APPENDIX E

Noise

NOISE ASSESSMENT TECHNICAL REPORT
for the
SPECIAL DISTRICT – B (SUD-B) NORTHEAST QUADRANT SPECIFIC PLAN

Prepared for:

City of Lincoln
600 Sixth Street
Lincoln, California 95648
Contact: Jim Bermudez

Prepared by:

DUDEK
853 Lincoln Way, Suite #208
Auburn, California 95603
Contact: Jonathan Leech

DECEMBER 2015

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

Section **Page No.**

APPENDIX

FIGURES

TABLES

1 INTRODUCTION

1.1 Purpose

This technical noise report evaluates noise effects of the project including potential impacts from current and future ambient noise levels upon proposed land uses as well as noise generation potential from proposed land uses and activities within the Special Use District B (SUD-B) Northeast Quadrant Specific Plan (proposed project or Specific Plan). Noise generation sources from future implementation of the project include traffic and mechanical equipment and exterior activities from commercial and residential uses.

1.2 Project Location and Description

The following is a summary of Chapter 3 (Project Description) of the proposed project's Environmental Impact Report (EIR). Please refer to that document for more detailed information on these aspects of the project.

1.2.1 Project Location

The proposed project site or Plan Area is located immediately west of the City of Lincoln, within Placer County (See Figure 1, Regional Location).

As shown in Figure 2, Site Vicinity, the proposed project site is bordered by Nicolaus Road to the north, Nelson Lane to the west, Highway 65 Bypass to the south, and the City of Lincoln, including the former Wastewater Treatment Plant, to the east.

The assessor parcel numbers (APNs) included in the proposed Specific Plan Area are 021-262-001, 021-262-034, 021-264-035, and 009-031-028.

1.2.2 Project Description

The project site is comprised of four parcels that have primarily been used in the past for agricultural purposes. The project site is designated on the City of Lincoln General Plan Land Use Diagram as Special Use District-B (APNs 021-262-001 and 021-262-034) and Low Density Residential (APN 021-262-035 and 009-031-028). The Placer County General Plan land use designation for the project site is Agricultural/Timberland – 80 Ac. Min. and Rural Residential 1-10 Ac. Min. The current Placer County zoning designations for the project site include F (Farm) –B (Building site) –X (Size) 80 acre minimum, F-B-X-SP (Special Purpose) 80-acre min., F-B-X-SP 5 acre minimum.

The proposed project consists of a mixed use village concept that includes residential, commercial, open space and recreation areas (see Table 1). The proposed project is anticipated to generate approximately 1,627 new residents based on the City's rate of 3.6 persons per household. Each project component is described in more detail below.

The Specific Plan is designed to allow flexibility by allowing a transfer of residential units between planning areas providing the maximum number of dwelling units does not exceed 500, the resulting density remains within the density designated for the area, and there are no additional environmental impacts beyond those identified in this EIR.

As shown on Figure 3, Proposed Site Plan, the 186.2 acre Plan Area is comprised of the following land uses:

Low Density Residential (density of 3.0 to 5.9 dwelling units per acre [du/ac]): The residential component would be comprised of a maximum of 500 single family detached homes located along the eastern boundary of the Plan Area within the C-2 zone of the airport's land use compatibility plan. Residential uses would be set back from Markham Ravine outside of the floodplain. Approximately 84.4 acres of the Plan Area would be residential.

Commercial: The commercial component would be located along the western boundary of the Plan Area along Nelson Lane and Nicolaus Road. Approximately 12.3 acres would be located in the northwest corner of the Plan Area, on the north side of Markham Ravine. The remaining 62 acres would be located south of Markham Ravine along the western boundary of the Plan Area. The commercial uses would be designed to comply with the City of Lincoln guidelines and airport land use restrictions included in the C-1 zone. Commercial land uses in the Plan Area would account for approximately 74.3 acres total with a maximum of 971,000 square feet.

Open Space / Park and Recreation: Proposed open space and park / active recreation areas within the Plan Area would include portions of the Markham Ravine and Auburn Ravine channels, buffer spaces, landscape corridors along major roads, and parks. Approximately 20.0 acres of land within the Plan would be developed as open space and 3.0 would be dedicated for park / active recreation uses. The City's Parks and Recreation Division would oversee operation and maintenance of the parks after the improvements have been constructed.

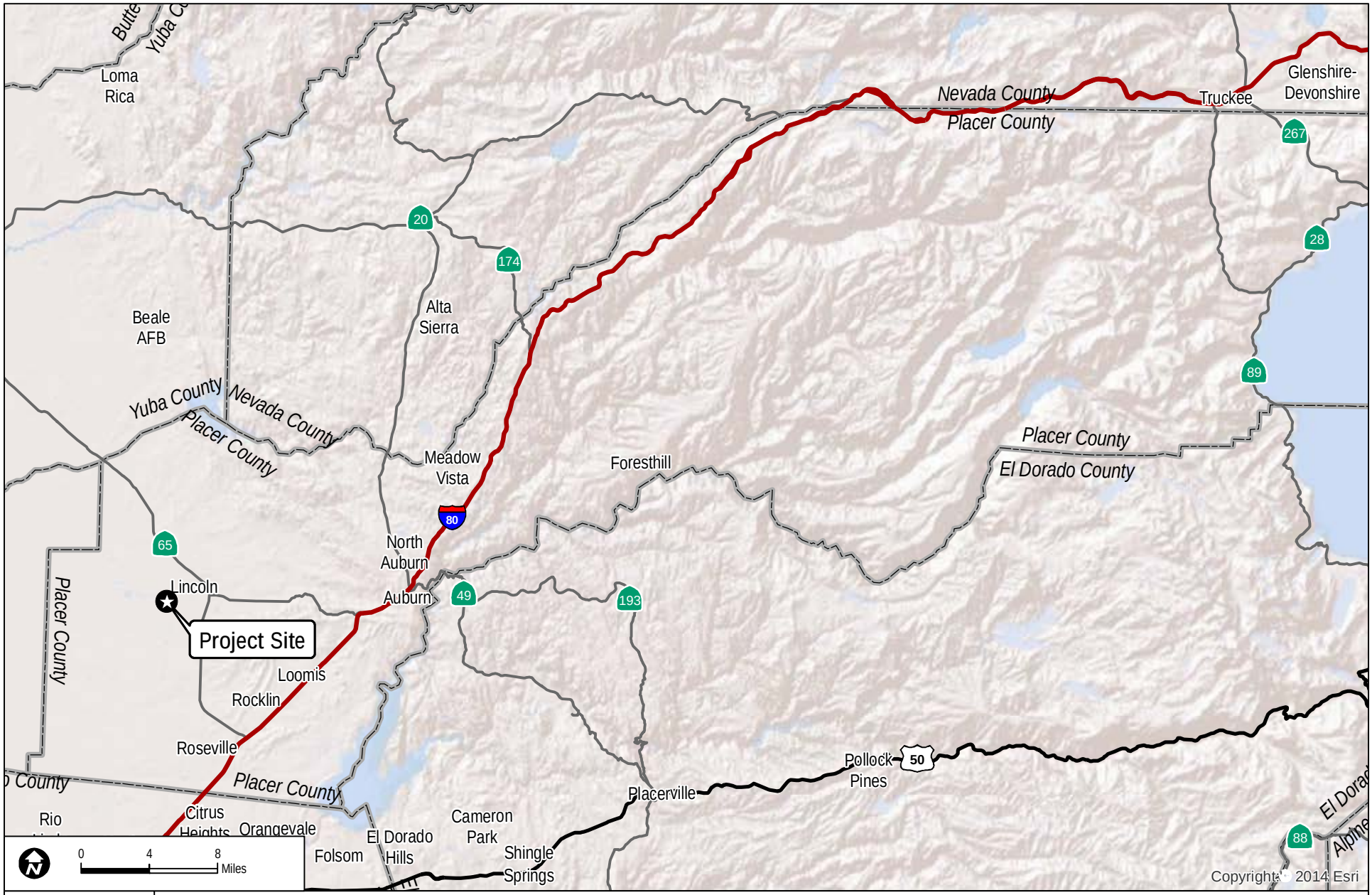
Specific Plan Roads: Collector roads would account for a total of approximately 4.4 acres of land.

Table 1
Land Use Summary

Land Use	Acreage	Density Range	Maximum Dwelling Units (du)	Maximum Commercial
Residential				
Low Density Residential (LDR)	84.4	3.0-5.9	419	
Commercial				
Commercial (COMM)	74.3			971,000
Parks, Recreation and Open Space				
Parks and Recreation (PR)	3.0			
Landscape Corridors (OS)	7.9			
Natural Areas (OS)	12.1			
Roadways	4.4			
Total	186.1		419	971,000

Source: NEQSP, Appendix X

INTENTIONALLY LEFT BLANK



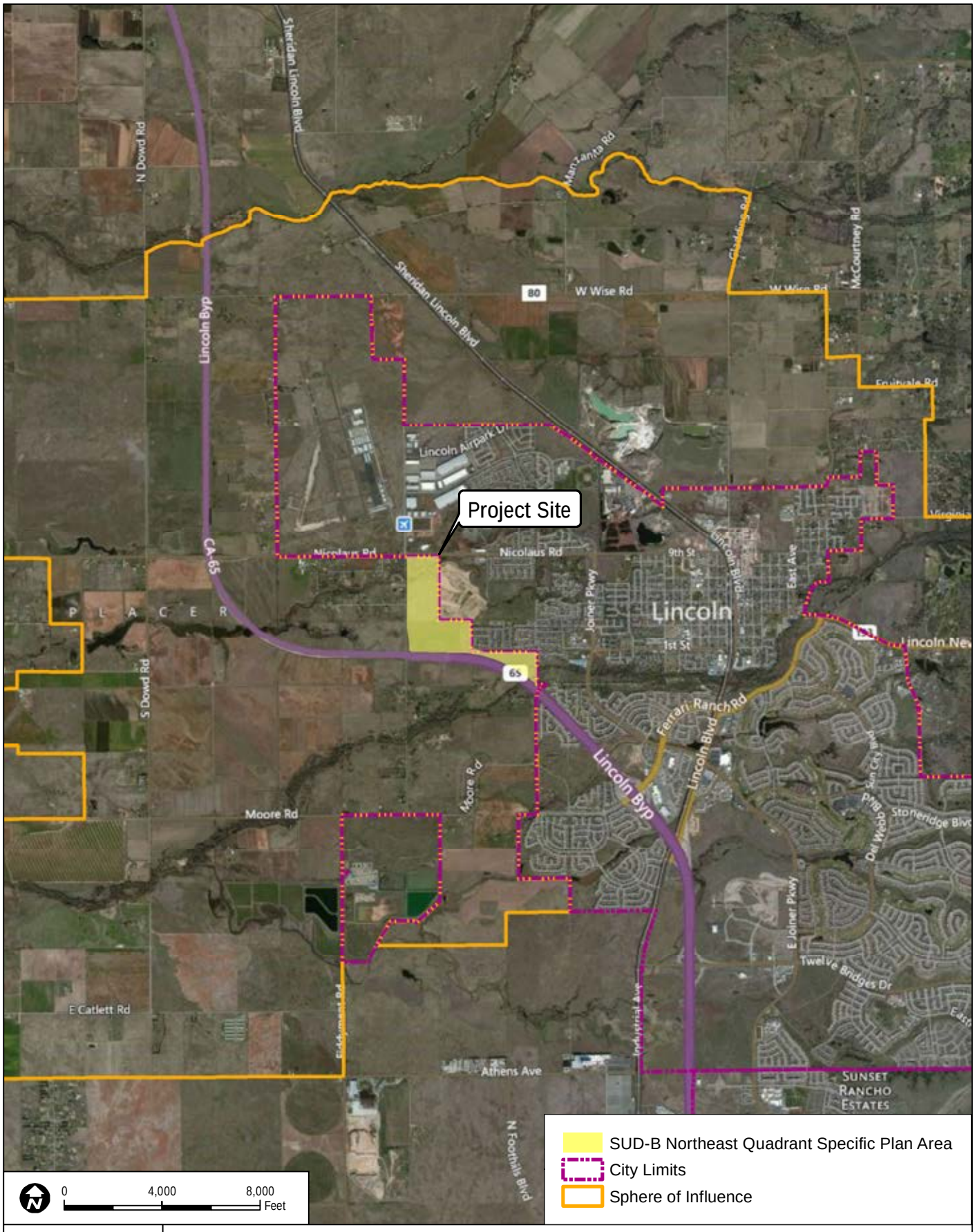
DUDEK

FIGURE 1

Regional Location Map

City of Lincoln SPECIAL DISTRICT - B (SUD-B) NORTHEAST QUADRANT SPECIFIC PLAN

INTENTIONALLY LEFT BLANK



SOURCE:Bing Maps 2015; Placer County 2012.

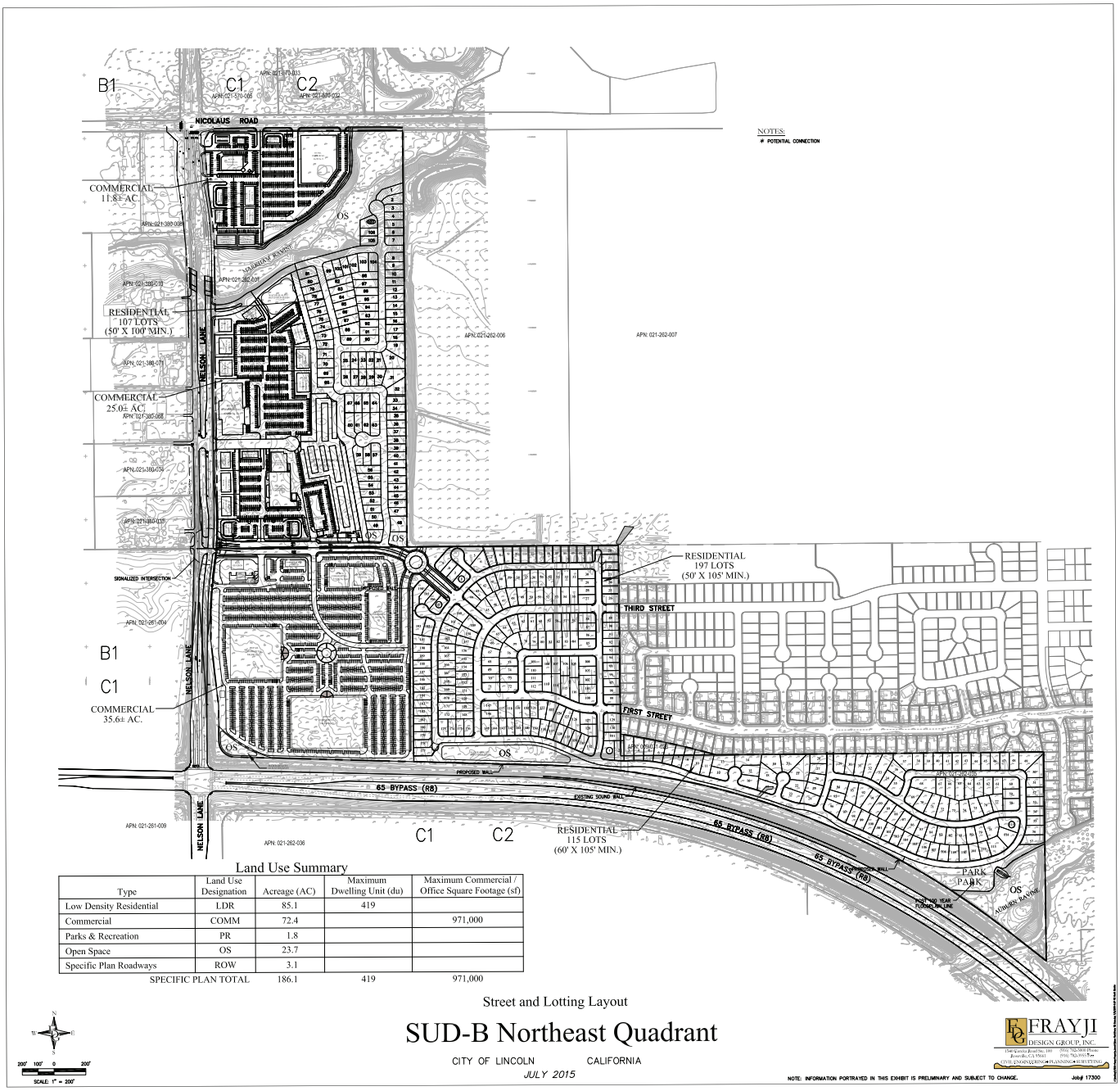
FIGURE 2

Site Vicinity Map

DUDEK

City of Lincoln SPECIAL DISTRICT - B (SUD-B) NORTHEAST QUADRANT SPECIFIC PLAN

INTENTIONALLY LEFT BLANK



Land Use Summary

Type	Land Use Designation	Acreage (AC)	Maximum Dwelling Unit (du)	Maximum Commercial / Office Square Footage (sf)
Low Density Residential	LDR	85.1	419	
Commercial	COMM	72.4		971,000
Parks & Recreation	PR	1.8		
Open Space	OS	23.7		
Specific Plan Roadways	ROW	3.1		
SPECIFIC PLAN TOTAL		186.1	419	971,000

Street and Lotting Layout

SUD-B Northeast Quadrant

CITY OF LINCOLN CALIFORNIA

JULY 2015

FRAYJI DESIGN GROUP, INC.

NOTE: INFORMATION PORTRAYED IN THIS EXHIBIT IS PRELIMINARY AND SUBJECT TO CHANGE.

Job# 17300

DUDEK

SOURCE: Frayji Design Group, Inc., 7/2/2015.

FIGURE 3

Proposed Site Plan

City of Lincoln SPECIAL DISTRICT – B (SUD-B) NORTHEAST QUADRANT SPECIFIC PLAN

INTENTIONALLY LEFT BLANK

1.2.3 Project Construction Scenario

Project construction would occur over a 2 to 10 year period with multiple phases. Phasing would be expected to begin in the southeast and proceed westward and northward. Phases may occur either sequentially or concurrently, depending on market conditions. Additionally, phases may proceed earlier in sequence if conditions warrant. Tentative maps would be submitted for all commercial and residential development. Annexation would be completed with the intent of having all of the parcels requiring annexation (APN 021-262-001, 021-262-034 and 021-262-035) being processed together in a single application.

