

APPENDIX J
Noise Technical Report

**NOISE TECHNICAL REPORT
FOR THE COLLEGE BOULEVARD
IMPROVEMENT PROJECT**

Prepared for:

City of Oceanside
300 North Coast Highway
Oceanside, California 92054

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Mike Greene
949.373.8317

AUGUST 2019

Noise Technical Report for the College Boulevard Improvement Project

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
1 INTRODUCTION.....	1
1.1 Purpose of the Report.....	1
1.2 Location	1
1.3 Project Description.....	1
2 EXISTING CONDITIONS	7
2.1 Noise Terminology	7
2.1.1 Sound Pressure Levels and Decibels	7
2.1.2 A-Weighted Sound Level	7
2.1.3 Human Response to Changes in Noise Levels	8
2.1.4 Noise Descriptors.....	8
2.1.5 Sound Propagation	9
2.1.6 Groundborne Vibration Fundamentals	9
2.2 Existing Conditions.....	13
3 REGULATORY SETTING	17
3.1 Federal.....	17
3.2 State.....	18
3.3 Local	19
4 SIGNIFICANCE CRITERIA	23
5 METHODOLOGY	25
6 IMPACT ANALYSIS	27
6.1 Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance.....	27
6.1.1 Construction Noise.....	27
6.1.2 Traffic Noise	30
6.1.3 Cumulative Noise Impacts Associated with Project Traffic.....	32
6.2 Excessive Groundborne Vibration or Groundborne Noise Levels	33
6.3 Substantial Permanent Increase in Ambient Noise Levels	34
6.4 Substantial Temporary or Periodic Increase in Ambient Noise.....	34
6.5 Airport/Airport Land Use Plan	34
6.6 Private Airstrip.....	34
6.7 Cumulative Impacts	34
7 MITIGATION MEASURES.....	37
8 REFERENCES.....	39

Noise Technical Report for the College Boulevard Improvement Project

TABLE OF CONTENTS (CONTINUED)

Page No.

APPENDICES

- A Field Noise Measurement Datat Sheets
- B Construction Noise Model Input/Output
- C Traffic Noise Model Input/Output

FIGURES

1	Regional Map.....	3
2	Vicinity Map	5
3	Typical Levels of Groundbourne Vibration.....	11
4	Noise Measurement and Modeling Locations	15

TABLES

1	Typical Sound Levels in the Environment and Industry	8
2	Measured Noise Levels.....	13
3	City of Oceanside Exterior Noise Standards	20
4	Typical Construction Equipment Noise Levels	28
5	Typical Construction Equipment Noise Levels	29
6	Summary of Construction Noise Modeling Results	30
7	Average Daily Traffic Volumes by Roadway Segment	31
8	Summary of Existing and Existing plus Project Traffic Noise Levels	32
9	Summary of Cumulative and Cumulative plus Project Traffic Noise Levels	33

Noise Technical Report for the College Boulevard Improvement Project

1 INTRODUCTION

1.1 Purpose of the Report

This noise technical report summarizes the results of the noise analysis conducted for the proposed College Boulevard Improvement Project (project). Dudek acoustical specialists have evaluated the potential noise impacts associated with the proposed project. The analysis addresses potential noise/vibration impacts from project-related construction and operation (i.e., traffic noise) at adjacent noise-sensitive receivers. Mitigation measures are provided as necessary.

1.2 Location

The proposed project is located in northern San Diego County, within the City of Oceanside (Figure 1, Regional Map). The proposed project corridor stretches from Waring Road north to Old Grove Road for a distance of approximately 2.41 miles. The improvement corridor is primarily bordered by residential uses to the east and west; however, the corridor also borders commercial uses in the Del Oro Marketplace, Gateway Plaza, and Rancho Del Oro Plaza near the College Boulevard/Oceanside Boulevard intersection and educational uses, commercial properties, and industrial designated lands near Old Grove Road (Figure 2, Vicinity Map).

The approximate centroid of the site is 33°11'58.57" North, 117°17'16.96" West and lies within the U.S. Geological Survey (USGS) 7.5-minute map, San Luis Rey Quadrangle. The project corridor lies within Sections 15, 27, and 22, Township 11 South, and Range 4 West within the USGS 7.5 Minute San Luis Rey Quadrangle.

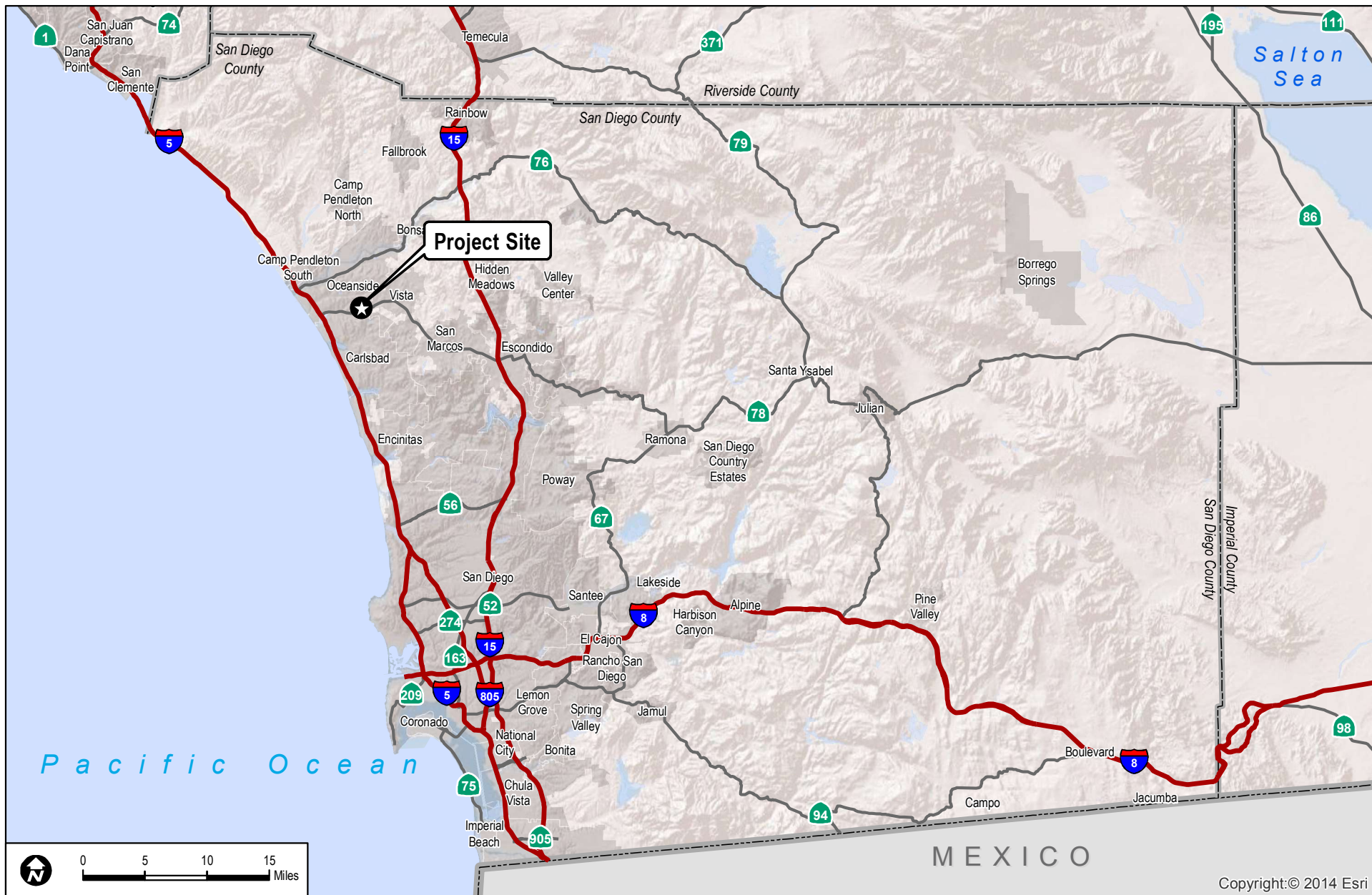
1.3 Project Description

The proposed College Boulevard improvement corridor is classified as a six-lane Major Arterial from Waring Road to Old Grove Road in the City of Oceanside's General Plan Circulation Element (City of Oceanside 2012). The 2.41-mile corridor is currently built with four lanes and posted speed limits are 40 to 50 miles per hour. A raised median is constructed throughout the length of the corridor. In addition to street parking that is permitted north of Roselle Avenue and south of Thunder Drive, bicycle lanes are striped along most of the corridor with widths ranging from 5 to 9 feet. Sidewalks are also provided on both sides of the street with widths ranging from 4 to 6 feet and landscaped parkways are provided in most sections. The existing right-of-way is located approximately 10 feet behind the face of curb through most of the corridor. Utilities are located underground along the corridor, which include cable television, phone, gas, sewer, water, storm drain and electrical. No overhead wires are present along the College Boulevard corridor.

Noise Technical Report for the College Boulevard Improvement Project

College Boulevard is proposed to be widened to a 6-lane major arterial from Olive Drive to Old Grove Road, which would be consistent with the City of Oceanside's Circulation Element Year 2030 classification of College Boulevard. This segment of College Boulevard was included in Section 3 (Thunder Drive to Old Grove Road) of the College Boulevard improvement corridor analyzed in the 2009 PSR. Along this section, the City proposes road and right-of-way improvements to the corridor to enhance existing and future traffic operations, provide congestion relief, and reduce queue lengths, improve safety conditions for the unsignalized intersections and access points along the corridor, and provide safer travel routes for bicyclists and pedestrians. In addition to College Boulevard widening, the proposed project would include curb/gutter improvements and relocation of utilities to accommodate the widened roadway segment, installation of retaining walls, and relocation of bike lanes, lighting, and sidewalks in various locations along College Boulevard between Waring Road/Barnard Drive and Marcella Street and between Olive Drive and Old Grove Road. The following improvements are an example of those proposed for the College Boulevard from Waring Road/Barnard Drive to Marcella Street:

- At the intersection of Waring Road/Barnard Drive increase the curb radius from 30 feet to 50 feet to improve truck access, construct a two-tier retaining wall system at the southeast corner of the Waring Road/Barnard Drive intersection with College Boulevard, and construct a five-foot tall, single tier retaining wall approximately 460 feet from the northeast corner;
- Widen approximately 600 feet of College Boulevard on the east side, north of Waring Road, to extend the bike lane and provide a third through lane and also construct multi-tier retaining walls on College Boulevard on the east side, north of Waring Road;
- Widen approximately 425 feet of College Boulevard on the west side, north of Barnard Drive, to extend bike lane and provide third through lane and also construct an approximately 5-foot high, 460 foot long single-tier retaining wall on College Boulevard on the west side, north of Barnard Drive;
- On both sides of College Boulevard, for an approximate distance of 3,000 feet, move the parkway adjacent to the curb and reconstruct the sidewalk adjacent to the right-of-way line and;
- Stripe new crosswalks at the College Boulevard/Roselle Avenue intersection and install traffic-calming chokers to narrow the travel way at approximately 600 feet north of Roselle Avenue;
- Lengthen the northbound left-turn pocket at the intersection with Marvin Street West and implement additional minor curb and striping improvements; and
- Lengthen the southbound left-turn pocket at the intersection with Thunder Drive.



Copyright: © 2014 Esri

DUDEK

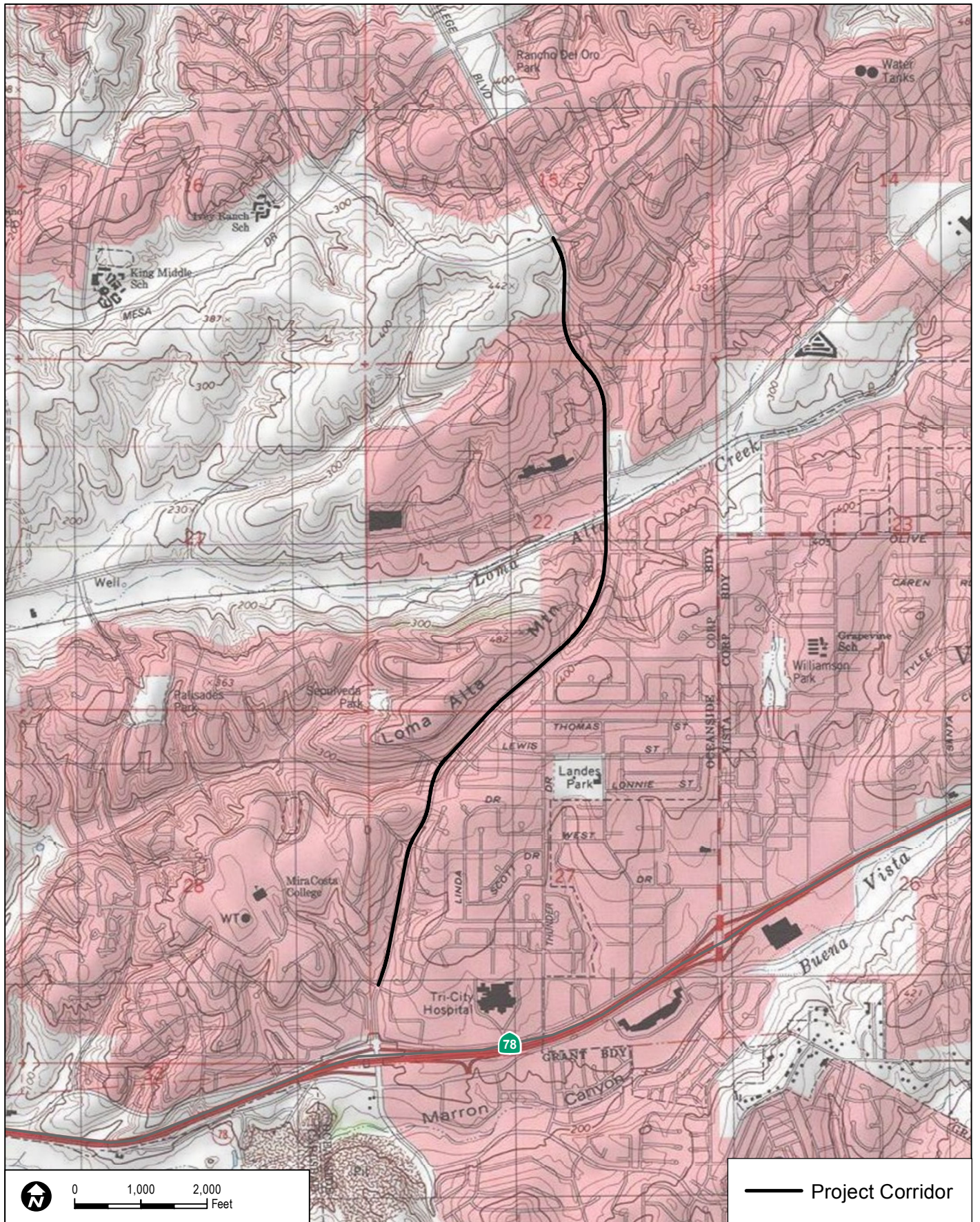
8689

Noise Technical Report for the College Boulevard Improvement Project

FIGURE 1
Regional Map

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK



DUDEK

8689

SOURCE: USGS 7.5-Minute Series - San Luis Rey Quadrangle.

Noise Technical Report for the College Boulevard Improvement Project

FIGURE 2
Vicinity Map

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

2 EXISTING CONDITIONS

2.1 Noise Terminology

The following is a brief discussion of fundamental noise concepts and basic terminology.

2.1.1 Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also called micropascal. One micropascal is approximately one-hundred billionth (0.0000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascal would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

2.1.2 A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this report are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 1.

Noise Technical Report for the College Boulevard Improvement Project

Table 1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	
Gas lawn mower at 1 meter (3 feet)	90	
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quite urban, daytime	50	Large business office; dishwasher next room
Quite urban, nighttime	40	Theater; large conference room (background)
Quite suburban, nighttime	30	Library
Quite rural, nighttime	20	Bedroom at night; concert hall (background)
	10	Broadcast/Recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013a.

2.1.3 Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level).

2.1.4 Noise Descriptors

Additional units of measure (i.e., noise metrics) have been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound level during the same period. The 1-hour A-weighted equivalent sound level, $L_{eq}(h)$, is the energy average of the A-weighted sound levels occurring during a 1-hour period, and is the primary basis for the Cities' noise ordinance criteria for stationary sources. Additional noise metrics include the L_{max} , L_{min} (the maximum and minimum instantaneous noise levels, respectively) and L_n . The L_n noise metric represents the noise level equaled or exceeded n percent of the time. For example, L_{10} is the level equaled or exceeded 10% of the time.

Noise Technical Report for the College Boulevard Improvement Project

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—was introduced. The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during the evening and nighttime hours. The CNEL noise metric (or a similar noise metric the day-night level (L_{dn})¹ is the basis for the City’s standards for mobile source noise such as traffic and aircraft noise.

2.1.5 Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by geometric spreading, ground absorption, atmospheric effects, and shielding by natural and/or built features.

Sound levels attenuate (or diminish) at a rate of approximately 6 dBA per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Atmospheric conditions such as humidity, temperature, and wind gradients can also temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects. Additional sound attenuation can result from built features such as intervening walls and buildings, and by natural features such as hills and dense woods.

2.1.6 Groundborne Vibration Fundamentals

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground, and can be described in terms of displacement, velocity, or acceleration. Displacement is the distance that a point on a surface moves away from its original static position, vibration velocity is the instantaneous speed that a point on a surface moves, and acceleration is the velocity’s rate of change. Each of these descriptors can be used to correlate vibration to environmental effects such as human response and building damage.

Several basic measurement units are commonly used to describe the intensity of ground vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration

¹ L_{dn} (also known as DNL) is comparable to CNEL, except that there is no evening component: the period from 7 a.m. to 10 p.m. is classified as daytime, and no adjustment to the noise levels is made during these hours; the period from 10 p.m. to 7 a.m. is classified as nighttime and 10 decibels is added to the hourly L_{eq} intervals occurring during these hours.

Noise Technical Report for the College Boulevard Improvement Project

signal and RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to one microinch per second (abbreviated as VdB). A comparison of common groundborne vibration levels, in terms of VdB, is shown in Figure 3. As shown in Figure 3, the threshold of perception is approximately 65 VdB. Typical background vibration levels are between 50 and 60 VdB, and the level for minor cosmetic damage to fragile buildings or blasting generally begins at 100 VdB (FTA 2006), which is equivalent to approximately 0.42 inches per second in terms of PPV.

The strength of groundborne vibration attenuates fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Typically, groundborne vibration generated by humans attenuates rapidly with distance from the source of the vibration. Manmade vibration problems are usually confined to relatively short distances (approximately 500 to 600 feet or less) from the source (FTA 2006).

The calculation to determine PPV at a given distance is as follows:

$$PPV_{\text{distance}} = PPV_{\text{ref}} * (25/D)^{1.5}$$

Where:

PPV_{equip} = the peak particle velocity in inches per second of the equipment adjusted for distance

PPV_{ref} = the reference vibration level in inches per second at 25 feet

D = the distance from the equipment to the receiver

The calculation to determine the root-mean square at a given distance is as follows:

$$L_v(D) = L_v(25 \text{ feet}) - 30 * \log(D/25)$$

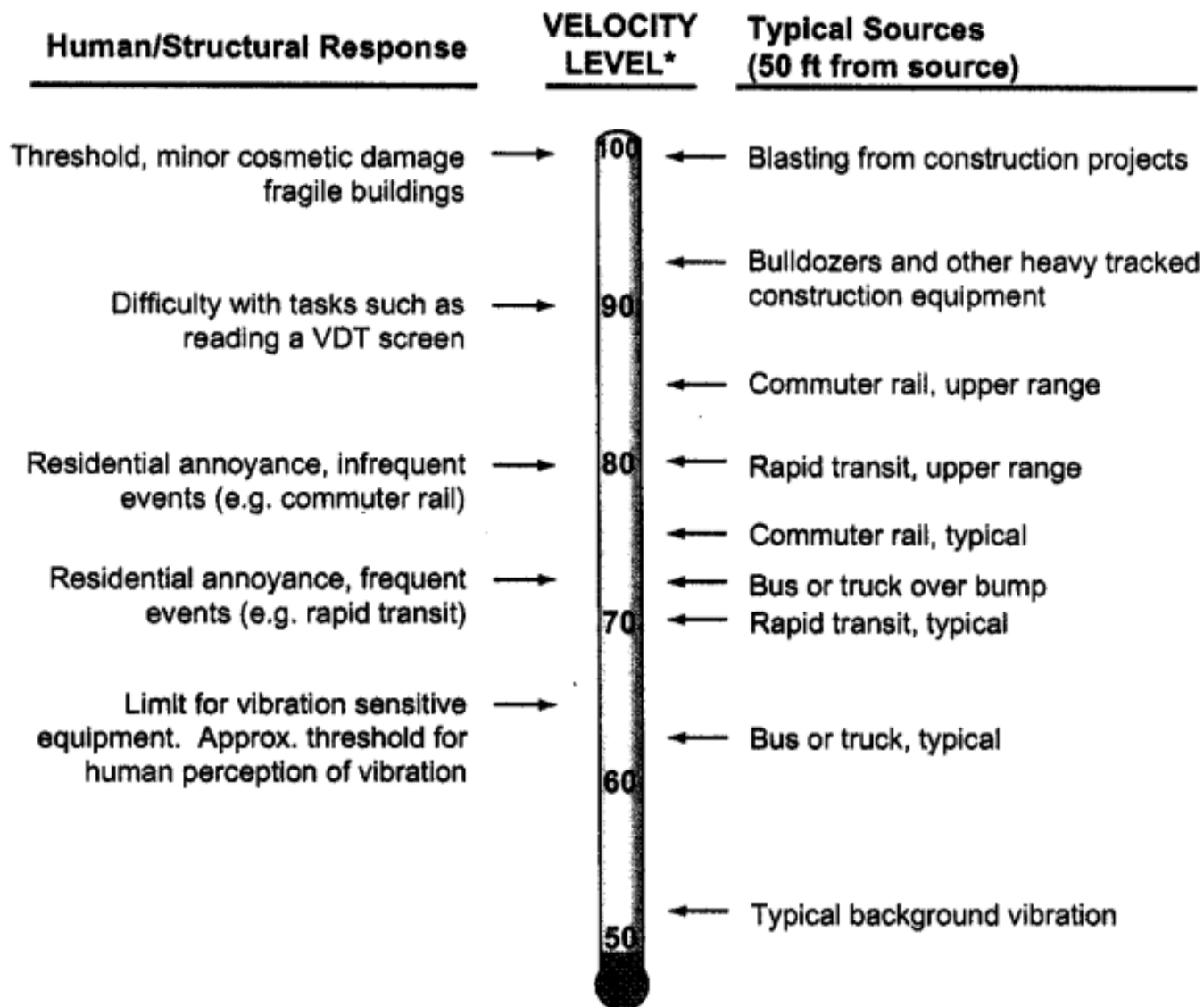
Where:

L_v(D) = the vibration level at the receiver

L_v(25 feet) = the reference source vibration level

D = the distance from the vibration activity to the receiver

California Department of Transportation (Caltrans) guidelines (Caltrans 2013b) recommend that a vibration level of 0.2 in/sec PPV not be exceeded for the protection of normal residential buildings, and that 0.08 in/sec PPV not be exceeded for the protection of old or historically significant structures. Information from Caltrans indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inch/second begin to annoy people.



* RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

2.2 Existing Conditions

College Boulevard is currently constructed and classified as a four-lane Major Arterial from Waring Road to Old Grove Road. The improvement corridor is primarily bordered by residential uses to the east and west; however, the corridor also borders commercial uses in the Del Oro Marketplace, Gateway Plaza, and Rancho Del Oro Plaza near the College Boulevard/Oceanside Boulevard intersection and educational uses, commercial properties, and industrial designated lands near Old Grove Road.

Noise measurements were conducted on and near the project site in September 2016 to characterize the existing noise environment. The daytime, short-term (1 hour or less) attended sound level measurements were taken with a Rion NL-52 sound-level meter. This sound-level meter meets the current American National Standards Institute (ANSI) standard for a Type 1 precision sound-level meter. The calibration of the sound level meter was verified before and after the measurements were taken, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground.

Six noise measurement locations (ST1–ST6) which represent key potential sensitive receptors or sensitive land uses were selected adjacent to the improvement corridor. The measurement locations are shown in Figure 4, Noise Measurement and Modeling Locations, and the measured average noise levels and measurement locations are provided in Table 2. Noise measurement data is also included in Appendix A. As shown in Table 2, the measured noise levels ranged from approximately 56 dBA L_{eq} at ST5 to 67 dBA L_{eq} at ST6. The primary noise sources at the measurement locations consisted of traffic along the adjacent roads.

Table 2
Measured Noise Levels

Receptors	Location/Address	Date	Time	L_{eq}^1 (dBA)	L_{max}^2 (dBA)
ST1	Side yard of residence at 3253 Camarillo Avenue	September 7, 2016	11:25 a.m.–11:35 a.m.	57.7	68.1
ST2	Rear yard of residence at 3193 Carr Drive	September 7, 2016	11:05 a.m.–11:15 a.m.	59.1	66.1
ST3	Front yard of residence at 2834 College Boulevard	September 7, 2016	10:43 a.m.–10:53 a.m.	64.2	74.8
ST4	Rear yard of residence at 2618 Hope Street	September 7, 2016	10:20 a.m.–10:30 a.m.	60.6	74.2
ST5	Adjacent to residences at 1904 College Boulevard	September 7, 2016	9:50 a.m.–10:02 a.m.	56.3	67.7
ST6	Adjacent to Coastal Academy High School, 4183 Avenida De La Plata	September 7, 2016	9:30 a.m.–9:40 a.m.	67.3	80

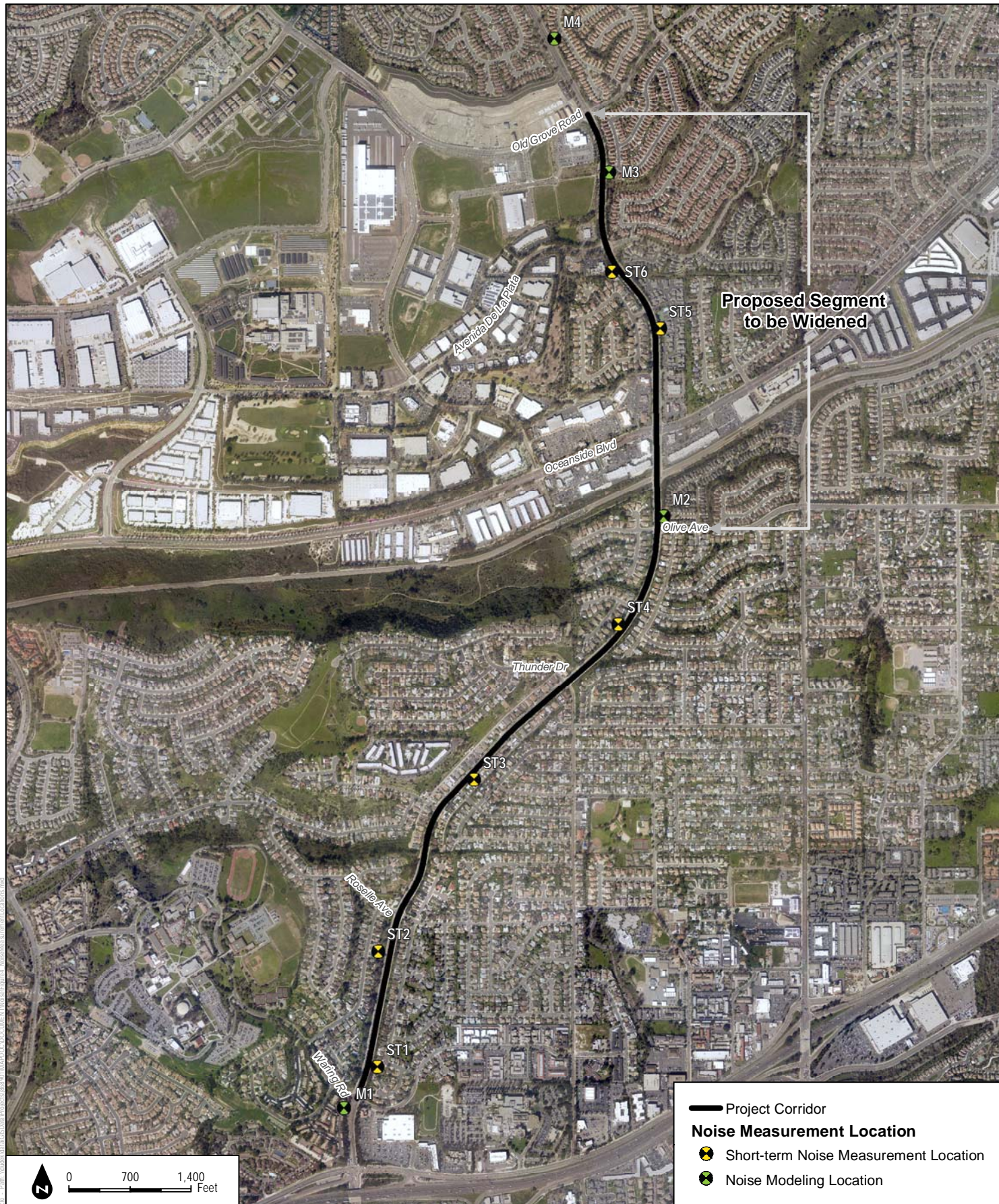
Notes:

¹ Equivalent continuous sound level (time-average sound level).

