FINAL
ENVIRONMENTAL IMPACT REPORT

EL DORADO COUNTY
AIR QUALITY MANAGEMENT DISTRICT

DST Output West Printing Capacity Expansion Project
(SCH # 2009082051)

November 2009

Quad Knopf

09-1424.B.1

FINAL
ENVIRONMENTAL IMPACT REPORT

EL DORADO COUNTY
AIR QUALITY MANAGEMENT DISTRICT

DST Output West Printing Capacity Expansion Project
(SCH #2009082051)

Submitted to:

El Dorado County Air Quality Management District
2850 Fairlane Court, Building C
Placerville, California 95667
Contact: Marcella McTaggart, Air Pollution Control Officer
(530) 621-6662

Prepared by:

Quad Knopf

One Sierragate Plaza, Suite 270C
Roseville, California 95678
Contact: Ronald Mauck, AICP, Senior Planner
(916) 784-7823

November 2009

090154

09-1424.B.2

TABLE OF CONTENTS

SECTION ONE

INTRODUCTION

SECTION ONE
INTRODUCTION

1.1 Purpose

The Environmental Impact Report (EIR) for the proposed DST Output West Printing Capacity Expansion Project was prepared to disclose, analyze, and, if necessary, provide mitigation measures for potentially significant environmental effects associated with adoption and implementation of the project. Preparation of this EIR is a requirement of SB 1662 Chapter 725 Statutes of 2008 Section 1 (c) (see Appendix A of the Draft Environmental Impact Report) prior to the El Dorado County Air Quality Management District (AQMD) authorizing a one time only transfer of emission reduction credits obtained in the Sacramento Metropolitan Air Quality Management District (SMAQMD) to allow expansion of DST Output West printing capacity within the AQMD as permitted under SB 1662.

SB 1662 Chapter 725 Statutes of 2008 Section 1 (c) requires that a Final EIR be prepared, considered, and certified and by the AQMD prior to taking action on the project. This Final EIR provides the AQMD, as Lead Agency, an opportunity to respond to comments received on the Draft EIR during the public review period and to incorporate any additions or revisions to the Draft EIR necessary to clarify or supplement information contained in the Draft document. Following completion of the Draft EIR, a public review period was held from October 1, 2009 to October 30, 2009. This document includes the responses to comments received during the public review period and any other errata or changes necessitated by comments on the Draft EIR. The Draft EIR and this document constitute the Final EIR for the proposed DST Output West Printing Capacity Expansion Project.

1.2 Scope and Format

Section One introduces and outlines the purpose, scope**,** and format of the Final EIR. Section Two explains the public review process and lists all agencies and individuals who commented on the Draft EIR. Section Three consists of the actual letters of comment, reproduced in their entirety, and the responses to each written comment received on the Draft EIR. These responses are intended to supplement or clarify information contained in the Draft EIR, as appropriate, based on the comments and additional research or updated information. Additions to the Draft EIR are shown in <u>underline</u> and deletions shown in ~~strikeout~~ format. Each response follows the associated letter or document. Each letter and document has been numbered (e.g., Letter 1, Letter 2). Within each letter or document, individual comments are assigned an alphanumeric identification. For example, the first comment of Letter 1 is Comment 1A, and the second is Comment 1B.

SECTION TWO

OVERVIEW OF COMMENTS RECEIVED

SECTION TWO
OVERVIEW OF COMMENTS RECEIVED

2.1 Public Review and Comment Procedures

CEQA requires public disclosure in an EIR of all project environmental effects and encourages public participation throughout the EIR process. As stated in Section 15200 of the CEQA Guidelines, the purposes of public review of environmental documents are:

1) sharing expertise
2) disclosing agency analyses
3) checking for accuracy
4) detecting omissions
5) discovering public concerns
6) soliciting counter proposals

Section 15201 of the CEQA Guidelines states that "Public participation is an essential part of the CEQA process." A public review period of no less than 30 days nor longer than 60 days is required for a Draft EIR under Section 15105(c) of the CEQA Guidelines. If a State agency is a lead or responsible agency for the project, the public review period shall be at least 45 days. As required under CEQA, the Draft EIR was published and circulated for the review and comment by responsible and trustee agencies and interested members of the public. The public review period ran from October 1, 2009 to October 30, 2009 as there are no State lead or responsible agencies. All written comments received on the Draft EIR are addressed herein.

2.2 Agencies and Individuals Who Commented on the Draft EIR

Letter 1: Dianna Hillyer, Project Manager, El Dorado Hills Community Services District

Letter 2: Don Barnett, Lennar Communities & Mark Enes, AKT Investments, Inc., West Valley LLC

Letter 3: Don Barnett, C&C Ranch, LLC by Lennar Renaissance, Inc.

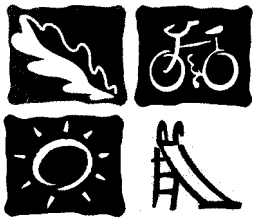
SECTION THREE

RESPONSES TO COMMENTS

SECTION THREE
RESPONSES TO COMMENTS

This section contains the letters of comment that were received on the Draft EIR (DEIR). Following each comment letter is a response intended to either supplement, clarify, or amend information provided in the DEIR, or refer the commenter to the appropriate place in the DEIR where the requested information can be found. Those comments that are not directly related to environmental issues are noted for the record.

Letter 1



El Dorado Hills
COMMUNITY SERVICES DISTRICT

October 6, 2009

Marcella McTaggart, Air Pollution Control Officer
2850 Fairlane Court, Building C
Placerville, CA 95667

RE: DST Output West Pringting Capacity Expansion Project
Draft EIR comments

Dear Ms. McTaggart:

I have read the Draft Environmental Impact Report for the DST Output West Printing Capacity Expansion Project. The El Dorado Hills Community Services District does not include the area where DST is located. We have no comments at this time regarding the project. A

We appreciate the opportunity to comment. If you have any questions or need more information from me, please contact me directly.

Sincerely,

Dianna Hillyer

Project Manager

1021 Harvard Way • El Dorado Hills, CA 95762 • (916) 933-6624 • (916) 941-1627 fax • www.edhcsd.org

09-1424.B.10

Letter 1 Dianna Hillyer, Project Manager, El Dorado Hills Community Services District

Response 1A: This comment notes review of the Draft EIR by the El Dorado Hills Community Services District, states that the proposed project is not located within the El Dorado Hills Community Services District service area, and that the District has no comments on the proposed project.

WEST VALLEY LLC

October 29, 2009

Marcella McTaggart
El Dorado County Air Quality Management District
2850 Fairlane Court, Building C
Placerville, CA 95667

RE: Draft Environmental Impact Report- DST Output West Printing Capacity Expansion Project (SCH #2009082051)

Dear Ms McTaggart:

West Valley LLC is the Master Developer of the Blackstone Master Planned Community (aka Valley View) that is located northeast of the DST facility in El Dorado Hills, CA. West Valley LLC hereby provides the following comments to the Draft Environmental Impact Report (DEIR) for the DST Output West Printing Capacity Expansion Project. A

West Valley LLC's comments focus on noise impacts to the Blackstone community from the existing DST facility and proposed expansion of the DST facility. West Valley LLC has become aware of complaints from residents living in Blackstone about nighttime noise being generated from the DST Facility. Residents have complained that the noise being generated from the DST facility is especially noticeable late at night when other background noise is low and people are trying to sleep. In response to the complaints of residents about noise, acoustical testing was conducted by a certified acoustical consultant. The acoustical consultant performed nighttime noise measurements within and near the Blackstone community in July, 2009. The noise measurements were taken in areas near where the noise complaints were received. Based on the findings of the acoustical consultant, it appears that portions of Blackstone are being impacted by nighttime noise levels in excess 45 dB, which is in excess of El Dorado County General Plan standards. The acoustical consultant has determined that the noise in being generated by the DST facility. B

The DEIR has concluded that no mitigation measures are required for impacts associated with noise being generated from the DST facility. The DEIR states "There are local regulations that regulate noise impacts from mobile and stationary sources, however, the proposed project will occur within the Existing DST Output West facility, which provides an existing noise barrier to the outside world, therefore, no specific local regulations pertaining to noise are applicable to the proposed project". The DEIR fails to reflect that the El Dorado Hills Bus[illegible] C

Park EIR and the El Dorado County Zoning Code provide standards and policies for noise generation and noise impacts. For example, Section 17.35.020 of the El Dorado County Zoning Code, which establishes performance standards for R&D uses, states "No use shall generate dust, air, or water pollutants, or significant noise or electrical interference beyond the building in which it occurs". Section 17.35.025 of the Zoning Code states "Noise- The use shall comply with the interior and exterior noise level standards established in Table 6-1 of the El Dorado County General Plan". C cont.

The El Dorado Hills Business Park EIR states on page 53, Noise- "The proposed R&D zoning requires all facilities to be constructed in such a manner to confine noise within existing walls". Page 10 of the Final EIR, in response to a comment from the California Department of Health concerning noise, states "The proposed R&D zoning prohibits the generation of significant noise beyond the exterior walls of building containing them. Outdoor activities can occur if they do not generate significant noise beyond the property line. Therefore, the zoning requirements should mitigate this potential adverse impact". D

Based on the noise measurements that we obtained, it would appear that the noise barriers at the existing DST facility are not adequately mitigating noise impacts to surrounding property owners, either under existing conditions or future conditions with the proposed expansion. This situation seems to be especially true late at night when the residents are most sensitive to the noise impacts. Under CEQA Guidelines, a project is considered to have a significant noise impact if it results in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance. Therefore, noise impacts should be considered a significant impact and DST must be required to mitigate for the noise impacts. E

We appreciate the opportunity to provide comments to the DEIR for the DST Output West Printing Capacity Expansion Project. Please feel free to contact us should you have any questions or comments. The West Valley LLC contact person for this issue is Don Barnett c/o Lennar Communities, 1075 Creekside Ridge Drive, Suite 100, Roseville, CA 95678. The telephone number is (916) 746-8512.

Respectfully,

West Valley LLC

Don Barnett
Lennar Communities

Mark Enes
AKT Investments, Inc

Letter 2 West Valley LLC - Don Barnett, Lennar Communities & Mark Enes, AKT Investments, Inc.,

Response 2A: Comment noted. This comment identifies West Valley LLC as the Master Developer of the Blackstone Master Planned Community (aka Valley View) that is located northeast of the DST Output West facility in El Dorado Hills.

Response 2B: Comment noted. West Valley LLC's comment addresses noise impacts to the Blackstone community from the existing DST Output West facility. Reference is also made to noise impacts that may result from the proposed expansion of printing capacity (the project addressed in the Draft EIR). Noise impact from nighttime DST Output West operation on portions of the Blackstone community resulting in resident complaints is cited and reference provided to a July, 2009 acoustical test documenting that nighttime noise levels in excess of the El Dorado General Plan standard of 45dB were occurring in portions of the Blackstone community. It is further stated that the acoustical consultant conducting the July, 2009 test determined that the noise responsible for the greater than 45 dB level was being generated by the DST Output West facility.

