vertebrate non-marine fossil localities occur in the Lower Livermore Formation. The dominant classes of the conglomerate are sandstone and lithic sandstone, Franciscan Complex greywacke, and fine-grained veined quartz.²⁷ The Livermore Formation may interfinger with the Sycamore Formation.

Sycamore Formation. The Sycamore Formation dates from the late Miocene to the Pliocene, approximately 8.5 to 2 million years ago, and is composed of silt, clay, sandstone, and conglomerate.²⁸ This formation, mapped at the northern portion of the Livermore Valley and the Tassajara Hills, contains extensive vertebrate and invertebrate terrestrial and lacustrine (lake) fossils, including *Hypolagus* (rabbit), *Eucastor cf. lecontei* (beaver), Machairodontinae (giant saber cat), Rhinocerotidae (rhinoceros), and *Capromeryx* (hornless prongback).

Late Miocene Marine and Non-Marine Rocks. The late Miocene Neroly Formation of the San Pablo Group, 23 million to 5 million years old, is present in the Livermore Valley and eastern foothills, where the San Pablo Group overlies the Great Valley Complex. These rocks contain both marine and non-marine continental sedimentation patterns,²⁹ and include coarse, pebbly, fossiliferous beds; fine-grained, light gray sandstone; massive siltstone and claystone; arkosic sandstone; and andesitic-pebble conglomerate.³⁰

Franciscan Complex. Presumably underlying the Livermore Valley area at great depth is the Franciscan Complex, a group of high pressure/low temperature metamorphic rocks formed during the Jurassic and Cretaceous periods (206 million to 65 million years ago).³¹ The Franciscan Complex is composed of abundant metamorphosed and unmetamorphosed greywacke; greenstone; conglomerate; serpentinite; blueschist and related schists; and varicolored red and green chert. Most of these rock types occur as blocks with sizes up to thousands of feet in length and width, encased within a sheared melange. Marine fossils, including ichthyosaurus (a marine vertebrate), and Belemnoida, *Buchia*, and *Inoceramus* (all marine invertebrates), occur in the least-metamorphosed rocks of the Franciscan Complex. Fossils found in the Franciscan Complex within and adjacent to the Livermore Valley date to the Tithonian and Turonian ages, between 151 million and 89 million years ago.

(2) Paleontological Sensitivity Assessment. No paleontological resources were identified in the Downtown Specific Plan area. The project area is underlain by Quaternary period Holocene and

²⁶ Barlock, 1988.

²⁷ Ibid.

²⁸ Isaacson, Kathleen A., 1995. *Late Tertiary Synorogenic Sedimentation in the Northern Livermore Basin, California*. Master's Thesis, Department of Geology, San Jose State University.

²⁹ California Department of Water Resources, 1966. *Livermore and Sunol Valleys, Evaluation of Ground Water Resources, Appendix A, Geology*. California Department of Water Resources Bulletin 118-2. Sacramento.

³⁰ Barlock, 1988.

³¹ Wakabayashi, John, 1999. Distribution of Displacement on and Evolution of a Young Transform Fault System: The Northern San Andreas Fault System, California. *Tectonics* 18(6).

Pleistocene deposits, the latter of which can contain significant Rancholabrean fossils. The depths of these deposits in the project area are not known but likely extend for several feet below the ground surface. Below these Quaternary deposits are deposits that date from the Pliocene to the Late Jurassic. These older deposits, while sensitive for significant paleontological resources, are most likely at considerable depths below the ground surface.

e. Legislative and Regulatory Framework. The subsections below briefly discuss the regulatory framework within which project area cultural and paleontological resources, and impacts to such resources, are addressed.

(1) California Environmental Quality Act. CEQA defines a “historical resource” as a resource which meets one or more of the following criteria:

- Listed in, or determined eligible for listing, in the California Register of Historical Resources (California Register);
- Listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k);
- Identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or
- Determined to be a historical resource by a project’s lead agency (Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a)).

A historical resource consists of:

“Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.... Generally, a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” *CEQA Guidelines* Section 15064.5(a)(3).

In accordance with *CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment.

CEQA requires a Lead Agency to determine if an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (*CEQA Guidelines* Section 15064.5(c)). Prior to considering potential impacts, the Lead Agency must determine whether an archaeological cultural resource meets the definition of a historical resource in *CEQA Guidelines* Section 15064.5(c)(1). If the archaeological cultural resource meets the definition of a historical resource, then it is treated like any other type of historical resource in accordance with *CEQA Guidelines* Section 15126.4. If the archaeological cultural resource does not meet the definition of a historical resource, then the lead agency determines if it meets the definition of a unique archaeological resource as defined at CEQA Section 21083.2(g). In practice, however, most archaeological sites that meet the definition of a unique archaeological resource will also meet the

definition of a historical resource.³² Should the archaeological cultural resource meet the definition of a unique archaeological resource, then it must be treated in accordance with CEQA Section 21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, then effects to the resource are not considered significant effects on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

(2) Health and Safety Code. California Health and Safety Code Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

(3) Public Resources Code. California Public Resources Code (PRC) Section 5097.5 provides for the protection of cultural and paleontological resources. This PRC section prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any public lands under the jurisdiction of State or local authorities.

(4) Livermore General Plan (2003). Policies and actions concerning cultural resources are included in the Community Character Element of the General Plan. Relevant objectives, policies, and actions are as follows.

- Objective CC-3.1: Establish and maintain a comprehensive, Citywide preservation program.
- Policy CC-3.1.P1: The City shall maintain a historic preservation commission and historic preservation program with dedicated staff to administer governmental preservation functions and programs.
- Policy CC-3.1.P2: The City shall encourage, and when possible require, the preservation of places, sites, areas, buildings, structures, and works of man which have cultural, archaeological, or historical significance or other special distinction to the community.
- Policy CC-3.1.P3: Whenever a historical resource is known to exist in or near a proposed project area, the City shall require an evaluation by qualified professionals as a part of the environmental assessment process.
- Policy CC-3.1.P4: The City shall encourage the preservation of historic resources to promote the sustainability, stabilization, and revitalization of its neighborhoods.
- Policy CC-3.1.P5: The City shall consider historic and cultural resources in its comprehensive planning efforts.
- Policy CC-3.1.P6: The City shall act as a role model for historic preservation by maintaining and preserving City-owned historic properties when prudent and feasible.
- Policy CC-3.1.P7: The City shall recognize the historic significance of Downtown Livermore through a Specific Plan for the Downtown and shall include provisions encouraging the continued use of historic resources in the Downtown and establishing design guidelines for rehabilitation and new construction.

³² Bass, Ronald E., Albert I. Herson, and Kenneth M. Bogdan, 1999:105. *CEQA Deskbook: A Step-by-Step Guide on how to Comply with the California Environmental Quality Act*. Solano Press Books, Point Arena, California.

- Action CC-3.1.A1: Revise historic preservation processes and standards to reflect and implement the goals, objectives and policies of this General Plan.
- Action CC-3.1.A2: Incorporate historic preservation goals, policies, and programs into new specific plans and specific plan updates.
- Action CC-3.1.A3: Pursue identification and establishment of historic districts, if necessary, to better preserve historical resources.
- Action CC-3.1.A4: Implement preservation goals, policies, and guidelines throughout various City departments and functions.
- Action CC-3.1.A5: Review and monitor permit and code enforcement procedures and activities to reinforce preservation goals through the historic preservation commission.
- Action CC-3.1.A6: Review and revise the development review process for historic preservation, as necessary, to provide clear direction on the process, procedures, and specific applicable standards for modifications to historic resources.
- Action CC-3.1.A7: Implement training of City staff and appointed committees and commissions in historic preservation, including familiarity with the Historic Preservation component of the General Plan and specific plans, design guidelines for historic resources, use of the State Historical Building Code, and the historic resource provisions of the California Environmental Quality Act.
- Action CC-3.1.A8: Establish design guidelines for historic resources based on established federal and State standards and guidelines.
- Objective CC-3.2: Establish an inventory of historic and cultural resources of significance to the local community, the State and the Nation.
- Action CC-3.2.A1: Conduct a citywide survey to document and identify those resources that meet the criteria for listing at the local level, the California Register of Historical Resources, and the National Register of Historic Places.
- Action CC-3.2.A2: Update the historic resources survey periodically, as needed, to reflect changes due to the passage of time, loss of existing historic resources, and the availability of new or reinterpreted information.
- Action CC-3.2.A3: Develop historic context statements for interpreting history about historic properties that share a common theme, common geographical area, or a common time period. This document should help to establish categories of historic significance for a given area.
- Objective CC-3.3: Promote a broad public understanding of Livermore's heritage, traditions, and preservation policies and foster a wider appreciation of the contributions historic and cultural resources make to the City's distinctive and diverse character:
- Policy CC-3.3.P1: The City shall increase knowledge of historic preservation through public education, awareness programs, and outreach programs.
- Policy CC-3.3.P2: The City shall support historically-oriented visitor programs at the local and regional levels.
- Policy CC-3.3.P3: The City shall encourage identification of historic resources through a program of plaques and markers.
- Policy CC-3.3.P4: The City shall encourage and support public and private schools to integrate local history into their curriculums and related educational programs.
- Policy CC-3.3.P5: The City shall encourage local private and non-profit organizations in their efforts to promote and protect historic and cultural resources.

- Action CC-3.3.A1: The City shall pursue developing an awards program to recognize excellence in preservation, conservation, rehabilitation, and education.
- Objective CC-3.4: Identify and protect archaeological and paleontological resources that enrich our understanding of early Livermore and the surrounding region.
- Policy CC-3.4.P1: The City shall require proper archaeological or paleontological testing, research, documentation, monitoring, and safe retrieval of cultural resources as part of a City established archaeological monitoring and mitigation program.
- Policy CC-3.4.P2: Whenever there is evidence of an archaeological or paleontological site within a proposed project area, an archaeological survey by qualified professionals shall be required as a part of the environmental assessment process.
- Policy CC-3.4.P3: If an archaeological site is discovered during construction, all work in the immediate vicinity shall be suspended pending site investigation by qualified professionals. If, in the opinion of a qualified professional, the site will yield new information or important verification of previous findings; the site shall not be destroyed.
- Policy CC-3.4.P4: Archaeological sites should be preserved for research and educational programs. Where possible, such sites shall be made accessible to the public as part of the open space/recreation/ educational system.
- Objective CC-3.5: Provide incentives to encourage owners of historic resources to preserve and rehabilitate their properties.
- Policy CC-3.5.P1: The City shall pursue and support the use of federal, State, local, and private grants, loans, and tax credits.
- Policy CC-3.5.P2: The City shall encourage continuing the original use of historic resources where possible; adaptive use of historic resources is the preferred alternative when the original use can no longer be sustained.
- Policy CC-3.5.P3: The City shall use the State Historical Building Code and Uniform Code for Building Conservation and provisions for historic buildings in the Americans with Disabilities Act.
- Action CC-3.5.A1: Collect, maintain and make available to the public an information base of State, federal and private incentive programs for historic resources.
- Action CC-3.5.A2: Explore opportunities for promoting heritage tourism, including cooperation with regional and State marketing efforts.

(5) Livermore Downtown Specific Plan (2004). The Downtown Specific Plan contains the following policies relating to cultural resources.

In Chapter 4, Land Use and Development Policies, the following policies relate to cultural resources:

- Structures rated 1 through 3 (1 being the most significant) are designated as “National Historic Resources”, and are protected from demolition and relocation except under very special circumstances. Very careful modifications and additions will be permitted to these structures provided the historic value of the structure is not negatively impacted, as detailed in the *Design Guidelines for Historic Structures*. The *Design Standards and Guidelines for Historic Structures* contained in this Plan are based upon the Standards established by the Secretary of the Interior Standards for Rehabilitation. These structures may be relocated under very special circumstances where necessary to allow or achieve a public benefit of community wide or regional significance consistent with the Downtown Specific Plan. The City Council may approve demolition of these structures only under very special circumstances where necessary to allow or achieve a public benefit of community wide or regional significance consistent with the Specific Plan.

- Structures rated 4 are designated as “Historic Resources”, and are protected from demolition and relocation except under very special circumstances. These structures receive a lesser level of protection than “National Historic Resources”. These structures may be modified or relocated under very special circumstances where modification or relocation is necessary to allow or achieve a public benefit of community wide or regional significance.
- Structures rated 5 are not considered significant historic resources, but have been found to be of local interest as indicated in adopted historic surveys. These buildings may merit special planning consideration under the existing Preservation of Cultural Heritage Ordinance (Livermore Municipal Code Chapter 15.68.040.B). In addition, they are subject to the general *Design Standards and Guidelines* for non-historic structures contained in the Plan, which will ensure quality construction, renovation and rehabilitation.
- Structures rated 6 and higher are not considered significant historic resources or of local interest, and receive no special protection.
- To ensure that any new buildings or additions are appropriate to their context, all improvements to structures that are designated as Historic Resources must refer to the *Design Guidelines for Historic Structures* that are contained within this Specific Plan. The regulatory framework that implements the design review process for historic resources located in the Downtown Specific Plan area will be based on these Guidelines; that process is further described in *Chapter 10: Implementation*.

In Chapter 6, Design Standards and Guidelines, of the Downtown Specific Plan contains the “Design Guidelines – Downtown Historic Structures.” The design guidelines address design principles, building mass and form, storefront composition, façade elements, signage, lighting, and building color for historic structures. The guidelines include the following policy statement:

- The Design Guidelines for Livermore’s Downtown Historic Structures are based upon the Standards established by the Secretary of the Interior. The Standards should be reviewed before commencing on any historic building rehabilitation, repairs or maintenance.

In Chapter 10, Implementation of the Downtown Specific Plan, contains the following relevant policy statements and a review process for historic resources:

- Any actions proposing changes to exterior features that convey the significance of a historic resource, as determined by staff, shall be reviewed for consistency with the Design Standards and Guidelines for Downtown Historic Structures, in addition to all applicable Downtown Specific Plan and General Plan provisions and applicable City ordinances and standards. A final Design Review determination shall be made prior to issuance of any building, grading, or development permit, final map approval, or other ministerial approval.
- Features that convey the significance of a historic resource shall be identified in a historic survey adopted by the City. If a survey report has not been completed for a historic resource, so designated by the City through historic resource policies or codes, a survey report shall be completed by a qualified historic preservation expert.

2. Impacts and Mitigation Measures

This subsection analyzes impacts related to cultural resources that could result from implementation of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

a. Significance Criteria. The significance thresholds used for this analysis are based on the *CEQA Guidelines*, which the City has adopted for determining significant impacts to cultural resources for the current project. Significant impacts would occur if implementation of the proposed project were to:

1. Cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5. Specifically, substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired;
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5;
3. Indirectly destroy a unique paleontological resource or site or unique geologic feature; or
4. Disturb any human remains, including those interred outside of formal cemeteries.

Impacts are discussed in the following section and summarized in Table IV.G-1.

b. Impacts Analysis. The following discussion describes the cultural resources impacts associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential cultural resources impacts associated with the Amendments will be at a general program-level. Given that there are more defined plans for the three potential Theater locations and the Railroad Avenue realignment, potential impacts will be analyzed at the project level.

As has been noted previously, the potential impacts associated with implementation of the Downtown Specific Plan were evaluated in the General Plan EIR. Policies and actions were identified in this EIR that would reduce the potential cultural resources impacts associated with development proposed under the Downtown Specific Plan. Current General Plan policies and actions that would be applicable to development proposed under the Specific Plan Amendments, and would reduce cultural resources related impacts, are included in the following discussion as appropriate.

(1) Substantial Adverse Change in the Significance of a Historical or Archaeological Resource (Criteria 1 and 2). The project has the potential to cause less-than-significant and significant impacts to historical or archaeological resources as described below.

Downtown Specific Plan Amendments. The Amendments will have a less-than-significant impact on historical architectural resources and have a potentially significant impact on archaeological deposits.

Historical Architectural Resources. The Amendments allow for an increase in total square footage of development in the Downtown Specific Plan area. Specific locations and designs for potential development is not available for review, and analysis of project-specific impacts cannot be completed at this time. New development in the Downtown area has the potential

Table IV.G-1: Summary of Potential Impacts – Cultural Resources

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site
1. Cause a substantial adverse change in the significance of a historical resource as defined in <i>CEQA Guidelines</i> Section 15064.5. Specifically, substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired?	○ CULT-1	○ CULT-2	○ CULT-2	○ CULT-3
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to <i>CEQA Guidelines</i> Section 15064.5?	○ CULT-1	○ CULT-3	○ CULT-3	○ CULT-3
3. Indirectly destroy a unique paleontological resource or site or unique geologic feature?	○ CULT-4	○ CULT-4	○ CULT-4	○ CULT-4
4. Disturb any human remains, including those interred outside of formal cemeteries?	○ CULT-5	○ CULT-5	○ CULT-5	○ CULT-5

^a The Amendments are analyzed in this EIR at the “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:
 == No impact
 ○ Less-than-Significant
 ● Reduced to Less-than-Significant with recommended mitigation
 ● Significant and Unavoidable
 CULT-1, etc. identifies the mitigation measure, if any, that addresses the impact.

Source: LSA Associates, 2008

to result in significant impacts to historical architectural resources in the project area, as identified in Appendix G of the Downtown Specific Plan and Carey & Co. Inc.³³

New development in the Downtown Specific Plan area could directly or indirectly adversely affect the historical integrity of cultural resources. As defined by the California Office of Historic Preservation, “Integrity is the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance.”³⁴ New construction, for example, that is incongruous in scale, design, and form could have a significant impact on the historical setting, feeling, and association of historical resources in the Downtown area. Inappropriate additions or modifications to historical architectural resources to accommodate an increase in allowed office or commercial space would also have a significant impact on such resources.

³³ Carey & Co. Inc., 1999.

³⁴ California Office of Historic Preservation, 1999:13. *How to Nominate a Resource to the California Register of Historical Resources*. Technical Assistance Series No. 7. California Office of Historic Preservation, Sacramento.

Existing policies and actions of the City's General Plan and current Downtown Specific Plan, however, will mitigate development impacts to historical architectural resources in the project area to a less-than-significant level. General Plan policy CC-3.1.P3 requires that a qualified professional evaluate project impacts of a proposed project if a historical resource is known to exist in or near the project area. This evaluation by a qualified professional (e.g., an architectural historian or preservation planner) will ensure that project-specific impacts are identified and mitigated.

New construction must also conform to the Design Standards and Guidelines of the Downtown Specific Plan. The Design Standards and Guidelines are intended, in part, to ensure that new commercial, mixed-use, and residential building designs draw upon the eclectic, historical architectural styles of the area, including Spanish Colonial Revival, Mission Revival, Renaissance Revival, Colonial Revival, and Italianate to minimize impacts to the overall setting of the historic Downtown area.

The Downtown Specific Plan also includes policies for historical buildings that are based on the Secretary of the Interior's Standards for Rehabilitation. Pursuant to CEQA Guidelines Section 15064.5(b)(3) and Section 15331, if the project plans conform to the Secretary's Standards, then potential impacts to historical resources are considered mitigated to a less-than-significant level. The Downtown Specific Plan Design Guidelines: Downtown Historic Structures are intended to mitigate impacts to historical architectural resources that may occur from repair, rehabilitation, or maintenance of such resources.

Archaeological Deposits. With the exception of the Theater, additional project-specific environmental review for cultural resources may be necessary for specific development activities allowed under the Amendments, as development proposals and plans have not been prepared or submitted to the City and could result in a significant impact to cultural resources.

Impact CULT-1: Ground-disturbing construction associated with development allowed under the Downtown Specific Plan Amendments may result in impacts to unidentified archaeological deposits that may qualify as historical or archaeological resources under CEQA. (S)

Implementation of the following mitigation measure would reduce this potential impact.

Mitigation Measure CULT-1: A qualified cultural resources professional shall review additional project developments allowed under the Downtown Specific Plan Amendments once project-specific plans are available. At a minimum, these reviews shall include a records search to determine the presence of recorded cultural resources within a proposed project development site, a project site survey to identify cultural resources, and the determination if a qualified archaeologist is required to monitor ground disturbing activities associated with the project. The results of the assessment shall be presented in a report submitted to the City of Livermore Community Development Department Planning Division and include recommendations for mitigation of project impacts to significant cultural resources, as appropriate. The City shall ensure that mitigation measures proposed as part of the cultural resources assessments are implemented as a condition to site development. (LTS)

First Street/South Livermore Avenue Site, Livermore Village Site, and First Street/Maple Street Site. Development of the First Street/South Livermore Avenue and Livermore

Village sites has the potential to impact historical architectural resources. Development of these two sites and the First Street/Maple Street site has the potential to impact archaeological deposits, as described below.

Historical Architectural Resources. Under the Downtown Specific Plan, those buildings assigned a rating of 1 through 4 are historical resources for purposes of CEQA. The First Street/South Livermore Avenue and Livermore Village sites are adjacent to significant historical architectural resources, as identified in Appendix G of the Downtown Specific Plan. Six historical architectural resources are adjacent to the First Street/South Livermore Avenue site: 2219, 2223, 2235 First Street; 2220/2226 First Street (L. Schenone Building); 2247 First Street (Masonic Building); 2250 First Street (Bank of Italy); First Street/Livermore Avenue intersection (Flag Pole); and 220 S. Livermore Avenue (Livermore Post Office). Four historical architectural resources are adjacent to the Livermore Village site: 2106 First Street (Hagstrom's Market); 2156/2160/2184 First Street (IOOF Building); 2220/2226 First Street; and 21 S. Livermore Avenue (F.A. Schrader and C.M. Montgomery's Blacksmith Shop). A project that will have a substantial adverse change in the significance of a historical resource is a project that will demolish, destroy, relocate, or alter the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (*CEQA Guidelines* Section 15064.5(b)(1)). Assessing potential impacts to historical resources, therefore, needs to account for a project's visual effects on the historical setting of such resources. A significant visual effect on an historical resource is one that will diminish a resource's integrity to the extent that its historic significance, and its eligibility for listing in the California Register of Historical Resources or a local historical register as defined at Public Resources Code section 5020.1(k), is compromised.

The proposed Theater will affect the "immediate surroundings" of adjacent historical resources due to its proximity, scale, and modern architectural style. The general vicinity of the First Street/South Livermore Avenue and Livermore Village project sites, however, includes several modern buildings and streetscape, which do not contribute to the historical feeling or setting of the area. Due to the existing modern buildings, project effects are less-than-significant and will not materially impair adjacent historical resources to the extent that their historical significance and eligibility for listing in the California Register of Historical Resources or local register will be compromised. Construction of a new, modern Theater, therefore, will not constitute a significant new impact to adjacent historic resources.

Two historical resources, the circa-1929 PT&T repeater station at 2324 Second Street (First Street/South Livermore Avenue site) and the circa-1905 Railroad Depot at 20 L Street (Livermore Village site), are located within the potential Theater sites. These buildings have been assigned a "3" rating under the City of Livermore Downtown Specific Plan, indicating that these are "National Historic Resources" under the Downtown Specific Plan and are protected from demolition and relocation "except under very special circumstances." These buildings are historical resources for purposes of CEQA as defined under Section 15064.5(a)(2,3) of the CEQA Guidelines. As noted previously, the railroad car that has been sited next to the Railroad Depot is not a historic resource in and of itself and is not an integral part of the historic Railroad Depot building.

Impact CULT-2: Construction of the Theater at the First Street/South Livermore Avenue site may impact the Pacific Telephone & Telegraph building. Construction of the Theater at the

Livermore Village site may impact the Southern Pacific Railroad Depot. Both of these structures are historical resources under CEQA. (S)

Construction of the Theater at either of the aforementioned locations may result in a substantial adverse change to the significance of a historical resource. As described in CCR Title 14, Chapter 3, Section 15064.5(b), a substantial adverse change in the significance of a historical resource occurs when the characteristics that convey the resource's historical significance and justify its eligibility for, or inclusion in, the California Register are materially impaired. Material impairment, for example, may result from demolition of the PT&T repeater station or Railroad Depot to make room for the Theater or from construction vibration impacts that affect the building's structural integrity. The feasibility of moving the PT&T building (a large, stucco plaster, tile-roofed building) was evaluated in a report prepared by Carey & Company in 2008 which is contained in Appendix G. Carey & Company determined that it was feasible to move the historic portion of the PT&T building. Because the Railroad Depot building is primarily wooden, it is lighter and more easily relocated.

Mitigation Measure CULT-2: If the proposed First Street/South Livermore Avenue or the Livermore Village alternative site is selected for development of the regional Theater, the Pacific Telephone & Telegraph (PT&T) or Southern Pacific Railroad Depot buildings, respectively, shall be moved from its current location to prevent its demolition. The relocated building shall retain its general physical context, including its orientation and relationship to the street as it has in its current location and shall be moved to a similar location within the Downtown Core. The recommendations provided by Carey & Co. Inc.,³⁵ for the PT&T building also shall apply to the SPRR Depot:

A relocation plan should be prepared by an architect and engineer, retained by the project applicant and approved by the Redevelopment Agency, with a minimum of five years experience in the rehabilitation of historic buildings. The plan would address the issues of documenting historic fabric prior to the move, protecting historic fabric during the move, and restoration following the relocation.

If feasible, non-historic additions to the PT&T and Southern Pacific Railroad Depot buildings shall not be moved, and the building shall be restored to its original condition. Restoration of the building shall be done in accordance with the Design Standards and Guidelines (Chapter 6) of the *City of Livermore Downtown Specific Plan* and the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

A report shall be prepared that includes photographic documentation of the building's current location and character defining elements and post-relocation conditions. The report shall also detail the building's significance in local and regional history. The report shall be submitted to local historical archives, libraries, and the Northwest Information Center. (LTS)

Archaeological Deposits. A review of historical maps of the three potential locations for the Theater indicated commercial and residential developments at these areas by at least 1884. Although 20th-century development has eliminated these historical buildings, there is the possibility that

³⁵ Carey & Co. Inc. 1999:11.

subsurface historical archaeological features, including building foundations or hollow-filled features (e.g., wells and privies) are within potential development sites.

Impact CULT-3: Ground-disturbing construction associated with the Theater may result in impacts to unidentified historical archaeological deposits that may qualify as historical or archaeological resources under CEQA. (S)

Ground-disturbing activities necessary to achieve project objectives include, but are not limited to, site grading, foundation preparation, and landscaping. These ground-disturbing activities have the potential to disturb or destroy historical archaeological deposits. Should such archaeological deposits qualify as historical or archaeological resources as defined in PRC sections 21084.1 and 21083.2(g), the disturbance or destruction would result in a substantial adverse change in the deposits' significance. As described in CCR Title 14, Chapter 3, Section 15064.5(b), a substantial adverse change in the significance of a historical resource occurs when the characteristics that convey the resource's historical significance and justify its eligibility for inclusion in the California Register are materially impaired. Material impairment may result from physical demolition, destruction, relocation, or alteration of the resource (CCR Title 14, Chapter 3, Section 15064.5(b)(1)).

Mitigation Measure CULT-3: A qualified archaeologist shall monitor ground-disturbing project activities at the proposed Theater sites due to the possibility of encountering subsurface historical archaeological deposits at one of the three potential locations. Archaeological monitors must be empowered to halt construction activities at the location of the discovery to review possible archaeological materials and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, archaeological deposits are not likely to be encountered.

If archaeological materials are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the archaeological monitor assesses the situation, consults with agencies as appropriate, and provides recommendations for the treatment of the discovery.

If archaeological deposits are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the archaeological monitor assesses the situation, consults with agencies as appropriate, and provides recommendations for the treatment of the discovery. Adverse effects to archaeological deposits should be avoided by project activities. If such deposits cannot be avoided, they shall be evaluated for their California Register of Historical Resources eligibility. If the deposits are not eligible, a determination shall be made as to whether it qualifies as a "unique archaeological resource" under CEQA. If the deposits are neither a historical nor unique archaeological resource, avoidance is not necessary. If the deposits qualify as either a historical or archaeological resource, they will need to be avoided and, in accordance with General Plan policy CC-3.4.P4, archaeological sites should be preserved for research and educational programs. Adverse effects to significant sites that cannot be avoided, or sites that cannot be preserved, must be mitigated. Mitigation can include, but is not necessarily limited to, excavation of the deposit in accordance with a data recovery plan (see *CEQA Guidelines* Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and significance of the archaeological

site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility. Educational public outreach may also be appropriate.

Upon completion of the monitoring, the archaeologist should prepare a report that describes the results of the monitoring, including any measures that may have been implemented for mitigation of impacts to significant archaeological deposits identified during monitoring. The report should be submitted to the City of Livermore Planning Division and the Northwest Information Center. (LTS)

(2) Destroy a Unique Paleontological Resource, Site, or Geological Feature (Criteria 3). Implementation of the Amendments or the Theater project has the potential to significantly impact paleontological resources as described below. The impacts discussion and mitigation measure applies to all proposed actions allowed under the project.

Although no fossil localities have been recorded in the Downtown Specific Plan area, the geologic units can contain significant paleontological resources. Fossils are significant if they can: (1) provide data on the evolutionary relationships of living and extinct organisms; (2) provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including the depositional history of the region and the timing of geologic events; (3) provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas; (4) demonstrate unusual or spectacular circumstances in the history of life; and/or (5) are rare and are not found in other regions.³⁶

Impact CULT-4: Ground disturbing activities associated with project implementation may destroy unique paleontological resources. (S)

Project ground disturbing construction may inadvertently encounter and damage paleontological resources. Should this occur, project construction may result in the destruction of a unique paleontological site. Project actions that have the potential to result in this impact include road widening, parcel infill development, and construction and rehabilitation of housing and commercial properties. Implementation of Mitigation Measure CULT-4 will ensure that impacts to unique paleontological resources are mitigated to a less-than-significant level.

Mitigation Measure CULT-4: The project applicant shall inform its contractor(s) of the sensitivity of the project area for paleontological resources by including the following directive in contract documents:

The subsurface at the construction site may be sensitive for paleontological resources. If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as tracks. Ancient marine sediments may contain invertebrate fossils such

³⁶ Association of Environmental Professionals, 2003:6. CEQA and Fossil Preservation in California. *The Environmental Monitor*, Fall 2003.

as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks.

The City shall verify that the language has been included in the contract documents before issuing a grading permit.

