#### INTRODUCTION

To provide the context on which potential impacts can be assessed, this chapter presents information on existing baseline noise levels and sources of noise within the City's planning area. This chapter also provides information on the regulatory setting that applies to noise issues. Background information on environmental acoustics, including definitions of terms commonly used in noise analysis, is provided in Appendix D.

#### SETTING

#### **Davis Planning Area**

Noise-sensitive uses (i.e., sensitive receptors) within the City's planning area include residential areas, schools, churches, nursing homes/senior housing, hospitals, libraries, and childcare facilities. Major sources of noise within the planning area include:

- traffic noise on I-80, Highway 113 and arterial streets;
- railroad noise from trains traveling on the Union Pacific Railroad track and the California Northern (CalNorthern) railroad track;
- aircraft noise in the vicinity of the UC Davis Airport; and
- stationary noise sources related to industrial facilities and agricultural activities.

The following is a discussion of these sources of noise.

#### **Traffic Noise**

Existing traffic noise conditions within the planning area have been evaluated using the Federal Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic data developed for this EIR (see Chapter 5D, "Traffic and Circulation", for details on existing traffic data). The noise model takes into account traffic volumes, speed, vehicle mix, and the acoustical absorption

characteristics of the ground. For this EIR, traffic noise levels along roadways with current or predicted traffic volumes that exceed 2,000 vehicles per day have been evaluated.

The model prepared for this EIR evaluates a 1-hour average traffic noise level. To assess the maximum noise level, the maximum hourly traffic volume during the day (peak hour) was used. Based on data collected for the General Plan update traffic study, the peak hour is approximately 9.5% of the total daily volume. For noise, this peak hour level was rounded to 10% (the affect of this change on noise is an increase of about 0.2 dB when compared to using a 9.5% factor). Using the peak hour traffic, the maximum 1-hour average traffic noise level was then calculated. Previous studies indicate the 24-hour day-night average sound level ( $L_{\rm dn}$ ) values in the planning area are typically about 1 decibel (dB) greater than the maximum 1-hour average traffic noise level.  $L_{\rm dn}$  values were therefore estimated by adding 1 dB to the calculated maximum hourly noise levels.

Table 5F-1 summarizes the results of the traffic noise modeling for existing conditions. The table includes predicted  $L_{\text{dn}}$  values at a distance of 100 feet from centerline of each roadway segment. The table also shows the distance from each roadway centerline to the 70, 65, and 60  $L_{\text{dn}}$  contours. The traffic noise modeling results indicate that Citywide, development is currently exposed to traffic noise levels in the range of 48- to 81-dBA  $L_{\text{dn}}$  at 100 feet from centerline. Table 5F-2 can be used as a general guide for project-specific adjustments that can be conservatively applied to the results in Table 5F-1 and other traffic noise tables in this chapter. For complex situations, detailed modeling rather than these guideline adjustments should be used.

Table 5F-2. Traffic Noise Adjustments for Various Topographic Conditions

	_	Distance from Center of Roadway (fee				
Topographic Situation	))	<200	200-400	>400		
Hillside overlooks roadway		0	+1 dB	+3 dB		
Roadway elevated (>15 feet)		-5 dB	-2 dB	0		
Roadway in cut/below embankment		-5 dB	-5 dB	-5 dB		
Dense vegetation blocking line of sight (100 feet or more)		-5 dB	-5 dB	-5 dB		

Source: Brown-Buntin Associates 1993.

#### Railroad Noise

Trains passing through the City's planning area on the Union Pacific and CalNorthern railroad tracks are a source of noise in the planning area. The Union Pacific Railroad track runs eastwest along the northern side of I-80 and carries freight and passenger trains. Noise levels resulting

		Comi	0.00		e Exp EL, dB)		
Land Use Category	5	55 6					80 8 I
Residential		-2.		::::::::::::::::::::::::::::::::::::::			
Transient Lodging – Motel, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes				****			
Auditoriums, Concert Halls, Amphitheaters				*****			
Sports Arenas, Outdoor Spectator Sports	32000						
Playgrounds, Neighborhood Areas							
Golf Courses, Riding Stables, Water Recreation, Cemetaries							
Office Buildings, Business Commercial and Professional							****
Industrial, Manufacturing, Utilities, Agriculture	¥.2.3.55;						*****
Normally Acceptable. Specified land use buildings involved are of normal convention requirements.							
Conditionally Acceptable. New construct detailed analysis of the noise reduction requincluded in the design.							
Normally Unacceptable. New construction construction or development does proceed, must be made and needed noise insulation	, a detaile	d analys	is of the	noise			
Clearly Unacceptable. New construction	or develop	oment cl	early sh	ould no	t be und	dertaken	n.
Sources: State of California General Plan Guidelines, Ju Charles M. Salter Associates, Inc.	ine 1987						

Redrawn from: City of Davis Community Development Department 1987a.



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Table 5F-1. Modeled Traffic Noise Level for Existing Conditions (Alternative 1)