Response 2C: This comment addresses the rational provided in the Draft EIR as a basis for concluding that no mitigation measures are required for impacts associated with noise (i.e. …"the proposed project will occur within the existing DST Output West facility, which provides an existing noise barrier to the outside world, therefore, no specific local regulations pertaining to noise are applicable to the proposed project"). The commenter goes on to say the Draft EIR fails to reflect that the El Dorado Hills Business Park EIR and the El Dorado County Zoning Code provide standards and policies for noise generation and noise impacts. Two examples of El Dorado County Zoning Code sections regulating noise (Section 17.35.020 establishing performance standards for R&D uses and Section 17.35.025 requiring uses to comply with noise level standards established in Table 6-1 of the El Dorado County General Plan) are provided.

Impact 3.11.-1 at page 3-6- of the Draft EIR is hereby revised to state:

> ***Impact #3.11-1: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.***
>
> **Discussion/Conclusion:** The proposed project consists of the addition of several new printing machines inside the existing DST Output West facility resulting in additional VOC emissions of up to 0.7 tpy. The proposed project will not significantly modify the existing plant operation and the proposed project will not change the exterior appearance of the plant or require any modification to the land surrounding the plant. Section 17.35.020 of the El Dorado County Code establishing performance standards for uses located within the Research and Development (R&D) zoning district states "no use shall generate dust, air, or water pollutants, or significant noise or electrical interference beyond the building in which it occurs" and Section 17.35.025 requires uses to comply with noise

level standards established in Table 6-1 of the El Dorado County General Plan. In compliance with these provisions, ~~T~~the proposed project will not expose persons to or cause the generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies due to the mitigating influence of the tilt-up concrete building walls on sound generated from within the existing DST Output West facility. This impact is ***less than significant.***

Response 2D: Comment noted. The commenter makes reference to text within the El Dorado Hills Business Park EIR stating that …"R&D zoning requires all facilities to be constructed in such a manner to confine noise within existing walls" and that …"zoning requirements should mitigate" potential noise impacts within the R&D zoning district.

Response 2E: The commenter states, based on noise measurements obtained, it would appear that noise barriers at the DST Output West facility are not adequately mitigating noise impacts to surrounding property owners. It is further stated that noise impacts from the proposed project should be considered a significant impact and mitigation provided.

In response to the concern raised by the commenter regarding the contribution of new project related noise to existing noise levels, an acoustical analysis dated November 11, 2009 was conducted by j.c. brennan & associates, Inc., consultants in acoustics. This analysis is found as Appendix A of the Final EIR. The analysis concludes that "based upon an interior noise level ranging from 90 dBA to 95 dBA due to overall future operations, the sound power level at the exterior building façade would be approximately 51 dBA to 56 dBA. The property line of the DST facility is 50 feet from the nearest building façade. Based on a conservative attenuation rate of 10 dB per doubling of distance, the noise levels associated with the operations inside of the building will be less than 40 dBA Leq at the east property line. Therefore, the interior operations of the project will comply with the El Dorado County exterior noise level criterion of 45dBA Leq."

October 30, 2009

Marcella McTaggart
El Dorado County Air Quality Management District
2850 Fairlane Court, Building C
Placerville, CA 95667

RE: Draft Environmental Impact Report- DST Output West Printing Capacity Expansion Project (SCH #2009082051)

Dear Ms McTaggart:

The Carson Creek Specific Plan property is located along the western boundary of the DST facility in El Dorado Hills, CA. The Carson Creek Specific Plan property is owned in partnership by AKT Carson Creek Investors, LLC and C & C Ranch, LLC. C & C Ranch, as Managing Partner, hereby provides the following comments to the Draft Environmental Impact Report (DEIR) for the DST Output West Printing Capacity Expansion Project. A

Our comments focus on noise impacts to the Carson Creek Specific Plan area from the existing DST facility and proposed expansion of the DST facility. Section 3.2.1- Environmental Setting of the DEIR describes the surrounding land uses to the DST facility. The land uses west of the DST facility are described as Vacant/Grassland. While the description of the land west of the DST facility is correct in its current condition, the DEIR fails to describe the approved land uses as designated in the adopted Carson Creek Specific Plan, which are vested in the Carson Creek Development Agreement. The land uses include Residential, Research & Development and Industrial. The DEIR should be revised to describe the land uses as designated in the Carson Creek Specific Plan. To date, Unit 1 of the Carson Creek project reflects an approved tentative subdivision map creating 302 single family homesites and a community clubhouse. Unit 2, comprising over 600 residential units, parks and community facilities, is also under county review with approval expected in the near future. These approvals must be considered as existing uses for the purposes of the DEIR. B

Consistent with the Carson Creek Specific Plan, the Unit 2 Tentative Subdivision Map proposes single family homes to be located approximately 700 feet west of the DST facility. As required as part of the submittal of the Tentative Subdivision C

Map, an Environmental Noise Assessment was prepared for the Carson Creek Unit 2 project (see attached). The Environmental Noise Assessment analyzed the noise that is being generated from the DST facility and the impact that noise will have on the future residents living in Carson Creek. Because the operations at the DST facility occur 24-hours per day, the Environmental Noise Assessment used the County's 45 dB L eq nighttime standard to determine the impact on Carson Creek. The Environmental Noise Assessment determined that portions of Carson Creek, including the residential areas, are being impacted by noise in excess of 45 dB, which is above the County noise level limits for residential uses.

C cont

The DEIR has concluded that no mitigation measures are required for impacts associated with noise being generated from the DST facility. The DEIR states "There are local regulations that regulate noise impacts from mobile and stationary sources, however, the proposed project will occur within the Existing DST Output West facility, which provides an existing noise barrier to the outside world, therefore, no specific local regulations pertaining to noise are applicable to the proposed project". The DEIR fails to reflect that the El Dorado Hills Business Park EIR and the El Dorado County Zoning Code provide standards and policies for noise generation and noise impacts. For example, Section 17.35.020 of the El Dorado County Zoning Code, which establishes performance standards for R&D uses, states "No use shall generate dust, air, or water pollutants, or significant noise or electrical interference beyond the building in which it occurs". Section 17.35.025 of the Zoning Code states "Noise- The use shall comply with the interior and exterior noise level standards established in Table 6-1 of the El Dorado County General Plan".

D

The El Dorado Hills Business Park EIR states on page 53, Noise- "The proposed R&D zoning requires all facilities to be constructed in such a manner to confine noise within the exterior walls". Page 10 of the Final EIR, in response to a comment from the California Department of Health concerning noise, states "The proposed R&D zoning prohibits the generation of significant noise beyond the exterior walls of buildings containing them. Outdoor activities can occur if they do not generate significant noise beyond the property line. Therefore, the zoning requirements should mitigate this potential adverse impact".

Based on the findings of the Environmental Noise Assessment, it would appear that the noise barriers at the existing DST facility are not adequately mitigating noise impacts to surrounding property owners, either under existing conditions or future conditions with the proposed expansion. Under CEQA Guidelines, a project is considered to have a significant noise impact if it results in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance. Therefore, noise impacts should be considered a significant impact and DST must be required to mitigate for the noise impacts.

E

We appreciate the opportunity to provide comments to the DEIR for the DST Output West Printing Capacity Expansion Project. Please feel free to contact us should you have any questions or comments. The contact person for this issue is Don Barnett c/o Lennar, 1075 Creekside Ridge Drive, Suite 100, Roseville, CA 95678. The telephone number is (916) 746-8512.

Respectfully,

C & C Ranch, LLC
by Lennar Renaissance, Inc

Don Barnett

Don Barnett

Environmental Noise Assessment

Carson Creek Unit 2

El Dorado County, California

BAC Job # 2007-026

Prepared For:

Lennar Communities

1075 Creekside Ridge Drive, Suite 110
Roseville, California 95678

Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard, President

January 21, 2009

BOLLARD
Acoustical Consultants

1293 Lincoln Way, Suite A ▸ Auburn, CA 95603 ▸ Phone: (530) 745-0550 ▸ Fax: (530) 745-0551 ▸ BACNOISE.COM

INTRODUCTION

The Carson Creek Unit 2 Residential Development Project (Project) site is located in western El Dorado County in the southern portion of El Dorado Hills, California, approximately two miles south of US Highway 50, southwest of the intersection of Latrobe Road and Golden Foothill Parkway. This noise analysis was prepared to evaluate the potential noise impacts upon future residential uses developed within Carson Creek Unit #2 pursuant to project EIR Noise Mitigation Measures 4.7-2, 4.7-3, and 4.7-4, as well as to specifically address project Condition of Approval #31. Those mitigation measures and Conditions are reproduced below:

Mitigation Measure 4.7.2 (Traffic):

> Where the development of a project could result in the exposure of noise-sensitive land uses to existing or projected future traffic noise levels in excess of the applicable County noise standards, the County shall require an acoustical analysis to be performed prior to the approval of such projects.

Mitigation Measure 4.7.3 (Railroad):

> Where the development of a project could result in the exposure of noise-sensitive land uses to projected future railroad noise levels in excess of the applicable County noise standards, the County shall require an acoustical analysis to be performed prior to the approval of such projects.

Mitigation Measure 4.7.4 (Stationary Noise Sources):

> Where the development of a project could result in the exposure of on-site noise-sensitive land uses to projected on-site or off-site stationary noise levels in excess of the applicable county noise standards, the county shall require an acoustical analysis to be performed prior to the approval of such projects.

Condition of Approval #31

> Where the development of a project could result in the exposure of on-site noise-sensitive land uses to projected on-site or off-site stationary noise source levels in excess of the applicable County noise standards the County shall require an acoustical analysis to be performed prior to the approval of such projects. Where acoustical analysis determines that stationary source noise levels would exceed the applicable County noise standards at proposed on-site noise sensitive land uses, the County shall require the implementation of noise attenuation measures, such as setbacks, sound barrier walls, or noise berms, as necessary to reduce stationary source noise levels at proposed noise sensitive uses to conform with the applicable County Standards.

In response to these mitigation measures and conditions, Bollard Acoustical Consultants, Inc. (BAC) has prepared this analysis to specifically address noise impacts upon the project from traffic, railroad, and stationary noise sources. Figure 1 shows the project site plan, the location of the Business Park Lift Station #3, and the Folsom Excursion railroad tracks.