Adverse effects to such deposits shall be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, project activities shall avoid disturbing the deposits, or the adverse effects of disturbance shall be mitigated. Upon completion of the paleontological assessment, a report shall be prepared documenting the methods, results, and recommendations of the assessment. The report shall be submitted to the City of Livermore Planning Division and, if paleontological materials are recovered, a paleontological repository, such as the University of California Museum of Paleontology. (LTS)

(3) Disturb Human Remains (Criteria 4). There is a slight potential that the project will significantly impact human remains interred outside of formal cemeteries as discussed below. The impacts discussion and the mitigation measure apply to all proposed actions allowed under the proposed project.

In the Livermore-Amador Valley region, human burials are often associated with prehistoric archaeological sites. Such remains have cultural and social value to descendent groups and may qualify as historical or archaeological resources as defined in PRC sections 21084.1 and 21083.2(g). Although human remains have not been identified in the project area, nor are such remains anticipated, the possibility of encountering such remains cannot be ruled out. Ground-disturbing activities necessary to achieve project objectives, (e.g., site grading), have the potential to disturb or destroy human remains. The disturbance or destruction of human remains would result in a significant impact to cultural resources.

The City's General Plan and Downtown Specific Plan do not contain policies related to the treatment of human remains, although in accordance with General Plan policy CC-3.4.P2, human remains constitute a category of archaeological resource that may require a field survey as part of the environmental assessment process. When appropriate protocols are followed, the treatment of human remains can respect the culture of the descendent community, as well as contribute to the scientific understanding of the area's prehistory.

Impact CULT-5: Project ground disturbing activities may disturb human remains, including those interred outside of formal cemeteries, and may result in impacts to cultural resources under CEQA. (S)

Mitigation Measure CULT-5: If human remains are encountered, these remains shall be treated in accordance with Health and Safety Code Section 7050.5 and *CEQA Guidelines* Section 15064.5(e). The project applicant shall inform its contractor(s) of the appropriate protocols in

the event that human remains are unearthed by including the following directive in contract documents:

If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the Alameda County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

The City shall verify that the language has been included in the contract documents before issuing a grading permit.

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the City of Livermore Planning Division and the Northwest Information Center. (LTS)

H. HAZARDS AND HAZARDOUS MATERIALS

This section describes hazardous materials¹ and other hazards to public health and safety that could result from the development of the Downtown Specific Plan Amendments (Amendments) and the Regional Performing Arts Theater (Theater). The setting section describes existing land uses, hazards, and hazardous materials in the Downtown Specific Plan area, at the Regional Theater location identified in the Downtown Specific Plan, as well as two other potential sites. The section also describes the pertinent federal, state, and local agency laws and regulations related to these hazards. The impacts and mitigation measures section defines the criteria of significance and identifies potential impacts and mitigation measures related to hazards and hazardous materials for the Amendments and Theater sites.

1. Setting

This section presents the regulatory framework, hazardous materials in soils and groundwater, building materials, sensitive land use receptors, and applicable General Plan policies.

a. Regulatory Framework. The regulatory framework for hazards and hazardous materials is described below.

(1) Hazardous Materials Use, Storage, and Disposal. In California, the U.S. Environmental Protection Agency (EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency. In turn, local agencies, such as the Livermore-Pleasanton Fire Department, have been granted responsibility for implementation and enforcement of most hazardous materials regulations in their jurisdiction under the Certified Unified Program Agency (CUPA) Program.² The CUPA Program consolidates, coordinates, and makes consistent portions of the following six hazardous materials programs:

- Hazardous Waste Generator Program
- On-Site Treatment of Hazardous Waste Program
- Hazardous Materials Business Plan Program (HMBP)
- California Accidental Release Prevention Program (CalARP)
- Underground Storage Tank Program
- Above Ground Petroleum Tank Program

Hazardous materials transported to and from a site are regulated by the California Department of Transportation. Hazardous waste management in Livermore is also governed by the Alameda County Hazardous Waste Management Plan. The Alameda County Hazardous Waste Management Plan

¹ The California Health and Safety Code defines a hazardous material as "... any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (Health and Safety Code, Section 25501).

² California Health and Safety Code, Chapter 6.11, Sections 25404-25404.8.

encourages the reduction of hazardous waste generated in the County.³ The City of Livermore requires any facility that stores or uses hazardous materials to submit a Hazardous Materials Declaration to the City of Livermore prior to issuance of building permits.

In California, regional agencies are responsible for implementation and enforcement of programs regulating emissions to the air, surface water, and groundwater. At the project site, the Bay Area Air Quality Management District (BAAQMD), under authority of the California Air Resources Board, has oversight of air emissions, and the San Francisco Bay Regional Water Quality Control Board (Water Board), under authority of the State Water Resources Control Board (SWRCB), regulates discharges to surface and groundwater.

(2) Demolition of Structures with Hazardous Building Materials. Federal, state, and local requirements govern the removal of asbestos-containing material (ACM), including the demolition of structures where asbestos is present. These requirements are promulgated by the EPA, the federal and State Occupational Health and Safety Administration (OSHA), the California Department of Toxic Substances Control (DTSC), and the BAAQMD. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition in accordance with applicable requirements. Friable ACM must be disposed of as an asbestos waste at an approved facility. Non-friable ACM may be disposed of as non-hazardous waste at landfills that will accept such wastes. Workers conducting asbestos abatement must be trained in accordance with federal and State OSHA requirements. In addition, Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos.⁴

Federal and state regulations also govern the demolition of structures where lead or material containing lead is present. Regulations pertaining to demolition of structures with lead-based paint are promulgated by the EPA, the U.S. Department of Housing and Urban Development (HUD), and the DTSC. Federal regulations require that lead-based paint equal to or greater than 1 milligram per square centimeter or 0.5 percent by weight be removed prior to demolition if the paint is loose and peeling.⁵ Loose and peeling paint must be disposed of as a state and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds. State and federal construction worker health and safety regulations require air monitoring and other protective measures during demolition activities where lead-based paint is present, and notification to the California Division of Occupational Safety and Health (DOSH) for abatement activities.⁶ Other hazardous building materials, such as electrical equipment containing polychlorinated biphenyls (PCBs), fluorescent tubes or thermostats containing mercury, and fluorescent light ballasts containing PCBs or di (2-ethylhexyl) phthalate (DEHP) must be removed from buildings prior to demolition in accordance with DOSH regulations.⁷

³ Alameda County Waste Management Authority, 1995. *Alameda County Hazardous Waste Management Plan*. November.

⁴ California Code of Regulations, Title 8, Sections 341.6 through 341.14 and 1529.

⁵ Code of Federal Regulations, Title 40, Section 745.227(h).

⁶ California Code of Regulations, Title 8, Section 1532.1.

⁷ California Code of Regulations, Title 8, Sections 1733-1737.

(3) Construction Worker Health and Safety. Worker health and safety is protected by federal and state regulations. The federal OSHA is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. Under its jurisdiction, the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations require training and medical supervision for workers at hazardous waste sites.⁸ Additional regulations have been developed for construction workers regarding exposure to lead⁹ and asbestos¹⁰ during construction activities.

The DOSH is responsible for enforcement of state regulations and supervision of workplaces in California that are not under direct federal jurisdiction. State worker health and safety regulations applicable to construction workers include training requirements for hazardous waste operations and emergency response,¹¹ lead,¹² and asbestos¹³ regulations, which equal or exceed their federal counterparts.

b. Hazardous Materials in Soils and Groundwater. Soil and groundwater in the Downtown Specific Plan area and at the potential Theater sites have, in places, been affected by historic land uses. Historical land uses associated with hazardous materials in the Downtown Specific Plan area and environmental investigations performed in the vicinity of the potential Theater sites are described below. A summary of hazardous materials impacts to soil, groundwater, and vapors at the potential Theater sites are presented in Table IV.H-1.

(1) Downtown Specific Plan Amendments. In general, commercial and industrial land uses in the Downtown Specific Plan area have historically used hazardous materials associated with railroad operations, service stations, dry cleaners, fuel storage, and machine shops.¹⁴ Based on these historical land uses, soil and groundwater in portions of the Downtown Specific Plan area may be affected by heavy metals, petroleum hydrocarbons, chlorinated solvents, and pesticides.

(2) First Street/South Livermore Avenue Site. A review of regulatory databases, including listed hazardous material sites compiled pursuant to Government Code Section 65962.5 (the Cortese list), identified one hazardous materials release site (Chevron/Mills Square Park) on the First Street/South Livermore Avenue site. Another hazardous materials release site (Pacific Bell) was identified adjacent to the east of the First Street/South Livermore Avenue site (shown in Figure IV.H-1).¹⁵

⁸ Code of Federal Regulations, Title 29, Section 1210.120.

⁹ Code of Federal Regulations, Title 29, Section 1926.62.

¹⁰ Code of Federal Regulations, Title 29, Section 1926.1101.

¹¹ California Code of Regulations, Title 8, Section 5192.

¹² California Code of Regulations, Title 8, Section 1532.1.

¹³ California Code of Regulations, Title 8, Section 1529.

¹⁴ Environmental Data Resources, Inc. (EDR), 2008a. *Certified Sanborn Map Report*; Inquiry Number: 2304248.3s. August 27.

¹⁵ EDR, 2008b. *The EDR Radius Map Report with GeoCheck*; Inquiry Number: 2304248.2s. August 27.

Table IV.H-1: Summary of Impacts from Historical Land Uses Associated with Hazardous Materials

Site Location	Regulatory Agency Oversight and Status	Media Affected			Contamination Likely to Affect Site Development?
		Soil	Ground-water	Vapor	
First Street/South Livermore Avenue Site					
Chevron/Mills Square Park	ACEHS - Active	X	X	---	Yes
Pacific Bell	ACEHS - Closed	X	---	---	No
Livermore Village Site					
Southern Pacific Railroad	None	Unknown	Unknown	Unknown	Unknown
Quality Cleaners	None	Unknown	Unknown	Unknown	Unknown
J Cleaners	None	---	---	---	No
Desert Petroleum BP	ACEHS - Active	X	X	---	Yes
Groth Bros Oldsmobile	ACEHS - Active	---	X	---	No
First Street/Maple Street Site					
Former Marine Service Facility	None	X	---	---	Yes

Notes:

- “X” indicates a potential impact.
- “---” indicates no known impact.
- “Unknown” indicates that no investigation has been performed.
- ACEHS = Alameda County Environmental Health Services.

Chevron/Mills Square Park. Sanborn Fire Insurance maps indicate that the Chevron/Mills Square Park site was formerly an automotive service station as early as 1929. At least five underground storage tanks (USTs) may have been used during the operation of the service station.¹⁶ Between 1965 and 1974, the service station buildings and pump islands were removed.¹⁷ One UST was removed from the Chevron/Mills Square Park site in 2005 and two more USTs were removed from the site in 2007.¹⁸

A subsurface investigation at the Chevron/Mills Square Park in 2007 identified concentrations of lead in soil above the Water Board Environmental Screening Levels¹⁹ (ESLs) for residential and commercial land uses and the direct exposure ESL for construction/trench workers in samples collected approximately eight and nine feet below the ground surface; these samples were collected during removal of the USTs.²⁰

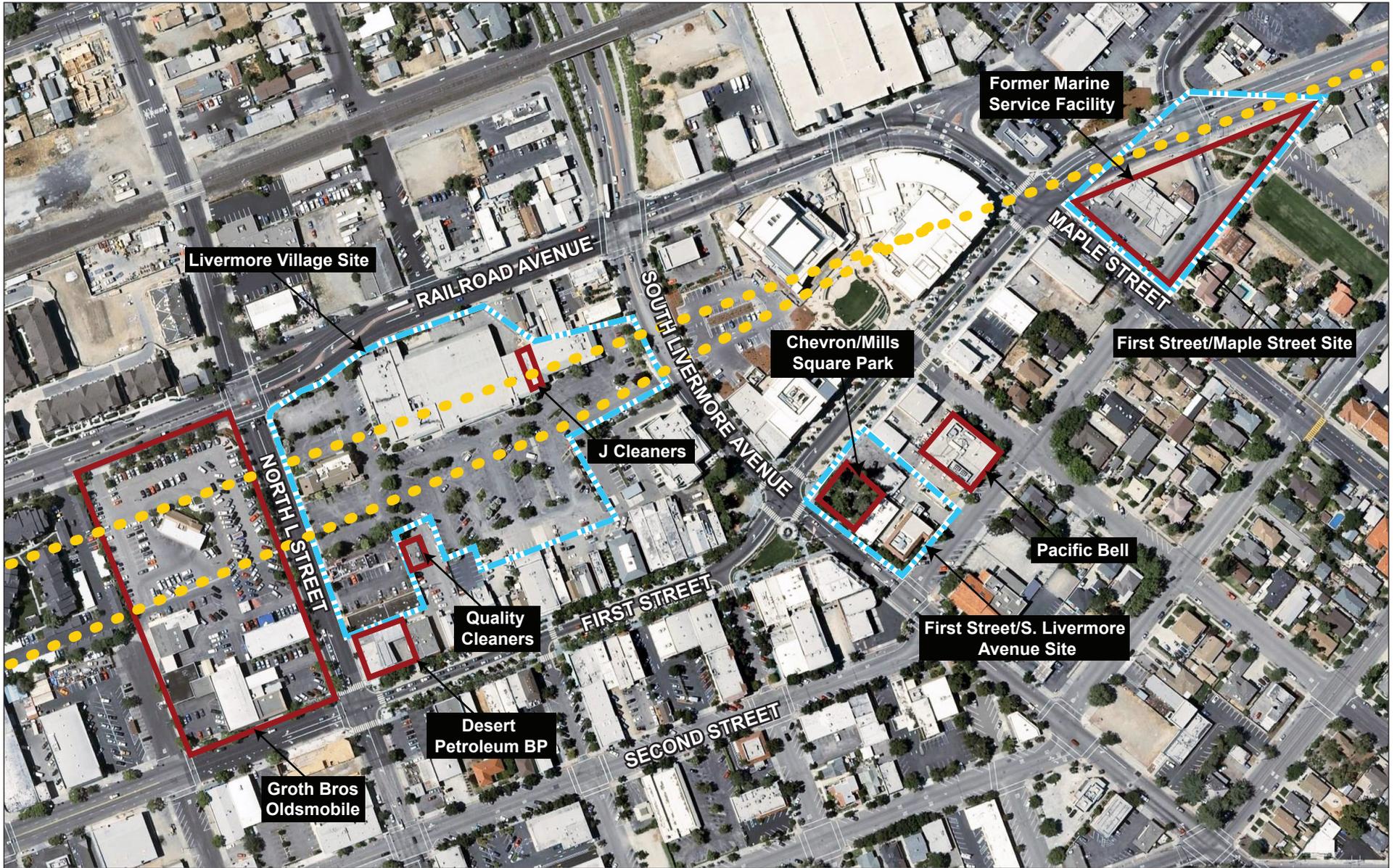
¹⁶ EDR, 2008a. op. cit.

¹⁷ EDR, 2008c. *The EDR Aerial Photo Decade Package*; Inquiry Number: 2304248.5. August 27.

¹⁸ Conestoga-Rovers & Associates (CRA), 2007. *Underground Storage Tank Removal and Compliance Sampling Report, Former Standard Oil Service Station #30-7233, Mills Square Park, 2259 First Street.* August 17.

¹⁹ San Francisco Bay Regional Water Quality Control Board (“Water Board”), 2008. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater.* May.

²⁰ CRA, 2007. op. cit.



LSA



-  POTENTIAL REGIONAL PERFORMING ARTS THEATER LOCATIONS
-  HAZARDOUS MATERIALS SITE (APPROXIMATE LOCATION)
-  FORMER SOUTHERN PACIFIC RAILROAD (APPROXIMATE LOCATION)

FIGURE IV.H-1

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Historical Land Uses Associated
with Hazardous Materials*

SOURCE: BASELINE ENVIRONMENTAL CONSULTING, 2008; GOOGLE EARTH, 2007.

I:\CLV0801 Dwtwn Livermore\figures\IVH1.ai (11/25/08)

A subsurface investigation completed at the Chevron/Mills Square Park site in January 2008 identified concentrations of total petroleum hydrocarbons (TPH) as gasoline and diesel in soil above the Water Board ESLs for residential and commercial land uses, but below the direct exposure ESLs for construction/trench workers. Concentrations of TPH as gasoline, diesel, and motor oil, benzene, total xylenes, and tert-butyl alcohol were also identified in grab groundwater samples at concentrations above the Water Board drinking water ESLs, but below the ESLs for potential vapor intrusion concerns. Petroleum hydrocarbons analyzed in soil gas samples were identified at concentrations below the Water Board ESLs for potential vapor intrusion concerns for residential and commercial land uses; however, the soil gas sample collected adjacent to the former USTs contained an abnormally high concentration of oxygen and may not be representative of soil gas conditions.²¹

The Alameda County Environmental Health Services (ACEHS) is overseeing site investigation activities at the Chevron/Mills Square Park site. Soil and groundwater impacts at the Chevron/Mills Square Park site could affect development of the Theater at the First Street/South Livermore Avenue site.

Pacific Bell. The Pacific Bell site had a release of diesel from an UST, reported in 1991. Regulatory oversight of the Pacific Bell site was conducted by ACEHS; this site was closed in 1996,²² which indicates that monitoring and remedial activities were complete. The release of diesel from the Pacific Bell site would not likely affect development of the First Street/South Livermore Avenue site because ACEHS has closed the site.

(3) Livermore Village Site. The Livermore Village site was not listed on a regulatory database for a hazardous materials release pursuant to the Cortese list.²³ Southern Pacific Railroad crossed the northern portion of the Livermore Village site as early as 1884²⁴ to as late as 1964.²⁵ Former railroad operations may have impacted soil and groundwater at the Livermore Village site with heavy metals, petroleum hydrocarbons, and pesticides.

Historical dry cleaning operations were located at Quality Cleaners adjacent to the Livermore Village site; the dry cleaning operations may have impacted groundwater beneath the Livermore Village site with chlorinated solvents.²⁶

Environmental investigations have not been performed for potential hazardous material releases associated with the former Southern Pacific Railroad on the Livermore Village site or Quality Cleaners adjacent to the Livermore Village site.

²¹ CRA, 2008. *Subsurface Investigation Report and Well Installation Workplan, Former Texaco Service Station (Chevron Station #307233), 2259 First Street, Livermore, California.* March 27.

²² EDR, 2008b. op cit.

²³ EDR 2008b. op. cit.

²⁴ EDR 2008a. op. cit.

²⁵ EDR 2008b. op. cit.

²⁶ Fugro West, Inc. 2005. *Sampling and Analysis Plan, Hazardous Materials Properties, Downtown Redevelopment Area, Livermore, California.* August.

Environmental investigations were performed at another dry cleaning facility (J Cleaners) located on the Livermore Village site and are described below. A review of regulatory databases indicated that two hazardous materials release sites, Desert Petroleum BP and Groth Bros Oldsmobile, were located adjacent to the Livermore Village site. Environmental investigations performed at the Desert Petroleum BP and Groth Bros Oldsmobile sites are also described below (shown in Figure IV.H-1).²⁷

J Cleaners. Soil investigations performed at J Cleaners in 2006²⁸ and 2008²⁹ identified tetrachloroethene (PCE) and methylene chloride in shallow soil samples at concentrations below the Water Board ESL for residential and commercial land uses. Concentrations of arsenic were identified in soil above the Water Board ESL for residential and commercial land uses, but below the direct exposure ESL for construction/trench workers; the arsenic concentrations were considered to be representative of background concentrations.³⁰ Concentrations of TPH as diesel and motor oil were identified in soil below the Water Board ESLs for residential and commercial land uses. The low concentrations of PCE, methylene chloride, and petroleum hydrocarbons in soils at the site indicate that groundwater has not been significantly impacted.³¹ Based on the results of the soil investigations, hazardous materials associated with the operation of J Cleaners would not likely affect development of the Theater at the Livermore Village Site.

Desert Petroleum BP. In February 1988, a release of gasoline from a UST was reported at the Desert Petroleum BP site located adjacent to the southwest corner of the Livermore Village site. Concentrations of benzene, toluene, ethylbenzene, total xylenes, methyl tert-butyl ether, and TPH as gasoline were identified in groundwater above the Water Board ESLs for drinking water during the December 2007 monitoring event at the Desert Petroleum BP site. Groundwater concentrations of petroleum hydrocarbons were not identified above the Water Board ESLs for potential vapor intrusion concerns. The ACEHS is overseeing groundwater monitoring activities at the Desert Petroleum BP site.³² Petroleum hydrocarbons may have impacted groundwater in the southwest portion of the Livermore Village site and could affect development of the Theater.³³

Groth Bros Oldsmobile. In 1991, a leaking UST was reported at the Groth Bros Oldsmobile site located adjacent to and west of the Livermore Village site. A subsurface investigation performed at the site in 2007 identified petroleum hydrocarbons in groundwater above the Water Board ESL for drinking water.³⁴ Based on the regional groundwater flow to the northwest,³⁵ a release of hazardous

²⁷ EDR, 2008b

²⁸ Fugro West, Inc. 2006. *Results of Soil Investigation, J Cleaners Facility, 2093 Railroad Avenue, Livermore, California*. September.

²⁹ Willdan Resource Solutions, 2008. *Subsurface Investigation, Former J Cleaners Site, 2093 Railroad Avenue, Livermore, California*. October 16.

³⁰ Fugro West, Inc. 2006. op cit.

³¹ Fugro West, Inc. 2006. op cit. and Willdan Resource Solutions, 2008. op cit.

³² Golder Associates, Inc. 2008. *Fourth Quarter 2007 Groundwater Monitoring Results, B&C Gas Mini Mart (Station ID 0278), 2008 First Street, Livermore, California*. January 29.

³³ Fugro West, Inc. 2005. op. cit.

³⁴ Bureau Veritas North America, Inc. 2007. *Subsurface Investigation Report, Groth Bothers Chevrolet Dealership, 57/59 South L Street, Livermore, California*. April 19.

³⁵ Godler Associates, Inc. 2008. op. cit.

materials at the Groth Bros Oldsmobile Inc. site, downgradient from the Livermore Village site, would not likely affect development of the Theater at the Livermore Village site.

(4) Railroad Avenue Realignment and First Street/Maple Street Site. The First Street/Maple Street site was not listed on a regulatory database for a hazardous materials release pursuant to the Cortese list.³⁶ A Phase I Environmental Site Assessment (ESA) performed in November 2007 identified a former marine service facility and former railroad tracks on the Railroad Avenue Realignment site that may have impacted soils and groundwater with chlorinated solvents, petroleum hydrocarbons, and heavy metals.³⁷ In addition, pesticides have historically been applied along railroads. Chemical residues from the pesticides may be present in the shallow soils along the railroad right-of-way at the First Street/Maple Street. Some classes of pesticides commonly used since the 1940s, such as organochlorine pesticides and inorganic compounds, can leave residues that persist for many decades. Existing buildings within this site or the roadway realignment may contain asbestos or lead. A Phase II ESA soil and groundwater investigation was performed on a portion of the First Street/Maple Street site south of the former railroad tracks and is summarized below. Soils in the former railroad right-of-way may be impacted with heavy metals, petroleum hydrocarbons, and pesticides and could affect development of this Theater site.

Former Marine Service Facility. A Phase II ESA performed in January 2008 evaluated potential impacts to soils and groundwater from chlorinated solvents, petroleum hydrocarbons, heavy metals, and organochlorine pesticides at the former marine service facility on the First Street/Maple Street site. Concentrations of arsenic were identified in soils above the Water Board ESL for residential and commercial land uses, but below the direct exposure ESL for construction/trench workers; the arsenic concentrations were representative of background concentrations.³⁸ Concentrations of lead were identified in a soil sample above the Water Board ESL for residential land use, but below the ESL for commercial land use. Relatively low concentrations of organochlorine pesticides in soil were identified below the Water Board ESLs for residential land use. Concentrations of TPH as diesel were identified in a groundwater sample below the Water Board ESL for drinking water.³⁹ The presence of lead in soils could affect development of the Theater at the First Street/Maple Street site.

c. Hazardous Building Materials. Thermal system insulation, surfacing materials, and asphalt and vinyl flooring materials installed in buildings prior to 1981 may contain asbestos according to DOSH.⁴⁰ Asbestos is a known human carcinogen.⁴¹ Prior to 1978, lead compounds were commonly used in interior and exterior paints. Lead is a state-recognized carcinogen and reproductive toxicant

³⁶ Environmental Data Resources, Inc. (EDR), 2008a. op cit.

³⁷ Fugro West, Inc. 2007. *Phase I Environmental Site Assessment, 112-186 S. Maple Street and 2552 Second Street, Livermore California*. November.

³⁸ Fugro West, Inc., 2008. *Phase II Environmental Site Assessment, 112-186 South Maple Street and 2552 Second Street, Livermore, California*. January.

³⁹ Ibid.

⁴⁰ California Code of Regulations, Title 8, Section 5208. *Asbestos*.

⁴¹ Agency for Toxic Substances and Disease Registry, 2001. *ToxFAQs for Asbestos*. September.

(causes birth defects or other reproductive harm).⁴² Therefore, demolition or renovation of structures constructed prior to 1981 in the Downtown Specific Plan area and at the potential Theater sites has the potential to release asbestos fibers and lead particles into the air, which then may be inhaled by construction workers, commercial site workers, and the general public. Other hazardous building materials can be found in electrical equipment containing PCBs, fluorescent tubes or thermostats containing mercury, and fluorescent light ballasts containing PCBs or DEHP.⁴³

d. Sensitive Land Use Receptors. There are several schools located in the Downtown Specific Plan area and within one-quarter mile of the potential Theater sites.⁴⁴ According to the City of Livermore's Comprehensive Emergency Management Plan, numerous emergency evacuation routes are accessible throughout the Downtown Specific Plan area. Emergency evacuation routes from the potential Theater sites are mapped along First Street, North Livermore Avenue, and South Livermore Avenue.⁴⁵

e. City of Livermore General Plan Policies. The Health and Safety Chapter of the City of Livermore General Plan contains the following policies and objectives related to hazardous materials.⁴⁶

- Policy PS-3.1.P1: Areas in which the elimination of fire hazard would require the following measures shall not be developed: (a) major modification of existing land forms; (b) significant removal of, or potential damage to, established trees and other vegetation; (c) exposure of slopes which cannot be suitably re-vegetated.
- Policy PS-3.1.P2: In order to ensure fire safety, development shall be restricted in areas of steep terrain.
- Policy PS-4.1.P1: Residual repositories shall be prohibited within the City limits.
- Policy PS-4.1.P2: Areas with a land use designation of High Intensity Industrial are appropriate for hazardous waste management facilities if other siting criteria can be met and potential environmental impacts are mitigated as part of conditional approval.
- Policy PS-4.1.P3: The City shall promote the safe transport of hazardous materials through Livermore through implementation of the following measures: (a) Maintain formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas; (b) Prohibit the parking of vehicles transporting hazardous materials on City Streets; (c) Require that new pipelines and other channels carrying hazardous materials avoid residential areas and other immobile populations to the greatest extent possible.
- Policy PS-4.1.P4: Require emergency response plans for all large generators of hazardous waste to be submitted as part of use applications.
- Policy PS-4.1.P5: When reviewing applications for new development in areas historically used for commercial or industrial uses, the City shall require environmental investigation as necessary to ensure that soils, groundwater, and buildings affected by hazardous materials releases from prior land uses, and lead

⁴² Cal/EPA, Office of Environmental Health Hazard Assessment, 2007. *Safe Drinking Water and Toxic Enforcement Act of 1986, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity*. June 1.

⁴³ California Integrated Waste Management Board, 2007. *Construction and Demolition Materials*. Website: <http://www.ciwmb.ca.gov/condemo/Materials/>. Accessed on September 24.

⁴⁴ Livermore Valley Joint Unified School District, 2008. *Map - Livermore Valley Joint Unified School District*. Website: http://www.livermoreschools.com/_Submenu/Schools.html. Accessed on September 24.

⁴⁵ City of Livermore, 2005. *Comprehensive Emergency Management Plan*. October 8.

⁴⁶ Livermore, City of, 2003. *General Plan*.

and asbestos potentially present in building materials, would not have the potential to affect the environment or the health and safety of future property owners or users.

- Policy PS-4.1.P6: Continue to encourage the reduction of solid and hazardous wastes generated within the City, in accordance with County-wide plans.
- Policy PS-4.1.P7: The City shall encourage the reuse and/or recycling of debris following a disaster, in accordance with all applicable regulations.
- Policy PS-5.1.P1: All construction in Livermore shall be consistent with the required setbacks and height restrictions for the Airport Protection Area, as well as the policies of a master plan adopted to plan for future Airport operations.
- Policy PS-6.1.P1: The City shall complete regularly-scheduled reviews and updates of its emergency management plans.

2. Impacts and Mitigation Measures

This subsection analyzes impacts related to hazards and hazardous materials that could result from implementation of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

a. Criteria of Significance. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Theater would result in a significant impact related to hazards if it would:

1. Create a significant hazard to the public or the environment as a result of routine transport, use, production, upset, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Create a significant hazard to the public or environment through exposure to hazardous materials present in soils, surface water, ground water, and/or building materials as a result of historical land uses in the project vicinity;
4. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
5. Be located on or adjacent to a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would result in a safety hazard for people residing or working in the area; or
6. Impair the implementation of, or physically interfere with, an adopted emergency response or evacuation plan.

Impacts are discussed in the following section and summarized in Table IV.H-2.

Table IV.H-2: Summary of Potential Impacts – Hazards and Hazardous Materials

Would the Project:	Project Amendments and Theater Sites ^a			
	Amendments	First St/S. Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site
1. Create a significant hazard to the public or the environment as a result of routine transport, use, production, upset, or disposal of hazardous materials?	○	○	○	○
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	○	○	○	○
3. Create a significant hazard to the public or environment through exposure to hazardous materials present in soils, surface water, ground water, and/or building materials as a result of historical land uses in the project vicinity?	● HAZ-1	● HAZ-2 HAZ-3	● HAZ-2 HAZ-3 HAZ-4	● HAZ-2 HAZ-3 HAZ-5
4. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	○	○	○	○
5. Be located on or adjacent to a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would result in a safety hazard for people residing or working in the area?	● HAZ-1	● HAZ-2 HAZ-3	● HAZ-2 HAZ-3 HAZ-4	● HAZ-2 HAZ-3 HAZ-5
6. Impair the implementation of, or physically interfere with, an adopted emergency response or evacuation plan?	○	○	○	○

^a The Amendments are analyzed in this EIR at the “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:

- == No impact
 - Less-than-Significant
 - Reduced to Less-than-Significant with recommended mitigation
 - Significant and Unavoidable
- HAZ-1, etc. identifies the mitigation measure, if any, that addresses the impact.