1.3 Noise Background and Terminology

Fundamentals of Environmental Noise

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels which de-emphasizes the low frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of dBA.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically noticed by the human ear (U.S. DOT 1980). Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA increase is readily noticeable (U.S. EPA 1974). The human ear perceives a 10 dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment. The background, or ambient, noise level gradually

changes throughout a typical day, corresponding to distant noise sources such as traffic volume as well as changes in atmospheric conditions.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during night-time hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, wherein noise measurements are weighted, added, and averaged over a 24-hour period to reflect magnitude, duration, frequency, and time of occurrence. A complete definition of CNEL is provided below.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (L_{xx}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). Below are brief definitions of these measurements and other terminology used in this report.

- *Decibel (dB)* is a unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- *A-weighted decibel* (dBA) is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- *Equivalent sound level* (L_{eq}) is the constant level that, over a given time period, transmits the same amount of acoustic energy as the actual time-varying sound. Equivalent sound levels are the basis for both the day-night average sound levels (L_{dn}) and Community Noise Equivalent Level (CNEL) scales.
- *Maximum sound level* (L_{max}) is the maximum sound level measured during the measurement period.
- *Minimum sound level* (L_{min}) is the minimum sound level measured during the measurement period.
- *Percentile-exceeded sound level* (L_{xx}) is the sound level exceeded x percent of a specific time period. For example, L_{10} is the sound level exceeded 10% of the time, L_{50} is the sound level exceeded 50% of the time and so on.
- *Day-Night Average Sound Level (L_{dn})* The County of Placer describes community noise levels in terms of the L_{dn}. The L_{dn} is a 24-hour average A-weighted sound level with a ten

dB penalty added to the nighttime hours from 10:00 p.m. to 7:00 a.m. The ten dB penalty is applied to account for increased noise sensitivity during the nighttime hours.

- *Community Noise Equivalent Level (CNEL)* The City of Lincoln describes community noise levels in terms of the CNEL. CNEL is the average equivalent A-weighted sound level during a 24-hour day. 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 dB to the sound levels in the evening and 10 dB to the sound levels at night.

Exterior Noise Distance Attenuation

Noise sources are classified in two forms: (1) point sources, such as stationary equipment or a group of construction vehicles and equipment working within a spatially limited area at a given time; and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dBA for each doubling of distance from the source to the receptor at acoustically “hard” sites and at a rate of 7.5 dBA for each doubling of distance from source to receptor at acoustically “soft” sites. Sound generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling distance, for hard and soft sites, respectively. Sound levels can also be attenuated by man-made or natural barriers. For the purpose of sound attenuation discussion, a "hard" or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt or concrete ground surfaces, as well as very hard-packed soils. An acoustically "soft" or absorptive site is characteristic of unpaved loose soil or vegetated ground.

With respect to examples of this distance attenuation relationship for exterior noise, a 60-dBA noise level measured at 50 feet from a lift-station pump within a paved sub-station site would diminish to 54 dBA at 100 feet from the source, and to 48 dBA at 200 feet from the source. This scenario is addressed by the point source attenuation for a hard site (6 dBA with each doubling of the distance). For the scenario where soft side conditions exist between the point source and receptor, represented by a corridor of vegetation or open ground along the sub-station perimeter, an attenuation rate of 7.5 dBA per doubling of distance would apply; the lift-station pump noise measured as a 60-dBA noise level at 50 feet would diminish to 52.5 dBA at 100 feet from the source and to 45 dBA at 200 feet from the source, where soft ground with or without vegetation exists between the sound source and the receptor location.

Structural Noise Attenuation

Sound levels can also be attenuated by man-made or natural barriers. Solid walls, berms, or elevation differences typically reduce noise levels by 5 to 10 dBA (U.S. DOT 1980). Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The outside-to-

inside noise attenuation provided by typical structures in California ranges between 17 to 30 dBA with open and closed windows, respectively, as shown in Table 2.

Table 2
Outside-to-Inside Noise Attenuation (dBA)

Building Type	Open Windows	Closed Windows[a]
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Offices/Hotels	17	25
Theaters	17	25

Source: Transportation Research Board, National Research Council, 2000.
[a] As shown, structures with closed windows can attenuate exterior noise by a minimum of 25 to 30 dBA.

Fundamentals of Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. The response of humans to vibration is very complex. However, it is generally accepted that human response is best approximated by the vibration velocity level associated with the vibration occurrence.

Heavy equipment operation, including stationary equipment that produces substantial oscillation or construction equipment that causes percussive action against the ground surface, may be perceived by building occupants as perceptible vibration. It is also common for ground-borne vibration to cause windows, pictures on walls, or items on shelves to rattle. Although the perceived vibration from such equipment operation can be intrusive to building occupants, the vibration is seldom of sufficient magnitude to cause even minor cosmetic damage to buildings.

When evaluating human response, ground-borne vibration is usually expressed in terms of root mean square (RMS) vibration velocity. RMS is defined as the average of the squared amplitude of the vibration signal. As for sound, it is common to express vibration amplitudes in terms of decibels defined as:

$$L_v = 20 \log \left(\frac{v_{rms}}{v_{ref}} \right)$$

where v_{rms} is the RMS vibration velocity amplitude in inches/second and v_{ref} is the decibel reference of $1x10^{-6}$ inches/second.

To avoid confusion with sound decibels, the abbreviation VdB is used for vibration decibels. The vibration threshold of perception for most people is around 65 VdB. Vibration levels in the 70 to 75 VdB range are often noticeable but generally deemed acceptable, and levels in excess of 80 VdB are often considered unacceptable (FTA 2006).

1.4 Noise Regulation and Management

1.4.1 Federal

Federal Aviation Administration (FAA) Standards

Enforced by the Federal Aviation Administration, Code of Federal Regulation (CFR) 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 which are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA Ldn (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 Ldn (or CNEL).

Federal Highway Administration (FHWA) Standards

CFR Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Federal Department of Transportation (DOT) 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 DOT-FHWA Noise Standards. Title 23 establishes a 67 dBA $L_{eq(h)}$ standard applicable to federal highway projects for evaluating impacts to land uses including residences, recreational uses, hotels, hospitals, and libraries [23 CFR Chapter 1, Part 772, Section 772.19].

Federal Transit Administration (FTA) and Federal Railroad Administration (FRA) Standards

Although the 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 (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA and FRA 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 is 0.2 inches/second PPV.

1.4.2 State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, declares that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also identifies a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards (California Code of Regulations [CCR] Title 24)

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for hotels, motels, dormitories, and multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or L_{dn}) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of at least 45 dBA [California's Title 24 Noise Standards, Chap. 2-35].

1.4.3 City of Lincoln

Although some of the project site is currently located in unincorporated Placer County, the project applicant seeks approval of an annexation request by the City. For this reason, the noise standards of the City of Lincoln are primarily used for this analysis.

Lincoln General Plan

The Noise section of Chapter 8 (Health and Safety) of the City of Lincoln's General Plan (2008) establishes a maximum "normally acceptable[1]" exterior noise exposure level of 60 dBA CNEL for noise sensitive uses including residences, schools, hospitals, and churches (see Table 3). The same land uses are "conditionally acceptable[2]" at noise levels of up to 70 dBA CNEL. Policy HS 8.1 states: "The City will allow the development of new noise sensitive land uses (which include but are not limited to residential, health care facilities and schools) only in areas exposed to existing or projected levels of noise which satisfy the levels specified in Table 8.1." Policy HS 8.2 states: "The City will strive to achieve exterior noise levels for existing and future dwellings in residential areas that do not exceed exterior noise levels of 60 dBA CNEL and interior noise levels of 45 dBA CNEL." In addition, Policy HS 8.15 states "The City shall establish restrictions regarding the hours and days of construction activities throughout the City."

Table 3
Maximum Allowable Noise Exposure by Land Use

	Noise Level (CNEL)						
	0-55	*56-60*	*61-65*	*66-70*	*71-75*	*75-80*	*>81*
Residential – Low Density Single Family, Duplex, Mobile Homes							
Residential – Multiple Family, Group Homes							
Motels/Hotels							
Schools, Libraries, Churches, Hospitals, Extended Care Facilities							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							

[1] From Table 8-1 of the General Plan (Maximum Allowable Noise Exposure by Land Use): "Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.

[2] Op. cit.: "New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design."

Table 3
Maximum Allowable Noise Exposure by Land Use

	Noise Level (CNEL)						
	0-55	*56-60*	*61-65*	*66-70*	*71-75*	*75-80*	*>81*
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	Normally acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.
	Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.
	Unacceptable. New construction or development should not be undertaken.

Lincoln Municipal Code

Chapter 9.04 of the City of Lincoln Municipal Code addresses noise control in the City, specifically noise from sound systems, loudspeakers or radios: "It is unlawful for any person, firm or corporation to operate or employ any sound system, sound-amplifying device, radio loudspeaker, record player, radio, jukebox or other electrical or mechanical device or apparatus that emits sound waves, at any time during any day in any manner so that any sound emitted therefrom is audible to a person of average hearing faculties or capacity at a distance of more than 25 feet from the source of the sound emitted or in any manner so that the sound emitted therefrom or transferred thereover travels, is carried or projected into any public street, sidewalk, alley or place or onto, across or over any private property other than that owned by the person controlling the loudspeaker or other sound-emitting device."

The Municipal Code does not address noise from other activities (such as construction noise or on-site operational noise from mechanical equipment such as heating, ventilation and air conditioning equipment) that would apply to the proposed project.

1.4.4 Placer County

Noise-sensitive land uses are located to the west, in areas which would remain in unincorporated Placer County; therefore, relevant portions of the Placer County noise policies and standards are also included here.

Placer County General Plan

Section 9 (Noise) of the Placer County General Plan (Placer County 2013) contains noise policies and standards (e.g., exterior and interior noise-level performance standards for new projects affected by or including non-transportation noise sources [included here as Table 4], and maximum allowable noise exposure levels for transportation noise sources [Table 5]). Additionally, the Placer County Municipal Code (Article 9.36) contains noise limits for sensitive receptors for daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) hours (Table 6). (Placer County 2014). The applicable policies and standards contained in the General Plan and Ordinance are summarized below.

- Policy 9.A.2: The County shall require that noise created by new non-transportation noise sources be mitigated so as not to exceed the noise level standards of Table 4 as measured immediately within the property line of lands designated for noise-sensitive uses.
- Policy 9.A.5: Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 4 at existing or planned noise-sensitive uses, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design.
- Policy 9.A.9: Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 5 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.
- According to Article 9.36.030, "Exemptions," construction noise is exempt from the noise ordinance standards shown in Table 6 provided that it is performed between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, and provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order.

Table 4
Allowable L_{dn} Noise Levels within Specified Zone Districts
Applicable to New Projects Affected by or Including
Non-Transportation Noise Sources

Zone District of Receptor	Property Line of Receiving Use	Interior Spaces
Residential Adjacent to Industrial	60	45
Other Residential	50	45
Office/Professional	70	45
Transient Lodging	65	45
Neighborhood Commercial	70	45
General Commercial	70	45
Heavy Commercial	75	45
Limited Industrial	75	45
Highway Service	75	45
Shopping Center	70	45
Industrial	–	45
Industrial Park	75	45
Industrial Reserve	–	–
Airport	–	45
Unclassified	–	–
Farm	(see footnote 6)	–
Agriculture Exclusive	(see footnote 6)	–
Forestry	–	–
Timberland Preserve	–	–
Recreation & Forestry	70	–
Open Space	–	–
Mineral Reserve	–	–

Table 5
Maximum Allowable Noise Exposure
Transportation Noise Sources

Noise Sensitive Land Uses [FY]	Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn}/CNEL, dB	*L_{dn}/CNEL, dB*	*L_{eq}, dB*[2]
Residential	60[3]	45	–
Transient Lodging[4]	60[3]	45	–
Hospitals, Nursing Homes	60[3]	45	–
Theaters, Auditoriums, Music Halls	–	–	35
Churches, Meeting Halls	60[3]	–	40
Office Buildings	–	–	45

Table 5
Maximum Allowable Noise Exposure
Transportation Noise Sources

Noise Sensitive Land Uses [FY]	Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq}, dB[2]
Schools, Libraries, Museums	–	–	45
Playgrounds, Neighborhood Parks	70	–	–

1 Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Table 6
Sound Level Standards (On-Site)

Sound Level Descriptor	Daytime (7am to 10pm)	Nighttime (10pm to 7am)
Hourly L_{eq}, dB	55	45
Maximum level, (Lmax) dB	70	65

INTENTIONALLY LEFT BLANK

2 EXISTING NOISE CONDITIONS

2.1 Transportation Noise Sources

Aviation

The nearest public airport to the Project Site is the Lincoln Regional Airport located approximately 0.4 miles to the north-northwest. Based upon the Placer County Airport Land Use Compatibility Plan (Placer County 2012), the project site is located within the Airport Influence Area, within Zone 6 (Traffic Pattern Zone). Based upon the City of Lincoln General Plan Background Report (City of Lincoln 2008), the project site is located outside of the Lincoln Regional Airport's projected Year 2033 60 dBA CNEL noise contour. The western side of the project site is located between the airport's 55 dBA CNEL and 60 dBA CNEL noise contours.

Due to the proximity of the airport, the project site is located within zones C-1 and C-2 of the airport's Land Use Compatibility Plan (Mead & Hunt 2014). The C-1 zone has a moderate degree of noise and risk and is considered conditionally compatible for residential uses and compatible for local parks. Cumulative noise levels can exceed CNEL 55 dB in portions of the zone and noise from individual aircraft operations is disruptive to noise-sensitive land uses. Portions of zone C-1 are located where restrictions may be required on buildings greater than 100 feet high (Federal Aviation Regulations Part 77 transitional surface airspace). The C-2 zone is outside of the CNEL 55 dB contour and safety is a concern only for uses that include a high concentration of people (i.e., schools and hospitals). The C-2 zone is compatible with residential uses (Mead & Hunt 2014).

Roadways

Vehicular traffic along State Route 65 (SR 65) is a principal contributor to the existing noise environment within the Project Site, with several existing local roads (Nicolaus Road and Nelson Lane) being secondary contributors. Regional access to the Project Site is provided by SR 65. Primary access to the main portion of the Project Site is provided by Nicolaus Lane, with secondary access from First Street and Third Street.

2.2 Other Noise Sources

The project site is undeveloped land that is relatively flat and consists of disturbed non-native annual grassland. This area has been used primarily for dry crop farming (i.e., hay) and grazing land with no structures or buildings present. Other surrounding land uses include rural residential and agricultural/grazing land to the south and west in Placer County, grazing land and two industrial/manufacturing uses to the north within the City of Lincoln, and grazing land, the

former wastewater treatment plant (WWTP) site, an industrial/manufacturing facility, and the southwesterly residential development in the City of Lincoln to the east.

2.3 Vicinity Noise Sensitive Land Uses

Noise-sensitive land uses (NSLU) are land uses that may be subject to stress and/or interference from excessive noise. The Noise Element of the Placer County General Plan (2008) identifies residences, schools, health care facilities, and other similar land uses to be NSLU. Industrial and commercial land uses are generally not considered sensitive to noise, with the exception of commercial lodging facilities. NSLU in the immediate vicinity of the Project Site include:

- Residences located immediately to the east, along 1st Street, 3rd Street and St. Lucia Way;
- Residences located to the west, along the west side of Nelson Lane;
- Residences to the east and west, along Nicolaus Road.

2.4 Proximate Vibration Sensitive Land Uses

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (FTA 2006) are considered "vibration-sensitive." The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. Excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. There are no known vibration sensitive land uses within at least several miles of the Project Site.

2.5 Existing Noise Levels

Existing (pre-project) noise conditions present on the project site and in the vicinity of noise sensitive land uses in the region of the project were inventoried by Dudek in December 2014. Three short-term (varying from 10 to 15 minutes duration) measurements were performed along existing roadways to characterize noise levels associated with traffic, and for calibration of the traffic noise model. The noise measurement locations are shown in Figure 4.

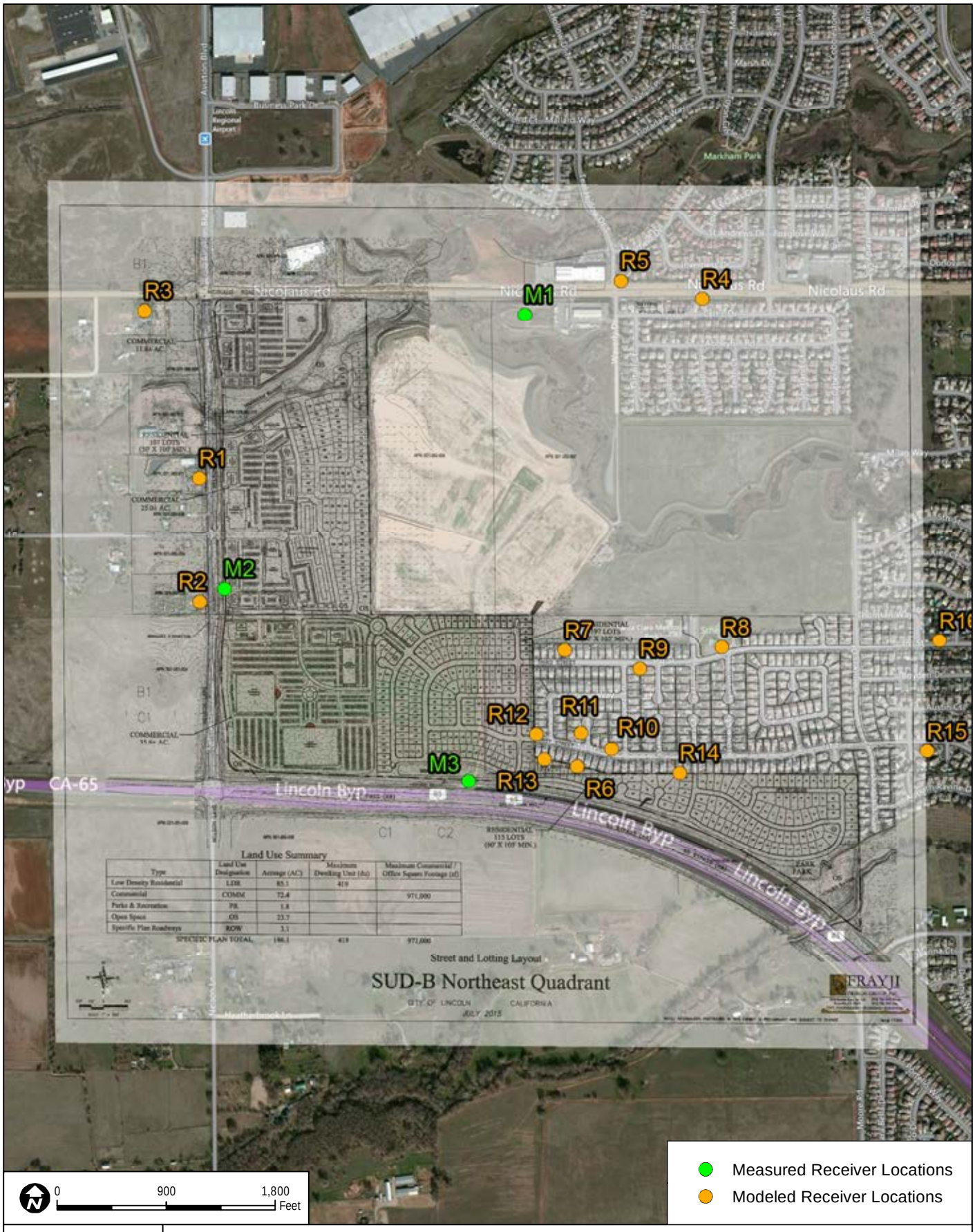
Sound level measurements were performed using a Larson Davis Model 800 integrating sound level meter, which is classified by the American National Standards Institute (ANSI) as a Type I (precision-grade) device. The sound level meter was calibrated before and after each measurement using a Larson Davis Model CAL200 calibrator. The results of the traffic noise measurements are presented in Table 7. The highest measured average noise levels were associated with traffic on SR 65, (71 dBA Leq at a distance of approximately 20 feet from the

edge of pavement. The measured noise level along Nelson Lane was 67 dBA L_{eq} at a distance of approximately 20 feet from the edge of pavement, and the noise level along Nicolaus Road was 66 dBA L_{eq} approximately 15 feet from the edge of pavement.