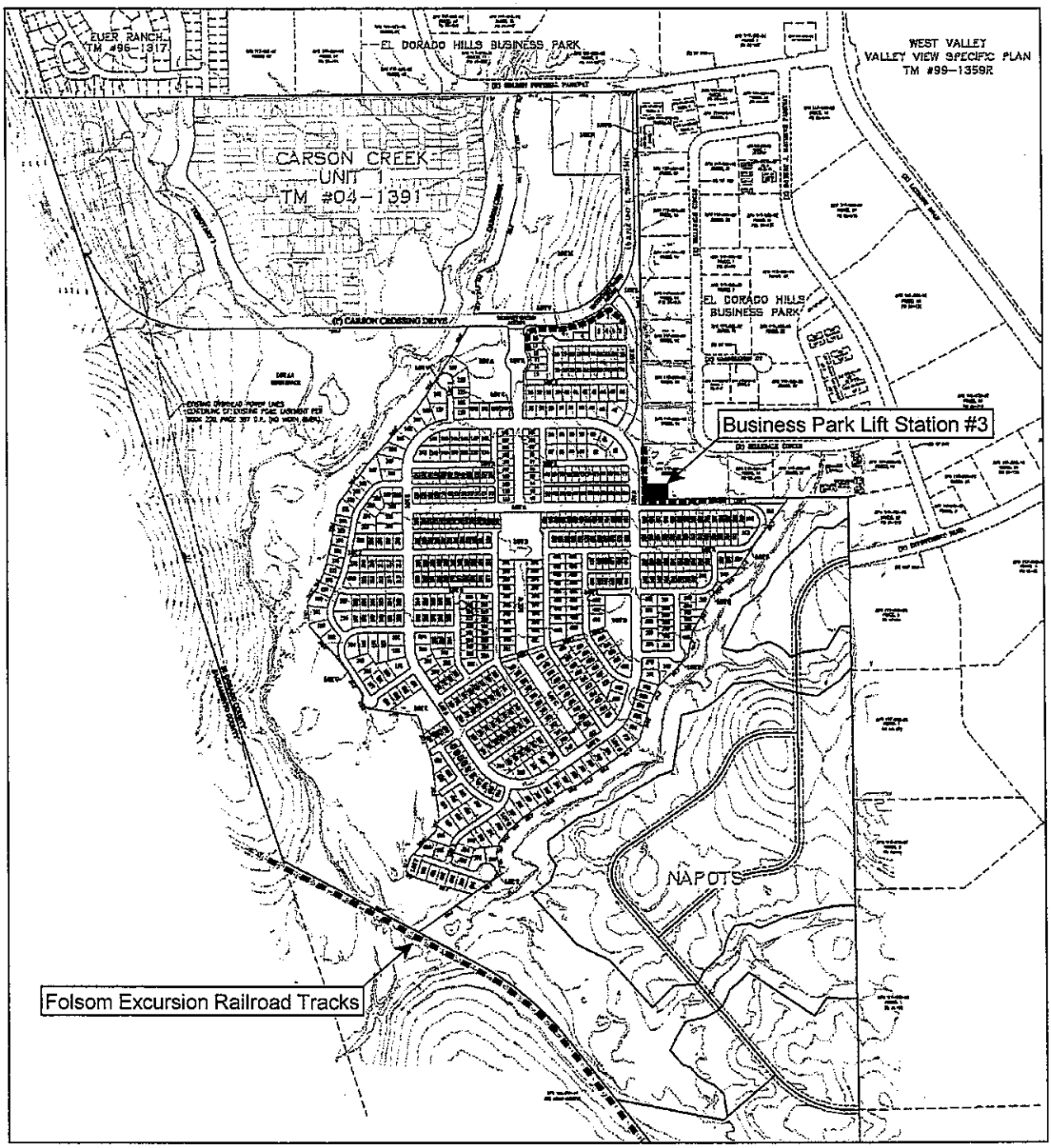
NOISE FUNDAMENTALS AND TERMINOLOGY

Background on Noise

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. Appendix A contains definitions of Acoustical Terminology. Figure 2 shows common noise levels associated with various sources.

Figure 1
Carson Creek Unit 2 – El Dorado County, California
Proposed Project Site Plan



BOLLARD
Acoustical Consultants

- - - : Noise Barrier Location

250' 750'
0 500' 1,000'

09-1424.B.22

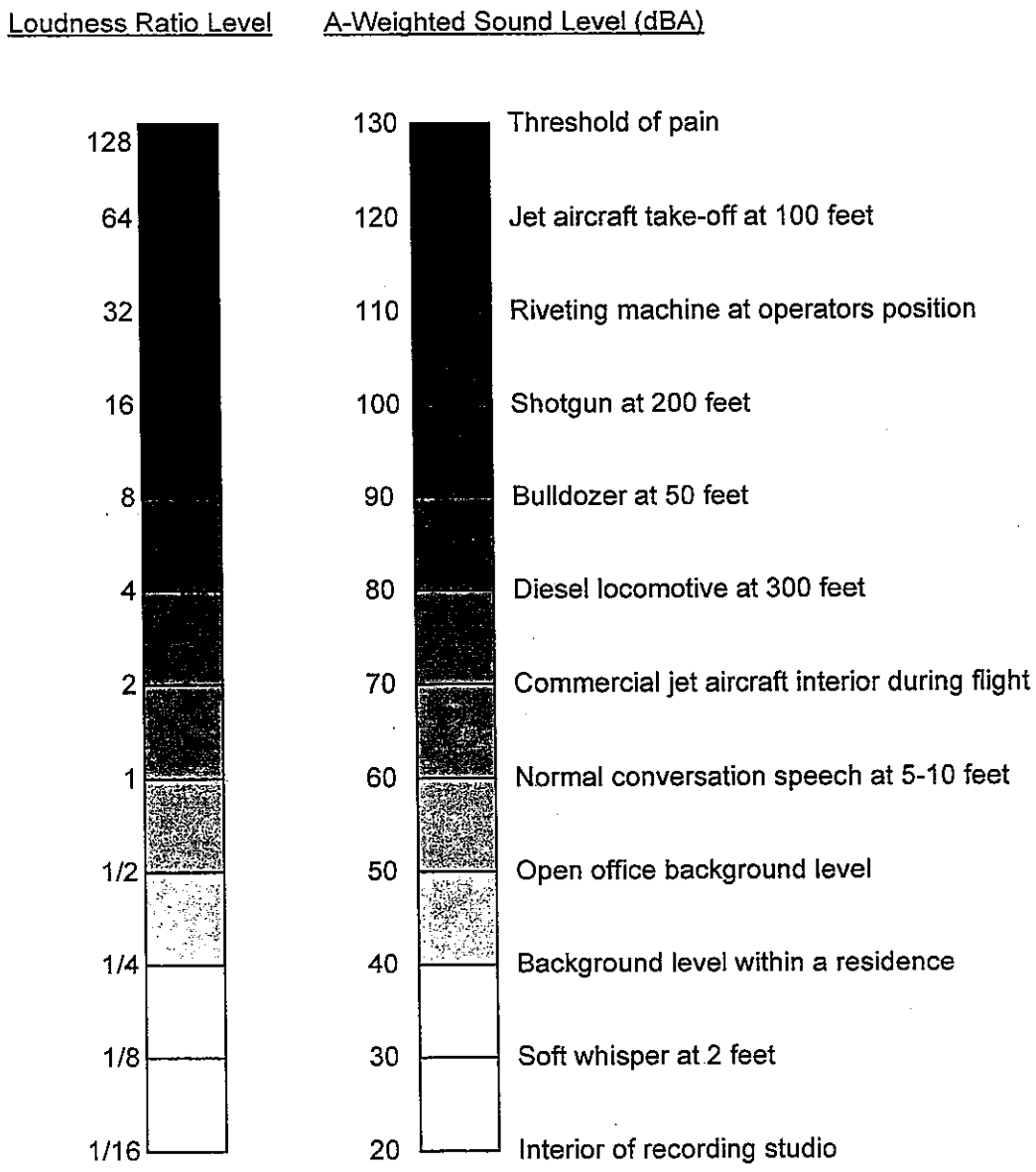
Effects of Noise on People

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn}-based noise standards are commonly used to assess noise impacts associated with traffic, railroad and aircraft noise sources.

Figure 2
Typical A-Weighted Sound Levels of Common Noise Sources



CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

El Dorado County Noise Standards

The Noise Element of the El Dorado County General Plan contains policies to ensure that County residents are not subjected to noise beyond acceptable levels. The current General Plan was adopted on July 19, 2004. The Carson Creek Specific Plan was approved while the previous General Plan (January 23, 1996) was in effect. Therefore the Project must abide by the standards set forth in the 1996 Noise Element. It is important to note that even though the General Plan was updated, both versions of the Noise Element contain the same standards.

Policy 6.5.1.1 of the County Noise Element requires an acoustical analysis for new residential developments located in potentially noise-impacted areas.

Policy 6.5.1.8 of the County Noise Element establishes 45 and 60 dB L_{dn} as being acceptable interior and exterior noise levels, respectively, for new residential uses affected by transportation (traffic, railroad) noise sources. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise reduction measures have been implemented and interior noise levels are in compliance with the 45 dB L_{dn} standard.

Policy 6.5.1.7 of the County Noise Element provides performance standards for residential uses affected by non-transportation noise sources such as the adjacent business park activities and lift station operations. Those standards are provided below in Table 1 [Table 6-2 of the General Plan].

Table 1
Exterior Noise Level Performance Standards
Non-Transportation (Stationary) Noise Sources Affecting Residential Uses

Noise Level Descriptor	Daytime 7 a.m. - 7 p.m.	Evening 7 p.m. - 10 p.m.	Night 10 p.m. - 7 a.m.
Hourly L_{eq}, dB	55	50	45
Maximum level, dB	70	60	55

Source: El Dorado County General Plan, 1996

NOISE IMPACTS ASSOCIATED WITH FUTURE RAILROAD OPERATIONS

Currently there are no railroad operations on the railroad tracks located southwest of the Carson Creek Unit #2 development. However, excursion trains between Folsom and Latrobe have been proposed and studied in the past. In a 1998 noise analysis prepared by Bollard Acoustical Consulting, the Folsom Excursion Rail Project proposed the operation of five round trips per weekend day between Folsom and Latrobe using steam (summer) and diesel (spring, fall, winter) locomotives with two to three passenger cars. The sightseeing trains would operate at speeds between 10 and 20 mph in the City of Folsom, up to 30 mph between Scott Road and Latrobe. All excursion train operations would occur during daytime hours, with no activities during nighttime or early morning hours.

That study concluded that, due to the relatively brief period of time required for the passage of the excursion trains, and an even more transient usage of warning horns near grade crossings, the percentage of the weekend day during which the train noise generation would occur in a particular area would be small. Furthermore, because excursion train usage was proposed only during daytime hours, the potential for sleep disturbance at the project site associated with excursion trains is considered to be minimal.

Based on information contained in that earlier analysis, it was concluded that the distance to the 60 dB L_{dn} contours for the excursion trains would be approximately 50 feet from the tracks in areas where warning horns are not uses, and 200 feet from the tracks where warning horns are used. Because the Carson Creek Unit #2 project site is located well beyond 200 feet from the railroad tracks in question, no exceedance of the County's noise standards are anticipated, and no additional noise mitigation measures would be required for this project.

NOISE IMPACTS ASSOCIATED WITH FUTURE TRAFFIC NOISE EXPOSURE

Traffic Noise Prediction Methodology

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calveno vehicle noise emission curves was used to predict traffic noise levels at the Project site. The FHWA Model is the traffic noise prediction model preferred by the Federal Highway Administration and the State of California Department of Transportation (Caltrans) for use in traffic noise assessment.

Predicted Future Traffic Noise Levels at the Project Site

The Carson Creek Unit 2 Project management is uncertain as to what the future average daily traffic (ADT) volumes will be on Carson Crossing Drive. Therefore, Bollard Acoustical Consultants, Inc. (BAC) utilized the FHWA Model with ADT volumes ranging from 8,000 to 21,000 to predict future traffic noise levels along Carson Crossing Drive. The FHWA Model inputs and predicted future traffic noise levels at the project site are shown in the Appendices. The predicted future traffic noise levels for Carson Crossing Drive are provided in Table 2.