Page 1 of 2

		L <sub>dn</sub> Noise	Distance to Noise Contour From Roadway Centerline (feet			
Roadways	Segment	Level at 100 Feet	$\frac{70 \text{ H Koad}}{70 \text{ L}_{dn}}$	65 L <sub>dn</sub>	60 L <sub>dn</sub>	
First Street	A Street to F Street	61	26	55	120	
Second Street	3rd Street to Pole Line Road	57	15	32	68	
Second Street	Pole Line Road to Mace Boulevard	59	17	37	81	
	West of Mace Boulevard	59	18	40	86	
Fifth Street	B Street to J Street	62	30	64	139	
riiii sueei	J Street to Pole Line Road	61	26	57	123	
		59	19	40	87	
	Pole Line Road to Juniper Point	59	19	42	90	
	Juniper Point to Pena East of Pena	56	11	23	51	
F: 1.1 C: .		57	15	31	68	
Eighth Street	Sycamore Lane to F Street		16	34	74	
	F Street to J Street	58	14	30	65	
	J Street to L Street	57		34	73	
	L Street to Pole Line Road	58	16			
	East of Pole Line Road	55	10	21	45	
14th Street	Oak Avenue to F Street	55	10	22	47	
Arlington Boulevard	Lake Boulevard to Russell Boulevard	58	17	36	77	
Chiles Road	Cowell Boulevard to Mace Boulevard	58	17	36	77	
	Mace Boulevard to infill	57	13	27	59	
	Infill to PG&E	57	13	27	59	
	PG&E to Webster ramps	55	10	21	45	
County Road 31	West of Lake Boulevard	65	44	95	205	
County Road 32A	East of Mace Boulevard	56	11	24	51	
Covell Boulevard	Lake Boulevard to Shasta Drive	65	49	105	226	
	Shasta Drive to F Street	65	48	103	223	
	F Street to Sycamore Lane	65	49	106	229	
	Sycamore Lane to Pole Line Road (overcrossing)	65	49	105	226	
	Pole Line Road to Alhambra Drive	66	55	118	253	
	Alhambra Drive to Mace Boulevard	64	39	85	182	
Cowell Boulevard	Research Park Drive to Pole Line	62	30	65	140	
	Pole Line Road to Chiles Road	60	21	44	96	
	Chiles Road to Mace Boulevard	58	15	33	71	
	East of Mace Boulevard	51	5	11	24	
Hutchison Drive	F Street to La Rue Road	62	28	60	130	
I-80	East of Webster	81	570	1,227	2,644	
1-80	Webster to Mace Boulevard	81	563	1,214	2,615	
	Mace Boulevard to Olive Drive	81	534	1,151	2,480	
	Olive Drive to Richards Boulevard	81	528	1,137	2,449	
	Richards Boulevard to F Street	81	527	1,135	2,446	
	West of F Street	81	507	1,091	2,351	
Lillard Drive	Pole Line Road to Drummond Avenue	58	17	36	78	
2	East of Drummond Avenue	52	6	14	29	
Old Davis Road	West of A Street	58	16	34	73	

		L <sub>dn</sub> Noise Level at		e to Noise ( dway Cente	
Roadways	Segment	100 Feet	70 L <sub>dn</sub>	65 L <sub>dn</sub>	60 L <sub>dn</sub>
Russell Boulevard	West of Lake Boulevard	56	12	26	57
	Lake Boulevard to Arlington Road	62	31	68	146
	Arlington Road to F Street	65	46	98	212
	F Street to Anderson Road	64	39	84	181
	Anderson Road to Oak Avenue	65	48	103	222
	Oak Avenue to B Street	65	49	106	229
Anderson Road	F Street to Catalina Drive	53	8	17	36
	Catalina Drive to Covell Boulevard	56	11	24	51
	Covell Boulevard to Valdora Drive	60	20	44	94
	Valdora Drive to Eighth Street	60	21	44	96
	Eighth Street to Russell Boulevard	60	21	46	99
B Street	14th Street to Eighth Street	55	10	22	47
D Bucci	Eighth Street to Russell Boulevard	57	14	31	66
	Russell Boulevard to First Street	60	23	49	106
California Avenue	South of Russell Boulevard	58	15	32	69
Catalina Drive	Grande Avenue to Covell Boulevard	52	6	13	28
F Street	Grande Avenue to Covell Boulevard	59	19	41	88
r Succi	Covell Boulevard to 14 <sup>th</sup> Street	60	21	45	98
	14th Street to Eighth Street	59	20	43	92
	Eighth Street to Fifth Street	59	19	40	86
	Fifth Street to First Street	59	19	42	90
	South of Russell Boulevard	61	24	51	111
Howard Way		55	11	23	49
J Street	Covell Boulevard to Eighth Street	48	3	7	16
* 1 D 1 1	Eighth Street to Third Street	56	12	27	58
Lake Boulevard	North of Covell Boulevard	60	22	47	101
Lake Boulevard	Covell Boulevard to Arlington Boulevard	55	10	21	45
	Arlington Boulevard to Russell Boulevard	66	58	124	267
Mace Boulevard	Covell Boulevard to Second Street			140	302
	Second Street to Chiles Road	67	65 34	74	159
	Chiles Road to Cowell Boulevard	63			88
· · · · · · · · · · · · · · · · · · ·	Cowell Boulevard to Montgomery Road	59	19	41	
Oak Avenue	Covell Boulevard to 14th Street	57	13	28	61
	14th Street to Eighth Street	54	9	19	40
E van de la company de la comp	Eighth Street to Russell Boulevard	52	7	15	32
Pole Line Road	North of Covell Boulevard	67	62	134	289
	Covell Boulevard to Loyola	59	17	37	80
	Loyola to Eighth Street	59	19	41	87
	Eighth Street to Fifth Street	60	20	43	94
	Fifth Street to Cowell Boulevard	60	22	48	104
Richards Boulevard	E Street to East Olive Drive	66	54	116	250
F Street	I-80 to Hutchison Drive	77	288	620	1,337
	Hutchison Drive to Russell Boulevard	76	268	578	1,245
	Russell Boulevard to Covell Boulevard	76	242	520	1,121
	North of Covell Boulevard	75	200	430	926
Sycamore Lane	North of Covell Boulevard	60	21	46	100
TO COMMAND	Covell Boulevard to Russell Boulevard	57	14	31	67

primarily from train traffic along the Union Pacific route were measured during preparation of the Gateway/Olive Drive Specific Plan EIR (City of Davis 1999). Twenty-four train pass-bys were measured during a 24-hour period with maximum noise levels from individual whistle blasts and engines ranging from 85 dBA to over 112 dBA at 30 feet from the track. An  $L_{dn}$  value of 82 dBA was measured at 30 feet. This corresponds to the 60  $L_{dn}$  contour being approximately 880 feet from the track.