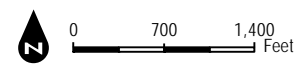
² Maximum instantaneous noise level.

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK



- Project Corridor
- Noise Measurement Location**
- Short-term Noise Measurement Location
- Noise Modeling Location



SOURCE: SANGIS 2017



FIGURE 4
Noise Measurement and Modeling Locations

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

3 REGULATORY SETTING

3.1 Federal

Occupational Safety and Health Administration

With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise (29 CFR 1910.95). OSHA specifies that sustained noise that is louder than 85 dBA (8-hour time-weighted average) can be a threat to workers' hearing, and, if worker exposure exceeds this amount, the employer must develop and implement a monitoring program (29 CFR 1910.95(d)(1)).

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Code of Federal Regulations Title 14, Part 150 prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA L_{dn} (or CNEL) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL).

Federal Highway Administration Standards

Code of Federal Regulations Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Department of Transportation Federal Highway Administration (FHWA). The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Department of Transportation FHWA Noise Standards. Title 23 establishes 67 dBA as the worst-case hourly average noise level standard for impacts of federal highway projects to land uses including residences, recreational uses, hotels, hospitals, and libraries.

Noise Technical Report for the College Boulevard Improvement Project

Federal Transit Administration Standards and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from groundborne vibration is 0.2 inches/second PPV.

3.2 State

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR) sets standards which new development in California must meet. According to Title 24, interior noise levels are not to exceed 45 dB community noise equivalent level (CNEL) for new multifamily residences, hotels, and other attached residences.

Title 24 also requires that an interior acoustical study demonstrating that interior noise levels due to exterior sources will be less than or equal to 45 CNEL be performed for affected multifamily structures and hotels that are exposed to exterior noise levels in excess of 60 CNEL.

California Department of Health Services Guidelines

The State Department of Health Services has developed guidelines of community noise acceptability for use by local agencies (OPR 2003). Selected relevant levels are listed here:

- Below 60 dBA CNEL: normally acceptable for low-density residential use
- 50 to 70 dBA: conditionally acceptable for low-density residential use
- Below 65 dBA CNEL: normally acceptable for high-density residential use and transient lodging
- 60 to 70 dBA CNEL: conditionally acceptable for high-density residential, transient lodging, churches, educational, and medical facilities.

Noise Technical Report for the College Boulevard Improvement Project

3.3 Local

City of Oceanside Noise Level Compatibility Standards

The Noise Element of the City's General Plan (City of Oceanside 2002) establishes target maximum noise levels in the City. The Noise Element provides the following limitations on construction noise:

1. It should be unlawful for any person within any residential zone of 500 feet there from to operate any pile driver, power shovel, pneumatic, power hoist, or other construction equipment between 8:00 p.m. and 7:00 a.m. generating an ambient noise levels of 50 dBA at any property line unless an emergency exists.
2. It should be unlawful for any person to operate any construction equipment at a level in excess of 85 dBA at 100 feet from the source.
3. It should be unlawful for any person to engage in construction activities between 6:00 p.m. and 7:00 a.m. when such activities exceed the ambient noise level by 5 dBA. A special permit may be granted by the Director of Public Works if extenuating circumstances exist.

In addition, the Noise Element addresses nuisance noise and states that it should be unlawful for any person to make or continue any loud, unnecessary noise that causes annoyance to any reasonable person of normal sensitivity.

Transportation-Related Noise Standards

The City's Noise Element establishes a policy for exterior sensitive areas to be protected from high noise levels. The Noise Element sets 65 dBA CNEL for the outdoor areas and interior noise levels of less than 45 dBA CNEL as the "normally acceptable" level.

For interior noise, the Noise Element also establishes 45 dBA CNEL as the maximum acceptable level for habitable rooms when exterior noise levels are 60 dBA CNEL or more. If windows and doors are required to be closed to meet this standard, then mechanical ventilation (i.e., air conditioning) shall be included in the project design.

Noise Element Policies

- Noise levels shall not be so loud as to cause danger to public health in all zones except manufacturing zones where noise levels may be greater.
- Noise shall be controlled at the source where possible.

Noise Technical Report for the College Boulevard Improvement Project

- Noise shall be intercepted by barriers or dissipated by space where other controls fail or are impractical.
- Noise levels shall be considered in any change to the Land Use and Circulation Elements of the General Plan.
- Noise levels of City vehicles, construction equipment, and garbage trucks shall be reduced to acceptable levels.

City of Oceanside Noise Ordinance

Chapter 38 of the Oceanside Municipal Code governs operational noise and contains the maximum one-hour average sound levels for various land uses for operational noise (Table 3) generated by sources within or affecting each land use zone. The Noise Ordinance sets an allowed level for single-family and medium-density residential areas to 50 dBA L_{eq} from 7:00 a.m. to 9:59 p.m., and 45 dBA L_{eq} from 10:00 p.m. to 6:59 a.m. High density residential areas are limited to 55 dBA L_{eq} from 7:00 a.m. to 9:59 p.m. and 50 dBA L_{eq} from 10:00 p.m. to 6:59 a.m. In commercial zones, noise generation is limited to 65 dBA L_{eq} from 7:00 a.m. to 9:59 p.m. and 60 dBA L_{eq} from 10:00 p.m. to 6:59 a.m. Where two land use zones abut one another, the more restrictive noise limit is enforced along the common boundary between the two land uses.

Table 3
City of Oceanside Exterior Noise Standards

Zone	Applicable Limit (decibels) ¹	Time Period
Residential Estate, Single-Family Residential, Medium Density Residential, Agricultural, Open Space	50	7:00 a.m. to 9:59 p.m.
	45	10:00 p.m. to 6:59 a.m.
High Density, Residential Tourist	55	7:00 a.m. to 9:59 p.m.
	50	10:00 p.m. to 6:59 a.m.
Commercial	65	7:00 a.m. to 9:59 p.m.
	60	10:00 p.m. to 6:59 a.m.
Industrial	70	7:00 a.m. to 9:59 p.m.
	65	10:00 p.m. to 6:59 a.m.
Downtown	65	7:00 a.m. to 9:59 p.m.
	55	10:00 p.m. to 6:59 a.m.

Source: Oceanside Municipal Code, Section 38.12.

Note:

¹ 1-hour average sound level.

Noise Technical Report for the College Boulevard Improvement Project

Construction activities are subject to Section 38.17 of the Noise Ordinance, which specifically prohibits the operation of any pneumatic or air hammer, pile driver, steam shovel, derrick, steam, or electric hoist, parking lot cleaning equipment or other appliance, the use of which is attended by loud or unusual noise, between the hours of 10:00 p.m. and 7:00 a.m.

Section 38.16 prohibits nuisance noise as recommended in the General Plan Noise Element. It is unlawful for any person to make, continue or cause to be made or continued, within the limits of the City of Oceanside, any disturbing, excessive, or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity.

City of Oceanside Engineers Design and Processing Manual

Construction noise in Oceanside is governed by the City's Engineers Design and Processing Manual (City of Oceanside 2004). Construction is normally limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Friday.

Vibration Standards

Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration. To date, the City has not adopted a threshold for groundborne vibration impacts. However, Caltrans has adopted vibration standards to evaluate potential impacts related to construction activities. Information from Caltrans indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inches/second begin to cause annoyance. For purposes of this analysis, the Caltrans threshold of 0.1 inches/second is used to evaluate the vibrational construction-related and operational impacts of the proposed project. For engineered concrete and masonry buildings, 0.3 inches/second PPV is a limit where building damage is possible. For non-engineered timber and masonry building, the building damage vibration limit is 0.2 inches/second PPV (Caltrans 2013b). Hence, the use of the 0.1 inches/second vibration annoyance threshold is also meant to be very conservative in avoiding damage to existing structures in the project vicinity.

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

4 SIGNIFICANCE CRITERIA

Based on the criteria identified in Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on noise if it would result in:

1. The 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?
2. The exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?
6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

5 METHODOLOGY

Ambient noise measurements were conducted to characterize the existing noise environment at locations in the project vicinity. The assessment of direct and indirect noise impacts of the project also used criteria established in the noise regulations as summarized in Section 3.2, State. Calculated traffic noise levels at adjacent noise-sensitive land uses with the proposed project were compared to the noise element limits, while short-term construction noise was compared to the Noise Ordinance and City's Engineers Design and Processing Manual.

The noise levels associated with roadway traffic for each of the three project alternatives (as discussed in Section 1.3, Project Description) were determined based on data obtained from the traffic impact report (Fehr & Peers 2019) for the proposed project. The Federal Highway Administration's Traffic Noise Model (TNM), Version 2.5 (FHWA 2004) noise modeling software was used to model the traffic noise that would result from the roadway traffic volumes identified in the Fehr & Peers report. Field noise measurements and manual traffic counts were used to calibrate the model to ensure model assumptions and inputs accurately reflect existing conditions, and that the model will reliably calculate traffic noise levels from predicted future traffic volumes.

Noise levels resulting from the proposed construction activities were calculated using the Federal Highway Administration (FHWA) Roadway Construction Noise Modeling software (FHWA 2008).

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

6 IMPACT ANALYSIS

6.1 Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance

Less Than Significant Impact with Mitigation Incorporated. Implementation of the proposed project would result in two primary types of potential noise impacts: short-term (i.e., temporary) noise during construction, and long-term noise during operation (from vehicular traffic along the improvement corridor).

6.1.1 Construction Noise

Construction noise is a temporary phenomenon. Construction noise levels will vary from hour to hour and day to day, depending on the equipment in use, the operations being performed, and the distance between the source and receptor.

Construction is expected to include demolition, clearing and excavation, grading, trenching, paving and roadway construction. Construction equipment with substantially higher noise-generation characteristics (such as pile drivers, rock drills, blasting equipment) would not be necessary. Construction is anticipated to commence in October 2019 and last for approximately six (6) months, until April 2020. Construction of the project would generally occur during daytime hours (7:00 a.m. to 5:00 p.m.) in accordance with the Oceanside Municipal Code however, select activities or tasks may require work during evening and nighttime hours.

The Federal Highway Administration (FHWA) has developed the Roadway Construction Noise Model (RCNM) software, which can be used to evaluate construction noise from any major construction proposal. RCNM contains a large database of construction equipment, including noise generation level and load factor (percentage of time each piece of equipment is active on a typical construction site). The RCNM was used to assess construction noise impacts of the proposed project.

Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of time in use, condition of each piece of equipment, and number of pieces of equipment that will actually operate on site. The construction vehicle assemblage would include standard equipment such as dozers, tractors, loaders, backhoes, excavators, graders, scrapers, trenchers, lifts, paving equipment, rollers, compressors, and miscellaneous trucks. Specified and measured noise level ranges for various pieces of construction equipment at a distance of 50 feet are presented in Table 4. The noise values presented are used as reference noise data for respective equipment in RCNM. The construction equipment is expected to be spread out over the entire site, with some equipment operating along the perimeter of the site while the rest of the equipment may be located several hundred feet further away from the noise sensitive receptors.

Noise Technical Report for the College Boulevard Improvement Project

Table 4
Typical Construction Equipment Noise Levels

Equipment Description*	Acoustical Use Factor (%)	Measured L _{max} @50ft (dBA, slow)
All Other Equipment > 5 HP (spec)	50	85
Auger Drill Rig	20	84
Backhoe	40	78
Compactor (ground)	20	83
Compressor (air)	40	78
Concrete Saw	20	90
Crane	16	81
Dozer	40	82
Dump Truck	40	76
Excavator	40	81
Flat Bed Truck	40	74
Front End Loader	40	79
Generator	50	81
Generator (<25KVA, VMS signs)	50	73
Gradall	40	83
Grader (spec)	40	85
Man Lift	20	75
Paver	50	77
Pickup Truck	40	75
Pneumatic Tools	50	85
Pumps	50	81
Roller	20	80
Scraper	40	84
Tractor (spec)	40	84
Warning Horn	5	83
Welder/Torch	40	74

Source: FTA 2006.

Note: * (spec) indicates that the L_{max} is based on common specifications for this equipment, not measured data.

Based upon Table 4, construction equipment noise levels are not anticipated to exceed 85 dBA at 100 feet. The piece of equipment with the highest noise level shown in Table 4 is the concrete saw with a maximum level of 90 dBA at 50 feet. At 100 feet, the expected maximum noise level would drop to approximately 84 dBA. Thus, all of the expected construction equipment would comply with the limitation on construction noise in the City Noise Element.

Construction would primarily occur during the City's allowable hours of construction activities. The City's Engineers Design and Processing Manual states that construction can occur Monday through Friday from 7:00 a.m. to 6:00 p.m.

Noise Technical Report for the College Boulevard Improvement Project

Table 5 shows the anticipated equipment use by phase for the construction of the project.

Table 5
Typical Construction Equipment Noise Levels

Construction Phase Name	Equipment	Number of pieces of Equipment
Drainage/Utilities/Subgrade	Air compressors	1
	Generator sets	1
	Graders	1
	Plate compactors	1
	Pumps	1
	Forklifts	1
	Scrapers	1
	Signal boards	5
	Tractors/loaders/backhoes	3
Paving	Pavers	1
	Paving equipment	1
	Rollers	2
	Signal Boards	5
	Tractors/loaders/backhoes Forklifts	3

The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and any intervening structures. The typical operating cycles for construction equipment involve one or two minutes of full power operation followed by three or four minutes at lower power settings. Noise from construction equipment generally exhibits point source acoustical characteristics. A point source sound is attenuated (is reduced) at a rate of 6 decibels per doubling of distance from the source for “hard site” conditions and at 7.5 decibels per doubling of distance for “soft site” conditions. A hard site is characterized by ground surface covered by pavement, or hard compacted soils; a soft site is characterized by ground covered with vegetation, or loose soil with a rough surface (such as tilled land). These rules apply to the propagation of sound waves with no obstacles between source and receivers, such as topography (ridges or berms) or structures.

Table 6 shows the calculated noise levels at nearby noise-sensitive receptors (i.e., the residential property lines to the southwest of the project site) during construction phases for the project, employing the RCNM software and based on construction equipment listed in Table 5. The noise levels shown in Table 6 take into account operation of multiple pieces of construction equipment simultaneously for the L_{eq} results. More details from the RCNM analysis can be found in Appendix B. Worst-case conditions occur when construction is happening near the project boundary closest to the noise sensitive receptors (such as the closest residence, as represented in the left-hand column in Table 6). Typical conditions represent noise levels if construction were being conducted near but not directly adjacent to the receiver, as listed in the right-hand column in Table 6.

Noise Technical Report for the College Boulevard Improvement Project

Table 6
Summary of Construction Noise Modeling Results

Construction Phase	L _{eq} (dBA)	
	Nearest Source-Receiver Distance (Within approximately 30 feet)	Typical Source-Receiver Distance (Within Approximately 250 feet)
Drainage/Utilities/Subgrade	90	76
Paving	87	75

Source: Appendix B.

As the table shows, the highest noise levels are expected to occur during the Drainage/Utilities/Subgrade Phase. Construction-related noise levels could reach up to 90 dBA L_{eq} at residential properties for the relatively brief periods (at any one location) when construction work takes place at or near the closest project work area. More typically (i.e., when construction takes place in the vicinity but not at the closest work area), construction noise levels are estimated to approximately 75 to 76 dBA L_{eq}. Although construction noise would not exceed the City's noise standards since it would comply with City's Code of Ordinances, noise levels could still be relatively high and could be considered a temporary substantial increase to those more sensitive to noise. As such, the project would result in a **potentially significant impact**; see Section 7, Mitigation Measures (MM-NOI-1 and MM-NOI-2), which would reduce the impact to less than significant.

6.1.2 Traffic Noise

Average Daily Traffic (ADT) volumes along College Boulevard were provided in the Traffic Impact Analysis (Fehr & Peers 2019) for the following scenarios:

- Existing (Year 2018);
- Existing (Year 2018) with Recommended Alternative/Proposed Project;
- Future (Year 2035) with Existing 4-Lane Geometry;
- Future (Year 2035) with Recommended Alternative/Proposed Project; and
- Future (Year 2035) with General Plan Circulation Element Geometry.

The ADT values illustrated in Table 7 were used with the TNM traffic noise model to calculate existing and future noise levels along the identified roadway segments, in order to determine traffic noise exposure levels for adjacent representative noise-sensitive receivers (as shown in Figure 4).

Noise Technical Report for the College Boulevard Improvement Project

Table 7
Average Daily Traffic Volumes by Roadway Segment

Roadway Segment	Existing (2018) Conditions	Existing (2018) Conditions with Recommended Alternative/Proposed Project	Future (2035) Conditions with Existing Geometry	Future (2035) Conditions with General Plan Geometry	Future (2035) Conditions with Recommended Alternative/Proposed Project
1. College Boulevard between Avenida Empressa and Old Grove Road	29,875	29,875	32,200	30,800	32,200
2. College Boulevard between Old Grove Road and Avenida De La Plata	38,215	38,215	41,100	41,000	41,100
3. College Boulevard between Aztec Street and Oceanside Boulevard	36,971	36,971	46,400	46,400	46,400
4. College Boulevard between Oceanside Boulevard and Olive Drive	49,943	49,943	60,100	61,900	60,100
5. College Boulevard between Olive Drive and Thunder Drive	35,917	35,917	39,400	43,400	39,400
6. College Boulevard between Thunder Drive and Marvin Street East	31,746	31,746	34,500	38,700	34,500
7. College Boulevard between Roselle Street and Barnard Drive/Waring Road	32,778	32,778	35,200	41,600	35,200
8. College Boulevard between Barnard Drive/Waring Road and Vista Way	44,216	44,216	45,100	46,500	45,100

Source: Fehr & Peers 2019, Table 13, Daily Roadway Segment Level of Service Summary.

Noise Technical Report for the College Boulevard Improvement Project

The results of the traffic noise modeling for the Existing and Existing plus Project scenarios are summarized in Table 8. The noise modeling input and output files are contained in Appendix C. Receiver locations consisted of the measurement locations ST1 – ST6, as well as four additional modeled-only locations (M1 – M4) in order to assure that all eight roadway segments were assessed. As shown in Table 8, the increase in noise levels resulting from the project would be 1 dB or less, which is below the discernible level of change for the average human ear in the context of community noise (i.e., outside of a listening lab or other controlled conditions). Thus, a less than significant impact is expected for project-related off-site traffic noise increases affecting existing residences in the vicinity.

Table 8
Summary of Existing and Existing plus Project Traffic Noise Levels

Receiver; Adjacent Roadway Segment	CNEL (dB)		
	Existing	Existing + Recommended Alternative/Proposed Project	dB Change
ST1; Segment 7	59	59	0
ST2; Segment 7	61	61	0
ST3; Segment 6	67	68	1
ST4; Segment 5	63	63	0
ST5; Segment 3	60	60	0
ST6; Segment 3	70	70	0
M1; Segment 8	68	68	0
M2; Segment 4	64	64	0
M3; Segment 2	53	53	0
M4; Segment 1	65	65	0

Source: Appendix C.

None of the modelled off-site receptors would experience noise levels that increase from below 65 dBA CNEL to greater than 65 dBA CNEL. Since the limit of acceptable exterior noise exposure for residences is 65 dBA CNEL, project-related traffic noise increases would not cause traffic noise exposure at existing residences to exceed an established standard. Therefore, the impact of the proposed project on traffic noise would be less than significant.

6.1.3 Cumulative Noise Impacts Associated with Project Traffic

The changes in cumulative (i.e., existing plus cumulative projects) traffic noise levels associated with the project and alternatives are considered in this section. Table 9 shows the modeling results for Year 2035 and Year 2035 plus project scenarios.

Noise Technical Report for the College Boulevard Improvement Project

Table 9
Summary of Cumulative and Cumulative plus Project Traffic Noise Levels

Receiver	CNEL (dB)				
	<i>Future Conditions with Existing Geometry</i>	<i>Future Conditions with Recommended Alternative/Proposed Project</i>	<i>dB Change</i>	<i>Future Conditions with GP Geometry</i>	<i>dB Change</i>
ST1	59	59	0	60	1
ST2	61	62	1	62	1
ST3	68	68	0	68	0
ST4	63	64	1	64	1
ST5	61	61	0	61	0
ST6	71	71	0	71	0
M1	68	68	0	68	0
M2	65	65	0	65	0
M3	54	54	0	54	0
M4	65	65	0	65	0

Source: Appendix C.

As shown in Table 9, in either the Future Conditions with Recommended Alternative/Proposed Project or Future Conditions with General Plan Geometry scenarios, the change in traffic noise levels at adjacent noise-sensitive receivers would be 1 dB or less. This change in noise levels is less than the threshold of perception for most people. In addition, none of the modelled receivers would experience noise levels that increase from below 65 dBA CNEL (the City's exterior residential noise standard) to greater than 65 dBA CNEL because of the project. Therefore, the cumulative impact of the proposed project on traffic noise would be less than significant.

6.2 Excessive Groundborne Vibration or Groundborne Noise Levels

Less than Significant. The heavier pieces of construction equipment used at this site would include dozers, graders, and pavers. Based on published vibration data, the anticipated construction equipment would generate a peak particle velocity of approximately 0.089 inch/second or less at a distance of 25 feet (FTA 2006).

Information from Caltrans (Caltrans 2013b) indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inch/second begin to annoy people. Groundborne vibration is typically attenuated over short distances. The closest existing residences would be approximately 30 feet or more from the construction area. At a distance of 30 feet, the peak particle velocity from construction would be approximately 0.068 inch/second, and thus would be below the annoyance threshold of 0.1 inch/second and below the damage threshold of 0.2 inch/second. Therefore, impacts related to vibration from construction activities would be less than significant.

Noise Technical Report for the College Boulevard Improvement Project

6.3 Substantial Permanent Increase in Ambient Noise Levels

Less than Significant. As discussed in Section 6.1.2, Traffic Noise, operational (which would be limited to traffic-related) noise increases associated with the project would be approximately 1 dB or less, and therefore would be less than significant.

6.4 Substantial Temporary or Periodic Increase in Ambient Noise

Less Than Significant Impact with Mitigation Incorporated. As discussed in Section 6.1.1, Construction Noise, the proposed project would result in temporary noise increases during the planned six-month construction period. The temporary increases in ambient noise levels would vary depending on the location of the construction activities and the type of equipment being used. The estimated construction noise levels at nearby noise-sensitive land uses are summarized in Table 6 (Summary of Construction Noise Modeling Results). Temporary noise increases at adjacent existing and future noise-sensitive land uses from construction activities are considered potentially significant; however, with the implementation of mitigation measures MM-NOI-1 and MM-NOI-2, temporary noise impacts from construction activities would be less than significant.

6.5 Airport/Airport Land Use Plan

No Impact. The nearest airport to the project is Oceanside Municipal Airport, located approximately 3.5 miles to the northwest of the project area (Airnav.com 2018). The project would not be located within 2 miles of any airport and would not expose people residing or working in the project area to excessive noise levels associated with an airport. Therefore, the project would result in no impact related to airports.

6.6 Private Airstrip

No Impact. The project area is not located within the vicinity of a private airstrip. Accordingly, no impacts related to exposing people residing or working in the project area to excessive noise levels related to private airstrips would occur.

6.7 Cumulative Impacts

Construction noise impacts primarily affect the areas immediately adjacent to a construction site. Temporary construction activities are likely to include only standard construction equipment; no pile driving or blasting activities are expected. Additionally, the project would comply with the City of Oceanside's limitations on construction activities addressed. Although several construction activities may occur simultaneously in the surrounding community, given the distance between the project site and the cumulative projects within the City of Oceanside, and given the projects'

Noise Technical Report for the College Boulevard Improvement Project

compliance with local jurisdictional noise standards, it is unlikely that the noise increase would exceed 3 dB. As previously stated, 3 dB is the minimum change in the sound level of individual events that an average human ear can detect. Additionally, MM-NOI-1 and MM-NOI-2 are required to reduce construction noise and would minimize construction noise impacts associated with the project to a less-than-significant level. Therefore, the increased noise **would not result in significant cumulative impacts**.

The future (Year 2035) traffic volumes used for the analysis of traffic noise include cumulative growth. As shown in Table 9, the project's traffic-related impacts would not result in a significant noise level increase along adjacent roadways. Therefore, impacts would not be cumulatively considerable and would be **less than significant**.

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

7 MITIGATION MEASURES

MM-NOI-1. Construction Noise Reduction

The City and/or its construction contractor shall comply with the following measures during construction:

1. Construction activities shall not occur between the hours of 6:00 p.m. and 7:00 a.m. Monday through Friday. In the event that construction is required to extend beyond these times, extended hours permits shall be required.
2. Pumps and associated equipment (e.g., portable generators etc.) shall be shielded from sensitive uses using local temporary noise barriers or enclosures or shall otherwise be designed or configured to minimize noise at nearby noise-sensitive receivers.
3. Staging of construction equipment shall not occur within 20 feet of any noise- or vibration-sensitive land uses.
4. All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
5. All mobile or fixed noise-producing equipment used for the project that are regulated for noise output by a local, state, or federal agency shall be in compliance with regulations.
6. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses.
7. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
8. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
9. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be used for safety warning purposes only.

MM-NOI-2: Notification

Effective communication with local residents shall be maintained prior to and during construction. Specifically, the City shall inform local residents of the schedule, duration, and progress of the construction. Additionally, residents shall be provided contact information for noise- or vibration-related complaints.

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

Noise Technical Report for the College Boulevard Improvement Project

8 REFERENCES

- Airnav.com. 2018. Accessed November 22, 2018. <https://www.airnav.com/airports/get>.
- Caltrans (California Department of Transportation). 2013a. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.
- Caltrans. 2013b. Transportation and Construction Vibration Guidance Manual. Division of Environmental Analysis, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. September 2013.
- City of Oceanside. 2002. "Noise Element." In *City of Oceanside General Plan*.
- City of Oceanside. 2004. City's Engineers Design and Processing Manual.
- City of Oceanside. 2012. "Circulation Element." In *City of Oceanside General Plan*.
- Fehr & Peers. 2019. College Boulevard Improvement Project EIR, Draft Traffic Impact Analysis. April 4, 2016 revised July 29, 2019.
- FHWA (Federal Highway Administration). 2004. Traffic Noise Model (TNM). Version 2.5.
- FHWA. 2008. Roadway Construction Noise Model (RCNM).
- FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. July 1, 2006.
- OPR (Governor's Office of Planning and Research). 2003. *State of California General Plan Guidelines*. October 2003.