Source: LSA Associates, 2008

b. Impact Analysis. The following discussion describes the impacts related to hazardous materials associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater Project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential hazards and hazardous materials impacts associated with the Amendments will be at a general program-level. Given that there are more defined plans for the three potential Theater locations and the Railroad Avenue realignment, potential impacts will be analyzed at the project level.

As has been noted previously, the potential impacts associated with implementation of the Downtown Specific Plan were evaluated in the General Plan EIR. Policies and actions were identified in this EIR that would reduce the potential impacts associated with development proposed under the Downtown Specific Plan. Current General Plan polices and actions that would be applicable to development proposed under the Downtown Specific Plan Amendments, and would reduce impacts related to hazards, are included in the following discussion as appropriate.

(1) Accidental Hazardous Materials Releases During Project Construction and Operation (Criteria 1 and 2). Construction activities in the Downtown Specific Plan area and at any of the potential Theater sites would not include the routine use, transport, and disposal of hazardous materials, such as petroleum hydrocarbon-based fuels and lubricants. No significant new uses of hazardous materials would occur following construction in the Downtown Specific Plan area and the potential Theater sites.

Although releases of hazardous materials from equipment during construction would not likely be routine, the accidental release of hazardous materials during fueling, maintenance, or improper operation of construction equipment could affect construction workers, the public, and the environment. Identification, transportation, use, and disposal of hazardous materials during construction activities are regulated by federal, state, and local statutes and regulations. In addition, a Storm Water Pollution Prevention Plan (SWPPP) must be prepared for construction activities in accordance with the requirements of the Water Board, which, as detailed in the Initial Study for this project (included in Appendix A), requires implementation of control measures for hazardous material storage and soil stockpiles, inspections, maintenance, and training, and containment of releases to prevent runoff into existing storm collection systems or waterways. Compliance with existing regulations and implementation of the SWPPP during construction would reduce the potential for accidental release during the routine use, transport, and disposal of hazardous materials associated with Amendments to the Downtown Specific Plan area and the potential Theater sites to a less-than-significant level.

(2) Potential Presence of Hazardous Materials (Criteria 3 and 5). Soil and groundwater in portions of the Downtown Specific Plan area may be contaminated with heavy metals, petroleum hydrocarbons, chlorinated solvents, and pesticides due to historical land uses. Buildings constructed prior to 1981 may contain hazardous building materials.

Impact HAZ-1: Development within the Downtown Specific Plan area may expose construction workers and future site patrons, residents, or workers to hazardous concentrations of contaminants from soils and groundwater at the site. (S)

The release of hazardous materials during demolition and/or earthwork activities for projects implemented as part of the Downtown Specific Plan Amendments and Railroad Avenue realignment could pose a hazard to construction workers, nearby receptors, and the environment. Future commercial workers, patrons, and trench workers could potentially experience adverse health effects from exposure to hazardous materials in soils and groundwater from known release sites in the Downtown Specific Plan area. Regulatory agencies overseeing known hazardous material release sites may require the responsible party to perform additional site characterization, remediation, and/or monitoring. Implementation of Mitigation Measure HAZ-1 for the Downtown Specific Plan

Amendments would comply with policies from the Livermore General Plan and reduce potential impacts involving the release of hazardous materials to a of less than significant level.

Mitigation Measure HAZ-1: Prior to development within the Downtown Specific Plan area, a Phase I investigation shall be conducted in accordance with ASTM standards (E1527-05) to determine whether past land uses could potentially have affected the subsurface. If potential effects are identified, a licensed professional shall provide recommendations for a subsurface investigation (Phase II). The results of the Phase II investigation shall be evaluated by a licensed professional and recommendations provided regarding remediation of soil and/or groundwater in consultation with a local or state regulatory agency. (LTS)

Theater Sites. The Chevron/Mills Square Park, located on the First Street/South Livermore Avenue site, was identified as a hazardous materials release site with regulatory agency oversight from the ACEHS. Soil and groundwater at the First Street/South Livermore Avenue site have been impacted by lead and petroleum hydrocarbons from the Chevron/Mills Square Park site. The ACEHS may require additional site characterization, remediation, and/or monitoring for the Chevron/Mills Square Park.

Impact HAZ-2: Development of the Theater at any of the alternative sites may expose construction workers and future site patrons, residents, or workers to hazardous concentrations of contaminants from soils and groundwater. (S)

Direct contact, inhalation, or ingestion of hazardous materials could cause adverse health effects. The severity of health effects would depend on the contaminant(s), concentration, use of personal protective equipment, and duration of exposure. The release of hazardous materials during demolition and earthwork activities at any of the alternative Theater sites and realignment of Railroad Avenue could pose a hazard to construction workers, nearby receptors, and the environment. Future residents, commercial workers, patrons, and trench workers could experience adverse health effects from exposure to hazardous materials in soils and groundwater if they come into contact with contaminated soil or groundwater. Implementation of Mitigation Measure HAZ-2 would comply with policies in the Livermore General Plan and reduce the potential impact to a less-than-significant level.

Mitigation Measure HAZ-2: Prior to the issuance of grading permits for any of the three Theater sites and realignment of Railroad Avenue, a Soil Management Plan (SMP) shall be prepared to address potential hazardous material issues during construction of the project. The SMP shall include any available environmental data from sampling at the specific site, a worker health and safety plan, and requirements for soil management and off-site disposal. The applicant shall ensure that appropriate response measures are included in the SMP to protect human health and the environment if evidence (e.g., odors or visual staining) of previously unknown contaminated soil and/or groundwater or buried debris are encountered during project construction. A contingency plan for sampling and analysis of previously unknown hazardous materials and reporting of the results shall be prepared by the applicant as part of the SMP. In addition, site development shall be coordinated with ACEHS regarding potential effects to site development from the currently active sites, i.e. the Chevron/Mills Square Park and the Desert Petroleum BP sites. (LTS)

Impact HAZ-3: Demolition of any structure containing lead-based paint and asbestos-containing building materials could release airborne lead and asbestos particles, which may adversely affect construction workers and the public. (S)

Hazardous materials including asbestos and lead-based paint may also be present in buildings constructed prior to 1981. Implementation of Mitigation Measure HAZ-3 would comply with policies in the Livermore General Plan and reduce the potential impact to a less-than-significant level.

Mitigation Measure HAZ-3: A hazardous building materials survey shall be conducted by a qualified professional for structures proposed for demolition during development at any of the three Theater sites and realignment of Railroad Avenue. All loose and peeling lead-based paint and asbestos-containing material shall be abated by a certified contractor(s) in accordance with local, state, and federal requirements. All other hazardous materials must be removed from buildings prior to demolition in accordance with DOSH regulations. The findings of the abatement activities shall be documented by a qualified environmental professional(s) and submitted to the City of Livermore prior to the issuance of construction and demolition permits. (LTS)

No hazardous materials release sites were identified at the Livermore Village site pursuant to the Cortese list. Historical land uses associated with hazardous materials may have impacted soil and groundwater at the Livermore Village site with heavy metals, petroleum hydrocarbons, pesticides, and chlorinated solvents. Petroleum hydrocarbons identified in groundwater at the adjacent Desert Petroleum BP site may have impacted groundwater in the southwest portion of the Livermore Village site. The ACEHS may require the Desert Petroleum BP site to perform additional site characterization, remediation, and/or groundwater monitoring on the southwest portion of the Livermore Village site if evidence of contaminated groundwater is identified. Hazardous materials may also be present in buildings constructed prior to 1981 at the Livermore Village site.

The release of hazardous materials during demolition and earthwork activities at the Livermore Village site could pose a hazard to construction workers, nearby receptors, and the environment. Future residents, commercial workers, patrons, and trench workers could potentially experience adverse health effects from exposure to hazardous materials in soils and groundwater at the Livermore Village Theater Site if they come into contact with contaminated soil or groundwater. Vapors from soil and groundwater impacts may migrate into buildings constructed over sources of contamination and pose a health risk to the building occupants. Implementation of Mitigation Measures HAZ-2 and HAZ-3 (described above) would comply with policies from the Livermore General Plan and reduce potential impacts involving the release of hazardous materials to a level of less than significant.

Impact HAZ-4: Historic operations of the Southern Pacific Railroad and Quality Cleaners could have impacted soils and/or groundwater at the Livermore Village site. (S)

Mitigation Measure HAZ-4: A soil and/or groundwater investigation workplan shall be prepared and implemented by a licensed professional to evaluate potential hazardous material impacts from operation of the Southern Pacific Railroad at the Livermore Village site and Quality Cleaners adjacent to the Livermore Village site. The workplan shall include representative sampling and analysis of soil and/or groundwater samples for heavy metals,

petroleum hydrocarbons, pesticides, and chlorinated solvents. Depending on the results of the subsurface investigation, regulatory agency oversight shall be requested, if contamination is identified that could affect public health and the environment. Future remedies for identified contamination could include removal of contaminated materials, on-site treatment and/or institutional or engineering controls (i.e., deed restrictions on certain land uses or capping of development sites). (LTS)

No hazardous material release sites were identified at the First Street/Maple Street site pursuant to the Cortese list. Soils at the former marine service facility on this site are impacted with lead. Soils in the former Southern Pacific Railroad right-of-way may be impacted with heavy metals, petroleum hydrocarbons, and pesticides. Hazardous materials may be present in buildings constructed prior to 1981 at the First Street/Maple Street site.

The release of hazardous materials during demolition and earthwork activities at this site could pose a hazard to construction workers, nearby receptors, and the environment. Adverse health effects could be experienced by future residents of the site if they come into contact with contaminated soil. Implementation of Mitigation Measures HAZ-2 and HAZ-3 (described above), and HAZ-5 at the First Street/Maple Street site would comply with policies from the Livermore General Plan and reduce potential impacts involving the release of hazardous materials to a level of less than significant.

Impact HAZ-5: Historic operations of the Southern Pacific Railroad and former Marine Service Facility could have impacted soils and/or groundwater at the First Street/Maple Street site. (S)

Mitigation Measure HAZ-5: A soil investigation workplan shall be prepared and implemented by a licensed professional to evaluate the extent of soils impacted by lead at the former marine service facility and potential hazardous material impacts in the former Southern Pacific Railroad right-of-way on the Railroad Avenue realignment or the First Street/Maple Street site. The workplan shall include representative sampling and analysis of soil samples for heavy metals, petroleum hydrocarbons, and pesticides. Depending on the results of the subsurface investigation, regulatory agency oversight shall be requested, if contamination is identified that could affect public health and the environment. Future remedies for identified contamination could include removal of contaminated materials, on-site treatment and/or institutional or engineering controls (i.e., deed restrictions on certain land uses or capping of development sites). (LST)

(3) Emission or use of hazardous materials within ¼ mile of a school (Criteria 4).

Several schools were identified in the Downtown Specific Plan area and within one-quarter-mile of the potential Theater sites. The potential for a hazardous materials release during construction activities would be less than significant as discussed, above. Hazardous materials would not be stored or used during operation of the Downtown Specific Plan Amendments and the potential Theater sites. Construction and operation of the Downtown Specific Plan Amendments and the potential Theater sites would not store or use any acutely hazardous materials. Therefore, the proposed Specific Downtown Plan Amendments and development at the potential Theater sites would not result in a significant impact to existing or proposed school facilities from the emission of hazardous or acutely hazardous materials, substances or wastes. This is a less-than-significant impact.

(4) Potential to disrupt an Emergency Response Plan (Criteria 6). Development of the Amendments to the Downtown Specific Plan and the potential Theater sites would not be expected to interfere with the City of Livermore's Comprehensive Emergency Management Plan. Numerous evacuation routes from the City allow for flexibility in minor traffic disruptions that may be associated with construction activities in the Downtown Specific Plan area. Construction and operation of the Theater at the First Street/South Livermore Avenue site and the Livermore Village site would not be expected to interfere with emergency evacuations routes. Construction of the First Street/Maple Street site may temporarily disrupt access to First Street from the Downtown Livermore area in the event of an emergency evacuation; however, alternate emergency evacuation routes are accessible approximately 700 feet southwest of the First Street/Maple Street site along North Livermore Avenue and South Livermore Avenue. Therefore, construction and operation of the Downtown Specific Plan Amendments and the potential Theater sites would not be expected to impact the implementation of an emergency response plan or evacuation plan and this impact is less than significant.

I. UTILITIES AND INFRASTRUCTURE

This section describes the utility systems (water, wastewater, storm drainage, solid waste, energy, and telecommunications) that serve the Downtown Specific Plan area, identifies the potential impacts to utilities and infrastructure systems that could result from implementation of the proposed project (Downtown Specific Plan Amendments and Regional Performing Arts Theater). Mitigation measures are recommended, as appropriate.

1. Setting

The section addresses the following utilities and infrastructure: water supply, treatment, and distribution; wastewater collection, treatment, and disposal; storm drainage; solid waste; and energy and telecommunications. Water quality issues associated with storm water drainage are addressed in Section VIII, Hydrology, of the Initial Study prepared for this EIR (Appendix A). Setting information from the General Plan EIR pertaining to utilities and infrastructure is incorporated into this EIR by reference

a. Water Infrastructure. The following discussion provides background information on the City's sources of water supply, water treatment facilities, and water distribution system. It also summarizes the City's General Plan policies related to water supply.

(1) Water Supply. Zone 7 of the Alameda County Flood Control and Water Conservation District (Zone 7) supplies treated water to the City of Livermore (in addition to the City of Pleasanton and the California Water Service Company) for municipal and industrial use. Zone 7 serves nearly 200,000 people in Pleasanton, Livermore, Dublin, and through special agreement with the Dublin San Ramon Services District to provide water to the Dougherty Valley area. In addition, Zone 7 supplies agricultural water to farms and vineyards, and provides flood protection to all of eastern Alameda County.¹

Approximately 80 percent of the water supplied to Zone 7 is imported through the Sacramento-San Joaquin River Delta. The water travels through a series of rivers, lakes, canals, and pumping stations that move it into the Livermore-Amador Valley through the State Water Project's South Bay Aqueduct. This aqueduct also conveys water to the Alameda County Water District and the Santa Clara Valley Water District. The balance of the Zone 7 service area supply is from local groundwater supplies and surface water in Lake Del Valle.

In 2007, total water demand for Zone 7 water was 49,200 acre-feet and the overall supply was 55,400 acre-feet.² In 2007, the demand for untreated water (primarily used for agriculture) was approximately 3,600 acre-feet.³ Demand for Zone 7 is estimated to grow to 81,000 acre-feet/year by 2020. The 2020 demand estimate comprises the water demands anticipated to serve the amount of growth projected in the current general plans for each of the local jurisdictions within Zone 7's service area. In Livermore, this long-term water demand is estimated to be approximately 22,000 acre-feet, based on the City's current General Plan, which includes assumptions for new urban

¹ Alameda County, Zone 7 Water Agency, 2008. *2007 Annual Report*.

² Ibid.

³ Ibid.

development within the urban growth boundary.⁴ According to the General Plan, Zone 7 identified a long-term average sustainable water supply⁵ of 84,100 acre-feet/year. Zone 7 projects that it can supply sufficient water supplies to meet the City's future treated water needs, assuming that it continues to receive its contractual allocation from its supply sources.⁶

Zone 7 has acquired a total of 65,000 acre-feet of storage capacity in the Semitropic Water Storage District (Semitropic) in Kern County for storage of surplus water for later use. During dry years, Zone 7 can receive water from Semitropic by way of entitlement exchanges with Southern California State Water Project contractors, such as the Metropolitan Water District of Southern California.

If an extended drought were to force cutbacks in State Water Project deliveries, Zone 7 would utilize its local and Semitropic groundwater resources to meet its reliability policy of providing for 100 percent of its expected treated water demands under all hydrologic conditions. The local groundwater basin holds approximately 200,000 acre-feet, and Semitropic holds about 50,000 acre-feet. The Livermore-Amador Valley groundwater basin is considered full at about 240,000 acre-feet, and Zone 7 estimates that about half of this amount could be made available during times of drought through well-pumping.

Recycled water is provided by Zone 7 to certain areas, primarily for irrigation purposes.

(2) Water Treatment Facilities. Zone 7 operates two water treatment plants (WTPs), the Del Valle and Patterson Pass WTPs, which treat water from the State Water Project before distribution throughout the Valley. The Del Valle WTP, located in the southern portion of Livermore, has a capacity of 36 million gallons per day (mgd). The Patterson Pass Conventional WTP and the Patterson Pass Ultrafiltration WTP, located in the eastern portion of Livermore, have a combined capacity of 20 mgd.⁷ Once the water is treated at the WTPs, it is then conveyed via transmission mains (typically 24 to 48 inches in diameter) to the City of Livermore and other retailer turnouts.⁸

In February 2005, the Zone 7 Board of Directors approved a contract to begin design and construction of the Altamont Water Treatment Plant and Pipeline (AWTP). The AWTP will have a capacity of 24 mgd, and is expandable to 42 mgd.⁹ The 24 mgd capacity added to Zone 7's existing delivery system will result in an overall water treatment capacity of 80 mgd. Construction of the Livermore reach of the pipeline began in June 2008, and Zone 7 estimates that this stretch will be complete by Summer 2009. Zone 7 is currently evaluating the timing for completion of the entire AWTP and the remaining 6-mile stretch of pipeline through unincorporated Alameda County.¹⁰ When complete, the AWTP

⁴ Livermore, City of, 2004. *City of Livermore General Plan, Infrastructure and Public Services Element*. February 9.

⁵ Long-term average sustainable water supply is the average expected yield of a given water supply source over a long period of time.

⁶ Livermore, City of, 2004. *Livermore Downtown Specific Plan; Chapter 10, Utilities and Infrastructure*.

⁷ Zone 7 Water Agency, 2008. *Treatment Plants*. Website: www.zone7water.com/index.php?option=com_content&task=view&id=60&Itemid=262. August 5.

⁸ Water turnouts are facilities that transfer water from Zone 7's water system to a public or private water system.

⁹ Zone 7 Water Agency, 2008. *op cit*.

¹⁰ Zone 7 Water Agency, 2008. *AWTP Project*. Website: www.zone7water.com/index.php?option=com_content&task=view&id=97&Itemid=414. November 14, 2008.

will work in conjunction the Del Valle and Patterson Pass WTPs, along with Zone 7's well and distribution system to meet the Valley's drinking-water supply needs.¹¹

(3) Water Distribution Systems. California Water Service Company (Cal Water) provides water to an area that includes the Downtown Specific Plan area of the City of Livermore, including the proposed Theater sites.

Cal Water's Livermore District serves 17,900 customer connections, in addition to 25 customer connections under contract with Crane Ridge Mutual Water Company. Water demands in the Cal Water Livermore service area are met through a combination of local groundwater pumped from 12 wells and surface water purchased from Zone 7. The Cal Water Livermore system is divided into seven pressure zones and water is delivered through a system that includes 25 storage tanks, 42 booster pumps, and 205 miles of pipeline.¹² According to the General Plan, the average water supply to the entire Cal Water service area is 12 mgd. Water is delivered into Cal Water's distribution system through eight water turnouts with Zone 7.

According to the Downtown Specific Plan, the use of recycled water is not anticipated in the Downtown, since there are no recycled water mains within 2.5 miles of the Downtown. In addition, there are few identified recycled use sites with the Downtown area. Further, the City is the only producer of recycled water and would have to supply Cal Water with recycled water for distribution.

The Downtown Specific Plan area, including the alternative Theater sites, is a developed urban area that is currently served by water infrastructure. The First Street/South Livermore Avenue site is surrounded by an 8-inch diameter water pipe located under South Livermore Avenue; an 8-inch diameter pipe located under First Street, a 6-inch pipe under McLeod Street; and a 4-inch pipe under Second Street. The Livermore Village site would also be served by existing water infrastructure. This proposed site is surrounded by a 12-inch diameter water pipe under North L Street; an 12-inch diameter pipe under Railroad Avenue; an 8-inch diameter pipe under South Livermore Avenue; and a 12-inch diameter pipe under First Street. There are several short 6-inch diameter laterals that connect this site to the surrounding water supply infrastructure. The 12-inch line under the Livermore Village site is an unauthorized line that has no easement.¹³ The First Street/Maple Street site has a 6-inch diameter water pipes located under Maple Street; a 12-inch diameter line under First Street; a 2-inch water pipe located under Second Street; and a 12-inch diameter line located under the proposed parcel.

According to the General Plan, Cal Water fire flows are lower than the fire flows provided by the Livermore Municipal Water Division (the other water provider within the City), which meets the fire flows requirements of the Livermore-Pleasanton Fire District. Fire flow availability and system design are based on consumer demand and Fire Department requirements at the original date of construction. As the Downtown continues develop, it is likely that upgrades will be required to Cal

¹¹ Lim, Mary, 2008. Environmental Services Program Manager, Zone 7 Water Agency. Written communication with LSA Associates, Inc. November 14.

¹² California Water Service Company, 2008. *Livermore District; 2007 Water Quality Report for Livermore*. Website: www.calwater.com/your_water/ccr/pdfs/2007/livermore-liv-2007.pdf. August 5.

¹³ Frost, Susan, 2008. Principal Planner, City of Livermore. Written communication with LSA Associates, Inc. November.

Water's existing water system in order to meet the current standards for system design as required by the Livermore-Pleasanton Fire District.

(4) Relevant Policies. The following City of Livermore General Plan policies and actions are applicable to water supply, treatment, and distribution.

- Policy INF-1.1.P2: The City shall maintain a water system capable of sustaining required fire flows at all times. The City shall work with California Water Service Company to insure its system also meets required fire flows.
- Action INF-1.1.A8: All new development projects shall be responsible for constructing an adequate potable water distribution system and paying water connection fees to construct additional necessary storage, pumping, and distribution facilities.
- Policy INF-1.2.P1: The potable water distribution and storage system shall be sized to serve development anticipated under the General Plan and shall not provide for additional growth and development beyond that anticipated under the General Plan.
- Policy INF 1.2.P7: Major utility lines, such as water supply mains and fire protection mains, shall be carefully planned where they cross a seismic fault. They shall cross at right angles, or nearly so, be accessible for rapid repair, and be provided with safety features such as automatic shutoff valves, switches, and expansion joints. Other equipment shall be provided to ensure minimal adverse impact on adjacent and surrounding areas and to facilitate restoration of service in the event of fault displacement.
- Policy INF-1.3.P2: Projects deemed appropriate for the use of recycled water shall be required to use recycled water, when available, for uses outlined in the State Water Code.
- Policy INF-1.3.P4: Require compliance with the State and City's mandatory water efficient landscape ordinance.
- Action INF-1.3.A2: Develop and institute a City-sponsored program of mandatory water conservation measures for new development. Develop a program for existing developments that is based on a voluntary participation with incentives to achieve specific targets for water conservation. Examples include:
 - Ultra-low flush toilets
 - Plumbing retrofits
 - Leak detection
 - Efficiency standards for water-using appliances and irrigation devices, and industrial and commercial processes
 - Gray water use
 - Swimming pool and spa conservation measures such as covers to reduce evaporation
 - Xeriscape landscape design standards

The following Downtown Specific plan policies are applicable to water service and infrastructure issues associated with the proposed project.

- Policy 1: Water service to all properties shall provide for sufficient water quality, pressure, storage and reliability in order to meet all needs including fire protection flow standards.
- Policy 2: The water system will require additional water lines, looping, upsizing or rerouting of some of the distribution facilities, storage and pump stations, as well as augmentation of water supply from Zone 7. More intense development demands more service and may require an individual area to upsize facilities.

- **Policy 3:** Developers will need to provide a “fair share” cost associated with the design and construction of water improvements in a manner acceptable to the City and Cal Water, based on Cal Water’s Water Management Plan recommendations as amended from time to time, and/or other water studies.

b. Wastewater Infrastructure. The following discussion provides background information on the City’s wastewater collection and treatment system, including information from the City’s Final Report Sewer Master Plan.¹⁴ It also summarizes the City’s General Plan policies related to wastewater.

(1) Wastewater Collection. Within the City, sewer service is provided by the Livermore Public Works Department. There are approximately 267 miles of existing sewer collection lines within the City (ranging in size from 6 inches to 48 inches in diameter), of which approximately 50 miles are major trunk sewer lines (18 inches or larger).¹⁵ The Downtown Specific Plan area is served by sewer trunk lines along P Street and North I Street, Railroad Avenue, and Maple Street. The current wastewater flow in the Downtown Specific Plan area is approximately 98,000 gpd and the ultimate flow is projected to reach 483,000 gpd at buildout of the Downtown Specific Plan area.¹⁶ In addition, the 2004 Sewer Master Plan estimates that the future unit base flow factor of the Downtown Specific Plan area is 2,700 gpd per acre for all future developed parcels.

The wastewater collection system in the Downtown Specific Plan area consists of a series of gravity sewer collection system pipes that tie into the recently constructed 24-inch Downtown Sewer Trunk Line Project along Railroad Avenue, P Street, Olivina Avenue, and Rincon Avenue. The trunk line ultimately ties into the East Sewer Trunk Line on Pine Street, which uses gravity to flow wastewater to the Livermore Water Reclamation Plant (WRP). The sewer trunk line has a capacity between 10.5 and 11 mgd.¹⁷ New sewer laterals in the Downtown Specific Plan area will be served by the 24-inch sanitary sewer trunkline.

In addition to the new 24-inch sewer trunk line, there are also smaller sewer lines that serve the potential Theater sites in the Downtown Specific Plan area. The First Street/South Livermore Avenue site is surrounded by 8-inch diameter sewer pipe located in South Livermore Avenue; a 10-inch diameter pipe in First Street; an 8-inch diameter pipe in McLeod Street; and a 6-inch diameter pipe in Second Street. The Livermore Village site would be served by existing sewer infrastructure. This site currently has an 8-inch diameter sewer pipe located under North L Street; a 6-inch diameter pipe located Railroad Avenue; a 10-inch diameter pipe in South Livermore Avenue; a 6-inch diameter pipe under the southern portion of the site; and a 6-inch diameter pipe that runs partway under the northeaster portion of the site. The First Street/Maple Street site has 6- and 10-inch diameter sewer pipes located to the west of the site; 8- and 24-inch diameter pipes located to the north; and several 8-inch diameter pipes located to the south.

Three sewer infrastructure improvement projects (Projects D-1, D-2, and D-5) identified in the 2004 Sewer Master Plan, have been completed in recent years in the Downtown Specific Plan area.

¹⁴ Livermore, City of, 2004. *Wastewater Services*. Website: www.ci.livermore.ca.us/wrd/wastewater.html. August 5.

¹⁵ Ibid.

¹⁶ Cavalieri, Michael, 2008a. Assistant City Engineer, City of Livermore Public Works Department. Written communication with LSA Associates Inc., October 3.

¹⁷ Ibid.

Projects D-1, D-2, and D-5 involve the replacement of pipelines. Project D-1 facilitates conveyance of existing and future flows from the east portion of the service area through the downtown trunk sewer system, and included the installation of the new 24-inch pipeline in Railroad Avenue, along with a new 33-inch pipeline along Railroad Avenue, North Livermore Avenue, North P Street, and Olivina Avenue. Project D-2 replaced an existing 6-inch pipeline with an 8-inch pipeline in 4th Street. Project D-5 replaced pipelines to service a planned housing development located between North P and S Streets.

(2) Wastewater Treatment. The Water Resources Division of the City's Public Works Department operates the Livermore WRP, located in the western portion of the City near the Airport. The facility currently has a capacity of 8.5 mgd.¹⁸ The most recent plant expansion was completed in 1993, and a Phase VI Expansion project, discussed below, is in the planning phase.

Approximately 4 to 7 mgd of treated wastewater is sent through the Livermore and Amador Valley Management Agency (LAVWMA) pipeline for ultimate disposal by the East Bay Dischargers Authority (EBDA) in San Francisco Bay. The Livermore WRP has a rated capacity of 8.5 mgd average dry weather flow. The current average daily dry weather inflow into the WRP is 7.0 mgd and peak flows regularly approach 8.0 mgd.¹⁹ Wastewater is subject to primary, secondary, and tertiary treatment processes, as well as ultra-violet disinfection. Treatment plant solids are thickened, stabilized, and dewatered prior to transport offsite for use as a landfill cover. The WRP also has microfiltration and reverse-osmosis facilities that are capable of removing bacteria, viruses, and some dissolved chemicals from wastewater.

The 2004 Sewer Master Plan estimates that at buildout of the General Plan, sewage flows will reach 9.47 mgd average dry weather flow and approximately 26.10 mgd peak wet weather hourly rate. The Livermore Water Reclamation Plant Master Plan identifies a shortfall of capacity to treat and dispose of sewage flows generated by buildout of the General Plan. New facilities at the WRP would be needed to handle projected ultimate flows and to ensure that all wastewater generated by the General Plan and Downtown Specific Plan would be subject to primary, secondary, and tertiary treatment processes. The City has planned a Phase VI Expansion project to address the need to increase the capacity of the plant and has a sanitary sewer impact fee program in place to fund the required improvements. The Phase VI Expansion is currently being planned in several phases based on available sewer connection fee funding and projected future flows, approximately 9.47 mgd average dry weather flow. The first phase of the Phase VI Expansion is under design and approximately 50 percent complete. This phase focuses on solids handling improvements that include new gravity belt thickeners and increasing the capacity of the existing sludge holding tanks. Construction of these improvements will start in the summer of 2009. Future phases of the Phase VI Expansion are expected to include a fourth anaerobic methane and acid-digester, chlorine contact expansion, and other facilities that would allow the WRP to have sufficient capacity to process the ultimate wastewater flows projected for buildout of the Master Plan.²⁰

(3) Wastewater Disposal. Wastewater treated at the Livermore WRP is conveyed to the LAVWMA export pipeline via a gravity-flow pipeline (known as the Livermore interceptor) that

¹⁸ Ibid

¹⁹ Livermore, City of, 2004. *2004 Final Report Sewer Master Plan*. July.