A Union Pacific track runs north-south through the City east of F Street. North of Third Street, CalNorthern Railroad leases the tracks (this north-south route is referred to as the CalNorthern Railroad in this EIR). The track crosses Third, Fourth, and East Eighth Streets at grade and crosses under Covell Boulevard. Noise from trains passing on the CalNorthern tracks was evaluated during preparation of the Covell Center Project EIR (City of Davis 1996). CalNorthern runs about four freight train trips per day during daytime hours. Without whistle blasts, the calculated L<sub>dn</sub> value is 56 dBA at 100 feet from the track. This corresponds to the 60 L<sub>dn</sub> contour being 50 feet from the track. With whistle blasts, the calculated L<sub>dn</sub> value is 61 dBA at 100 feet. This corresponds to the 60 L<sub>dn</sub> contour being about 110 feet from the track where it crosses at grade roadways.

#### **Aircraft Noise**

The UC Davis Airport is the only airport in the immediate vicinity of Davis. The airport is used almost exclusively for flight training and for infrequent, short-duration operations. No impact to noise-sensitive uses has been found to exist (City of Davis 1999).

## **Stationary Noise Sources**

Industrial and manufacturing facilities are typical stationary sources of noise. Within the City, the former Hunt-Wesson tomato processing plant is the largest stationary source of noise in the City. Noise from the former Hunt-Wesson facility has been evaluated in detail as part of studies relating to development of the Covell Center property site. The studies on the site indicate that noise from the plant results in a 60 community noise equivalent level (CNEL) contour that extends across approximately the southern half of the Covell Center property site (City of Davis 1996).

#### Sites Being Studied

Table 5F-3 summarizes existing sources of noise and resultant noise modeling levels for the sites being studied. Noise levels are based on estimates of traffic volumes developed for the traffic analysis that is more fully described in Chapter 5D, "Traffic and Circulation".

Table 5F-3. Summary of Modeling Results for Existing Noise Levels at the Sites Being Studied

Sites Being Studied	<b>Existing Noise Sources</b>	Noise Levels
Nishi/Gateway	I-80 – south	65- to 80-dB L <sub>dn</sub>
Covell Center property	F Street and CalNorthern RR - west	>60-dB L <sub>dn</sub> (100-300 feet)
	Covell Boulevard – south	>60-dB L <sub>dn</sub> (100-300 feet)
	Pole Line Road – east	>60-dB L <sub>dn</sub> (100-300 feet)
	Former Hunt-Wesson – southwest	>60-dB L <sub>dn</sub> over half of the
		southern portion of the site
Signature	Covell Boulevard - north and east	60-dB L <sub>dn</sub> within 200 feet
Mace Ranch interior retail	Loyola and Alhambra Drives – adjacent	<60-dB L <sub>dn</sub>
Under Second Street	Union Pacific Railroad and I-80 - south	65- to 80-dB L <sub>dn</sub>
Sutter-Davis Hospital	State Route 113 – east	65- to 75-dB L <sub>dn</sub>
	Covell Boulevard – north	
Oeste Campus	County Road 99 - west	65- to 80-dB $L_{dn}$
Davis Technology Campus	I-80 – south	65- to 80-dB L <sub>dn</sub>
Intervening lands	I-80 – north	65- to 80-dB L <sub>dn</sub>

#### **Regulatory Setting**

In California, cities and counties are required to adopt a noise element as part of their general plan. Cities and counties can also adopt noise control requirements within their zoning ordinances or as a separate noise ordinance.

#### **Existing General Plan, Noise Element Policies**

The existing Noise Element of the General Plan establishes general land use compatibility criteria through the chart shown in Figure 5F-1. Locations exposed to values of 60 or less are considered normally acceptable for noise-sensitive land uses (e.g., residential, educational, and health care uses). The existing Noise Element also contains a series of guiding and implementing policies.

#### City of Davis Noise Ordinance

The current City Noise Ordinance was substantially updated from the previous version and adopted on July 15, 1993. Additional amendments were adopted on May 29, 1996. Ordinance No. 1700, Chapter 16B, "Noise Regulations" of the City of Davis Municipal Code establishes noise regulations for the City and penalties for violation. Table 5F-4 summarizes the noise limits specified in the ordinance.

Table 5F-4. Noise Limits in the City of Davis Noise Ordinance

Land Use	Time Period	Maximum Noise Level
Residential zone	10 p.m. to 7 a.m.	50 dB
	7 a.m. to 10 p.m.	55 dB
Commercial zone	10 p.m. to 7 a.m.	55 dB
Industrial zone	7 a.m. to 10 p.m.	60 dB
High noise traffic corridor <sup>a</sup>	anytime	65 dB

dB = A-weighted decibel scale.

#### IMPACTS AND METHODOLOGY

This section presents an assessment of potential impacts on noise issues. Impacts assessed include policy changes, construction-related noise, and operations-related noise (effects from traffic, railroad operations, and stationary noise sources on sensitive receptors).

Figure 5F-1 summarizes the standards contained in the General Plan update for exterior noise exposure, which is in effect the same as those in the existing General Plan. The only difference is that the "normally acceptable" standard for industrial, manufacturing, utility, and agricultural uses has been reduced to 65 dB  $L_{\rm dn}$  from 70 dB  $L_{\rm dn}$ . Accordingly, there are no impacts associated with adopting the updated noise element.

Noise impacts are based on planned land uses and on traffic noise levels predicted for various arterial roadways under each alternative. Traffic noise levels have been calculated using the information provided in the setting section. Noise effects from trains and the future industrial operations at the former Hunt-Wesson plant also are considered. The results of the noise modeling conducted for this project is more fully described in Appendix D, "Noise Technical Information" and summarized below in the appropriate impact section.

# Applicable Policies

The existing and proposed General Plans contain goals, policies, standards, and actions that are designed to reduce or eliminate potential environmental impacts that may be related to the implementation of each plan. In evaluating noise impacts, Alternative 2 assumes implementation of the existing General Plan and the goals, policies, standards, and actions it contains. In assessing

<sup>&</sup>lt;sup>a</sup> High noise traffic corridors include Highway 113 and I-80.

the noise impacts associated with Alternatives 3 through 5, it is assumed that the goals, policies, standards, and actions contained in the General Plan update will be implemented with all future projects. A comparison of the existing General Plan and General Plan update is contained in Chapter 3, "Project Description".