Table 2
Predicted Carson Crossing Drive Future Traffic Noise Levels
Carson Creek Unit 2 – El Dorado County

		Distance to Contours, Feet		
ADT	Predicted L_{dn} @ 60 Feet, dB	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
8,000	65	29	63	135
9,000	66	32	68	146
10,000	66	34	73	157
11,000	67	36	78	167
12,000	67	38	82	177
13,000	67	40	87	187
14,000	68	42	91	197
15,000	68	44	96	206
16,000	68	46	100	215
17,000	69	48	104	224
18,000	69	50	108	232
19,000	69	52	112	241
20,000	69	54	116	249
21,000	69	55	120	258

Notes:
- FHWA Model input data are provided in the appendices.
- Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
- Source: FHWA-RD-77-108 with inputs from Bollard Acoustical Consultants, Inc.

The Table 2 data indicate that future Carson Crossing Drive traffic noise levels are predicted to exceed the 60 dB L_{dn} exterior noise level standard applied by El Dorado County to the outdoor activity areas of new residential developments for the entire range of future ADT's. Specifically, future traffic noise levels in the backyards of the lots closest to Carson Crossing Drive are predicted to be approximately between 65 dB L_{dn} and 70 dB L_{dn} depending upon the actual future ADT volumes for that roadway. Therefore, noise mitigation measures would be required along Carson Crossing Drive in order to ensure compliance with the County's exterior standard.

Exterior Traffic Noise Mitigation

As discussed above, the entire range of possible future traffic noise levels from Table 2 are predicted to exceed the County's 60 dB L_{dn} exterior noise level standard. Therefore, Bollard Acoustical Consultants, Inc. performed a detailed barrier analysis to determine what the predicted future noise levels would be at the nearest outdoor activity areas with the various ADT volumes in conjunction with barriers of various heights. The results of the barrier analysis are presented on Table 3.

Table 3
Carson Crossing Drive Future Traffic Noise Levels With Varying ADT & Wall Heights
Carson Creek Unit 2 Residential Development – El Dorado County

ADT	Predicted L_{dn} (dB)	W/ 6' Wall	W/ 7' Wall	W/ 8' Wall
8,000	65	59	58	56
9,000	66	60	58	57
10,000	66	60	59	57
11,000	67	60	59	58
12,000	67	61	59	58
13,000	67	61	60	58
14,000	68	62	60	59
15,000	68	62	60	59
16,000	68	62	61	59
17,000	69	62	61	59
18,000	69	63	61	60
19,000	69	63	61	60
20,000	69	63	62	60
21,000	69	63	62	60

Notes:
- FHWA Model input data and results are provided in the Appendix.
- Predicted levels shown represent levels at outdoor activity areas which are 60 feet from the centerline of Carson Crossing Drive.
- Source: FHWA-RD-77-108 with inputs from Bollard Acoustical Consultants, Inc.

The results of the barrier analyses shown in Table 3 indicate that in order to ensure that Carson Crossing Drive traffic noise levels comply with the County's 60 dB L_{dn} exterior noise level standard at the nearest proposed residential outdoor activity areas, a noise barrier up to 8 feet in height (relative to the residential pad elevations), would be required at the residential property lines adjacent to the roadway.

Interior Traffic Noise Mitigation

According to Table 2, the worst-case exposure of any residence in the Carson Creek development to future traffic noise would occur at the residences along Carson Crossing Drive. The predicted future traffic noise levels at the first-floor facades of these residences would range from approximately 65-70 dB L_{dn}, without considering the shielding affects of property line noise barriers. Due to reduced ground absorption of sound at elevated locations, traffic noise levels are expected to be approximately 2 dB higher at second floor facades (67-72 dB L_{dn}). Therefore, given future worst-case exterior noise levels between 67-72 dB L_{dn}, a building facade noise reduction of 22-27 dB would be required to achieve an interior noise level of 45 dB L_{dn}.

Standard residential construction (wood siding, STC-27 windows, door weatherstripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of approximately 25 dB with windows closed, and approximately 15 dB with windows open. Therefore if the future ADT volumes do not exceed 16,000 vehicles per day, standard residential building construction would be sufficient for first and second floor building facades of residences that face Carson Crossing Drive. However, if future ADT volumes range from 16,000 to 21,000 vehicles per day then all windows that face Carson Crossing Drive would need to be upgraded to an STC-29 rating which would be required to provide approximately 26 dB of exterior to interior noise reduction. Under the worst-case scenario, if future ADT volumes range from 21,000 to 22,000 vehicles per day then windows with an STC-30 rating would be required at all first row facades that face Carson Crossing Drive in order to provide approximately 27 dB of exterior to interior noise reduction. The window upgrades discussed above would only be required for the windows that will have a direct view of Carson Crossing Drive.

NOISE IMPACTS ASSOCIATED WITH THE BUSINESS PARK

To generally quantify ambient noise levels associated with the adjacent business park uses (except DST, which was quantified through a separate noise survey described below), an ambient noise survey was conducted at the locations shown on Figure 3 on February, 27, 2007. The measurement results, as summarized in Table 4, are assumed to be representative of typical operations at the neighboring commercial/light industrial uses, and are used for subsequent comparison to the County's hourly noise exposure criteria to determine compatibility.

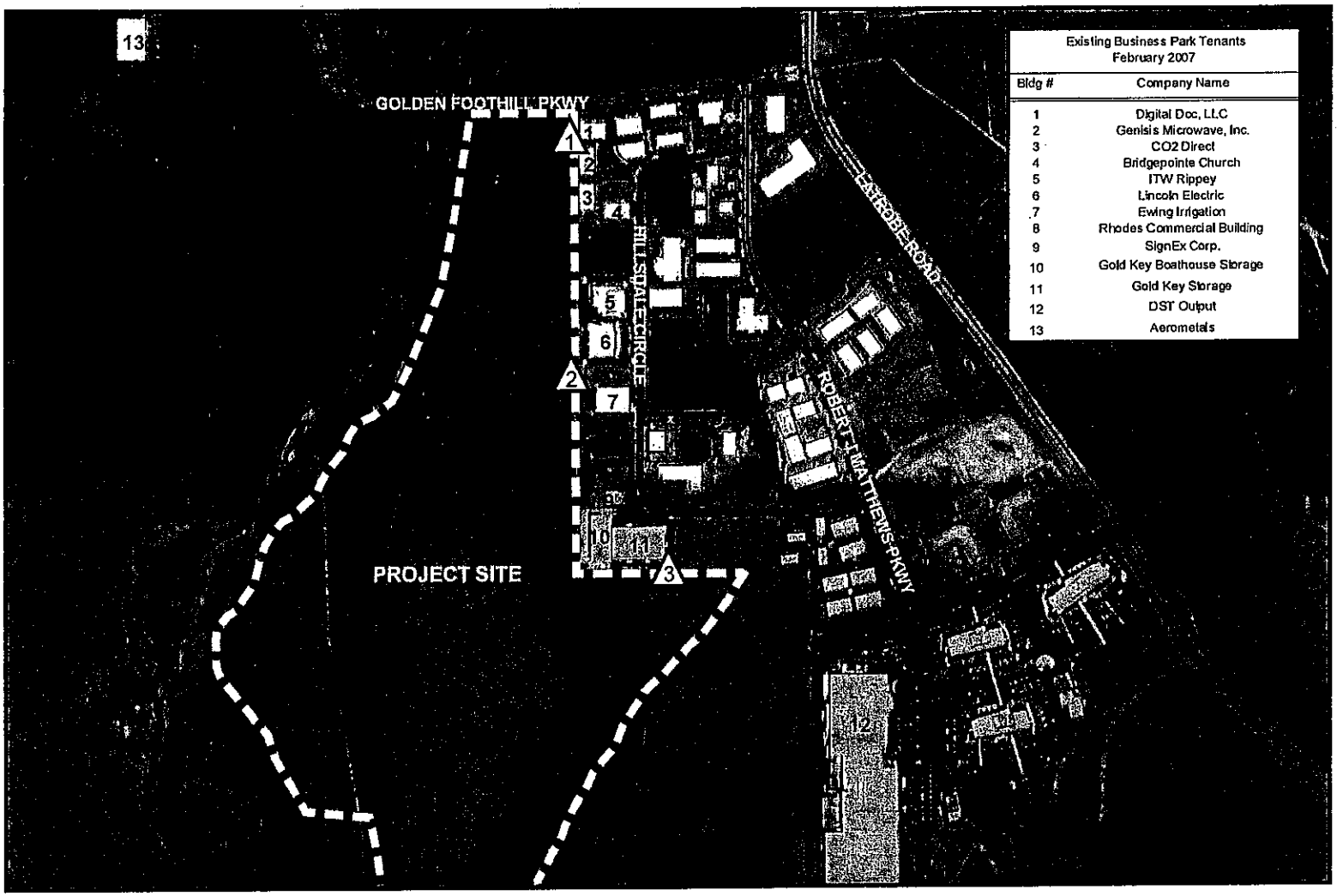
Noise measurement equipment used for this project included Larson-Davis Laboratories (LDL) Model 820 precision integrating sound level meters equipped with LDL Model 2560 ½" microphones. The systems were calibrated in the field before use using an LDL Model CAL200 acoustical calibrator. The measurement microphones were placed on tripods approximately 5 feet above the ground (assumed project building pad elevations).

Table 4
Summary of Ambient Noise Level Measurements
Carson Creek Unit 2 Project Site and Vicinity – February 27, 2007

Site	Location	Time	Measured Sound Level, dB	
			Average (L_{eq})	Maximum (L_{max})
1	Western property line, between Buildings 1 & 2	2:30 pm	45	59
2	Western property line, between Buildings 6 & 7	2:05 pm	44	54
3	Southeast corner of Building 11	3:00 pm	53	67

Source: Bollard Acoustical Consultants, Inc.
Noise measurement locations are identified on Figure 3.

Figure 3
Carson Creek Unit 2 – El Dorado County, California
Adjacent Land Uses & Short-term Noise Measurement Locations



Existing Business Park Tenants February 2007	
Bldg #	Company Name
1	Digital Doc, LLC
2	Genisis Microwave, Inc.
3	CO2 Direct
4	Bridgepointe Church
5	ITW Rippey
6	Lincoln Electric
7	Ewing Irrigation
8	Rhodes Commercial Building
9	SignEx Corp.
10	Gold Key Boathouse Storage
11	Gold Key Storage
12	DST Output
13	Aerometals

BOLLARD
Acoustical Consultants

△# : Short-Term Noise Measurement Site

09-1424.B.31

As shown in Table 4, existing operations at the adjacent commercial/light industrial facilities to north and east are all in compliance with the County's daytime noise level standards of 55 dB L_{eq} and 75 dB L_{max}. However, several noise producing activities were identified that, although not present during the ambient noise surveys, could exceed the County's standards. The primary noise sources associated with the adjacent commercial site which may be potentially significant at the proposed Carson Creek residential development include loading dock activities at Building 5, forklift operations at Building 7, boat storage and removal at the indoor boat storage facility at Building 10, and industrial operations at Building 12. These buildings are identified on Figure 3. A separate discussion of potential impacts and mitigation measures for each of these uses, as well as DST, follows:

Loading Dock Operations (Building 5 - ITW Rippey)

Building 5 (see Figure 3) was observed to have a dual bay loading dock, though it was not in use during the ambient noise survey. To determine typical loading dock noise levels, Bollard Acoustical Consultants used noise level measurements from a similar facility. Assuming one semi-tractor trailer truck delivery were to occur at this site per hour, the approximate noise levels would be 45 dB L_{eq} and 75 dB L_{max} at a reference distance of 50 feet.