Table 7
Traffic Noise Level Measurements (Existing) (dBA)

Measurement #	Measurement Date	Measurement Time Period	L_{eq}	L_{max}	L_{min}	Remarks
1	10/23/2014	8:35 – 8:50	65.6	78.9	43.1	Along Nicolaus Road east of Nelson Lane
2	10/23/2014	7:35 – 7:45	67.2	80.8	52.6	Along Nelson Lane between Nicolaus Road and SR 65.
3	10/23/2014	8:05 – 8:15	70.7	82.6	51.1	Along SR 65 east of Nelson Lane

INTENTIONALLY LEFT BLANK



DUDEK

SOURCE:Bing Imagery, 2015; Frayji Design Group, Inc., 7/2/2015.

FIGURE 4

Noise Measurement and Modeling Locations

City of Lincoln SPECIAL DISTRICT - B (SUD-B) NORTHEAST QUADRANT SPECIFIC PLAN

INTENTIONALLY LEFT BLANK

3 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?

3.1 City of Lincoln Noise Significance Criteria

Chapter 8 (Noise) of the City's Health & Safety Element of the City of Lincoln General Plan (2008) defines noise sensitive areas to include:

- Residential areas
- Schools
- Health Care Facilities

The above types of occupancies or development are also commonly referred to as Noise Sensitive Land Uses (NSLUs).

Policy HS-8.2 of the Health & Safety Element states that "The City will strive to achieve exterior noise levels for existing and future dwellings in residential areas that do not exceed exterior noise levels of 60 dBA CNEL and interior noise levels of 45 dBA CNEL." Consequently, significant impacts would occur if new NSLUs were constructed in areas with existing ambient, or future predicted, noise levels exceeding 60 dBA CNEL.

For transportation-related noise, impacts are considered significant if Project-generated traffic exposes existing or potential NSLU to sound levels in excess of 60 dBA CNEL. In areas where the ambient noise exceeds 60 dBA CNEL, a 3 dBA CNEL or greater increase due to the project is considered significant.

Also based on Policy HS-8.2 of the Health & Safety Element, impacts relating to operational noise are considered significant when Project-related commercial noise would result in exposure of NSLU to noise levels exceeding 60 dBA CNEL.

Impacts related to excessive ground-borne vibration would be significant if the project results in the exposure of persons to or generation of excessive ground-borne vibration equal to or in excess of 0.2 in/sec PPV. Construction activities within 200 feet and pile driving within 600 feet would be potentially disruptive to vibration-sensitive operations (Caltrans 2009).

4 IMPACTS AND MITIGATION

4.1 Transportation Noise Exposure Impact Analysis

Aviation Noise

The Project Site is located approximately 0.4 miles south-southeast of the Lincoln Regional Airport. Based upon the City of Lincoln General Plan Background Report (City of Lincoln 2008), the project site is located outside of the Lincoln Regional Airport's projected Year 2033 60 dBA CNEL noise contour. The western side of the project site is located between the airport's 55 dBA CNEL and 60 dBA CNEL noise contours. The project site is located within zones C-1 and C-2 of the airport's Land Use Compatibility Plan (Mead & Hunt 2014). The C-1 zone has a moderate degree of noise and risk and is considered conditionally compatible for residential uses and compatible for local parks. Cumulative noise levels can exceed CNEL 55 dB in portions of the zone and noise from individual aircraft operations is disruptive to noise-sensitive land uses. The C-2 zone is compatible with residential uses (Mead & Hunt 2014). The proposed project site plan is configured such that the proposed residential uses would be located within zone C-1, and the commercial uses would be located within zone C-2. Therefore, NSLU would not be exposed to excessive noise levels from aviation noise as a result of the proposed Project. The implementation of the Project would have a less than significant impact related to exposure to aircraft noise.

Roadway Noise

Traffic Noise Exposure

The FHWA transportation noise model (TNM Version 2.5) was calibrated first, before using the model to evaluate existing and future noise levels from traffic. Traffic counts were made during the noise measurements. To calibrate the noise model, the same traffic volume and vehicle composition ratios counted during the noise measurements were used along with the observed vehicle speed (which may differ from the posted speed limit for the roadway). Using vehicle counts and observed speeds, the modeled noise values were within 2 dB of the measured noise levels, which confirms the accuracy of the inputs used in the noise model. The proposed project's traffic engineers (DKS) provided trip generation data and resulting roadway traffic volumes for each of the major roadways within the project area for the existing, proposed project and for cumulative projects scenarios. The representative existing and proposed future modeled receivers are shown in Figure 4.

As part of the CNEL calculation process, it is assumed the average hourly traffic volume in the analysis is approximately equal to 10% of the average daily trips (ADT). Ten percent of the ADT

is generally accepted to be roughly equivalent to the worst-case hourly traffic volume; using this value in the noise model results in an average hourly equivalent noise level that is approximately equal to the CNEL for the corresponding ADT and actual hourly traffic distribution. Thus, this relationship results in a CNEL value that is representative of traffic noise resulting from typical daytime, evening, and nighttime traffic distribution.

To assess noise exposure for noise-sensitive land uses situated along roadways, the analysis uses the greatest anticipated future roadway traffic volume. This is the scenario associated with the project plus cumulative traffic forecast. Utilizing the planned roadway sections and identified future traffic volumes (from project development and cumulative traffic), traffic noise along each of the main project-related roadways was modeled with TNM 2.5. Receptor points in the noise model were placed at representative existing and proposed project-related NSLUs. Existing and proposed noise barriers were accounted for in the TNM model: the existing SR 65 noise wall (approximately 12 feet in height) which exists along a portion of the project's frontage, and the proposed project sound wall (at this time planned to be 8 feet in height) near the proposed project's southern boundary in the residential area, were modeled. Additionally the proposed wall (at this time planned to be 6 feet in height) between the project's commercial land uses and the residential uses in the southwestern portion of the project was modeled. The results of the modelling are presented in Table 8.

As shown in Table 8, on-site noise levels at NSLU would range from approximately 52 dBA CNEL (at R26) to 65 dBA CNEL (at R22). The noise levels from traffic would be 60 dBA CNEL or less at 17 of the 19 modeled on-site receivers. The noise levels at two of the on-site NSLU would exceed 60 dBA CNEL at receiver R22 (Lot 177, the southwestern-most residential lot) and at receiver R31 (proposed park site along the southeastern edge of the project site). Both of these receivers would exceed the 60 dBA CNEL significance threshold without additional mitigation measures. Therefore, On-Site traffic noise impacts would be significant. Section 4.2, Transportation Noise Mitigation Measures, identifies effective noise mitigation for the impacted NSLU.

Table 8
Future On-Site Traffic Noise
Cumulative plus Project Traffic Levels Project

Modeled Receiver	Land Use / Adjacent Roadway	Traffic Noise Level (dBA CNEL)	In Compliance with 60 dBA CNEL or Lower Significance Threshold ?
R17	Proposed residential/ Internal residential rd.	60	Yes
R18	Proposed residential/ Internal residential rd.	60	Yes
R19	Proposed residential/ 1st St. extension	57	Yes
R20	Proposed residential/ 3rd St. extension	54	Yes

Table 8
Future On-Site Traffic Noise
Cumulative plus Project Traffic Levels Project

Modeled Receiver	Land Use / Adjacent Roadway	Traffic Noise Level (dBA CNEL)	In Compliance with 60 dBA CNEL or Lower Significance Threshold ?
R21	Proposed residential/ Proposed residential/ 1st St. extension, other internal resi rd.	59	Yes
R22	Proposed residential/SR 65	65	No
R23	Proposed residential/ Internal residential rd.	57	Yes
R24	Proposed residential/ Internal residential-commercial rd.	60	Yes
R25	Proposed residential/ Internal residential rd.	59	Yes
R26	Proposed residential/ Internal residential rd.. SR65	52	Yes
R27	Proposed residential/ Internal residential rd.. SR65	59	Yes
R28	Proposed residential/ Internal residential rd.. SR65	58	Yes
R29	Proposed residential/ Internal residential rd.. SR65	54	Yes
R30	Proposed residential/ Internal residential rd.. SR65	59	Yes
R31	Proposed park/SR65	63	No
R32	Proposed residential/ Internal residential rd.. SR65	60	Yes
R33	Proposed residential/ Internal residential rd.	56	Yes
R34	Proposed residential/ Internal residential rd.	56	Yes
R35	Proposed residential/ Internal residential rd.	55	Yes

Noise levels are based upon traffic volume data provided by DKS (November 2015). See Appendix A for TNM 2.5 model results.

Off-Site Noise Impacts Associated With Project Traffic

Traffic-related noise impacts, especially in the context of a Specific Plan analysis, must primarily evaluate the future noise environment resulting from long-range community build-out. This is performed by using the traffic volumes anticipated from full development under the specific plan, compared with background or cumulative traffic from all other development in the region. With distribution of project-generated trips onto the area roadway network off site, the noise attributable to project-contributed trips versus regional traffic becomes largely indistinguishable within a relatively short distance from the project site.

Using the Traffic Impact Analysis prepared by the project's traffic engineers (DKS), the roadway segments with the most project-related traffic trips and with adjacent existing NSLU were

identified and modeled in the TNM noise model. Table 9 summarizes the traffic-related noise levels at the representative off-site NSLUs for existing, existing plus project, cumulative, and cumulative plus project traffic scenarios. As shown in Table 9, project-related traffic noise increases would be less than three decibels at all sixteen of the modeled receivers except at R8 for the existing plus project scenario, where the predicted noise increase would be three decibels. The existing plus project traffic noise level is predicted to be 53 dBA CNEL, whereas the existing traffic noise level is 50 dBA CNEL. However, because the noise level (either with or without the project) would be below 60 dBA CNEL, this is not considered a significant impact. The project would not cause a significant noise impact at these NSLU, and would not contribute substantially toward a cumulatively significant impact.

Table 9
Existing and Cumulative Off-Site Traffic Noise
(dBA CNEL)

Modeled Receiver	Land Use / Adjacent Roadway	Existing	Existing plus Project	Increase / Decrease from Project	Cumulative	Cumulative plus Project	Increase / Decrease from Project
R1	Residential/ Nelson Lane	59	60	1	65	64	-1
R2	Residential/ Nelson Lane	58	58	0	65	66	1
R3	Residential/ Nicolaus Road	54	55	1	62	62	0
R4	Residential/ Nicolaus Road	55	56	1	61	60	-1
R5	Residential/ Nicolaus Road	54	55	1	59	58	-1
R6	Residential/ SR 65	55	54	-1	60	56	-4
R7	Residential / 3rd Street	46	48	2	50	49	-1
R8	Residential/ 3rd Street	50	53	3	54	55	1
R9	Residential/ 3rd Street	51	53	2	54	55	1
R10	Residential/1st Street	56	55	-1	59	57	-2
R11	Residential/1st Street	50	49	-1	54	51	-3
R12	Residential/1st Street & SR 65	55	56	1	58	57	-1
R13	Residential/ SR 65	55	54	-1	60	56	-4
R14	Residential/ SR 65	53	53	0	58	55	-3
R15	Residential/1st Street	58	58	0	59	59	0
R16	Residential/ 3rd Street	54	54	0	56	56	0

4.2 Transportation Noise Exposure Mitigation Measures

The following mitigation measures would reduce potential noise impacts due to Project-related traffic.

Noise-1 **Noise Barriers**. Because the City of Lincoln's 60 dBA CNEL noise standard for NSLU would be exceeded at two receiver locations additional sound barriers (i.e., noise wall, berm or a combination of these) and/or modifications to already-planned sound barriers are proposed, as follows:

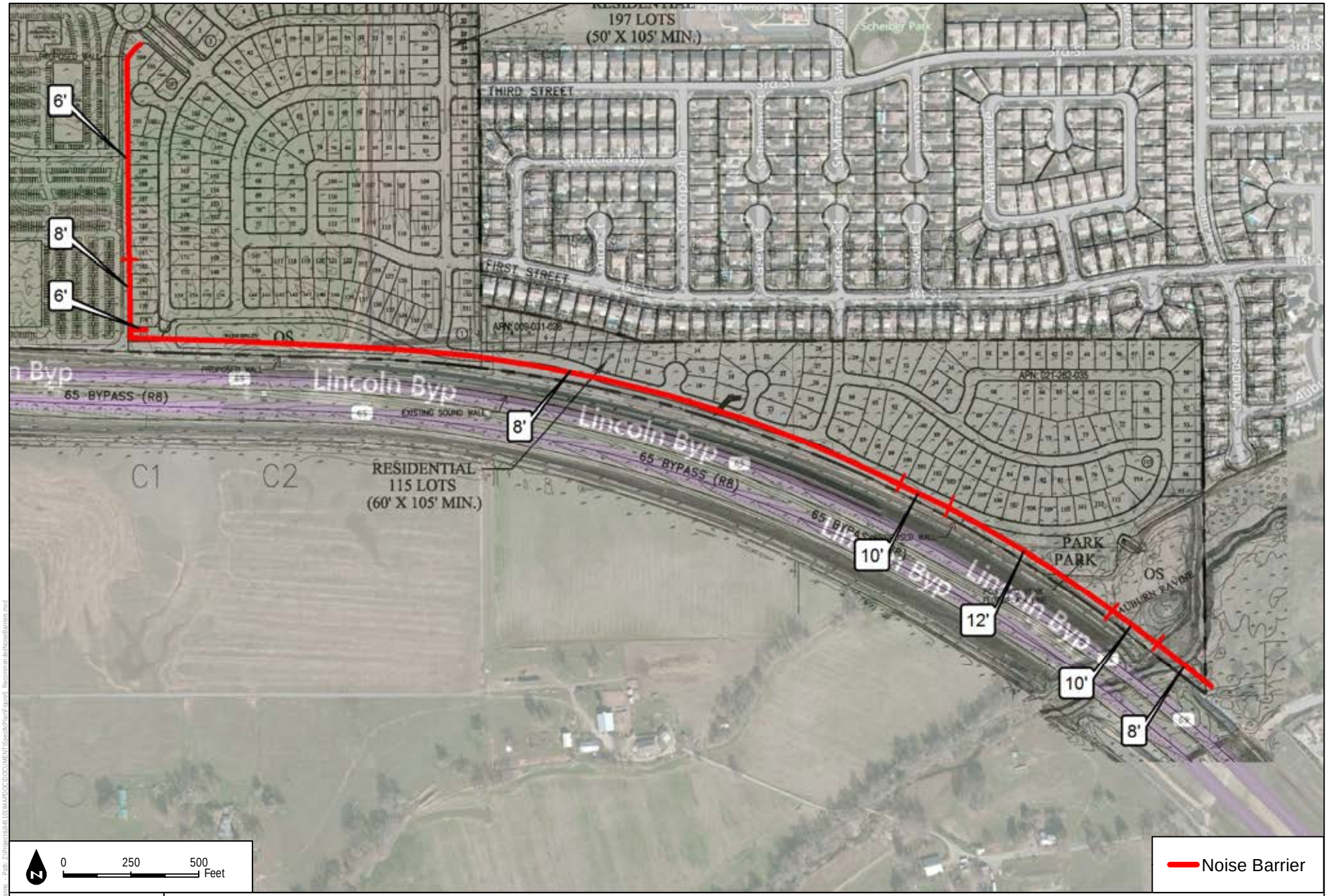
- At the southwestern-most proposed residential lot (Receiver 24, Lot 177), a minimum 6-foot high, solid noise barrier shall be constructed along the southern lot line, so as to shield the private exterior rear and side yards. Additionally, the planned wall to the west of Receiver 24 (between the project's commercial land uses and the residential uses) should be constructed to a minimum 8 foot height from Lot 177 to Lot 182, at which point the height may be 6 feet.
- At the proposed park site along the southeastern edge of the project site (Receiver 31), the planned noise barrier should be 12 feet in height along the length of the park frontage with SR 65, at which point the wall height may then transition to 10 feet and then 8 feet.

The recommended noise barriers are illustrated in Figure 5.

Residual Significance After Mitigation

Implementation of mitigation measure Noise-1 would require the applicant to construct additional noise barriers or construct higher noise barriers at two locations within the project site along the SR 65 frontage. Such noise barriers would reduce potentially significant noise exposure levels to below a level of significance.

INTENTIONALLY LEFT BLANK



DUDEK

SOURCE: Bing Imagery, 2015; Frayji Design Group, Inc., 7/2/2015.