Noise Technical Report for the College Boulevard Improvement Project

INTENTIONALLY LEFT BLANK

APPENDIX A
Field Noise Measurement
Data Sheets

Field Noise Measurement Data

Record: 225

Project Name	College Blvd
Project #	8689
Observer(s)	Connor Burke
Date	2016-09-07
autoemail	cburke@dudek.com

Meteorological Conditions

Temp (F)	74
Humidity % (R.H.)	66
Wind	Calm
Wind Speed (MPH)	1
Wind Direction	East
Sky	Overcast

Instrument and Calibrator Information

Instrument Name List	(ENC) Rion NL-52
Instrument Name	(ENC) Rion NL-52
Instrument Name Lookup Key	(ENC) Rion NL-52
Manufacturer	Rion
Model	NL-52
Serial Number	553896
Calibration Date	
Calibrator Name	(ENC) LD CAL 150
Calibrator Name	(ENC) LD CAL 150
Calibrator Name Lookup Key	(ENC) LD CAL 150
Calibrator Manufacturer	Larson Davis
Calibrator Model	LD CAL 150
Calibrator Serial #	5152
GPS Assistance Used	No
Pre-Test (dBA SPL)	94
Post-Test (dBA SPL)	94
Windscreen	Yes
Weighting?	A-WTD
Slow/Fast?	Slow
ANSI?	Yes

Recordings


Record #	1
Site ID	ST1
Site Location	Latitude:33.187250, Longitude:-117.295577, Altitude:75.611359, Speed:0.000000, Horizontal Accuracy:5.000000, Vertical Accuracy:3.000000, Time:11:27:45 AM PDT
Begin (Time)	11:25:00
End (Time)	11:35:00
Leq	57.7
Lmax	68.1
Lmin	47.3
Other Lx?	L90, L50, L10
L90	51.4
L50	56.6

L10	60.9
Other (Specify Metric)	
Primary Noise Source	Traffic
Other Noise Sources (Background)	Birds, Distant Traffic
Is the same instrument and calibrator being used as previously notated?	Yes
Are the meteorological conditions the same as previously notated?	Yes

Source Info and Traffic Counts	
Distance to Roadway (feet)	50
Estimated Vehicle Speed (MPH)	45
Count Duration (Min)	10
Speeds Estimated by:	Driving the Pace
Posted Speed Limit Sign (MPH)	45

Traffic Counts	
Counting Both Directions?	Yes
Vehicle Count Tally	340
Autos	1
Number of Vehicles - Autos	340
Medium Trucks	1
Number of Vehicles - Medium Trucks	4
Heavy Trucks	1
Number of Vehicles - Heavy Trucks	3

Description / Photos

Site Photos	
Photo	

Site Photos

Photo



Recordings

Record #	2
Site ID	ST2
Site Location	Latitude:33.190887, Longitude:-117.295527, Altitude:94.387543, Speed:0.000000, Horizontal Accuracy:5.000000, Vertical Accuracy:4.000000, Time:11:06:27 AM PDT
Begin (Time)	11:05:00
End (Time)	11:15:00
Leq	59.1
Lmax	66.1
Lmin	42.3
Other Lx?	L90, L50, L10
L90	48.4
L50	57.5
L10	62.8
Other (Specify Metric)	
Primary Noise Source	Traffic
Other Noise Sources (Background)	Distant Dog Barking, Distant Traffic
Is the same instrument and calibrator being used as previously notated?	Yes
Are the meteorological conditions the same as previously notated?	Yes

Source Info and Traffic Counts

Distance to Roadway (feet)	80
Roadway Type	
Estimated Vehicle Speed (MPH)	45
Count Duration (Min)	10
Speeds Estimated by:	Driving the Pace
Posted Speed Limit Sign (MPH)	45

Traffic Counts

Counting Both Directions?	Yes
Autos	1
Number of Vehicles - Autos	296
Medium Trucks	1
Number of Vehicles - Medium Trucks	4
Heavy Trucks	1
Number of Vehicles - Heavy Trucks	3
Buses	0

Description / Photos

Site Photos

Photo



Site Photos

Photo



Recordings

Record #	3
Site ID	ST3
Site Location	Latitude:33.196275, Longitude:-117.291886, Altitude:98.098602, Speed:0.000000, Horizontal Accuracy:5.000000, Vertical Accuracy:3.000000, Time:10:42:59 AM PDT
Begin (Time)	10:43:00
End (Time)	10:53:00
Leq	64.2
Lmax	74.8
Lmin	41.2
Other Lx?	L90, L50, L10
L90	51.1
L50	61.9
L10	67.9
Other (Specify Metric)	
Primary Noise Source	Traffic
Other Noise Sources (Background)	Birds, Distant Conversations / Yelling, Distant Traffic, Rustling Leaves
Other Noise Sources Additional Description	
Is the same instrument and calibrator being used as previously notated?	Yes
Are the meteorological conditions the same as previously notated?	Yes

Source Info and Traffic Counts

Distance to Roadway (feet)	15
Estimated Vehicle Speed (MPH)	45
Count Duration (Min)	10
Speeds Estimated by:	<i>Driving the Pace</i>
Posted Speed Limit Sign (MPH)	45

Traffic Counts

Counting Both Directions?	Yes
Autos	1
Number of Vehicles - Autos	281
Medium Trucks	1
Number of Vehicles - Medium Trucks	5
Heavy Trucks	1
Number of Vehicles - Heavy Trucks	5

Description / Photos

Site Photos

Photo



Site Photos

Photo



Recordings

Record #	4
Site ID	ST4
Site Location	Latitude:33.201141, Longitude:-117.286444, Altitude:105.533020, Speed:0.000000, Horizontal Accuracy:10.000000, Vertical Accuracy:3.000000, Time:10:20:52 AM PDT
Begin (Time)	10:20:00
End (Time)	10:30:00
Leq	60.6
Lmax	74.2
Lmin	41.3
Other Lx?	L90, L50, L10
L90	52.2
L50	58.3
L10	63.7
Other (Specify Metric)	
Primary Noise Source	Traffic
Other Noise Sources (Background)	Birds, Distant Gardener / Landscape Noise, Distant Traffic
Is the same instrument and calibrator being used as previously notated?	Yes
Are the meteorological conditions the same as previously notated?	Yes

Source Info and Traffic Counts

Distance to Roadway (feet)	40
Estimated Vehicle Speed (MPH)	45
Count Duration (Min)	10

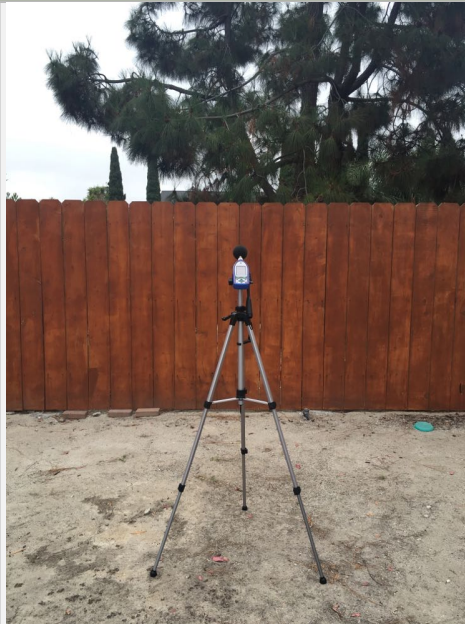
Traffic Counts

Counting Both Directions?	Yes
Autos	1
Number of Vehicles - Autos	366
Medium Trucks	1
Number of Vehicles - Medium Trucks	4
Heavy Trucks	1
Number of Vehicles - Heavy Trucks	3
Buses	1
Number of Vehicles - Buses	1
Motorcycles	1
Number of Vehicles - Motorcycles	4

Description / Photos

Site Photos

Photo



Site Photos

Photo




Recordings

Record #	5
Site ID	ST5
Site Location	Latitude:33.210451, Longitude:-117.284797, Altitude:98.965904, Speed:0.220000, Horizontal Accuracy:10.000000, Vertical Accuracy:24.000000, Time:9:50:36 AM PDT
Begin (Time)	09:50:00
End (Time)	10:02:00
Leq	56.3
Lmax	67.7
Lmin	40.9
Other Lx?	L90, L50, L10
L90	47.1
L50	54.5
L10	59.3
Other (Specify Metric)	
Primary Noise Source	Traffic
Other Noise Sources (Background)	Birds, Distant Aircraft, Distant Conversations / Yelling, Distant Traffic, Rustling Leaves
Other Noise Sources Additional Description	Television in nearby apartment.
Is the same instrument and calibrator being used as previously notated?	Yes
Are the meteorological conditions the same as previously notated?	Yes

Source Info and Traffic Counts	
Distance to Roadway (feet)	50
Estimated Vehicle Speed (MPH)	45
Count Duration (Min)	10
Speeds Estimated by:	<i>Driving the Pace</i>
Posted Speed Limit Sign (MPH)	45

Traffic Counts	
Counting Both Directions?	Yes
Autos	1
Number of Vehicles - Autos	329
Medium Trucks	1
Number of Vehicles - Medium Trucks	12
Heavy Trucks	1
Number of Vehicles - Heavy Trucks	3
Buses	1
Number of Vehicles - Buses	2

Description / Photos

Site Photos	
Photo	

Recordings

Record #	6
Site ID	ST6
Site Location	Latitude:33.212254, Longitude:-117.286600, Altitude:96.563499, Speed:0.000000, Horizontal Accuracy:10.000000, Vertical Accuracy:24.000000, Time:9:40:41 AM PDT
Begin (Time)	09:30:00
End (Time)	09:40:00
Leq	67.3
Lmax	80
Lmin	41.7
Other Lx?	L90, L50, L10
L90	52.3
L50	65.1
L10	70.3
Other (Specify Metric)	
Primary Noise Source	Traffic
Other Noise Sources (Background)	Birds, Distant Traffic, Rustling Leaves
Is the same instrument and calibrator being used as previously notated?	Yes
Are the meteorological conditions the same as previously notated?	Yes

Source Info and Traffic Counts

Distance to Roadway (feet)	30
Estimated Vehicle Speed (MPH)	45
Count Duration (Min)	10
Speeds Estimated by:	Driving the Pace
Posted Speed Limit Sign (MPH)	45

Traffic Counts

Counting Both Directions?	Yes
Autos	1
Number of Vehicles - Autos	337
Medium Trucks	1
Number of Vehicles - Medium Trucks	8
Heavy Trucks	1
Number of Vehicles - Heavy Trucks	2
Motorcycles	1
Number of Vehicles - Motorcycles	3

Description / Photos

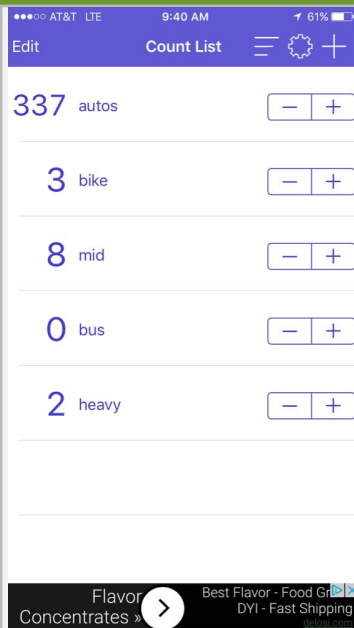
Site Photos

Photo



Site Photos

Photo



Comments / Description

Traffic counts.

APPENDIX B

Construction Noise Model Input/Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/7/2018

Case Description College Blvd_Drainage/Utilities/Subgrade

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Nearest Rcvr	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	30	0
Generator		No	50		80.6	50	0
Grader		No	40	85		30	0
Compactor (ground)		No	20		83.2	100	0
Pumps		No	50		80.9	75	0
Man Lift		No	20		74.7	100	0
Scraper		No	40		83.6	50	0
All Other Equipment > 5 HP		No	50	85		50	0
Front End Loader		No	40		79.1	75	0
Backhoe		No	40		77.6	150	0
Tractor		No	40	84		100	0
All Other Equipment > 5 HP		No	50	85		75	0
All Other Equipment > 5 HP		No	50	85		200	0
All Other Equipment > 5 HP		No	50	85		300	0
All Other Equipment > 5 HP		No	50	85		400	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
	*Lmax	Leq	Day	Leq	Evening	
			Lmax		Lmax	Leq
Compressor (air)	82.1	78.1	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A
Grader	89.4	85.5	N/A	N/A	N/A	N/A
Compactor (ground)	77.2	70.2	N/A	N/A	N/A	N/A
Pumps	77.4	74.4	N/A	N/A	N/A	N/A
Man Lift	68.7	61.7	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	85	82	N/A	N/A	N/A	N/A
Front End Loader	75.6	71.6	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A
Tractor	78	74	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	81.5	78.5	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	73	69.9	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	69.4	66.4	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	66.9	63.9	N/A	N/A	N/A	N/A
Total	89.4	89.5	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Typical Rcvr	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	250	0
Generator		No	50		80.6	250	0
Grader		No	40	85		250	0
Compactor (ground)		No	20		83.2	500	0
Pumps		No	50		80.9	250	0
Man Lift		No	20		74.7	250	0
Scraper		No	40		83.6	250	0
All Other Equipment > 5 HP		No	50	85		250	0
Front End Loader		No	40		79.1	500	0
Backhoe		No	40		77.6	250	0
Tractor		No	40	84		500	0
All Other Equipment > 5 HP		No	50	85		250	0
All Other Equipment > 5 HP		No	50	85		500	0
All Other Equipment > 5 HP		No	50	85		250	0
All Other Equipment > 5 HP		No	50	85		500	0

		Results				
		Calculated (dBA)		Noise Limits (dBA)		
Equipment		*Lmax	Leq	Day	Evening	
				Lmax	Leq	Lmax
Compressor (air)		63.7	59.7	N/A	N/A	N/A
Generator		66.7	63.6	N/A	N/A	N/A
Grader		71	67	N/A	N/A	N/A
Compactor (ground)		63.2	56.2	N/A	N/A	N/A
Pumps		67	64	N/A	N/A	N/A
Man Lift		60.7	53.7	N/A	N/A	N/A
Scraper		69.6	65.6	N/A	N/A	N/A
All Other Equipment > 5 HP		71	68	N/A	N/A	N/A
Front End Loader		59.1	55.1	N/A	N/A	N/A
Backhoe		63.6	59.6	N/A	N/A	N/A
Tractor		64	60	N/A	N/A	N/A
All Other Equipment > 5 HP		71	68	N/A	N/A	N/A
All Other Equipment > 5 HP		65	62	N/A	N/A	N/A
All Other Equipment > 5 HP		71	68	N/A	N/A	N/A
All Other Equipment > 5 HP		65	62	N/A	N/A	N/A
Total		71	76	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Report date: 11/7/2018
Case Description College Blvd_Paving

		---- Receptor #1 ----				
		Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night		
Nearest Rcvr	Residential	65	60	55		
		Equipment				
		Impact	Spec	Actual	Receptor	Estimated
Description	Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	30	0
Pavement Scarafier	No	20		89.5	50	0
Roller	No	20		80	30	0
Roller	No	20		80	100	0
All Other Equipment > 5 HP	No	50	85		75	0
All Other Equipment > 5 HP	No	50	85		100	0
All Other Equipment > 5 HP	No	50	85		200	0
All Other Equipment > 5 HP	No	50	85		300	0
All Other Equipment > 5 HP	No	50	85		400	0
Backhoe	No	40		77.6	75	0
Tractor	No	40	84		100	0
Front End Loader	No	40		79.1	75	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		81.7	78.6	N/A	N/A	N/A	N/A
Pavement Scarafier		89.5	82.5	N/A	N/A	N/A	N/A
Roller		84.4	77.4	N/A	N/A	N/A	N/A
Roller		74	67	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		81.5	78.5	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		79	76	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		73	69.9	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		69.4	66.4	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		66.9	63.9	N/A	N/A	N/A	N/A
Backhoe		74	70.1	N/A	N/A	N/A	N/A
Tractor		78	74	N/A	N/A	N/A	N/A
Front End Loader		75.6	71.6	N/A	N/A	N/A	N/A
Total		89.5	86.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----			
		Baselines (dBA)			
Description	Land Use	Daytime	Evening	Night	
Typical Rcvr	Residential	65	60	55	
		Equipment			
		Spec	Actual	Receptor	Estimated

Description	Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	250	0
Pavement Scarafier	No	20		89.5	250	0
Roller	No	20		80	250	0
Roller	No	20		80	500	0
All Other Equipment > 5 HP	No	50	85		250	0
All Other Equipment > 5 HP	No	50	85		500	0
All Other Equipment > 5 HP	No	50	85		250	0
All Other Equipment > 5 HP	No	50	85		500	0
All Other Equipment > 5 HP	No	50	85		250	0
Backhoe	No	40		77.6	250	0
Tractor	No	40	84		500	0
Front End Loader	No	40		79.1	250	0

Equipment	Results					
	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Paver	63.2	60.2	N/A	N/A	N/A	N/A
Pavement Scarafier	75.5	68.5	N/A	N/A	N/A	N/A
Roller	66	59	N/A	N/A	N/A	N/A
Roller	60	53	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	71	68	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65	62	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	71	68	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65	62	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	71	68	N/A	N/A	N/A	N/A
Backhoe	63.6	59.6	N/A	N/A	N/A	N/A
Tractor	64	60	N/A	N/A	N/A	N/A
Front End Loader	65.1	61.2	N/A	N/A	N/A	N/A
Total	75.5	75.4	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX C

Traffic Noise Model Input/Output

INPUT: ROADWAYS
PN 8689

Dudek MG												
INPUT: ROADWAYS												
PROJECT/CONTRACT:	PN 8689											
RUN:	College Blvd GPA - Existing											
Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control				Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected		Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%			
College Blvd SB Seg 3 - Aztec St O Blvd	42.0	point198	198	4,781.2	10,210.7	354.00					Average	
		point183	183	4,848.9	10,028.4	338.00					Average	
		point182	182	4,931.5	9,875.4	322.00					Average	
		point181	181	5,001.0	9,790.4	315.00					Average	
		point180	180	5,178.8	9,578.7	304.00					Average	
		point179	179	5,286.4	9,394.7	293.00					Average	
		point178	178	5,322.3	9,301.0	282.00					Average	
		point177	177	5,366.4	9,141.1	272.00					Average	
		point176	176	5,374.0	8,838.2	269.00					Average	
		point175	175	5,390.6	8,375.2	252.00					Average	
		point208	208	5,395.7	7,921.5	241.00						
College Blvd NB Seg 2 - OG Rd Av dl P	42.0	point199	199	4,817.4	10,219.2	354.00					Average	
		point131	131	4,799.5	10,361.9	370.00					Average	
		point132	132	4,792.9	10,983.1	386.00					Average	
		point133	133	4,788.3	11,196.3	402.00					Average	
		point134	134	4,765.7	11,312.6	405.00					Average	
		point135	135	4,694.6	11,474.1	413.00						
College Blvd NB Seg 1 - Av Emp OG Rd	42.0	point200	200	4,694.6	11,474.1	413.00					Average	
		point190	190	4,630.3	11,607.8	408.00					Average	
		point191	191	3,813.4	13,325.8	370.00						
College Blvd SB Seg 2 - OG Rd Av dl P-2	42.0	point203	203	4,658.4	11,465.6	413.00					Average	
		point188	188	4,729.5	11,304.1	405.00					Average	
		point187	187	4,752.1	11,187.8	402.00					Average	
		point186	186	4,753.8	10,976.0	386.00					Average	
		point185	185	4,760.4	10,354.8	370.00					Average	

INPUT: ROADWAYS
PN 8689

		point184	184	4,781.2	10,210.7	354.00					
College Blvd SB Seg 1- Av Emp OG Rd	42.0	point194	194	3,777.3	13,303.0	370.00				Average	
		point201	201	4,594.1	11,599.3	408.00				Average	
		point189	189	4,658.4	11,465.6	413.00					
College Blvd NB Seg 3 - Aztec St O Blvd-2	42.0	point209	209	5,431.9	7,930.0	241.00				Average	
		point121	121	5,426.8	8,383.7	252.00				Average	
		point122	122	5,410.2	8,846.7	269.00				Average	
		point123	123	5,402.6	9,149.6	272.00				Average	
		point124	124	5,358.5	9,309.5	282.00				Average	
		point125	125	5,322.6	9,403.2	293.00				Average	
		point126	126	5,215.0	9,587.2	304.00				Average	
		point127	127	5,036.2	9,806.0	315.00				Average	
		point128	128	4,966.7	9,891.0	322.00				Average	
		point129	129	4,885.1	10,036.9	338.00				Average	
		point130	130	4,817.4	10,219.2	354.00					
College Blvd SB Seg 4 -O Blvd Olv Dr	42.0	point210	210	5,395.7	7,921.5	241.00				Average	
		point174	174	5,400.8	7,467.7	230.00				Average	
		point173	173	5,400.8	6,891.7	245.00					
College Blvd NB Seg 4 -O Blvd Olv Dr	42.0	point211	211	5,438.7	6,900.2	245.00				Average	
		point120	120	5,437.0	7,476.2	230.00				Average	
		point206	206	5,431.9	7,930.0	241.00					
College Blvd SB Seg 5 - Olv Dr Thndr Dr	42.0	point212	212	5,400.8	6,891.7	245.00				Average	
		point172	172	5,397.4	6,722.3	262.00				Average	
		point171	171	5,365.6	6,537.5	277.00				Average	
		point170	170	5,309.8	6,329.5	292.00				Average	
		point169	169	5,259.5	6,192.4	307.00				Average	
		point168	168	5,166.7	6,005.7	314.50				Average	
		point167	167	5,055.2	5,832.9	322.00				Average	
		point166	166	4,902.0	5,647.6	335.00				Average	
		point165	165	4,770.1	5,524.3	349.00					
College Blvd SB Seg 6 Thndr Dr Mrvn St	42.0	point213	213	4,770.1	5,524.3	349.00				Average	
		point164	164	4,570.8	5,335.7	363.00				Average	
		point163	163	4,346.8	5,143.0	366.50				Average	
		point162	162	4,081.9	4,914.4	359.00				Average	
		point161	161	3,928.9	4,778.0	351.50				Average	
		point160	160	3,745.5	4,591.0	344.00				Average	
		point159	159	3,593.7	4,438.6	338.00				Average	
		point158	158	3,421.5	4,257.4	332.00				Average	
		point157	157	3,285.9	4,111.1	326.00				Average	

INPUT: ROADWAYS
PN 8689

		point156	156	3,128.0	3,949.6	325.00					
College Blvd NB Seg 5 - Olv Dr Thndr Dr	42.0	point214	214	4,821.3	5,514.9	349.00				Average	
		point112	112	4,950.4	5,640.4	335.00				Average	
		point113	113	5,095.9	5,833.3	322.00				Average	
		point114	114	5,203.8	6,009.0	314.50				Average	
		point115	115	5,291.6	6,199.9	307.00				Average	
		point116	116	5,341.9	6,337.0	292.00				Average	
		point117	117	5,398.7	6,547.0	277.00				Average	
		point118	118	5,432.2	6,731.8	262.00				Average	
		point119	119	5,438.7	6,900.2	245.00					
College Blvd NB Seg 6 Thndr Dr Mrvn St	42.0	point215	215	3,169.2	3,951.0	325.00				Average	
		point103	103	3,329.7	4,112.5	326.00				Average	
		point104	104	3,467.6	4,258.5	332.00				Average	
		point105	105	3,638.1	4,433.7	338.00				Average	
		point106	106	3,784.7	4,585.7	344.00				Average	
		point107	107	3,973.0	4,763.3	351.50				Average	
		point108	108	4,126.0	4,898.3	359.00				Average	
		point109	109	4,398.9	5,134.4	366.50				Average	
		point110	110	4,627.2	5,331.4	363.00				Average	
		point111	111	4,821.3	5,514.9	349.00					
College Blvd SB Seg7 Rsl St Brnd_Wrg	42.0	point216	216	3,128.0	3,949.6	325.00				Average	
		point155	155	2,999.5	3,803.8	323.00				Average	
		point154	154	2,917.9	3,697.0	321.00				Average	
		point153	153	2,882.3	3,643.2	319.40				Average	
		point152	152	2,847.4	3,554.8	318.20				Average	
		point151	151	2,810.9	3,454.1	316.00				Average	
		point150	150	2,781.3	3,301.5	311.00				Average	
		point149	149	2,712.4	2,990.1	301.00				Average	
		point148	148	2,669.7	2,883.9	298.00				Average	
		point147	147	2,583.3	2,713.3	295.00				Average	
		point146	146	2,476.4	2,518.5	291.00				Average	
		point145	145	2,455.7	2,467.5	290.00				Average	
		point144	144	2,410.2	2,292.5	279.00				Average	
		point143	143	2,357.8	2,022.1	274.00				Average	
		point142	142	2,287.6	1,668.0	263.00				Average	
		point141	141	2,203.2	1,227.5	252.00				Average	
		point140	140	2,135.8	903.2	238.00				Average	
		point139	139	2,088.2	700.0	232.00				Average	
		point138	138	1,985.8	418.1	228.00					

INPUT: ROADWAYS
PN 8689

College Blvd CL	15.0	point222	222	1,845.4	-405.2	190.00				Average	
		point42	42	1,844.9	-67.0	221.00				Average	
		point6	6	1,999.7	417.1	228.00				Average	
		point7	7	2,102.1	694.9	232.00				Average	
		point8	8	2,150.7	903.2	238.00				Average	
		point9	9	2,220.1	1,229.5	252.00				Average	
		point10	10	2,303.5	1,667.0	263.00				Average	
		point11	11	2,373.7	2,021.1	274.00				Average	
		point12	12	2,426.1	2,292.5	279.00				Average	
		point13	13	2,471.6	2,467.5	290.00				Average	
		point14	14	2,496.4	2,518.5	291.00				Average	
		point15	15	2,601.3	2,716.4	295.00				Average	
		point16	16	2,687.7	2,887.0	298.00				Average	
		point17	17	2,729.3	2,994.2	301.00				Average	
		point18	18	2,798.2	3,305.6	311.00				Average	
		point19	19	2,826.8	3,453.1	316.00				Average	
		point20	20	2,863.3	3,553.8	318.20				Average	
		point21	21	2,902.3	3,643.2	319.40				Average	
		point22	22	2,937.9	3,697.0	321.00				Average	
		point23	23	3,019.5	3,803.8	323.00				Average	
		point24	24	3,148.0	3,949.6	325.00				Average	
		point25	25	3,305.9	4,111.1	326.00				Average	
		point26	26	3,442.4	4,255.7	332.00				Average	
		point27	27	3,614.6	4,433.4	338.00				Average	
		point28	28	3,765.5	4,587.6	344.00				Average	
		point29	29	3,949.4	4,766.8	351.50				Average	
		point30	30	4,102.4	4,903.2	359.00				Average	
		point31	31	4,378.6	5,145.0	366.50				Average	
		point32	32	4,602.6	5,337.7	363.00				Average	
		point33	33	4,795.3	5,519.9	349.00				Average	
		point34	34	4,927.2	5,643.2	335.00				Average	
		point35	35	5,072.7	5,830.2	322.00				Average	
		point36	36	5,184.2	6,003.0	314.50				Average	
		point37	37	5,275.4	6,191.4	307.00				Average	
		point38	38	5,325.7	6,328.5	292.00				Average	
		point39	39	5,382.5	6,538.5	277.00				Average	
		point40	40	5,414.3	6,723.3	262.00				Average	
		point41	41	5,420.8	6,891.7	245.00				Average	
		point2	2	5,420.8	7,467.7	230.00				Average	