Based upon noise levels of 45 dB L_{eq} and 75 dB L_{max}, respectively, loading dock noise levels were predicted at Lot "M", which may contain future residential uses. The nearest proposed residential property line would be located approximately 100 feet west of the loading dock area. Table 5 shows the predicted loading dock noise levels at this distance.

Table 5
Predicted Building 5 Loading Dock Operation Noise Levels
At the Nearest Carson Creek Unit 2 Property Line (Lot M)

Location	Distance	L_{eq}, dB	L_{max}, dB
Lot M	100 feet	39	69

Note: Predicted levels are based on noise levels of 45 dB L_{eq} and 75 dB L_{max} at a distance of 50 feet, with a sound attenuation rate of 6 dB per doubling of distance from the source.

As seen in Table 5, the Building 5 loading dock operation noise levels at the nearest property line of the Carson Creek Unit 2 development would be in compliance with the County's daytime noise level criteria presented in Table 1. As a result, no further mitigation measures are warranted for this aspect of the project provided loading dock activities are limited to daytime hours. It is worth noting however, that building 5 would not affect the tentative map for Unit 2 at this time.

Forklift Operations (Building 7 - Ewing Irrigation)

During BAC site inspections, Building 7 was observed to employ the use of a forklift. To determine typical forklift noise levels, Bollard Acoustical Consultants consulted file data from previous projects. The file data indicate that typical forklift operations are expected to produce noise levels of approximately 60 dB L_{eq} and 75 dB L_{max} at a reference distance of 50 feet.

Based upon noise levels of 60 dB L_{eq} and 75 dB L_{max} at a reference distance of 50 feet, forklift operation noise levels were predicted at the portion of the Carson Creek Unit 2 project site nearest to Building 7. The nearest potential residential locations (Lots 1, 2, 25, 26) would be approximately 85 feet west of Building 7. Table 6 shows the predicted forklift noise levels at this distance.

Table 6
Predicted Forklift Noise Levels from Building 7 at the Nearest Carson Creek Unit 2 Residences (Lots 1, 2, 25, 26)

Location	Distance	L_{eq}, dB	L_{max}, dB
Lots 1, 2, 25, 26	85 feet	55	70

Notes: Predicted levels are based on noise levels of 60 dB L_{eq} and 75 dB L_{max} at a distance of 50 feet, with a sound attenuation rate of 6 dB per doubling of distance from the source.

As seen in Table 6, the predicted Building 7 forklift operation noise levels at the nearest residential uses within the proposed Carson Creek Unit 2 development would be in compliance with the County's daytime noise level criteria presented in Table 1. As a result, no further mitigation measures are warranted for this aspect of the project provided forklift operations are limited to daytime hours.

If forklift activities were to occur during evening or nighttime hours, the outdoor activity areas of residential uses constructed near this use should be setback from the property line and/or shielded by intervening residential structures to reduce the levels shown in Table 6 to a state of compliance with the applicable El Dorado County standards.

Boat Storage Operations (Building 10 - Gold Key Boathouse Storage)

Proposed project residences will border the existing Gold Key Storage Facility. The facility is designed to store three levels of boats with their trailers. Boats are moved in and out of the storage building with the use of a large fork lift. In order to quantify the noise generated by the boat storage and removal process, Bollard Acoustical Consultants, Inc. Utilized previously collected reference noise level data for this facility. That data indicates that the boat fork lift generated noise levels of 70 dB L_{eq} and 81 dB L_{max} at a distance of 50 feet. The measurement was 13 minutes in duration and was representative of typical operations. Based on this operational information the boat storage noise levels were calculated at the nearest proposed residences to the west. The predicted boat storage noise levels are presented in Table 7.

Table 7
Predicted Building 10 Boat Storage Operation Noise Levels
At the Nearest Residential Property Line

Location	Distance	L_{eq}, dB	L_{max}, dB
Residences to the west	75 feet	60	78

Notes: Predicted levels are based on noise levels of 70 dB L_{eq} and 81 dB L_{max} at a distance of 50 feet (13 minute duration), with a sound attenuation rate of 6 dB per doubling of distance from the source.

The predicted noise levels shown in Table 7 exceed the County's daytime average daytime and maximum standards by 5 and 3 dB, respectively. In order to achieve compliance with the El Dorado County 55 dB L_{eq} and 70 dB L_{max} daytime noise level standards, a solid noise barrier would be required along the boundary of the residential back yards located nearest to this use. The results of the barrier analysis indicate that a 6-foot tall noise barrier at those locations would reduce boat storage operation noise levels by approximately 6 dB to a state of compliance with the El Dorado County daytime noise level standards. Activities at this site are limited to daytime hours (7 am to 7 pm). It should be noted, however, that the lift station that is in existence at the corner of this building generates higher noise levels, which would require noise mitigation in excess of 6 feet (see next section). If that lift station is removed or abandoned in the future, however, then a 6 foot tall barrier would be adequate to shield the Carson Creek Unit #2 project site receivers from this use.

Lift Station Noise Generation and Potential Noise Impacts

To quantify noise levels associated with the existing Business Park #3 Lift Station (seen in Figure 1), BAC conducted short-term noise level measurements of the existing lift station operations between the hours of 8 a.m. and 10 a.m. on June 14, 2007. At the time of the noise level measurements, BAC identified the emergency generator as the dominant noise producing component at the lift station facility. The emergency generator is housed in a roofed masonry enclosure with two louvered panels for air intake and air exhaust, and an exit port for engine exhaust, a standard door, and a roll up door. Accordingly, sound pressure level (SPL) measurements of the emergency generator were conducted at each side of the generator enclosure, and the levels were noted as being constant. Pump equipment was operating during the noise level measurements; however, it is located in an underground enclosure and pump noise was not audible over the generator noise. The lift station emergency generator noise level measurement results are summarized in Table 8.

Table 8
Lift Station Noise Level Measurements
Carson Creek Unit 2 – El Dorado County, California

Location	Distance (Feet)	SPL (dB)*
Northern Facade	20	83
Eastern Facade	20	89
Southern Facade	20	74
Western Facade	20	78

Source: Bollard Acoustical Consultants, Inc.
* Emergency generator was dominant noise source at lift station.

As the Table 8 data indicate, the highest noise levels measured were on the eastern facade, which was where the generator exhaust ports were located. No significant change in the overall equipment noise level was measured with the generator under load (i.e., with pump).

Based on the measured noise levels contained in Table 8 and a spherical spreading loss offset (-6 dB per doubling of distance from the noise source), unmitigated worst-case emergency generator noise levels were predicted to be approximately 68 and 72 dB at the proposed residences that will be located just south and west of the lift station, respectively. Project management indicated that during weekly and monthly testing of the lift station equipment, the generator would be operated for no more than 6 and 12 minutes, respectively, during any given hour. Based on this operational information and the measured noise level data contained in Table 8, worst-case (12 minutes out of the hour) generator noise levels were calculated at the proposed residences to the west and south of the lift station. The predicted hourly (L_{eq}) lift station/generator noise levels are presented in Table 9.

Table 9
Predicted Lift Station Hourly Noise Levels at Nearest Residences
Carson Creek Unit 2 – El Dorado County, California

Location	Distance (Feet)	L_{eq} (dB)
Nearest residences to the south	40	61
Nearest residences to the west	40	65

Source: Bollard Acoustical Consultants, Inc.

Noise during emergency operation of the lift station generator would be exempt under the County's standards. However, noise during routine maintenance and testing of the generator would be required to comply. Therefore, the predicted lift station generator noise levels presented in Table 9 were compared to the County's daytime noise exposure standard. Unmitigated lift station generator noise levels are predicted to exceed the established 55 dB Hourly L_{eq} (daytime) limit. Specifically, predicted lift station generator noise levels exceed the County standard by approximately 6 and 10 dB at the proposed residences to the south and west, respectively. Therefore, noise mitigation for the lift station generator would be required.

In order to ensure that the emergency generator noise levels at the nearest residential property lines do not exceed the County's 55 dB L_{eq} daytime noise level criterion, either acoustic retrofits and upgrades to the emergency generator building would be required or a solid noise barrier would be required along the southern and western property lines of the generator site. An 8-foot tall solid barrier (relative to the pad elevation of the lift station building) is estimated to be sufficient to reduce noise levels during routine maintenance testing to acceptable levels. Upgrades to the generator building would be more complicated, and would require the use of acoustically absorptive materials at the interior of the generator building, silencers at both cooling air inlet and exhaust ports, and upgraded doors. Such upgrades require an analysis of specific lift station design plans, which should be undertaken when such plans are available.

It is possible that the current location of the Business Park Lift Station #3 will be abandoned at some point with this project. If the lift station is abandoned, no further mitigation measures would be warranted for this source.

Industrial Operations (Building 12 - DST)

During the initial project site inspection it was noted that the rooftop mechanical equipment located atop Building 12, DST, was clearly audible (a photograph of this mechanical equipment can be seen in Appendix B). In order to quantify the noise generation of the DST equipment at the project site, noise measurements were taken at 13 locations throughout the project site on April 4, 2007. The measurement sites were spaced approximately 500 feet apart and were utilized to develop the 45 dB, 50 dB, and 55 dB noise level contours. The noise measurement locations and predicted contours can be seen in Figure 4. The results of the noise level measurements can be seen below in Table 10.