FIGURE 5

Recommended Noise Barriers

City of Lincoln SPECIAL DISTRICT B (SUD-B) NORTHEAST QUADRANT SPECIFIC PLAN

INTENTIONALLY LEFT BLANK

4.3 Cumulative Transportation Noise Impacts

Aviation

No additional aviation uses are planned to be introduced in the immediate vicinity of the Project Site, according to the Placer County Airport Land Use Compatibility Plan (Mead & Hunt 2014). In addition, the Project does not propose any new air traffic operations. No NSLU would be exposed to excessive noise levels from aviation noise as a result of the proposed Project. Therefore, a significant cumulative impact would not occur.

Roadway Noise

The proposed Project, along with future regional growth, and other projects to be developed within the Project vicinity would result in increases in traffic that would cumulatively increase traffic noise at off-site NSLU. While the noise levels from cumulative traffic would increase the noise levels at all but one of the modeled representative receivers by more than 3 dBA CNEL compared to existing noise levels, the project would not contribute noise of 3 dBA at any of receivers; the project would therefore not substantially contribute to a cumulatively significant impact at these NSLU. Therefore, a significant cumulative impact would not occur.

4.4 Noise Generation – Project Land Uses

The implementation of the Project would also result in changes to existing noise levels on the Project Site by developing new stationary sources of noise and by increasing human activity throughout the Project Site. These sources may affect noise-sensitive land uses both on and off the Project Site. Proposed noise-sensitive land uses associated with the Project include residential development, transient residential (a motel) and a recreational area (a park). Potential noise generating land uses on site include commercial; and a park.

4.4.1 Commercial Development

Potential operational noise sources associated with commercial development within the project site include heating-ventilation-air-conditioning (HVAC) equipment, commercial truck deliveries, exterior sound amplification (public address systems), and surface parking lots.

Mechanical HVAC equipment located on the ground or on rooftops of new buildings have the potential to generate noise levels which average 71 dBA CNEL at a distance of 50 feet when equipment is operating continuously for 24 hours. Depending on where it is located, HVAC equipment could have the potential to disrupt at nearby residents and other noise-sensitive land uses. For a single point source such as a piece of mechanical equipment, the sound level normally

decreases by about 6 dBA for each doubling of distance from the source under "hard-surface" conditions typical of a developed commercial site. Therefore, it is assumed that HVAC equipment would generate noise levels that exceed 60 dBA CNEL within approximately 150 feet of the equipment. Consequently, any on-site residences or other noise-sensitive land use proposed within 150 feet of an HVAC system associated with a new commercial use, or any development that proposes HVAC equipment within 150 feet of an existing off-site residence, could result in a potentially significant impact.

The nearest off-site residences (with regard to proposed commercial uses) are located to the west of the Project Site. The nearest residences are located approximately 200 or more feet from proposed commercial uses. Therefore, the proposed Project would not result in a significant impact to off-site receptors related to on-site HVAC equipment.

In addition to HVAC systems, commercial land uses also have the potential to generate noise from truck deliveries and other mechanical equipment. Noise levels associated with commercial uses generally range from 65 dBA and 69 dBA at a distance of 50 feet from the noise source (PBS&J 2009). Assuming commercial land uses would be operating from 9:00 a.m. to 9:00 p.m. with a noise level of 69 dBA at 50 feet from the noise source, commercial development would have the potential to result in noise levels above 60 dBA CNEL within approximately 125 feet of the source. For the hours of 9:00 p.m. to 9:00 a.m. future average noise levels associated with truck deliveries and mechanical equipment at commercial land uses was assumed to be 50 dBA L_{eq} (PBS&J 2009). Commercial land uses would be located in Village Commercial land use districts throughout each portion of the Specific Plan, with immediately adjacent Central Village Residential land uses immediately adjacent in nearly every instance. Therefore, any proposed noise-sensitive land use located within 125 feet of commercial development could be exposed to noise levels that exceed the acceptable noise level threshold of 60 dBA CNEL resulting in a potentially significant impact.

Noise sources from parking lots include car alarms, door slams, radios, tire squeals. These sources typically range from about 30 to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 1996), and are generally short-term and intermittent. Parking lots have the potential to generate noise levels that exceed 60 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-sensitive receptors at the same time. Therefore, noise generated from parking lots would be less than significant.

4.4.2 Residential Development

Noise generated from residential uses is generally described as "nuisance noise." Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to other residents. Nuisance noise impacts are more likely to occur in more densely developed areas such as multi-family or mixed-use projects where residences would be closer together and neighbors would be more likely to hear a neighbor's music or lawnmower. These types of residential uses are not proposed for this project. The proposed project would construct relatively low density residential development, and would be less likely to be affected by neighboring nuisance noise. Chapter 9.04 of the City of Lincoln Municipal Code addresses noise control in the City, specifically noise from sound systems, loudspeakers or radios: "It is unlawful for any person, firm or corporation to operate or employ any sound system …or other electrical or mechanical device or apparatus that emits sound waves, at any time during any day so that any sound emitted therefrom is audible to a person of average hearing faculties or capacity at a distance of more than 25 feet from the source…so that the sound emitted … is carried or projected into any public street, sidewalk, alley or place or onto, across or over any private property.". Thus, loud music that would be audible to a neighbor in a residential zone is prohibited. Compliance with this regulation would limit exposure to excessive nuisance noise. Therefore, nuisance noise in residential neighborhoods would not result in significant impact.

4.4.3 Recreational Facilities

Contemplated recreational facilities within the Project Site would include a park. Playgrounds and parks would generate incidental recreational noise such as cheering or children at play. The proposed park has not yet been designed, but potential uses and facilities could include playground equipment, a sports field, a swimming pool, and an outdoor amphitheater. During the day, noise from most of these uses would not be disruptive, because ambient noise levels are higher during the day, and daytime activities are less prone to disruption by noise. At night, however, crowd noise and amplified noise could be loud enough to disrupt sleep and other activities. This is considered a potentially significant impact.

4.5 Mitigation - Project Land Use Noise Generation

The following mitigation measures would minimize noise generated from operational sources including HVAC equipment and truck deliveries.

Noise-2 **Commercial Uses**. During design review for the proposed project, the applicant shall demonstrate that outdoor areas associated with residential units will be protected from noise by one or a combination of the following and/or equally effective measures:

i) Mechanical equipment associated with the commercial uses shall be shielded from view of adjacent residential uses by building parapets or located within mechanical equipment rooms,

AND/OR

ii) Commercial loading docks located within 300 feet of existing or proposed residences shall be positioned in areas shielded from view of those residences by intervening commercial buildings,

AND/OR

iii) Solid noise barrier shall be constructed at the boundary of the commercial uses of sufficient height to intercept line of sight between heavy trucks and the affected area of the residential use,

AND/OR

iv) Truck deliveries shall be limited to daytime hours (7 am – 10 pm)

AND/OR

v) Signs shall be posted prohibiting Idling of delivery trucks to 10 minutes or less.

Noise-3 **Recreational Uses.** , one or a combination of the following shall be used to minimize the effects of outdoor noise on nearby residences during evenings and nighttime:

i) Any outdoor activity areas, such as sports fields or an amphitheater that seat large numbers of spectators and/or include mechanical amplification shall be sited and oriented away from residential areas, and shall be designed so that residential areas are shielded from noise from these sources;

AND/OR

ii) Loudspeakers and other forms of amplification shall not be used in outdoor activity areas after 10 pm;

AND/OR

iii) The City shall place a nuisance easement over residential lots in the vicinity of the proposed park.

Residual Significance After Mitigation

With implementation of the above measures, potential impacts associated with operational noise would be reduced to a less than significant level.

4.6 Cumulative Land Use Noise Impacts

The implementation of cumulative development projects would have the potential to increase ambient noise from new operational noise sources (such as HVAC equipment, parking lots, and truck deliveries) and by increasing human activity throughout the Project Site and surrounding area. As discussed above, mechanical HVAC equipment located on the ground or on rooftops of new buildings have the potential to generate noise levels that exceed 60 dBA CNEL within approximately 150 feet of the equipment. Additionally, commercial development would have the potential to result in noise levels above 60 dBA CNEL within approximately 125 feet of the source. Noise sources from parking lots typically range from about 30 to 66 dBA at a distance of 100 feet. Therefore, new projects associated with the cumulative development would have the potential to result in ambient noise levels that exceed 60 dBA CNEL.

Nonetheless, impacts from operational noise would be site-specific and future development of land use improvements within the project would be required to conform to policies in the City of Lincoln General Plan to minimize exposure to excessive noise levels. In addition, Project-related operational noise impacts would be mitigated to below a level of significance with the incorporation of the above measures. Therefore, no cumulative operation noise impact would occur and as a result of implementation of the Project.

4.7 Construction Noise

Construction of the proposed development would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. 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 intervening structures. 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. These rules apply to the propagation of sound waves with no obstacles between source and receivers, such as topography (ridges or berms) or structures. The range of maximum noise levels for various types of construction equipment is depicted in Table 10. Typical operating cycles may involve two minutes of full power, followed by three or four minutes at lower levels.

Table 10
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dB) - 50 feet from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile-driver (Impact)	101
Pile-driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scraper	89
Truck	88

Source: Federal Transit Administration 2006

4.7.1 On-Site Construction Activity

The construction timeframe for the entire buildout of the Project is expected to occur over a 2 to 10 year period, with multiple phases. All proposed development would involve grading and site preparation, as well as utilities installation, building construction, external/internal building work, paving and landscaping. Standard equipment, such as dozers, loaders, scrapers, and miscellaneous trucks would be used for construction. Special construction techniques such as blasting or pile driving are not anticipated.

Construction within each area of the Plan would not take place all at once; some areas would be completed before other structures within the phase are under construction. Therefore, build-out

of the Project would have the potential to expose on-site residences, or lodging facilities developed previously to construction noise.

Although the on-site residences could be exposed to elevated construction noise levels, the exposure would be short-term, and would cease upon Project construction. It is anticipated that construction activities associated with build-out of the Project would take place between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday. However, construction activities could take place outside these time periods for portions of the project where technical requirements dictate (such as large continuous concrete pours for commercial buildings). As a result a significant construction noise impact could potentially occur.

The nearest off-site noise-sensitive land uses to the Project Site are the residences located immediately adjacent to the project on the western site boundary. Therefore, noise impacts from construction are considered significant.

4.8 Mitigation - Construction Noise

Implementation of the following mitigation measure would reduce temporary noise impacts from construction activities.

Noise-4 **Construction Activity Limits**.

a) Construction activity occurring within 500 feet of occupied residential or other NSLU shall be restricted to the hours between 7am to 7pm, Monday through Friday (unless extended by special permit).

b) All internal combustion engines associated with stationary and mobile construction equipment shall have mufflers/silencers in good working condition equal to or better than those supplied with the equipment by the manufacturer.

c) On-site construction staging and equipment and material laydown areas shall be located as far as practical from existing residential areas.

Residual Significance After Mitigation

Implementation of the above measures would reduce potential impacts associated with construction noise to a less than significant level.

4.9 Cumulative Construction Noise Impacts

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. As discussed above, sound levels from typical construction equipment range from 60 dBA to 90 dBA Leq at 50 feet from the source (FHWA 2006). Construction noise decreases approximately 6 dBA (urban area, hard-surface conditions) to 7.5 dBA (undeveloped area with loose dirt or vegetated ground cover) with every doubling of distance. Therefore, construction noise would be reduced to less than 60 dBA approximately 0.25 mile from the construction site, assuming worst case construction noise of 90 dBA Leq, hard site conditions, and no intervening topography or structures. Additionally, construction noise is temporary and would cease at completion of the cumulative project. Only construction projects occurring simultaneously within approximately 0.25 mile of each other would result in a significant cumulative temporary noise impact. Therefore, construction on the Project Site would not be located in close proximity to another construction project(s) and would not contribute to a significant cumulative temporary ambient noise impact.

4.10 Ground-borne Vibration

4.10.1 Impacts

The main concern associated with ground-borne vibration is annoyance, however, vibration-sensitive instruments and operations, such as those found in hospitals and laboratories, can be disrupted at much lower levels. In extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. No vibration-sensitive land uses are proposed as part of the Project, and none are located in the project vicinity; however, excessive levels of ground-borne vibration may be an annoyance to residences. Some common sources of ground-borne vibration are trains, and construction activities such as blasting, pile-driving and heavy earth-moving equipment. Vibration sensitive land uses within 600 feet of a railroad may be exposed to disruptive vibration (FTA 2006). Beyond 600 feet, vibration impacts would not occur. Since the project is not located near rail lines, vibration from this source would not be felt at the Project Site. Additionally, no pile driving or blasting is anticipated to be necessary as part of project construction. Therefore, the primary source of ground-borne vibration occurring as part of the Project is conventional construction activity.

According to Caltrans, the highest measured vibration level during highway construction was 2.88 in/sec PPV at 10 feet from a pavement breaker. Other typical construction activities and equipment, such as D-8 and D-9 Caterpillars, earthmovers, and trucks have not exceeded 0.10 in/sec PPV at 10 feet.

New construction on the project site would have the potential to expose developed on-site residences or adjacent existing residences to ground-borne vibration. However, ground vibrations from construction activities would not reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in close proximity and result in short-term annoyance (FTA 2006). Beyond a distance of approximately 25 feet, however construction vibration levels would generally be below a level of perceptibility. This is considered to be a less than significant impact.

4.10.2 Mitigation Measures

The proposed project would not result in a significant groundborne vibration impact; therefore, no mitigation is required.

Significance After Mitigation

Mitigation is not required, because impacts would be less than significant without mitigation.

4.11 Cumulative Vibration Impacts

As described above, vibration levels from project-related construction activity would typically be less than significant within approximately 25 feet from the work area. In order to result in a cumulative vibration impact, major construction activities would have to be located in proximity another project. Due to the localized nature of vibration impacts and the fact that all construction would not occur at the same time or at the same location, cumulative development in the surrounding area would not result in the exposure of people to or the generation of excessive ground-borne vibration and/or noise levels. Therefore, a cumulative ground-borne vibration impact would not occur.

INTENTIONALLY LEFT BLANK

5 REFERENCES

California Department of Transportation (Caltrans). 2009. Technical Noise Supplement. Division of Environmental Analysis. Sacramento, CA. November California Department of Transportation. 2002. *Transportation Related Earthborne Vibrations (TAV-02-01-R9201)*. February 20.

City of Lincoln. 2008. General Plan, Chapter 8 (Health and Safety)

City of Lincoln. 1951. Lincoln Municipal Code, Chapter 9.04.

County of Placer. 2008. *Placer County General Plan, Noise Element.*

DKS. 2015. *Lincoln SUD-B Northeast Quadrant Traffic Impact Analysis.* November 13.

Federal Transit Administration, Office of Planning and Environment. 2006. *Transit Noise & Vibration Impact Assessment.* May.

Gordon Bricken & Associates. 1996. *Parking Lot Noise Estimates*,

PBS&J. 2009. .*Noise Study Report on Highway 215 Widening,*

U.S. Department of Transportation; Federal Highway Administration. 1980. Fundamentals and Abatement of Highway Traffic Noise: Textbook and Course. September.

U.S. Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Washington, D.C. March.

INTENTIONALLY LEFT BLANK

APPENDIX A

TNM 2.5 Traffic Model Runs
Inputs and Results

Dudek **21 December 2015**

M Greene **TNM 2.5**

INPUT: ROADWAYS

PROJECT/CONTRACT: 8451

RUN: Lincoln Specific Plan - Calibration Run

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Nicolaus Rd E of Nelson Ln - WB	34.0	point4	4	34,927,612.0	14,129,586.0	130.00				Average	
		point6	6	34,925,284.0	14,129,529.0	130.00				Average	
		point7	7	34,924,004.0	14,129,507.0	130.00				Average	
		point8	8	34,920,676.0	14,129,447.0	130.00					
Aviation Blvd - N of Nicolaus Rd NB	35.0	point9	9	34,920,668.0	14,129,416.0	130.00				Average	
		point10	10	34,920,660.0	14,130,095.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB	40.0	point15	15	34,920,772.0	14,125,316.0	130.00				Average	
		point14	14	34,920,800.0	14,126,739.0	130.00				Average	
		point13	13	34,920,792.0	14,127,449.0	130.00				Average	
		point12	12	34,920,724.0	14,128,874.0	130.00				Average	
		point11	11	34,920,692.0	14,129,371.0	130.00					
Lincoln Bypass - E. of Nelson Ln - WB	45.0	point21	21	34,925,556.0	14,124,503.0	130.00				Average	
		point20	20	34,924,592.0	14,124,909.0	130.00				Average	
		point19	19	34,923,976.0	14,125,086.0	130.00				Average	
		point18	18	34,923,428.0	14,125,209.0	130.00				Average	
		point17	17	34,922,696.0	14,125,262.0	130.00				Average	
		point16	16	34,920,788.0	14,125,297.0	130.00					
Lincoln Bypass - W. of Nelson Ln - WB	45.0	point23	23	34,920,672.0	14,125,286.0	130.00				Average	
		point22	22	34,919,260.0	14,125,286.0	130.00					
Nelson Ln - S of Lincoln BP - NB	22.0	point25	25	34,920,752.0	14,124,655.0	130.00				Average	
		point24	24	34,920,760.0	14,125,211.0	130.00					
Nicolaus Rd W of Nelson Ln - WB	17.0	point5	5	34,919,280.0	14,129,394.0	130.00				Average	
		point50	50	34,920,304.0	14,129,386.0	130.00				Average	
		point26	26	34,920,600.0	14,129,379.0	130.00					
Nicolaus Rd W of Nelson Ln - EB	17.0	point31	31	34,920,608.0	14,129,429.0	130.00				Average	
		point51	51	34,920,308.0	14,129,414.0	130.00				Average	
		point32	32	34,919,280.0	14,129,420.0	130.00					

Aviation Blvd - N of Nicolaus Rd SB	35.0	point34	34	34,920,628.0	14,130,095.0	130.00				Average	
		point33	33	34,920,636.0	14,129,416.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB	40.0	point35	35	34,920,612.0	14,129,371.0	130.00				Average	
		point36	36	34,920,644.0	14,128,874.0	130.00				Average	
		point37	37	34,920,712.0	14,127,449.0	130.00				Average	
		point38	38	34,920,720.0	14,126,739.0	130.00				Average	
		point39	39	34,920,692.0	14,125,316.0	130.00					
Lincoln Bypass - E. of Nelson Ln - EB	45.0	point40	40	34,920,788.0	14,125,197.0	130.00				Average	
		point41	41	34,922,696.0	14,125,162.0	130.00				Average	
		point42	42	34,923,428.0	14,125,109.0	130.00				Average	
		point43	43	34,923,976.0	14,124,986.0	130.00				Average	
		point44	44	34,924,592.0	14,124,809.0	130.00				Average	
		point45	45	34,925,556.0	14,124,403.0	130.00					
Lincoln Bypass - W. of Nelson Ln - EB	45.0	point46	46	34,919,260.0	14,125,201.0	130.00				Average	
		point47	47	34,920,672.0	14,125,201.0	130.00					
Nelson Ln - S of Lincoln BP - SB	22.0	point48	48	34,920,712.0	14,125,211.0	130.00				Average	
		point49	49	34,920,704.0	14,124,655.0	130.00					
Nicolaus Rd E of Nelson Ln - EB	34.0	point58	58	34,927,612.0	14,129,486.0	130.00				Average	
		point59	59	34,925,284.0	14,129,429.0	130.00				Average	
		point60	60	34,924,004.0	14,129,407.0	130.00				Average	
		point61	61	34,920,700.0	14,129,348.0	130.00					