²⁰ Cavalieri, Michael, 2008a. Op. cit.

conveys the effluent to a LAVWMA metering structure. The rated capacity of the Livermore gravity interceptor is 9.2 mgd for both dry weather and wet weather flows. At the metering structure, effluent from the Livermore WRP combines with wastewater treatment plant effluent from the Dublin San Ramon Services District and the City of Pleasanton. The combined effluent then flows through two flow equalization basins, receives additional chlorination, and is transported to the LAVWMA by a 27-inch gravity pipeline. Treated wastewater is pumped through the export pipeline to the East Bay Dischargers Authority, which is responsible for dechlorination and final flow discharge into the Bay.

The peak wet weather flow capacity of the existing LAVWMA export pipeline is 41.2 MGD. The City shares this overall capacity with Dublin San Ramon Services District and the City of Pleasanton. Livermore's portion of the existing LAVWMA pipeline capacity is 11.1 mgd for average dry weather flows and 12.4 mgd during peak wet weather flow conditions.²¹ The capacity of the LAVWMA was increased from 21 mgd to 41.2 mgd in 2005 with the implementation of the Export Pipeline Facilities Program. The program has increased wet weather flow capacity to serve planned growth in the area served by LAVWMA until 2023, and has increased overall capacity to serve planned growth (based on member agency's General Plans) until 2040.

(4) Relevant Policies. The following General Plan policies and actions are applicable to wastewater infrastructure.

- Policy INF-2.1.P3: The approval of new development shall be conditioned on the availability of adequate long-term capacity of wastewater treatment, conveyance, and disposal sufficient to service the proposed development.
- Policy INF-2.1.P5: All new development shall demonstrate to the City that the downstream sanitary sewer system is adequately sized and has sufficient capacity to accommodate anticipated sewage flows. If the downstream mains are found to be inadequate, the developer shall provide additional facilities to accept the additional sewage expected to be generated by the development.
- Policy INF-2.1.P7: Major sewer collection and transmission systems shall be carefully planned where they cross a seismic fault. They shall cross at right angles, or nearly so, be accessible for rapid repair, and be provided with safety features such as automatic switches, expansion joints and sufficient drop between manholes to accommodate vertical displacement across faults. Other equipment shall be provided to ensure minimal adverse impact on adjacent and surrounding areas and to facilitate restoration of service in the event of fault displacement.
- Policy INF-2.1.P8: Sewer collection and transmission systems shall be designed and constructed in such a manner as to minimize potential inflow and infiltration.
- INF-2.1.P10: All new development projects shall be responsible for construction of a sanitary sewer collection and conveyance system as part of the Citywide infrastructure plan. This system shall be designed to serve developments within the approved General Plan only and shall not be extended to serve uses outside of the Urban Area.
- Policy INF-2.1.P11: The sanitary sewer system shall be designed and constructed in such a manner as to minimize potential environmental impacts.
- Action INF-2.1.A7: Installation of the sanitary sewer system should occur concurrent with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.

²¹ Livermore-Amador Valley Water Management Agency, 2008. LAVWMA. Website: <http://lavwma.com/>.
September.

- **Action INF-2.1.A9:** The City shall utilize sanitary sewer connection fees collected from new development and elsewhere within the City to construct necessary improvements to the City's trunk sewer mains (as identified in the latest master plan prepared for sewer) in order to accommodate anticipated cumulative development.

The following Downtown Specific plan policies are applicable to sewer service and infrastructure issues associated with the proposed project.

- **Policy 1:** All properties will be served by sewer lines and sewer mains, which are of adequate size and design to move sewage to the City Water Reclamation Plant in a sanitary and reliable manner.
- **Policy 3:** For new developments, hydraulic calculations should be submitted as a part of the building permit plan check process to determine if the existing sewer mains serving the proposed development have available capacity for its additional demands. If capacity is not available, sewer mains of adequate size should be designed and constructed consistent with the City's adopted Sewer Master Plan, standards, specifications and details.

c. Storm Water System. The following discussion provides background information on the City's storm water system. It also summarizes the City's General Plan policies related to storm water. Water quality issues related to storm water are addressed in the Initial Study conducted for this EIR, found in Appendix A of this document.

(1) Storm Water Collection. The City's storm drain system consists of more than 200 miles of pipeline, ranging in size from 8- to 66-inches in diameter. The storm drain pipes are generally concrete, with some corrugated metal pipes and some high density polyethylene (HDPE) pipes. There are also ditches and open channels within existing developed areas. Most of the drainage reaches are relatively short due to the proximity of the many major channels. A few detention basins have recently been constructed as part of the development of new subdivisions within Livermore in order to maintain runoff levels at predevelopment levels and protect habitat for sensitive species.

The City's 2004 Storm Drain Master Plan identifies a large number of capacity-related deficiencies in the existing storm drainage system. However, many of the deficiencies were attributable to the adoption of more demanding design criteria since the time the storm drains were originally built. Most needed improvements were scattered throughout the older neighborhoods south of I-580, with just a handful north of I-580 in the Springtown area. The recommended improvements would provide protection against extreme rainfall events. However, in most cases, the system handles typical rainfall events well.

The City of Livermore also has an ongoing maintenance program, which includes catch basin cleaning, street/sidewalk sweeping, site inspection testing and monitoring, run-off control from new development, and public information. The maintenance program is funded by the General Fund and includes cleaning catch basins and street gutters, keeping them free of debris, and subsequently allowing storm water to flow unobstructed along the intended pathway.

The Downtown Specific Plan area, including the alternative Theater sites, is located in a developed urban area that contains existing storm water infrastructure. In the Downtown Specific Plan area, storm drain pipes generally have diameters between 12- and 48-inches. At the potential First Street/South Livermore Avenue site, there are existing 18-inch storm drains along Second Street and 30-inch storm drains on the north side of First Street at Maple Street. These drains direct storm water

through a deficient 21-inch storm drain pipe under the Livermore Village Site to Arroyo Mocho²² located approximately 1.2 miles southwest of the Downtown Specific Plan area. The proposed Livermore Village site would be served by existing sewer infrastructure, including 15- and 21-inch diameter storm drain pipes that run along the southern portion of the site and a 12-inch diameter pipe that is located on the northwestern corner of the site. The First Street/Maple Street site also has existing storm drain pipes surrounding the site including 15- and 18-inch diameter storm drain pipes located along First Street

(2) Natural Drainages. The Livermore Valley drains in a westerly direction to the Arroyo de la Laguna, then to Alameda Creek, near Sunol. The Alameda Creek basin drains an area primarily east of the Coast Range to San Francisco Bay through Niles Canyon. The Livermore Valley watershed has four major drainage watersheds, each drained by a major channel: Arroyo del Valle, Arroyo Mocho, Arroyo Las Positas, and Altamont Creek. No creeks or arroyos cross or are located within the Downtown Specific Plan area.

The Zone 7 Water Agency is responsible for flood control and stream management of some portions of Arroyo Las Positas, relocated Arroyo Las Positas, Altamont Creek, a portion of Arroyo Mocho, Arroyo Seco, and Collier Canyon Creek, within the City of Livermore. Special Drainage Area agreements provide for improvement of channels and arroyos to Zone 7 standards. Zone 7 assumes ownership of these facilities upon completion of improvements. Responsibility for maintaining unimproved arroyos to the centerline of the arroyo falls to the underlying property owner.

Flood control improvements are still required in areas along three sections of Arroyo Las Positas and one section along Arroyo Mocho. The sections along Arroyo Las Positas include Altamont Creek to Heather Lane, Kitty Hawk Road to Airway Boulevard, and east of Airway Boulevard to El Charro Road. Recommended management measures for these sections were identified in the Arroyo Mocho and Los Positas Management Plan completed for the City in December 2000 by Philip Williams & Associates. These measures are expected to address flooding concerns through stabilization measures and enhanced sediment transport and deposition. Although these projects are included in the City's 20-year Capital Improvement Plan, no funding sources have yet been identified.

(3) Storm Water Pollution Control. Runoff water quality is regulated by the National Pollution Discharge Elimination System (NPDES) Nonpoint Source Program (established through the Clean Water Act); the NPDES program objective is to control and reduce pollutants to water bodies from nonpoint discharges. The main nonpoint discharge regulated by the NPDES program is storm water runoff.

The NPDES Program is administered by the California Regional Water Quality Control Boards (RWQCBs). The Amendments and Theater sites would be under the jurisdiction of the San Francisco Bay RWQCB and the Alameda Countywide Clean Water Program (ACCWP). The City of Livermore is a participant in the ACCWP. The ACCWP is a function of the County government that maintains compliance with the NPDES Storm Water Discharge Permit and promotes storm water pollution prevention within that context. County compliance with the NPDES Permit is mandated by State and federal laws, statutes, and regulations.

²² Susan Frost, 2008. op cit.

Participating agencies (including the City of Livermore) must comply with the provisions of the County permit by ensuring that new development and redevelopment mitigate, to the maximum extent practicable, water quality impacts to storm water runoff both during construction and operation periods of projects. Alameda County is implementing the current NPDES permit for storm water discharges under the Alameda Countywide Clean Water Program, Stormwater Management Plan.²³ Please see the Section VIII, Hydrology, of the Initial Study prepared for this EIR for additional information (Appendix A).

(4) Relevant Policies. The following General Plan policies and actions are applicable to the storm water system.

- Policy INF-3.1.P1: Design local storm drainage improvements to carry appropriate design-year flows resulting from buildout of the General Plan.
- Policy INF-3.2.P1: All new development projects shall be responsible for constructing a storm water collection system and contributing storm water collection fees to construct additional necessary facilities. These fees include the City storm drain fees as well as Zone 7 regional storm drainage fees.
- Policy INF-3.2.P4: Installation of storm water collection systems should occur concurrently with construction of new roadways to maximize efficiency.
- Action INF-3.2.A2: Existing property owners shall be encouraged, or required as appropriate, to reduce storm water runoff by reducing impermeable surfaces.

The following Downtown Specific plan policies are applicable to storm drainage system issues associated with the proposed project.

- Policy 1: The storm drainage system should be able to prevent uncontrolled storm water runoff in all areas of Downtown, under both existing and future conditions
- Policy 3: The city shall prioritize storm drain improvements recommended in the Storm Drain Master Plan and implement them through the City's Capital Improvement Program. These improvements shall be funded using funds from the Storm Water Impact Fee and the General Fund.
- Policy 4: Developments will need to provide for the design and construction of storm drainage improvements in a manner acceptable to the City Engineer based on adopted Master Plans, Development Plan Check and Procedures Manual, City Standards, Specifications and Details. These improvements involve connecting on-site drainage to City storm drain systems.

d. Solid Waste. The following discussion provides background information on solid waste disposal for the Downtown Specific Plan area.

(1) Nonhazardous Solid Waste. In Alameda County, responsibility for the collection and disposal of nonhazardous solid waste is held jointly by the Alameda County Waste Management Authority and local jurisdictions. The City has entered into a franchise agreement with Waste Management of Alameda County for the exclusive right to collect, transport, or process and dispose of solid waste, recyclable materials, and compostable materials. Waste Management transports solid waste from Livermore to the Vasco Road Sanitary Landfill for disposal. The Vasco Road Sanitary Landfill is designated as a Class III disposal site that permits the disposal of municipal solid waste, with separate disposal areas required for asbestos and auto-shredder waste. The landfill has a

²³ Alameda Countywide Clean Water Program, 2003. Stormwater Quality Management Plan, July 2001 – June 2008. February 19.

permitted capacity of 31,942,205 cubic yards, and has a remaining capacity of 9,870,704 cubic yards (30.9 percent).²⁴ The landfill has a permitted daily permitted capacity of 2,250 tons and is estimated to have capacity to accept solid waste until the year 2015.²⁵

The California Integrated Waste Management Board estimates an average waste generation rate of 18.8 pounds per employee per day and a rate of 1 pound per resident per day for the City of Livermore.²⁶

(2) Hazardous Solid Waste. Livermore residents and small businesses are able to drop off their hazardous waste materials at the Alameda County Household Hazardous Waste Facility located on La Ribiera in Livermore. The facility accepts paints and varnishes, automobile products, household batteries and cleaners, garden products such as pesticides and fertilizers, and home generated pharmaceuticals and sharps packages in an approved container.

(3) Regulatory Context. The following discussion summarizes regulations that apply to solid waste generation and disposal in Livermore.

California Integrated Waste Management Act (AB 939). In 1989, the California Legislature enacted the California Integrated Waste Management Act (AB 939), which requires the diversion of waste materials from landfills in order to preserve the decreasing capacity of landfills and natural resources. Cities and counties in California were required to divert 25 percent of solid waste by 1995, and 50 percent of solid waste by the year 2000. AB 939 further requires every city and county to prepare two documents demonstrating how the mandated rates of diversion will be achieved. The Source Reduction and Recycling Element describes the chief source of the jurisdiction's waste, the existing diversion programs, and current rates of waste diversion and new or expanded diversion programs. The Household Hazardous Waste Element describes each jurisdiction's responsibility in ensuring that household hazardous wastes are not mixed with non-hazardous solid wastes and subsequently deposited at a landfill. Livermore's Source Reduction and Recycling Element was approved in June 1998 and its Household Hazardous Waste Element was approved in August 1995 by the California Integrated Waste Management Board.²⁷ On June 15, 2005, the California Integrated Waste Management Board certified that the City had diverted 61 percent of its solid waste and had met the requirements of the California Integrated Waste Management Act.²⁸

Alameda County Waste Reduction and Recycling Initiative. In 1989, Alameda County voters approved the Alameda County Waste Reduction and Recycling Initiative (Measure D) with the goal of diverting 75 percent of solid waste from landfills. Measure D applies a surcharge at Alameda County landfills, of which 50 percent is earmarked and disbursed to jurisdictions for source reduction and recycling programs. The Measure D fee is usually increased annually.

²⁴ California Integrated Waste Management Board, 2008. *Active Landfills Profile for Vasco Road Sanitary Landfill*. Website: www.ciwmb.ca.gov/Profiles/Facility/Landfill/Default.asp?VW=JSELECT&MTYPE=Landfill. August 7.

²⁵ Ibid.

²⁶ California Integrated Waste Management Board, 2008. *Jurisdiction Profile for City of Livermore*. Website: www.ciwmb.ca.gov/profiles/. August 7.

²⁷ Ibid.

²⁸ Ibid.

City Ordinances. In parallel with the new franchise agreement with Waste Management of Alameda County, in June of 2002 the City of Livermore adopted two ordinances:

- A Construction and Demolition Debris ordinance, effective August 1, 2002. This requires construction and renovation projects of specified sizes (each has a monetary value that triggers the ordinance) to reuse or recycle at least 50 percent of the construction and demolition waste.
- A Solid Waste Management ordinance, effective August 1, 2002. This ordinance reflects changes in the franchise agreement with Waste Management, as well as information related to the new Construction and Demolition Debris ordinance. The ordinance allows contractors the option to choose a provider, as the collection of construction and demolition debris will no longer be an exclusive right of the franchisee.

A Solid Waste and Recycling Container Enclosure Ordinance was moved to the Livermore Planning and Zoning Code from the Health and Safety Title of the Livermore Municipal Code, effective August 1, 2002. This ordinance implements State requirements for reduction, diversion and recycling by providing safe areas and facilities for solid waste, recyclable materials and compostable materials enclosures.

(4) Relevant Policies. The following General Plan policies and actions are applicable to solid waste issues associated with the proposed project.

- Policy INF-8.1.P1: The City will seek to meet or exceed State requirements with regard to waste diversion and recycling.
- Policy INF-8.1.A1: Implement source reduction and recycling programs to minimize waste at the point of manufacture or use.

e. Energy and Telecommunications. The following discussion provides background information on energy and telecommunications issues that relate to the proposed project.

(1) Electricity and Natural Gas. The Pacific Gas and Electric Company (PG&E) provides electricity within the Livermore area. Most of Livermore's electric power is delivered via a 230-kilovolt (kV) transmission line running between the Contra Costa Power Plant near Antioch and the Newark Substation; the power is then distributed to local substations, which reduce the power to a lower voltage so it can be passed on to consumers. Like much of the Bay Area, the Tri-Valley region has experienced a rapid increase in demand for electricity in recent years, as a result of both population growth and a boom in local high-tech industry uses. As of 2004, electrical demand throughout the Tri-Valley region is more than 98 percent of the area's existing electrical system capacity on an average daily basis.

On October 10, 2001, the California Public Utilities Commission approved PG&E's Tri-Valley 2002 Capacity Increase Project, which includes the development of new transmission lines and substations, including the Cayetano Substation on North Livermore Avenue. The Capacity Increase Project would accommodate projected electricity demand in the Tri-Valley region. The first two phases of the Capacity Increase Project (including construction of an underground transmission line from the Vineyard Substation in Pleasanton to the Transition Station, and construction of an underground

transmission line from the Cayetano Substation in Livermore to a Transition Station) are complete. The Cayetano Substation, which would serve the Downtown, began operating in December 2003.²⁹

In addition, there is existing PG&E infrastructure that serves the Downtown area. The First Street/South Livermore Avenue site receives power from a feed off of Second Street; the Livermore Village site receives power from a feed from Railroad Avenue, and the new First Street/Maple Street site would require a trench from a pole across Maple Street to feed power to the site.³⁰

PG&E supplies the City of Livermore with natural gas via three main pipelines. A 24-inch natural gas pipeline main traverses the City of Livermore from southwest to northeast. A 36-inch and a 22-inch natural gas pipeline main enters the Livermore area north of Vasco Road and extends south until approximately Telsa Road before heading west through the City. PG&E also maintains six natural gas regulator stations within the City that reduces gas pressure prior to urban use distribution.³¹

Existing natural gas pipelines currently serve the Downtown Specific Plan area. The First Street/South Livermore Avenue site is served by pipelines in South Livermore Avenue and First Street. The Livermore Village site is served by pipelines in South L Street and First Street. The First Street/Maple Street site is served by a pipeline in Second Street. There are no natural gas pipelines located in the portion of First Street that would become part of the new parcel after realignment of Railroad Avenue.

(2) Telecommunications. AT&T (formerly SBC) provides residential and commercial telephone service within Livermore area. AT&T also provides or hosts a variety of other telecommunications services, such as Digital Subscriber Lines (DSL), Internet Service Provider (ISP), web hosting, virtual private networking, and wireless/cellular and paging services.

The California Public Utilities Commission requires that SBC anticipate and serve new growth. To meet this requirement, AT&T continually upgrades its facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City. AT&T works with the City to ensure that construction of new facilities does not interfere with any new or newly-paved streets. Cable services within the City of Livermore are provided by Comcast Corporation. In November of 2002, Comcast merged with AT&T Cable Services. Comcast has a franchise agreement with the City for cable communication services, including television.

(3) Relevant Policies. The following General Plan policies and actions are applicable to energy and telecommunication issues associated with the proposed project.

- **Policy INF-4.2.P1:** The energy-efficiency of proposed development shall be considered when land use and development review decisions are made.

²⁹ State of California Public Utilities Commission, 2008. PG&E Tri-Valley 2002 Capacity Increase Project. Website: <http://www.cpuc.ca.gov/Environment/info/aspen/tri-valley/tri-valley.htm>. November 17.

³⁰ Mullings, Terry, 2008. Project Manager, PG&E. Written communication with Mike Mikasa, City of Livermore. September 8.

³¹ Livermore, City of, 2004. *City of Livermore General Plan, Infrastructure and Public Services Element*. February 9.

- Policy OSC-7.1.P2: The City shall approve only those development proposals which are designed and located to minimize energy consumption and adverse impacts on air, land, and water resources.

2. Impacts and Mitigation Measures

This subsection analyzes impacts related to utilities and infrastructure that could result from implementation of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

a. Criteria of Significance. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Center would result in a significant impact on utilities and infrastructure if it would:

1. Have insufficient water supplies available to serve the project from existing entitlements and resources, requiring new or expanded entitlements;
2. Create substantial demand for water beyond the existing or planned City's water supply, requiring additional water storage capacity;
3. Require the extension or substantial reconstruction of major water and wastewater lines to serve new development beyond improvements identified in the City's Capital Improvements Plan;
4. Exceed wastewater treatment requirements of the Regional Water Quality Control Board;
5. Generate wastewater flows that would exceed the existing or planned wastewater treatment, storage, and disposal capacity;
6. Conflict with current infrastructure plans of wastewater service providers;
7. Generate additional storm water runoff that would exceed the existing or planned capacity of the Region Zone 7 and City's storm drain systems and require the construction or substantial expansion of existing facilities;
8. Conflict with the use, operation, or maintenance of an existing utility line, or increase the risk of accidental damage to an existing utility line;
9. Result in a substantial decrease in remaining available space at a landfill;
10. Interfere with the accomplishment of waste diversion goals mandated by the California Integrated Waste Management Act;
11. Result in an increase of the City's dependence on non-renewable energy resources; or
12. Require substantial increases on peak and base period demand for electricity and other forms of energy and additional capacity of local or regional energy supplies.

Impacts are discussed in the following section and summarized in Table IV.I-1.

Table IV.I-1: Summary of Potential Impacts – Utilities and Infrastructure Materials

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St./ Livermore Ave. Site	Livermore Village Site	First St./ Maple St. Site
Would the Project:				
1. Have insufficient water supplies available to serve the project from existing entitlements and resources, requiring new or expanded entitlements?	○	○	○	○
2. Create substantial demand for water beyond the existing or planned City’s water supply, requiring additional water storage capacity?	○	○	○	○
3. Require the extension or substantial reconstruction of major water and wastewater lines to serve new development beyond improvements identified in the City’s Capital Improvements Plan?	○	○	● UTIL-1	○
4. Exceed wastewater treatment requirements of the Regional Water Quality Control Board?	○	○	○	○
5. Generate wastewater flows that would exceed the existing or planned wastewater treatment, storage, and disposal capacity?	○	○	○	○
6. Conflict with current infrastructure plans of wastewater service providers?	○	○	○	○
7. Generate additional storm water runoff that would exceed the existing or planned capacity of the Region Zone 7 and City’s storm drain systems and require the construction or substantial expansion of existing facilities;	○	○	○	○
8. Conflict with the use, operation, or maintenance of an existing utility line, or increase the risk of accidental damage to an existing utility line?	○	○	○	● UTIL-2
9. Result in a substantial decrease in remaining available space at a landfill?	○	○	○	○
10. Interfere with the accomplishment of waste diversion goals mandated by the California Integrated Waste Management Act?	○	○	○	○
11. Result in an increase of the City’s dependence on non-renewable energy resources?	○	○	○	○
12. Require substantial increases on peak and base period demand for electricity and other forms of energy and additional capacity of local or regional energy supplies?	○	○	○	○

^a The Amendments are analyzed in this EIR at a “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:

- == No impact
 - Less-than-Significant
 - Reduced to Less-than-Significant with recommended mitigation
 - Significant and Unavoidable
- UTIL-1, etc. identifies the mitigation measure, if any, that addresses the impact.

Source: LSA Associates, 2008

b. Impacts Analysis. The following discussion describes the utilities and infrastructure impacts associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater project. As there have been no specific locations associated with the

majority of the Amendments, the discussion of potential utility and infrastructure impacts associated with the Amendments will be at a general program-level. Given that there are more defined plans for the three potential Theater locations and the Railroad Avenue realignment, potential impacts will be analyzed at the project level.

As has been noted previously, the potential impacts associated with implementation of the Downtown Specific Plan were evaluated in the General Plan EIR. Policies and actions were identified in this EIR that would reduce the potential utilities impacts associated with development proposed under the Downtown Specific Plan. Current General Plan polices and actions that would be applicable to development proposed under the Downtown Specific Plan Amendments, and would reduce impacts on utilities, are included in the following discussion as appropriate.

(1) Adequate Water Supplies (Criteria 1). Zone 7 and Cal Water would have adequate water supplies to serve the Amendments and Theater project, as discussed below.

Downtown Specific Plan Amendments. Implementation of the proposed Amendments would result in the development of additional office, commercial, hotel rooms, and parking garage in the Downtown Specific Plan area.

For the purposes of this analysis, wastewater generation is assumed to be approximately 90 percent of total water usage (the 10 percent differential includes consumed water and water used for irrigation). According to wastewater generation numbers provided by the Public Works Department,³² included in Table IV.I-2, since the proposed Amendments would generate approximately 29,710 gpd of wastewater, the anticipated water demand would be approximately 33,010 gpd. In combination with the Theater project, discussed below, the increased water demand in the Downtown Specific Plan would be approximately 34,426 gpd (38.6 acre-feet per year). The anticipated increase in water demand resulting from the proposed Amendments and Theater project would represent 0.05 percent of the projected sustainable long-term water supply for all of Zone 7 (84,100 acre-feet per year).

Although shortages of water from the State Water Project could occur during drought years, the water supply would be supplemented by local and Semitropic water groundwater resources. In addition, conservation measures would likely be implemented during drought years, further reducing water demand. Therefore, adequate water supplies are anticipated to serve the proposed Amendments; no new or expanded entitlements or enhanced water storage capacity would be required and the proposed Amendments would have a less-than-significant impact on water supplies.

A Water Supply Assessment (WSA) under SB 610 is required if a project includes the following development:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;

³² Livermore, City of, 2004. *Final Sewer Master Plan, Appendix C*. July.

Table IV.I-2: Projected Average Dry Weather Flow (ADWF) Generation and Water Demand

Use	Additional Development ^a	Wastewater Generation Rate	Wastewater	Water Demand
Hotel	200 rooms	90 gpd per room per day	18,000 gpd	20,000 gpd
Commercial	145,000 square feet	0.04 gallons per square foot per day	5,800 gpd	6,444 gpd
Movie Screens	3 new movie screens with 255 seats	2.55 gallons per seat per day less 7,500 square foot of office space removed at 0.04 gallons per day	350 gpd	389 gpd
Office	139,000 square feet	0.04 gallons per square foot per day	5,560 gpd	6,177 gpd
Theater	500 additional seats	2.55 gallons per seat per day	1,275 gpd	1,416 gpd
Total			30,985 gpd	34,426 gpd

^a One hundred hotel rooms were not included in this analysis because these uses were already identified in the Downtown Specific Plan. In addition, a 1,500 seat performing arts theater was evaluated in the Final Sewer Master Plan. The above analysis calculates the water and wastewater generated by the additional 500 seats proposed as part of this Theater project. Additionally, while the three movie screens are already constructed and in use, they were not included in previous water supply analysis.

Source: LSA Associates, Inc., 2008; Cavalieri, Michael, 2008a. op cit.

- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The proposed project does not meet any of the requirements above. The City estimates that 500 dwelling units (at a density of 8 units/acre)³³ would require approximately 125,000 gpd. As noted above, this is significantly more water usage than is projected with the proposed project. Therefore, a WSA is not required under SB 610.

Regional Performing Arts Theater. Based the wastewater generation numbers provided by the Public Works Department, and shown in Table IV.I-2, the additional 500 seats would increase water demand by approximately 1,416 gpd. In combination with the proposed Amendments, the project would increase water demand in the Downtown Specific Plan area by approximately 34,426 gpd (38.5 acre-feet per year).

This increased demand represents 0.2 percent of the City’s long-term water demand (22,000 acre-feet per year) and 0.05 percent of the projected sustainable long-term water supply for all of Zone 7 (84,100 acre-feet per year). As with the proposed Amendments, during drought years, conservation measures would likely be implemented to reduce water demand. Therefore, water supplies are anticipated to serve the proposed Amendments and Theater project; no new or expanded entitlements or enhancements to water storage capacity would be required, and the Theater project would result in a less-than-significant impact to water supplies.

³³ As a higher density residential development is likely to use less water, 8 units/acre was selected for this analysis in order to have a conservative water usage estimate.

(2) Create Substantial Demand for Water (Criteria 2). The proposed Amendments and Theater project would not result in a substantial increase in the demand for water as discussed below.

Downtown Specific Plan Amendments. Implementation of the proposed Amendments would result in the development of additional office, commercial, hotel rooms, and parking space in the Downtown Specific Plan area.

As previously stated, since the proposed Amendments would generate approximately 29,710 gpd of wastewater, the anticipated water demand would be approximately 33,010 gpd. In combination with the Theater project, discussed below, the increased water demand in the Downtown Specific Plan would be approximately 34,426 gpd (38.5 acre-feet per year). This increased demand represents 0.2 percent of the City's long-term projected water demand (22,000 acre-feet per year). In addition, the proposed Amendments and Theater project would represent 0.05 percent of the projected sustainable long-term water supply for all of Zone 7 (84,100 acre-feet per year). Implementation of the proposed Amendments would increase water demand in the Downtown Specific Plan area; however, this increase would not be considered a significant increase in the demand for water and the environmental impacts to water supply would be less-than-significant.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As previously stated, the anticipated water demand resulting from the 500 additional seats would be approximately 1,416 gpd. In combination with the proposed Amendments, the project would increase water demand in the Downtown Specific Plan area by approximately 34,426 gpd (38.5 acre-feet per year).

This increased demand represents 0.2 percent of the City's long-term water demand (22,000 acre-feet per year) and 0.05 percent of the projected sustainable long-term water supply for all of Zone 7 (84,100 acre-feet per year). Implementation of the proposed Theater would increase water demand in the Downtown Specific Plan area; however, this increase would not be considered a significant increase in the demand for water and the environmental impacts to water supply would be less-than-significant.

(3) Require the Extension or Reconstruction of Existing Water or Wastewater Lines (Criteria 3). Implementation of the Amendments and Theater project would not result in environmental impacts associated with the extension of existing water or wastewater lines, as discussed below.

Downtown Specific Plan Amendments. As previously described, the Downtown Specific Plan area is served by existing water and wastewater lines. Sewer replacement and rehabilitation projects in the Downtown Specific Plan area have included the installation of a new 24-inch sewer trunk line, which was installed to provide additional sewer conveyance capacity in anticipation of increased development within the Downtown Specific Plan area, consistent with the General Plan and Downtown Specific Plan. The old sewer line is also still in place. The sewer mains have the capacity to serve the proposed Amendments.³⁴

³⁴ Greenwood, Darren. 2008. Water Resources Manager, City of Livermore, Public Works Department, Water Resources. Written communication with LSA Associates, Inc., September 29.

The construction of new or expansion of existing wastewater lines would not be required as long as the sewer laterals are sized appropriately for the development and are connected to the new 24-inch sewer line in Railroad Avenue.³⁵ Site-specific plans would be reviewed and approved by the City at the time when each project is proposed. Implementation of the proposed Amendments would not result in a significant environmental impact related to the extension of water or wastewater lines.