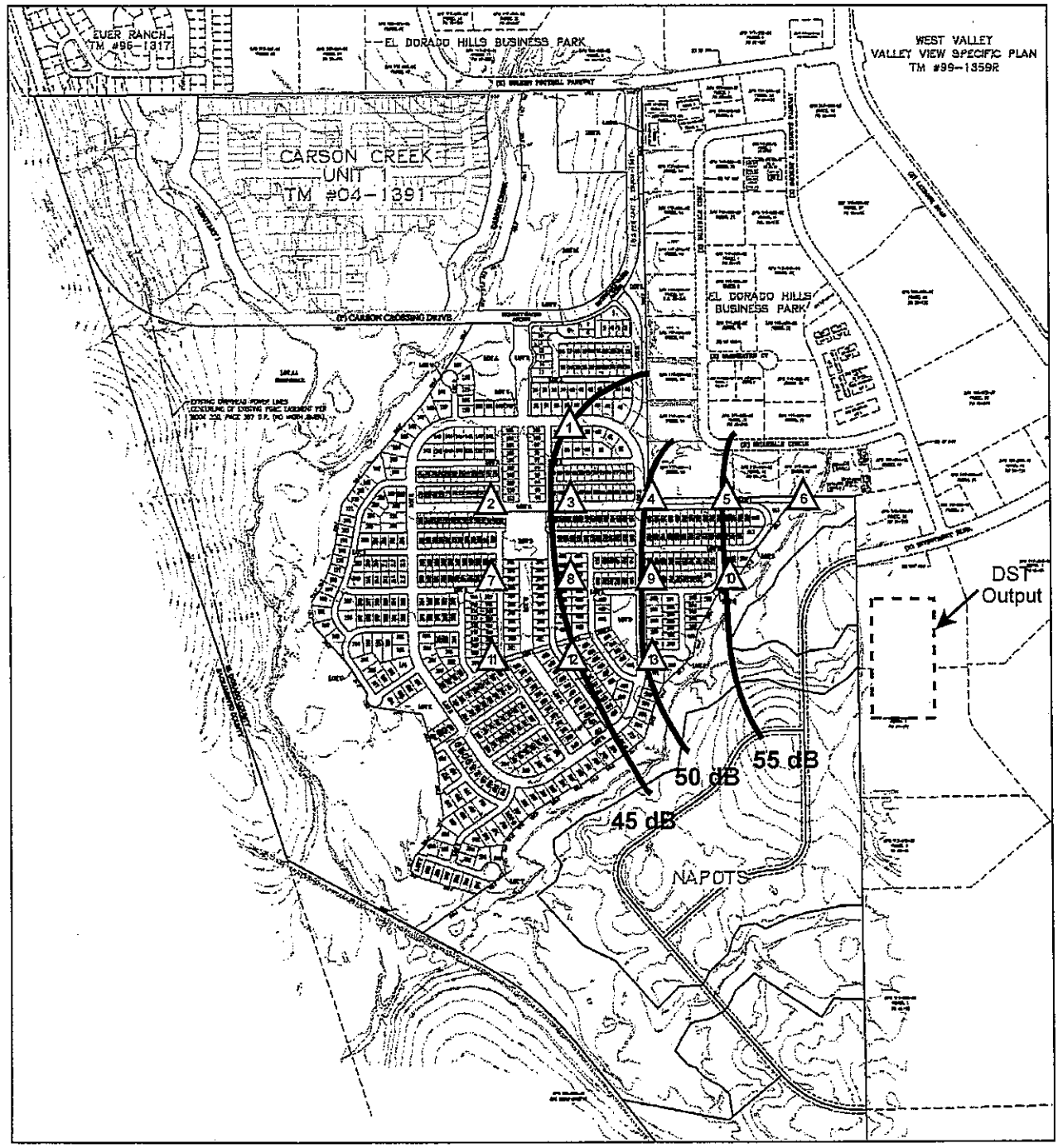
In addition to the sound pressure level measurements conducted for DST, 1/3 octave band frequency noise level measurements were also conducted to determine whether or not the noise emitting from the rooftop mechanical equipment contained pure tones. The measurements were taken at the 3 locations shown on Figure 5 on March 23, 2007. The results of the measurements, which are provided in Appendix C, indicate that the DST noise output does not contain pure tones.

Table 10
Summary of DST Output Noise Level Measurements
Carson Creek Unit 2 Project Site – April 4, 2007

Site	L_{eq}	L_{max}
1	44	55
2	45	55
3	47	52
4	53	55
5	55	61
6	54	60
7	43	52
8	42	53
9	46	50
10	55	57
11	42	54
12	44	48
13	49	53

Source: Bollard Acoustical Consultants. Noise measurement locations are shown on Figure 4.

Figure 4
Carson Creek Unit 2 – El Dorado County, California
DST Output Noise Measurement Sites and Noise Level Contours



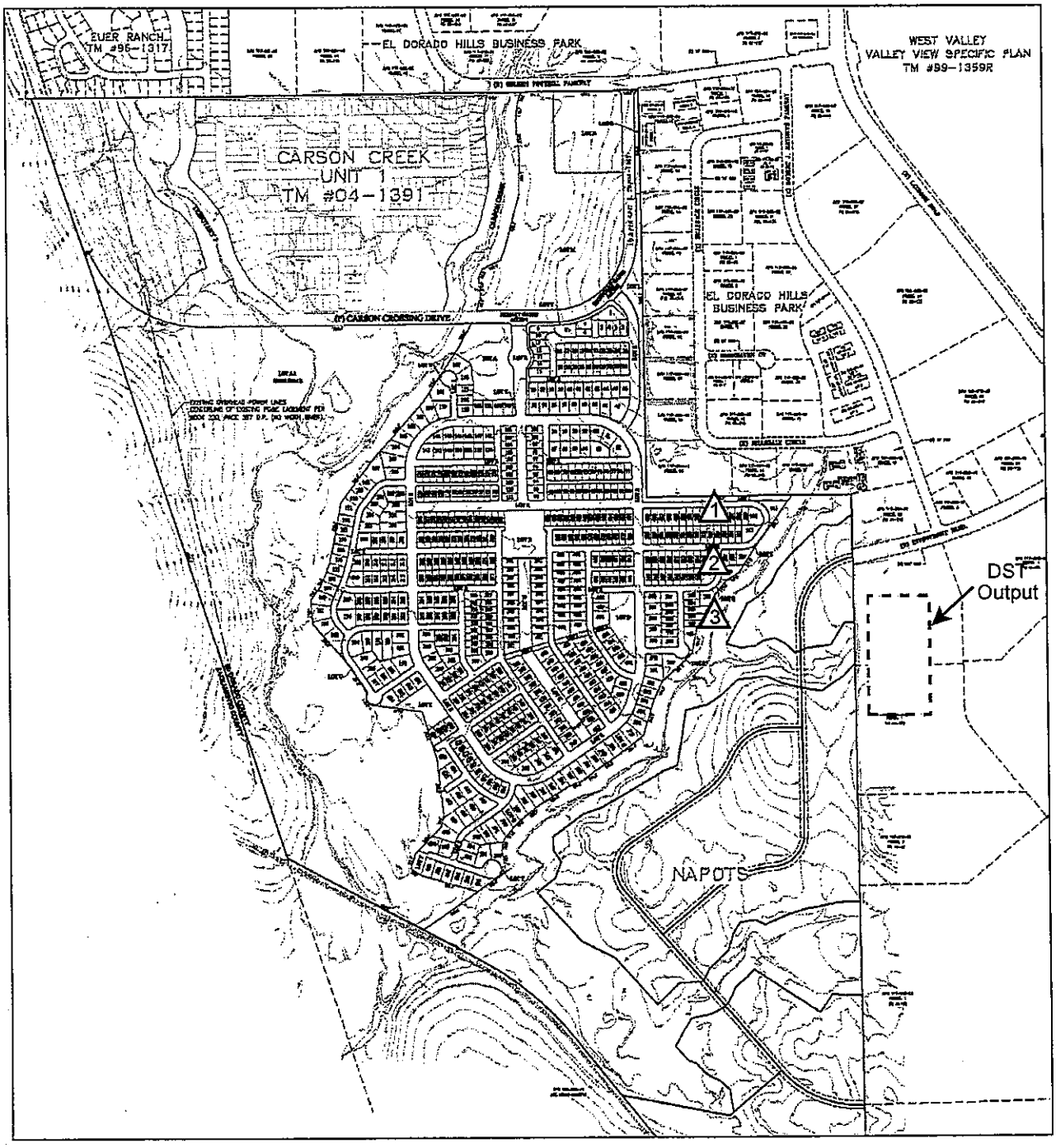
BOLLARD
Acoustical Consultants

: Noise Measurement Site

250' 750'
0 500' 1,000'

09-1424.B.38

Figure 5
Carson Creek Unit 2 – El Dorado County, California
DST Output Frequency Analysis Noise Measurement Sites



BOLLARD
Acoustical Consultants

: Noise Measurement Site

250' 750'
0 500' 1,000'

09-1424.B.39

Because operations at DST occur 24-hours per day, the appropriate standard to apply to this use would be the County's 45 dB L_{eq} nighttime standard. As can be seen from Figure 4, the 45 dB L_{eq} standard extends well into the Carson Creek Unit 2 project site. As a result, substantial noise mitigation measures would be required prior to the development of residences within that noise contour.

It is BAC's believe that there are only two options for ensuring that noise from DST satisfies the County noise level limits at future residential uses with the Carson Creek Unit 2 development. The first, and most efficient option would be to work with DST to develop industrial noise control measures which could be implemented at the source of the noise (i.e. acoustical silencers, partial enclosures of the noise-generating equipment, procurement of quieter equipment, etc.) to dramatically shrink the size of the 45 dB L_{eq} contour to the area where no residences are proposed, or even to the DST property line.

The second options is to restrict all residential development to locations outside of the 45 dB L_{eq} noise contour shown on Figure 4 until such time as the industrial noise control options cited above can be implemented or other mitigation has been determined.

It should be noted that, due to the elevated position of the industrial equipment responsible for the major noise generation of the DST facility, the use of noise barrier on the Carson Creek Unit 2 project site to shield this noise source would be very limited in effectiveness and are not recommended.

Aerometals Helicopter Noise Levels

The Aerometals facility is located just north of the proposed Carson Creek Unit 1 residential development. The company manufactures helicopter parts for the McDonnell Douglas MD-500 helicopter. The MD-500 is a four passenger helicopter and is flown an average of 21 flights a year. The helicopter operations at the Aerometals facility have been identified as a potentially significant noise source at the proposed residences.

The Special Use Permit S98-00117R (Aerometals Facilities Expansion) dated December 28, 2006 was conditionally approved by the County and required that disclosure be given to potential buyers of the neighboring properties. In addition, a cinder block sound wall was required that separates the Business Park from the residential area. The special use permit went on to say that the helicopter has been in operation for over eight years, and the County has not received any complaints in the vicinity according to the El Dorado Hills Area Planning Committee.

Although this issue has previously been addressed, it is recommended that similar disclosure statements be provided for the residences of the Carson Creek Unit 2 as were provided to the existing residences to the west of the Aerometals facility.

CONCLUSIONS

A portion of the Carson Creek Unit 2 development will be exposed to noise generated by future traffic and operations at the nearby business park to the east which exceeds, or has the potential under certain conditions to exceed, El Dorado County Noise Element standards. The following noise mitigation measures should be utilized to achieve compliance with those noise standards:

General Recommendations

1. Air conditioning should be included in all residences constructed in the Carson Creek Unit 2 development to allow occupants to close doors and windows as desired to achieve additional acoustic isolation from the commercial noise source in the project vicinity.

2. Disclosure statements should be provided to all future residents of the development notifying them of the presence of the nearby business park and the potential for periodic elevated noise levels associated with it's operations.

Recommendations for Future Attached or Detached Units Developed on Lots M & N

3. The design of the multi-family residential sites to the north of Carson Crossing Drive (Lots M & N) should be set back as far as practical from the business park property line and the common outdoor activity areas should be shielded from the adjacent business park by intervening residential buildings. As an alternative, solid noise barriers could be considered between any proposed common outdoor activity areas and the business park property line, but the heights of such barriers cannot be determined until detailed site plans are available.

Recommendations for Residences Located Nearest to the Boat Storage Facility and Lift Station

4. Acoustic retrofits and upgrades to the emergency generator building or a solid noise barrier would be required along the southern and western property lines of the generator site. An 8-foot tall solid barrier (relative to the pad elevation of the lift station building) is estimated to be sufficient to reduce noise levels during routine maintenance testing to acceptable levels. Upgrades to the generator building would be more complicated, and would require the use of acoustically absorptive materials at the interior of the generator building, silencers at both cooling air inlet and exhaust ports, and upgraded doors. If the lift station is abandoned, then a 6-foot tall barrier would be required at the nearest residences to provide shielding from the boat storage facility.