Dudek **21 December 2015**

M Greene **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes

PROJECT/CONTRACT: 8451

RUN: Lincoln Specific Plan - Calibration Run

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Nicolaus Rd E of Nelson Ln - WB	point4	4	318	40	12	40	6	40	0	0	6	40
	point6	6	318	40	12	40	6	40	0	0	6	40
	point7	7	318	40	12	40	6	40	0	0	6	40
	point8	8										
Aviation Blvd - N of Nicolaus Rd NB	point9	9	0	0	0	0	0	0	0	0	0	0
	point10	10										
NelsonLn -NicolausLn to LinclnBy - NB	point15	15	375	40	3	40	15	40	0	0	0	0
	point14	14	375	40	3	40	15	40	0	0	0	0
	point13	13	375	40	3	40	15	40	0	0	0	0
	point12	12	375	40	3	40	15	40	0	0	0	0
	point11	11										
Lincoln Bypass - E. of Nelson Ln - WB	point21	21	690	65	15	65	18	65	3	65	0	0
	point20	20	690	65	15	65	18	65	3	65	0	0
	point19	19	690	65	15	65	18	65	3	65	0	0
	point18	18	690	65	15	65	18	65	3	65	0	0
	point17	17	690	65	15	65	18	65	3	65	0	0
	point16	16										
Lincoln Bypass - W. of Nelson Ln - WB	point23	23	0	0	0	0	0	0	0	0	0	0
	point22	22										
Nelson Ln - S of Lincoln BP - NB	point25	25	0	0	0	0	0	0	0	0	0	0
	point24	24										
Nicolaus Rd W of Nelson Ln - WB	point5	5	0	0	0	0	0	0	0	0	0	0
	point50	50	0	0	0	0	0	0	0	0	0	0
	point26	26										
Nicolaus Rd W of Nelson Ln - EB	point31	31	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes **8451**

	point51	51	0	0	0	0	0	0	0	0	0	0
	point32	32										
Aviation Blvd - N of Nicolaus Rd SB	point34	34	0	0	0	0	0	0	0	0	0	0
	point33	33										
NelsonLn -NicolausLn to LinclnBy - SB	point35	35	375	40	3	40	15	40	0	0	0	0
	point36	36	375	40	3	40	15	40	0	0	0	0
	point37	37	375	40	3	40	15	40	0	0	0	0
	point38	38	375	40	3	40	15	40	0	0	0	0
	point39	39										
Lincoln Bypass - E. of Nelson Ln - EB	point40	40	690	65	15	65	18	65	3	65	0	0
	point41	41	690	65	15	65	18	65	3	65	0	0
	point42	42	690	65	15	65	18	65	3	65	0	0
	point43	43	690	65	15	65	18	65	3	65	0	0
	point44	44	690	65	15	65	18	65	3	65	0	0
	point45	45										
Lincoln Bypass - W. of Nelson Ln - EB	point46	46	0	0	0	0	0	0	0	0	0	0
	point47	47										
Nelson Ln - S of Lincoln BP - SB	point48	48	0	0	0	0	0	0	0	0	0	0
	point49	49										
Nicolaus Rd E of Nelson Ln - EB	point58	58	318	40	12	40	6	40	0	0	6	40
	point59	59	318	40	12	40	6	40	0	0	6	40
	point60	60	318	40	12	40	6	40	0	0	6	40
	point61	61										

Dudek
M Greene

21 December 2015
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Calibration Run

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	34,923,260.0	14,129,365.0	130.00	5.00	65.60	66	10.0	8.0	Y
M2	2	1	34,920,836.0	14,126,965.0	130.00	5.00	67.20	66	10.0	8.0	Y
M3	3	1	34,922,820.0	14,125,305.0	130.00	5.00	70.70	66	10.0	8.0	Y

Dudek
M Greene

21 December 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Calibration Run
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	65.6	65.6	66	0.0	10	----	65.6	0.0	8	-8.0
M2	2	1	67.2	65.0	66	-2.2	10	----	65.0	0.0	8	-8.0
M3	3	1	70.7	72.2	66	1.5	10	Snd Lvl	72.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	3	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek					**21 December 2015**						
M. Greene / J. Leech					**TNM 2.5**						
INPUT: ROADWAYS							**Average pavement type shall be used unless**				
PROJECT/CONTRACT:	**8451**						**a State highway agency substantiates the use**				
RUN:	**Lincoln Specific Plan - Existing**						**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	%		
Nicolaus Rd E of Nelson Ln - WB	34.0	point4	4	34,927,612.0	14,129,586.0	130.00				Average	
		point6	6	34,925,284.0	14,129,529.0	130.00				Average	
		point7	7	34,924,004.0	14,129,507.0	130.00				Average	
		point8	8	34,920,676.0	14,129,447.0	130.00					
Aviation Blvd - N of Nicolaus Rd NB	35.0	point9	9	34,920,668.0	14,129,449.0	130.00				Average	
		point10	10	34,920,660.0	14,130,095.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB	40.0	point15	15	34,920,772.0	14,125,316.0	130.00				Average	
		point14	14	34,920,800.0	14,126,739.0	130.00				Average	
		point13	13	34,920,792.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - WB	45.0	point23	23	34,920,672.0	14,125,286.0	130.00				Average	
		point22	22	34,919,260.0	14,125,286.0	130.00					
Nelson Ln - S of Lincoln BP - NB	22.0	point25	25	34,920,752.0	14,124,655.0	130.00				Average	
		point24	24	34,920,760.0	14,125,195.0	130.00					
Nicolaus Rd W of Nelson Ln - EB	17.0	point5	5	34,919,280.0	14,129,394.0	130.00				Average	
		point50	50	34,920,304.0	14,129,386.0	130.00				Average	
		point26	26	34,920,600.0	14,129,379.0	130.00					
Nicolaus Rd E of Nelson Ln - EB	34.0	point30	30	34,920,700.0	14,129,348.0	130.00				Average	
		point29	29	34,924,004.0	14,129,407.0	130.00				Average	
		point28	28	34,925,284.0	14,129,429.0	130.00				Average	
		point27	27	34,927,612.0	14,129,486.0	130.00					
Nicolaus Rd W of Nelson Ln - WB	17.0	point31	31	34,920,608.0	14,129,429.0	130.00				Average	
		point51	51	34,920,308.0	14,129,414.0	130.00				Average	
		point32	32	34,919,280.0	14,129,420.0	130.00					
Aviation Blvd - N of Nicolaus Rd SB	35.0	point34	34	34,920,628.0	14,130,095.0	130.00				Average	
		point33	33	34,920,636.0	14,129,448.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB	40.0	point35	35	34,920,612.0	14,129,371.0	130.00				Average	
		point36	36	34,920,644.0	14,128,874.0	130.00				Average	

		point37	37	34,920,712.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - EB	45.0	point46	46	34,919,260.0	14,125,201.0	130.00				Average	
		point47	47	34,920,672.0	14,125,201.0	130.00					
Nelson Ln - S of Lincoln BP - SB	22.0	point48	48	34,920,712.0	14,125,199.0	130.00				Average	
		point49	49	34,920,704.0	14,124,655.0	130.00					
1st Street - E. of Project Site	45.0	point52	52	34,923,384.0	14,125,734.0	130.00				Average	
		point53	53	34,924,012.0	14,125,606.0	130.00				Average	
		point54	54	34,924,712.0	14,125,608.0	130.00				Average	
		point55	55	34,925,480.0	14,125,623.0	130.00				Average	
		point56	56	34,925,596.0	14,125,658.0	130.00				Average	
		point57	57	34,925,900.0	14,125,707.0	130.00					
3rd Street - E. of Project Site	45.0	point59	59	34,923,372.0	14,126,371.0	130.00				Average	
		point60	60	34,924,700.0	14,126,396.0	130.00				Average	
		point61	61	34,925,096.0	14,126,500.0	130.00				Average	
		point62	62	34,926,032.0	14,126,525.0	130.00					
Lincoln Bypass - E. of Nelson Ln - WB	45.0	point69	69	34,926,160.0	14,123,802.0	130.00				Average	
		point70	70	34,925,940.0	14,124,007.0	130.00				Average	
		point80	80	34,925,596.0	14,124,265.0	130.00				Average	
		point71	71	34,925,204.0	14,124,516.0	130.00				Average	
		point72	72	34,924,844.0	14,124,706.0	130.00				Average	
		point73	73	34,924,556.0	14,124,836.0	130.00				Average	
		point74	74	34,924,008.0	14,125,032.0	130.00				Average	
		point75	75	34,923,476.0	14,125,148.0	130.00				Average	
		point76	76	34,923,060.0	14,125,213.0	130.00				Average	
		point77	77	34,922,792.0	14,125,235.0	130.00				Average	
		point78	78	34,921,864.0	14,125,253.0	130.00				Average	
		point79	79	34,920,812.0	14,125,285.0	130.00					
Lincoln Bypass - E. of Nelson Ln - EB	45.0	point81	81	34,920,796.0	14,125,205.0	130.00				Average	
		point82	82	34,921,348.0	14,125,174.0	130.00				Average	
		point83	83	34,922,108.0	14,125,133.0	130.00				Average	
		point84	84	34,922,848.0	14,125,119.0	130.00				Average	
		point85	85	34,923,296.0	14,125,069.0	130.00				Average	
		point86	86	34,923,792.0	14,124,974.0	130.00				Average	
		point87	87	34,924,396.0	14,124,786.0	130.00				Average	
		point88	88	34,924,836.0	14,124,591.0	130.00				Average	
		point89	89	34,925,104.0	14,124,451.0	130.00				Average	
		point90	90	34,925,572.0	14,124,157.0	130.00				Average	
		point91	91	34,926,048.0	14,123,772.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB-2	40.0	point92	92	34,920,792.0	14,127,449.0	130.00				Average	
		point12	12	34,920,724.0	14,128,874.0	130.00				Average	

		point11	11	34,920,696.0	14,129,342.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB-2	40.0	point93	93	34,920,712.0	14,127,449.0	130.00				Average	
		point38	38	34,920,720.0	14,126,739.0	130.00				Average	
		point39	39	34,920,692.0	14,125,316.0	130.00					
3rd Street - E. of Project Site-2	45.0	point109	109	34,926,032.0	14,126,525.0	130.00				Average	
		point63	63	34,927,644.0	14,126,561.0	130.00					
1st Street - E. of Project Site-2	45.0	point110	110	34,925,900.0	14,125,707.0	130.00				Average	
		point58	58	34,927,640.0	14,125,770.0	130.00					

Dudek 21 December
M. Greene / J. Leech TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing

Roadway	Points		Segment										
Name	Name	No.	Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Nicolaus Rd E of Nelson Ln - WB	point4	4	238	97	40	2	40	1	40	0	0	0	0
	point6	6	238	97	40	2	40	1	40	0	0	0	0
	point7	7	238	97	40	2	40	1	40	0	0	0	0
	point8	8											
Aviation Blvd - N of Nicolaus Rd NB	point9	9	173	97	40	2	40	1	40	0	0	0	0
	point10	10											
NelsonLn -NicolausLn to LinclnBy - NB	point15	15	389	97	40	2	40	1	40	0	0	0	0
	point14	14	389	97	40	2	40	1	40	0	0	0	0
	point13	13											
Lincoln Bypass - W. of Nelson Ln - WB	point23	23	616	85	65	2	65	13	65	0	0	0	0
	point22	22											
Nelson Ln - S of Lincoln BP - NB	point25	25	62	97	40	2	40	1	40	0	0	0	0
	point24	24											
Nicolaus Rd W of Nelson Ln - EB	point5	5	202	97	40	2	40	1	40	0	0	0	0
	point50	50	202	97	40	2	40	1	40	0	0	0	0
	point26	26											
Nicolaus Rd E of Nelson Ln - EB	point30	30	442	97	40	2	40	1	40	0	0	0	0
	point29	29	442	97	40	2	40	1	40	0	0	0	0
	point28	28	442	97	40	2	40	1	40	0	0	0	0
	point27	27											
Nicolaus Rd W of Nelson Ln - WB	point31	31	167	97	40	2	40	1	40	0	0	0	0
	point51	51	167	97	40	2	40	1	40	0	0	0	0
	point32	32											
Aviation Blvd - N of Nicolaus Rd SB	point34	34	216	97	40	2	40	1	40	0	0	0	0
	point33	33											

NelsonLn -NicolausLn to LinclnBy - SB	point35	35	344	97	40	2	40	1	40	0	0	0	0
	point36	36	344	97	40	2	40	1	40	0	0	0	0
	point37	37											
Lincoln Bypass - W. of Nelson Ln - EB	point46	46	855	85	65	2	65	13	65	0	0	0	0
	point47	47											
Nelson Ln - S of Lincoln BP - SB	point48	48	58	97	40	2	40	1	40	0	0	0	0
	point49	49											
1st Street - E. of Project Site	point52	52	200	97	25	2	25	1	25	0	0	0	0
	point53	53	200	97	25	2	25	1	25	0	0	0	0
	point54	54	200	97	25	2	25	1	25	0	0	0	0
	point55	55	200	97	25	2	25	1	25	0	0	0	0
	point56	56	200	97	25	2	25	1	25	0	0	0	0
	point57	57											
3rd Street - E. of Project Site	point59	59	80	97	25	2	25	1	25	0	0	0	0
	point60	60	80	97	25	2	25	1	25	0	0	0	0
	point61	61	80	97	25	2	25	1	25	0	0	0	0
	point62	62											
Lincoln Bypass - E. of Nelson Ln - WB	point69	69	888	85	65	0	65	13	65	0	0	0	0
	point70	70	888	85	65	2	65	13	65	0	0	0	0
	point80	80	888	85	65	2	65	13	65	0	0	0	0
	point71	71	888	85	65	2	65	13	65	0	0	0	0
	point72	72	888	85	65	2	65	13	65	0	0	0	0
	point73	73	888	85	65	2	65	13	65	0	0	0	0
	point74	74	888	85	65	2	65	13	65	0	0	0	0
	point75	75	888	85	65	2	65	13	65	0	0	0	0
	point76	76	888	85	65	2	65	13	65	0	0	0	0
	point77	77	888	85	65	2	65	13	65	0	0	0	0
	point78	78	888	85	65	2	65	13	65	0	0	0	0
	point79	79											
Lincoln Bypass - E. of Nelson Ln - EB	point81	81	1014	85	65	2	65	13	65	0	0	0	0
	point82	82	1014	85	65	2	65	13	65	0	0	0	0
	point83	83	1014	85	65	2	65	13	65	0	0	0	0
	point84	84	1014	85	65	2	65	13	65	0	0	0	0
	point85	85	1014	85	65	2	65	13	65	0	0	0	0
	point86	86	1014	85	65	2	65	13	65	0	0	0	0
	point87	87	1014	85	65	2	65	13	65	0	0	0	0
	point88	88	1014	85	65	2	65	13	65	0	0	0	0

	point89	89	1014	85	65	2	65	13	65	0	0	0	0
	point90	90	1014	85	65	2	65	13	65	0	0	0	0
	point91	91											
NelsonLn -NicolausLn to LinclnBy - NB-2	point92	92	444	97	40	2	40	1	40	0	0	0	0
	point12	12	444	97	40	2	40	1	40	0	0	0	0
	point11	11											
NelsonLn -NicolausLn to LinclnBy - SB-2	point93	93	278	97	40	2	40	1	40	0	0	0	0
	point38	38	278	97	40	2	40	1	40	0	0	0	0
	point39	39											
3rd Street - E. of Project Site-2	point109	109	200	97	25	2	25	1	25	0	0	0	0
	point63	63											
1st Street - E. of Project Site-2	point110	110	430	97	25	2	25	1	25	0	0	0	0
	point58	58											

Dudek
M. Greene / J. Leech

21 December 2015
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	34,923,256.0	14,129,338.0	130.00	5.00	0.00	66	10.0	8.0	Y
M2	2	1	34,920,824.0	14,126,966.0	130.00	5.00	0.00	66	10.0	8.0	Y
M3	3	1	34,922,544.0	14,125,397.0	130.00	5.00	0.00	66	10.0	8.0	Y
R1	4	1	34,920,576.0	14,127,884.0	130.00	5.00	0.00	66	10.0	8.0	Y
R2	5	1	34,920,596.0	14,126,797.0	130.00	5.00	0.00	66	10.0	8.0	Y
R3	6	1	34,920,188.0	14,129,261.0	130.00	5.00	0.00	66	10.0	8.0	Y
R4	7	1	34,925,012.0	14,129,367.0	130.00	5.00	0.00	66	10.0	8.0	Y
R5	9	1	34,924,056.0	14,129,572.0	130.00	5.00	0.00	66	10.0	8.0	Y
R6	11	1	34,923,744.0	14,125,522.0	130.00	5.00	0.00	66	10.0	8.0	Y
R7	12	1	34,923,644.0	14,126,490.0	130.00	5.00	0.00	66	10.0	8.0	Y
R8	13	1	34,924,932.0	14,126,518.0	130.00	5.00	0.00	66	10.0	8.0	Y
R9	14	1	34,924,284.0	14,126,326.0	130.00	5.00	0.00	66	10.0	8.0	Y
R10	15	1	34,924,008.0	14,125,662.0	130.00	5.00	0.00	66	10.0	8.0	Y
R11	16	1	34,923,772.0	14,125,795.0	130.00	5.00	0.00	66	10.0	8.0	Y
R12	17	1	34,923,396.0	14,125,784.0	130.00	5.00	0.00	66	10.0	8.0	Y
R13	18	1	34,923,484.0	14,125,570.0	130.00	5.00	0.00	66	10.0	8.0	Y
R14	19	1	34,924,572.0	14,125,473.0	130.00	5.00	0.00	66	10.0	8.0	Y
R15	24	1	34,926,624.0	14,125,684.0	130.00	5.00	0.00	66	10.0	8.0	Y
R16	27	1	34,926,456.0	14,126,594.0	130.00	5.00	0.00	66	10.0	8.0	Y