Regional Performing Arts Theater. The following discussion would be applicable to the First Street/Livermore Avenue and First Street/Maple Street sites. As previously described, all the potential Theater sites are served by existing water and wastewater lines, including a new 24-inch sewer trunk line in Railroad Avenue. As with the proposed Amendments, the construction of new or the expansion of existing wastewater lines would not be required as long as sewer laterals are sized appropriately for the Theater and are served by the new 24-inch sanitary sewer main line in Railroad Avenue, which has capacity for the additional wastewater generated by the Theater. In addition, the water lines serving these two potential project sites are adequately sized to meet fire flow requirements. Implementation of the proposed Theater would not result in a significant environmental impact related to the extension of water or wastewater lines at these two sites.

Livermore Village Site. The Livermore-Pleasanton Fire District has indicated that current water flows would likely not meet fire flow requirements for the Theater at the Livermore Village site. As such, the infrastructure surrounding the Livermore Village site would require improvements to meet fire flow standards.³⁶

Impact UTIL-1: Fire flows may not be adequate for the Regional Theater if it is constructed on the Livermore Village site. (S)

Implementation of the following mitigation measure would reduce potential impacts associated with potentially inadequate fire flow to the Livermore Village site to a less-than-significant level.

Mitigation Measure UTIL-1: When detailed site plans for the Livermore Village site are submitted, City staff, the Livermore Pleasanton Fire District, and Cal Water shall review and approve the plans to ensure the provision of adequate water fire flows. Should increasing the size of the water main in Railroad Avenue be required, the City and the water providers shall require and approve a plan for infrastructure improvements prior to issuance of grading permits. The project applicant shall be required to contribute their fair share towards this improvement, to the satisfaction of the City staff. An occupancy permit for the Theater shall not be issued until the Livermore Pleasanton Fire District has confirmed adequate fire flow is available.
(LTS)

(4) Generate Wastewater Flows that Exceed Existing or Planned Treatment Facilities (Criteria 4). The proposed Amendments and Theater project would not generate wastewater flows that would exceed existing or planned treatment facilities. Each component of the project is discussed below.

³⁵ Cavalieri, Michael, 2008a. op. cit.

³⁶ Scott Deaver, 2008. Fire Marshall, Livermore-Pleasanton Fire District. Communication with Susan Frost, Principal Planner, City of Livermore. November.

Downtown Specific Plan Amendments. Based on the wastewater generation rates shown in Table IV.I-2, the proposed Amendments would generate approximately 29,710 gpd of average dry weather flow (ADWF) of which 1,275 gpd is attributable to the Theater

Based on buildout of the Downtown Specific Plan, the ultimate ADWF at buildout would be 483,000 gpd per Table 4-7 of the City's 2004 Sewer Master Plan. Since the project would increase the amount of development in the Downtown Specific Plan area, it would change the ultimate flows projected for buildout. Appendix C of the City's 2004 Sewer Master Plan estimates that the future unit base flow factor of the Downtown Specific Plan area is 2,700 gpd per acre for all future developed parcels based on Appendix C of the City's 2004 Sewer Master Plan. As shown in Table IV.I-3, the proposed project would increase the projected ultimate wastewater flow at buildout of the 179 acres in the Downtown Specific Plan area. The unit base flow determined in the City's 2004 Sewer Master Plan was 483,000 gpd as shown in Table 4-7 of the Sewer Master Plan which would increase to 501,030 gpd with the addition of the proposed project. This yields a new unit base flow factor of 2,800 gpd per acre based on Appendix C of City's 2004 Sewer Master Plan using the increased flows shown in Table IV.I-2 above

In addition, Table IV.I-3 shows that the increased ADWF generated by the project would result in an increase of 18,030 gpd over the previously projected ultimate buildout flow (wastewater generated by the Downtown Specific Plan at the time of buildout) of 483,000 gpd. The additional 18,030 gpd of wastewater is approximately 0.3 percent of the total 9.47 mgd ADWF of projected capacity of the WRP after completion of the Phase VI Expansion project. As described in the settings subsection above, the Water Resources Division of the City's Public Works Department is currently planning the phasing of the Phase VI Expansion of the Livermore WRP, which will increase the capacity of the WRP so that it will be able to handle the projected ultimate flows generated by the buildout of the General Plan. This additional wastewater generated by the project would be not result in a significant impact to treatment and disposal facilities as there is sufficient capacity at the WRP to accommodate this amount of additional wastewater.³⁷

Table IV.I-3: Changes to the Unit Base Flow and Projected Ultimate Flow in the Downtown Specific Plan Area

Current Unit Base Flow Factor in the Downtown	Current Projected Buildout Flow in Downtown without Project	Revised Unit Base Flow Factor with Project	Projected Ultimate Buildout Flow in Downtown with Project	Difference Between Base Flow Plus Project and Projected Ultimate Flow
2,700 gpd per acre	483,000 gpd	2,800 gpd per acre	501,030 gpd	18,030 gpd

Source: Cavelleri, Michael, 2008a. op cit.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. The Theater project proposes 500 more seats than the theater identified in the Downtown Specific Plan. Based on a wastewater generation rate of 2.55 gallons per seat per day, the proposed Theater would result in 1,275 gpd more wastewater than the 1,500 seat theater. As previously described, the project would result in a net increase of 18,030 gpd in the projected ultimate buildout wastewater flow in the Downtown Specific Plan area. Since this represents approximately

³⁷ Cavelleri, Michael, 2008a. op. cit.

0.3 percent of the projected capacity of the WRP after completion of the Phase VI Expansion project, the proposed Amendments and Theater project would not result in a significant impact to treatment and disposal facilities.

(5) Exceed Wastewater Treatment Requirements of the RWQCB (Criteria 5). The proposed project would not exceed wastewater treatment requirements of the regional water quality control board (RWQCB), as discussed below.

Downtown Specific Plan Amendments. As previously stated, the proposed Amendments would not generate wastewater flows that exceed the existing capacity of the Livermore WRP. The Amendments and the Theater project would add an additional 18,030 gpd of wastewater to the projected ultimate flow generated by buildout of the Downtown Specific Plan area, which would represent approximately 0.3 percent of the capacity of the WRP after the Phase VI Expansion is complete. The Phase VI Expansion project will ensure that all wastewater generated by the General Plan and Downtown Specific Plan would be subject to primary, secondary, and tertiary treatment processes. Therefore, additional flow generated by the Amendments and Theater project would not exceed the wastewater treatment requirements of the RWQCB.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As stated above, the wastewater generated by the Amendments and Theater project would not exceed the wastewater treatment requirements of the RWQCB.

(6) Conflict with Current Infrastructure Plans of Wastewater Service Providers (Criteria 6). The proposed Amendments and Theater project would not conflict with current infrastructure plans of wastewater service providers, and are discussed below.

Downtown Specific Plan Amendments. As described in the settings subsection above, the Water Resources Division of the City's Public Works Department is currently planning the phasing of the Phase VI Expansion of the Livermore WRP, which will increase the capacity of the WRP so that it will be able to handle the projected ultimate flows generated by the buildout of the General Plan. While the growth proposed by the Amendments is not anticipated in the current General Plan, it would not generate a substantial amount of wastewater. As previously described, the additional wastewater generated by the project would represent 0.2 percent of the current capacity of the WRP. Implementation of the Amendments would not cause a conflict with the Phase VI Expansion project.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As stated above, the wastewater generated by the Amendments and Theater project would not generate wastewater flows that would exceed existing or planned treatment facilities. Implementation of the Theater project would not cause a conflict with the Phase VI Expansion project.

(7) Generate Substantial Stormwater Runoff (Criteria 7). The proposed project would not generate additional stormwater runoff that would exceed the existing or planned capacity of the City's and regional storm drain systems and require the construction or substantial expansion of existing facilities, as discussed below.

Downtown Specific Plan Amendments. The Downtown Specific Plan area is currently served by stormwater infrastructure. According to the Downtown Specific Plan, intensified development or redevelopment within the Downtown area is not expected to generate significant amounts of additional storm water runoff, since most surfaces are already developed and impervious. While specific sites have not been identified for these new uses, it is assumed that the Downtown infill sites would generally be covered in impervious surfaces. Since the Amendments would not increase the amount of impervious surface cover, it would not be expected to generate substantial amounts of additional stormwater runoff in the Downtown Specific Plan area.

Even though the Amendments are proposed for a developed urban area served by stormwater infrastructure, each proposed use would likely require some degree of storm drainage features. These features would be connected to the existing storm drainage system. Since the area is already developed, these improvements would not constitute a substantial expansion. Implementation of the proposed Amendments would not generate a substantial amount of additional stormwater runoff and would not require the construction or substantial expansion of existing facilities.

Regional Performing Arts Theater. The amount of additional stormwater runoff generated by the Theater would depend on which alternative site is chosen. The First Street/South Livermore Avenue site currently contains Mill Square Park. This urban pocket park is very narrow, includes landscaping strips, and is located on the corner of the First Street/South Livermore Avenue intersection. Implementation of the proposed Theater would increase the amount of impervious surface on the site by a very small amount. While development of this site would marginally increase the amount of stormwater runoff, this was generally taken into account in the General Plan with the 1,500 seat theater. The additional 500 seats would increase the size the building, but it would not result in substantially greater amounts of stormwater runoff than the 1,500 seat theater. Implementation of the Theater on this alternative site would not result in stormwater runoff that would exceed the stormwater drainage system or require new or expanded facilities.

The First Street/Maple Street and Livermore Village sites are both currently covered almost entirely in impervious surfaces. Implementation of the proposed Theater would not substantially increase the amount of impervious surface cover, and correspondingly, would not substantially increase the amount of stormwater runoff from the sites. In addition, both sites are currently served by stormwater drainage facilities, and while minor improvements may be required, it would not result in substantial construction or expansion of existing facilities.

(8) Conflict with the use of an Existing Utility Line (Criteria 8). The proposed Amendments and Theater project would not conflict with the use, operation, or maintenance of an existing utility line. Each component of the project is discussed below.

Downtown Specific Plan Amendments. The proposed Amendments would not conflict with the use, operation, or maintenance of existing utility lines. In addition, as projects are proposed, each applicant will be required to submit site plans that show existing utility lines and proposed changes to the site and follow local construction regulations, thus reducing the risk of accidental damage to existing lines.

Regional Performing Arts Theater. Electrical lines around the First Street/South Livermore Avenue site are located underground, while electrical lines serving the Livermore Village site and the new First Street/Maple Street site are located above ground.

Since the First Street/Maple Street site would be created through the realignment of Railroad Avenue, some sewer lines may potentially need to be relocated in order to serve the site. However, it is not possible at this time to determine if any sewer lines or other utilities would need to be relocated or altered to serve this site and accommodate the Railroad Avenue and First Street realignment. An assessment of existing sewer and other utility lines would need to be made by the City, and other utility providers, at the time detailed site plans for the Railroad Avenue and First Street realignment are available.

Impact UTIL-2: The realignment of Railroad Avenue could have construction period impacts on the use, operation, or maintenance of existing utility lines. (S)

Implementation of the following mitigation measure would reduce potential impacts associated with the utility lines relocation to a less-than-significant level.

Mitigation Measure UTIL-2: When detailed site plans for the Railroad Avenue realignment are available, the City should coordinate with all utility providers to prepare plans for relocation of existing utility lines as necessary. Prior to issuance of any grading or demolition permits, the city and utilities providers shall approve plans for utility line relocation. (LTS)

(9) Result in a Substantial Decrease in Landfill Capacity (Criteria 9). The proposed project would not result in a substantial decrease in landfill capacity. Each component of the project is discussed below.

Downtown Specific Plan Amendments. As previously described, solid waste generated by the proposed Amendments would be transported to the Vasco Road Sanitary Landfill, which has a remaining capacity of 9,870,704 cubic yards. The landfill is expected to have adequate capacity until the year 2024. Since there are no conceptual plans for any of the uses proposed as part of the Amendments, it is uncertain how much demolition and construction debris would be generated, if any. However, any individual projects associated with the Amendments would be required to meet the requirements of the City's Construction and Demolition Debris ordinance, which requires that at least 50 percent of construction and demolition waste be reused or recycled. Compliance with this City ordinance would ensure that construction and demolition debris would be reduced.

The operational phase of the uses associated with the proposed Amendments would also generate additional solid waste in the Downtown Specific Plan area. As stated in Chapter IV.B, Population, Housing and Employment, the Amendments would generate approximately 1,037 employees. According to the California Integrated Waste Management Board, employees in Livermore generate approximately 18.8 pounds of nonhazardous solid waste per day. Based on these assumptions, the operational phase of the Amendments would be expected to generate up to approximately 19,496 pounds (9.75 tons) of solid waste per day. This represents approximately 0.4 percent of the permitted daily throughput of the Vasco Road Landfill. The project's solid waste contribution would also be minimized by the provision of recycling and green waste collection service. Implementation of the Amendments would not substantially reduce the life-span of the landfill.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. All three sites would require the demolition of existing buildings and the construction of the new Theater. While the amount of demolition material would vary, this analysis assumes that a similar amount of construction and demolition debris would be generated at each site. At each site, 50 percent of construction and demolition debris would be required to be reused or recycled, per the City's Construction and Demolition Debris ordinance.

During the operation phase of the Theater project, additional solid waste would be generated by employees and theater patrons. The General Plan EIR found that the amount of development under buildout conditions would not substantially reduce the available space at the Vasco Road Sanitary Landfill. The additional 500 seats proposed as part of the Theater would not generate substantially more solid waste than the 1,500 seat theater previously evaluated. Therefore, implementation of the Theater project would not substantially reduce the life-span of the landfill.

(10) Interfere with Accomplishment of Waste Diversion Goals (Criteria 10). The proposed project would not interfere with the City's accomplishment of waste diversion goals. Each component of the project is discussed below.

Downtown Specific Plan Amendments. Implementation of the proposed project would increase solid waste generation within the Downtown Specific Plan area. Waste would be generated in association with construction of the office, commercial, movie, and hotel uses and by employees and/or visitors to these uses. The construction contractor for each project would be required to comply with the City's Construction and Demolition Debris ordinance. Therefore, at least 50 percent of the construction waste associated with the implementation of the Amendments would be recycled, and demolition and construction activities associated with implementation of the Amendments would not violate the diversion goals of Measure D or other applicable local and State solid waste regulations.

Once the uses proposed as part of the Amendments are operational, additional waste would be generated by new employees and visitors. It is anticipated that the Waste Management Authority would provide the new development with recycling and green waste carts, and would provide weekly pick-up of recyclables, and green waste. The proposed uses would not conflict with the waste diversion requirements of Measure D or other applicable local and State solid waste regulations. Because the Amendments would comply with applicable solid waste regulations, it would not interfere with the City's accomplishment of waste diversion goals.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As previously stated, additional waste would be generated during the demolition, construction, and operational phases of the Theater. The Theater's construction contractor would comply with the City's Construction and Demolition Debris ordinance. Solid waste generated during the operational phase of the Theater by employees and patrons would be reduced by the City's recycling requirements. Construction of the Theater would not conflict with the waste diversion requirements of Measure D or other applicable local and State solid waste regulations. Construction of the Theater would not interfere with the City's accomplishment of waste diversion goals.

(11) Result in an Increase of the City's Dependency on Non-renewable Energy Resources (Criteria 11). Implementation of the proposed project would not result in a substantial increase of the City's dependency on non-renewable energy. Each component of the project is discussed below.

Downtown Specific Plan Amendments. Implementation of the proposed Amendments would increase the amount of office, commercial, parking, movie, and hotel space within the Downtown Specific Plan area, which would require additional electricity and natural gas. The Amendments would represent infill development in an urban environment already served by electricity and natural gas. In addition, the area is served by transit hubs located in the Downtown Specific Plan area, such as the ACE train station, Wheels bus station, and other Wheels bus stops. These transit options would offer alternative modes of transportation, which allow for a decreased dependence on nonrenewable energy resources.

The expected electricity and natural gas usage would be consistent with typical usage rates for office, commercial, parking, movie, and hotel uses; however, energy consumption is largely a function of personal choice and the physical structure and layout of buildings. Since conceptual site plans have not been submitted for development associated with the Amendments, it is difficult to quantify the additional energy demand that would ultimately be generated. It can be assumed that implementation of the Amendments would result in additional energy demand in the Downtown Specific Plan area; however, since they would be located in a developed urban area, the proposed Amendments would not result in a substantial increase of the City's dependency on non-renewable energy resources.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As previously stated, there are existing points of connection for energy services available for each of the potential Theater sites, though the First Street/Maple Street site would require trenching from a pole across Maple Street to feed the site. The Theater would require the same amount of electricity and natural gas at all three potential locations. The increase in energy use associated with 500 additional Theater seats is not likely to result in a substantial increase in energy use. In addition, PG&E has indicated that the point of connections would be able to provide sufficient energy supplies to each of the potential sites.³⁸ Therefore, construction and use of the Theater would not result in a substantial increase of the City's dependency on non-renewable energy resources.

(12) Require substantial increases on peak and base period demand for electricity and other forms of energy (Criteria 12). Implementation of the proposed project would not require substantial increases on peak and base period demand for electricity and other forms of energy. Each component of the project is discussed below.

Downtown Specific Plan Amendments. As previously stated, the proposed Amendments would require some additional energy, but it would not result in a substantial increase in the use of electricity or natural gas in the Downtown Specific Plan area. Peak electricity demand occurs mostly in the summer and is predicted by maximum daily temperatures.³⁹ The uses associated with the proposed Amendments, such as office, commercial, hotel rooms, and movie screens, would likely

³⁸ Mullings, Terry, 2008. op cit.

³⁹ California Climate Change Center, 2006. *White Paper, Climate Change and Electricity Demand in California*. February.

utilize air conditioning during the hot summer months, which would contribute to the peak demand for electricity and other forms of energy. However, the additional uses proposed by the Amendments would not be expected to result in energy demand that is in excess of energy consumption associated with similar uses in the Downtown Specific Plan area. Implementation of the proposed Amendments would not require substantial increases in peak and base period demand for electricity and other forms of energy.

Regional Performing Arts Theater. The following discussion would be applicable to all of the potential Theater sites. As previously stated, construction and use of the Theater at any of the three potential project sites would not result in a substantial increase in electricity or natural gas demand, though the Theater would require additional energy during the hot summer months for air conditioning. The additional 500 seats proposed by the project would not result in energy demand that is substantially in excess of energy demand anticipated by the General Plan. Implementation of the Theater would not require substantial increases on peak and base period demand for electricity and other forms of energy.

J. VISUAL RESOURCES

This section evaluates the potential effects of the Downtown Specific Plan Amendments and Regional Performing Arts Theater on visual resources. This section is based on: (1) field surveys of the Downtown Specific Plan area; (2) a review of the data provided by the project applicant; (3) and view simulations showing “before and “after” representations of the Theater project prepared by Andrew McNichol.

1. Setting

The following section describes the visual quality of the Downtown area and the three potential Theater sites, views from the Theater sites, views of the sites, and a discussion of applicable Livermore policies that relate to scenic resources and community character.

a. Overview of Downtown Area.

Livermore’s historic Downtown is comprised of a variety of residential, commercial, and industrial uses within a dense urban environment. A mix of building types, architectural styles, and heights are located throughout the Downtown. Streets and blocks are generally organized in a grid pattern with the Union Pacific railroad forming the northern boundary of Downtown. Angled and parallel street parking is located throughout the Downtown. In the last four years, the City has improved the pedestrian facilities in the Downtown, including the installation of landscaped areas, fountains, benches, street trees, and out door eating establishments.



First Street/South Livermore Avenue Intersection

The residential development in the Downtown and immediate surrounding area generally reflects the early phase of the City’s development, from the late 19th Century to 1950s. The traditional single-family residential development within the Downtown is concentrated along the north, south and east borders of the Downtown Specific Plan area with homes generally consisting of one-story, single-family homes, most often built in the ranch or bungalow styles. New townhome and apartment development is located in the center part of Downtown.

First Street and South Livermore Avenue serve as the main commercial roadways within the Downtown. The Downtown contains a mix of both historic and new commercial structures, generally ranging in height from one- to three-stories. Much of Downtown is walkable with wide sidewalks, landscaping and tree canopy, and outdoor eating establishments.

Light industrial and auto-related uses are located in the northern portion of the Downtown along the Union Pacific railroad tracks. These uses are generally characterized by one-story buildings on larger lots with surface parking.

b. Visual Character of the Theater Sites. A visual character overview of the three potential Theater sites is provided below.



Mill Square Park

(1) First Street/South Livermore Avenue Site. There are four parcels that comprise this potential Theater site. The buildings on this site front on South Livermore Avenue, and are one-story at the sidewalk. This condition, in addition to street landscaping and the Mill Square Park, creates a pedestrian-friendly urban block.

The PT&T building is located on the southern most parcel on the site (2324 Second Street) and the parcel and the building front both Second Street and South Livermore Avenue. The PT&T building has a Mediterranean Revival architecture style with a stucco plaster exterior and tiled roof.

The building's distinctive features include a terra

cotta frieze band and rounded arched heads over the doors. Ornamental landscaping and trees are located along the front and side of the building. This structure has been identified by the Downtown Specific Plan as a National Historic Resource. Parking is provided behind the PT&T building and is accessed off Second Street.

Adjacent to the PT&T building is a one-story commercial building made of brick with a large glass picture windows fronting on South Livermore Avenue. Food service establishments are located at the front of the building with offices at the rear of the building.

Mill Square Park is located on the southeast corner of the First Street/South Livermore Avenue intersection. This park includes a short path which cuts across the parcel, grass, benches, lighting, a pergola, and mature landscaping. Large mature trees located along the east and south perimeter provide shade within the park and partially block the brick wall of the adjacent commercial building.

East of Mill Square Park, and fronting on First Street, is the parcel that contains the Henry Beam's Blue Bar. The building is a one-story block structure located at the back of the parcel; parking is located on the front of the parcel.

Street parking is provided on all the streets immediately adjacent to the PT&T site; angled pull-in parking is provided on First Street and Second Street, parallel parking is provided on South Livermore Avenue. There are sidewalks along all street frontages, and mature street trees are located on First Street and South Livermore Avenue adjacent to this project site.



Looking east on First Street

Visual Characteristics of the Surrounding Area. The First Street/South Livermore Theater site is in close proximity to a number of buildings that characterize historic Downtown Livermore. On the northeast corner of the First Street/South Livermore Avenue intersection is the Bank of Italy Building, an historic granite faced building designed in the renaissance revival style. To the east of this building are a series of buildings with both contemporary and traditional design and range of building facades and heights. A wide sidewalk and angled street parking are provided on the north side of First Street.

The block located across South Livermore Avenue from the project site includes a small plaza, retail shops and services. Flag Pole Plaza is located at the southwestern corner of the First Street/South Livermore Avenue intersection and includes a fountain, pergola, grassy area, low concrete walls that serves as seating, landscaping, and a flagpole. The Masonic building, a three-story commercial building is located to the south of Flag Pole Plaza. This L-shaped building includes features from a variety of architectural styles as well as a mansard roof with Georgian-style dormers. This building is identified as a National Historic Resource by the Downtown Specific Plan and provides the anchor for the cluster of buildings at the First Street/South Livermore intersection, considered the traditional crossroads of the City. Parallel parking spaces and street trees are located along this building frontage. Immediately south of this building is the Livermore Auto & Tire shop. This 1940s structure is a stucco-clad building with flat roof. The majority of the corner of northwest corner of South Livermore Avenue/Second Street intersection is paved to allow for parking of vehicles but does not include palm trees and shrubs. While this structure is not considered a National Historic Resource, it was identified by the Downtown Specific Plan as having been found to be of local interest.

The Livermore post office is located across Second Street from the First Street/South Livermore Avenue site. The post office is a one and a half-story structure with a Spanish Colonial/Mediterranean Revival architecture style and a red clay tiled roof. This building is identified as a National Historic Resource by the Downtown Specific Plan. Parking is located behind the building, with access from Second Street. Multi-family homes are located east of the post office. Second Street includes angled parking, a sidewalk, and street trees. Overhead power poles are located along the southern side of Second Street.

(2) Livermore Village Site. The Livermore Village site is located on the northern portion of the block bound by Railroad Avenue, South L Street, First Street, and South Livermore Avenue. This site does not front on First Street, but is within the larger block. There are approximately four parcels that make up the Livermore Village site.

The Livermore Village site contains several existing buildings and a large surface parking lot. The largest building is located on the northern portion of the site, and at one time contained a Lucky's Supermarket and strip mall retail uses. This two-story structure is



Southern Pacific Railroad Depot Building

largely vacant. The rear of the property, which fronts on Railroad Avenue, includes a brick wall as well as a chainlink fence.

The two-story wood Southern Pacific Railroad Depot Building is located on the site along L Street. Entrances and windows are located on all sides of this structure. The building includes a gabled roof and wooden shingle details. This building is identified as a National Historic Resource by the Downtown Specific Plan. Adjacent to this building is a railroad car on top of a short stretch of railroad tracks. As noted in Section IV.G, Cultural and Paleontological Resources, the railroad car is not a historic resource in and of itself and is not an integral part of the historic Railroad Depot building.

There are two one-story commercial building on the southern corner of the project site. One is a drive-through Kentucky Fried Chicken which fronts on L Street. The other is a strip mall type building that includes a pizza restaurant, liquor store, and butcher shop.

The remainder of the site is surface parking and ornamental landscaping. Vehicular access to the site is provided off of South Livermore Avenue, South L Street and Railroad Avenue. Railroad Avenue, adjacent to the Livermore Village site is a four-lane road with a divider/center turn-lane. The sidewalk along Railroad Avenue includes street trees and lighting; street parking is not allowed along this stretch of Railroad Avenue. South Livermore Avenue, adjacent to this Theater site, is a two-lane road (with an additional lane for merging traffic), sidewalks, lighting and trees. No street parking is allowed on this street. South L Street, adjacent to the Livermore Village site, is four-lane street; street parking is not allowed.

Visual Characteristics of the Surrounding Area. The Livermore Village site is located on the northern portion of the larger block bound by Railroad Avenue, South L Street, First Street and South Livermore Avenue. On the northeastern corner of the block (immediately adjacent to the project site) are two brick structures that front on South Livermore Avenue and have been recently renovated to include an outdoor seating patio. The Downtown Specific Plan identifies these structures as historic resources. Two one-story contemporary commercial structures also front on Railroad Avenue; parking lots are located immediately adjacent to these structures.

The block across South Livermore Avenue from this Theater site is characterized by a mix of buildings (a modern one-story auto-service store, a contemporary retail building, and the historic Bank of Italy building) and a landscaped parking lot. The Bankhead Theater can be seen to the east of the parking lot.

The view to the south from the Livermore Village site is the backs of the buildings that front on First Street. This includes one- and two-story buildings, parking, and alleyways connecting to First Street.

The western view across South L Street is mainly of a surface parking lot for an auto dealership. There is a one-story showroom associated with this dealership.

The view to the north is of single-story commercial structures, vacant lots, chainlink/wall enclosed parcels, the intersection of North K Street, and parking lots. The northside of Railroad Avenue includes overhead transmission wires and parallel parking spaces.

(3) First Street/Maple Street Site. The First Street/Maple Street site is created by the realignment of Railroad Avenue and First Street. As such, approximately half of the project site is currently comprised of roadways. First Street is a five-lane roadway (includes a center turn-lane) with sidewalks on both side of the street. The site also includes the First Street/Old First Street intersection. A portion of Old First Street (a two-lane roadway) will be within this Theater site. Figure III-4 shows the realignment and configuration of this proposed site.



First Street/Maple Street Intersection

The existing parcel within the First Street/Maple Street site contains a one-story beige brick building contains a variety of commercial uses in a strip-mall configuration. A paved parking area for this building fronts on Maple Street. A delivery and trash area is located behind the building.

There is a small landscaped island is located within the proposed site bounded by First Street, Second Street, and Old First Street.

Two structures would be removed to accommodate the roadway realignment. This would include a one-story brick warehouse building currently located adjacent to the Railroad Avenue cul-de-sac as well as a one-story brick commercial building located at the Old First Street/First Street intersection.

Visual Characteristics of the Surrounding Area. The view across Second Street from the site is of a two-story multi-family residence at the corner of Maple Street/Second Street intersection. To the east of this building is a one-story brick commercial building with two garage doors that front onto Second Street. A playing field is located at the southwest corner of the Second Street/Church Street intersection.

Across Maple Street to the north are views of a one-story commercial building. Street trees and a sidewalk are also located on this block.

A newly constructed two-story commercial building is located on the northeast corner of the First Street/Maple Street intersection across from the project site. A parking area is located adjacent to the project site, and a City-owned parking structure is located at the Maple Street/Railroad Avenue intersection. The building on the northwest corner of the First Street/Maple Street intersection is a newly built movie theater with a contemporary design.

c. Views from the Sites. Views from these alternative Theater sites are generally comprised of the surrounding buildings, roadways and trees. From roadways (such as South Livermore Avenue) it is possible to look down the street and into the distance to see the hills surrounding the City. Views to the distant hills are also available in areas where there are breaks in the development or across parking lots.

d. Views of the Sites. Views of the potential Theater sites are generally limited due to the developed nature of the areas immediately surrounding the sites. The following subsection describes views of the potential Theater sites from several of the photo simulation viewpoints. Photos from these existing viewpoints are shown in Figures IV.J-2a through Figure IV.J-2g. Figure IV.J-1 shows the locations of the viewpoints.