In this section, the following applicable policies were applied to the impact assessment for Alternatives 3 through 5.

## Goals and Policies Specific to Noise

The General Plan update includes goals, policies, standards, and actions relating to noise sources, sensitive receptors, and appropriate noise-reducing mitigation measures (e.g., sound walls). Specific goals, policies, standards, and actions that affect the assessment of impacts include the following:

**GOAL NOISE 1.** Maintain community noise levels that meet health guidelines and allow for a high quality of life.

- **Policy NOISE 1.1** Minimize vehicular and stationary noise sources, and noise emanating from temporary activities.
  - Standard NOISE 1.1a. The City shall strive to achieve the "normally acceptable" exterior noise levels as shown in Table 19 [Figure 5F-1 in this EIR] of the General Plan update and the target interior noise levels as shown in Table 20 of the General Plan update in future development areas and in currently developed areas.
  - Standard NOISE 1.1b. New development should generally be allowed only in areas where exterior and interior noise levels consistent with Tables 19 [Figure 5F-1 in this EIR] and 20 of the General Plan update can be achieved.
  - Standard NOISE 1.1c. New development and changes in use should generally be allowed only if they will not adversely impact attainment within the community of the exterior and interior noise standards shown in Table 19 [Figure 5F-1 in this EIR] and 20 of the General Plan update. Cumulative and project specific impacts by new development on existing residential land uses should be mitigated consistent with the standards shown in Table 19 and 20 of the General Plan update.
  - Standard NOISE 1.1d. Required noise mitigation measures for new and existing housing should be provided with the first stage and prior to completion of new developments or the completion of capacity-enhancing roadway changes wherever noise levels currently exceed or are projected within 5 years to exceed the normally acceptable noise levels shown in Table 19 [Figure 5F-1 in this EIR] of the General Plan update.

- Action NOISE 1.1g. Require an acoustic study for all proposed projects that would have noise exposure greater than normally acceptable as indicated by Figure 37 of the General Plan update.
- Action NOISE 1.1h. Considering lowering speed limits or installing traffic calming
  measures adjacent to all residences, schools, hospitals, and libraries that experience
  noise levels that exceed acceptable noise levels.
- Policy NOISE 1.2. Discourage the use of sound walls whenever alternative mitigation measures are feasible, while also facilitating the construction of sound walls where desired by the neighborhood and there is no other way to reduce noise to acceptable exterior levels shown in Table 19 [Figure 5F-1 in this EIR] of the General Plan update.
- **Policy NOISE 1.3.** Develop and implement procedures for the accurate measurement and prediction of noise levels in Davis.
  - Action NOISE 1.3a. Directly measure noise levels along all arterials and minor arterials, rather than simply estimating them with computer models.

**GOAL NOISE 2.** Provide for indoor noise environments that are conducive to living and working.

- Policy NOISE 2.1. Take all feasible steps to ensure that interior noise levels can be maintained at the levels shown in Table 20 of the General Plan update.
  - Standard NOISE 2.1a. New residential development or construction shall include noise attenuation measures necessary to achieve acceptable interior noise levels shown in Table 20 of the General Plan update.
  - Standards NOISE 2.1b. Existing areas will be subjected to noise levels greater than the acceptable noise levels shown in Table 20 of the General Plan update as a result of increased traffic on existing city streets (including streets remaining in existing configurations and streets being widened) shall be mitigated to the acceptable levels shown in Table 20 of the General Plan update. If traffic increases are caused by specific projects, then the City shall be the lead agency in implementing cumulative noise mitigation projects. Project applicants shall pay their fair share for any mitigation.

# Summary of Impacts Related to Land Use Map Alternatives

This chapter evaluates noise impacts related to the General Plan update and establishment of a new junior high school, including, the four land use map alternatives. For this evaluation, impacts have been assessed in three categories. Table 5F-5 provides an overview of the significance

findings made for the project and each of the sites being studied under each alternative. The table also shows the impacts related specifically to the proposed junior high school site under the heading "Signature Site" for Alternatives 4 and 5. The following paragraphs provide a brief summary of each impact.

• Impact NOI-1. Consistency with General Plan Policies. Impacts were assessed for each land use map's consistency with the locational policies stated in the existing General Plan (Alternative 2) and the General Plan update (Alternatives 3 through 5). Each land use map alternative was determined to have a significant and unavoidable impact due to existing and potential future development within the in-fill areas of the City. Many locations within the City are currently impacted by unacceptable noise levels, and increases in regional traffic and traffic within the City will further this impact. Alternative 5 was also found to be inconsistent due to the residential designation given to the Intervening Lands site (issue with adjacency to Interstate 80).

For Alternatives 3 through 5, proposed reductions in roadway level of service standards were found to have an adverse effect on noise related to increases in congestion. Policy changes in the General Plan update also add new policies targeted at reducing noise impacts. Much of the change related to policy modifications will offset each other.

- Impact NOI-2. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise. This impact was designed to assess the impact on sensitive receptors when exposed to the temporary generation of noise from construction of the various developments proposed under each alternative. Given the noise standards included in the City's Noise Ordinance, Alternatives 2 through 5 were not found to have the potential to have a significant and unavoidable impact (individual projects will need further evaluation on a case-by-case basis once construction techniques and locations are known in detail).
- Impact NOI-3. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise. This impact was designed to assess the impact on sensitive receptors when exposed to noise generated by operations from the various developments proposed under each land use map alternative. Alternative 2 was determined to have a significant impact related to inadequacies in the policies contained in the existing General Plan. Including the policy set from the General Plan update mitigated this impact. Alternatives 3 and 4 were found to have a less-than-significant impact due to the application of sound reducing measures and restrictions on development outlined in the General Plan update policies. Potential development of residential uses on the Intervening Lands site as part of Alternative 5 was found to have a significant impact due to the proximity of residential uses to the I-80 corridor and surrounding public uses. This was mitigated by requiring a change in land use type and requiring the preparation of a specific plan for this site and the Davis Technology site.