Dudek **21 December 2015**
M. Greene / J. Leech **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing

Barrier									Points									
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				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	34,922,808.0	14,125,271.0	130.00	12.00	0.00	0	0		
									point2	2	34,923,076.0	14,125,249.0	130.00	12.00	0.00	0	0		
									point3	3	34,923,492.0	14,125,184.0	130.00	12.00	0.00	0	0		
									point4	4	34,924,032.0	14,125,067.0	130.00	12.00	0.00	0	0		
									point5	5	34,924,572.0	14,124,872.0	130.00	12.00	0.00	0	0		
									point6	6	34,924,860.0	14,124,742.0	130.00	12.00	0.00	0	0		
									point7	7	34,925,220.0	14,124,552.0	130.00	12.00					
Barrier2	W	0.00	99.99	0.00				0.00	point8	8	34,924,020.0	14,129,635.0	130.00	6.00	0.00	0	0		
									point9	9	34,924,044.0	14,129,560.0	130.00	6.00	0.00	0	0		
									point10	10	34,925,280.0	14,129,574.0	130.00	6.00					
Barrier3	W	0.00	99.99	0.00				0.00	point11	11	34,923,996.0	14,129,365.0	130.00	6.00	0.00	0	0		
									point12	12	34,925,492.0	14,129,385.0	130.00	6.00					

Dudek **21 December 2015**

M. Greene / J. Leech **TNM 2.5**

INPUT: BUILDING ROWS

PROJECT/CONTRACT: **8451**

RUN: **Lincoln Specific Plan - Existing**

Building Row Name	Average Height	Building Percent	Points No.	Coordinates (ground) X	Y	Z
	ft	%		ft	ft	ft
Building1	18.00	80	1	34,923,376.0	14,126,442.0	130.00
			2	34,924,276.0	14,126,457.0	130.00
Building2	18.00	80	3	34,923,808.0	14,125,751.0	130.00
			4	34,923,668.0	14,125,777.0	130.00
Building3	18.00	80	5	34,923,388.0	14,125,656.0	130.00
			6	34,924,024.0	14,125,527.0	130.00
			7	34,924,700.0	14,125,525.0	130.00

Dudek
M. Greene / J. Leech
21 December 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
M2	2	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
M3	3	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
R1	4	1	0.0	59.0	66	59.0	10	----	59.0	0.0	8	-8.0
R2	5	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
R3	6	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
R4	7	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
R5	9	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
R6	11	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
R7	12	1	0.0	46.3	66	46.3	10	----	46.3	0.0	8	-8.0
R8	13	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
R9	14	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
R10	15	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
R11	16	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
R12	17	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8	-8.0
R13	18	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
R14	19	1	0.0	53.2	66	53.2	10	----	53.2	0.0	8	-8.0
R15	24	1	0.0	57.7	66	57.7	10	----	57.7	0.0	8	-8.0
R16	27	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0

All that meet NR Goal		0	0.0	0.0	0.0								

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing with Proj

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Nicolaus Rd E of Nelson Ln - WB	34.0	point4	4	34,927,612.0	14,129,586.0	130.00				Average	
		point6	6	34,925,284.0	14,129,529.0	130.00				Average	
		point7	7	34,924,004.0	14,129,507.0	130.00				Average	
		point8	8	34,920,676.0	14,129,447.0	130.00					
Aviation Blvd - N of Nicolaus Rd NB	35.0	point9	9	34,920,668.0	14,129,449.0	130.00				Average	
		point10	10	34,920,660.0	14,130,095.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB	40.0	point15	15	34,920,772.0	14,125,316.0	130.00				Average	
		point14	14	34,920,800.0	14,126,739.0	130.00				Average	
		point13	13	34,920,792.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - WB	45.0	point23	23	34,920,672.0	14,125,286.0	130.00				Average	
		point22	22	34,919,260.0	14,125,286.0	130.00					
Nelson Ln - S of Lincoln BP - NB	22.0	point25	25	34,920,752.0	14,124,655.0	130.00				Average	
		point24	24	34,920,760.0	14,125,195.0	130.00					
Nicolaus Rd W of Nelson Ln - WB	17.0	point5	5	34,919,280.0	14,129,394.0	130.00				Average	
		point50	50	34,920,304.0	14,129,386.0	130.00				Average	
		point26	26	34,920,600.0	14,129,379.0	130.00					
Nicolaus Rd E of Nelson Ln - EB	34.0	point30	30	34,920,700.0	14,129,348.0	130.00				Average	
		point29	29	34,924,004.0	14,129,407.0	130.00				Average	
		point28	28	34,925,284.0	14,129,429.0	130.00				Average	
		point27	27	34,927,612.0	14,129,486.0	130.00					
Nicolaus Rd W of Nelson Ln - EB	17.0	point31	31	34,920,608.0	14,129,429.0	130.00				Average	
		point51	51	34,920,308.0	14,129,414.0	130.00				Average	
		point32	32	34,919,280.0	14,129,420.0	130.00					
Aviation Blvd - N of Nicolaus Rd SB	35.0	point34	34	34,920,628.0	14,130,095.0	130.00				Average	
		point33	33	34,920,636.0	14,129,448.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB	40.0	point35	35	34,920,612.0	14,129,371.0	130.00				Average	
		point36	36	34,920,644.0	14,128,874.0	130.00				Average	

		point37	37	34,920,712.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - EB	45.0	point46	46	34,919,260.0	14,125,201.0	130.00				Average	
		point47	47	34,920,672.0	14,125,201.0	130.00					
Nelson Ln - S of Lincoln BP - SB	22.0	point48	48	34,920,712.0	14,125,199.0	130.00				Average	
		point49	49	34,920,704.0	14,124,655.0	130.00					
1st Street - E. of Proj site to Chambers	45.0	point52	52	34,923,384.0	14,125,734.0	130.00				Average	
		point53	53	34,924,012.0	14,125,606.0	130.00				Average	
		point54	54	34,924,712.0	14,125,608.0	130.00				Average	
		point55	55	34,925,480.0	14,125,623.0	130.00				Average	
		point56	56	34,925,596.0	14,125,658.0	130.00				Average	
		point57	57	34,925,900.0	14,125,707.0	130.00					
3rd Street - E. of Proj site to Chambers	45.0	point59	59	34,923,372.0	14,126,371.0	130.00				Average	
		point60	60	34,924,700.0	14,126,396.0	130.00				Average	
		point61	61	34,925,096.0	14,126,500.0	130.00				Average	
		point62	62	34,926,032.0	14,126,525.0	130.00					
Lincoln Bypass - E. of Nelson Ln - EB	45.0	point114	114	34,920,796.0	14,125,205.0	130.00				Average	
		point116	116	34,921,348.0	14,125,174.0	130.00				Average	
		point117	117	34,922,108.0	14,125,133.0	130.00				Average	
		point118	118	34,922,848.0	14,125,119.0	130.00				Average	
		point119	119	34,923,296.0	14,125,069.0	130.00				Average	
		point120	120	34,923,792.0	14,124,974.0	130.00				Average	
		point121	121	34,924,396.0	14,124,786.0	130.00				Average	
		point122	122	34,924,836.0	14,124,591.0	130.00				Average	
		point123	123	34,925,104.0	14,124,451.0	130.00				Average	
		point124	124	34,925,572.0	14,124,157.0	130.00				Average	
		point115	115	34,926,048.0	14,123,772.0	130.00					
Lincoln Bypass - E. of Nelson Ln - WB	45.0	point125	125	34,926,160.0	14,123,802.0	130.00				Average	
		point127	127	34,925,940.0	14,124,007.0	130.00				Average	
		point128	128	34,925,596.0	14,124,265.0	130.00				Average	
		point129	129	34,925,204.0	14,124,516.0	130.00				Average	
		point130	130	34,924,844.0	14,124,706.0	130.00				Average	
		point131	131	34,924,556.0	14,124,836.0	130.00				Average	
		point132	132	34,924,008.0	14,125,032.0	130.00				Average	
		point133	133	34,923,476.0	14,125,148.0	130.00				Average	
		point134	134	34,923,060.0	14,125,213.0	130.00				Average	
		point135	135	34,922,792.0	14,125,235.0	130.00				Average	
		point136	136	34,921,864.0	14,125,253.0	130.00				Average	
		point126	126	34,920,812.0	14,125,285.0	130.00					
Roadway31	12.0	point147	147	34,923,368.0	14,125,737.0	0.00				Average	
		point149	149	34,923,256.0	14,125,739.0	0.00				Average	

		point150	150	34,923,148.0	14,125,740.0	0.00				Average	
		point151	151	34,923,076.0	14,125,753.0	0.00				Average	
		point152	152	34,922,968.0	14,125,806.0	0.00				Average	
		point153	153	34,922,896.0	14,125,818.0	0.00				Average	
		point154	154	34,922,756.0	14,125,818.0	0.00				Average	
		point148	148	34,922,484.0	14,125,818.0	0.00					
Roadway32	12.0	point155	155	34,923,364.0	14,126,369.0	0.00				Average	
		point157	157	34,923,236.0	14,126,365.0	0.00				Average	
		point158	158	34,922,752.0	14,126,363.0	0.00				Average	
		point159	159	34,922,696.0	14,126,360.0	0.00				Average	
		point160	160	34,922,612.0	14,126,325.0	0.00					
Roadway33	12.0	point164	164	34,922,508.0	14,126,243.0	0.00				Average	
		point174	174	34,922,324.0	14,126,408.0	0.00				Average	
		point165	165	34,922,136.0	14,126,570.0	0.00				Average	
		point166	166	34,922,144.0	14,126,617.0	0.00				Average	
		point167	167	34,922,124.0	14,126,654.0	0.00				Average	
		point168	168	34,922,084.0	14,126,672.0	0.00				Average	
		point169	169	34,922,044.0	14,126,664.0	0.00				Average	
		point170	170	34,922,032.0	14,126,646.0	0.00				Average	
		point171	171	34,921,940.0	14,126,685.0	0.00				Average	
		point172	172	34,921,856.0	14,126,705.0	0.00				Average	
		point198	198	34,921,428.0	14,126,706.0	0.00					
Roadway34	12.0	point175	175	34,922,028.0	14,126,640.0	0.00				Average	
		point180	180	34,922,024.0	14,126,609.0	0.00				Average	
		point176	176	34,922,040.0	14,126,581.0	0.00				Average	
		point177	177	34,922,068.0	14,126,556.0	0.00				Average	
		point178	178	34,922,100.0	14,126,557.0	0.00				Average	
		point179	179	34,922,128.0	14,126,570.0	0.00					
NelsonLn -NicolausLn to LinclnBy - NB-2	40.0	point183	183	34,920,792.0	14,127,449.0	130.00				Average	
		point12	12	34,920,724.0	14,128,874.0	130.00				Average	
		point11	11	34,920,696.0	14,129,342.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB-2	40.0	point184	184	34,920,712.0	14,127,449.0	130.00				Average	
		point38	38	34,920,720.0	14,126,739.0	130.00				Average	
		point39	39	34,920,692.0	14,125,316.0	130.00					
3rd Street - Chmbrs to Joiner	45.0	point185	185	34,926,032.0	14,126,525.0	130.00				Average	
		point63	63	34,927,644.0	14,126,561.0	130.00					
1st Street - Chmbrs to Joiner	45.0	point186	186	34,925,900.0	14,125,707.0	130.00				Average	
		point58	58	34,927,640.0	14,125,770.0	130.00					
Roadway40	42.0	point187	187	34,922,012.0	14,126,091.0	130.00				Average	
		point194	194	34,921,760.0	14,126,086.0	130.00				Average	

		point188	188	34,921,700.0	14,126,089.0	130.00				Average	
		point189	189	34,921,620.0	14,126,113.0	130.00				Average	
		point190	190	34,921,544.0	14,126,164.0	130.00				Average	
		point191	191	34,921,484.0	14,126,226.0	130.00				Average	
		point192	192	34,921,444.0	14,126,338.0	130.00				Average	
		point193	193	34,921,436.0	14,126,681.0	130.00					
Roadway41	42.0	point195	195	34,922,040.0	14,126,555.0	130.00				Average	
		point196	196	34,922,012.0	14,126,471.0	130.00				Average	
		point197	197	34,922,012.0	14,126,091.0	130.00					
Roadway33-2	12.0	point200	200	34,921,428.0	14,126,706.0	0.00				Average	
		point173	173	34,920,844.0	14,126,706.0	0.00					
Roadway44	42.0	point201	201	34,922,476.0	14,125,748.0	130.00				Average	
		point202	202	34,922,476.0	14,125,508.0	130.00					
Roadway45	42.0	point203	203	34,922,204.0	14,125,498.0	130.00				Average	
		point204	204	34,922,804.0	14,125,501.0	130.00				Average	
		point205	205	34,922,892.0	14,125,484.0	130.00				Average	
		point206	206	34,923,016.0	14,125,441.0	130.00				Average	
		point207	207	34,923,164.0	14,125,373.0	130.00				Average	
		point208	208	34,923,240.0	14,125,354.0	130.00					
Roadway46	42.0	point210	210	34,923,240.0	14,125,354.0	130.00				Average	
		point211	211	34,923,364.0	14,125,340.0	130.00				Average	
		point212	212	34,923,500.0	14,125,340.0	130.00				Average	
		point213	213	34,923,592.0	14,125,330.0	130.00				Average	
		point214	214	34,923,700.0	14,125,306.0	130.00				Average	
		point215	215	34,923,824.0	14,125,259.0	130.00				Average	
		point216	216	34,923,920.0	14,125,234.0	130.00				Average	
		point217	217	34,924,172.0	14,125,166.0	130.00				Average	
		point218	218	34,924,384.0	14,125,099.0	130.00				Average	
		point219	219	34,924,476.0	14,125,071.0	130.00				Average	
		point220	220	34,924,540.0	14,125,064.0	130.00				Average	
		point221	221	34,924,616.0	14,125,043.0	130.00					
Roadway47	42.0	point222	222	34,924,620.0	14,125,064.0	130.00				Average	
		point223	223	34,924,656.0	14,125,153.0	130.00				Average	
		point224	224	34,924,688.0	14,125,265.0	130.00				Average	
		point225	225	34,924,688.0	14,125,527.0	130.00					
Roadway48	42.0	point226	226	34,924,616.0	14,125,043.0	130.00				Average	
		point227	227	34,924,672.0	14,125,010.0	130.00				Average	
		point228	228	34,924,728.0	14,124,970.0	130.00				Average	
		point229	229	34,924,768.0	14,124,946.0	130.00				Average	
		point230	230	34,924,892.0	14,124,892.0	130.00				Average	

		point231	231	34,925,148.0	14,124,772.0	130.00				Average	
		point232	232	34,925,280.0	14,124,722.0	130.00				Average	
		point233	233	34,925,408.0	14,124,695.0	130.00				Average	
		point234	234	34,925,504.0	14,124,695.0	130.00				Average	
		point235	235	34,925,616.0	14,124,706.0	130.00				Average	
		point236	236	34,925,708.0	14,124,728.0	130.00				Average	
		point237	237	34,925,792.0	14,124,764.0	130.00				Average	
		point238	238	34,925,840.0	14,124,808.0	130.00				Average	
		point239	239	34,925,876.0	14,124,855.0	130.00				Average	
		point240	240	34,925,900.0	14,124,936.0	130.00				Average	
		point241	241	34,925,900.0	14,125,206.0	130.00					
Roadway49	42.0	point242	242	34,921,884.0	14,126,718.0	130.00				Average	
		point243	243	34,921,908.0	14,126,836.0	130.00				Average	
		point244	244	34,921,896.0	14,126,921.0	130.00				Average	
		point245	245	34,921,872.0	14,127,700.0	130.00				Average	
		point246	246	34,921,600.0	14,127,703.0	130.00				Average	
		point247	247	34,921,600.0	14,127,961.0	130.00				Average	
		point248	248	34,921,580.0	14,128,100.0	130.00				Average	
		point249	249	34,921,472.0	14,128,504.0	130.00					
Roadway50	12.0	point250	250	34,920,828.0	14,128,204.0	130.00				Average	
		point251	251	34,920,904.0	14,128,209.0	130.00				Average	
		point252	252	34,920,996.0	14,128,245.0	130.00				Average	
		point253	253	34,921,228.0	14,128,423.0	130.00				Average	
		point254	254	34,921,320.0	14,128,465.0	130.00				Average	
		point255	255	34,921,476.0	14,128,510.0	130.00				Average	
		point256	256	34,921,736.0	14,128,583.0	130.00				Average	
		point257	257	34,921,860.0	14,128,594.0	130.00					
Roadway51	12.0	point259	259	34,921,876.0	14,127,966.0	130.00				Average	
		point260	260	34,921,872.0	14,128,595.0	130.00				Average	
		point261	261	34,921,864.0	14,128,862.0	130.00					
Roadway32-2	12.0	point262	262	34,922,612.0	14,126,325.0	0.00				Average	
		point161	161	34,922,548.0	14,126,267.0	0.00				Average	
		point162	162	34,922,492.0	14,126,179.0	0.00				Average	
		point163	163	34,922,476.0	14,126,092.0	0.00				Average	
		point156	156	34,922,480.0	14,125,831.0	0.00					

Dudek 21 December
M. Greene / J. Leech TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing with Proj