INPUT: ROADWAYS
PN 8689

		point207	207	5,415.7	7,921.5	241.00				Average	
		point45	45	5,410.6	8,375.2	252.00				Average	
		point46	46	5,394.0	8,838.2	269.00				Average	
		point47	47	5,386.4	9,141.1	272.00				Average	
		point48	48	5,342.3	9,301.0	282.00				Average	
		point49	49	5,306.4	9,394.7	293.00				Average	
		point50	50	5,198.8	9,578.7	304.00				Average	
		point51	51	5,020.0	9,797.5	315.00				Average	
		point52	52	4,950.5	9,882.5	322.00				Average	
		point53	53	4,868.9	10,028.4	338.00				Average	
		point54	54	4,801.2	10,210.7	354.00				Average	
		point55	55	4,780.4	10,354.8	370.00				Average	
		point56	56	4,773.8	10,976.0	386.00				Average	
		point57	57	4,772.1	11,187.8	402.00				Average	
		point58	58	4,749.5	11,304.1	405.00				Average	
		point59	59	4,678.4	11,465.6	413.00				Average	
		point192	192	4,614.1	11,599.3	408.00				Average	
		point193	193	3,779.3	13,354.6	370.00					
College Blvd NB Seg 8 - Brnd Dr VstaWy	42.0	point224	224	1,862.6	-398.4	190.00				Average	
		point82	82	1,864.0	-58.5	221.00				Average	
		point84	84	2,025.6	425.6	228.00					
College Blvd NB Seg 7 Rsl St Brnd_Wrg	42.0	point226	226	2,025.6	425.6	228.00				Average	
		point85	85	2,125.2	703.4	232.00				Average	
		point86	86	2,166.9	911.7	238.00				Average	
		point87	87	2,236.3	1,238.0	252.00				Average	
		point88	88	2,319.7	1,675.5	263.00				Average	
		point89	89	2,389.9	2,029.6	274.00				Average	
		point90	90	2,442.3	2,301.0	279.00				Average	
		point91	91	2,487.8	2,476.0	290.00				Average	
		point92	92	2,512.6	2,527.0	291.00				Average	
		point93	93	2,619.6	2,723.5	295.00				Average	
		point94	94	2,706.0	2,894.1	298.00				Average	
		point95	95	2,745.5	3,002.7	301.00				Average	
		point96	96	2,814.4	3,314.1	311.00				Average	
		point97	97	2,843.0	3,461.6	316.00				Average	
		point98	98	2,881.6	3,558.8	318.20				Average	
		point99	99	2,920.6	3,648.2	319.40				Average	
		point100	100	2,959.1	3,702.7	321.00				Average	
		point101	101	3,040.7	3,809.5	323.00				Average	

INPUT: ROADWAYS

PN 8689

		point102	102	3,169.2	3,951.0	325.00					
College Blvd SB Seg 8 - Brnd Dr VstaWy	42.0	point227	227	1,985.8	418.1	228.00				Average	
		point220	220	1,826.9	-69.0	221.00				Average	
		point221	221	1,824.8	-408.7	190.00					

INPUT: TRAFFIC FOR LAeq1h Percentages

PN 8689

Dudek													
MG													
INPUT: TRAFFIC FOR LAeq1h Percentages													
PROJECT/CONTRACT:	PN 8689												
RUN:	College Blvd GPA - Existing												
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
College Blvd SB Seg 3 - Aztec St O Blvd	point198	198	1849	97	45	2	45	1	45	0	0	0	0
	point183	183	1849	97	45	2	45	1	45	0	0	0	0
	point182	182	1849	97	45	2	45	1	45	0	0	0	0
	point181	181	1849	97	45	2	45	1	45	0	0	0	0
	point180	180	1849	97	45	2	45	1	45	0	0	0	0
	point179	179	1849	97	45	2	45	1	45	0	0	0	0
	point178	178	1849	97	45	2	45	1	45	0	0	0	0
	point177	177	1849	97	45	2	45	1	45	0	0	0	0
	point176	176	1849	97	45	2	45	1	45	0	0	0	0
	point175	175	1849	97	45	2	45	1	45	0	0	0	0
	point208	208											
College Blvd NB Seg 2 - OG Rd Av dl P	point199	199	1911	97	45	2	45	1	45	0	0	0	0
	point131	131	1911	97	45	2	45	1	45	0	0	0	0
	point132	132	1911	97	45	2	45	1	45	0	0	0	0
	point133	133	1911	97	45	2	45	1	45	0	0	0	0
	point134	134	1911	97	45	2	45	1	45	0	0	0	0
	point135	135											
College Blvd NB Seg 1 - Av Emp OG Rd	point200	200	1494	97	45	2	45	1	45	0	0	0	0
	point190	190	1494	97	45	2	45	1	45	0	0	0	0
	point191	191											
College Blvd SB Seg 2 - OG Rd Av dl P-2	point203	203	1911	97	45	2	45	1	45	0	0	0	0
	point188	188	1911	97	45	2	45	1	45	0	0	0	0
	point187	187	1911	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point186	186	1911	97	45	2	45	1	45	0	0	0	0
	point185	185	1911	97	45	2	45	1	45	0	0	0	0
	point184	184											
College Blvd SB Seg 1- Av Emp OG Rd	point194	194	1494	97	45	2	45	1	45	0	0	0	0
	point201	201	1494	97	45	2	45	1	45	0	0	0	0
	point189	189											
College Blvd NB Seg 3 - Aztec St O Blvd-2	point209	209	1849	97	45	2	45	1	45	0	0	0	0
	point121	121	1849	97	45	2	45	1	45	0	0	0	0
	point122	122	1849	97	45	2	45	1	45	0	0	0	0
	point123	123	1849	97	45	2	45	1	45	0	0	0	0
	point124	124	1849	97	45	2	45	1	45	0	0	0	0
	point125	125	1849	97	45	2	45	1	45	0	0	0	0
	point126	126	1849	97	45	2	45	1	45	0	0	0	0
	point127	127	1849	97	45	2	45	1	45	0	0	0	0
	point128	128	1849	97	45	2	45	1	45	0	0	0	0
	point129	129	1849	97	45	2	45	1	45	0	0	0	0
	point130	130											
College Blvd SB Seg 4 -O Blvd Olv Dr	point210	210	2497	97	45	2	45	1	45	0	0	0	0
	point174	174	2497	97	45	2	45	1	45	0	0	0	0
	point173	173											
College Blvd NB Seg 4 -O Blvd Olv Dr	point211	211	2497	97	45	2	45	1	45	0	0	0	0
	point120	120	2497	97	45	2	45	1	45	0	0	0	0
	point206	206											
College Blvd SB Seg 5 - Olv Dr Thndr Dr	point212	212	1796	97	45	2	45	1	45	0	0	0	0
	point172	172	1796	97	45	2	45	1	45	0	0	0	0
	point171	171	1796	97	45	2	45	1	45	0	0	0	0
	point170	170	1796	97	45	2	45	1	45	0	0	0	0
	point169	169	1796	97	45	2	45	1	45	0	0	0	0
	point168	168	1796	97	45	2	45	1	45	0	0	0	0
	point167	167	1796	97	45	2	45	1	45	0	0	0	0
	point166	166	1796	97	45	2	45	1	45	0	0	0	0
	point165	165											
College Blvd SB Seg 6 Thndr Dr Mrvn St	point213	213	1587	97	45	2	45	1	45	0	0	0	0
	point164	164	1587	97	45	2	45	1	45	0	0	0	0
	point163	163	1587	97	45	2	45	1	45	0	0	0	0
	point162	162	1587	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point161	161	1587	97	45	2	45	1	45	0	0	0	0
	point160	160	1587	97	45	2	45	1	45	0	0	0	0
	point159	159	1587	97	45	2	45	1	45	0	0	0	0
	point158	158	1587	97	45	2	45	1	45	0	0	0	0
	point157	157	1587	97	45	2	45	1	45	0	0	0	0
	point156	156											
College Blvd NB Seg 5 - Olv Dr Thndr Dr	point214	214	1796	97	45	2	45	1	45	0	0	0	0
	point112	112	1796	97	45	2	45	1	45	0	0	0	0
	point113	113	1796	97	45	2	45	1	45	0	0	0	0
	point114	114	1796	97	45	2	45	1	45	0	0	0	0
	point115	115	1796	97	45	2	45	1	45	0	0	0	0
	point116	116	1796	97	45	2	45	1	45	0	0	0	0
	point117	117	1796	97	45	2	45	1	45	0	0	0	0
	point118	118	1796	97	45	2	45	1	45	0	0	0	0
	point119	119											
College Blvd NB Seg 6 Thndr Dr Mrvn St	point215	215	1587	97	45	2	45	1	45	0	0	0	0
	point103	103	1587	97	45	2	45	1	45	0	0	0	0
	point104	104	1587	97	45	2	45	1	45	0	0	0	0
	point105	105	1587	97	45	2	45	1	45	0	0	0	0
	point106	106	1587	97	45	2	45	1	45	0	0	0	0
	point107	107	1587	97	45	2	45	1	45	0	0	0	0
	point108	108	1587	97	45	2	45	1	45	0	0	0	0
	point109	109	1587	97	45	2	45	1	45	0	0	0	0
	point110	110	1587	97	45	2	45	1	45	0	0	0	0
	point111	111											
College Blvd SB Seg7 Rsl St Brnd_Wrg	point216	216	1638	97	45	2	45	1	45	0	0	0	0
	point155	155	1638	97	45	2	45	1	45	0	0	0	0
	point154	154	1638	97	45	2	45	1	45	0	0	0	0
	point153	153	1638	97	45	2	45	1	45	0	0	0	0
	point152	152	1638	97	45	2	45	1	45	0	0	0	0
	point151	151	1638	97	45	2	45	1	45	0	0	0	0
	point150	150	1638	97	45	2	45	1	45	0	0	0	0
	point149	149	1638	97	45	2	45	1	45	0	0	0	0
	point148	148	1638	97	45	2	45	1	45	0	0	0	0
	point147	147	1638	97	45	2	45	1	45	0	0	0	0
	point146	146	1638	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point145	145	1638	97	45	2	45	1	45	0	0	0	0
	point144	144	1638	97	45	2	45	1	45	0	0	0	0
	point143	143	1638	97	45	2	45	1	45	0	0	0	0
	point142	142	1638	97	45	2	45	1	45	0	0	0	0
	point141	141	1638	97	45	2	45	1	45	0	0	0	0
	point140	140	1638	97	45	2	45	1	45	0	0	0	0
	point139	139	1638	97	45	2	45	1	45	0	0	0	0
	point138	138											
College Blvd CL	point222	222	0	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0	0
	point6	6	0	0	0	0	0	0	0	0	0	0	0
	point7	7	0	0	0	0	0	0	0	0	0	0	0
	point8	8	0	0	0	0	0	0	0	0	0	0	0
	point9	9	0	0	0	0	0	0	0	0	0	0	0
	point10	10	0	0	0	0	0	0	0	0	0	0	0
	point11	11	0	0	0	0	0	0	0	0	0	0	0
	point12	12	0	0	0	0	0	0	0	0	0	0	0
	point13	13	0	0	0	0	0	0	0	0	0	0	0
	point14	14	0	0	0	0	0	0	0	0	0	0	0
	point15	15	0	0	0	0	0	0	0	0	0	0	0
	point16	16	0	0	0	0	0	0	0	0	0	0	0
	point17	17	0	0	0	0	0	0	0	0	0	0	0
	point18	18	0	0	0	0	0	0	0	0	0	0	0
	point19	19	0	0	0	0	0	0	0	0	0	0	0
	point20	20	0	0	0	0	0	0	0	0	0	0	0
	point21	21	0	0	0	0	0	0	0	0	0	0	0
	point22	22	0	0	0	0	0	0	0	0	0	0	0
	point23	23	0	0	0	0	0	0	0	0	0	0	0
	point24	24	0	0	0	0	0	0	0	0	0	0	0
	point25	25	0	0	0	0	0	0	0	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0	0
	point28	28	0	0	0	0	0	0	0	0	0	0	0
	point29	29	0	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point32	32	0	0	0	0	0	0	0	0	0	0	0
	point33	33	0	0	0	0	0	0	0	0	0	0	0
	point34	34	0	0	0	0	0	0	0	0	0	0	0
	point35	35	0	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0	0
	point2	2	0	0	0	0	0	0	0	0	0	0	0
	point207	207	0	0	0	0	0	0	0	0	0	0	0
	point45	45	0	0	0	0	0	0	0	0	0	0	0
	point46	46	0	0	0	0	0	0	0	0	0	0	0
	point47	47	0	0	0	0	0	0	0	0	0	0	0
	point48	48	0	0	0	0	0	0	0	0	0	0	0
	point49	49	0	0	0	0	0	0	0	0	0	0	0
	point50	50	0	0	0	0	0	0	0	0	0	0	0
	point51	51	0	0	0	0	0	0	0	0	0	0	0
	point52	52	0	0	0	0	0	0	0	0	0	0	0
	point53	53	0	0	0	0	0	0	0	0	0	0	0
	point54	54	0	0	0	0	0	0	0	0	0	0	0
	point55	55	0	0	0	0	0	0	0	0	0	0	0
	point56	56	0	0	0	0	0	0	0	0	0	0	0
	point57	57	0	0	0	0	0	0	0	0	0	0	0
	point58	58	0	0	0	0	0	0	0	0	0	0	0
	point59	59	0	0	0	0	0	0	0	0	0	0	0
	point192	192	0	0	0	0	0	0	0	0	0	0	0
	point193	193											
College Blvd NB Seg 8 - Brnd Dr VstaWy	point224	224	2211	97	45	2	45	1	45	0	0	0	0
	point82	82	2211	97	45	2	45	1	45	0	0	0	0
	point84	84											
College Blvd NB Seg 7 Rsl St Brnd_Wrg	point226	226	1638	97	45	2	45	1	45	0	0	0	0
	point85	85	1638	97	45	2	45	1	45	0	0	0	0
	point86	86	1638	97	45	2	45	1	45	0	0	0	0
	point87	87	1638	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point88	88	1638	97	45	2	45	1	45	0	0	0	0
	point89	89	1638	97	45	2	45	1	45	0	0	0	0
	point90	90	1638	97	45	2	45	1	45	0	0	0	0
	point91	91	1638	97	45	2	45	1	45	0	0	0	0
	point92	92	1638	97	45	2	45	1	45	0	0	0	0
	point93	93	1638	97	45	2	45	1	45	0	0	0	0
	point94	94	1638	97	45	2	45	1	45	0	0	0	0
	point95	95	1638	97	45	2	45	1	45	0	0	0	0
	point96	96	1638	97	45	2	45	1	45	0	0	0	0
	point97	97	1638	97	45	2	45	1	45	0	0	0	0
	point98	98	1638	97	45	2	45	1	45	0	0	0	0
	point99	99	1638	97	45	2	45	1	45	0	0	0	0
	point100	100	1638	97	45	2	45	1	45	0	0	0	0
	point101	101	1638	97	45	2	45	1	45	0	0	0	0
	point102	102											
College Blvd SB Seg 8 - Brnd Dr VstaWy	point227	227	2211	97	45	2	45	1	45	0	0	0	0
	point220	220	2211	97	45	2	45	1	45	0	0	0	0
	point221	221											

INPUT: RECEIVERS
PN 8689

Dudek						29 July 2019					
MG						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:		PN 8689									
RUN:		College Blvd GPA - Existing									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	2,240.4	777.6	257.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	2,228.1	2,103.7	317.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	3,401.9	4,021.8	328.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	4,975.5	5,821.4	335.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	5,479.5	9,193.2	269.00	5.00	0.00	66	10.0	8.0	Y
ST6	6	1	4,884.5	9,821.6	322.00	5.00	0.00	66	10.0	8.0	Y
M1	12	1	1,824.6	214.3	236.00	5.00	0.00	66	10.0	8.0	Y
M2	14	1	5,516.4	7,056.6	260.00	5.00	0.00	66	10.0	8.0	Y
M3	16	1	4,881.0	10,778.2	335.00	5.00	0.00	66	10.0	8.0	Y
M4	18	1	4,168.8	12,713.0	385.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

PN 8689

Dudek					29 July 2019														
MG					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:				PN 8689															
RUN:				College Blvd GPA - Existing															
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft	#Up	#Dn	Reflec-tions?
Barrier1	W	0.00	99.99	0.00				0.00		point1	1	2,127.2	456.7	257.00	5.00	0.00	0	0	
										point3	3	2,212.5	747.6	257.00	5.00	0.00	0	0	
										point4	4	2,254.1	988.2	257.00	5.00	0.00	0	0	
										point5	5	2,317.5	1,266.0	257.00	5.00				
Barrier2	W	0.00	99.99	0.00				0.00		point23	23	2,234.9	1,886.5	317.00	0.00	0.00	0	0	
										point7	7	2,252.2	2,108.7	317.00	0.00	0.00	0	0	
										point8	8	2,285.2	2,329.2	317.00	0.00	0.00	0	0	
										point9	9	2,332.1	2,494.1	317.00	0.00				
Barrier3	W	0.00	99.99	0.00				0.00		point25	25	3,206.8	3,915.3	328.00	0.00	0.00	0	0	
										point11	11	3,318.4	4,033.8	328.00	0.00	0.00	0	0	
										point12	12	3,503.0	4,212.9	328.00	0.00	0.00	0	0	
										point13	13	3,642.2	4,354.8	328.00	0.00				
Barrier4	W	0.00	99.99	0.00				0.00		point27	27	4,787.9	5,615.6	335.00	6.00	0.00	0	0	
										point15	15	4,911.5	5,728.2	335.00	6.00	0.00	0	0	
										point16	16	5,031.8	5,879.1	335.00	6.00	0.00	0	0	
										point17	17	5,143.4	6,045.4	335.00	6.00	0.00	0	0	
										point18	18	5,191.5	6,128.5	335.00	6.00				
Barrier5	W	0.00	99.99	0.00				0.00		point29	29	5,459.5	8,945.7	272.00	6.00	0.00	0	0	
										point20	20	5,452.6	9,187.1	272.00	6.00	0.00	0	0	
										point21	21	5,430.0	9,310.3	282.00	6.00	0.00	0	0	
										point2	2	5,376.2	9,426.6	293.00	6.00				
Barrier11	W	0.00	99.99	0.00				0.00		point32	32	1,833.0	124.0	235.00	0.00	0.00	0	0	
										point33	33	1,893.4	297.0	235.00	0.00				
Barrier12	W	0.00	99.99	0.00				0.00		point34	34	5,483.5	6,848.5	260.00	0.00	0.00	0	0	
										point35	35	5,480.2	7,295.6	260.00	0.00				
Barrier13	W	0.00	99.99	0.00				0.00		point36	36	4,839.2	10,359.8	365.00	6.00	0.00	0	0	
										point37	37	4,836.9	11,103.4	381.00	6.00				
Barrier15	W	0.00	99.99	0.00				0.00		point39	39	4,673.1	11,630.5	408.00	6.00	0.00	0	0	
										point40	40	3,856.2	13,348.5	370.00	6.00				

RESULTS: SOUND LEVELS
PN 8689

Dudek													
MG													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:													
RUN:													
BARRIER DESIGN:													
ATMOSPHERICS:													
Receiver													
Name	No.	#DUs	Existing	No Barrier						With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
ST1	1	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0	
ST2	2	1	0.0	60.9	66	60.9	10	----	60.9	0.0	8	-8.0	
ST3	3	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0	
ST4	4	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0	
ST5	5	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0	
ST6	6	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0	
M1	12	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0	
M2	14	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0	
M3	16	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0	
M4	18	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		10	0.0	0.0	0.0								
All Impacted		3	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

INPUT: ROADWAYS
PN 8689

Dudek												
MG												
INPUT: ROADWAYS								Average pavement type shall be used unless				
PROJECT/CONTRACT:				PN 8689				a State highway agency substantiates the use				
RUN:				College Blvd GPA -Ex Alt 2_5-6Lns Partial				of a different type with the approval of FHWA				
Roadway		Points										
Name	Width	Name	No.	Coordinates (pavement)			Flow Control				Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On	
							Device	Constraint	Vehicles	Type	Struct?	
									Affected			
	ft			ft	ft	ft		mph	%			
College Blvd SB Seg 3 - Aztec St O Blvd	42.0	point198	198	4,775.4	10,210.7	354.00				Average		
		point183	183	4,843.1	10,028.4	338.00				Average		
		point182	182	4,931.0	9,873.4	322.00				Average		
		point181	181	5,000.5	9,788.4	315.00				Average		
		point180	180	5,178.8	9,578.7	304.00				Average		
		point179	179	5,281.6	9,393.4	293.00				Average		
		point178	178	5,317.5	9,299.7	282.00				Average		
		point177	177	5,359.7	9,141.1	272.00				Average		
		point176	176	5,367.3	8,838.2	269.00				Average		
		point175	175	5,385.4	8,377.4	252.00				Average		
		point208	208	5,390.5	7,923.7	241.00						
College Blvd NB Seg 2 - OG Rd Av dl P	42.0	point199	199	4,821.8	10,224.1	354.00				Average		
		point131	131	4,803.8	10,366.8	370.00				Average		
		point132	132	4,798.7	10,983.8	386.00				Average		
		point133	133	4,794.1	11,197.1	402.00				Average		
		point134	134	4,769.4	11,313.4	405.00				Average		
		point135	135	4,698.3	11,474.9	413.00						
College Blvd NB Seg 1 - Av Emp OG Rd	42.0	point200	200	4,697.5	11,475.6	413.00				Average		
		point190	190	4,634.0	11,610.4	408.00				Average		
		point191	191	3,818.3	13,328.9	370.00						
College Blvd SB Seg 2 - OG Rd Av dl P-2	42.0	point203	203	4,654.0	11,464.9	413.00				Average		
		point188	188	4,725.1	11,303.4	405.00				Average		
		point187	187	4,746.3	11,188.5	402.00				Average		
		point186	186	4,748.0	10,976.7	386.00				Average		
		point185	185	4,754.6	10,354.8	370.00				Average		

INPUT: ROADWAYS
PN 8689

		point184	184	4,775.4	10,210.7	354.00					
College Blvd SB Seg 1- Av Emp OG Rd	42.0	point194	194	3,773.2	13,299.9	370.00				Average	
		point201	201	4,588.3	11,600.8	408.00				Average	
		point189	189	4,652.6	11,467.1	413.00					
College Blvd NB Seg 3 - Aztec St O Blvd-2	42.0	point209	209	5,437.8	7,928.5	241.00				Average	
		point121	121	5,432.7	8,382.3	252.00				Average	
		point122	122	5,416.9	8,843.4	269.00				Average	
		point123	123	5,409.3	9,146.3	272.00				Average	
		point124	124	5,363.5	9,311.1	282.00				Average	
		point125	125	5,327.6	9,404.8	293.00				Average	
		point126	126	5,215.0	9,587.2	304.00				Average	
		point127	127	5,038.2	9,808.0	315.00				Average	
		point128	128	4,968.7	9,893.0	322.00				Average	
		point129	129	4,889.5	10,041.3	338.00				Average	
		point130	130	4,821.8	10,223.6	354.00					
College Blvd SB Seg 4 -O Blvd Olv Dr	42.0	point210	210	5,390.5	7,922.9	241.00				Average	
		point174	174	5,395.6	7,468.6	230.00				Average	
		point173	173	5,395.6	6,892.6	245.00					
College Blvd NB Seg 4 -O Blvd Olv Dr	42.0	point211	211	5,442.6	6,900.6	245.00				Average	
		point120	120	5,440.9	7,476.6	230.00				Average	
		point206	206	5,437.8	7,926.3	241.00					
College Blvd SB Seg 5 - Olv Dr Thndr Dr	42.0	point212	212	5,395.4	6,892.3	245.00				Average	
		point172	172	5,389.7	6,725.6	262.00				Average	
		point171	171	5,363.2	6,540.2	277.00				Average	
		point170	170	5,307.1	6,331.1	292.00				Average	
		point169	169	5,256.8	6,194.0	307.00				Average	
		point168	168	5,161.7	6,008.4	314.50				Average	
		point167	167	5,050.2	5,835.6	322.00				Average	
		point166	166	4,901.6	5,654.2	335.00				Average	
		point165	165	4,769.7	5,530.9	349.00					
College Blvd SB Seg 6 Thndr Dr Mrvn St	42.0	point213	213	4,768.1	5,528.5	349.00				Average	
		point164	164	4,568.9	5,340.0	363.00				Average	
		point163	163	4,344.5	5,147.7	366.50				Average	
		point162	162	4,078.4	4,920.2	359.00				Average	
		point161	161	3,925.4	4,782.6	351.50				Average	
		point160	160	3,743.2	4,594.5	344.00				Average	
		point159	159	3,591.4	4,441.3	338.00				Average	
		point158	158	3,419.2	4,260.1	332.00				Average	
		point157	157	3,284.7	4,115.4	326.00				Average	

INPUT: ROADWAYS
PN 8689

		point156	156	3,126.8	3,953.9	325.00					
College Blvd NB Seg 5 - Olv Dr Thndr Dr	42.0	point214	214	4,825.2	5,515.3	349.00				Average	
		point112	112	4,954.2	5,640.7	335.00				Average	
		point113	113	5,101.7	5,828.3	322.00				Average	
		point114	114	5,209.7	6,003.9	314.50				Average	
		point115	115	5,295.9	6,194.5	307.00				Average	
		point116	116	5,346.2	6,331.6	292.00				Average	
		point117	117	5,402.6	6,547.0	277.00				Average	
		point118	118	5,439.6	6,730.1	262.00				Average	
		point119	119	5,442.2	6,898.5	245.00					
College Blvd NB Seg 6 Thndr Dr Mrvn St	42.0	point215	215	3,171.5	3,949.5	325.00				Average	
		point103	103	3,332.0	4,111.0	326.00				Average	
		point104	104	3,469.5	4,256.6	332.00				Average	
		point105	105	3,640.0	4,431.7	338.00				Average	
		point106	106	3,787.4	4,585.0	344.00				Average	
		point107	107	3,977.3	4,761.8	351.50				Average	
		point108	108	4,131.1	4,893.7	359.00				Average	
		point109	109	4,402.4	5,130.6	366.50				Average	
		point110	110	4,629.1	5,329.1	363.00				Average	
		point111	111	4,823.2	5,512.6	349.00					
College Blvd SB Seg7 Rsl St Brnd_Wrg	42.0	point216	216	3,126.1	3,953.1	325.00				Average	
		point155	155	2,996.0	3,808.8	323.00				Average	
		point154	154	2,916.4	3,698.5	321.00				Average	
		point153	153	2,879.2	3,643.6	319.40				Average	
		point152	152	2,844.3	3,555.2	318.20				Average	
		point151	151	2,806.6	3,456.1	316.00				Average	
		point150	150	2,777.0	3,303.5	311.00				Average	
		point149	149	2,708.9	2,990.9	301.00				Average	
		point148	148	2,666.3	2,884.7	298.00				Average	
		point147	147	2,580.2	2,716.4	295.00				Average	
		point146	146	2,473.3	2,521.6	291.00				Average	
		point145	145	2,452.6	2,469.0	290.00				Average	
		point144	144	2,407.1	2,294.0	279.00				Average	
		point143	143	2,353.1	2,023.7	274.00				Average	
		point142	142	2,282.9	1,669.6	263.00				Average	
		point141	141	2,200.1	1,228.6	252.00				Average	
		point140	140	2,132.7	904.4	238.00				Average	
		point139	139	2,083.2	702.3	232.00				Average	
		point138	138	1,980.8	420.4	228.00					

INPUT: ROADWAYS
PN 8689

College Blvd CL	15.0	point222	222	1,845.4	-405.2	190.00				Average	
		point42	42	1,844.9	-67.0	221.00				Average	
		point6	6	1,999.7	417.1	228.00				Average	
		point7	7	2,102.1	694.9	232.00				Average	
		point8	8	2,150.7	903.2	238.00				Average	
		point9	9	2,220.1	1,229.5	252.00				Average	
		point10	10	2,303.5	1,667.0	263.00				Average	
		point11	11	2,373.7	2,021.1	274.00				Average	
		point12	12	2,426.1	2,292.5	279.00				Average	
		point13	13	2,471.6	2,467.5	290.00				Average	
		point14	14	2,496.4	2,518.5	291.00				Average	
		point15	15	2,601.3	2,716.4	295.00				Average	
		point16	16	2,687.7	2,887.0	298.00				Average	
		point17	17	2,729.3	2,994.2	301.00				Average	
		point18	18	2,798.2	3,305.6	311.00				Average	
		point19	19	2,826.8	3,453.1	316.00				Average	
		point20	20	2,863.3	3,553.8	318.20				Average	
		point21	21	2,902.3	3,643.2	319.40				Average	
		point22	22	2,937.9	3,697.0	321.00				Average	
		point23	23	3,019.5	3,803.8	323.00				Average	
		point24	24	3,148.0	3,949.6	325.00				Average	
		point25	25	3,305.9	4,111.1	326.00				Average	
		point26	26	3,442.4	4,255.7	332.00				Average	
		point27	27	3,614.6	4,433.4	338.00				Average	
		point28	28	3,765.5	4,587.6	344.00				Average	
		point29	29	3,949.4	4,766.8	351.50				Average	
		point30	30	4,102.4	4,903.2	359.00				Average	
		point31	31	4,378.6	5,145.0	366.50				Average	
		point32	32	4,602.6	5,337.7	363.00				Average	
		point33	33	4,795.3	5,519.9	349.00				Average	
		point34	34	4,927.2	5,643.2	335.00				Average	
		point35	35	5,072.7	5,830.2	322.00				Average	
		point36	36	5,184.2	6,003.0	314.50				Average	
		point37	37	5,275.4	6,191.4	307.00				Average	
		point38	38	5,325.7	6,328.5	292.00				Average	
		point39	39	5,382.5	6,538.5	277.00				Average	
		point40	40	5,414.3	6,723.3	262.00				Average	
		point41	41	5,420.8	6,891.7	245.00				Average	
		point2	2	5,420.8	7,467.7	230.00				Average	