Table 5F-5. Summary of Noise Impacts by Land Use Map Alternative

					Site	es Be	ing	Stud	ied			
Project Impacts	Project Mitigations	Overall General Plan	Nishi/Gateway	Covell Center	Signature Site	Mace Ranch	Under Second Street	Sutter-Davis	Oeste Campus	Davis Technology	Intervening Lands	In-fill
Alternative 2. Buildout to 2010 Using Existing General Plan												No.
NOI-1. Consistency with General Plan Policies	NOI-1.1	SU	LS	LS		LS	LS					SU
NOI-2. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise	NOI-2.1, -2.2, -2.3	SU	SU	SU		SU	SU					SU
NOI-3. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise	NOI-1.1, -3.1	SU	S	S		NI	S					SU
Alternative 3. Reduced Buildout Scenario												W.
NOI-1. Consistency with General Plan Policies	NOI-1.1	SU		LS		LS	LS					SU
NOI-2. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise	NOI-2.1, -2.2, -2.3	SU		SU		SU	SU					SU
NOI-3. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise	NOI-1.1	SU		LS		NI	LS					SU
Alternative 4. Community Expansion Scenario with Oeste Campus												
NOI-1. Consistency with General Plan Policies	NOI-1.1	SU	LS	LS	LS	LS	LS	LS	LS			SU
NOI-2. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise	NOI-2.1, -2.2, -2.3	SU	SU	SU	SU	SU	SU	SU	SU			SU
NOI-3. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise	NOI-1.1	LS	LS	LS	LS	NI	LS	LS	LS			SU
Alternative 5. Community Expansion Scenario with Davis Technology Campus								Shirt				
NOI-1. Consistency with General Plan Policies	NOI-1.1, LU- 1.1, -1.2	SU	LS	LS	LS	LS	LS	LS		LS	S	SU
NOI-2. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise	NOI-2.1, -2.2, -2.3	SU	SU	SU	SU	SU	SU	SU		SU	SU	SU
NOI-3. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise	NOI-1.1, -3.1 LU-1.1, -1.2	SU	LS	LS	LS	NI	LS	LS		LS	S	SU
SU = Significant unavoidable S = Significant, but can be reduced to less than significant with mitigations included	LS NI N/A	=	No	ss that impone av	act		cant		·			

## **Project Impacts**

# Impact NOI-1. Consistency with General Plan Policies

## Significance Criteria

- A significant impact would occur if a land use map alternative or one of its components would conflict with the environmental plans and goals of the local community or other planning regulations.
- For Alternatives 3 through 5, a significant impact would occur if a policy change in the General Plan update would result in a substantial adverse change in the environment related to noise.

Impacts of the proposed project related to General Plan consistency were assessed with application of the above significance criteria. Table 5F-6 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5F-6. General Plan Policy Consistency under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Some in-fill areas are currently (or will be) impacted by unacceptable noise levels, primarily from traffic noise	<ul> <li>Some in-fill areas are currently (or will be) impacted by unacceptable noise levels, primarily from traffic noise</li> <li>Positive changes in noise policies to protect sensitive uses</li> </ul>	<ul> <li>Some in-fill areas are currently (or will be) impacted by unacceptable noise levels, primarily from traffic noise</li> <li>Positive changes in noise policies to protect sensitive uses</li> </ul>	<ul> <li>Some in-fill areas are currently (or will be) impacted by unacceptable noise levels, primarily from traffic noise</li> <li>Residential development on Intervening Lands site inconsistent</li> <li>Positive changes in noise policies to protect sensitive uses</li> </ul>

Alternative 2. Buildout to 2010 Using Existing General Plan. The existing General Plan contains policies on the protection of public health and safety in relation to noise. While not as complete as the policies provided in the General Plan update, the existing General Plan and Noise Ordinance provide guidance for new development. An assessment of noise impacts on the sites being studied may be found under Impacts NOI-2 and -3.

Under this alternative, development is expected to occur throughout the City in the form of in-fill development. Many locations within the City are currently impacted by unacceptable noise levels (as measured against current standards), and increases in regional traffic and traffic within the City will further this impact. In addition, unlike larger scale development projects that include noise sensitive uses (e.g., Covell Center), development in the in-fill area is constrained regarding the amount of noise mitigation that can be implemented. Because noise sensitive uses exist in noise impacted areas, and other policies in the General Plan promote development within the in-fill area, these policies are considered inconsistent, and a *significant and unavoidable* impact will occur based on policy direction.

Alternative 3. Reduced Buildout Scenario. Implementation of Alternative 3 would only allow growth and development in the City to 2010 for projects that are already entitled and additions in Covell Center (Variation 3, business park). For these projects, application of the policies in the General Plan update is assumed.

The noise goals, policies, standards, and actions contained within the General Plan update are intended to reduce noise impacts for the residents of the community. These policies are designed to provide for a more livable community by protecting residents from excessive noise levels. Under this alternative, the land uses proposed on the sites being studied would not be inconsistent with the locational policies in the General Plan update.

Under this land use map alternative, development is expected to occur throughout the City in the form of in-fill development. Like Alternative 2, since noise sensitive uses exist in noise impacted areas, and other policies in the General Plan update promote development within the in-fill area, these policies are considered inconsistent, and a *significant and unavoidable* impact will occur based on policy direction.

In preparing the General Plan update, City staff has identified the primary areas of policy where the proposed update differs from the existing General Plan. A list of these major changes is listed in Chapter 3 under a section labeled "New, Expanded, or Modified Goals and Policies in the General Plan Update". From this list, the following statements represent new policy direction (in bold type) associated with noise topics.

- Reduced level of service for roads:
  - Current plan: "C" on new streets and "D" on existing streets
  - Update: "D" during non-peak hours, "E" during peak hours, and "F" during peak hour in the core area

In addition to changing traffic, the above policy change will also result in indirect noise effects. Within the planning area, one of the largest sources of noise is associated with automobile traffic. The affect of changing acceptable levels of service on roadways will be to accept higher levels of congestion, effectively reducing traffic speeds and thereby

could result in an overall reduction in traffic noise. This increase in congestion was taken into account with the traffic study prepared for this EIR, and was consequently used to assess noise impacts related to the land use map alternatives. This assessment is presented as Impact NOI-3 later in this chapter. Therefore, changes in policy were found to be a *less than significant* impact.