Recommendations for Residences Proposed Within 45 dB L_{eq} Contour of DST Company

5. Work with DST to develop industrial noise control measures which could be implemented at the source of the noise (i.e. acoustical silencers, partial enclosures of the noise-generating equipment, procurement of quieter equipment, etc.) to dramatically shrink the size of the 45 dB L_{eq} contour to the area where no residences are proposed, or even to the DST property line.

6. Until noise control measures described above in item #1 or any other mitigation measures can be implemented and verified as being effective, development of residential uses on the Carson Creek Unit 2 project site should be limited to areas beyond the 45 dB L_{eq} contour shown on Figure 4.

Recommendations for Residences Proposed Adjacent to Carson Crossing Drive

7. An 8-foot tall solid noise barrier should be provided at the locations shown in Figure 1 to reduce noise levels in future backyard areas to 60 dB L_{dn} or less.

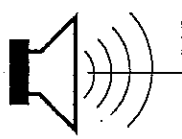
8. To ensure compliance with the County's 45 dB L_{dn} interior noise level standard, it is recommended that all second-floor bedroom windows of the residences constructed adjacent to Carson Crossing Drive from which that roadway would be visible have a minimum STC rating of 30.

These conclusions are based on: the site plan shown in Figure 1, Bollard Acoustical Consultants, Inc. site observations, noise level measurement data, and assumptions contained in this analysis. Changes to the site plan or deviations from the assumptions cited herein could cause future noise levels to differ from those predicted in this analysis. Bollard Acoustical Consultants, Inc. is not responsible for degradation in acoustic performance of the residential construction due to poor construction practices, failure to comply with applicable building code requirements, or for failure to adhere to the minimum building practices cited in this report.

Appendix A

Acoustical Terminology

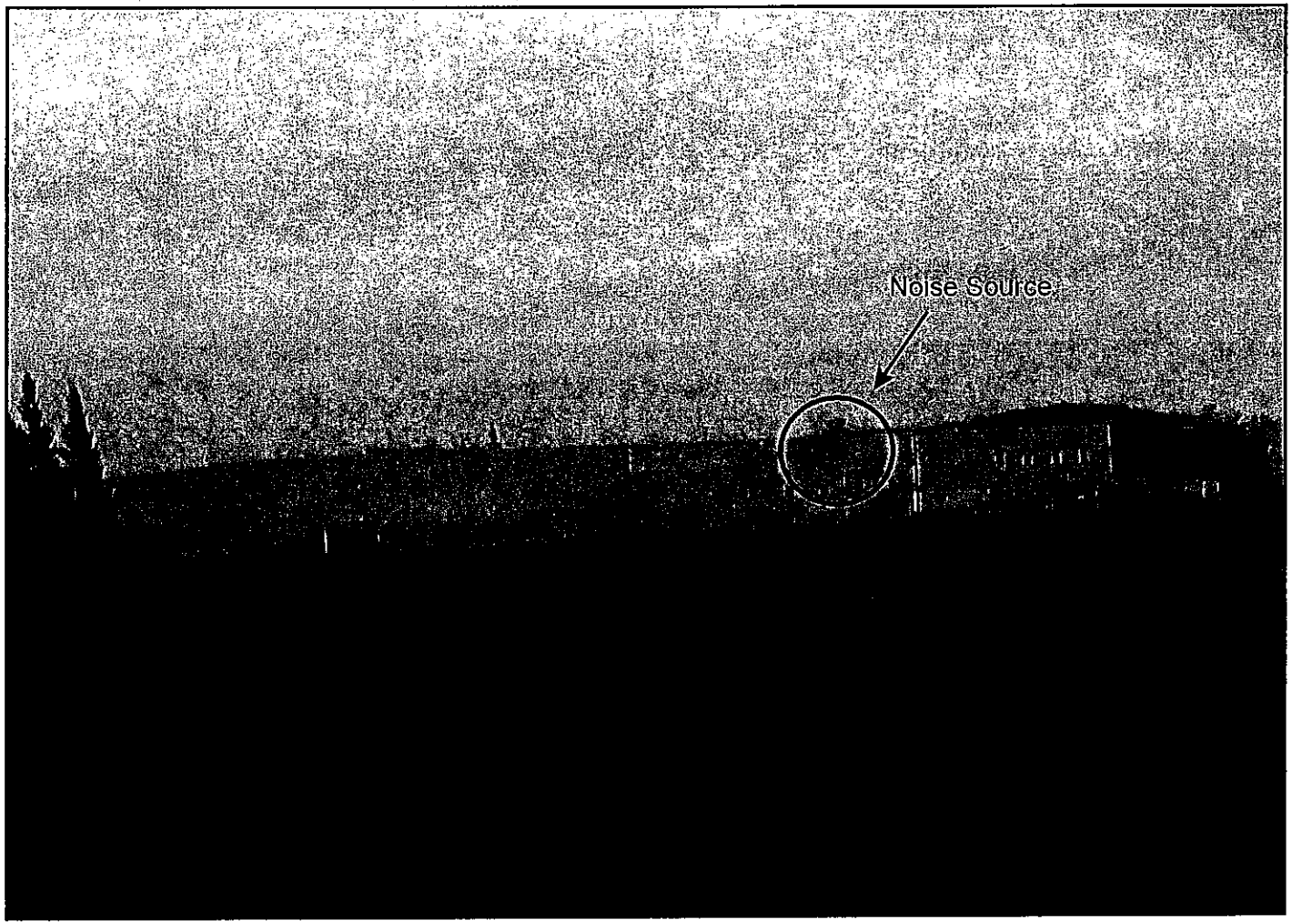
Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



BOLLARD

Acoustical Consultants

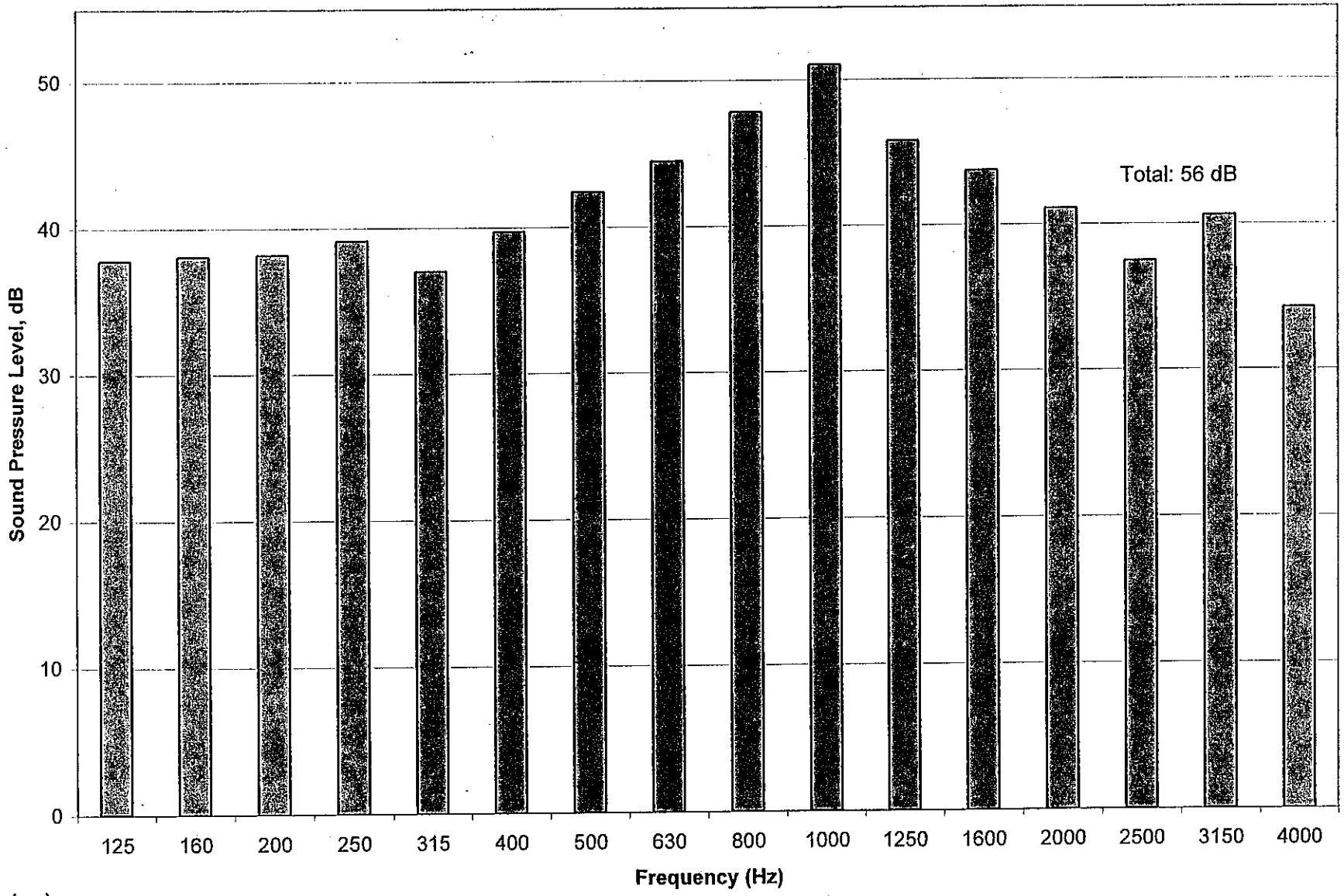
Appendix B
Carson Creek Unit 2 – El Dorado County, California
DST Output Photograph