INPUT: ROADWAYS
PN 8689

		point207	207	5,415.7	7,921.5	241.00				Average	
		point45	45	5,410.6	8,375.2	252.00				Average	
		point46	46	5,394.0	8,838.2	269.00				Average	
		point47	47	5,386.4	9,141.1	272.00				Average	
		point48	48	5,342.3	9,301.0	282.00				Average	
		point49	49	5,306.4	9,394.7	293.00				Average	
		point50	50	5,198.8	9,578.7	304.00				Average	
		point51	51	5,020.0	9,797.5	315.00				Average	
		point52	52	4,950.5	9,882.5	322.00				Average	
		point53	53	4,868.9	10,028.4	338.00				Average	
		point54	54	4,801.2	10,210.7	354.00				Average	
		point55	55	4,780.4	10,354.8	370.00				Average	
		point56	56	4,773.8	10,976.0	386.00				Average	
		point57	57	4,772.1	11,187.8	402.00				Average	
		point58	58	4,749.5	11,304.1	405.00				Average	
		point59	59	4,678.4	11,465.6	413.00				Average	
		point192	192	4,614.1	11,599.3	408.00				Average	
		point193	193	3,779.3	13,354.6	370.00					
College Blvd NB Seg 8 - Brnd Dr VstaWy	42.0	point224	224	1,865.1	-400.8	190.00				Average	
		point82	82	1,867.8	-64.0	221.00				Average	
		point84	84	2,029.5	420.1	228.00					
College Blvd NB Seg 7 Rsl St Brnd_Wrg	42.0	point226	226	2,029.9	421.0	228.00				Average	
		point85	85	2,129.4	698.8	232.00				Average	
		point86	86	2,170.4	909.8	238.00				Average	
		point87	87	2,239.8	1,236.1	252.00				Average	
		point88	88	2,325.5	1,674.8	263.00				Average	
		point89	89	2,395.7	2,028.9	274.00				Average	
		point90	90	2,445.4	2,300.3	279.00				Average	
		point91	91	2,490.9	2,475.3	290.00				Average	
		point92	92	2,516.1	2,526.7	291.00				Average	
		point93	93	2,623.1	2,723.1	295.00				Average	
		point94	94	2,708.4	2,891.4	298.00				Average	
		point95	95	2,747.8	3,000.0	301.00				Average	
		point96	96	2,819.0	3,313.0	311.00				Average	
		point97	97	2,847.6	3,460.5	316.00				Average	
		point98	98	2,884.3	3,558.8	318.20				Average	
		point99	99	2,923.3	3,648.2	319.40				Average	
		point100	100	2,961.0	3,701.9	321.00				Average	
		point101	101	3,045.3	3,808.3	323.00				Average	

INPUT: ROADWAYS

PN 8689

		point102	102	3,171.9	3,950.6	325.00					
College Blvd SB Seg 8 - Brnd Dr VstaWy	42.0	point227	227	1,980.2	421.0	228.00				Average	
		point220	220	1,821.4	-66.1	221.00				Average	
		point221	221	1,821.1	-407.5	190.00					

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

Dudek													
MG													
INPUT: TRAFFIC FOR LAeq1h Percentages PROJECT/CONTRACT: PN 8689 RUN: College Blvd GPA -Ex Alt 2_5-6Lns Partial													
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
College Blvd SB Seg 3 - Aztec St O Blvd	point198	198	1849	97	45	2	45	1	45	0	0	0	0
	point183	183	1849	97	45	2	45	1	45	0	0	0	0
	point182	182	1849	97	45	2	45	1	45	0	0	0	0
	point181	181	1849	97	45	2	45	1	45	0	0	0	0
	point180	180	1849	97	45	2	45	1	45	0	0	0	0
	point179	179	1849	97	45	2	45	1	45	0	0	0	0
	point178	178	1849	97	45	2	45	1	45	0	0	0	0
	point177	177	1849	97	45	2	45	1	45	0	0	0	0
	point176	176	1849	97	45	2	45	1	45	0	0	0	0
	point175	175	1849	97	45	2	45	1	45	0	0	0	0
	point208	208											
College Blvd NB Seg 2 - OG Rd Av dl P	point199	199	1911	97	45	2	45	1	45	0	0	0	0
	point131	131	1911	97	45	2	45	1	45	0	0	0	0
	point132	132	1911	97	45	2	45	1	45	0	0	0	0
	point133	133	1911	97	45	2	45	1	45	0	0	0	0
	point134	134	1911	97	45	2	45	1	45	0	0	0	0
	point135	135											
College Blvd NB Seg 1 - Av Emp OG Rd	point200	200	1494	97	45	2	45	1	45	0	0	0	0
	point190	190	1494	97	45	2	45	1	45	0	0	0	0
	point191	191											
College Blvd SB Seg 2 - OG Rd Av dl P-2	point203	203	1911	97	45	2	45	1	45	0	0	0	0
	point188	188	1911	97	45	2	45	1	45	0	0	0	0
	point187	187	1911	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point186	186	1911	97	45	2	45	1	45	0	0	0	0
	point185	185	1911	97	45	2	45	1	45	0	0	0	0
	point184	184											
College Blvd SB Seg 1- Av Emp OG Rd	point194	194	1494	97	45	2	45	1	45	0	0	0	0
	point201	201	1494	97	45	2	45	1	45	0	0	0	0
	point189	189											
College Blvd NB Seg 3 - Aztec St O Blvd-2	point209	209	1849	97	45	2	45	1	45	0	0	0	0
	point121	121	1849	97	45	2	45	1	45	0	0	0	0
	point122	122	1849	97	45	2	45	1	45	0	0	0	0
	point123	123	1849	97	45	2	45	1	45	0	0	0	0
	point124	124	1849	97	45	2	45	1	45	0	0	0	0
	point125	125	1849	97	45	2	45	1	45	0	0	0	0
	point126	126	1849	97	45	2	45	1	45	0	0	0	0
	point127	127	1849	97	45	2	45	1	45	0	0	0	0
	point128	128	1849	97	45	2	45	1	45	0	0	0	0
	point129	129	1849	97	45	2	45	1	45	0	0	0	0
	point130	130											
College Blvd SB Seg 4 -O Blvd Olv Dr	point210	210	2497	97	45	2	45	1	45	0	0	0	0
	point174	174	2497	97	45	2	45	1	45	0	0	0	0
	point173	173											
College Blvd NB Seg 4 -O Blvd Olv Dr	point211	211	2497	97	45	2	45	1	45	0	0	0	0
	point120	120	2497	97	45	2	45	1	45	0	0	0	0
	point206	206											
College Blvd SB Seg 5 - Olv Dr Thndr Dr	point212	212	1796	97	45	2	45	1	45	0	0	0	0
	point172	172	1796	97	45	2	45	1	45	0	0	0	0
	point171	171	1796	97	45	2	45	1	45	0	0	0	0
	point170	170	1796	97	45	2	45	1	45	0	0	0	0
	point169	169	1796	97	45	2	45	1	45	0	0	0	0
	point168	168	1796	97	45	2	45	1	45	0	0	0	0
	point167	167	1796	97	45	2	45	1	45	0	0	0	0
	point166	166	1796	97	45	2	45	1	45	0	0	0	0
	point165	165											
College Blvd SB Seg 6 Thndr Dr Mrvn St	point213	213	1587	97	45	2	45	1	45	0	0	0	0
	point164	164	1587	97	45	2	45	1	45	0	0	0	0
	point163	163	1587	97	45	2	45	1	45	0	0	0	0
	point162	162	1587	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point161	161	1587	97	45	2	45	1	45	0	0	0	0
	point160	160	1587	97	45	2	45	1	45	0	0	0	0
	point159	159	1587	97	45	2	45	1	45	0	0	0	0
	point158	158	1587	97	45	2	45	1	45	0	0	0	0
	point157	157	1587	97	45	2	45	1	45	0	0	0	0
	point156	156											
College Blvd NB Seg 5 - Olv Dr Thndr Dr	point214	214	1796	97	45	2	45	1	45	0	0	0	0
	point112	112	1796	97	45	2	45	1	45	0	0	0	0
	point113	113	1796	97	45	2	45	1	45	0	0	0	0
	point114	114	1796	97	45	2	45	1	45	0	0	0	0
	point115	115	1796	97	45	2	45	1	45	0	0	0	0
	point116	116	1796	97	45	2	45	1	45	0	0	0	0
	point117	117	1796	97	45	2	45	1	45	0	0	0	0
	point118	118	1796	97	45	2	45	1	45	0	0	0	0
	point119	119											
College Blvd NB Seg 6 Thndr Dr Mrvn St	point215	215	1587	97	45	2	45	1	45	0	0	0	0
	point103	103	1587	97	45	2	45	1	45	0	0	0	0
	point104	104	1587	97	45	2	45	1	45	0	0	0	0
	point105	105	1587	97	45	2	45	1	45	0	0	0	0
	point106	106	1587	97	45	2	45	1	45	0	0	0	0
	point107	107	1587	97	45	2	45	1	45	0	0	0	0
	point108	108	1587	97	45	2	45	1	45	0	0	0	0
	point109	109	1587	97	45	2	45	1	45	0	0	0	0
	point110	110	1587	97	45	2	45	1	45	0	0	0	0
	point111	111											
College Blvd SB Seg7 Rsl St Brnd_Wrg	point216	216	1638	97	45	2	45	1	45	0	0	0	0
	point155	155	1638	97	45	2	45	1	45	0	0	0	0
	point154	154	1638	97	45	2	45	1	45	0	0	0	0
	point153	153	1638	97	45	2	45	1	45	0	0	0	0
	point152	152	1638	97	45	2	45	1	45	0	0	0	0
	point151	151	1638	97	45	2	45	1	45	0	0	0	0
	point150	150	1638	97	45	2	45	1	45	0	0	0	0
	point149	149	1638	97	45	2	45	1	45	0	0	0	0
	point148	148	1638	97	45	2	45	1	45	0	0	0	0
	point147	147	1638	97	45	2	45	1	45	0	0	0	0
	point146	146	1638	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point145	145	1638	97	45	2	45	1	45	0	0	0	0
	point144	144	1638	97	45	2	45	1	45	0	0	0	0
	point143	143	1638	97	45	2	45	1	45	0	0	0	0
	point142	142	1638	97	45	2	45	1	45	0	0	0	0
	point141	141	1638	97	45	2	45	1	45	0	0	0	0
	point140	140	1638	97	45	2	45	1	45	0	0	0	0
	point139	139	1638	97	45	2	45	1	45	0	0	0	0
	point138	138											
College Blvd CL	point222	222	0	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0	0
	point6	6	0	0	0	0	0	0	0	0	0	0	0
	point7	7	0	0	0	0	0	0	0	0	0	0	0
	point8	8	0	0	0	0	0	0	0	0	0	0	0
	point9	9	0	0	0	0	0	0	0	0	0	0	0
	point10	10	0	0	0	0	0	0	0	0	0	0	0
	point11	11	0	0	0	0	0	0	0	0	0	0	0
	point12	12	0	0	0	0	0	0	0	0	0	0	0
	point13	13	0	0	0	0	0	0	0	0	0	0	0
	point14	14	0	0	0	0	0	0	0	0	0	0	0
	point15	15	0	0	0	0	0	0	0	0	0	0	0
	point16	16	0	0	0	0	0	0	0	0	0	0	0
	point17	17	0	0	0	0	0	0	0	0	0	0	0
	point18	18	0	0	0	0	0	0	0	0	0	0	0
	point19	19	0	0	0	0	0	0	0	0	0	0	0
	point20	20	0	0	0	0	0	0	0	0	0	0	0
	point21	21	0	0	0	0	0	0	0	0	0	0	0
	point22	22	0	0	0	0	0	0	0	0	0	0	0
	point23	23	0	0	0	0	0	0	0	0	0	0	0
	point24	24	0	0	0	0	0	0	0	0	0	0	0
	point25	25	0	0	0	0	0	0	0	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0	0
	point28	28	0	0	0	0	0	0	0	0	0	0	0
	point29	29	0	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point32	32	0	0	0	0	0	0	0	0	0	0	0
	point33	33	0	0	0	0	0	0	0	0	0	0	0
	point34	34	0	0	0	0	0	0	0	0	0	0	0
	point35	35	0	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0	0
	point2	2	0	0	0	0	0	0	0	0	0	0	0
	point207	207	0	0	0	0	0	0	0	0	0	0	0
	point45	45	0	0	0	0	0	0	0	0	0	0	0
	point46	46	0	0	0	0	0	0	0	0	0	0	0
	point47	47	0	0	0	0	0	0	0	0	0	0	0
	point48	48	0	0	0	0	0	0	0	0	0	0	0
	point49	49	0	0	0	0	0	0	0	0	0	0	0
	point50	50	0	0	0	0	0	0	0	0	0	0	0
	point51	51	0	0	0	0	0	0	0	0	0	0	0
	point52	52	0	0	0	0	0	0	0	0	0	0	0
	point53	53	0	0	0	0	0	0	0	0	0	0	0
	point54	54	0	0	0	0	0	0	0	0	0	0	0
	point55	55	0	0	0	0	0	0	0	0	0	0	0
	point56	56	0	0	0	0	0	0	0	0	0	0	0
	point57	57	0	0	0	0	0	0	0	0	0	0	0
	point58	58	0	0	0	0	0	0	0	0	0	0	0
	point59	59	0	0	0	0	0	0	0	0	0	0	0
	point192	192	0	0	0	0	0	0	0	0	0	0	0
	point193	193											
College Blvd NB Seg 8 - Brnd Dr VstaWy	point224	224	2211	97	45	2	45	1	45	0	0	0	0
	point82	82	2211	97	45	2	45	1	45	0	0	0	0
	point84	84											
College Blvd NB Seg 7 Rsl St Brnd_Wrg	point226	226	1638	97	45	2	45	1	45	0	0	0	0
	point85	85	1638	97	45	2	45	1	45	0	0	0	0
	point86	86	1638	97	45	2	45	1	45	0	0	0	0
	point87	87	1638	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point88	88	1638	97	45	2	45	1	45	0	0	0	0
	point89	89	1638	97	45	2	45	1	45	0	0	0	0
	point90	90	1638	97	45	2	45	1	45	0	0	0	0
	point91	91	1638	97	45	2	45	1	45	0	0	0	0
	point92	92	1638	97	45	2	45	1	45	0	0	0	0
	point93	93	1638	97	45	2	45	1	45	0	0	0	0
	point94	94	1638	97	45	2	45	1	45	0	0	0	0
	point95	95	1638	97	45	2	45	1	45	0	0	0	0
	point96	96	1638	97	45	2	45	1	45	0	0	0	0
	point97	97	1638	97	45	2	45	1	45	0	0	0	0
	point98	98	1638	97	45	2	45	1	45	0	0	0	0
	point99	99	1638	97	45	2	45	1	45	0	0	0	0
	point100	100	1638	97	45	2	45	1	45	0	0	0	0
	point101	101	1638	97	45	2	45	1	45	0	0	0	0
	point102	102											
College Blvd SB Seg 8 - Brnd Dr VstaWy	point227	227	2211	97	45	2	45	1	45	0	0	0	0
	point220	220	2211	97	45	2	45	1	45	0	0	0	0
	point221	221											

INPUT: RECEIVERS
PN 8689

Dudek						29 July 2019					
MG						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	PN 8689										
RUN:	College Blvd GPA -Ex Alt 2_5-6Lns Partial										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	2,240.4	777.6	257.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	2,228.1	2,103.7	317.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	3,401.9	4,021.8	328.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	4,975.5	5,821.4	335.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	5,479.5	9,193.2	269.00	5.00	0.00	66	10.0	8.0	Y
ST6	6	1	4,884.5	9,821.6	322.00	5.00	0.00	66	10.0	8.0	Y
M1	12	1	1,824.6	214.3	236.00	5.00	0.00	66	10.0	8.0	Y
M2	14	1	5,516.4	7,056.6	260.00	5.00	0.00	66	10.0	8.0	Y
M3	16	1	4,881.0	10,778.2	335.00	5.00	0.00	66	10.0	8.0	Y
M4	18	1	4,168.8	12,713.0	385.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

PN 8689

Dudek					29 July 2019														
MG					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:				PN 8689															
RUN:				College Blvd GPA -Ex Alt 2_5-6Lns Partial															
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit	\$ per Unit	Top Width	Run:Rise	\$ per Unit				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
				Area	Vol.			Length								Incre-	#Up	#Dn	Reflec-
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft			tions?
Barrier1	W	0.00	99.99	0.00				0.00		point1	1	2,127.2	456.7	257.00	5.00	0.00	0	0	
										point3	3	2,212.5	747.6	257.00	5.00	0.00	0	0	
										point4	4	2,254.1	988.2	257.00	5.00	0.00	0	0	
										point5	5	2,317.5	1,266.0	257.00	5.00				
Barrier2	W	0.00	99.99	0.00				0.00		point23	23	2,234.9	1,886.5	317.00	0.00	0.00	0	0	
										point7	7	2,252.2	2,108.7	317.00	0.00	0.00	0	0	
										point8	8	2,285.2	2,329.2	317.00	0.00	0.00	0	0	
										point9	9	2,332.1	2,494.1	317.00	0.00				
Barrier3	W	0.00	99.99	0.00				0.00		point25	25	3,206.8	3,915.3	328.00	0.00	0.00	0	0	
										point11	11	3,318.4	4,033.8	328.00	0.00	0.00	0	0	
										point12	12	3,503.0	4,212.9	328.00	0.00	0.00	0	0	
										point13	13	3,642.2	4,354.8	328.00	0.00				
Barrier4	W	0.00	99.99	0.00				0.00		point27	27	4,787.9	5,615.6	335.00	6.00	0.00	0	0	
										point15	15	4,911.5	5,728.2	335.00	6.00	0.00	0	0	
										point16	16	5,031.8	5,879.1	335.00	6.00	0.00	0	0	
										point17	17	5,143.4	6,045.4	335.00	6.00	0.00	0	0	
										point18	18	5,191.5	6,128.5	335.00	6.00				
Barrier5	W	0.00	99.99	0.00				0.00		point29	29	5,459.5	8,945.7	272.00	6.00	0.00	0	0	
										point20	20	5,452.6	9,187.1	272.00	6.00	0.00	0	0	
										point21	21	5,430.0	9,310.3	282.00	6.00	0.00	0	0	
										point2	2	5,376.2	9,426.6	293.00	6.00				
Barrier11	W	0.00	99.99	0.00				0.00		point32	32	1,833.0	124.0	235.00	0.00	0.00	0	0	
										point33	33	1,893.4	297.0	235.00	0.00				
Barrier12	W	0.00	99.99	0.00				0.00		point34	34	5,483.5	6,848.5	260.00	0.00	0.00	0	0	
										point35	35	5,480.2	7,295.6	260.00	0.00				
Barrier13	W	0.00	99.99	0.00				0.00		point36	36	4,839.2	10,359.8	365.00	6.00	0.00	0	0	
										point37	37	4,836.9	11,103.4	381.00	6.00				
Barrier15	W	0.00	99.99	0.00				0.00		point39	39	4,673.1	11,630.5	408.00	6.00	0.00	0	0	
										point40	40	3,856.2	13,348.5	370.00	6.00				

RESULTS: SOUND LEVELS

PN 8689

Dudek MG													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:													
RUN:													
BARRIER DESIGN:													
ATMOSPHERICS:													
Receiver													
Name	No.	#DUs	Existing	No Barrier						With Barrier			
			LAeq1h	LAeq1h									
				Calculated	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction			
							Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated	
												minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
ST1	1	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0	
ST2	2	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0	
ST3	3	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0	
ST4	4	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0	
ST5	5	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0	
ST6	6	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0	
M1	12	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0	
M2	14	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0	
M3	16	1	0.0	53.1	66	53.1	10	----	53.1	0.0	8	-8.0	
M4	18	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		10	0.0	0.0	0.0								
All Impacted		3	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

INPUT: ROADWAYS
PN 8689

Dudek												
MG												
INPUT: ROADWAYS								Average pavement type shall be used unless				
PROJECT/CONTRACT:				PN 8689				a State highway agency substantiates the use				
RUN:				College Blvd GPA -2035 Fut GP Geo				of a different type with the approval of FHWA				
Roadway		Points										
Name	Width	Name	No.	Coordinates (pavement)			Flow Control				Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On	
							Device	Constraint	Vehicles	Type	Struct?	
									Affected			
	ft			ft	ft	ft		mph	%			
College Blvd SB Seg 3 - Aztec St O Blvd	42.0	point198	198	4,775.4	10,210.7	354.00				Average		
		point183	183	4,843.1	10,028.4	338.00				Average		
		point182	182	4,931.0	9,873.4	322.00				Average		
		point181	181	5,000.5	9,788.4	315.00				Average		
		point180	180	5,178.8	9,578.7	304.00				Average		
		point179	179	5,281.6	9,393.4	293.00				Average		
		point178	178	5,317.5	9,299.7	282.00				Average		
		point177	177	5,359.7	9,141.1	272.00				Average		
		point176	176	5,367.3	8,838.2	269.00				Average		
		point175	175	5,385.4	8,377.4	252.00				Average		
		point208	208	5,390.5	7,923.7	241.00						
College Blvd NB Seg 2 - OG Rd Av dl P	42.0	point199	199	4,821.8	10,224.1	354.00				Average		
		point131	131	4,803.8	10,366.8	370.00				Average		
		point132	132	4,798.7	10,983.8	386.00				Average		
		point133	133	4,794.1	11,197.1	402.00				Average		
		point134	134	4,769.4	11,313.4	405.00				Average		
		point135	135	4,698.3	11,474.9	413.00						
College Blvd NB Seg 1 - Av Emp OG Rd	42.0	point200	200	4,697.5	11,475.6	413.00				Average		
		point190	190	4,634.0	11,610.4	408.00				Average		
		point191	191	3,818.3	13,328.9	370.00						
College Blvd SB Seg 2 - OG Rd Av dl P-2	42.0	point203	203	4,654.0	11,464.9	413.00				Average		
		point188	188	4,725.1	11,303.4	405.00				Average		
		point187	187	4,746.3	11,188.5	402.00				Average		
		point186	186	4,748.0	10,976.7	386.00				Average		
		point185	185	4,754.6	10,354.8	370.00				Average		

INPUT: ROADWAYS
PN 8689

		point184	184	4,775.4	10,210.7	354.00					
College Blvd SB Seg 1- Av Emp OG Rd	42.0	point194	194	3,773.2	13,299.9	370.00				Average	
		point201	201	4,588.3	11,600.8	408.00				Average	
		point189	189	4,652.6	11,467.1	413.00					
College Blvd NB Seg 3 - Aztec St O Blvd-2	42.0	point209	209	5,437.8	7,928.5	241.00				Average	
		point121	121	5,432.7	8,382.3	252.00				Average	
		point122	122	5,416.9	8,843.4	269.00				Average	
		point123	123	5,409.3	9,146.3	272.00				Average	
		point124	124	5,363.5	9,311.1	282.00				Average	
		point125	125	5,327.6	9,404.8	293.00				Average	
		point126	126	5,215.0	9,587.2	304.00				Average	
		point127	127	5,038.2	9,808.0	315.00				Average	
		point128	128	4,968.7	9,893.0	322.00				Average	
		point129	129	4,889.5	10,041.3	338.00				Average	
		point130	130	4,821.8	10,223.6	354.00					
College Blvd SB Seg 4 -O Blvd Olv Dr	42.0	point210	210	5,390.5	7,922.9	241.00				Average	
		point174	174	5,395.6	7,468.6	230.00				Average	
		point173	173	5,395.6	6,892.6	245.00					
College Blvd NB Seg 4 -O Blvd Olv Dr	42.0	point211	211	5,442.6	6,900.6	245.00				Average	
		point120	120	5,440.9	7,476.6	230.00				Average	
		point206	206	5,437.8	7,926.3	241.00					
College Blvd SB Seg 5 - Olv Dr Thndr Dr	42.0	point212	212	5,395.4	6,892.3	245.00				Average	
		point172	172	5,389.7	6,725.6	262.00				Average	
		point171	171	5,363.2	6,540.2	277.00				Average	
		point170	170	5,307.1	6,331.1	292.00				Average	
		point169	169	5,256.8	6,194.0	307.00				Average	
		point168	168	5,161.7	6,008.4	314.50				Average	
		point167	167	5,050.2	5,835.6	322.00				Average	
		point166	166	4,901.6	5,654.2	335.00				Average	
		point165	165	4,769.7	5,530.9	349.00					
College Blvd SB Seg 6 Thndr Dr Mrvn St	42.0	point213	213	4,768.1	5,528.5	349.00				Average	
		point164	164	4,568.9	5,340.0	363.00				Average	
		point163	163	4,344.5	5,147.7	366.50				Average	
		point162	162	4,078.4	4,920.2	359.00				Average	
		point161	161	3,925.4	4,782.6	351.50				Average	
		point160	160	3,743.2	4,594.5	344.00				Average	
		point159	159	3,591.4	4,441.3	338.00				Average	
		point158	158	3,419.2	4,260.1	332.00				Average	
		point157	157	3,284.7	4,115.4	326.00				Average	

INPUT: ROADWAYS
PN 8689

		point156	156	3,126.8	3,953.9	325.00					
College Blvd NB Seg 5 - Olv Dr Thndr Dr	42.0	point214	214	4,825.2	5,515.3	349.00				Average	
		point112	112	4,954.2	5,640.7	335.00				Average	
		point113	113	5,101.7	5,828.3	322.00				Average	
		point114	114	5,209.7	6,003.9	314.50				Average	
		point115	115	5,295.9	6,194.5	307.00				Average	
		point116	116	5,346.2	6,331.6	292.00				Average	
		point117	117	5,402.6	6,547.0	277.00				Average	
		point118	118	5,439.6	6,730.1	262.00				Average	
		point119	119	5,442.2	6,898.5	245.00					
College Blvd NB Seg 6 Thndr Dr Mrvn St	42.0	point215	215	3,171.5	3,949.5	325.00				Average	
		point103	103	3,332.0	4,111.0	326.00				Average	
		point104	104	3,469.5	4,256.6	332.00				Average	
		point105	105	3,640.0	4,431.7	338.00				Average	
		point106	106	3,787.4	4,585.0	344.00				Average	
		point107	107	3,977.3	4,761.8	351.50				Average	
		point108	108	4,131.1	4,893.7	359.00				Average	
		point109	109	4,402.4	5,130.6	366.50				Average	
		point110	110	4,629.1	5,329.1	363.00				Average	
		point111	111	4,823.2	5,512.6	349.00					
College Blvd SB Seg7 Rsl St Brnd_Wrg	42.0	point216	216	3,126.1	3,953.1	325.00				Average	
		point155	155	2,996.0	3,808.8	323.00				Average	
		point154	154	2,916.4	3,698.5	321.00				Average	
		point153	153	2,879.2	3,643.6	319.40				Average	
		point152	152	2,844.3	3,555.2	318.20				Average	
		point151	151	2,806.6	3,456.1	316.00				Average	
		point150	150	2,777.0	3,303.5	311.00				Average	
		point149	149	2,708.9	2,990.9	301.00				Average	
		point148	148	2,666.3	2,884.7	298.00				Average	
		point147	147	2,580.2	2,716.4	295.00				Average	
		point146	146	2,473.3	2,521.6	291.00				Average	
		point145	145	2,452.6	2,469.0	290.00				Average	
		point144	144	2,407.1	2,294.0	279.00				Average	
		point143	143	2,353.1	2,023.7	274.00				Average	
		point142	142	2,282.9	1,669.6	263.00				Average	
		point141	141	2,200.1	1,228.6	252.00				Average	
		point140	140	2,132.7	904.4	238.00				Average	
		point139	139	2,083.2	702.3	232.00				Average	
		point138	138	1,980.8	420.4	228.00					