Alternative 4. Community Expansion Scenario with Oeste Campus. The noise goals, policies, standards, and actions contained within the General Plan update are intended to reduce noise impacts for the residents of the community. These policies are designed to provide for a more livable community by protecting residents from excessive noise levels. Under this alternative, the land uses proposed on the sites being studied would not be inconsistent with the locational policies in the General Plan update.

Like Alternatives 2 and 3, development under this alternative is expected to occur throughout the City in the form of in-fill development. Since noise sensitive uses exist in noise impacted areas, and other policies in the General Plan update promote development within the in-fill area, these policies are considered inconsistent, and a *significant and unavoidable* impact will occur based on policy direction.

Related to the second significance criteria (impacts related to policy changes), changes in policy will have an overall positive affect on noise issues (the same as described for Alternative 3, above), and would have a *less than significant* environmental impact.

Campus. The noise goals, policies, standards, and actions contained within the General Plan update are intended to reduce noise impacts for the residents of the community. These policies are designed to provide for a more livable community by protecting residents from excessive noise levels. Like the existing General Plan, the General Plan update (Policy NOISE 1.1) discourages development of sensitive uses (such as residential) on parcels that cannot meet the exterior noise levels and also discourages the use of sound walls. More than half of the Intervening Lands site is within the 65-dB L<sub>dn</sub> contour from Interstate 80. This site is also located adjacent to public uses (such as the CDF facility) that conduct outdoor maintenance, and a proposed waste transfer site. To mitigate this sound levels would require the use of sound walls and/or severe restrictions on development. In addition, the principles stated for preparation of the land use map (Principle 12) states that the City should "Designate areas along the freeway for aesthetically pleasing, non-noise-sensitive uses that will provide a noise buffer for adjacent residences."

Like Alternatives 2, 3, and 4, development under this alternative is expected to occur throughout the City in the form of in-fill development. Since noise sensitive uses exist in noise impacted areas, and other policies in the General Plan update promote development within the in-fill area, these policies are considered inconsistent.

Given the inconsistencies associated with the location of residential uses adjacent to the freeway and development within noise impacted areas of the City, this alternative is considered to have a significant impact.

Related to the second significance criteria (impacts related to policy changes), changes in policy will have an overall positive affect on noise issues (the same as described for Alternative 3, above), and would have a less than significant environmental impact.

## **Mitigation Measure**

For Alternatives 2 through 5, development in portions of the in-fill area was found to be significantly impacted by existing and projected noise levels. While some areas are truly impacted by noise, other areas that exceed City standards do so because the standards do not reflect a reasonable noise thresholds for an urbanized area (i.e., dB levels are too low). As discussed later under Impact NOI-2, construction standards have a similar issue. Under the current noise regulations, it is impossible for any large-scale construction to occur near noise sensitive uses and not exceed current standards. In order to evaluate future projects and assist in mitigating existing noise issues, the following mitigation is recommended. Even with this mitigation, this impact will remain a significant and unavoidable impact.

## NOI-1.1. Acoustic Study and Policy Assessment (Alternatives 2 through 5)

The City should-conduct an acoustic study of the City and revise noise standards and ordinances to reflect the urbanized setting of the City.

Funding Source:

Davis City Council

Implementing Party:

City of Davis Planning and Building Department and Davis

City Council

Monitoring Agency:

City of Davis Planning and Building Department

Timing:

Begin study in the year 2000

Implementation of mitigation measures LU-1.1 and LU-1.2 for Alternative 5 would reduce the significant impact related to noise at the Intervening Lands sites to a less than significant level.

#### LU-1.1 Develop Planning Guidelines for the Area (Alternative 5)

#### LU-1.2 Modify General Plan Direction (Alternative 5)

January 2000

# Impact NOI-2. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise

#### Significance Criterion

- A land use map alternative was determined to have a significant impact if construction activities could violate provisions of City's Noise Ordinance (Chapter 16B, "Noise Regulations" of the City of Davis Municipal Code). Specifically, permitted construction activities between the hours of 7 a.m. and 7 p.m. (Monday through Friday) and 8 a.m. and 8 p.m. (Saturday and Sunday) were considered significant if both of the following measures are exceeded:
  - 1. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet.
  - 2. The noise level at any point outside the property plane of the project shall not exceed 86 dBA.

Impacts of the proposed project related to the exposure of noise-sensitive land uses to construction-related noise were assessed with application of the above significance criteria. Table 5F-7 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5F-7. Exposure of Noise-Sensitive Land Uses to Construction-Related Noise under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
Exposure to short-term construction-related	<ul> <li>Exposure to short-term construction-related</li> </ul>	Exposure to short-term construction-related	<ul> <li>Exposure to short-term construction-related</li> </ul>
noise	noise	noise	noise

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 would result in the temporary generation of noise from construction of the various developments proposed under this alternative. Table 5F-8 provides a listing of construction equipment that can be found on an urban construction site, although the types and mix of equipment will vary by location. For instance, a pile driver is not typically found at a residential construction site, but may be found on the construction site of a multistory building. As shown on the table, most equipment on the list exceeds the 83 dBA listed as the first measure in the significance criteria above.

Table 5F-8. Noise Levels from Typical Construction Equipment (dBA at 25 Feet)

Equipment	<b>Typical Noise Level</b>	Equipment	Typical Noise Level
Air Compressor	87	Loader	91
Backhoe	86	Paver	95
Ballast Equalizer	88	Pile Driver (Impact)	107
Ballast Tamper	89	Pile Driver (Sonic)	102
Compactor	88	Pneumatic Tool	91
Concrete Mixer	91	Pump	82
Concrete Pump	88	Rail Saw	96
Concrete Vibrator	82	Rock Drill	104
Crane, Derrick	94	Roller	80
Crane, Mobile	89	Saw	82
Dozer	91	Scarifier	89
Generator	87	Scraper	95
Grader	91	Shovel	88
Impact Wrench	91	Truck	94
Jack Hammer	94		

Source: Federal Transit Administration 1995.