Roadway	Points		Segment										
Name	Name	No.	Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Nicolaus Rd E of Nelson Ln - WB	point4	4	312	97	40	2	40	1	40	0	0	0	0
	point6	6	312	97	40	2	40	1	40	0	0	0	0
	point7	7	312	97	40	2	40	1	40	0	0	0	0
	point8	8											
Aviation Blvd - N of Nicolaus Rd NB	point9	9	172	97	40	2	40	1	40	0	0	0	0
	point10	10											
NelsonLn -NicolausLn to LinclnBy - NB	point15	15	389	97	40	2	40	1	40	0	0	0	0
	point14	14	389	97	40	2	40	1	40	0	0	0	0
	point13	13											
Lincoln Bypass - W. of Nelson Ln - WB	point23	23	616	85	65	2	65	13	65	0	0	0	0
	point22	22											
Nelson Ln - S of Lincoln BP - NB	point25	25	1854	97	40	2	40	1	40	0	0	0	0
	point24	24											
Nicolaus Rd W of Nelson Ln - WB	point5	5	203	97	40	2	40	1	40	0	0	0	0
	point50	50	203	97	40	2	40	1	40	0	0	0	0
	point26	26											
Nicolaus Rd E of Nelson Ln - EB	point30	30	506	97	40	2	40	1	40	0	0	0	0
	point29	29	506	97	40	2	40	1	40	0	0	0	0
	point28	28	506	97	40	2	40	1	40	0	0	0	0
	point27	27											
Nicolaus Rd W of Nelson Ln - EB	point31	31	194	97	40	2	40	1	40	0	0	0	0
	point51	51	194	97	40	2	40	1	40	0	0	0	0
	point32	32											
Aviation Blvd - N of Nicolaus Rd SB	point34	34	221	97	40	2	40	1	40	0	0	0	0
	point33	33											

NelsonLn -NicolausLn to LinclnBy - SB	point35	35	458	97	40	2	40	1	40	0	0	0	0
	point36	36	458	97	40	2	40	1	40	0	0	0	0
	point37	37											
Lincoln Bypass - W. of Nelson Ln - EB	point46	46	855	85	65	2	65	13	65	0	0	0	0
	point47	47											
Nelson Ln - S of Lincoln BP - SB	point48	48	2158	97	40	2	40	1	40	0	0	0	0
	point49	49											
1st Street - E. of Proj site to Chambers	point52	52	210	97	25	2	25	1	25	0	0	0	0
	point53	53	210	97	25	2	25	1	25	0	0	0	0
	point54	54	210	97	25	2	25	1	25	0	0	0	0
	point55	55	210	97	25	2	25	1	25	0	0	0	0
	point56	56	210	97	25	2	25	1	25	0	0	0	0
	point57	57											
3rd Street - E. of Proj site to Chambers	point59	59	160	97	25	2	25	1	25	0	0	0	0
	point60	60	160	97	25	2	25	1	25	0	0	0	0
	point61	61	160	97	25	2	25	1	25	0	0	0	0
	point62	62											
Lincoln Bypass - E. of Nelson Ln - EB	point114	114	1014	85	65	2	65	13	65	0	0	0	0
	point116	116	1014	85	65	2	65	13	65	0	0	0	0
	point117	117	1014	85	65	2	65	13	65	0	0	0	0
	point118	118	1014	85	65	2	65	13	65	0	0	0	0
	point119	119	1014	85	65	2	65	13	65	0	0	0	0
	point120	120	1014	85	65	2	65	13	65	0	0	0	0
	point121	121	1014	85	65	2	65	13	65	0	0	0	0
	point122	122	1014	85	65	2	65	13	65	0	0	0	0
	point123	123	1014	85	65	2	65	13	65	0	0	0	0
	point124	124	1014	85	65	2	65	13	65	0	0	0	0
	point115	115											
Lincoln Bypass - E. of Nelson Ln - WB	point125	125	888	85	65	2	65	13	65	0	0	0	0
	point127	127	888	85	65	2	65	13	65	0	0	0	0
	point128	128	888	85	65	2	65	13	65	0	0	0	0
	point129	129	888	85	65	2	65	13	65	0	0	0	0
	point130	130	888	85	65	2	65	13	65	0	0	0	0
	point131	131	888	85	65	2	65	13	65	0	0	0	0
	point132	132	888	85	65	2	65	13	65	0	0	0	0
	point133	133	888	85	65	2	65	13	65	0	0	0	0
	point134	134	888	85	65	2	65	13	65	0	0	0	0

	point135	135	888	85	65	2	65	13	65	0	0	0	0
	point136	136	888	85	65	2	65	13	65	0	0	0	0
	point126	126											
Roadway31	point147	147	290	97	25	2	25	1	25	0	0	0	0
	point149	149	290	97	25	2	25	1	25	0	0	0	0
	point150	150	290	97	25	2	25	1	25	0	0	0	0
	point151	151	290	97	25	2	25	1	25	0	0	0	0
	point152	152	290	97	25	2	25	1	25	0	0	0	0
	point153	153	290	97	25	2	25	1	25	0	0	0	0
	point154	154	290	97	25	2	25	1	25	0	0	0	0
	point148	148											
Roadway32	point155	155	290	97	25	2	25	1	25	0	0	0	0
	point157	157	290	97	25	2	25	1	25	0	0	0	0
	point158	158	290	97	25	2	25	1	25	0	0	0	0
	point159	159	290	97	25	2	25	1	25	0	0	0	0
	point160	160											
Roadway33	point164	164	830	97	35	2	35	1	35	0	0	0	0
	point174	174	830	97	35	2	35	1	35	0	0	0	0
	point165	165	830	97	35	2	35	1	35	0	0	0	0
	point166	166	830	97	35	2	35	1	35	0	0	0	0
	point167	167	830	97	35	2	35	1	35	0	0	0	0
	point168	168	830	97	35	2	35	1	35	0	0	0	0
	point169	169	830	97	35	2	35	1	35	0	0	0	0
	point170	170	830	97	35	2	35	1	35	0	0	0	0
	point171	171	830	97	35	2	35	1	35	0	0	0	0
	point172	172	830	97	35	2	35	1	35	0	0	0	0
	point198	198											
Roadway34	point175	175	0	0	0	0	0	0	0	0	0	0	0
	point180	180	0	0	0	0	0	0	0	0	0	0	0
	point176	176	0	0	0	0	0	0	0	0	0	0	0
	point177	177	0	0	0	0	0	0	0	0	0	0	0
	point178	178	0	0	0	0	0	0	0	0	0	0	0
	point179	179											
NelsonLn -NicolausLn to LinclnBy - NB-2	point183	183	594	97	40	2	40	1	40	0	0	0	0
	point12	12	594	97	40	2	40	1	40	0	0	0	0
	point11	11											
NelsonLn -NicolausLn to LinclnBy - SB-2	point184	184	272	97	40	2	40	1	40	0	0	0	0

	point38	38	272	97	40	2	40	1	40	0	0	0	0
	point39	39											
3rd Street - Chmbrs to Joiner	point185	185	210	97	25	2	25	1	25	0	0	0	0
	point63	63											
1st Street - Chmbrs to Joiner	point186	186	440	97	25	2	25	1	25	0	0	0	0
	point58	58											
Roadway40	point187	187	760	97	35	2	35	1	35	0	0	0	0
	point194	194	760	97	35	2	35	1	35	0	0	0	0
	point188	188	760	97	35	2	35	1	35	0	0	0	0
	point189	189	760	97	35	2	35	1	35	0	0	0	0
	point190	190	760	97	35	2	35	1	35	0	0	0	0
	point191	191	760	97	35	2	35	1	35	0	0	0	0
	point192	192	760	97	35	2	35	1	35	0	0	0	0
	point193	193											
Roadway41	point195	195	210	97	35	2	35	1	35	0	0	0	0
	point196	196	210	97	35	2	35	1	35	0	0	0	0
	point197	197											
Roadway33-2	point200	200	1780	97	35	2	35	1	35	0	0	0	0
	point173	173											
Roadway44	point201	201	20	97	25	2	25	1	25	0	0	0	0
	point202	202											
Roadway45	point203	203	20	97	25	2	25	1	25	0	0	0	0
	point204	204	20	97	25	2	25	1	25	0	0	0	0
	point205	205	20	97	25	2	25	1	25	0	0	0	0
	point206	206	20	97	25	2	25	1	25	0	0	0	0
	point207	207	20	97	25	2	25	1	25	0	0	0	0
	point208	208											
Roadway46	point210	210	10	97	25	2	25	1	25	0	0	0	0
	point211	211	10	97	25	2	25	1	25	0	0	0	0
	point212	212	10	97	25	2	25	1	25	0	0	0	0
	point213	213	10	97	25	2	25	1	25	0	0	0	0
	point214	214	10	97	25	2	25	1	25	0	0	0	0
	point215	215	10	97	25	2	25	1	25	0	0	0	0
	point216	216	10	97	25	2	25	1	25	0	0	0	0
	point217	217	10	97	25	2	25	1	25	0	0	0	0
	point218	218	10	97	25	2	25	1	25	0	0	0	0
	point219	219	10	97	25	2	25	1	25	0	0	0	0

	point220	220	10	97	25	2	25	1	25	0	0	0	0
	point221	221											
Roadway47	point222	222	90	97	25	2	25	1	25	0	0	0	0
	point223	223	90	97	25	2	25	1	25	0	0	0	0
	point224	224	90	97	25	2	25	1	25	0	0	0	0
	point225	225											
Roadway48	point226	226	30	97	25	2	25	1	25	0	0	0	0
	point227	227	30	97	25	2	25	1	25	0	0	0	0
	point228	228	30	97	25	2	25	1	25	0	0	0	0
	point229	229	30	97	25	2	25	1	25	0	0	0	0
	point230	230	30	97	25	2	25	1	25	0	0	0	0
	point231	231	30	97	25	2	25	1	25	0	0	0	0
	point232	232	30	97	25	2	25	1	25	0	0	0	0
	point233	233	30	97	25	2	25	1	25	0	0	0	0
	point234	234	30	97	25	2	25	1	25	0	0	0	0
	point235	235	30	97	25	2	25	1	25	0	0	0	0
	point236	236	30	97	25	2	25	1	25	0	0	0	0
	point237	237	30	97	25	2	25	1	25	0	0	0	0
	point238	238	30	97	25	2	25	1	25	0	0	0	0
	point239	239	30	97	25	2	25	1	25	0	0	0	0
	point240	240	30	97	25	2	25	1	25	0	0	0	0
	point241	241											
Roadway49	point242	242	110	97	25	2	25	1	25	0	0	0	0
	point243	243	110	97	25	2	25	1	25	0	0	0	0
	point244	244	110	97	25	2	25	1	25	0	0	0	0
	point245	245	110	97	25	2	25	1	25	0	0	0	0
	point246	246	110	97	25	2	25	1	25	0	0	0	0
	point247	247	110	97	25	2	25	1	25	0	0	0	0
	point248	248	110	97	25	2	25	1	25	0	0	0	0
	point249	249											
Roadway50	point250	250	250	97	25	2	25	1	25	0	0	0	0
	point251	251	250	97	25	2	25	1	25	0	0	0	0
	point252	252	250	97	25	2	25	1	25	0	0	0	0
	point253	253	250	97	25	2	25	1	25	0	0	0	0
	point254	254	250	97	25	2	25	1	25	0	0	0	0
	point255	255	250	97	25	2	25	1	25	0	0	0	0
	point256	256	250	97	25	2	25	1	25	0	0	0	0

	point257	257											
Roadway51	point259	259	110	97	25	2	25	1	25	0	0	0	0
	point260	260	110	97	25	2	25	1	25	0	0	0	0
	point261	261											
Roadway32-2	point262	262	300	97	25	2	25	1	25	0	0	0	0
	point161	161	300	97	25	2	25	1	25	0	0	0	0
	point162	162	300	97	25	2	25	1	25	0	0	0	0
	point163	163	300	97	25	2	25	1	25	0	0	0	0
	point156	156											

Dudek
M. Greene / J. Leech

21 December 2015
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing with Proj

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	1	1	34,920,576.0	14,127,884.0	130.00	5.00	0.00	66	10.0	8.0	Y
R2	2	1	34,920,596.0	14,126,797.0	130.00	5.00	0.00	66	10.0	8.0	
R3	3	1	34,920,188.0	14,129,261.0	130.00	5.00	0.00	66	10.0	8.0	
R4	4	1	34,925,012.0	14,129,367.0	130.00	5.00	0.00	66	10.0	8.0	
R5	5	1	34,924,056.0	14,129,572.0	130.00	5.00	0.00	66	10.0	8.0	
R6	6	1	34,923,744.0	14,125,522.0	130.00	5.00	0.00	66	10.0	8.0	
R7	7	1	34,923,644.0	14,126,490.0	130.00	5.00	0.00	66	10.0	8.0	
R8	8	1	34,924,932.0	14,126,518.0	130.00	5.00	0.00	66	10.0	8.0	
R9	9	1	34,924,284.0	14,126,326.0	130.00	5.00	0.00	66	10.0	8.0	
R10	11	1	34,924,008.0	14,125,662.0	130.00	5.00	0.00	66	10.0	8.0	
R11	12	1	34,923,772.0	14,125,795.0	130.00	5.00	0.00	66	10.0	8.0	
R12	13	1	34,923,396.0	14,125,784.0	130.00	5.00	0.00	66	10.0	8.0	
R13	14	1	34,923,484.0	14,125,570.0	130.00	5.00	0.00	66	10.0	8.0	
R14	15	1	34,924,572.0	14,125,473.0	130.00	5.00	0.00	66	10.0	8.0	
R15	16	1	34,926,624.0	14,125,684.0	130.00	5.00	0.00	66	10.0	8.0	
R16	17	1	34,926,456.0	14,126,594.0	130.00	5.00	0.00	66	10.0	8.0	
R17	18	1	34,922,224.0	14,126,572.0	130.00	5.00	0.00	66	10.0	8.0	
R18	19	1	34,922,384.0	14,126,291.0	130.00	5.00	0.00	66	10.0	8.0	
R19	24	1	34,923,352.0	14,125,650.0	130.00	5.00	0.00	66	10.0	8.0	
R20	25	1	34,923,124.0	14,126,279.0	130.00	5.00	0.00	66	10.0	8.0	
R21	26	1	34,922,580.0	14,125,728.0	130.00	5.00	0.00	66	10.0	8.0	
R22	27	1	34,922,092.0	14,125,398.0	130.00	5.00	0.00	66	10.0	8.0	
R23	28	1	34,923,180.0	14,125,500.0	130.00	5.00	0.00	66	10.0	8.0	
R24	29	1	34,921,792.0	14,126,831.0	130.00	5.00	0.00	66	10.0	8.0	

R25	31	1	34,921,348.0	14,128,445.0	130.00	5.00	0.00	66	10.0	8.0	
R26	32	1	34,921,964.0	14,128,976.0	130.00	5.00	0.00	66	10.0	8.0	
R27	33	1	34,923,944.0	14,125,267.0	130.00	5.00	0.00	66	10.0	8.0	
R28	34	1	34,924,520.0	14,125,098.0	130.00	5.00	0.00	66	10.0	8.0	
R29	36	1	34,926,020.0	14,124,842.0	130.00	5.00	0.00	66	10.0	8.0	
R30	38	1	34,924,724.0	14,125,017.0	130.00	5.00	0.00	66	10.0	8.0	
R31	39	1	34,925,472.0	14,124,561.0	130.00	5.00	0.00	66	10.0	8.0	
R32	40	1	34,923,320.0	14,125,391.0	130.00	5.00	0.00	66	10.0	8.0	
R33	41	1	34,924,724.0	14,125,418.0	130.00	5.00	0.00	66	10.0	8.0	
R34	42	1	34,924,724.0	14,125,380.0	130.00	5.00	0.00	66	10.0	8.0	
R35	43	1	34,924,572.0	14,125,313.0	130.00	5.00	0.00	66	10.0	8.0	

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing with Proj

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 Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		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	34,924,020.0	14,129,635.0	130.00	6.00	0.00	0	0		
									point2	2	34,924,044.0	14,129,560.0	130.00	6.00	0.00	0	0		
									point3	3	34,925,280.0	14,129,574.0	130.00	6.00					
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	34,923,996.0	14,129,365.0	130.00	6.00	0.00	0	0		
									point5	5	34,925,492.0	14,129,385.0	130.00	6.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	34,922,808.0	14,125,271.0	130.00	12.00	0.00	0	0		
									point7	7	34,923,076.0	14,125,249.0	130.00	12.00	0.00	0	0		
									point8	8	34,923,492.0	14,125,184.0	130.00	12.00	0.00	0	0		
									point9	9	34,924,032.0	14,125,067.0	130.00	12.00	0.00	0	0		
									point10	10	34,924,572.0	14,124,872.0	130.00	12.00	0.00	0	0		
									point11	11	34,924,860.0	14,124,742.0	130.00	12.00	0.00	0	0		
									point12	12	34,925,220.0	14,124,552.0	130.00	12.00					
Barrier4	W	0.00	99.99	0.00				0.00	point13	13	34,926,040.0	14,124,095.0	130.00	8.00	0.00	0	0		
									point14	14	34,925,580.0	14,124,447.0	130.00	8.00	0.00	0	0		
									point15	15	34,925,128.0	14,124,726.0	130.00	8.00	0.00	0	0		
									point16	16	34,924,776.0	14,124,901.0	130.00	8.00	0.00	0	0		
									point17	17	34,924,416.0	14,125,051.0	130.00	8.00	0.00	0	0		
									point18	18	34,923,988.0	14,125,180.0	130.00	8.00	0.00	0	0		
									point19	19	34,923,520.0	14,125,276.0	130.00	8.00	0.00	0	0		
									point20	20	34,923,016.0	14,125,328.0	130.00	8.00	0.00	0	0		
									point21	21	34,922,068.0	14,125,358.0	130.00	8.00					
Barrier5	W	0.00	99.99	0.00				0.00	point22	22	34,922,068.0	14,125,358.0	130.00	6.00	0.00	0	0		
									point23	23	34,922,060.0	14,126,407.0	130.00	6.00	0.00	0	0		
									point24	24	34,922,064.0	14,126,437.0	130.00	6.00	0.00	0	0		
									point25	25	34,922,088.0	14,126,474.0	130.00	6.00	0.00	0	0		
									point26	26	34,922,108.0	14,126,499.0	130.00	6.00					