INPUT: ROADWAYS
PN 8689

College Blvd CL	15.0	point222	222	1,845.4	-405.2	190.00				Average	
		point42	42	1,844.9	-67.0	221.00				Average	
		point6	6	1,999.7	417.1	228.00				Average	
		point7	7	2,102.1	694.9	232.00				Average	
		point8	8	2,150.7	903.2	238.00				Average	
		point9	9	2,220.1	1,229.5	252.00				Average	
		point10	10	2,303.5	1,667.0	263.00				Average	
		point11	11	2,373.7	2,021.1	274.00				Average	
		point12	12	2,426.1	2,292.5	279.00				Average	
		point13	13	2,471.6	2,467.5	290.00				Average	
		point14	14	2,496.4	2,518.5	291.00				Average	
		point15	15	2,601.3	2,716.4	295.00				Average	
		point16	16	2,687.7	2,887.0	298.00				Average	
		point17	17	2,729.3	2,994.2	301.00				Average	
		point18	18	2,798.2	3,305.6	311.00				Average	
		point19	19	2,826.8	3,453.1	316.00				Average	
		point20	20	2,863.3	3,553.8	318.20				Average	
		point21	21	2,902.3	3,643.2	319.40				Average	
		point22	22	2,937.9	3,697.0	321.00				Average	
		point23	23	3,019.5	3,803.8	323.00				Average	
		point24	24	3,148.0	3,949.6	325.00				Average	
		point25	25	3,305.9	4,111.1	326.00				Average	
		point26	26	3,442.4	4,255.7	332.00				Average	
		point27	27	3,614.6	4,433.4	338.00				Average	
		point28	28	3,765.5	4,587.6	344.00				Average	
		point29	29	3,949.4	4,766.8	351.50				Average	
		point30	30	4,102.4	4,903.2	359.00				Average	
		point31	31	4,378.6	5,145.0	366.50				Average	
		point32	32	4,602.6	5,337.7	363.00				Average	
		point33	33	4,795.3	5,519.9	349.00				Average	
		point34	34	4,927.2	5,643.2	335.00				Average	
		point35	35	5,072.7	5,830.2	322.00				Average	
		point36	36	5,184.2	6,003.0	314.50				Average	
		point37	37	5,275.4	6,191.4	307.00				Average	
		point38	38	5,325.7	6,328.5	292.00				Average	
		point39	39	5,382.5	6,538.5	277.00				Average	
		point40	40	5,414.3	6,723.3	262.00				Average	
		point41	41	5,420.8	6,891.7	245.00				Average	
		point2	2	5,420.8	7,467.7	230.00				Average	

INPUT: ROADWAYS
PN 8689

		point207	207	5,415.7	7,921.5	241.00				Average	
		point45	45	5,410.6	8,375.2	252.00				Average	
		point46	46	5,394.0	8,838.2	269.00				Average	
		point47	47	5,386.4	9,141.1	272.00				Average	
		point48	48	5,342.3	9,301.0	282.00				Average	
		point49	49	5,306.4	9,394.7	293.00				Average	
		point50	50	5,198.8	9,578.7	304.00				Average	
		point51	51	5,020.0	9,797.5	315.00				Average	
		point52	52	4,950.5	9,882.5	322.00				Average	
		point53	53	4,868.9	10,028.4	338.00				Average	
		point54	54	4,801.2	10,210.7	354.00				Average	
		point55	55	4,780.4	10,354.8	370.00				Average	
		point56	56	4,773.8	10,976.0	386.00				Average	
		point57	57	4,772.1	11,187.8	402.00				Average	
		point58	58	4,749.5	11,304.1	405.00				Average	
		point59	59	4,678.4	11,465.6	413.00				Average	
		point192	192	4,614.1	11,599.3	408.00				Average	
		point193	193	3,779.3	13,354.6	370.00					
College Blvd NB Seg 8 - Brnd Dr VstaWy	42.0	point224	224	1,865.1	-400.8	190.00				Average	
		point82	82	1,867.8	-64.0	221.00				Average	
		point84	84	2,029.5	420.1	228.00					
College Blvd NB Seg 7 Rsl St Brnd_Wrg	42.0	point226	226	2,029.9	421.0	228.00				Average	
		point85	85	2,129.4	698.8	232.00				Average	
		point86	86	2,170.4	909.8	238.00				Average	
		point87	87	2,239.8	1,236.1	252.00				Average	
		point88	88	2,325.5	1,674.8	263.00				Average	
		point89	89	2,395.7	2,028.9	274.00				Average	
		point90	90	2,445.4	2,300.3	279.00				Average	
		point91	91	2,490.9	2,475.3	290.00				Average	
		point92	92	2,516.1	2,526.7	291.00				Average	
		point93	93	2,623.1	2,723.1	295.00				Average	
		point94	94	2,708.4	2,891.4	298.00				Average	
		point95	95	2,747.8	3,000.0	301.00				Average	
		point96	96	2,819.0	3,313.0	311.00				Average	
		point97	97	2,847.6	3,460.5	316.00				Average	
		point98	98	2,884.3	3,558.8	318.20				Average	
		point99	99	2,923.3	3,648.2	319.40				Average	
		point100	100	2,961.0	3,701.9	321.00				Average	
		point101	101	3,045.3	3,808.3	323.00				Average	

INPUT: ROADWAYS

PN 8689

		point102	102	3,171.9	3,950.6	325.00					
College Blvd SB Seg 8 - Brnd Dr VstaWy	42.0	point227	227	1,980.2	421.0	228.00				Average	
		point220	220	1,821.4	-66.1	221.00				Average	
		point221	221	1,821.1	-407.5	190.00					

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

Dudek													
MG													
INPUT: TRAFFIC FOR LAeq1h Percentages													
PROJECT/CONTRACT:				PN 8689									
RUN:				College Blvd GPA -2035 Fut GP Geo									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
College Blvd SB Seg 3 - Aztec St O Blvd	point198	198	2320	97	45	2	45	1	45	0	0	0	0
	point183	183	2320	97	45	2	45	1	45	0	0	0	0
	point182	182	2320	97	45	2	45	1	45	0	0	0	0
	point181	181	2320	97	45	2	45	1	45	0	0	0	0
	point180	180	2320	97	45	2	45	1	45	0	0	0	0
	point179	179	2320	97	45	2	45	1	45	0	0	0	0
	point178	178	2320	97	45	2	45	1	45	0	0	0	0
	point177	177	2320	97	45	2	45	1	45	0	0	0	0
	point176	176	2320	97	45	2	45	1	45	0	0	0	0
	point175	175	2320	97	45	2	45	1	45	0	0	0	0
	point208	208											
College Blvd NB Seg 2 - OG Rd Av dl P	point199	199	2050	97	45	2	45	1	45	0	0	0	0
	point131	131	2050	97	45	2	45	1	45	0	0	0	0
	point132	132	2050	97	45	2	45	1	45	0	0	0	0
	point133	133	2050	97	45	2	45	1	45	0	0	0	0
	point134	134	2050	97	45	2	45	1	45	0	0	0	0
	point135	135											
College Blvd NB Seg 1 - Av Emp OG Rd	point200	200	1540	97	45	2	45	1	45	0	0	0	0
	point190	190	1540	97	45	2	45	1	45	0	0	0	0
	point191	191											
College Blvd SB Seg 2 - OG Rd Av dl P-2	point203	203	2050	97	45	2	45	1	45	0	0	0	0
	point188	188	2050	97	45	2	45	1	45	0	0	0	0
	point187	187	2050	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point186	186	2050	97	45	2	45	1	45	0	0	0	0
	point185	185	2050	97	45	2	45	1	45	0	0	0	0
	point184	184											
College Blvd SB Seg 1- Av Emp OG Rd	point194	194	1540	97	45	2	45	1	45	0	0	0	0
	point201	201	1540	97	45	2	45	1	45	0	0	0	0
	point189	189											
College Blvd NB Seg 3 - Aztec St O Blvd-2	point209	209	2320	97	45	2	45	1	45	0	0	0	0
	point121	121	2320	97	45	2	45	1	45	0	0	0	0
	point122	122	2320	97	45	2	45	1	45	0	0	0	0
	point123	123	2320	97	45	2	45	1	45	0	0	0	0
	point124	124	2320	97	45	2	45	1	45	0	0	0	0
	point125	125	2320	97	45	2	45	1	45	0	0	0	0
	point126	126	2320	97	45	2	45	1	45	0	0	0	0
	point127	127	2320	97	45	2	45	1	45	0	0	0	0
	point128	128	2320	97	45	2	45	1	45	0	0	0	0
	point129	129	2320	97	45	2	45	1	45	0	0	0	0
	point130	130											
College Blvd SB Seg 4 -O Blvd Olv Dr	point210	210	3095	97	45	2	45	1	45	0	0	0	0
	point174	174	3095	97	45	2	45	1	45	0	0	0	0
	point173	173											
College Blvd NB Seg 4 -O Blvd Olv Dr	point211	211	3095	97	45	2	45	1	45	0	0	0	0
	point120	120	3095	97	45	2	45	1	45	0	0	0	0
	point206	206											
College Blvd SB Seg 5 - Olv Dr Thndr Dr	point212	212	2170	97	45	2	45	1	45	0	0	0	0
	point172	172	2170	97	45	2	45	1	45	0	0	0	0
	point171	171	2170	97	45	2	45	1	45	0	0	0	0
	point170	170	2170	97	45	2	45	1	45	0	0	0	0
	point169	169	2170	97	45	2	45	1	45	0	0	0	0
	point168	168	2170	97	45	2	45	1	45	0	0	0	0
	point167	167	2170	97	45	2	45	1	45	0	0	0	0
	point166	166	2170	97	45	2	45	1	45	0	0	0	0
	point165	165											
College Blvd SB Seg 6 Thndr Dr Mrvn St	point213	213	1935	97	45	2	45	1	45	0	0	0	0
	point164	164	1935	97	45	2	45	1	45	0	0	0	0
	point163	163	1935	97	45	2	45	1	45	0	0	0	0
	point162	162	1935	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point161	161	1935	97	45	2	45	1	45	0	0	0	0
	point160	160	1935	97	45	2	45	1	45	0	0	0	0
	point159	159	1935	97	45	2	45	1	45	0	0	0	0
	point158	158	1935	97	45	2	45	1	45	0	0	0	0
	point157	157	1935	97	45	2	45	1	45	0	0	0	0
	point156	156											
College Blvd NB Seg 5 - Olv Dr Thndr Dr	point214	214	2170	97	45	2	45	1	45	0	0	0	0
	point112	112	2170	97	45	2	45	1	45	0	0	0	0
	point113	113	2170	97	45	2	45	1	45	0	0	0	0
	point114	114	2170	97	45	2	45	1	45	0	0	0	0
	point115	115	2170	97	45	2	45	1	45	0	0	0	0
	point116	116	2170	97	45	2	45	1	45	0	0	0	0
	point117	117	2170	97	45	2	45	1	45	0	0	0	0
	point118	118	2170	97	45	2	45	1	45	0	0	0	0
	point119	119											
College Blvd NB Seg 6 Thndr Dr Mrvn St	point215	215	1935	97	45	2	45	1	45	0	0	0	0
	point103	103	1935	97	45	2	45	1	45	0	0	0	0
	point104	104	1935	97	45	2	45	1	45	0	0	0	0
	point105	105	1935	97	45	2	45	1	45	0	0	0	0
	point106	106	1935	97	45	2	45	1	45	0	0	0	0
	point107	107	1935	97	45	2	45	1	45	0	0	0	0
	point108	108	1935	97	45	2	45	1	45	0	0	0	0
	point109	109	1935	97	45	2	45	1	45	0	0	0	0
	point110	110	1935	97	45	2	45	1	45	0	0	0	0
	point111	111											
College Blvd SB Seg7 Rsl St Brnd_Wrg	point216	216	2080	97	45	2	45	1	45	0	0	0	0
	point155	155	2080	97	45	2	45	1	45	0	0	0	0
	point154	154	2080	97	45	2	45	1	45	0	0	0	0
	point153	153	2080	97	45	2	45	1	45	0	0	0	0
	point152	152	2080	97	45	2	45	1	45	0	0	0	0
	point151	151	2080	97	45	2	45	1	45	0	0	0	0
	point150	150	2080	97	45	2	45	1	45	0	0	0	0
	point149	149	2080	97	45	2	45	1	45	0	0	0	0
	point148	148	2080	97	45	2	45	1	45	0	0	0	0
	point147	147	2080	97	45	2	45	1	45	0	0	0	0
	point146	146	2080	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point145	145	2080	97	45	2	45	1	45	0	0	0	0
	point144	144	2080	97	45	2	45	1	45	0	0	0	0
	point143	143	2080	97	45	2	45	1	45	0	0	0	0
	point142	142	2080	97	45	2	45	1	45	0	0	0	0
	point141	141	2080	97	45	2	45	1	45	0	0	0	0
	point140	140	2080	97	45	2	45	1	45	0	0	0	0
	point139	139	2080	97	45	2	45	1	45	0	0	0	0
	point138	138											
College Blvd CL	point222	222	0	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0	0
	point6	6	0	0	0	0	0	0	0	0	0	0	0
	point7	7	0	0	0	0	0	0	0	0	0	0	0
	point8	8	0	0	0	0	0	0	0	0	0	0	0
	point9	9	0	0	0	0	0	0	0	0	0	0	0
	point10	10	0	0	0	0	0	0	0	0	0	0	0
	point11	11	0	0	0	0	0	0	0	0	0	0	0
	point12	12	0	0	0	0	0	0	0	0	0	0	0
	point13	13	0	0	0	0	0	0	0	0	0	0	0
	point14	14	0	0	0	0	0	0	0	0	0	0	0
	point15	15	0	0	0	0	0	0	0	0	0	0	0
	point16	16	0	0	0	0	0	0	0	0	0	0	0
	point17	17	0	0	0	0	0	0	0	0	0	0	0
	point18	18	0	0	0	0	0	0	0	0	0	0	0
	point19	19	0	0	0	0	0	0	0	0	0	0	0
	point20	20	0	0	0	0	0	0	0	0	0	0	0
	point21	21	0	0	0	0	0	0	0	0	0	0	0
	point22	22	0	0	0	0	0	0	0	0	0	0	0
	point23	23	0	0	0	0	0	0	0	0	0	0	0
	point24	24	0	0	0	0	0	0	0	0	0	0	0
	point25	25	0	0	0	0	0	0	0	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0	0
	point28	28	0	0	0	0	0	0	0	0	0	0	0
	point29	29	0	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point32	32	0	0	0	0	0	0	0	0	0	0	0
	point33	33	0	0	0	0	0	0	0	0	0	0	0
	point34	34	0	0	0	0	0	0	0	0	0	0	0
	point35	35	0	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0	0
	point2	2	0	0	0	0	0	0	0	0	0	0	0
	point207	207	0	0	0	0	0	0	0	0	0	0	0
	point45	45	0	0	0	0	0	0	0	0	0	0	0
	point46	46	0	0	0	0	0	0	0	0	0	0	0
	point47	47	0	0	0	0	0	0	0	0	0	0	0
	point48	48	0	0	0	0	0	0	0	0	0	0	0
	point49	49	0	0	0	0	0	0	0	0	0	0	0
	point50	50	0	0	0	0	0	0	0	0	0	0	0
	point51	51	0	0	0	0	0	0	0	0	0	0	0
	point52	52	0	0	0	0	0	0	0	0	0	0	0
	point53	53	0	0	0	0	0	0	0	0	0	0	0
	point54	54	0	0	0	0	0	0	0	0	0	0	0
	point55	55	0	0	0	0	0	0	0	0	0	0	0
	point56	56	0	0	0	0	0	0	0	0	0	0	0
	point57	57	0	0	0	0	0	0	0	0	0	0	0
	point58	58	0	0	0	0	0	0	0	0	0	0	0
	point59	59	0	0	0	0	0	0	0	0	0	0	0
	point192	192	0	0	0	0	0	0	0	0	0	0	0
	point193	193											
College Blvd NB Seg 8 - Brnd Dr VstaWy	point224	224	2325	97	45	2	45	1	45	0	0	0	0
	point82	82	2325	97	45	2	45	1	45	0	0	0	0
	point84	84											
College Blvd NB Seg 7 Rsl St Brnd_Wrg	point226	226	2080	97	45	2	45	1	45	0	0	0	0
	point85	85	2080	97	45	2	45	1	45	0	0	0	0
	point86	86	2080	97	45	2	45	1	45	0	0	0	0
	point87	87	2080	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point88	88	2080	97	45	2	45	1	45	0	0	0	0
	point89	89	2080	97	45	2	45	1	45	0	0	0	0
	point90	90	2080	97	45	2	45	1	45	0	0	0	0
	point91	91	2080	97	45	2	45	1	45	0	0	0	0
	point92	92	2080	97	45	2	45	1	45	0	0	0	0
	point93	93	2080	97	45	2	45	1	45	0	0	0	0
	point94	94	2080	97	45	2	45	1	45	0	0	0	0
	point95	95	2080	97	45	2	45	1	45	0	0	0	0
	point96	96	2080	97	45	2	45	1	45	0	0	0	0
	point97	97	2080	97	45	2	45	1	45	0	0	0	0
	point98	98	2080	97	45	2	45	1	45	0	0	0	0
	point99	99	2080	97	45	2	45	1	45	0	0	0	0
	point100	100	2080	97	45	2	45	1	45	0	0	0	0
	point101	101	2080	97	45	2	45	1	45	0	0	0	0
	point102	102											
College Blvd SB Seg 8 - Brnd Dr VstaWy	point227	227	2325	97	45	2	45	1	45	0	0	0	0
	point220	220	2325	97	45	2	45	1	45	0	0	0	0
	point221	221											

INPUT: RECEIVERS
PN 8689

Dudek						29 July 2019					
MG						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:		PN 8689									
RUN:		College Blvd GPA -2035 Fut GP Geo									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	2,240.4	777.6	257.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	2,228.1	2,103.7	317.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	3,401.9	4,021.8	328.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	4,975.5	5,821.4	335.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	5,479.5	9,193.2	269.00	5.00	0.00	66	10.0	8.0	Y
ST6	6	1	4,884.5	9,821.6	322.00	5.00	0.00	66	10.0	8.0	Y
M1	12	1	1,824.6	214.3	236.00	5.00	0.00	66	10.0	8.0	Y
M2	14	1	5,516.4	7,056.6	260.00	5.00	0.00	66	10.0	8.0	Y
M3	16	1	4,881.0	10,778.2	335.00	5.00	0.00	66	10.0	8.0	Y
M4	18	1	4,168.8	12,713.0	385.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

PN 8689

Dudek					29 July 2019														
MG					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:				PN 8689															
RUN:				College Blvd GPA -2035 Fut GP Geo															
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit	\$ per Unit	Top Width	Run:Rise	\$ per Unit				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
				Area	Vol.			Length								Inc- #Up	#Dn	Struct?	Reflec- tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00				0.00		point1	1	2,127.2	456.7	257.00	5.00	0.00	0	0	
										point3	3	2,212.5	747.6	257.00	5.00	0.00	0	0	
										point4	4	2,254.1	988.2	257.00	5.00	0.00	0	0	
										point5	5	2,317.5	1,266.0	257.00	5.00				
Barrier2	W	0.00	99.99	0.00				0.00		point23	23	2,234.9	1,886.5	317.00	0.00	0.00	0	0	
										point7	7	2,252.2	2,108.7	317.00	0.00	0.00	0	0	
										point8	8	2,285.2	2,329.2	317.00	0.00	0.00	0	0	
										point9	9	2,332.1	2,494.1	317.00	0.00				
Barrier3	W	0.00	99.99	0.00				0.00		point25	25	3,206.8	3,915.3	328.00	0.00	0.00	0	0	
										point11	11	3,318.4	4,033.8	328.00	0.00	0.00	0	0	
										point12	12	3,503.0	4,212.9	328.00	0.00	0.00	0	0	
										point13	13	3,642.2	4,354.8	328.00	0.00				
Barrier4	W	0.00	99.99	0.00				0.00		point27	27	4,787.9	5,615.6	335.00	6.00	0.00	0	0	
										point15	15	4,911.5	5,728.2	335.00	6.00	0.00	0	0	
										point16	16	5,031.8	5,879.1	335.00	6.00	0.00	0	0	
										point17	17	5,143.4	6,045.4	335.00	6.00	0.00	0	0	
										point18	18	5,191.5	6,128.5	335.00	6.00				
Barrier5	W	0.00	99.99	0.00				0.00		point29	29	5,459.5	8,945.7	272.00	6.00	0.00	0	0	
										point20	20	5,452.6	9,187.1	272.00	6.00	0.00	0	0	
										point21	21	5,430.0	9,310.3	282.00	6.00	0.00	0	0	
										point2	2	5,376.2	9,426.6	293.00	6.00				
Barrier11	W	0.00	99.99	0.00				0.00		point32	32	1,833.0	124.0	235.00	0.00	0.00	0	0	
										point33	33	1,893.4	297.0	235.00	0.00				
Barrier12	W	0.00	99.99	0.00				0.00		point34	34	5,483.5	6,848.5	260.00	0.00	0.00	0	0	
										point35	35	5,480.2	7,295.6	260.00	0.00				
Barrier13	W	0.00	99.99	0.00				0.00		point36	36	4,839.2	10,359.8	365.00	6.00	0.00	0	0	
										point37	37	4,836.9	11,103.4	381.00	6.00				
Barrier15	W	0.00	99.99	0.00				0.00		point39	39	4,673.1	11,630.5	408.00	6.00	0.00	0	0	
										point40	40	3,856.2	13,348.5	370.00	6.00				

INPUT: ROADWAYS
PN 8689

Dudek											
MG											
INPUT: ROADWAYS				29 July 2019							
PROJECT/CONTRACT:				TNM 2.5							
RUN:											
PROJECT/CONTRACT:				PN 8689				Average pavement type shall be used unless			
RUN:				College Blvd GPA - 2035 Conds Ex Geo				a State highway agency substantiates the use			
								of a different type with the approval of FHWA			
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control				Segment
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Type	Struct?
									Affected		
	ft			ft	ft	ft		mph	%		
Roadway6	12.0	point60	60	4,668.1	5,632.3	0.00				Average	
		point61	61	4,653.3	5,646.1	0.00					
Roadway7	12.0	point63	63	5,568.7	6,905.2	0.00				Average	
		point64	64	5,589.2	6,905.1	0.00					
Roadway9	12.0	point69	69	4,996.4	10,966.8	0.00				Average	
		point70	70	5,017.2	10,967.3	0.00					
Roadway10	12.0	point71	71	5,026.2	11,457.5	0.00				Average	
		point72	72	5,043.3	11,466.3	0.00					
Roadway12	12.0	point75	75	2,575.6	352.8	0.00				Average	
		point76	76	2,592.2	346.3	0.00					
Roadway14	12.0	point79	79	5,461.9	9,261.6	0.00				Average	
		point80	80	5,480.8	9,267.3	0.00					
College Blvd SB Seg 3 - Aztec St O Blvd	42.0	point198	198	4,781.2	10,210.7	354.00				Average	
		point183	183	4,848.9	10,028.4	338.00				Average	
		point182	182	4,931.5	9,875.4	322.00				Average	
		point181	181	5,001.0	9,790.4	315.00				Average	
		point180	180	5,178.8	9,578.7	304.00				Average	
		point179	179	5,286.4	9,394.7	293.00				Average	
		point178	178	5,322.3	9,301.0	282.00				Average	
		point177	177	5,366.4	9,141.1	272.00				Average	
		point176	176	5,374.0	8,838.2	269.00				Average	
		point175	175	5,390.6	8,375.2	252.00				Average	
		point208	208	5,395.7	7,921.5	241.00					
College Blvd NB Seg 2 - OG Rd Av dl P	42.0	point199	199	4,817.4	10,219.2	354.00				Average	
		point131	131	4,799.5	10,361.9	370.00				Average	

INPUT: ROADWAYS
PN 8689

		point132	132	4,792.9	10,983.1	386.00				Average	
		point133	133	4,788.3	11,196.3	402.00				Average	
		point134	134	4,765.7	11,312.6	405.00				Average	
		point135	135	4,694.6	11,474.1	413.00					
College Blvd NB Seg 1 - Av Emp OG Rd	42.0	point200	200	4,694.6	11,474.1	413.00				Average	
		point190	190	4,630.3	11,607.8	408.00				Average	
		point191	191	3,813.4	13,325.8	370.00					
College Blvd SB Seg 2 - OG Rd Av dl P-2	42.0	point203	203	4,658.4	11,465.6	413.00				Average	
		point188	188	4,729.5	11,304.1	405.00				Average	
		point187	187	4,752.1	11,187.8	402.00				Average	
		point186	186	4,753.8	10,976.0	386.00				Average	
		point185	185	4,760.4	10,354.8	370.00				Average	
		point184	184	4,781.2	10,210.7	354.00					
College Blvd SB Seg 1- Av Emp OG Rd	42.0	point194	194	3,777.3	13,303.0	370.00				Average	
		point201	201	4,594.1	11,599.3	408.00				Average	
		point189	189	4,658.4	11,465.6	413.00					
College Blvd NB Seg 3 - Aztec St O Blvd-2	42.0	point209	209	5,431.9	7,930.0	241.00				Average	
		point121	121	5,426.8	8,383.7	252.00				Average	
		point122	122	5,410.2	8,846.7	269.00				Average	
		point123	123	5,402.6	9,149.6	272.00				Average	
		point124	124	5,358.5	9,309.5	282.00				Average	
		point125	125	5,322.6	9,403.2	293.00				Average	
		point126	126	5,215.0	9,587.2	304.00				Average	
		point127	127	5,036.2	9,806.0	315.00				Average	
		point128	128	4,966.7	9,891.0	322.00				Average	
		point129	129	4,885.1	10,036.9	338.00				Average	
		point130	130	4,817.4	10,219.2	354.00					
College Blvd SB Seg 4 -O Blvd Oliv Dr	42.0	point210	210	5,395.7	7,921.5	241.00				Average	
		point174	174	5,400.8	7,467.7	230.00				Average	
		point173	173	5,400.8	6,891.7	245.00					
College Blvd NB Seg 4 -O Blvd Oliv Dr	42.0	point211	211	5,438.7	6,900.2	245.00				Average	
		point120	120	5,437.0	7,476.2	230.00				Average	
		point206	206	5,431.9	7,930.0	241.00					
College Blvd SB Seg 5 - Oliv Dr Thndr Dr	42.0	point212	212	5,400.8	6,891.7	245.00				Average	
		point172	172	5,397.4	6,722.3	262.00				Average	
		point171	171	5,365.6	6,537.5	277.00				Average	
		point170	170	5,309.8	6,329.5	292.00				Average	
		point169	169	5,259.5	6,192.4	307.00				Average	
		point168	168	5,166.7	6,005.7	314.50				Average	