The second measure is more difficult to assess since specific project plans have not been submitted for review for each of the sites being studied in this alternative. Noise levels from equipment will diminish with distance. Typically, noise diminishes by 6 dBA for each doubling of distance from the source. Therefore, a backhoe with a noise level of 86 dBA at 25 feet (Table 5F-8), would have a noise level of 80 dBA at 50 feet. Given the noise levels shown for construction equipment on Table 5F-8, and the potential to have construction activities near the property line of each site, it is possible to have a noise level of greater than 86 dBA at the property line from a single piece of equipment. Multiple pieces of equipment operating near each other would have an additive effect, and would increase over the single equipment levels shown.

Adherence to the City's Noise Ordinance would reduce the adversity of construction noise impacts, but for any given project site, it is possible that neither significance measure can be met. Therefore, construction noise was considered to be a short-term, *significant and unavoidable* impact of the overall General Plan project.

Alternative 3. Reduced Buildout Scenario. Implementation of Alternative 3 would result in an impact similar to that described above under Alternative 2, although the area to be disturbed will be lower due to the lower intensity of development proposed for the planning area. Under this alternative, clear guidance on the requirements for acoustic studies related to construction noise is missing and should be included in Action NOISE 1.1g. Due to the potential for a site included in this alternative to not meet the significance criterion presented and the lack of clear policy guidance, construction noise was considered to be a short-term, *significant and unavoidable* impact of the overall General Plan project.

Alternative 4. Community Expansion Scenario with Oeste Campus. Implementation of Alternative 4 would result in an impact similar to that described above under Alternative 2, although the area to be disturbed would be larger due to the larger number of development sites proposed for the planning area. Due to the potential for a site included in this alternative to not meet the significance criterion presented and the lack of clear policy guidance, construction noise was considered to be a short-term, *significant and unavoidable* impact of the overall General Plan project.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. Implementation of Alternative 5 would result in an impact similar to that described above under Alternative 2, although the area to be disturbed would be larger due to the larger number of development sites proposed for the planning area. Due to the potential for a site included in this alternative to not meet the significance criterion presented and the lack of clear policy guidance, construction noise was considered to be a short-term, *significant and unavoidable* impact of the overall General Plan project.

## **Mitigation Measures**

Implementation of the following mitigation measures will reduce the adversity of this impact, but the impact will remain *significant and unavoidable* for the General Plan project overall. Individual projects may be able to prove compliance and could be found to have a less than significant impact. Each individual project will need further evaluation on a case-by-case basis once construction techniques and locations are known in detail based on future project proposals.

#### NOI-2.1. Acoustic Studies for Construction (Alternatives 2 through 5)

For Alternatives 3 through 5, this impact can be reduced in adversity by modifying the language in Action NOISE 1.1g to include assessment of construction impacts. For Alternative 2, this language should be added as a new policy.

"Require an acoustic study for all proposed projects that would have noise exposure that may exceed City Noise Ordinance standards for construction activities or impacts after development that would be greater than normally acceptable as indicated by Figure 37 of the General Plan update."

Funding Source:

Davis City Council

Implementing Party:

City of Davis Planning and Building Department and Davis

City Council

Monitoring Agency:

City of Davis Planning and Building Department

Timing:

Prior to adoption of General Plan update for Alternative 3 through 5, and as part of a General Plan amendment

presented during the year 2000

# NOI-2.2. Construction Mitigation (Alternatives 2 through 5)

For Alternatives 2 through 5, this impact can be reduced in adversity by adding a new action to the General Plan text.

"The project proponent shall employ noise-reducing construction practices. The following measures shall be incorporated into contract specifications to reduce the impact of construction noise.

- All equipment shall have sound-control devices no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.
- As directed by the City, the contractor shall implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources."

Funding Source: Davis City Council

Implementing Party: City of Davis Planning and Building Department and Davis

City Council

Monitoring Agency: City of Davis Planning and Building Department

Timing: Prior to adoption of General Plan update for Alternative 3

through 5, and as part of a General Plan amendment

presented during the year 2000

Implementation of the following mitigation measure could reduce construction-related noise impacts to a less than significant level (since it would in effect change the significance criteria), but since approval of this change can not be predicted, the impact will remain *significant and unavoidable* for the General Plan project overall.

# NOI-2.3. Revise Davis Noise Ordinance (Alternatives 2 through 5)

Revise the City's Noise Ordinance (Chapter 16B, "Noise Regulations" of the City of Davis Municipal Code) to reflect construction criteria that can be met by typical construction activities.

Funding Source: Davis City Council

Implementing Party: City of Davis Planning and Building Department and Davis

City Council

Monitoring Agency: City of Davis Planning and Building Department

Timing: Within one year of adoption of General Plan update

## Impact NOI-3. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise

#### Significance Criterion

• A land use map alternative was determined to have a significant impact if the potential development proposed in the plan would substantially increase the exposure of existing noise sensitive land uses to noise in excess of exterior and/or interior noise standards specified in Figure 5F-1.

Impacts of the proposed project related to the exposure of noise-sensitive land uses to operations-related noise were assessed with application of the above significance criteria. Table 5F-9 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5F-9. Exposure of Noise-Sensitive Land Uses to Operations-Related Noise under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
<ul> <li>Sensitive receptors</li></ul>	Sensitive receptors	<ul> <li>Sensitive receptors</li></ul>	<ul> <li>Sensitive receptors</li></ul>
exposed to noise above	exposed to noise above	exposed to noise above	exposed to noise above
normally acceptable	normally acceptable	normally acceptable	normally acceptable
levels	levels	levels	levels

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 would include development of the Nishi/Gateway, Covell Center, Mace Ranch, and Under Second Street sites, in addition to other in-fill areas throughout the planning area. New residential, office, and commercial land uses would be located near roadways and train tracks in various portions of the planning area. As more fully described in Appendix D, "Noise Technical Information", traffic noise modeling indicates that development at Nishi/Gateway, Covell Center (uses within 100-300 feet of adjacent roadways), and Under Second Street sites would be exposed to traffic noise that is well above the normally acceptable levels specified in the existing General Plan. Development of the Mace Ranch site would not be adjacent to any major roadways and is not predicted to be exposed to noise in excess of the normally acceptable standards.