BOLLARD
Acoustical Consultants

Note: Photograph taken from south-east corner of Gold Key Storage Facility

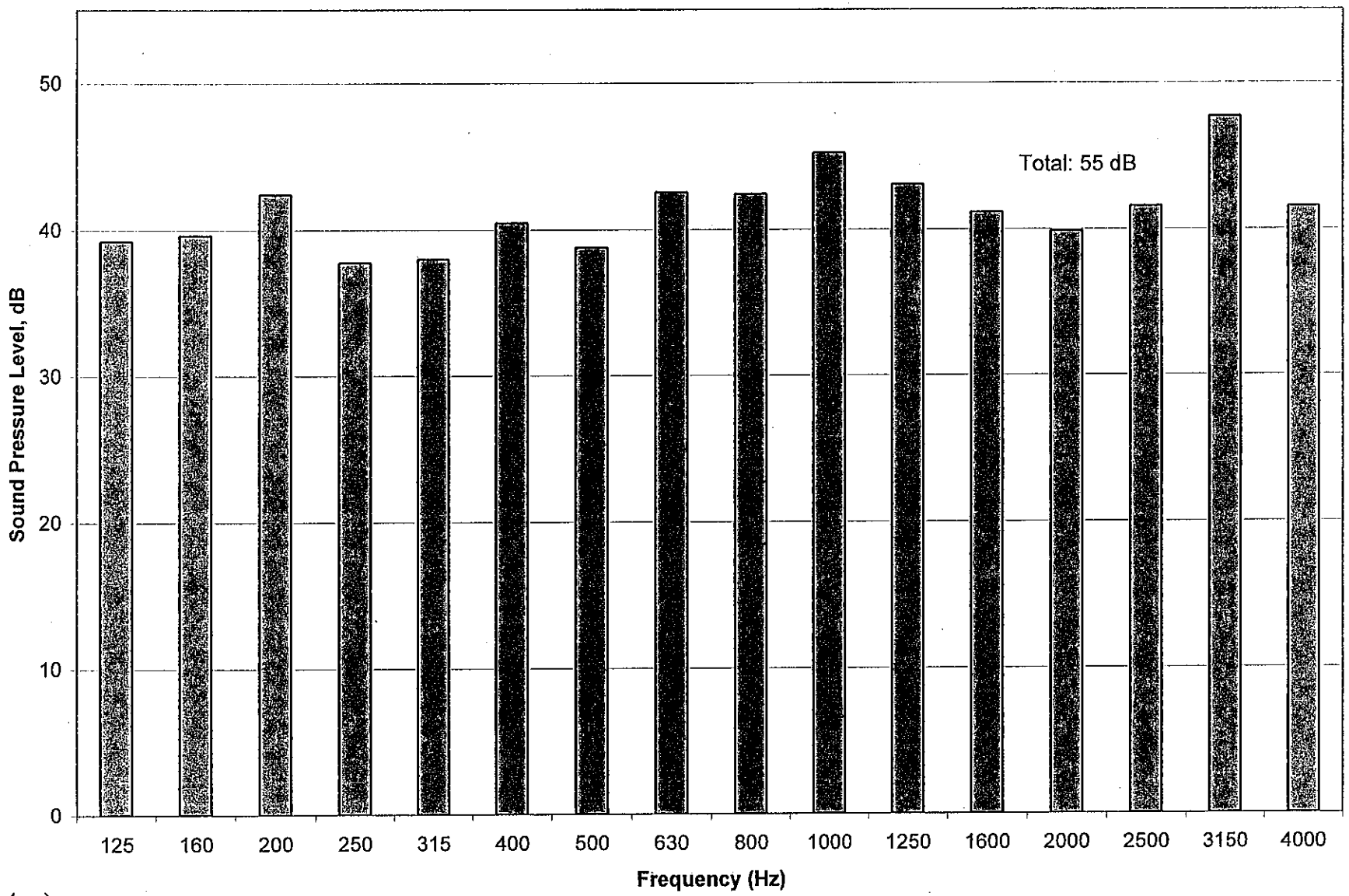
Appendix C-1
Carson Creek Unit 2 - Condition 31 - El Dorado County, California
Frequency Analysis of DST Output Noise Exposure at Site 1



BOLLARD
Acoustical Consultants

09-1424.B.45

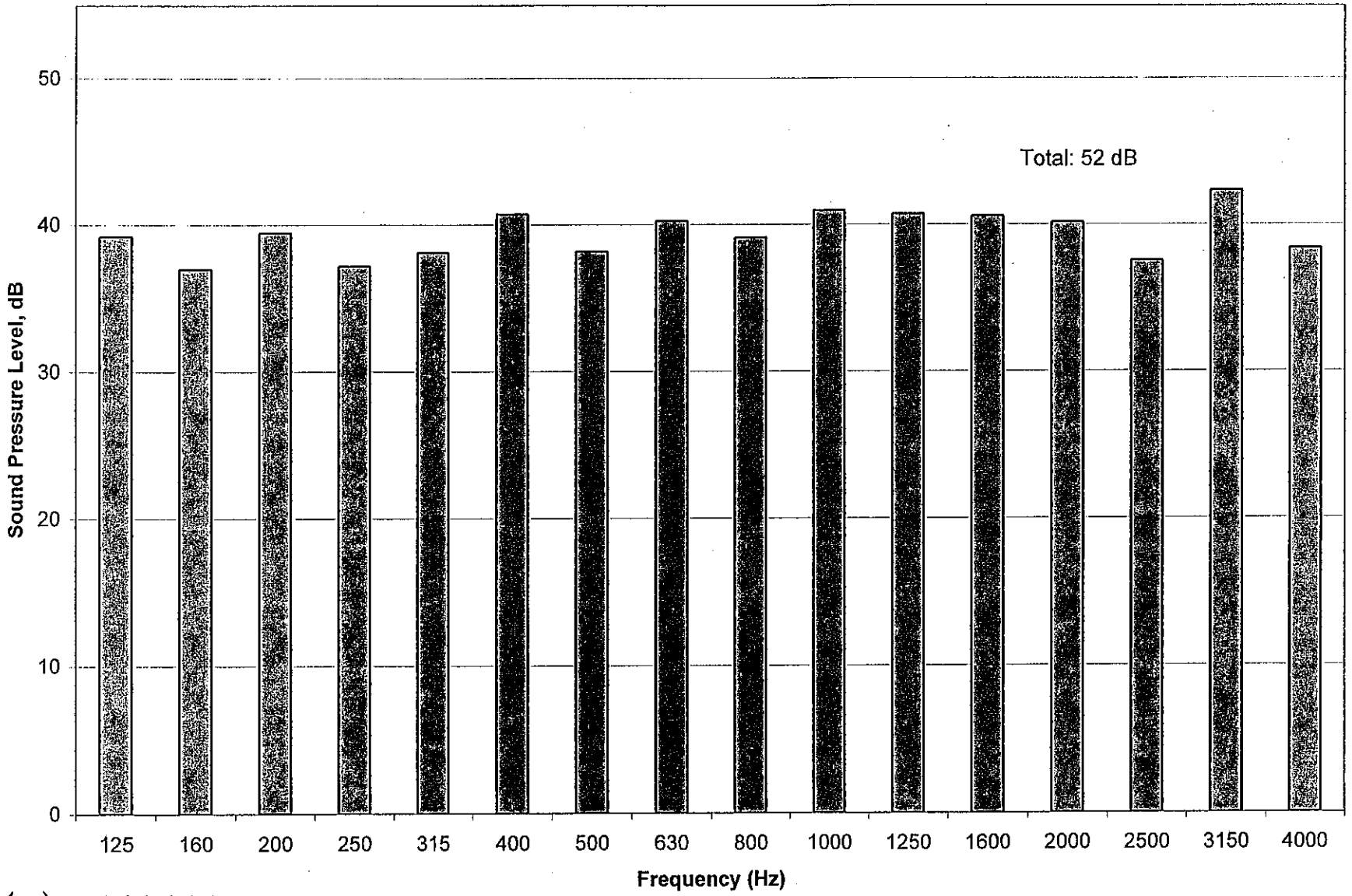
Appendix C-2
Carson Creek Unit 2 - Condition 31 - El Dorado County, California
Frequency Analysis of DST Output Noise Exposure at Site 2



BOLLARD
Acoustical Consultants

09-1424.B.46

Appendix C-3
Carson Creek Unit 2 - Condition 31 - El Dorado County, California
Frequency Analysis of DST Output Noise Exposure at Site 3



BOLLARD
Acoustical Consultants

09-1424.B.47

Letter 3 Don Barnett, C&C Ranch, LLC by Lennar Renaissance, Inc.

Response 3A: Comment noted. This comment states that the Carson Creek Specific Plan property is located along the western boundary of the DST Output West facility and identifies AKT Carson Creek Investors, LLC and C&C Ranch, LLC. C&C Ranch, as Managing Partner.

Response 3B: Comment noted. The commenter requests that entitlements for future development of property located west of the DST Output West facility be described in the Draft EIR. The Carson Creek Specific Plan is referenced in table 2-1 found at page 2-2 of the Draft EIR. Although entitlements exist for future development of the Carson Creek Specific Plan property, it would be speculative to address potential future uses as existing in the Draft EIR.

Response 3C: The commenter makes reference to the Environmental Noise Assessment prepared for the Carson Creek Unit 2 project and incorporates the study into the comment letter. Reference is made to the conclusion of the Noise Assessment that portions of the proposed Carson Creek project, including residential areas, are being impacted by nighttime noise in excess of 45 dBA.

See response to comment 2E.

Response 3D: See response to comment 2C:

Response 3E: See response to comment 2D:

APPENDIX A

j.c. brennan & associates
consultants in acoustics
P.O. Box 6748 • Auburn, California 95604
263 Nevada Street • Auburn, California 95603
p.530.823.0960 • f.530.823.0961 • www.jcbrennanassoc.com

November 11, 2009

Mr. Ron Mauck
Quad Knopf
One Sierragate Plaza, Suite 270C
Roseville, CA 95678

Subject: Responses to Noise Comments on the DST EIR

Dear Mr. Mauck:

The acoustical consulting firm of j.c. brennan & associates, Inc. has reviewed the two letters which provided comments on the noise section of the DST Facility EIR in El Dorado County. The two comment letters were from West Valley LLC and C&C Ranch LLC. Both letters were authored by Mr. Don Barnett.

Both letters refer to the fact that the existing DST facility produces noise levels which currently exceed the El Dorado County General Plan Noise Element Criteria. Specifically, the Noise Element nighttime noise level criterion of 45 dBA Leq is the most stringent standard which is being violated.

Mr. Barnett employed Bollard Acoustical Consultants to conduct an Environmental Noise Analysis for the proposed Carson Creek Unit 2 residential project (*Environmental Noise Assessment, Carson Creek Unit 2, El Dorado County, California, Prepared for: Lennar Communities, Prepared by: Bollard Acoustical Consultants, Inc., January 21, 2009*). This development is proposed to be located to the east of the DST facility, and approximately 700 feet from the DST building, at the developments closest location.

The noise analysis indicated that the roof-top mechanical equipment was the primary noise source associated with the facility and was responsible for exceeding the El Dorado County noise level criteria at the Carson Creek Unit 2 site. The noise analysis was not able to quantify noise levels associated with DST operations which occur internally to the building. Based upon the noise level contours developed in the Bollard study, the 45 dB Leq noise contour associated with roof-top equipment does extend within the proposed Carson Creek Unit 2 site, but does not extend to the existing Blackstone Master Planned Community, as referenced in the West Valley LLC comment letter.

The DST project proposes to include an additional 3 to 5 printing machines within the existing building. Noise level data provided by the printer manufacturer indicates that the noise levels associated with the printers is 90 dBA at one foot from the unit. Currently,

there are over 15 existing printers located within the facility, as well as other equipment. Based upon the addition of 3 to 5 printers, the overall interior noise level of the facility would increase by approximately 1 dBA.

The DST building façade construction is a tilt-up concrete system. Transmission loss data indicates that the tilt-up concrete façade will provide a minimum transmission loss of 39 dBA at the 125 Hz octave band. Transmission loss of the building façade increases with the higher frequencies. Based upon an interior noise level ranging from 90 dBA to 95 dBA due to overall future operations, the sound power level at the exterior building façade would be approximately 51 dBA to 56 dBA. The property line of the DST facility is 50 feet from the nearest building façade. Based upon a conservative attenuation rate of 10 dB per doubling of distance, the noise levels associated with the operations inside of the building will be less than 40 dBA Leq at the east property line. Therefore, the interior operations of the project will comply with the El Dorado County exterior noise level criterion of 45 dBA Leq.

In addition, based upon the noise measurement data collected in the Bollard Acoustical study, the project will not contribute to a significant cumulative increase in noise levels.

If you have any questions, please contact me at (530) 823-0960.

Respectfully submitted,

j.c. brennan & associates, Inc.

Jim Brennan
President
Member: Institute of Noise Control Engineering