INPUT: ROADWAYS
PN 8689

		point167	167	5,055.2	5,832.9	322.00				Average	
		point166	166	4,902.0	5,647.6	335.00				Average	
		point165	165	4,770.1	5,524.3	349.00					
College Blvd SB Seg 6 Thndr Dr Mrvn St	42.0	point213	213	4,770.1	5,524.3	349.00				Average	
		point164	164	4,570.8	5,335.7	363.00				Average	
		point163	163	4,346.8	5,143.0	366.50				Average	
		point162	162	4,081.9	4,914.4	359.00				Average	
		point161	161	3,928.9	4,778.0	351.50				Average	
		point160	160	3,745.5	4,591.0	344.00				Average	
		point159	159	3,593.7	4,438.6	338.00				Average	
		point158	158	3,421.5	4,257.4	332.00				Average	
		point157	157	3,285.9	4,111.1	326.00				Average	
		point156	156	3,128.0	3,949.6	325.00					
College Blvd NB Seg 5 - Olv Dr Thndr Dr	42.0	point214	214	4,821.3	5,514.9	349.00				Average	
		point112	112	4,950.4	5,640.4	335.00				Average	
		point113	113	5,095.9	5,833.3	322.00				Average	
		point114	114	5,203.8	6,009.0	314.50				Average	
		point115	115	5,291.6	6,199.9	307.00				Average	
		point116	116	5,341.9	6,337.0	292.00				Average	
		point117	117	5,398.7	6,547.0	277.00				Average	
		point118	118	5,432.2	6,731.8	262.00				Average	
		point119	119	5,438.7	6,900.2	245.00					
College Blvd NB Seg 6 Thndr Dr Mrvn St	42.0	point215	215	3,169.2	3,951.0	325.00				Average	
		point103	103	3,329.7	4,112.5	326.00				Average	
		point104	104	3,467.6	4,258.5	332.00				Average	
		point105	105	3,638.1	4,433.7	338.00				Average	
		point106	106	3,784.7	4,585.7	344.00				Average	
		point107	107	3,973.0	4,763.3	351.50				Average	
		point108	108	4,126.0	4,898.3	359.00				Average	
		point109	109	4,398.9	5,134.4	366.50				Average	
		point110	110	4,627.2	5,331.4	363.00				Average	
		point111	111	4,821.3	5,514.9	349.00					
College Blvd SB Seg7 Rsl St Brnd_Wrg	42.0	point216	216	3,128.0	3,949.6	325.00				Average	
		point155	155	2,999.5	3,803.8	323.00				Average	
		point154	154	2,917.9	3,697.0	321.00				Average	
		point153	153	2,882.3	3,643.2	319.40				Average	
		point152	152	2,847.4	3,554.8	318.20				Average	
		point151	151	2,810.9	3,454.1	316.00				Average	
		point150	150	2,781.3	3,301.5	311.00				Average	

INPUT: ROADWAYS

PN 8689

		point149	149	2,712.4	2,990.1	301.00				Average	
		point148	148	2,669.7	2,883.9	298.00				Average	
		point147	147	2,583.3	2,713.3	295.00				Average	
		point146	146	2,476.4	2,518.5	291.00				Average	
		point145	145	2,455.7	2,467.5	290.00				Average	
		point144	144	2,410.2	2,292.5	279.00				Average	
		point143	143	2,357.8	2,022.1	274.00				Average	
		point142	142	2,287.6	1,668.0	263.00				Average	
		point141	141	2,203.2	1,227.5	252.00				Average	
		point140	140	2,135.8	903.2	238.00				Average	
		point139	139	2,088.2	700.0	232.00				Average	
		point138	138	1,985.8	418.1	228.00					
College Blvd CL	15.0	point222	222	1,845.4	-405.2	190.00				Average	
		point42	42	1,844.9	-67.0	221.00				Average	
		point6	6	1,999.7	417.1	228.00				Average	
		point7	7	2,102.1	694.9	232.00				Average	
		point8	8	2,150.7	903.2	238.00				Average	
		point9	9	2,220.1	1,229.5	252.00				Average	
		point10	10	2,303.5	1,667.0	263.00				Average	
		point11	11	2,373.7	2,021.1	274.00				Average	
		point12	12	2,426.1	2,292.5	279.00				Average	
		point13	13	2,471.6	2,467.5	290.00				Average	
		point14	14	2,496.4	2,518.5	291.00				Average	
		point15	15	2,601.3	2,716.4	295.00				Average	
		point16	16	2,687.7	2,887.0	298.00				Average	
		point17	17	2,729.3	2,994.2	301.00				Average	
		point18	18	2,798.2	3,305.6	311.00				Average	
		point19	19	2,826.8	3,453.1	316.00				Average	
		point20	20	2,863.3	3,553.8	318.20				Average	
		point21	21	2,902.3	3,643.2	319.40				Average	
		point22	22	2,937.9	3,697.0	321.00				Average	
		point23	23	3,019.5	3,803.8	323.00				Average	
		point24	24	3,148.0	3,949.6	325.00				Average	
		point25	25	3,305.9	4,111.1	326.00				Average	
		point26	26	3,442.4	4,255.7	332.00				Average	
		point27	27	3,614.6	4,433.4	338.00				Average	
		point28	28	3,765.5	4,587.6	344.00				Average	
		point29	29	3,949.4	4,766.8	351.50				Average	
		point30	30	4,102.4	4,903.2	359.00				Average	

INPUT: ROADWAYS
PN 8689

		point31	31	4,378.6	5,145.0	366.50				Average	
		point32	32	4,602.6	5,337.7	363.00				Average	
		point33	33	4,795.3	5,519.9	349.00				Average	
		point34	34	4,927.2	5,643.2	335.00				Average	
		point35	35	5,072.7	5,830.2	322.00				Average	
		point36	36	5,184.2	6,003.0	314.50				Average	
		point37	37	5,275.4	6,191.4	307.00				Average	
		point38	38	5,325.7	6,328.5	292.00				Average	
		point39	39	5,382.5	6,538.5	277.00				Average	
		point40	40	5,414.3	6,723.3	262.00				Average	
		point41	41	5,420.8	6,891.7	245.00				Average	
		point2	2	5,420.8	7,467.7	230.00				Average	
		point207	207	5,415.7	7,921.5	241.00				Average	
		point45	45	5,410.6	8,375.2	252.00				Average	
		point46	46	5,394.0	8,838.2	269.00				Average	
		point47	47	5,386.4	9,141.1	272.00				Average	
		point48	48	5,342.3	9,301.0	282.00				Average	
		point49	49	5,306.4	9,394.7	293.00				Average	
		point50	50	5,198.8	9,578.7	304.00				Average	
		point51	51	5,020.0	9,797.5	315.00				Average	
		point52	52	4,950.5	9,882.5	322.00				Average	
		point53	53	4,868.9	10,028.4	338.00				Average	
		point54	54	4,801.2	10,210.7	354.00				Average	
		point55	55	4,780.4	10,354.8	370.00				Average	
		point56	56	4,773.8	10,976.0	386.00				Average	
		point57	57	4,772.1	11,187.8	402.00				Average	
		point58	58	4,749.5	11,304.1	405.00				Average	
		point59	59	4,678.4	11,465.6	413.00				Average	
		point192	192	4,614.1	11,599.3	408.00				Average	
		point193	193	3,779.3	13,354.6	370.00					
College Blvd NB Seg 8 - Brnd Dr VstaWy	42.0	point224	224	1,862.6	-398.4	190.00				Average	
		point82	82	1,864.0	-58.5	221.00				Average	
		point84	84	2,025.6	425.6	228.00					
College Blvd NB Seg 7 Rsl St Brnd_Wrg	42.0	point226	226	2,025.6	425.6	228.00				Average	
		point85	85	2,125.2	703.4	232.00				Average	
		point86	86	2,166.9	911.7	238.00				Average	
		point87	87	2,236.3	1,238.0	252.00				Average	
		point88	88	2,319.7	1,675.5	263.00				Average	
		point89	89	2,389.9	2,029.6	274.00				Average	

INPUT: ROADWAYS
PN 8689

		point90	90	2,442.3	2,301.0	279.00				Average	
		point91	91	2,487.8	2,476.0	290.00				Average	
		point92	92	2,512.6	2,527.0	291.00				Average	
		point93	93	2,619.6	2,723.5	295.00				Average	
		point94	94	2,706.0	2,894.1	298.00				Average	
		point95	95	2,745.5	3,002.7	301.00				Average	
		point96	96	2,814.4	3,314.1	311.00				Average	
		point97	97	2,843.0	3,461.6	316.00				Average	
		point98	98	2,881.6	3,558.8	318.20				Average	
		point99	99	2,920.6	3,648.2	319.40				Average	
		point100	100	2,959.1	3,702.7	321.00				Average	
		point101	101	3,040.7	3,809.5	323.00				Average	
		point102	102	3,169.2	3,951.0	325.00					
College Blvd SB Seg 8 - Brnd Dr VstaWy	42.0	point227	227	1,985.8	418.1	228.00				Average	
		point220	220	1,826.9	-69.0	221.00				Average	
		point221	221	1,824.8	-408.7	190.00					

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

Dudek													
MG													
INPUT: TRAFFIC FOR LAeq1h Percentages PROJECT/CONTRACT: PN 8689 RUN: College Blvd GPA - 2035 Conds Ex Geo													
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Roadway6	point60	60	0	0	0	0	0	0	0	0	0	0	0
	point61	61											
Roadway7	point63	63	0	0	0	0	0	0	0	0	0	0	0
	point64	64											
Roadway9	point69	69	0	0	0	0	0	0	0	0	0	0	0
	point70	70											
Roadway10	point71	71	0	0	0	0	0	0	0	0	0	0	0
	point72	72											
Roadway12	point75	75	0	0	0	0	0	0	0	0	0	0	0
	point76	76											
Roadway14	point79	79	0	0	0	0	0	0	0	0	0	0	0
	point80	80											
College Blvd SB Seg 3 - Aztec St O Blvd	point198	198	2320	97	45	2	45	1	45	0	0	0	0
	point183	183	2320	97	45	2	45	1	45	0	0	0	0
	point182	182	2320	97	45	2	45	1	45	0	0	0	0
	point181	181	2320	97	45	2	45	1	45	0	0	0	0
	point180	180	2320	97	45	2	45	1	45	0	0	0	0
	point179	179	2320	97	45	2	45	1	45	0	0	0	0
	point178	178	2320	97	45	2	45	1	45	0	0	0	0
	point177	177	2320	97	45	2	45	1	45	0	0	0	0
	point176	176	2320	97	45	2	45	1	45	0	0	0	0
	point175	175	2320	97	45	2	45	1	45	0	0	0	0
	point208	208											

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

College Blvd NB Seg 2 - OG Rd Av dl P	point199	199	2055	97	45	2	45	1	45	0	0	0	0
	point131	131	2055	97	45	2	45	1	45	0	0	0	0
	point132	132	2055	97	45	2	45	1	45	0	0	0	0
	point133	133	2055	97	45	2	45	1	45	0	0	0	0
	point134	134	2055	97	45	2	45	1	45	0	0	0	0
	point135	135											
College Blvd NB Seg 1 - Av Emp OG Rd	point200	200	1610	97	45	2	45	1	45	0	0	0	0
	point190	190	1610	97	45	2	45	1	45	0	0	0	0
	point191	191											
College Blvd SB Seg 2 - OG Rd Av dl P-2	point203	203	2055	97	45	2	45	1	45	0	0	0	0
	point188	188	2055	97	45	2	45	1	45	0	0	0	0
	point187	187	2055	97	45	2	45	1	45	0	0	0	0
	point186	186	2055	97	45	2	45	1	45	0	0	0	0
	point185	185	2055	97	45	2	45	1	45	0	0	0	0
	point184	184											
College Blvd SB Seg 1- Av Emp OG Rd	point194	194	1610	97	45	2	45	1	45	0	0	0	0
	point201	201	1610	97	45	2	45	1	45	0	0	0	0
	point189	189											
College Blvd NB Seg 3 - Aztec St O Blvd-2	point209	209	2320	97	45	2	45	1	45	0	0	0	0
	point121	121	2320	97	45	2	45	1	45	0	0	0	0
	point122	122	2320	97	45	2	45	1	45	0	0	0	0
	point123	123	2320	97	45	2	45	1	45	0	0	0	0
	point124	124	2320	97	45	2	45	1	45	0	0	0	0
	point125	125	2320	97	45	2	45	1	45	0	0	0	0
	point126	126	2320	97	45	2	45	1	45	0	0	0	0
	point127	127	2320	97	45	2	45	1	45	0	0	0	0
	point128	128	2320	97	45	2	45	1	45	0	0	0	0
	point129	129	2320	97	45	2	45	1	45	0	0	0	0
	point130	130											
College Blvd SB Seg 4 -O Blvd Olv Dr	point210	210	3005	97	45	2	45	1	45	0	0	0	0
	point174	174	3005	97	45	2	45	1	45	0	0	0	0
	point173	173											
College Blvd NB Seg 4 -O Blvd Olv Dr	point211	211	3005	97	45	2	45	1	45	0	0	0	0
	point120	120	3005	97	45	2	45	1	45	0	0	0	0
	point206	206											
College Blvd SB Seg 5 - Olv Dr Thndr Dr	point212	212	1970	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point172	172	1970	97	45	2	45	1	45	0	0	0	0
	point171	171	1970	97	45	2	45	1	45	0	0	0	0
	point170	170	1970	97	45	2	45	1	45	0	0	0	0
	point169	169	1970	97	45	2	45	1	45	0	0	0	0
	point168	168	1970	97	45	2	45	1	45	0	0	0	0
	point167	167	1970	97	45	2	45	1	45	0	0	0	0
	point166	166	1970	97	45	2	45	1	45	0	0	0	0
	point165	165											
College Blvd SB Seg 6 Thndr Dr Mrvn St	point213	213	1725	97	45	2	45	1	45	0	0	0	0
	point164	164	1725	97	45	2	45	1	45	0	0	0	0
	point163	163	1725	97	45	2	45	1	45	0	0	0	0
	point162	162	1725	97	45	2	45	1	45	0	0	0	0
	point161	161	1725	97	45	2	45	1	45	0	0	0	0
	point160	160	1725	97	45	2	45	1	45	0	0	0	0
	point159	159	1725	97	45	2	45	1	45	0	0	0	0
	point158	158	1725	97	45	2	45	1	45	0	0	0	0
	point157	157	1725	97	45	2	45	1	45	0	0	0	0
	point156	156											
College Blvd NB Seg 5 - Olv Dr Thndr Dr	point214	214	1970	97	45	2	45	1	45	0	0	0	0
	point112	112	1970	97	45	2	45	1	45	0	0	0	0
	point113	113	1970	97	45	2	45	1	45	0	0	0	0
	point114	114	1970	97	45	2	45	1	45	0	0	0	0
	point115	115	1970	97	45	2	45	1	45	0	0	0	0
	point116	116	1970	97	45	2	45	1	45	0	0	0	0
	point117	117	1970	97	45	2	45	1	45	0	0	0	0
	point118	118	1970	97	45	2	45	1	45	0	0	0	0
	point119	119											
College Blvd NB Seg 6 Thndr Dr Mrvn St	point215	215	1725	97	45	2	45	1	45	0	0	0	0
	point103	103	1725	97	45	2	45	1	45	0	0	0	0
	point104	104	1725	97	45	2	45	1	45	0	0	0	0
	point105	105	1725	97	45	2	45	1	45	0	0	0	0
	point106	106	1725	97	45	2	45	1	45	0	0	0	0
	point107	107	1725	97	45	2	45	1	45	0	0	0	0
	point108	108	1725	97	45	2	45	1	45	0	0	0	0
	point109	109	1725	97	45	2	45	1	45	0	0	0	0
	point110	110	1725	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point111	111											
College Blvd SB Seg7 Rsl St Brnd_Wrg	point216	216	1760	97	45	2	45	1	45	0	0	0	0
	point155	155	1760	97	45	2	45	1	45	0	0	0	0
	point154	154	1760	97	45	2	45	1	45	0	0	0	0
	point153	153	1760	97	45	2	45	1	45	0	0	0	0
	point152	152	1760	97	45	2	45	1	45	0	0	0	0
	point151	151	1760	97	45	2	45	1	45	0	0	0	0
	point150	150	1760	97	45	2	45	1	45	0	0	0	0
	point149	149	1760	97	45	2	45	1	45	0	0	0	0
	point148	148	1760	97	45	2	45	1	45	0	0	0	0
	point147	147	1760	97	45	2	45	1	45	0	0	0	0
	point146	146	1760	97	45	2	45	1	45	0	0	0	0
	point145	145	1760	97	45	2	45	1	45	0	0	0	0
	point144	144	1760	97	45	2	45	1	45	0	0	0	0
	point143	143	1760	97	45	2	45	1	45	0	0	0	0
	point142	142	1760	97	45	2	45	1	45	0	0	0	0
	point141	141	1760	97	45	2	45	1	45	0	0	0	0
	point140	140	1760	97	45	2	45	1	45	0	0	0	0
	point139	139	1760	97	45	2	45	1	45	0	0	0	0
	point138	138											
College Blvd CL	point222	222	0	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0	0
	point6	6	0	0	0	0	0	0	0	0	0	0	0
	point7	7	0	0	0	0	0	0	0	0	0	0	0
	point8	8	0	0	0	0	0	0	0	0	0	0	0
	point9	9	0	0	0	0	0	0	0	0	0	0	0
	point10	10	0	0	0	0	0	0	0	0	0	0	0
	point11	11	0	0	0	0	0	0	0	0	0	0	0
	point12	12	0	0	0	0	0	0	0	0	0	0	0
	point13	13	0	0	0	0	0	0	0	0	0	0	0
	point14	14	0	0	0	0	0	0	0	0	0	0	0
	point15	15	0	0	0	0	0	0	0	0	0	0	0
	point16	16	0	0	0	0	0	0	0	0	0	0	0
	point17	17	0	0	0	0	0	0	0	0	0	0	0
	point18	18	0	0	0	0	0	0	0	0	0	0	0
	point19	19	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point20	20	0	0	0	0	0	0	0	0	0	0	0
	point21	21	0	0	0	0	0	0	0	0	0	0	0
	point22	22	0	0	0	0	0	0	0	0	0	0	0
	point23	23	0	0	0	0	0	0	0	0	0	0	0
	point24	24	0	0	0	0	0	0	0	0	0	0	0
	point25	25	0	0	0	0	0	0	0	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0	0
	point28	28	0	0	0	0	0	0	0	0	0	0	0
	point29	29	0	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0	0
	point33	33	0	0	0	0	0	0	0	0	0	0	0
	point34	34	0	0	0	0	0	0	0	0	0	0	0
	point35	35	0	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0	0
	point2	2	0	0	0	0	0	0	0	0	0	0	0
	point207	207	0	0	0	0	0	0	0	0	0	0	0
	point45	45	0	0	0	0	0	0	0	0	0	0	0
	point46	46	0	0	0	0	0	0	0	0	0	0	0
	point47	47	0	0	0	0	0	0	0	0	0	0	0
	point48	48	0	0	0	0	0	0	0	0	0	0	0
	point49	49	0	0	0	0	0	0	0	0	0	0	0
	point50	50	0	0	0	0	0	0	0	0	0	0	0
	point51	51	0	0	0	0	0	0	0	0	0	0	0
	point52	52	0	0	0	0	0	0	0	0	0	0	0
	point53	53	0	0	0	0	0	0	0	0	0	0	0
	point54	54	0	0	0	0	0	0	0	0	0	0	0
	point55	55	0	0	0	0	0	0	0	0	0	0	0
	point56	56	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point57	57	0	0	0	0	0	0	0	0	0	0	0
	point58	58	0	0	0	0	0	0	0	0	0	0	0
	point59	59	0	0	0	0	0	0	0	0	0	0	0
	point192	192	0	0	0	0	0	0	0	0	0	0	0
	point193	193											
College Blvd NB Seg 8 - Brnd Dr VstaWy	point224	224	2255	97	45	2	45	1	45	0	0	0	0
	point82	82	2255	97	45	2	45	1	45	0	0	0	0
	point84	84											
College Blvd NB Seg 7 Rsl St Brnd_Wrg	point226	226	1760	97	45	2	45	1	45	0	0	0	0
	point85	85	1760	97	45	2	45	1	45	0	0	0	0
	point86	86	1760	97	45	2	45	1	45	0	0	0	0
	point87	87	1760	97	45	2	45	1	45	0	0	0	0
	point88	88	1760	97	45	2	45	1	45	0	0	0	0
	point89	89	1760	97	45	2	45	1	45	0	0	0	0
	point90	90	1760	97	45	2	45	1	45	0	0	0	0
	point91	91	1760	97	45	2	45	1	45	0	0	0	0
	point92	92	1760	97	45	2	45	1	45	0	0	0	0
	point93	93	1760	97	45	2	45	1	45	0	0	0	0
	point94	94	1760	97	45	2	45	1	45	0	0	0	0
	point95	95	1760	97	45	2	45	1	45	0	0	0	0
	point96	96	1760	97	45	2	45	1	45	0	0	0	0
	point97	97	1760	97	45	2	45	1	45	0	0	0	0
	point98	98	1760	97	45	2	45	1	45	0	0	0	0
	point99	99	1760	97	45	2	45	1	45	0	0	0	0
	point100	100	1760	97	45	2	45	1	45	0	0	0	0
	point101	101	1760	97	45	2	45	1	45	0	0	0	0
	point102	102											
College Blvd SB Seg 8 - Brnd Dr VstaWy	point227	227	2255	97	45	2	45	1	45	0	0	0	0
	point220	220	2255	97	45	2	45	1	45	0	0	0	0
	point221	221											

INPUT: RECEIVERS
PN 8689

Dudek						29 July 2019					
MG						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	PN 8689										
RUN:	College Blvd GPA - 2035 Conds Ex Geo										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	2,240.4	777.6	257.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	2,228.1	2,103.7	317.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	3,401.9	4,021.8	328.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	4,975.5	5,821.4	335.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	5,479.5	9,193.2	269.00	5.00	0.00	66	10.0	8.0	Y
ST6	6	1	4,884.5	9,821.6	322.00	5.00	0.00	66	10.0	8.0	Y
M1	12	1	1,824.6	214.3	236.00	5.00	0.00	66	10.0	8.0	Y
M2	14	1	5,516.4	7,056.6	260.00	5.00	0.00	66	10.0	8.0	Y
M3	16	1	4,881.0	10,778.2	335.00	5.00	0.00	66	10.0	8.0	Y
M4	18	1	4,168.8	12,713.0	385.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

PN 8689

Dudek					29 July 2019														
MG					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:				PN 8689															
RUN:				College Blvd GPA - 2035 Conds Ex Geo															
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates	(bottom)	Height	Segment				
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft	#Up	#Dn	Reflec-tions?
Barrier1	W	0.00	99.99	0.00				0.00		point1	1	2,127.2	456.7	257.00	5.00	0.00	0	0	
										point3	3	2,212.5	747.6	257.00	5.00	0.00	0	0	
										point4	4	2,254.1	988.2	257.00	5.00	0.00	0	0	
										point5	5	2,317.5	1,266.0	257.00	5.00				
Barrier2	W	0.00	99.99	0.00				0.00		point23	23	2,234.9	1,886.5	317.00	0.00	0.00	0	0	
										point7	7	2,252.2	2,108.7	317.00	0.00	0.00	0	0	
										point8	8	2,285.2	2,329.2	317.00	0.00	0.00	0	0	
										point9	9	2,332.1	2,494.1	317.00	0.00				
Barrier3	W	0.00	99.99	0.00				0.00		point25	25	3,206.8	3,915.3	328.00	0.00	0.00	0	0	
										point11	11	3,318.4	4,033.8	328.00	0.00	0.00	0	0	
										point12	12	3,503.0	4,212.9	328.00	0.00	0.00	0	0	
										point13	13	3,642.2	4,354.8	328.00	0.00				
Barrier4	W	0.00	99.99	0.00				0.00		point27	27	4,787.9	5,615.6	335.00	6.00	0.00	0	0	
										point15	15	4,911.5	5,728.2	335.00	6.00	0.00	0	0	
										point16	16	5,031.8	5,879.1	335.00	6.00	0.00	0	0	
										point17	17	5,143.4	6,045.4	335.00	6.00	0.00	0	0	
										point18	18	5,191.5	6,128.5	335.00	6.00				
Barrier5	W	0.00	99.99	0.00				0.00		point29	29	5,459.5	8,945.7	272.00	6.00	0.00	0	0	
										point20	20	5,452.6	9,187.1	272.00	6.00	0.00	0	0	
										point21	21	5,430.0	9,310.3	282.00	6.00	0.00	0	0	
										point2	2	5,376.2	9,426.6	293.00	6.00				
Barrier11	W	0.00	99.99	0.00				0.00		point32	32	1,833.0	124.0	235.00	0.00	0.00	0	0	
										point33	33	1,893.4	297.0	235.00	0.00				
Barrier12	W	0.00	99.99	0.00				0.00		point34	34	5,483.5	6,848.5	260.00	0.00	0.00	0	0	
										point35	35	5,480.2	7,295.6	260.00	0.00				
Barrier13	W	0.00	99.99	0.00				0.00		point36	36	4,839.2	10,359.8	365.00	6.00	0.00	0	0	
										point37	37	4,836.9	11,103.4	381.00	6.00				
Barrier15	W	0.00	99.99	0.00				0.00		point39	39	4,673.1	11,630.5	408.00	6.00	0.00	0	0	
										point40	40	3,856.2	13,348.5	370.00	6.00				

RESULTS: SOUND LEVELS

PN 8689

Dudek MG													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:													
RUN:													
BARRIER DESIGN:													
ATMOSPHERICS:													
Receiver													
Name	No.	#DUs	Existing	No Barrier						With Barrier			
			LAeq1h	LAeq1h									
				Calculated	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction			
							Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated	
												minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
ST1	1	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0	
ST2	2	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0	
ST3	3	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	8	-8.0	
ST4	4	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0	
ST5	5	1	0.0	60.7	66	60.7	10	----	60.7	0.0	8	-8.0	
ST6	6	1	0.0	70.8	66	70.8	10	Snd Lvl	70.8	0.0	8	-8.0	
M1	12	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0	
M2	14	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0	
M3	16	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0	
M4	18	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		10	0.0	0.0	0.0								
All Impacted		3	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

INPUT: ROADWAYS
PN 8689

Dudek												
MG												
INPUT: ROADWAYS								Average pavement type shall be used unless				
PROJECT/CONTRACT:				PN 8689				a State highway agency substantiates the use				
RUN:				College Blvd GPA -2035Alt 2_5-6LnsPrtl				of a different type with the approval of FHWA				
Roadway		Points										
Name	Width	Name	No.	Coordinates (pavement)			Flow Control				Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On	
							Device	Constraint	Vehicles	Type	Struct?	
									Affected			
	ft			ft	ft	ft		mph	%			
College Blvd SB Seg 3 - Aztec St O Blvd	42.0	point198	198	4,775.4	10,210.7	354.00				Average		
		point183	183	4,843.1	10,028.4	338.00				Average		
		point182	182	4,931.0	9,873.4	322.00				Average		
		point181	181	5,000.5	9,788.4	315.00				Average		
		point180	180	5,178.8	9,578.7	304.00				Average		
		point179	179	5,281.6	9,393.4	293.00				Average		
		point178	178	5,317.5	9,299.7	282.00				Average		
		point177	177	5,359.7	9,141.1	272.00				Average		
		point176	176	5,367.3	8,838.2	269.00				Average		
		point175	175	5,385.4	8,377.4	252.00				Average		
		point208	208	5,390.5	7,923.7	241.00						
College Blvd NB Seg 2 - OG Rd Av dl P	42.0	point199	199	4,821.8	10,224.1	354.00				Average		
		point131	131	4,803.8	10,366.8	370.00				Average		
		point132	132	4,798.7	10,983.8	386.00				Average		
		point133	133	4,794.1	11,197.1	402.00				Average		
		point134	134	4,769.4	11,313.4	405.00				Average		
		point135	135	4,698.3	11,474.9	413.00						
College Blvd NB Seg 1 - Av Emp OG Rd	42.0	point200	200	4,697.5	11,475.6	413.00				Average		
		point190	190	4,634.0	11,610.4	408.00				Average		
		point191	191	3,818.3	13,328.9	370.00						
College Blvd SB Seg 2 - OG Rd Av dl P-2	42.0	point203	203	4,654.0	11,464.9	413.00				Average		
		point188	188	4,725.1	11,303.4	405.00				Average		
		point187	187	4,746.3	11,188.5	402.00				Average		
		point186	186	4,748.0	10,976.7	386.00				Average		
		point185	185	4,754.6	10,354.8	370.00				Average		