Development in the in-fill area presents additional challenges, as also discussed under Impact NOI-1. Since this development is occurring in a developed area with a wide range of setbacks from other uses and roadways, and can occur in areas with mixes of land use types, some sites will find it difficult to develop and meet City standards for noise. On some in-fill sites, development of sensitive uses may occur in noise environments that are considered only "conditionally acceptable".

Under the existing General Plan, acoustic studies would be required, and residential structures would be required to obtain a 45 dB rating for interior spaces (Policy G).

Under this alternative, some in-fill areas may not be developable, and existing development may be exposed to noise levels that exceeds adopted standards. Therefore, some development (existing and future) may result in a *significant and unavoidable* impact.

Implementation of Alternative 2 would maintain the goals and policies in the existing General Plan. Adopted 12 years ago, the goals and policies in this document (Noise Element) do not provide a comprehensive set of protections to or from future development. The existing General Plan also does not contain policies requiring projects to mitigate for off-site noise impacts related to traffic generation. The General Plan update provides an enhanced set of policy guidance that reflects current needs. As the guiding policy document for the City, the existing General Plan is dated, and its continued use represents a *significant* impact.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5F-1, development of Covell Center (business park version) and Under Second Street sites, and other portions of the infill area could be exposed to traffic noise that is above the normally acceptable range specified in the General Plan update for these land uses. Concerns for development in the in-fill area would be similar to those discussed for Alternative 2.

Policies Noise 1.1, 1.2, and 2.1 of the General Plan update require that new development complies with the interior and exterior noise levels described in Figure 5F-1. Typical sound-reducing measures described in the policies include the use of noise barriers (where appropriate) and the use of sound-rated building construction. Because project-related development would incorporate the appropriate noise-reducing measures as outlined in the policies of the General Plan update, development at the sites being studied can be designed to have a less than significant impact.

Similar to Alternative 2, some in-fill areas may not be developable, and existing development may be exposed to noise levels that exceeds adopted standards. Therefore, some development (existing and future) may result in a *significant and unavoidable* impact.

Alternative 4. Community Expansion Scenario with Oeste Campus. This impact is similar to that described above under Alternative 3, although the area to be disturbed will be higher due to the expansion of development within the planning area. As shown in Table 5F-1, development of all the sites being studied (except the Mace Ranch site), and the other portions of the in-fill area could be exposed to traffic noise that is above the normally acceptable level specified in the General Plan update for these land uses.

Policies Noise 1.1, 1.2, and 2.1 of the General Plan update require that new development comply with the interior and exterior noise levels described in Figure 5F-1. Typical sound-reducing measures described in the policies include the use of noise barriers (where appropriate) and the use of sound-rated building construction. Because project-related development would incorporate the

appropriate noise-reducing measures as outlined in the policies of the General Plan update, development at the sites being studied can be designed to have a less than significant impact.

Similar to Alternative 2, some in-fill areas may not be developable, and existing development may be exposed to noise levels that exceeds adopted standards. Therefore, some development (existing and future) may result in a *significant and unavoidable* impact.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. This impact is similar to that described above under Alternative 3, although the area to be disturbed will be higher due to the expansion of development within the planning area. As shown in Table 5F-1, development of all the sites being studied (except the Mace Ranch site) and the other portions of the in-fill area could be exposed to traffic noise that is above the normally acceptable level specified in the General Plan update for these land uses.

General Plan Policies Noise 1.1, 1.2, and 2.1 require that new development comply with the interior and exterior noise levels described in Figure 5F-1. However, development of the Intervening Lands site as residential, given the sites' location adjacent to I-80 and other industrial-type uses, has the potential to expose sensitive receptors to long-term noise impacts that may not be addressed by the noise-reducing measures outlined in the policies of the General Plan update. For example, the use of noise barriers may be unable to effectively reduce traffic noise to normally acceptable levels. Additionally, the use of noise barriers could result in other indirect aesthetic-related impacts. Due to the development of the Intervening Lands site as a mixed residential area, this impact is considered *significant*.

Similar to Alternative 2, some in-fill areas may not be developable, and existing development may be exposed to noise levels that exceeds adopted standards. Therefore, some development (existing and future) may result in a *significant and unavoidable* impact.

# Mitigation Measures

Implementation of mitigation measure NOI-3.1 would reduce the adversity of noise impacts related to Alternative 2, but the impact on in-fill areas would remain *significant and unavoidable*. Implementation of mitigation measures LU-1.1 and LU-1.2 for Alternative 5 would reduce the significant impact related to noise at the Intervening Lands sites to a *less than significant* level.

For Alternatives 2 through 5, development in portions of the in-fill area was found to be significantly impacted by existing and projected noise levels. While some areas are truly impacted by noise, other areas that exceed City standards do so because the standards do not reflect a reasonable noise thresholds for an urbanized area (i.e., dB levels are too low). In order to evaluate future projects and assist in mitigating existing noise issues, the following mitigation is recommended. Even with this mitigation, this impact will remain a *significant and unavoidable* impact.

# NOI-1.1. Acoustic Study and Policy Assessment (Alternatives 2 through 5)

#### NOI-3.1. Noise Goals, Policies, Standards, and Actions (Alternative 2)

This impact can be reduced to a less-than-significant level by replacing the goals and policies in the existing General Plan with GOAL NOISE 1 and associated policies, standards, and actions from the General Plan update.

Funding Source:

Davis City Council

Implementing Party:

City of Davis Planning and Building Department and Davis

City Council

Monitoring Agency:

City of Davis Planning and Building Department

Timing:

As part of a General Plan amendment presented during the

year 2000

# LU-1.1 Develop Planning Guidelines for the Area (Alternative 5)

#### LU-1.2 Modify General Plan Direction (Alternative 5)

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