1. *First Street/South Livermore Avenue Site: View from First Street looking east.* This viewpoint is on First Street looking east towards the First Street/South Livermore Avenue site. The foreground includes landscaping, pergola, fountain and flag pole associated with Flag Pole Plaza. Behind Flag Pole Plaza is the Mill Square Park portion of this potential Theater site.
2. *First Street/South Livermore Avenue Site: View from South Livermore Avenue looking north.* This viewpoint is on South Livermore Avenue looking north towards the First Street/South Livermore Avenue site. The PT&T building is visible from this viewpoint; other buildings within this alternative site are obscured by existing street landscaping and parked cars along South Livermore Avenue.
3. *Livermore Village Site: View from First Street/South Livermore Avenue intersection looking northwest.* This viewpoint is on the southeastern corner of the First Street/South Livermore Avenue intersection. Buildings and landscaping along South Livermore Avenue block the view of the Livermore Village site.
4. *Livermore Village Site: View from South Livermore Avenue looking southeast.* This viewpoint is from the eastern side of South Livermore Avenue looking southwest. The one-story brick buildings along South Livermore Avenue block views of the existing buildings located on the Livermore Village site.
5. *Livermore Village Site: View from North Livermore Avenue/Chestnut Street intersection looking south.* This viewpoint is from the North Livermore Avenue/Chestnut Street intersection looking back toward the Livermore Village site. Existing buildings on the Livermore Village site are obscured by intervening landscaping. Hills to the south of Downtown can be seen in the distance to the east of the site.
6. *First Street/Maple Street Site: View from Maple Street looking southeast.* This viewpoint is taken from Maple Street looking southeast. Part of the First Street/Maple Street intersection will be located within the proposed site. The majority of the project site is obscured by an existing building on the left portion of the view.
7. *First Street/Maple Street Site: View from First Street looking southwest.* This viewpoint is taken from First Street looking southwest along First Street towards the First Street/Maple Street intersection. The proposed site will consist of the existing roadway and structures, which is obscured by intervening vegetation.

e. General Plan Policies. The following General Plan policies relate to visual resources and community character.

- Policy CC-1.1.P8: New development shall be designed to preserve views from existing neighborhoods to the greatest extent feasible.
- Policy CC-1.1.P12: The City shall preserve and enhance the following manmade amenities:
 - (a) Vineyards
 - (b) Other Agriculture

- (c) Lake Del Valle
- (d) Scenic Highways, Roads, and Corridors
- (e) Buildings of Historic or Architectural Significance or Interest
- (f) Community Entrance Points
- Policy CC-1.3.P1: The importance of views of the nighttime sky unimpaired by inappropriate intensities of light and glare shall be acknowledged as a significant scenic resource in Livermore.
- Action CC-1.3.A1: Incorporate standards in the development of design review guidelines that are concerned with lighting quantity, intensity, and design in order to minimize contributions to glare, light trespass and “sky glow” while providing nighttime lighting sufficient to ensure public safety.
- Policy CC-2.1.P1: All new development and redevelopment shall be subject to design review.
- Policy CC-2.1.P2: High-quality design shall be provided in the areas of community design, site design, building design, and landscape design to ensure that compatibility exists between new and existing development.
- Policy CC-2.1.P3: The architectural design and site layout of new development and redevelopment should consider the context and character created by existing land uses.
- Policy CC-2.1.P4: Design requirements and amenities shall be encouraged in new development and redevelopment, including, but not limited to:
 - (a) Interconnected street layout;
 - (b) Clustering of buildings;
 - (c) Landscaping on each lot;
 - (d) Visual buffers;
 - (e) Facilitating pedestrian activity; and
 - (f) Distinctiveness in architectural design.
- Policy CC-2.1.P8: Buildings with large, blank exterior walls lacking architectural details shall be prohibited.
- Policy CC-2.1.P10: Multi-family structures and non-residential uses located adjacent to single-family properties shall incorporate adequate screening into the project design to soften the visual impacts of new, more intense development.
- Policy CC-2.1.P12: Off-street parking areas shall be screened, preferably by natural vegetation in conjunction with earth berms.
- Action CC-2.1.A1: Prepare and adopt ordinances, guidelines, and/or procedures in order to implement these policies including design review procedures, creation of development design standards, a specific plan for Downtown development and revitalization, and establishment of public improvement standards including landscaping and related programs which address these policies. These ordinances, guidelines, and procedures shall address, at a minimum, the following:
 - (a) Building materials;
 - (b) Building scale, bulk, and facade treatment;
 - (c) Streetscapes;
 - (d) Lighting;
 - (e) Landscaping and trees;
 - (f) Visual impacts of multi-unit housing on nearby single-family residences and historical buildings;
 - (g) Visual resources;

(h) Signs.

- Action CC-2.1.A2: Develop, maintain, and implement urban design guidelines and performance standards that establish design requirements for residential, commercial, and industrial development and redevelopment. All new development and redevelopment shall be subject to design principles and performance standards.
- Action CC-2.1.A3: Update adopted standards for the design of public improvements in new development and redevelopment in recognition of the extreme importance of quality design of development and the value of aesthetics in developing an image and sense of character for the City.
- Policy CC-2.1.P1: Existing overhead utilities shall be placed underground through a phased program of conversion.
- Policy CC-2.1.P2: Utility distribution lines shall be placed underground in new developments and upon redevelopment.
- Policy OSC-1.3.P1: Require new developments to incorporate native vegetation into their landscape plans, and prohibit the use of invasive non-native plant species. Propagules (seeds or plants) of native plants shall be from native sources.
- Action OSC-1.3.A1: Restore areas adjacent to existing open space areas with native plant and animal communities. Restoration should be accomplished with native plants from local sources.
- Action OSC-1.3.A2: Develop and implement an urban forest preservation ordinance, inclusive of an inventory of ancestral trees, to require the preservation of trees of significant value.

f. Downtown Specific Plan. The following strategies within the Downtown Specific Plan relate to the Amendments and the Theater project :

7. Place high priority on the design, financing and construction of a new Performing Arts Center in the heart of Downtown.
 - a. Reserve sufficient land for this facility at the southeast corner of First Street and Livermore Avenue. This prominent site is appropriate for such a civic function due to its excellent visibility from all directions.
 - b. Design the structure to be a civic landmark for Downtown, as a one-of-a-kind icon that is a memorable emblem of Livermore's Downtown, and as a visual sign of Livermore's relationship to the Arts.
9. Build on the high quality of historic structures to set the tone for design in the district. Use the strong architectural heritage as a basis for design recommendations including:
 - a. Stringent design guidelines for new structures, and façade improvement programs for repair of older ones.
 - b. Distinctive features to characterize the streetscape of Downtown, including special street furniture and lighting, custom planters designed specifically for Livermore, and unique outdoor artwork interspersed throughout the Core.

The Downtown Specific Plan includes Development Standards that specify site development and building design standards, such as permitted land use, building height, and setbacks and Design Standards and Guidelines, that provide guidance for new development in terms of aesthetics and other considerations such as district character or design detail.

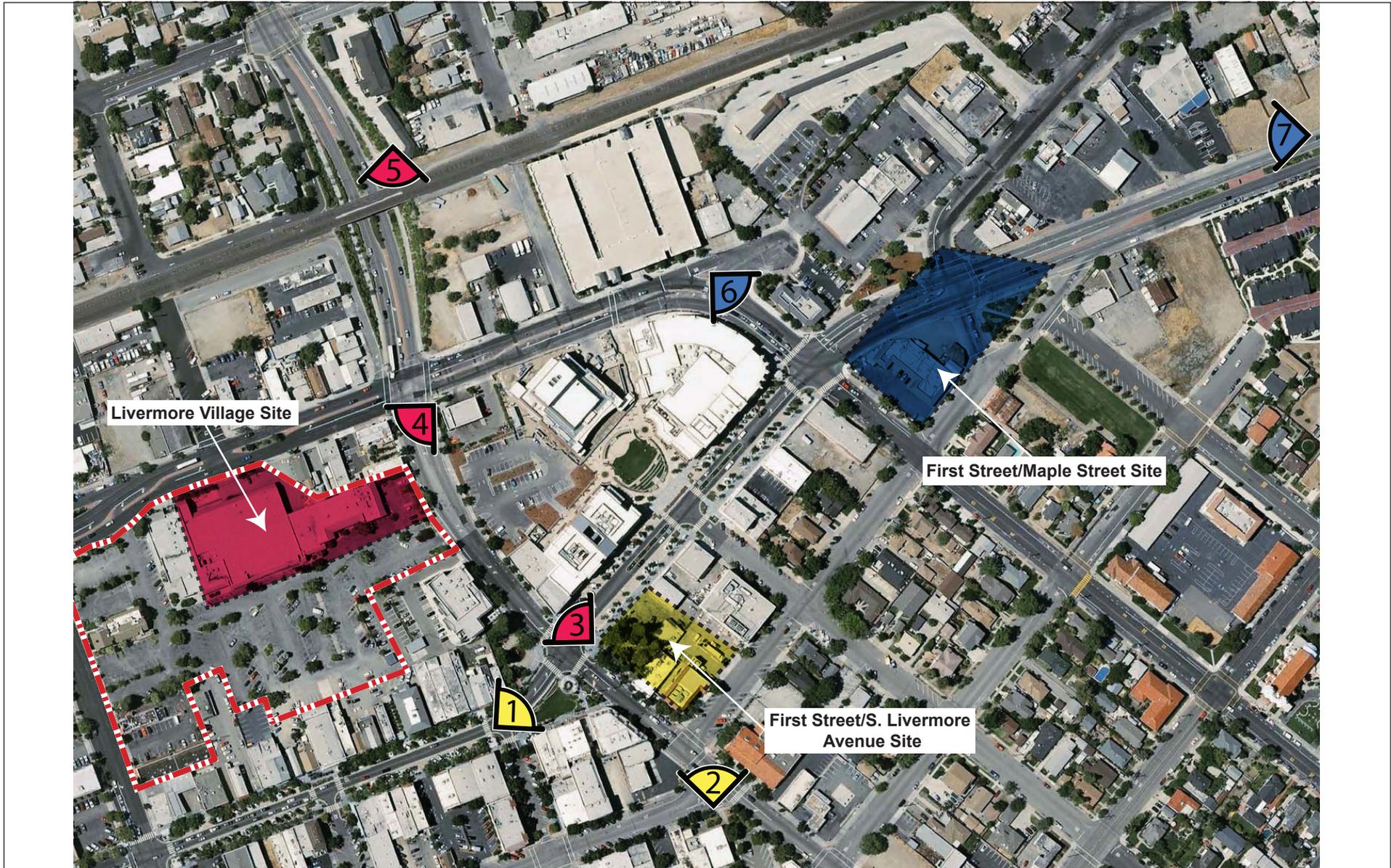


FIGURE IV.J-1

LSA



0 150 300

FEET



VIEWPOINT LOCATIONS



LIVERMORE VILLAGE SITE

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Viewpoint Locations*

SOURCE: ANDREW MCCNICHOL, 2008

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Existing view from First Street looking east towards Flag Pole Plaza



Visual simulation of proposed project

LSA

FIGURE IV.J-2a

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR

**Viewpoint I Visual Simulation:
First Street/South Livermore Avenue Site**

SOURCE: ANDREW MCCNICHOL, 2008

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Existing view from South Livermore Avenue looking north



Visual simulation of proposed project

LSA

FIGURE IV.J-2b

*Downtown Specific Plan Amendments
and Regional Performing Arts Theater EIR*

**Viewpoint 2 Visual Simulation:
First Street/South Livermore Avenue Site**



Existing view from First Street/South Livermore Avenue looking northwest



Visual simulation of proposed project

LSA

FIGURE IV.J-2c

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR
Viewpoint 3 Visual Simulation:
Livermore Village Site

SOURCE: ANDREW MCCNICHOL, 2008

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Existing view from South Livermore Avenue looking southwest



Visual simulation of proposed project

LSA

FIGURE IV.J-2d

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR
Viewpoint 4 Visual Simulation:
Livermore Village Site

SOURCE: ANDREW MCCNICHOL, 2008

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Existing view from the North Livermore Avenue/Chestnut Street intersection looking south



Visual simulation of proposed project

LSA

FIGURE IV.J-2e

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR
Viewpoint 5 Visual Simulation:
Livermore Village Site

SOURCE: ANDREW MCCNICHOL, 2008

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Existing view from South Livermore Avenue looking southwest towards Railroad Avenue/South Livermore Avenue intersection



Visual simulation of proposed project

LSA

FIGURE IV.J-2f

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR
Viewpoint 6 Visual Simulation:
First Street/Maple Street Site

SOURCE: ANDREW MCCNICHOL, 2008

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Existing view First Street looking southwest towards First Street/Maple Street intersection



Visual simulation of proposed project

LSA

FIGURE IV.J-2g

Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR
Viewpoint 7 Visual Simulation:
First Street/Maple Street Site

SOURCE: ANDREW MCCNICHOL, 2008

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2. Impacts and Mitigation Measures

This subsection analyzes impacts related to visual resources that could result from implementation of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. The subsection begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this subsection presents the impacts associated with the proposed project, and recommends mitigation measures as appropriate.

To guide the assessment of whether construction of the Theater would create a significant adverse impact when measured against the significance criteria, the analysis includes computer-generated photo simulations illustrating “before” and “after” views of the Theater sites (see Figures IV.J-2a through Figure IV.J-2g).

a. Criteria of Significance. The Livermore Downtown Specific Plan Amendments and Regional Performing Arts Theater would result in a significant impact related to visual resources if it would:

1. Result in visual conditions that would conflict with applicable policies and regulations governing aesthetics and community character;
2. Have a substantial adverse effect on a scenic vista, or would substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings;
3. Substantially degrade the existing visual character of the City or specific neighborhoods;
4. Result in the disruption or blocking of existing views or public opportunities to view scenic resources; or
5. Create substantial light or glare which would adversely affect day or nighttime views.

Impacts are discussed in the following section and summarized in Table IV.J-1.

b. Impact Analysis. The following discussion describes the impacts related to visual resources associated with implementation of the Downtown Specific Plan Amendments and Regional Performing Arts Theater Project. As there have been no specific locations or projects associated with the majority of the Amendments, the discussion of potential visual resources impacts associated with the Amendments will be at a general program-level. Given that there are more defined plans for the three potential Theater locations and the Railroad Avenue realignment, potential impacts will be analyzed at the project level.

As has been noted previously, the potential impacts associated with implementation of the Downtown Specific Plan were evaluated in the General Plan EIR. Policies and actions were identified in this EIR that would reduce the potential impacts associated with development proposed under the Downtown Specific Plan. Current General Plan polices and actions that would be applicable to development proposed under the Specific Plan Amendments, and would reduce impacts related to visual resources, are included in the following discussion as appropriate.

Table IV.J-1: Summary of Potential Impacts – Visual Resources

Significance Criteria	Project Amendments and Theater Sites ^a			
	Amendments	First St./S. Livermore Ave. Site	Livermore Village Site	First St./Maple St. Site
Would the Project:				
1. Result in visual conditions that would conflict with applicable policies and regulations governing aesthetics and community character?	○	○	○	○
2. Have a substantial adverse effect on a scenic vista, or would substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings?	○	● <i>or</i> = VIS-1 ^b	○	○
3. Substantially degrade the existing visual character of the City or specific neighborhoods?	○	○	○	● <i>or</i> = VIS-2 ^b
4. Result in the disruption or blocking of existing views or public opportunities to view scenic resources?	○	○	○	○
5. Create substantial light or glare which would adversely affect day or nighttime views?	○	● VIS-3	● VIS-3	● VIS-3

^a The Amendments are analyzed in this EIR at the “program” level. The Theater sites are analyzed in this EIR at a “project” level. The level of impact and the proposed mitigation measure, if any, are identified as follows:

- == No impact
- Less-than-Significant
- Reduced to Less-than-Significant with recommended mitigation
- Significant and Unavoidable

VIS-1, etc. identifies the mitigation measure, if any, that addresses the impact.

^b This impact will either be “significant and unavoidable” or “no impact” depending on the final site selected for the Theater.

Source: LSA Associates, 2008

(1) Conflict with Aesthetics/Community Character Policies and Regulations (Criteria

1). Polices within the General Plan outline the need for new development to provide for a high quality design and to be integrated with existing development in the area (Policy CC-2.1.P2) and for new development to consider the context and character created by existing land uses (Policy CC-2.1.P3). The Downtown Specific Plan seeks to improve the visual quality of the Downtown through development standards, design guidelines, historic preservation and streetscape improvements. Projects associated with the Amendments would be required to adhere to design guidelines and standards outlined in the Downtown Specific Plan. These guidelines and standards help to create the desired visual character of the Downtown Specific Plan. As such, implementation of the Amendments would not conflict with aesthetic or community character policies and regulations.

Theater Sites. The First Street/South Livermore Avenue site and the Livermore Village site include historic structures (the PT&T building at the First Street/South Livermore Avenue site and the Southern Pacific Railroad Depot Building at the Livermore Village site). Construction of the Theater at either one of these sites would result in the removal (either relocation or demolition) of these historic structures. Removal of historic structures could conflict with Community Character Policy CC-1.1.P12, which calls for the preservation and enhancement of manmade amenities, including buildings of historic or architectural significance or interest.

Policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct physical impacts. As discussed in Section IV. G, Cultural Resources, removal of these buildings is a potential cultural resources impact. However, the conflict of the project with Community Character Policy CC-1.1.P12 does not result in a significant physical aesthetic impact. Even with removal of these historic buildings, many other historic buildings located within the Downtown would preserve the character of the area. In addition, if either the PT&T building or the Railroad Depot are moved, they would be moved to a location within the Downtown.

The General Plan contains many goals, objectives, policies, and actions, some of which may compete with each other. When considering the project, the Planning Commission and City Council will determine whether the project is consistent with the overall intent of the General Plan even though it may conflict with this General Plan Policy CC-11.P12.

Upon approval of the Theater at any of the proposed sites, the City would undertake a design review process to ensure the project adheres to the design guidelines and standards outlined in the General Plan and Downtown Specific Plan. Therefore, implementation of the Theater project would not result in a significant physical environmental impact related to a conflict with applicable visual resources and community character policies and regulations.

(2) Scenic Vistas, Scenic Resources, and Historic Structures (Criteria 2 and 4). The views of the hills surrounding Livermore are one of the primary visual characteristics and amenities of the City. These views are available throughout many vantage points within the City, including from locations within the Downtown.

The General Plan identifies a number of roadways within the City that are considered scenic routes (shown in Figure 4-1 of the General Plan). None of the identified scenic routes are within the Downtown area. The General Plan also identified scenic vistas. These vistas are generally located along the periphery of the City and are associated with the surrounding hills or other natural features.

Implementation of the Amendments, which would result in additional development and intensification of land uses in the Downtown area, may result in some blocked views of surrounding hills; however, views of the hills from the Downtown are intermittent depending on the surrounding development at a particular site or along a roadway. Views to hillsides from roadways would be altered, but not eliminated, through implementation of the Amendments.

The following policies within the General Plan address potential impacts to scenic vistas and resources: Policy CC-1.1.P8 requires new development to be designed to preserve views from existing neighborhoods to the greatest extent feasible, and Policy CC-2.1.P1 states that new development and redevelopment shall be subject to design review. Adherence to these policies would help to ensure that implementation of the Amendments would result in a less-than-significant impact to scenic vistas and scenic resources.

Theater Sites. The three potential Theater sites are not within scenic vistas or located on routes in the Downtown which are considered scenic routes. However, the First Street/South Livermore Avenue site and the Livermore Village site do contain historic structures. These two sites are discussed below.

First Street/South Livermore Avenue site. The PT&T building is located on the First Street/South Livermore Avenue Theater site. This structure has been identified as an historic resource.

Impact VIS-1: Construction of the Theater at the First Street/South Livermore Avenue site would result in the relocation of the PT&T building, changing a scenic resource. (S)

The PT&T building has been identified as a historic resource. Given its prominent location on South Livermore Avenue, and its relation to surrounding structures (including the Livermore post office and the Masonic building which are considered historic resources and are located across the street), this historic structure would be considered a scenic resources. The removal or relocation of the PT&T building has been identified as a cultural resources impact, and would also be considered a significant visual resources impact as its removal would substantially damage a historic building that contributes to the historic character of Downtown. The Downtown Specific Plan discusses the important role that existing historic structures play in setting the visual character of the Downtown. The relocation or demolition of the building and replacement with a large regional Theater would adversely change the visual character of the site, how it relates to the surrounding development and historic buildings, and the visual character of the area. Construction of the Theater at the First Street/South Livermore Avenue site would be considered a significant and unavoidable impact on visual resources. If another site were considered for the Theater, this impact would be less than significant.

Mitigation Measure VIS-1: There are no feasible mitigation measures to reduce the potential scenic resource impact caused by removal of the PT&T building from the First Street/South Livermore Avenue Theater site. If another site were considered for the Theater, this impact would be less than significant. (SU)

Livermore Village Site. The Southern Pacific Railroad Depot is located along South L Street on the Livermore Village site. While this building has been identified as a cultural resource, the removal/demolition of the building from this site would not be considered a significant visual impact for the following reasons. This building is located on South L Street, which is not a central roadway within the Downtown. Additionally, the structure is currently surrounded by a parking lot, and is adjacent to a small strip mall with a Kentucky Fried Chicken drive-through and a vacant/dilapidated shopping center. The Southern Pacific Railroad Depot Building is not in a central location and does not substantially contribute to the visual quality of the site or Downtown. While its removal and relocation has been identified as a cultural resource impact, its removal from the site would not be considered a significant visual resources impact. Additionally, it would be moved to another location within the Downtown, so it would still be a contributing element to the overall historic nature of the Downtown. The railroad car that is adjacent to the Southern Pacific Railroad Depot would not be relocated within the Downtown; however, the railroad car is not considered a contributing element to the definition of this building as a historic resource.

(3) Visual Character (Criteria 3). The Downtown is an urban mixed-use area, and implementation of the Amendments would result in increased development in the Downtown. Opportunities for development include vacant lots within the Downtown, and development of these lots could result in a beneficial impact to the visual character of the area.

The City requires all new projects to adhere to the design guidelines and standards outlined in the Downtown Specific Plan. In addition, several policies in the General Plan would protect the visual character of the Downtown: Policy CC-2.1.P1 requires all new development and redevelopment to be subject to design review; Policy CC-2.1.P8 prohibits blank exterior walls lacking architectural details; Policy CC-2.1.P2 requires high-quality design of new construction to ensure new and existing development are compatible; and Policy CC-2.1.P3 requires new development to consider the context and character created by existing land uses. Compliance with these policies would ensure that implementation of the Amendments would not result in a significant impact to the visual character of Downtown.

Theater Sites. The City of Livermore, in consultation with LSA Associates, Inc., selected seven locations from which to prepare visual simulations of the Theater at three potential sites. Figure IV.J-1 is a photo location map, and Figures IV.J-2a through IV.J-2g show the existing views of the Theater sites and visual simulations of the proposed Theater. The visual simulations were prepared using computer modeling and rendering techniques, and are based on the design data provided by the applicant. The simulations are intended to only show building massing, height and bulk as architectural details have not been finalized. The photos simulations for the alternative sites are described below.

First Street/South Livermore Avenue Site. Figure IV.J-2a shows the view from First Street looking east towards Flag Pole Plaza and the First Street/South Livermore Avenue site. The visual simulation shows that the existing vegetation associated with Mill Square Park would be removed to accommodate the Theater at this site. The Theater building would be placed right up to the property line, with the entrance and lobby immediately adjacent to the sidewalk. The Theater at this site would be significantly taller than other buildings in the immediate area. Additionally, because the site is the smallest of the three, the Theater would take up the entire site and no space would be available for landscaping or other features to soften the visual impact of the project or to provide some sort of visual buffer between adjacent structures and the Theater.

Figure IV.J-2b shows the view looking north towards the Theater from South Livermore Avenue. This visual simulation also shows that the Theater would be significantly larger than adjacent structures. Entries and windows would be limited on the Second Street and South Livermore Avenue sides of the Theater. The lack of these features, and the height of the building next to the sidewalk, would contribute to the creation of a long, monotonous wall that would change the character of this block from its current small-scale pedestrian-friendly environment.

As shown in the visual simulations, if the Theater project is constructed at this location the visual character at this block would be changed. However, this change would not substantially degrade the visual character of the Downtown as a whole. The First Street/South Livermore Avenue site is identified in the Downtown Specific Plan as the potential location of the Regional Performing Arts Theater and the Development Standards allow for the Performing Arts Theater to be an iconic building that is significantly taller than other development generally permitted in the Downtown. Development of a large Theater was foreseen and encouraged at this site in the Downtown Specific Plan. While the Theater would change the visual character of this block, it would not be considered a significant impact.

Additionally, if the project is approved at any of the proposed sites, the Theater would undergo Design Review. The Design Review process would provide the opportunity for the City to further refine the design and architectural treatments of the Theater.

Livermore Village Site. Figure IV.J-2c shows the view from First Street/South Livermore Avenue looking toward the Livermore Village site. Given the intervening development and landscaping, as well as the fact that this Theater site includes an entry plaza that sets the Theater back from South Livermore Avenue, only the very top portion of the Theater would be visible from this vantage point.

Figure IV.J-2d shows the view of the site from South Livermore Avenue looking southwest. This visual simulation shows that the Theater would be set back from the roadway and would be adjacent to an open landscaped entry plaza. From this viewpoint, existing development would block the lower portion of the Theater, but it is much taller than any other surrounding structures.

Figure IV.J-2e shows the view looking south from the North Livermore Avenue/Chestnut Street intersection. This viewpoint is about one and a half blocks from the site. In this visual simulation, a small portion of the upper level of the Theater can be seen. The majority of the Theater is blocked by intervening landscaping and trees. From this viewpoint, the Theater would block a very small portion of the distant views of the hills; however the majority of the distant views would be unchanged.

As shown in the visual simulations for this site, if the Theater were constructed at this location, the visual character would be changed, but the change would not be considered significant. The majority of the Livermore Village site is an abandoned shopping mall and parking area, and the construction of the Theater at this site could be considered a beneficial change. Additionally, the Theater would be set back from the street which would reduce the visual impact of the structure in the Downtown. The construction of the Theater at this site would not result in a significant visual resources impact.

First Street/Maple Street Site. Figure IV.J-2f shows the view from South Livermore Avenue looking southeast towards the First Street/Maple Street site. This visual simulation shows the new parcel that would be created by the realignment of Railroad Avenue and First Street. This visual simulation shows that an entry plaza would allow for the front of the Theater to be set back from Maple Street. The Theater would be taller than buildings surrounding it; however it would not block distant views.

Figure IV.J-2g shows the view from First Street looking southwest towards the First Street/Maple Street intersection. This visual simulation shows that the multi-story (approximately 85 feet in height) rear of the Theater building would occupy a major portion of this view, and would block the limited views of the distant hills.

Impact VIS-2: Construction of the Theater at the First Street/Maple Street site would alter the visual character of the First Street entry into Downtown. (S)

This viewpoint represents a “visual gateway” to the historic Downtown area. The construction of the Theater at this site would result in an obscured the view of this entryway by the back of a large Theater structure. This potential development would significantly change the nature of this gateway, resulting in a significant and unavoidable impact. While the Theater would undergo design review, it

is unlikely that significant changes to the height, bulk, and massing, especially associated with the back of the Theater building, could be made to reduce the potential visual impact from this viewpoint. Construction of the Theater at the First Street/Maple Street site would be considered a significant and unavoidable impact on visual resources. If another site is chosen, this impact would be less than significant.

Mitigation Measure VIS-2: There are no feasible mitigation measures to reduce the potential visual resource impact caused by construction of the Theater at the First Street/Maple Street site. If another site is chosen, this impact would be less than significant. (SU)

(4) Light and Glare (Criteria 5). The Downtown area is an urban area with a significant amount of nighttime lighting to create a vibrant pedestrian-friendly activity area and protect public safety. Implementation of the Amendments would result in the construction of new buildings in the Downtown which could contribute to light and glare in the area. General Plan Policy CC-1.3.P1 states that views of the nighttime sky, unimpaired by inappropriate intensities of light and glare shall be acknowledged as a significant scenic resource in Livermore.

Individual projects would undergo Design Review, and would need to adhere to lighting and window design guidelines outlined in the Downtown Specific Plan. Additionally, the Design Review would ensure that lighting is sufficient to protect public safety but does not excessively illuminate the surrounding area. Because of this, implementation of the Amendments would not result in a significant light or glare impact.

Theater Sites. The Theater project would incorporate a large glass façade at the front of the Theater which could result in a new source of glare within the Downtown area.

Impact VIS-3: Construction of the Theater could result in a new source of glare within the Downtown. (S)

As currently designed, the Theater includes a large glass front entry (approximately 50 feet in height), which could result in a significant amount of glare. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure VIS-3: The applicant shall incorporate into the Theater project glass surfaces that are non-mirrored or include non-reflective films, coatings and shading devices to reduce glare. The architectural detail regarding lighting and glass shall be reviewed and approved by the City during the Design Review process. (LTS)

IV. SETTING, IMPACTS AND MITIGATION MEASURES

This chapter contains an analysis of each topic that has been identified through preliminary environmental evaluation of the Livermore Downtown Specific Plan Amendments and Regional Performing Arts Theater project, and, as such, constitutes the major portion of this EIR. Sections A through J of this chapter describe the environmental setting of the proposed project as it relates to each specific environmental topic. The impacts resulting from implementation of the project, and mitigation measures that would reduce impacts of the project, if necessary, are also presented in each of the sections.

DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.¹ The *CEQA Guidelines* direct that this determination be based on scientific and factual data. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria of significance are based on those in Appendix G of the *CEQA Guidelines* and were developed in coordination with City of Livermore staff.

ISSUES ADDRESSED IN THE DRAFT EIR

The following environmental issues are addressed in this chapter:

- A. Land Use and Planning Policy
- B. Population, Housing, and Employment
- C. Transportation and Circulation
- D. Air Quality
- E. Global Climate Change
- F. Noise
- G. Cultural and Paleontological Resources
- H. Hazards and Hazardous Materials
- I. Utilities and Infrastructure
- J. Visual Resources

FORMAT OF ISSUE SECTIONS

Each environmental issue section has two main subsections: 1) Setting, and 2) Impacts and Mitigation Measures. Any identified significant impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Significant impacts and mitigation

¹ Public Resources Code Section 21068.

measures are numbered consecutively within each topic and begin with a shorthand abbreviation for the impact section (e.g., LAND for Land Use). The following abbreviations are used for individual topics:

LAND:	Land Use
POL:	Planning Policy
POP:	Population, Housing, and Employment
TRANS:	Transportation and Circulation
AIR:	Air Quality
GCC:	Global Climate Change
NOISE:	Noise
CULT:	Cultural and Paleontological Resources
HAZ:	Hazards and Hazardous Materials
UTIL:	Utilities and Infrastructure
VIS:	Visual Resources

The following notions are provided after each identified significant impact and after identification of mitigation measures:

SU	=	Significant and Unavoidable
S	=	Significant
LTS	=	Less than Significant

These notations indicate the significance of the impact before and after mitigation.