INPUT: ROADWAYS
PN 8689

		point184	184	4,775.4	10,210.7	354.00					
College Blvd SB Seg 1- Av Emp OG Rd	42.0	point194	194	3,773.2	13,299.9	370.00				Average	
		point201	201	4,588.3	11,600.8	408.00				Average	
		point189	189	4,652.6	11,467.1	413.00					
College Blvd NB Seg 3 - Aztec St O Blvd-2	42.0	point209	209	5,437.8	7,928.5	241.00				Average	
		point121	121	5,432.7	8,382.3	252.00				Average	
		point122	122	5,416.9	8,843.4	269.00				Average	
		point123	123	5,409.3	9,146.3	272.00				Average	
		point124	124	5,363.5	9,311.1	282.00				Average	
		point125	125	5,327.6	9,404.8	293.00				Average	
		point126	126	5,215.0	9,587.2	304.00				Average	
		point127	127	5,038.2	9,808.0	315.00				Average	
		point128	128	4,968.7	9,893.0	322.00				Average	
		point129	129	4,889.5	10,041.3	338.00				Average	
		point130	130	4,821.8	10,223.6	354.00					
College Blvd SB Seg 4 -O Blvd Olv Dr	42.0	point210	210	5,390.5	7,922.9	241.00				Average	
		point174	174	5,395.6	7,468.6	230.00				Average	
		point173	173	5,395.6	6,892.6	245.00					
College Blvd NB Seg 4 -O Blvd Olv Dr	42.0	point211	211	5,442.6	6,900.6	245.00				Average	
		point120	120	5,440.9	7,476.6	230.00				Average	
		point206	206	5,437.8	7,926.3	241.00					
College Blvd SB Seg 5 - Olv Dr Thndr Dr	42.0	point212	212	5,395.4	6,892.3	245.00				Average	
		point172	172	5,389.7	6,725.6	262.00				Average	
		point171	171	5,363.2	6,540.2	277.00				Average	
		point170	170	5,307.1	6,331.1	292.00				Average	
		point169	169	5,256.8	6,194.0	307.00				Average	
		point168	168	5,161.7	6,008.4	314.50				Average	
		point167	167	5,050.2	5,835.6	322.00				Average	
		point166	166	4,901.6	5,654.2	335.00				Average	
		point165	165	4,769.7	5,530.9	349.00					
College Blvd SB Seg 6 Thndr Dr Mrvn St	42.0	point213	213	4,768.1	5,528.5	349.00				Average	
		point164	164	4,568.9	5,340.0	363.00				Average	
		point163	163	4,344.5	5,147.7	366.50				Average	
		point162	162	4,078.4	4,920.2	359.00				Average	
		point161	161	3,925.4	4,782.6	351.50				Average	
		point160	160	3,743.2	4,594.5	344.00				Average	
		point159	159	3,591.4	4,441.3	338.00				Average	
		point158	158	3,419.2	4,260.1	332.00				Average	
		point157	157	3,284.7	4,115.4	326.00				Average	

INPUT: ROADWAYS
PN 8689

		point156	156	3,126.8	3,953.9	325.00					
College Blvd NB Seg 5 - Olv Dr Thndr Dr	42.0	point214	214	4,825.2	5,515.3	349.00				Average	
		point112	112	4,954.2	5,640.7	335.00				Average	
		point113	113	5,101.7	5,828.3	322.00				Average	
		point114	114	5,209.7	6,003.9	314.50				Average	
		point115	115	5,295.9	6,194.5	307.00				Average	
		point116	116	5,346.2	6,331.6	292.00				Average	
		point117	117	5,402.6	6,547.0	277.00				Average	
		point118	118	5,439.6	6,730.1	262.00				Average	
		point119	119	5,442.2	6,898.5	245.00					
College Blvd NB Seg 6 Thndr Dr Mrvn St	42.0	point215	215	3,171.5	3,949.5	325.00				Average	
		point103	103	3,332.0	4,111.0	326.00				Average	
		point104	104	3,469.5	4,256.6	332.00				Average	
		point105	105	3,640.0	4,431.7	338.00				Average	
		point106	106	3,787.4	4,585.0	344.00				Average	
		point107	107	3,977.3	4,761.8	351.50				Average	
		point108	108	4,131.1	4,893.7	359.00				Average	
		point109	109	4,402.4	5,130.6	366.50				Average	
		point110	110	4,629.1	5,329.1	363.00				Average	
		point111	111	4,823.2	5,512.6	349.00					
College Blvd SB Seg7 Rsl St Brnd_Wrg	42.0	point216	216	3,126.1	3,953.1	325.00				Average	
		point155	155	2,996.0	3,808.8	323.00				Average	
		point154	154	2,916.4	3,698.5	321.00				Average	
		point153	153	2,879.2	3,643.6	319.40				Average	
		point152	152	2,844.3	3,555.2	318.20				Average	
		point151	151	2,806.6	3,456.1	316.00				Average	
		point150	150	2,777.0	3,303.5	311.00				Average	
		point149	149	2,708.9	2,990.9	301.00				Average	
		point148	148	2,666.3	2,884.7	298.00				Average	
		point147	147	2,580.2	2,716.4	295.00				Average	
		point146	146	2,473.3	2,521.6	291.00				Average	
		point145	145	2,452.6	2,469.0	290.00				Average	
		point144	144	2,407.1	2,294.0	279.00				Average	
		point143	143	2,353.1	2,023.7	274.00				Average	
		point142	142	2,282.9	1,669.6	263.00				Average	
		point141	141	2,200.1	1,228.6	252.00				Average	
		point140	140	2,132.7	904.4	238.00				Average	
		point139	139	2,083.2	702.3	232.00				Average	
		point138	138	1,980.8	420.4	228.00					

INPUT: ROADWAYS
PN 8689

College Blvd CL	15.0	point222	222	1,845.4	-405.2	190.00				Average	
		point42	42	1,844.9	-67.0	221.00				Average	
		point6	6	1,999.7	417.1	228.00				Average	
		point7	7	2,102.1	694.9	232.00				Average	
		point8	8	2,150.7	903.2	238.00				Average	
		point9	9	2,220.1	1,229.5	252.00				Average	
		point10	10	2,303.5	1,667.0	263.00				Average	
		point11	11	2,373.7	2,021.1	274.00				Average	
		point12	12	2,426.1	2,292.5	279.00				Average	
		point13	13	2,471.6	2,467.5	290.00				Average	
		point14	14	2,496.4	2,518.5	291.00				Average	
		point15	15	2,601.3	2,716.4	295.00				Average	
		point16	16	2,687.7	2,887.0	298.00				Average	
		point17	17	2,729.3	2,994.2	301.00				Average	
		point18	18	2,798.2	3,305.6	311.00				Average	
		point19	19	2,826.8	3,453.1	316.00				Average	
		point20	20	2,863.3	3,553.8	318.20				Average	
		point21	21	2,902.3	3,643.2	319.40				Average	
		point22	22	2,937.9	3,697.0	321.00				Average	
		point23	23	3,019.5	3,803.8	323.00				Average	
		point24	24	3,148.0	3,949.6	325.00				Average	
		point25	25	3,305.9	4,111.1	326.00				Average	
		point26	26	3,442.4	4,255.7	332.00				Average	
		point27	27	3,614.6	4,433.4	338.00				Average	
		point28	28	3,765.5	4,587.6	344.00				Average	
		point29	29	3,949.4	4,766.8	351.50				Average	
		point30	30	4,102.4	4,903.2	359.00				Average	
		point31	31	4,378.6	5,145.0	366.50				Average	
		point32	32	4,602.6	5,337.7	363.00				Average	
		point33	33	4,795.3	5,519.9	349.00				Average	
		point34	34	4,927.2	5,643.2	335.00				Average	
		point35	35	5,072.7	5,830.2	322.00				Average	
		point36	36	5,184.2	6,003.0	314.50				Average	
		point37	37	5,275.4	6,191.4	307.00				Average	
		point38	38	5,325.7	6,328.5	292.00				Average	
		point39	39	5,382.5	6,538.5	277.00				Average	
		point40	40	5,414.3	6,723.3	262.00				Average	
		point41	41	5,420.8	6,891.7	245.00				Average	
		point2	2	5,420.8	7,467.7	230.00				Average	

INPUT: ROADWAYS
PN 8689

		point207	207	5,415.7	7,921.5	241.00				Average	
		point45	45	5,410.6	8,375.2	252.00				Average	
		point46	46	5,394.0	8,838.2	269.00				Average	
		point47	47	5,386.4	9,141.1	272.00				Average	
		point48	48	5,342.3	9,301.0	282.00				Average	
		point49	49	5,306.4	9,394.7	293.00				Average	
		point50	50	5,198.8	9,578.7	304.00				Average	
		point51	51	5,020.0	9,797.5	315.00				Average	
		point52	52	4,950.5	9,882.5	322.00				Average	
		point53	53	4,868.9	10,028.4	338.00				Average	
		point54	54	4,801.2	10,210.7	354.00				Average	
		point55	55	4,780.4	10,354.8	370.00				Average	
		point56	56	4,773.8	10,976.0	386.00				Average	
		point57	57	4,772.1	11,187.8	402.00				Average	
		point58	58	4,749.5	11,304.1	405.00				Average	
		point59	59	4,678.4	11,465.6	413.00				Average	
		point192	192	4,614.1	11,599.3	408.00				Average	
		point193	193	3,779.3	13,354.6	370.00					
College Blvd NB Seg 8 - Brnd Dr VstaWy	42.0	point224	224	1,865.1	-400.8	190.00				Average	
		point82	82	1,867.8	-64.0	221.00				Average	
		point84	84	2,029.5	420.1	228.00					
College Blvd NB Seg 7 Rsl St Brnd_Wrg	42.0	point226	226	2,029.9	421.0	228.00				Average	
		point85	85	2,129.4	698.8	232.00				Average	
		point86	86	2,170.4	909.8	238.00				Average	
		point87	87	2,239.8	1,236.1	252.00				Average	
		point88	88	2,325.5	1,674.8	263.00				Average	
		point89	89	2,395.7	2,028.9	274.00				Average	
		point90	90	2,445.4	2,300.3	279.00				Average	
		point91	91	2,490.9	2,475.3	290.00				Average	
		point92	92	2,516.1	2,526.7	291.00				Average	
		point93	93	2,623.1	2,723.1	295.00				Average	
		point94	94	2,708.4	2,891.4	298.00				Average	
		point95	95	2,747.8	3,000.0	301.00				Average	
		point96	96	2,819.0	3,313.0	311.00				Average	
		point97	97	2,847.6	3,460.5	316.00				Average	
		point98	98	2,884.3	3,558.8	318.20				Average	
		point99	99	2,923.3	3,648.2	319.40				Average	
		point100	100	2,961.0	3,701.9	321.00				Average	
		point101	101	3,045.3	3,808.3	323.00				Average	

INPUT: ROADWAYS

PN 8689

		point102	102	3,171.9	3,950.6	325.00					
College Blvd SB Seg 8 - Brnd Dr VstaWy	42.0	point227	227	1,980.2	421.0	228.00				Average	
		point220	220	1,821.4	-66.1	221.00				Average	
		point221	221	1,821.1	-407.5	190.00					

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

Dudek													
MG													
INPUT: TRAFFIC FOR LAeq1h Percentages PROJECT/CONTRACT: PN 8689 RUN: College Blvd GPA -2035Alt 2_5-6LnsPrtl													
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
College Blvd SB Seg 3 - Aztec St O Blvd	point198	198	2320	97	45	2	45	1	45	0	0	0	0
	point183	183	2320	97	45	2	45	1	45	0	0	0	0
	point182	182	2320	97	45	2	45	1	45	0	0	0	0
	point181	181	2320	97	45	2	45	1	45	0	0	0	0
	point180	180	2320	97	45	2	45	1	45	0	0	0	0
	point179	179	2320	97	45	2	45	1	45	0	0	0	0
	point178	178	2320	97	45	2	45	1	45	0	0	0	0
	point177	177	2320	97	45	2	45	1	45	0	0	0	0
	point176	176	2320	97	45	2	45	1	45	0	0	0	0
	point175	175	2320	97	45	2	45	1	45	0	0	0	0
	point208	208											
College Blvd NB Seg 2 - OG Rd Av dl P	point199	199	2055	97	45	2	45	1	45	0	0	0	0
	point131	131	2055	97	45	2	45	1	45	0	0	0	0
	point132	132	2055	97	45	2	45	1	45	0	0	0	0
	point133	133	2055	97	45	2	45	1	45	0	0	0	0
	point134	134	2055	97	45	2	45	1	45	0	0	0	0
	point135	135											
College Blvd NB Seg 1 - Av Emp OG Rd	point200	200	1610	97	45	2	45	1	45	0	0	0	0
	point190	190	1610	97	45	2	45	1	45	0	0	0	0
	point191	191											
College Blvd SB Seg 2 - OG Rd Av dl P-2	point203	203	2055	97	45	2	45	1	45	0	0	0	0
	point188	188	2055	97	45	2	45	1	45	0	0	0	0
	point187	187	2055	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point186	186	2055	97	45	2	45	1	45	0	0	0	0
	point185	185	2055	97	45	2	45	1	45	0	0	0	0
	point184	184											
College Blvd SB Seg 1- Av Emp OG Rd	point194	194	1610	97	45	2	45	1	45	0	0	0	0
	point201	201	1610	97	45	2	45	1	45	0	0	0	0
	point189	189											
College Blvd NB Seg 3 - Aztec St O Blvd-2	point209	209	2320	97	45	2	45	1	45	0	0	0	0
	point121	121	2320	97	45	2	45	1	45	0	0	0	0
	point122	122	2320	97	45	2	45	1	45	0	0	0	0
	point123	123	2320	97	45	2	45	1	45	0	0	0	0
	point124	124	2320	97	45	2	45	1	45	0	0	0	0
	point125	125	2320	97	45	2	45	1	45	0	0	0	0
	point126	126	2320	97	45	2	45	1	45	0	0	0	0
	point127	127	2320	97	45	2	45	1	45	0	0	0	0
	point128	128	2320	97	45	2	45	1	45	0	0	0	0
	point129	129	2320	97	45	2	45	1	45	0	0	0	0
	point130	130											
College Blvd SB Seg 4 -O Blvd Olv Dr	point210	210	3005	97	45	2	45	1	45	0	0	0	0
	point174	174	3005	97	45	2	45	1	45	0	0	0	0
	point173	173											
College Blvd NB Seg 4 -O Blvd Olv Dr	point211	211	3005	97	45	2	45	1	45	0	0	0	0
	point120	120	3005	97	45	2	45	1	45	0	0	0	0
	point206	206											
College Blvd SB Seg 5 - Olv Dr Thndr Dr	point212	212	1970	97	45	2	45	1	45	0	0	0	0
	point172	172	1970	97	45	2	45	1	45	0	0	0	0
	point171	171	1970	97	45	2	45	1	45	0	0	0	0
	point170	170	1970	97	45	2	45	1	45	0	0	0	0
	point169	169	1970	97	45	2	45	1	45	0	0	0	0
	point168	168	1970	97	45	2	45	1	45	0	0	0	0
	point167	167	1970	97	45	2	45	1	45	0	0	0	0
	point166	166	1970	97	45	2	45	1	45	0	0	0	0
	point165	165											
College Blvd SB Seg 6 Thndr Dr Mrvn St	point213	213	1725	97	45	2	45	1	45	0	0	0	0
	point164	164	1725	97	45	2	45	1	45	0	0	0	0
	point163	163	1725	97	45	2	45	1	45	0	0	0	0
	point162	162	1725	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point161	161	1725	97	45	2	45	1	45	0	0	0	0
	point160	160	1725	97	45	2	45	1	45	0	0	0	0
	point159	159	1725	97	45	2	45	1	45	0	0	0	0
	point158	158	1725	97	45	2	45	1	45	0	0	0	0
	point157	157	1725	97	45	2	45	1	45	0	0	0	0
	point156	156											
College Blvd NB Seg 5 - Olv Dr Thndr Dr	point214	214	1970	97	45	2	45	1	45	0	0	0	0
	point112	112	1970	97	45	2	45	1	45	0	0	0	0
	point113	113	1970	97	45	2	45	1	45	0	0	0	0
	point114	114	1970	97	45	2	45	1	45	0	0	0	0
	point115	115	1970	97	45	2	45	1	45	0	0	0	0
	point116	116	1970	97	45	2	45	1	45	0	0	0	0
	point117	117	1970	97	45	2	45	1	45	0	0	0	0
	point118	118	1970	97	45	2	45	1	45	0	0	0	0
	point119	119											
College Blvd NB Seg 6 Thndr Dr Mrvn St	point215	215	1725	97	45	2	45	1	45	0	0	0	0
	point103	103	1725	97	45	2	45	1	45	0	0	0	0
	point104	104	1725	97	45	2	45	1	45	0	0	0	0
	point105	105	1725	97	45	2	45	1	45	0	0	0	0
	point106	106	1725	97	45	2	45	1	45	0	0	0	0
	point107	107	1725	97	45	2	45	1	45	0	0	0	0
	point108	108	1725	97	45	2	45	1	45	0	0	0	0
	point109	109	1725	97	45	2	45	1	45	0	0	0	0
	point110	110	1725	97	45	2	45	1	45	0	0	0	0
	point111	111											
College Blvd SB Seg7 Rsl St Brnd_Wrg	point216	216	1760	97	45	2	45	1	45	0	0	0	0
	point155	155	1760	97	45	2	45	1	45	0	0	0	0
	point154	154	1760	97	45	2	45	1	45	0	0	0	0
	point153	153	1760	97	45	2	45	1	45	0	0	0	0
	point152	152	1760	97	45	2	45	1	45	0	0	0	0
	point151	151	1760	97	45	2	45	1	45	0	0	0	0
	point150	150	1760	97	45	2	45	1	45	0	0	0	0
	point149	149	1760	97	45	2	45	1	45	0	0	0	0
	point148	148	1760	97	45	2	45	1	45	0	0	0	0
	point147	147	1760	97	45	2	45	1	45	0	0	0	0
	point146	146	1760	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point145	145	1760	97	45	2	45	1	45	0	0	0	0
	point144	144	1760	97	45	2	45	1	45	0	0	0	0
	point143	143	1760	97	45	2	45	1	45	0	0	0	0
	point142	142	1760	97	45	2	45	1	45	0	0	0	0
	point141	141	1760	97	45	2	45	1	45	0	0	0	0
	point140	140	1760	97	45	2	45	1	45	0	0	0	0
	point139	139	1760	97	45	2	45	1	45	0	0	0	0
	point138	138											
College Blvd CL	point222	222	0	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0	0
	point6	6	0	0	0	0	0	0	0	0	0	0	0
	point7	7	0	0	0	0	0	0	0	0	0	0	0
	point8	8	0	0	0	0	0	0	0	0	0	0	0
	point9	9	0	0	0	0	0	0	0	0	0	0	0
	point10	10	0	0	0	0	0	0	0	0	0	0	0
	point11	11	0	0	0	0	0	0	0	0	0	0	0
	point12	12	0	0	0	0	0	0	0	0	0	0	0
	point13	13	0	0	0	0	0	0	0	0	0	0	0
	point14	14	0	0	0	0	0	0	0	0	0	0	0
	point15	15	0	0	0	0	0	0	0	0	0	0	0
	point16	16	0	0	0	0	0	0	0	0	0	0	0
	point17	17	0	0	0	0	0	0	0	0	0	0	0
	point18	18	0	0	0	0	0	0	0	0	0	0	0
	point19	19	0	0	0	0	0	0	0	0	0	0	0
	point20	20	0	0	0	0	0	0	0	0	0	0	0
	point21	21	0	0	0	0	0	0	0	0	0	0	0
	point22	22	0	0	0	0	0	0	0	0	0	0	0
	point23	23	0	0	0	0	0	0	0	0	0	0	0
	point24	24	0	0	0	0	0	0	0	0	0	0	0
	point25	25	0	0	0	0	0	0	0	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0	0
	point28	28	0	0	0	0	0	0	0	0	0	0	0
	point29	29	0	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point32	32	0	0	0	0	0	0	0	0	0	0	0
	point33	33	0	0	0	0	0	0	0	0	0	0	0
	point34	34	0	0	0	0	0	0	0	0	0	0	0
	point35	35	0	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0	0
	point2	2	0	0	0	0	0	0	0	0	0	0	0
	point207	207	0	0	0	0	0	0	0	0	0	0	0
	point45	45	0	0	0	0	0	0	0	0	0	0	0
	point46	46	0	0	0	0	0	0	0	0	0	0	0
	point47	47	0	0	0	0	0	0	0	0	0	0	0
	point48	48	0	0	0	0	0	0	0	0	0	0	0
	point49	49	0	0	0	0	0	0	0	0	0	0	0
	point50	50	0	0	0	0	0	0	0	0	0	0	0
	point51	51	0	0	0	0	0	0	0	0	0	0	0
	point52	52	0	0	0	0	0	0	0	0	0	0	0
	point53	53	0	0	0	0	0	0	0	0	0	0	0
	point54	54	0	0	0	0	0	0	0	0	0	0	0
	point55	55	0	0	0	0	0	0	0	0	0	0	0
	point56	56	0	0	0	0	0	0	0	0	0	0	0
	point57	57	0	0	0	0	0	0	0	0	0	0	0
	point58	58	0	0	0	0	0	0	0	0	0	0	0
	point59	59	0	0	0	0	0	0	0	0	0	0	0
	point192	192	0	0	0	0	0	0	0	0	0	0	0
	point193	193											
College Blvd NB Seg 8 - Brnd Dr VstaWy	point224	224	2255	97	45	2	45	1	45	0	0	0	0
	point82	82	2255	97	45	2	45	1	45	0	0	0	0
	point84	84											
College Blvd NB Seg 7 Rsl St Brnd_Wrg	point226	226	1760	97	45	2	45	1	45	0	0	0	0
	point85	85	1760	97	45	2	45	1	45	0	0	0	0
	point86	86	1760	97	45	2	45	1	45	0	0	0	0
	point87	87	1760	97	45	2	45	1	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Percentages
PN 8689

	point88	88	1760	97	45	2	45	1	45	0	0	0	0
	point89	89	1760	97	45	2	45	1	45	0	0	0	0
	point90	90	1760	97	45	2	45	1	45	0	0	0	0
	point91	91	1760	97	45	2	45	1	45	0	0	0	0
	point92	92	1760	97	45	2	45	1	45	0	0	0	0
	point93	93	1760	97	45	2	45	1	45	0	0	0	0
	point94	94	1760	97	45	2	45	1	45	0	0	0	0
	point95	95	1760	97	45	2	45	1	45	0	0	0	0
	point96	96	1760	97	45	2	45	1	45	0	0	0	0
	point97	97	1760	97	45	2	45	1	45	0	0	0	0
	point98	98	1760	97	45	2	45	1	45	0	0	0	0
	point99	99	1760	97	45	2	45	1	45	0	0	0	0
	point100	100	1760	97	45	2	45	1	45	0	0	0	0
	point101	101	1760	97	45	2	45	1	45	0	0	0	0
	point102	102											
College Blvd SB Seg 8 - Brnd Dr VstaWy	point227	227	2255	97	45	2	45	1	45	0	0	0	0
	point220	220	2255	97	45	2	45	1	45	0	0	0	0
	point221	221											

INPUT: RECEIVERS
PN 8689

Dudek						29 July 2019					
MG						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:		PN 8689									
RUN:		College Blvd GPA -2035Alt 2_5-6LnsPrtl									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'I	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	2,240.4	777.6	257.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	2,228.1	2,103.7	317.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	3,401.9	4,021.8	328.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	4,975.5	5,821.4	335.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	5,479.5	9,193.2	269.00	5.00	0.00	66	10.0	8.0	Y
ST6	6	1	4,884.5	9,821.6	322.00	5.00	0.00	66	10.0	8.0	Y
M1	12	1	1,824.6	214.3	236.00	5.00	0.00	66	10.0	8.0	Y
M2	14	1	5,516.4	7,056.6	260.00	5.00	0.00	66	10.0	8.0	Y
M3	16	1	4,881.0	10,778.2	335.00	5.00	0.00	66	10.0	8.0	Y
M4	18	1	4,168.8	12,713.0	385.00	5.00	0.00	66	10.0	8.0	Y

INPUT: BARRIERS

PN 8689

Dudek					29 July 2019														
MG					TNM 2.5														
INPUT: BARRIERS																			
PROJECT/CONTRACT:				PN 8689															
RUN:				College Blvd GPA -2035Alt 2_5-6LnsPrtl															
Barrier										Points									
Name	Type	Height		If Wall	If Berm			Add'tnl		Name	No.	Coordinates (bottom)			Height	Segment			
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length				X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft				ft	ft	ft	ft	ft	#Up	#Dn	Reflec-tions?
Barrier1	W	0.00	99.99	0.00				0.00		point1	1	2,127.2	456.7	257.00	5.00	0.00	0	0	
										point3	3	2,212.5	747.6	257.00	5.00	0.00	0	0	
										point4	4	2,254.1	988.2	257.00	5.00	0.00	0	0	
										point5	5	2,317.5	1,266.0	257.00	5.00				
Barrier2	W	0.00	99.99	0.00				0.00		point23	23	2,234.9	1,886.5	317.00	0.00	0.00	0	0	
										point7	7	2,252.2	2,108.7	317.00	0.00	0.00	0	0	
										point8	8	2,285.2	2,329.2	317.00	0.00	0.00	0	0	
										point9	9	2,332.1	2,494.1	317.00	0.00				
Barrier3	W	0.00	99.99	0.00				0.00		point25	25	3,206.8	3,915.3	328.00	0.00	0.00	0	0	
										point11	11	3,318.4	4,033.8	328.00	0.00	0.00	0	0	
										point12	12	3,503.0	4,212.9	328.00	0.00	0.00	0	0	
										point13	13	3,642.2	4,354.8	328.00	0.00				
Barrier4	W	0.00	99.99	0.00				0.00		point27	27	4,787.9	5,615.6	335.00	6.00	0.00	0	0	
										point15	15	4,911.5	5,728.2	335.00	6.00	0.00	0	0	
										point16	16	5,031.8	5,879.1	335.00	6.00	0.00	0	0	
										point17	17	5,143.4	6,045.4	335.00	6.00	0.00	0	0	
										point18	18	5,191.5	6,128.5	335.00	6.00				
Barrier5	W	0.00	99.99	0.00				0.00		point29	29	5,459.5	8,945.7	272.00	6.00	0.00	0	0	
										point20	20	5,452.6	9,187.1	272.00	6.00	0.00	0	0	
										point21	21	5,430.0	9,310.3	282.00	6.00	0.00	0	0	
										point2	2	5,376.2	9,426.6	293.00	6.00				
Barrier11	W	0.00	99.99	0.00				0.00		point32	32	1,833.0	124.0	235.00	0.00	0.00	0	0	
										point33	33	1,893.4	297.0	235.00	0.00				
Barrier12	W	0.00	99.99	0.00				0.00		point34	34	5,483.5	6,848.5	260.00	0.00	0.00	0	0	
										point35	35	5,480.2	7,295.6	260.00	0.00				
Barrier13	W	0.00	99.99	0.00				0.00		point36	36	4,839.2	10,359.8	365.00	6.00	0.00	0	0	
										point37	37	4,836.9	11,103.4	381.00	6.00				
Barrier15	W	0.00	99.99	0.00				0.00		point39	39	4,673.1	11,630.5	408.00	6.00	0.00	0	0	
										point40	40	3,856.2	13,348.5	370.00	6.00				

RESULTS: SOUND LEVELS

PN 8689

Dudek													
MG													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:													
RUN:													
BARRIER DESIGN:													
ATMOSPHERICS:													
Receiver													
Name	No.	#DUs	Existing	No Barrier						With Barrier			
			LAeq1h	LAeq1h						Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
ST1	1	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0	
ST2	2	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0	
ST3	3	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	8	-8.0	
ST4	4	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0	
ST5	5	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0	
ST6	6	1	0.0	70.8	66	70.8	10	Snd Lvl	70.8	0.0	8	-8.0	
M1	12	1	0.0	68.1	66	68.1	10	Snd Lvl	68.1	0.0	8	-8.0	
M2	14	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0	
M3	16	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0	
M4	18	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		10	0.0	0.0	0.0								
All Impacted		3	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