V. ALTERNATIVES

The *CEQA Guidelines* require the analysis of a reasonable range of alternatives to the proposed project, or to the location of the proposed project, which would feasibly attain most of the proposed project's basic objectives and avoid or substantially lessen any of the significant effects of the proposed project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.¹ CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative."

The following discussion is intended to inform the public and decision-makers of the relative impacts of five potential alternatives to the proposed project, the Downtown Specific Plan Amendments and the Regional Performing Arts Theater. A discussion of an alternative that was considered but rejected and the environmentally superior alternatives is also provided.

The proposed Amendments, Theater project and associated realignment of Railroad Avenue at First Street are described in detail in Chapter III, Project Description, and the potential environmental effects of implementing the proposed project are analyzed in Chapter IV, Setting, Impacts and Mitigation Measures. As has been noted previously, currently there are no specific project proposals or development applications associated with the increase in development proposed by the Amendments. Therefore, potential impacts associated with the Downtown Specific Plan Amendments have been analyzed at a programmatic level within this EIR. The proposed Amendments to the Downtown Specific Plan are listed below:

- *Downtown Specific Plan Amendments (Amendments)*. The City proposed Amendments to the Specific Plan and General Plan are:
 - Increase the size of a proposed regional performing arts theater from 1,500 seats to 2,000 seats;
 - Increase the number of movie screens in the Downtown from 12 screens to 15 screens;
 - Increase the number of hotel and bed and breakfast rooms in the Downtown area to 300 rooms;
 - Increase the amount of commercial development from 855,000 square feet to 1,000,000 square feet;
 - Increase the amount of office development from 217,000 square feet to 356,000 square feet;
 - Include a parking structure on L Street within the Downtown Core Area;
 - Add a new chapter (Financing) to the Downtown Specific Plan; and
 - Revise the General Plan and Downtown Specific Plan to reflect the above changes.
- *Regional Performing Arts Theater (Theater)*. This EIR analyzes three alternative locations for the construction of a 2,000 seat Theater on one of three sites within the Downtown. One of the

¹ *CEQA Guidelines*, 2007, Section 15126.6.

potential Theater sites (the First Street/Maple Street site) would be created via the realignment of Railroad Avenue

The Theater project is a joint collaboration between the City of Livermore/Redevelopment Agency and the Livermore Valley Performing Arts Center (LVPAC). Conceptual site plans have been developed for the Theater project and realignment of Railroad Avenue, and the impacts associated with development of the Theater have been analyzed in this EIR at a project level. While the First Street/South Livermore site (Alternative 1 site) was identified as the proposed location for a 1,500 seat Theater in the Downtown Specific Plan, after adoption of the Plan, two other alternative locations for the Theater have been proposed: the Livermore Village site (Alternatives 2 and 3) south of Railroad Avenue and South Livermore Avenue, and the First Street/Maple Street site (Alternative 4) which would be created by the realignment of Railroad Avenue and First Street. To assist City decision-makers in determining the preferred location for the Theater and the effects of realigning Railroad Avenue, this EIR provides a full evaluation within each environmental topic section in Chapter IV of the potential impacts associated with development of the 2,000 seat Theater at each of the three potential sites within the Downtown. Additionally, the environmental analysis was conducted at a similar level of detail for all three potential Theater sites so that there is sufficient environmental analysis per CEQA for whichever site is ultimately chosen and approved. This chapter provides a summary of that analysis. This EIR also evaluated the potential effects of the realignment of Railroad Avenue with the Theater project (Alternatives 1, 3, and 4).

For the purposes of this alternatives analysis, this section compares five alternatives to the Theater project developed at the First Street/South Livermore Avenue without the Railroad Avenue realignment. Additionally, it is assumed that all the alternatives would include the Amendments, except for Alternative 5 (the No Project alternative). As such, the discussion of alternatives does not include a discussion about potential impacts for the Amendments as it is assumed Amendment-related impacts would be similar under all the alternatives. In this alternatives analysis, the No Project alternative, which assumes buildout under the adopted Downtown Specific Plan and no increase in development per the Amendments, is the potential alternative to the project that addresses or reduces potential significant impacts relative to development under the Amendments.

All of the alternatives assume that 295 dwelling units and a new parking structure (as part of the Amendments listed above) of up to 350 parking spaces would be constructed at the Livermore Village site. The 295 units were identified as part of the anticipated buildout of the Downtown Specific Plan and evaluated under the EIR prepared for the General Plan and Downtown Specific Plan in 2003. These housing units are considered to be part of cumulative baseline conditions during evaluation of the alternatives. Any potential site specific impacts associated with construction of these units (or development proposed as part of the Amendments) is not included in this EIR. If and when residential units are proposed for development at the Livermore Village site, or other sites within the Downtown, the City will review those proposals to determine the appropriate CEQA analysis that would be necessary to evaluate their environmental effects, as necessary. However, this EIR does address potential impacts the construction of the Theater or Amendments may have on existing or projected future residential development assumed as part of the buildout in the Downtown Specific Plan.

As part of the project description, objectives for the Amendments and the Theater project were identified. To assist in evaluating project alternatives, the objectives for the Downtown Specific Plan Amendments are repeated below:

- Increase the seating capacity of a proposed Regional Performing Arts Theater in the Downtown to allow for large shows and performances with a regional draw.
- Increase the amount of office/commercial square footage allowed in the Downtown to encourage a mix of uses and an active Downtown area.
- Provide adequate parking for existing and proposed land uses within the Downtown including a 2,000 seat Regional Performing Arts Theater.
- Encourage in-fill development in the Downtown so as to protect undeveloped land elsewhere in the City, especially area outside the Urban Growth Boundary.
- Enhance Downtown's role as a center for retail activity and employment.
- Provide economic enrichment to the community and the region.

The objectives for the Regional Performing Arts Theater project include:

- Develop a 2,000 seat Theater in the Downtown to accommodate performances with a regional draw.
- Build a modern state-of-the-art regional cultural events facility for the Downtown.
- Provide a high quality designed building to augment the Downtown Livermore area.
- Support and enhance arts education.
- Play a significant role in the continued growth and development of Downtown Livermore as a shopping, dining and entertainment destination for area residents and visitors.
- Expand the attraction of Livermore and the entire Tri-Valley as a destination for tourism, both cultural and recreational.

A. ALTERNATIVE CONSIDERED BUT REJECTED

One alternative was considered but rejected for further evaluation because it failed to meet the basic project objectives. This alternative included the realignment of Railroad Avenue but did not include the development of a Regional Performing Arts Theater of any size. Under this alternative, the new First Street/Maple Street parcel created by the roadway realignment would be developed with office space, consumer services, and retail space. The First Street/South Livermore Avenue site would be developed with the following uses: commercial space, office space, and residential units. Mills Square Park would remain at its current location. The PT&T building would remain and would be redeveloped with space for City and/or non-profit sponsored art-related uses. The Livermore Village site is assumed to be developed with residential uses and a parking garage under this alternative as described above.

Because this alternative would not include development of a Theater, it would not meet the following project objectives and was rejected as a feasible alternative to the proposed project:

- Increase the seating capacity of a proposed Regional Performing Arts Theater in the Downtown to allow for large shows and performances with a regional draw.
- Develop a 2,000 seat Theater in the Downtown to accommodate performances with a regional draw.

- Build a modern state-of-the-art regional cultural events facility for the Downtown.
- Provide a high quality designed building to augment the Downtown Livermore area.
- Support and enhance arts education.
- Play a significant role in the continued growth and development of Downtown Livermore as a shopping, dining and entertainment destination for area residents and visitors.
- Expand the attraction of Livermore and the entire Tri-Valley as a destination for tourism, both cultural and recreational.

B. DESCRIPTION OF ALTERNATIVES

The five alternatives evaluated in this section are described below. A comparison of the impacts associated with each alternative is provided in Table V.1. As noted previously, each alternative is compared to the Theater at First Street/South Livermore Avenue without the Railroad Avenue realignment (also called the “proposed project” for purposes of this analysis).

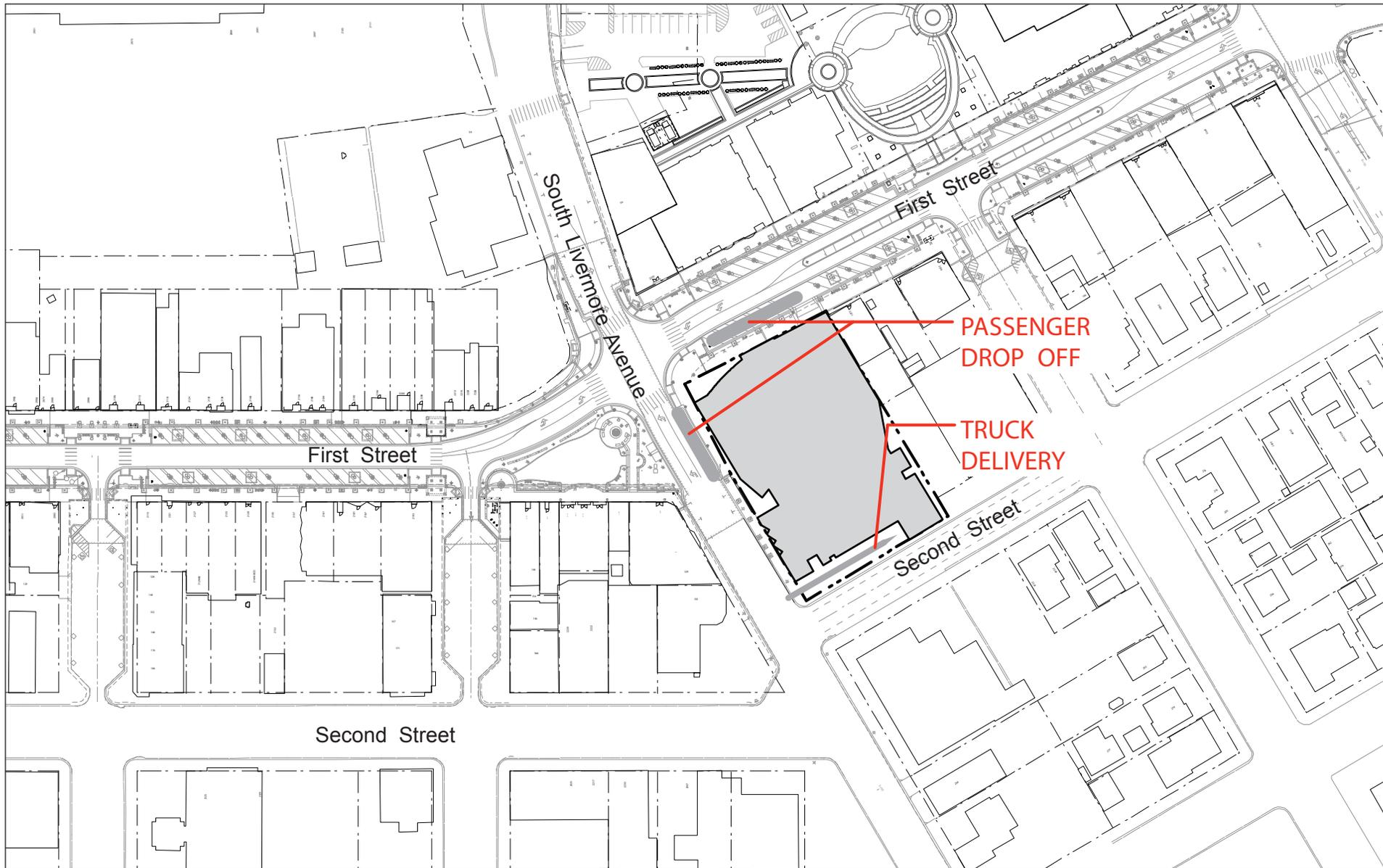
1. Regional Theater at the Southeast Corner of First Street/South Livermore Avenue and Realignment of Railroad Avenue and First Street (Alternative 1).

This alternative would include development of a 2,000 seat Theater at the First Street/South Livermore Avenue site. Figure V-1 shows a conceptual plan of the Theater at this site. This alternative would involve the demolition of two structures and relocation of the historic PT&T building. The entrance to the Theater would front on First Street. A patron pick-up and drop-off zone would be located on South Livermore Avenue and First Street.

As part of this alternative, a portion of Railroad Avenue would be realigned to connect with First Street to facilitate traffic circulation within the Downtown area. Vehicles traveling through the Downtown use the Railroad Avenue corridor as an alternative to the First Street corridor now that First Street has been narrowed and redesigned to accommodate walking trips within the Downtown. This traffic shift resulted in substantial numbers of vehicles making the right and left turns between First Street and Railroad Avenue. Realigning Railroad Avenue and First Street would provide a direct route onto Railroad Avenue for vehicles to travel through the Downtown with the added benefit of providing easier access to the existing parking garage on Railroad Avenue.

This realignment would result in the demolition of approximately three structures, the abandonment of a portion of First Street, the creation of a new Railroad Avenue/First Street intersection, and the creation of a new parcel bound by Maple Street, Second Street, and First Street (shown in Figure III-4). Under this alternative it is assumed that the new parcel created by the realignment would be developed with office space, consumer services, and retail space. The Livermore Village site is assumed to be developed with residential uses and a parking garage.

This alternative would meet all the project objectives identified above. This alternative would result in two significant unavoidable traffic impacts and two significant and unavoidable visual resources impacts associated with the change of a scenic resource (the PT&T building) and a cumulative visual resources impact.



LSA

FIGURE V-1



FIRST STREET/SOUTH LIVERMORE AVENUE SITE
(ALTERNATIVE 1)

NOT TO SCALE

*Downtown Specific Plan Amendments and
and Regional Performing Arts Theater EIR*
Conceptual Site Plan for the Theater at the
First Street/South Livemore Avenue Site

As identified in the traffic section of this EIR, intersection LOS analysis at the study intersections outside the Downtown would remain the same with no significant change in delay when compared against the Theater at this site without the realignment or other alternatives with the Theater. Nor would there be a measurable change to the freeway mainline segments, ramp junctions, and MTS roadways that were studied in this EIR. Intersection operations i.e., LOS within the Downtown, would remain similar to the other alternatives with slight variations given the location of the Theater site and available parking in the Downtown. The mitigation measures identified in section IV.C, Transportation and Circulation would continue to be applicable.

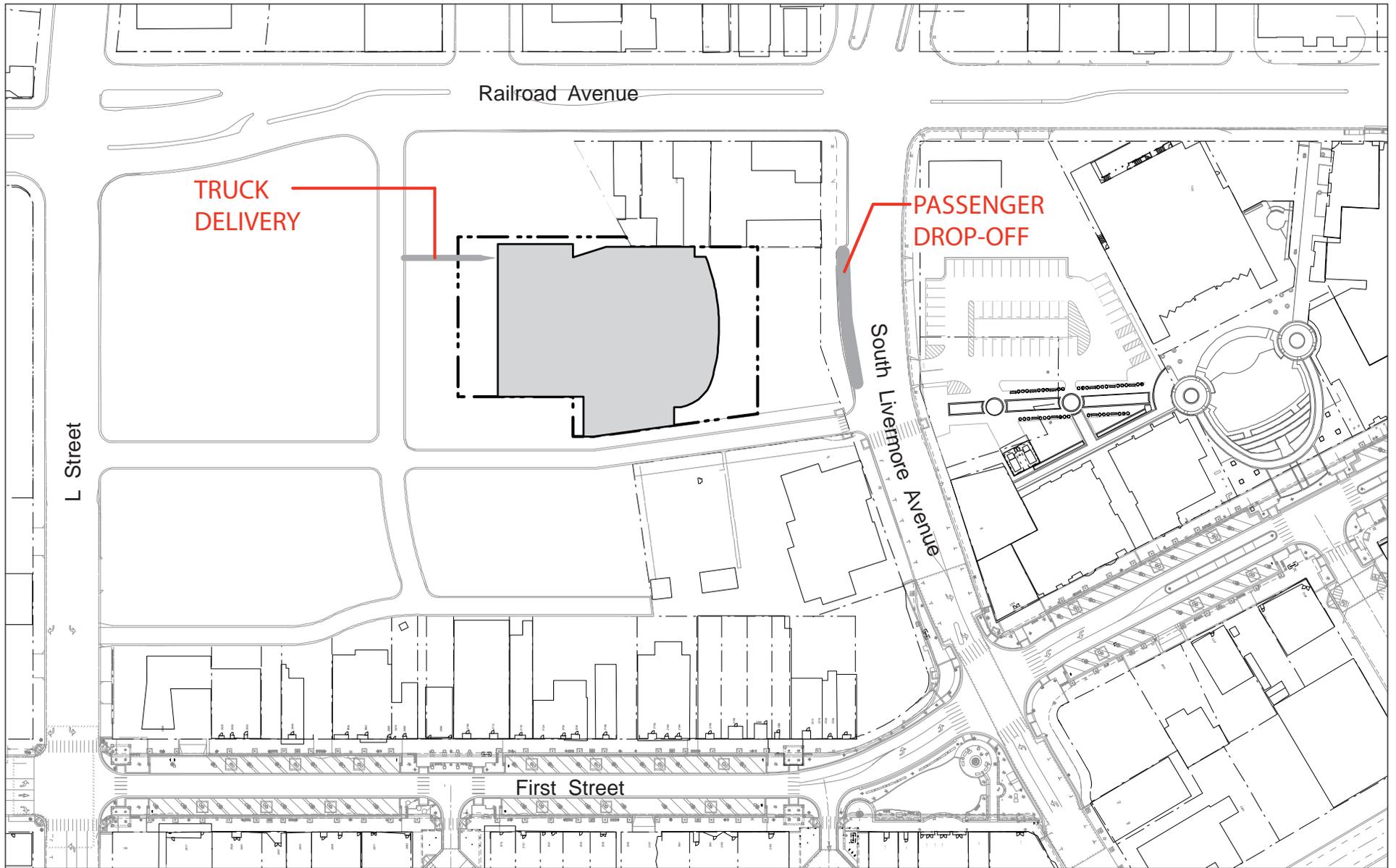
2. Regional Theater at the Livermore Village Site just south of Railroad Avenue and west of South Livermore Avenue (Alternative 2).

As part of this alternative, the Theater would be located on a portion of the Livermore Village site, the former Lucky's shopping center bounded by Railroad Avenue, South Livermore Avenue, First Street, and L Street (shown in Figure III-3). Figure V-2 shows a conceptual site plan of the parcel if the Theater were located at this site. The entrance to the Theater would front on South Livermore Avenue, and would include a patron pick-up and drop-off zone and a small plaza. The historic Southern Pacific Railroad Depot building, located on the Livermore Village site, would be relocated to the LAVTA Transit Center on Old First Street.

Under this alternative, the First Street/South Livermore Avenue site would be developed with commercial space, office space, and residential units. Mills Square Park would remain at its current location and the PT&T building would remain and be redeveloped with space for City and/or non-profit sponsored art-related uses. This alternative assumes that the Railroad Avenue/First Street realignment would not occur.

This alternative would meet all the project objectives listed above. As shown in Table V-1, in comparison to the proposed project and Alternatives 1 and 4, no significant unavoidable visual resources impacts associated with development of the Theater at the Livermore Village site would occur. It would result in two significant unavoidable traffic impacts.

Intersection LOS at the study intersections outside the Downtown would remain the same with no significant change in delay when compared against the proposed project. Nor would there be a measurable change to the freeway mainline segments, ramp junctions, and MTS roadways that were studied in this EIR. Intersection operations i.e., LOS within the Downtown would remain similar to the project with slight variations given the location of the Theater site and available parking in the Downtown. The mitigation measures identified in Section IV.C, Transportation and Circulation would continue to be applicable.



LSA

FIGURE V-2



LIVERMORE VILLAGE SITE
(ALTERNATIVES 2 AND 3)

NOT TO SCALE

SOURCE: GOOGLE EARTH, 2008.

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*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Conceptual Site Plan for the Theater
at the Livermore Village Site*

3. Regional Theater at the Livermore Village Site just south of Railroad Avenue and west of South Livermore Avenue and the Realignment of Railroad Avenue and First Street (Alternative 3)

This alternative would include development of the 2,000 seat Theater on the Livermore Village site (as described above) and would include the realignment of Railroad Avenue and First Street. The effects of the realignment would be the same as stated previously.

The new First Street/Maple Street parcel created by the roadway realignment would be developed with office space, consumer services, and retail space. Under this alternative, the First Street/South Livermore Avenue site would be developed with the following uses: commercial space, office space, and residential units. Mills Square Park would remain at its current location and the PT&T building would remain and would be redeveloped with space for City and/or non-profit sponsored art-related uses.

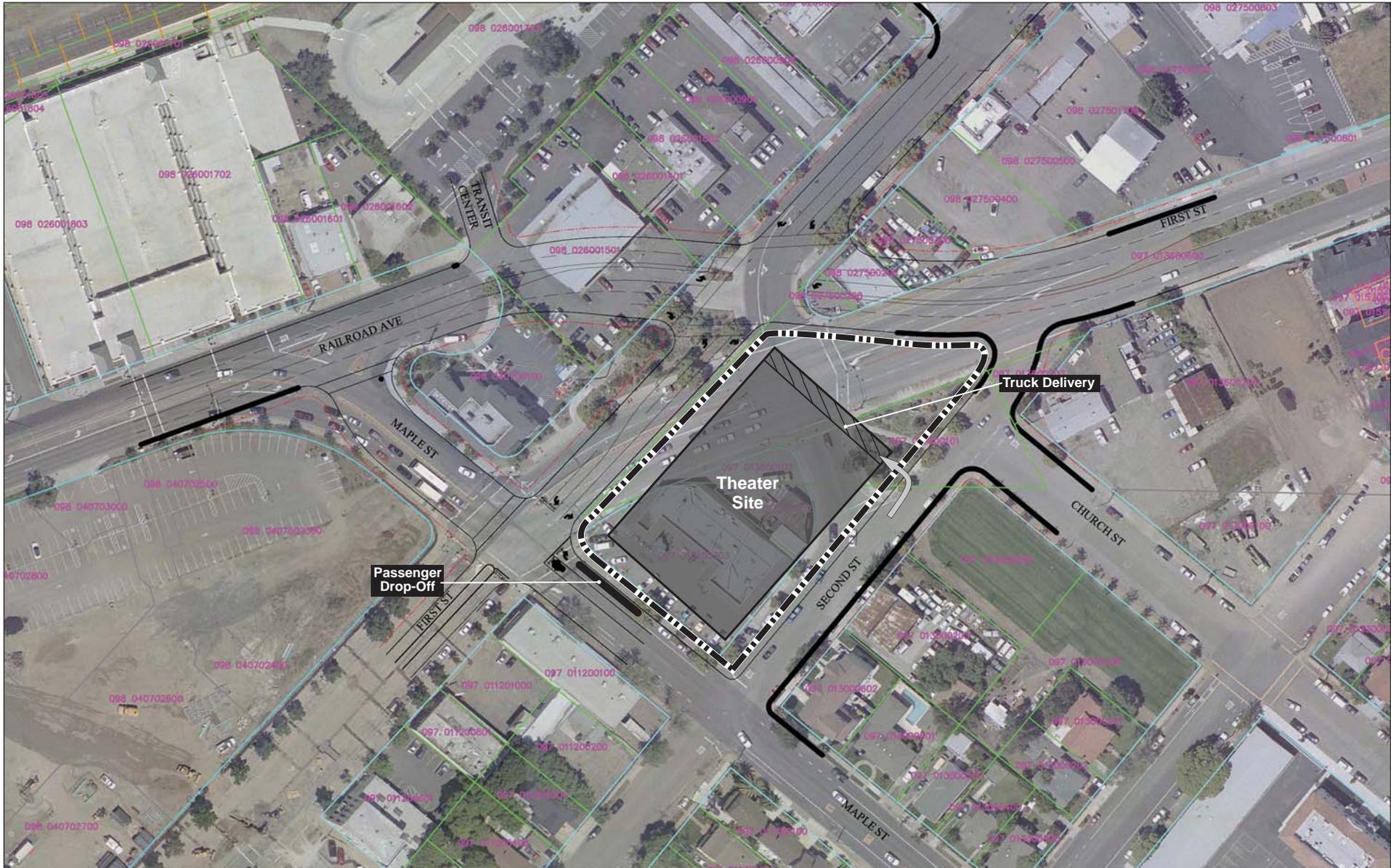
This alternative is different from Alternative 2 in that it includes the realignment of Railroad Avenue and First Street, as well as development of the new site created by this realignment. This alternative would meet all the project objectives listed above. Additionally, similar to Alternative 2, no significant unavoidable visual resources impacts associated with development of the Theater at the Livermore Village site would occur. It would result in the same two significant unavoidable traffic impacts as the other alternatives.

As part of this alternative, a portion of Railroad Avenue would be realigned to connect with First Street to facilitate traffic circulation within the Downtown area. Vehicles traveling through the Downtown use the Railroad Avenue corridor as an alternative to the First Street corridor now that First Street has been narrowed and redesigned to accommodate walking trips within the Downtown. This traffic shift resulted in substantial numbers of vehicles making the right and left turns between First Street and Railroad Avenue. Realigning Railroad Avenue and First Street would provide a direct route onto Railroad Avenue for vehicles to travel through the Downtown with the added benefit of providing easier access to the existing parking garage on Railroad Avenue.

Intersection LOS at the study intersections outside the Downtown would remain the same with no measurable change in delay when compared against the proposed project. Nor would there be a measurable change to the freeway mainline segments, ramp junctions, and MTS roadways that were studied in this EIR. Intersection operations i.e., LOS within the Downtown would remain similar to proposed project with slight variations given the location of the Theater site and available parking in the Downtown. The mitigation measures identified in Section IV.C, Transportation and Circulation would continue to be applicable.

4. Regional Theater at the Southeast Corner of First Street/Maple Street and the Realignment of Railroad Avenue and First Street (Alternative 4).

This alternative would include the realignment of Railroad Avenue and the construction of the Theater on the new parcel at the First Street/Maple Street site. Figure V-3 shows how the Theater would conceptually be placed on the newly created site. The realignment of Railroad Avenue would result in the same effects as identified above. The entrance to the Theater would front on Maple



LSA



NOT TO SCALE



FIRST STREET/MAPLE STREET SITE
CREATED BY ROADWAY REALIGNMENT



THEATER
(ALTERNATIVE 4)



TRUCK DELIVERY

FIGURE V-3

*Downtown Specific Plan Amendments and
Regional Performing Arts Theater EIR
Conceptual Site Plan for the Theater at the
First Street/Maple Street Site*

SOURCE: CITY OF LIVERMORE, 2008

I:\CLV0801 Dwtwn Livermore\figures\Fig_V3.ai (12/15/08)

Street, the closest corner to Downtown, and include a patron pick-up and drop-off zone on Maple Street. Under this alternative it is assumed that additional development at the new First Street/Maple Street parcel also would include office space in addition to the Theater.

Under this alternative the First Street/South Livermore Avenue site would be developed with the following uses: commercial space, office space, and residential units. Mills Square Park would remain at its current location. The PT&T building would remain and be redeveloped with space for City and/or non-profit sponsored art-related uses. The Livermore Village site is assumed to be developed with residential uses and a parking garage under this alternative as described above.

Similar to proposed project, this alternative would meet all the project objectives identified in Chapter III, Project Description. This alternative would result in the same two significant unavoidable traffic impacts and two significant and unavoidable visual resources impacts related to the substantial change to the visual character of the eastern gateway to the Downtown at First Street and a cumulative visual resources impact.

Intersection LOS at the study intersections outside the Downtown would remain the same with no significant change in delay when compared against the proposed project. Nor would there be a measurable change to the freeway mainline segments, ramp junctions, and MTS roadways that were studied in this EIR. Intersection operations i.e., LOS within the Downtown, would remain similar to proposed project with slight variations given the location of the Theater site and available parking in the Downtown. The mitigation measures identified in Section IV.C, Transportation and Circulation would continue to be applicable.

5. No Project Alternative: Buildout of Existing Downtown Specific Plan and Construction of a 1,500 Seat Regional Theater at the First Street/South Livermore Avenue site (Alternative 5)

This No Project alternative assumes that the development associated with buildout of the adopted Downtown Specific Plan and General Plan would occur. There would be no increase in development per the Amendments described previously, including no increase in seating at the Regional Performing Arts Theater and no new parking structure. A 1,500 seat Theater would be located at the First Street/South Livermore Avenue. While no site plans have been developed for a 1,500 seat Theater at this location, it is assumed that the footprint and orientation of the 1,500 seat Theater would be similar to that of the 2,000 seat Theater at the First Street/South Livermore site.

This alternative would not meet the following objectives:

- Increase the seating capacity of a proposed Regional Performing Arts Theater in the Downtown to allow for large shows and performances with a regional draw.
- Increase the amount of office/commercial square footage allowed in the Downtown to encourage a mix of uses and an active Downtown area.
- Provide adequate parking for existing and proposed land uses within the Downtown including a 2,000-seat Regional Performing Arts Theater.
- Develop a 2,000 seat Theater in the Downtown to accommodate performances with a regional draw.

As with the proposed project, this alternative would result in the same two significant unavoidable traffic impacts and two significant and unavoidable visual resources impacts associated with the change of a scenic resource and a cumulative visual resources impact at the First Street/South Livermore Avenue site similar to the proposed project and Alternative 1. This alternative does not include the Amendments or increase in the size of the Theater, major components of this project. As such, this alternative would not meet the overall project objectives.

C. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative in an EIR. Alternatives 2 or 3, the Theater sited at Livermore Village with or without realignment of Railroad Avenue, are considered to be the environmentally superior alternatives. Additionally, as shown in Table V-1, the same two significant and unavoidable traffic impacts would occur with the Theater at the other alternative locations or with the no project alternative. However, the Theater located at the other sites would result in additional significant unavoidable impacts. The realignment of Railroad Avenue would likely improve general circulation within the Downtown area in contrast to Alternative 2 (without realignment); however, the realignment is not needed to reduce impacts related to the Theater. With Alternative 3 there would be less-than-significant environmental impacts associated with the roadway realignment (UTIL-2 and HAZ-5) that would not occur with Alternative 2, but this EIR identifies mitigation measures to reduce these impacts to a less-than-significant level. Therefore, Alternatives 2 or 3, the Theater sited at Livermore Village with or without realignment of Railroad Avenue, are considered to be the environmentally superior alternative.

Table V.1: Alternatives Analysis

Environmental Topics	Proposed Project^a (First St./S. Livermore Site)	Alternative 1 (First St./S. Livermore Site and Roadway Realignment)	Alternative 2 (Livermore Village Site)	Alternative 3 (Livermore Village Site and Roadway Realignment)	Alternative 4 (First Street/Maple Street Site and Roadway Realignment)	Alternative 5^{b, c} (Existing Downtown Specific Plan Buildout)
Land Use and Planning Policy	○	○	POL-1 POL-2	POL-1 POL-2	POL-3 POL-4	○
Population and Employment	○	○	○	○	○	○
Transportation, Circulation and Parking	<i>TRANS-1</i> <i>TRANS-2</i> TRANS-3 TRANS-4 TRANS-7 TRANS-10 TRANS-11	<i>TRANS-1</i> <i>TRANS-2</i> TRANS-3 TRANS-4 TRANS-7 TRANS-10 TRANS-11	<i>TRANS-1</i> <i>TRANS-2</i> TRANS-3 TRANS-5 TRANS-8 TRANS-10 TRANS-11	<i>TRANS-1</i> <i>TRANS-2</i> TRANS-3 TRANS-5 TRANS-8 TRANS-10 TRANS-11	<i>TRANS-1</i> <i>TRANS-2</i> TRANS-3 TRANS-6 TRANS-9 TRANS-10 TRANS-11	<i>TRANS-1</i> <i>TRANS-2</i> TRANS-3 TRANS-4 TRANS-7 TRANS-10 TRANS-11
Air Quality	AIR-1	AIR-1	AIR-1	AIR-1	AIR-1	AIR-1
Global Climate Change	GCC-1	GCC-1	GCC-1	GCC-1	GCC-1	GCC-1
Noise	NOISE-1 NOISE-2 NOISE-3 NOISE-4	NOISE-1 NOISE-2 NOISE-3 NOISE-4	NOISE-1 NOISE-2 NOISE-3 NOISE-4	NOISE-1 NOISE-2 NOISE-3 NOISE-4	NOISE-1 NOISE-2 NOISE-3 NOISE-4	NOISE-1 NOISE-2 NOISE-3 NOISE-4
Cultural Resources	CULT-1 CULT-2 CULT-3 CULT-4 CULT-5	CULT-1 CULT-2 CULT-3 CULT-4 CULT-5	CULT-1 CULT-2 CULT-3 CULT-4 CULT-5	CULT-1 CULT-2 CULT-3 CULT-4 CULT-5	CULT-1 CULT-3 CULT-4 CULT-5	CULT-2 CULT-3 CULT-4 CULT-5
Hazards	HAZ-1 HAZ-2 HAZ-3	HAZ-1 HAZ-2 HAZ-3 HAZ-5	HAZ-1 HAZ-2 HAZ-3 HAZ-4	HAZ-1 HAZ-2 HAZ-3 HAZ-4 HAZ-5	HAZ-1 HAZ-2 HAZ-3 HAZ-5	HAZ-2 HAZ-3
Utilities and Infrastructure	○	UTIL-2	UTIL-1	UTIL-1 UTIL-2	UTIL-2	○
Visual Resources	<i>VIS-1</i> VIS-3 <i>VIS-4</i>	<i>VIS-1</i> VIS-3 <i>VIS-4</i>	VIS-3	VIS-3	<i>VIS-2</i> VIS-3 <i>VIS-4</i>	<i>VIS-1</i> VIS-3 <i>VIS-4</i>

Table notes on following page.

- ^a For comparison purposes, it is assumed that the Theater located at First Street/South Livermore Avenue (the site identified in the Downtown Specific Plan) without the Railroad Avenue realignment is the “proposed project.”
- ^b Alternative 5 is considered the No Project Alternative. Under this alternative it is assumed that the impacts associated with the Amendments would not occur and a parking garage would not be constructed at the Livermore Village site.
- ^c While no conceptual site plans have been prepared for projects under this alternative, it is assumed that the 1,500 seat Theater at First Street/South Livermore Avenue would have the same orientation and footprint as the 2,000 seat Theater at this location.
- indicates Less-than-Significant impacts
- CULT-1, etc. identifies the mitigation measure, if any, that addresses an identified impact.
- Bold italicized text*** indicates a significant unavoidable impact.

VI. CEQA-REQUIRED ASSESSMENT CONCLUSIONS

As required by the California Environmental Quality Act (CEQA), this chapter discusses the following types of impacts that could result from implementation of the proposed Downtown Specific Plan Amendments and Regional Performing Arts Theater project: effects found not to be significant; growth-inducing impacts; unavoidable significant environmental impacts; significant irreversible changes; and cumulative impacts.

A. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meetings among representatives of City of Livermore departments involved in the project planning and review, and consultants for the City, were held to preliminarily determine the scope of the Downtown Specific Plan Amendments and Regional Performing Arts Theater EIR. In addition to these meetings, an Initial Study was completed and a Notice of Preparation (NOP) was circulated on September 22, 2008 to solicit comments from the public and agencies about the scope of this EIR. Written comments received on the NOP (included in Appendix A of this document) were considered in the preparation of the final scope for this document and evaluation of the proposed project.

The environmental topics analyzed in Chapter IV, Setting, Impacts, and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts. The topics found to be less than significant and not analyzed in the EIR are described below and in the Initial Study found in Appendix A.

The following seven topics were considered but not addressed in this EIR because it was determined that the project would not cause significant impacts related to these topics: agricultural resources, biological resources, geology and soils, hydrology and water quality, mineral resources, public services, and recreation. These topics were evaluated in the Initial Study which is included in Appendix A.

a. Agricultural Resources. No agricultural resources are located in or near the Downtown Specific Plan area, and the area has not been in agricultural use since the 1860s, when Livermore's original commercial center was built. The Downtown Specific Plan area and the Theater project sites are classified as "Urban and Built-Up Land" by the State Department of Conservation. Implementation of the proposed project would not convert agricultural land to non-agricultural uses. In addition, none of the parcels located in the Downtown Specific Plan area, or any of the land adjacent to the Downtown area, is zoned for agricultural use. As such, implementation of the Amendments and Theater project would not conflict with existing zoning for agricultural uses or Williamson Act contracts. Impacts on agricultural resources would be less than significant.

b. Biological Resources. The Specific Plan area has been developed with urban uses since the 1860s. The Livermore General Plan Biological Resources Figure (Figure 8-1 of the General Plan) identifies the Downtown Specific Area as developed. The Downtown is an urban area that would not generally provide habitat for native plants and is likely to have low wildlife habitat value. While some

native wildlife species do utilize urban areas for foraging, roosting, and/or nesting, these species are expected to be common species that adapt to urban conditions and would not be adversely affected by implementation of the Amendments or the development of the Theater. Implementation of the Amendments and the Theater project would not have a significant impact on protected species.

The City of Livermore tree preservation ordinance identifies trees with protected status as trees located on private property occupied by commercial development with a circumference of 24 inches or more or located on an undeveloped/underdeveloped property with a circumference of 18 inches. Based on these definitions, there may be protected trees on all three of the potential Theater sites. The Theater applicant (or other applicants associated with the Amendments development) would be required to submit a tree permit to remove any protected trees, and would be required to follow the procedures outlined as part of the permit.

Implementation of the Amendments and Theater project would have a less-than-significant impact on biological resources.

c. Geology and Soils. The Downtown Specific Plan area and potential Theater sites are not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, there are a number of faults identified within the City of Livermore, and ground shaking hazard is a potentially significant impact. In addition, based on factors such as proximity to faults, groundwater level, and soil characteristics, ABAG has rated the Downtown Specific Plan area and potential Theater sites as having a moderate level of hazard for liquefaction.¹ While there is the potential for strong seismic shaking and liquefaction hazards within the Downtown Specific Plan area, implementation of Mitigation Measures GEO-1 and GEO-2 identified in the Initial Study (found in Appendix A), as well as implementation of policies and actions identified in the Livermore General Plan, Downtown Specific Plan, and General Plan EIR, would reduce these impacts to a less-than-significant level. Other geology and soil related impacts would be less-than-significant and are not further analyzed in this EIR. Please see the Initial Study in Appendix A for a discussion of Geology and Soils.

d. Hydrology and Water Quality. The construction of the Theater would disturb an area greater than 1.0 acre; therefore, the storm water quality discharge requirements of the CGP and Countywide NPDES Permit would apply to all the potential Theater sites. Potential impacts to surface water quality during the construction phase and the post-construction phase would be less-than-significant by completing each phase of the project in compliance with the corresponding permits. In addition, the Theater project and Amendments would not propose any use of local groundwater supplies (e.g., by installation and pumping of water supply wells), and would not lower the groundwater table as a result of groundwater extraction. Development of the Theater or the Amendments would not be expected to include unusual or unique industrial, commercial, or agricultural activities likely to generate materials that would significantly degrade water quality. Implementation of best management practices during construction and site design, source control, treatment, and potential hydromodification management measures during post-construction as required by the Water Board, ACCWP, and the City of Livermore would minimize hydrologic and water quality impacts, and reduce secondary impacts associated with runoff to a less-than-significant level. In addition, since the

¹ Association of Bay Area Governments (ABAG), 2004. *Interactive Susceptibility Map, Liquefaction Susceptibility Map*; based on work by William Lettis & Associates, Inc. and USGS Open-File Report 00-444, Knudsen & others, 2000. Website: www.abag.ca.gov. April

Downtown Specific Plan area is not located in a 100-year flood zone, a dam failure inundation hazard area, or near any enclosed or partially enclosed bodies of water, the Amendments and Theater project would not be subject to impacts associated with flooding or inundation by seiche, tsunami, or mudflow. Therefore, impacts to hydrology and water quality would be less-than-significant and are not further analyzed in this EIR. Please see the Initial Study in Appendix A for a discussion of Hydrology and Water Quality.

e. Mineral Resources. According to the City of Livermore General Plan and the California Geological Survey, there are high value sand and gravel deposits in the vicinity of Livermore. Most of the valley floor south of I-580 is classified as an area of significant mineral resources. However, the areas designated as “areas of regional significance” by the State Mining and Geology Board are located in the west and southern portions of the City, and are not within the Downtown Specific Plan area. As such, implementation of the proposed project would not result in the loss of locally-important mineral resources. Impacts on mineral resources would be less than significant and are not further analyzed in this EIR.

f. Public Services. The Amendments and the Theater project do not propose the construction of new or altered public service facilities. While the project would marginally increase demand for public services, it would not require the construction of new facilities to meet this increase in demand. Fire protection and emergency services are provided to the Downtown area by the Livermore-Pleasanton Fire Department (LPPD). Police protection services within the City of Livermore are provided by the Livermore Police Department (LPD). The Amendments and the Theater project would marginally increase the demand for fire and police services; however the Amendments and Theater would be located in an urban area already served by fire and police services. Both the LPPD and the LPD have sufficient facilities and offices for the required personnel. In addition, both the LPPD and LPD would review the Theater project site plans, and any future site plans associated with the Amendments, prior to project approval to identify potential fire fighting, safety, or emergency concerns. Any site planning or vehicular access concerns would be addressed via revisions to the project site plans prior to approval.

Because the project would not directly result in any local population increase, which would lead to a subsequent increase in student enrollment in public schools, implementation of the project would not require the construction of new schools or result in school capacity being exceeded. The Amendments and Theater project would not require the construction of new recreation facilities that would adversely impact the provision of parkland to population ratios or goals. Impacts on public services would be less than significant and are not further analyzed in this EIR.

g. Recreation. Implementation of the Amendments would increase the amount of commercial and office space planned for the area, which could indirectly lead to population growth due to the creation of new jobs. This indirect population growth could result in increased demand placed on recreational facilities. However, the marginal increase in demand for recreation facilities would not result in substantial physical deterioration of any such facility. As such, impacts on recreation would be less than significant and are not further analyzed in this EIR.

B. GROWTH-INDUCING IMPACTS

This section summarizes the project's growth-inducing impacts on the surrounding community. According to CEQA, a project is typically considered growth-inducing if it would foster economic or population growth. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

Implementation of the Amendments and the Theater would not result in direct population growth because it would not result in the development of new housing units. Indirect population growth could occur as a result of construction of new office, commercial, hotel, and Theater in the Downtown. As described in Section IV.B, Population, Employment, and Housing, the creation of 1,037 jobs from the Amendments and Theater project could cause new employees to move to the City, thereby inducing population growth. If all 1,037 new employees were from outside the City and relocated to Livermore – a highly unlikely scenario – this increase would represent approximately 1.3 percent of the City's 2005 population and 0.9 percent of the projected 2035 population. Indirect population growth associated with the Amendments and Theater project is not considered to be substantial in the context of the population growth projected to occur in the City (a maximum of 0.9 percent of the proposed growth). As such, the proposed project would not induce substantial growth.

Additionally, the proposed Amendments and Theater project would represent infill development within an existing urbanized area and would not require the extension of utilities or roads into undeveloped areas or directly or indirectly lead to the development of greenfield sites. Because the Amendments and Theater are proposed within an existing urbanized area and is served by transit, anticipated employment growth could reduce adverse impacts associated with automobile use, such as air pollution. Therefore, the growth that would occur as a result of the Amendments and Theater project would not be considered substantial or adverse.

C. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

The following describes the unavoidable significant environmental impacts associated with implementation of the Amendments and Theater project. As the analysis within this EIR evaluates three potential sites for the Theater project, certain unavoidable significant impacts may be associated with the development of the Theater at a certain site. In these cases, the location where the unavoidable significant impact would occur is identified.

Implementation of the Amendments and the Theater project would result in the following significant unavoidable impacts:

- Construction of the Theater in the Downtown would significantly affect operations of the Stanley Boulevard/Murrietta Boulevard (#10) intersection under existing plus Theater conditions.
- Construction of the Theater in the Downtown would significantly affect operations of the Eastbound I-580 Off-Ramp at Portola Avenue under existing plus Theater conditions.
- Construction of the Theater at the First Street/South Livermore Avenue site would result in the relocation or removal of the PT&T building, resulting in a change to a scenic resource.

- Construction of the Theater at the First Street/Maple Street site would alter the visual character of the First Street gateway/entry into Downtown.
- Construction of the Theater at either the First Street/South Livermore Avenue site or the First Street/Maple Street site, in addition to projects in the Downtown developed under the cumulative conditions, would result in a cumulative visual resources impact.

D. SIGNIFICANT IRREVERSIBLE CHANGES

An EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of non-renewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA dictates that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.² The *CEQA Guidelines* describe three distinct categories of significant irreversible changes: 1) changes in land use that would commit future generations; 2) irreversible changes from environmental actions; and 3) consumption of non-renewable resources.

1. Changes In Land Use Which Commit Future Generations

Development associated with the Amendments and Theater project would occur in the Downtown Specific Plan area, which has experienced urban development since the 1860s. The mix of land uses proposed by the Amendments and Theater would be similar to the current mix of uses within the Downtown Specific Plan area. The Downtown Specific Plan area has a performing arts theater, hotel rooms, office space, commercial uses, and movie theaters. The proposed Amendments would allow for an increase in the square footage of uses to existing and proposed uses identified in the General Plan and Downtown Specific Plan. The Downtown Specific Plan area is a developed urban area, and the proposed Amendments and Theater project would commit future generations to more intense development; however, development within the Downtown urban area is more compact and pedestrian-friendly. As such, implementation of the Amendments and the Theater project would not result in a change in land use but a change in land use development intensity.

2. Irreversible Damage From Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of a hazardous material, is anticipated with implementation of the Amendments and Theater. The use of hazardous materials (beyond standard construction supplies and household waste) is not proposed.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. The Downtown Specific Plan area is located within an urbanized part of Livermore, and there are no agricultural land uses within the Downtown. As the site has not been used for mineral extraction, loss of access to any minerals that historically occurred on-site would not occur. The project would require additional electricity and natural gas. However, the scale of such consumption for the proposed project would be typical for the type of development proposed and would not be considered excessive or significant. Additionally, locating the

² *CEQA Guidelines*, 2007. §15126.2(c).

development proposed by the project within an urban area served by transit would likely allow for reduced energy consumption associated with transportation.

E. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as “two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts.” Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited, but cumulatively significant. These impacts can result from the proposed projects alone or together with other projects.

1. Methodology

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, or reasonably anticipated relevant projects, including projects outside the control of the lead agency, or a summary of the projections in an adopted planning document, such as a General Plan. This cumulative impacts analysis uses the projections contained in the City of Livermore General Plan, adopted in 2004, and evaluated in the General Plan EIR, certified in February of 2004.

2. Cumulative Effects of the Downtown Specific Plan Amendments and the Regional Performing Arts Theater

The following analysis examines the cumulative effects of the proposed project for each of the topics that are analyzed in Chapter IV of the EIR.

a. Land Use and Planning Policy. Implementation of the Amendments would allow for more development within the Downtown, but does not change the types of development currently permitted. As has been noted in Section IV.A-1, development standards and design guidelines are outlined in the Downtown Specific Plan that would be applicable to development within the Downtown, and would help to reduce potential land use conflicts between existing and future development. The Amendments and Theater project would result in a less-than-significant cumulative land use impact.

b. Population, Employment, and Housing. As discussed in Section IV.B, Population, Employment and Housing, the proposed Amendments and Theater project would not directly increase the City’s population because no additional housing units are proposed. However, buildout of the Amendments and Theater would create new jobs, which could indirectly induce population growth in the City. Cumulative development in the Downtown area could generate both jobs and housing; however this increase in jobs and housing would be consistent with population and employment projections, and would not result in a cumulative significant impact.

c. Transportation, Circulation and Parking. Please refer to Section IV.C, Transportation, Circulation and Parking for a discussion of the cumulative effects on transportation.

d. Air Quality. Please refer to Section IV.D, Air Quality, for a more detailed discussion of the cumulative effects on air quality. As is described in air quality section, there are no significant cumulative air quality impacts.

e. Noise. Please refer to Section IV.F, Noise, for a discussion of the cumulative effects on noise. As described in the noise section, increases in noise levels associated with traffic under the cumulative conditions would not be significant and unavoidable. Construction-period activities would be subject to standard noise-reduction measures and would not adversely impact sensitive receptors.

f. Global Climate Change. Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in greenhouse gasses (GHGs) and (b) global growth is continuing to contribute large amounts of GHGs across the globe. Therefore, Section IV.E, Global Climate Change addressed climate change as a cumulative impact. As described in this section, with implementation of the elements and strategies listed in Mitigation Measure GCC-1 and application of all regulatory requirements, the project's contribution to cumulative GHG emissions would be reduced to a less-than-significant level. In addition, the project would not conflict with or impede implementation of reduction goals identified in AB 32, the Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor.

g. Cultural Resources. Downtown Livermore has a rich cultural history and many historic buildings. Construction activities associated with the proposed project and buildout of the Downtown could result in significant impacts to identified and unidentified historical, archaeological and paleontological resources. However, similar to the proposed project, each future project would be subject to the policies and guidelines within the General Plan and Downtown Specific Plan, environmental analysis, and mitigation measures designed to protect cultural resources. Required mitigation might include the monitoring of construction areas around known archaeological sites or areas of archaeological sensitivity, reporting the recovery of any unidentified human remains to the appropriate authorities, and the preservation of significant cultural resources or mitigation of project impacts to such resources.

Additionally, the proposed project could result in the moving of a historic resource within the Downtown (the PT&T building at the First Street/South Livermore Avenue site or the Railroad Depot at the Livermore Village site). However, the structures would be relocated within the Downtown, and would still contribute to the historic fabric of the Downtown. The proposed project would not result in a substantial cumulative impact to cultural resources.

h. Hazards and Hazardous Materials. As described in Section IV.H, Hazards and Hazardous Materials, implementation of the Amendments and Theater project could expose construction workers and/or the public to hazardous materials releases during and after construction as soil and groundwater in portions of the Downtown Specific Plan area may be contaminated with heavy metals, petroleum hydrocarbons, chlorinated solvents, and pesticides due to historical land uses. Construction activities as well as any other operations at the Theater sites or other project sites in the Downtown that use, store, or dispose of hazardous materials would be required to comply with federal, State, and local requirements for managing hazardous materials. No significant unavoidable impacts related to hazards would result from construction or operation of the proposed project, and the project would not contribute to any cumulative hazards impacts.

i. Utilities. Implementation of the proposed project and cumulative projects would increase the demand for water, wastewater treatment, and energy on a regional level. Utility improvements funded

by project applicants, routine expansions of wastewater treatment plants and infrastructure, and energy conservation measures would ensure that cumulative development would have less-than-significant cumulative impacts on wastewater treatment and energy. The increase in wastewater and stormwater generated by the proposed Amendments and Theater project would be slightly higher than what is identified in the appropriate utility master plans since those plans were based on buildout of the General Plan and Downtown Specific Plan. However, the existing and planned wastewater and stormwater facilities would have sufficient capacity to handle the increased flows.

The General Plan EIR found that the City of Livermore has sufficient water and wastewater conveyance, treatment and disposal capacity to serve projected growth under the General Plan in the City of Livermore.³ Fire flows for the Livermore Village site may be inadequate for a regional Theater. The proposed Amendments and Theater project would increase the amount of certain uses within the Downtown Specific Plan area beyond what was considered as part of the General Plan. However, as evaluated in section IV.I, Utilities and Infrastructure in this EIR, the existing water, wastewater, stormwater, and energy systems within the Specific Plan area can accommodate the additional demand with potential improvements to provide adequate fire flows at the Livermore Village site.⁴ The proposed project would not require the construction of additional wastewater distribution facilities, storm drainage facilities, and new water delivery infrastructure to serve the site. It would therefore not contribute to a cumulative impact related to local infrastructure. As noted in Section IV.I, Utilities and Infrastructure, the proposed project does not meet any of the requirements for preparation of a Water Supply Assessment (WSA) under SB 610. The City estimates that 500 dwelling units (at a density of 8 units/acre)⁵ would require approximately 125,000 gpd of water. As noted in the section, this is significant more water usage than is projected with the proposed project (34,426 gpd).

j. Visual Resources. Depending on which Theater alternative site is selected, the project could result in a significant cumulative visual resources impact. Section IV.J, Visual Resources, identifies significant and unavoidable visual impacts associated with the Theater being constructed at either the First Street/South Livermore Avenue site or the First Street/Maple Street site. Construction of the Theater at the First Street/South Livermore Avenue site would result in a significant unavoidable visual impact related to the removal of the PT&T building, considered a scenic resource. The construction of the Theater at the First Street/Maple Street site would result in a significant unavoidable impact related to the alteration of a gateway view into the Downtown.

If the Theater is constructed at either the First Street/South Livermore Avenue site or the First Street/Maple Street site, surrounding development associated with cumulative development would result in a significant unavoidable cumulative visual resources impact. If the Theater is constructed at the Livermore Village site, the potential impact would be less than significant.

³ LSA Associates, Inc., 2003. Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report. June.

⁴ Frost, Susan, Principal Planner, City of Livermore. 2008. Personal communication with LSA Associates Inc. December.

⁵ As a higher density residential development is likely to use less water, 8 units/acre was selected for this analysis in order to have a conservative water usage estimate.

Impact VIS-4: Development of the Theater at either the First Street/South Livermore Avenue site or the First Street/Maple Street site, in addition to projects developed under the cumulative conditions, would result in a cumulative visual resources impact.(S)

While proposed projects developed under the cumulative conditions would be subject to the City's Design Review process, any development in the immediate surrounding area to these two locations would contribute to the visual impact.

Mitigation Measure VIS-4: There are no mitigation measures available to reduce this impact to a less-than-significant level. If the Livermore Village site is chosen, this impact would be less than significant. (SU)

As there have been no significant visual impacts identified for construction of the Theater at the Livermore Village site, the project and cumulative development would not be considered a significant visual impact at this site.

VII. REPORT PREPARATION

A. REPORT PREPARATION

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**NOTICE OF COMPLETION
DOWNTOWN SPECIFIC PLAN AMENDMENTS AND REGIONAL PERFORMING
ARTS THEATER DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT**

Project Title: Downtown Specific Plan Amendments and Regional Performing Arts Theater

Project Description: The City proposes Amendments to the Downtown Specific Plan and General Plan to: increase the size of a proposed regional performing arts theater from 1,500 seats to 2,000 seats; increase the number of movie screens from 12 screens to 15 screens; increase the number of hotel and bed and breakfast rooms in the Downtown area to 300 rooms; increase the amount of commercial development from 855,000 square feet to 1,000,000 square feet; increase the amount of office development from 217,000 square feet to 356,000 square feet; include a new second parking structure within the Downtown Core Area; and add a new chapter (Chapter 11, Financing) to the Downtown Specific Plan. Additionally the project includes the construction of a 2,000 seat Theater on one of three sites within the Downtown. One of the potential Theater sites (First Street/Maple Street site) would be created via the realignment of Railroad Avenue which is also evaluated in the DEIR. The attached figure shows these potential locations.

The EIR concluded that the project could result in significant unavoidable impacts related to transportation and circulation, and visual resources. All other identified impacts could be reduced to a less-than-significant level.

The City of Livermore, as lead agency, has prepared a Draft Subsequent Environmental Impact Report (EIR) for the above-mentioned project.

Copies of the Draft Subsequent EIR are available for review during normal business hours at the Livermore Planning Division, 1052 South Livermore Avenue, and the Livermore Public Library Main Branch, 1188 South Livermore Avenue. Copies are also available for purchase at the Livermore Planning Division. The Draft Subsequent EIR is also available on the City's website at www.ci.livermore.ca.us.

The review period for the Draft Subsequent EIR is from **January 9, 2009 to February 23, 2009**.

A public hearing on the Draft Subsequent EIR is scheduled for the Planning Commission meeting on February 17, 2009 beginning at 7:30 p.m. at the Livermore City Council Chambers, 3575 Pacific Avenue.

Please submit written comments to:

Susan Frost
Principal Planner
Livermore Planning Department
1052 South Livermore Avenue
Livermore, CA 94550

Please contact Susan Frost, at (925) 960-4450 or smfrost@ci.livermore.ca.us if you have any questions.



Susan Frost
Principal Planner
Community Development Department
Planning Division

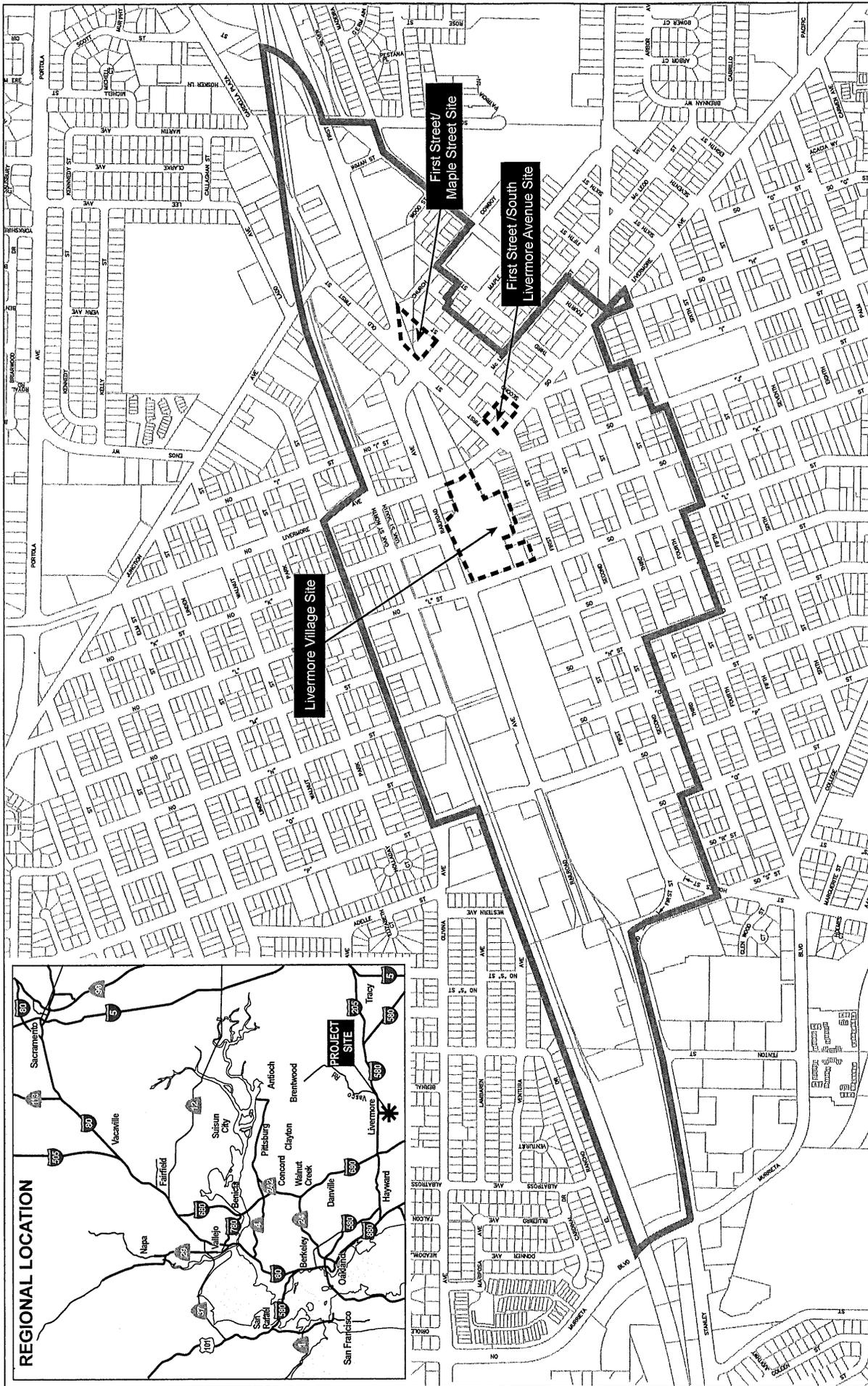


FIGURE I
 Downtown Specific Plan Amendments and
 Regional Performing Arts Theater EIR
 Downtown Specific Plan Boundary and Alternative
 Regional Performing Arts Theater Sites

-  DOWNTOWN SPECIFIC PLAN BOUNDARY
-  ALTERNATIVE REGIONAL PERFORMING ARTS THEATER SITES

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SOURCE: CITY OF LIVERMORE, 2003.
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