Dudek 21 December 2015

M. Greene / J. Leech TNM 2.5

INPUT: BUILDING ROWS

PROJECT/CONTRACT: 8451

RUN: Lincoln Specific Plan - Existing

Building Row Name	Average Height	Building Percent	Points No.	Coordinates (ground) X	Y	Z
	ft	%		ft	ft	ft
Building1	18.00	80	1	34,923,376.0	14,126,442.0	130.00
			2	34,924,276.0	14,126,457.0	130.00
Building2	18.00	80	3	34,923,808.0	14,125,751.0	130.00
			4	34,923,668.0	14,125,777.0	130.00
Building3	18.00	80	5	34,923,388.0	14,125,656.0	130.00
			6	34,924,024.0	14,125,527.0	130.00
			7	34,924,612.0	14,125,526.0	130.00
Building4	18.00	80	8	34,922,116.0	14,125,409.0	130.00
			9	34,922,132.0	14,126,232.0	130.00
Building5	18.00	80	10	34,922,236.0	14,125,563.0	130.00
			11	34,922,432.0	14,125,570.0	130.00
Building6	18.00	80	12	34,922,504.0	14,125,568.0	130.00
			13	34,922,880.0	14,125,570.0	130.00
			14	34,923,192.0	14,125,435.0	130.00
Building7	18.00	80	15	34,923,272.0	14,125,413.0	130.00
			16	34,923,680.0	14,125,395.0	130.00
			17	34,924,028.0	14,125,284.0	130.00
Building8	18.00	80	18	34,924,140.0	14,125,242.0	130.00
			19	34,924,328.0	14,125,180.0	130.00
Building9	18.00	80	20	34,924,404.0	14,125,152.0	130.00
			21	34,924,588.0	14,125,104.0	130.00
Building10	18.00	80	22	34,924,672.0	14,125,078.0	130.00
			23	34,925,284.0	14,124,784.0	130.00
			24	34,925,456.0	14,124,756.0	130.00
			25	34,925,652.0	14,124,785.0	130.00
			26	34,925,792.0	14,124,849.0	130.00

			27	34,925,848.0	14,124,956.0	130.00
Building11	18.00	80	28	34,925,992.0	14,124,877.0	130.00
			29	34,925,988.0	14,125,168.0	130.00
Building12	18.00	80	30	34,924,564.0	14,125,116.0	130.00
			31	34,924,588.0	14,125,181.0	130.00
			32	34,924,612.0	14,125,251.0	130.00
			33	34,924,616.0	14,125,386.0	130.00
Building13	18.00	80	35	34,921,940.0	14,128,969.0	130.00
			36	34,921,952.0	14,128,830.0	130.00
			37	34,921,952.0	14,128,619.0	130.00

Dudek
M. Greene / J. Leech
21 December 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Existing with Proj
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
R2	2	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
R3	3	1	0.0	54.6	66	54.6	10	----	54.6	0.0	8	-8.0
R4	4	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
R5	5	1	0.0	54.6	66	54.6	10	----	54.6	0.0	8	-8.0
R6	6	1	0.0	54.0	66	54.0	10	----	54.0	0.0	8	-8.0
R7	7	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
R8	8	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
R9	9	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
R10	11	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
R11	12	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R12	13	1	0.0	55.5	66	55.5	10	----	55.5	0.0	8	-8.0
R13	14	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
R14	15	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R15	16	1	0.0	57.7	66	57.7	10	----	57.7	0.0	8	-8.0
R16	17	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
R17	18	1	0.0	60.7	66	60.7	10	----	60.7	0.0	8	-8.0
R18	19	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
R19	24	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
R20	25	1	0.0	54.0	66	54.0	10	----	54.0	0.0	8	-8.0
R21	26	1	0.0	57.3	66	57.3	10	----	57.3	0.0	8	-8.0
R22	27	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
R23	28	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
R24	29	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
R25	31	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0

R26	32	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R27	33	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
R28	34	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
R29	36	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R30	38	1	0.0	57.4	66	57.4	10	----	57.4	0.0	8	-8.0
R31	39	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
R32	40	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0
R33	41	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
R34	42	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
R35	43	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	35	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 21 December 2015
M Greene / J Leech TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future w/o Proj

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Nicolaus Rd E of Nelson Ln - WB	34.0	point4	4	34,927,612.0	14,129,586.0	130.00				Average	
		point6	6	34,925,284.0	14,129,529.0	130.00				Average	
		point7	7	34,924,004.0	14,129,507.0	130.00				Average	
		point8	8	34,920,676.0	14,129,447.0	130.00					
Aviation Blvd - N of Nicolaus Rd NB	35.0	point9	9	34,920,668.0	14,129,449.0	130.00				Average	
		point10	10	34,920,660.0	14,130,095.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB	40.0	point15	15	34,920,772.0	14,125,316.0	130.00				Average	
		point14	14	34,920,800.0	14,126,739.0	130.00				Average	
		point13	13	34,920,792.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - WB	45.0	point23	23	34,920,672.0	14,125,286.0	130.00				Average	
		point22	22	34,919,260.0	14,125,286.0	130.00					
Nelson Ln - S of Lincoln BP - NB	22.0	point25	25	34,920,752.0	14,124,655.0	130.00				Average	
		point24	24	34,920,760.0	14,125,195.0	130.00					
Nicolaus Rd W of Nelson Ln - EB	17.0	point5	5	34,919,280.0	14,129,394.0	130.00				Average	
		point50	50	34,920,304.0	14,129,386.0	130.00				Average	
		point26	26	34,920,600.0	14,129,379.0	130.00					
Nicolaus Rd E of Nelson Ln - EB	34.0	point30	30	34,920,700.0	14,129,348.0	130.00				Average	
		point29	29	34,924,004.0	14,129,407.0	130.00				Average	
		point28	28	34,925,284.0	14,129,429.0	130.00				Average	
		point27	27	34,927,612.0	14,129,486.0	130.00					
Nicolaus Rd W of Nelson Ln - WB	17.0	point31	31	34,920,608.0	14,129,429.0	130.00				Average	
		point51	51	34,920,308.0	14,129,414.0	130.00				Average	
		point32	32	34,919,280.0	14,129,420.0	130.00					
Aviation Blvd - N of Nicolaus Rd SB	35.0	point34	34	34,920,628.0	14,130,095.0	130.00				Average	
		point33	33	34,920,636.0	14,129,448.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB	40.0	point35	35	34,920,612.0	14,129,371.0	130.00				Average	
		point36	36	34,920,644.0	14,128,874.0	130.00				Average	

		point37	37	34,920,712.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - EB	45.0	point46	46	34,919,260.0	14,125,201.0	130.00				Average	
		point47	47	34,920,672.0	14,125,201.0	130.00					
Nelson Ln - S of Lincoln BP - SB	22.0	point48	48	34,920,712.0	14,125,199.0	130.00				Average	
		point49	49	34,920,704.0	14,124,655.0	130.00					
1st Street - E. of Project Site	45.0	point52	52	34,923,384.0	14,125,734.0	130.00				Average	
		point53	53	34,924,012.0	14,125,606.0	130.00				Average	
		point54	54	34,924,712.0	14,125,608.0	130.00				Average	
		point55	55	34,925,480.0	14,125,623.0	130.00				Average	
		point56	56	34,925,596.0	14,125,658.0	130.00				Average	
		point57	57	34,925,900.0	14,125,707.0	130.00					
3rd Street - E. of Project Site	45.0	point59	59	34,923,372.0	14,126,371.0	130.00				Average	
		point60	60	34,924,700.0	14,126,396.0	130.00				Average	
		point61	61	34,925,096.0	14,126,500.0	130.00				Average	
		point62	62	34,926,032.0	14,126,525.0	130.00					
Lincoln Bypass - E. of Nelson Ln - WB	45.0	point69	69	34,926,160.0	14,123,802.0	130.00				Average	
		point70	70	34,925,940.0	14,124,007.0	130.00				Average	
		point80	80	34,925,596.0	14,124,265.0	130.00				Average	
		point71	71	34,925,204.0	14,124,516.0	130.00				Average	
		point72	72	34,924,844.0	14,124,706.0	130.00				Average	
		point73	73	34,924,556.0	14,124,836.0	130.00				Average	
		point74	74	34,924,008.0	14,125,032.0	130.00				Average	
		point75	75	34,923,476.0	14,125,148.0	130.00				Average	
		point76	76	34,923,060.0	14,125,213.0	130.00				Average	
		point77	77	34,922,792.0	14,125,235.0	130.00				Average	
		point78	78	34,921,864.0	14,125,253.0	130.00				Average	
		point79	79	34,920,812.0	14,125,285.0	130.00					
Lincoln Bypass - E. of Nelson Ln - EB	45.0	point81	81	34,920,796.0	14,125,205.0	130.00				Average	
		point82	82	34,921,348.0	14,125,174.0	130.00				Average	
		point83	83	34,922,108.0	14,125,133.0	130.00				Average	
		point84	84	34,922,848.0	14,125,119.0	130.00				Average	
		point85	85	34,923,296.0	14,125,069.0	130.00				Average	
		point86	86	34,923,792.0	14,124,974.0	130.00				Average	
		point87	87	34,924,396.0	14,124,786.0	130.00				Average	
		point88	88	34,924,836.0	14,124,591.0	130.00				Average	
		point89	89	34,925,104.0	14,124,451.0	130.00				Average	
		point90	90	34,925,572.0	14,124,157.0	130.00				Average	
		point91	91	34,926,048.0	14,123,772.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB-2	40.0	point92	92	34,920,792.0	14,127,449.0	130.00				Average	
		point12	12	34,920,724.0	14,128,874.0	130.00				Average	

		point11	11	34,920,696.0	14,129,342.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB-2	40.0	point93	93	34,920,712.0	14,127,449.0	130.00				Average	
		point38	38	34,920,720.0	14,126,739.0	130.00				Average	
		point39	39	34,920,692.0	14,125,316.0	130.00					
3rd Street - E. of Project Site-2	45.0	point109	109	34,926,032.0	14,126,525.0	130.00				Average	
		point63	63	34,927,644.0	14,126,561.0	130.00					
1st Street - E. of Project Site-2	45.0	point110	110	34,925,900.0	14,125,707.0	130.00				Average	
		point58	58	34,927,640.0	14,125,770.0	130.00					

Dudek 21 December
M Greene / J Leech TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future w/o Proj

Roadway	Points		Segment										
Name	Name	No.	Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Nicolaus Rd E of Nelson Ln - WB	point4	4	763	97	40	2	40	1	40	0	0	0	0
	point6	6	763	97	40	2	40	1	40	0	0	0	0
	point7	7	763	97	40	2	40	1	40	0	0	0	0
	point8	8											
Aviation Blvd - N of Nicolaus Rd NB	point9	9	691	97	40	2	40	1	40	0	0	0	0
	point10	10											
NelsonLn -NicolausLn to LinclnBy - NB	point15	15	1461	97	40	2	40	1	40	0	0	0	0
	point14	14	1461	97	40	2	40	1	40	0	0	0	0
	point13	13											
Lincoln Bypass - W. of Nelson Ln - WB	point23	23	961	85	65	2	65	13	65	0	0	0	0
	point22	22											
Nelson Ln - S of Lincoln BP - NB	point25	25	1776	97	40	2	40	1	40	0	0	0	0
	point24	24											
Nicolaus Rd W of Nelson Ln - EB	point5	5	1666	97	40	2	40	1	40	0	0	0	0
	point50	50	1666	97	40	2	40	1	40	0	0	0	0
	point26	26											
Nicolaus Rd E of Nelson Ln - EB	point30	30	1731	97	40	2	40	1	40	0	0	0	0
	point29	29	1731	97	40	2	40	1	40	0	0	0	0
	point28	28	1731	97	40	2	40	1	40	0	0	0	0
	point27	27											
Nicolaus Rd W of Nelson Ln - WB	point31	31	1198	97	40	2	40	1	40	0	0	0	0
	point51	51	1198	97	40	2	40	1	40	0	0	0	0
	point32	32											
Aviation Blvd - N of Nicolaus Rd SB	point34	34	1183	97	40	2	40	1	40	0	0	0	0
	point33	33											

NelsonLn -NicolausLn to LinclnBy - SB	point35	35	1308	97	40	2	40	1	40	0	0	0	0
	point36	36	1308	97	40	2	40	1	40	0	0	0	0
	point37	37											
Lincoln Bypass - W. of Nelson Ln - EB	point46	46	1375	85	65	2	65	13	65	0	0	0	0
	point47	47											
Nelson Ln - S of Lincoln BP - SB	point48	48	2108	97	40	2	40	1	40	0	0	0	0
	point49	49											
1st Street - E. of Project Site	point52	52	280	97	25	2	25	1	25	0	0	0	0
	point53	53	280	97	25	2	25	1	25	0	0	0	0
	point54	54	280	97	25	2	25	1	25	0	0	0	0
	point55	55	280	97	25	2	25	1	25	0	0	0	0
	point56	56	280	97	25	2	25	1	25	0	0	0	0
	point57	57											
3rd Street - E. of Project Site	point59	59	150	97	25	2	25	1	25	0	0	0	0
	point60	60	150	97	25	2	25	1	25	0	0	0	0
	point61	61	150	97	25	2	25	1	25	0	0	0	0
	point62	62											
Lincoln Bypass - E. of Nelson Ln - WB	point69	69	2616	85	65	2	65	13	65	0	0	0	0
	point70	70	2616	85	65	2	65	13	65	0	0	0	0
	point80	80	2616	85	65	2	65	13	65	0	0	0	0
	point71	71	2616	85	65	2	65	13	65	0	0	0	0
	point72	72	2616	85	65	2	65	13	65	0	0	0	0
	point73	73	2616	85	65	2	65	13	65	0	0	0	0
	point74	74	2616	85	65	2	65	13	65	0	0	0	0
	point75	75	2616	85	65	2	65	13	65	0	0	0	0
	point76	76	2616	85	65	2	65	13	65	0	0	0	0
	point77	77	2616	85	65	2	65	13	65	0	0	0	0
	point78	78	2616	85	65	2	65	13	65	0	0	0	0
	point79	79											
Lincoln Bypass - E. of Nelson Ln - EB	point81	81	2979	85	65	2	65	13	65	0	0	0	0
	point82	82	2979	85	65	2	65	13	65	0	0	0	0
	point83	83	2979	85	65	2	65	13	65	0	0	0	0
	point84	84	2979	85	65	2	65	13	65	0	0	0	0
	point85	85	2979	85	65	2	65	13	65	0	0	0	0
	point86	86	2979	85	65	2	65	13	65	0	0	0	0
	point87	87	2979	85	65	2	65	13	65	0	0	0	0
	point88	88	2979	85	65	2	65	13	65	0	0	0	0

	point89	89	2979	85	65	2	65	13	65	0	0	0	0
	point90	90	2979	85	65	2	65	13	65	0	0	0	0
	point91	91											
NelsonLn -NicolausLn to LinclnBy - NB-2	point92	92	1316	97	40	2	40	1	40	0	0	0	0
	point12	12	1316	97	40	2	40	1	40	0	0	0	0
	point11	11											
NelsonLn -NicolausLn to LinclnBy - SB-2	point93	93	1744	97	40	2	40	1	40	0	0	0	0
	point38	38	1744	97	40	2	40	1	40	0	0	0	0
	point39	39											
3rd Street - E. of Project Site-2	point109	109	340	97	25	2	25	1	25	0	0	0	0
	point63	63											
1st Street - E. of Project Site-2	point110	110	570	97	25	2	25	1	25	0	0	0	0
	point58	58											

Dudek
M Greene / J Leech

21 December 2015
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future w/o Proj

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	34,923,256.0	14,129,338.0	130.00	5.00	0.00	66	10.0	8.0	Y
M2	2	1	34,920,824.0	14,126,966.0	130.00	5.00	0.00	66	10.0	8.0	Y
M3	3	1	34,922,544.0	14,125,397.0	130.00	5.00	0.00	66	10.0	8.0	Y
R1	4	1	34,920,576.0	14,127,884.0	130.00	5.00	0.00	66	10.0	8.0	Y
R2	5	1	34,920,596.0	14,126,797.0	130.00	5.00	0.00	66	10.0	8.0	Y
R3	6	1	34,920,188.0	14,129,261.0	130.00	5.00	0.00	66	10.0	8.0	Y
R4	7	1	34,925,012.0	14,129,367.0	130.00	5.00	0.00	66	10.0	8.0	Y
R5	9	1	34,924,056.0	14,129,572.0	130.00	5.00	0.00	66	10.0	8.0	Y
R6	11	1	34,923,744.0	14,125,522.0	130.00	5.00	0.00	66	10.0	8.0	Y
R7	12	1	34,923,644.0	14,126,490.0	130.00	5.00	0.00	66	10.0	8.0	Y
R8	13	1	34,924,932.0	14,126,518.0	130.00	5.00	0.00	66	10.0	8.0	Y
R9	14	1	34,924,284.0	14,126,326.0	130.00	5.00	0.00	66	10.0	8.0	Y
R10	15	1	34,924,008.0	14,125,662.0	130.00	5.00	0.00	66	10.0	8.0	Y
R11	16	1	34,923,772.0	14,125,795.0	130.00	5.00	0.00	66	10.0	8.0	Y
R12	17	1	34,923,396.0	14,125,784.0	130.00	5.00	0.00	66	10.0	8.0	Y
R13	18	1	34,923,484.0	14,125,570.0	130.00	5.00	0.00	66	10.0	8.0	Y
R14	19	1	34,924,572.0	14,125,473.0	130.00	5.00	0.00	66	10.0	8.0	Y
R15	24	1	34,926,624.0	14,125,684.0	130.00	5.00	0.00	66	10.0	8.0	Y
R16	27	1	34,926,456.0	14,126,594.0	130.00	5.00	0.00	66	10.0	8.0	

Dudek **21 December 2015**
M Greene / J Leech **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **8451**
RUN: **Lincoln Specific Plan - Future w/o Proj**

Barrier									Points									
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				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	34,922,808.0	14,125,271.0	130.00	12.00	0.00	0	0		
									point2	2	34,923,076.0	14,125,249.0	130.00	12.00	0.00	0	0		
									point3	3	34,923,492.0	14,125,184.0	130.00	12.00	0.00	0	0		
									point4	4	34,924,032.0	14,125,067.0	130.00	12.00	0.00	0	0		
									point5	5	34,924,572.0	14,124,872.0	130.00	12.00	0.00	0	0		
									point6	6	34,924,860.0	14,124,742.0	130.00	12.00	0.00	0	0		
									point7	7	34,925,220.0	14,124,552.0	130.00	12.00					
Barrier2	W	0.00	99.99	0.00				0.00	point8	8	34,924,020.0	14,129,635.0	130.00	6.00	0.00	0	0		
									point9	9	34,924,044.0	14,129,560.0	130.00	6.00	0.00	0	0		
									point10	10	34,925,280.0	14,129,574.0	130.00	6.00					
Barrier3	W	0.00	99.99	0.00				0.00	point11	11	34,923,996.0	14,129,365.0	130.00	6.00	0.00	0	0		
									point12	12	34,925,492.0	14,129,385.0	130.00	6.00					

Dudek					**21 December 2015**	
M Greene / J Leech					**TNM 2.5**	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:	**8451**					
RUN:	**Lincoln Specific Plan - Future w**					
Building Row			**Points**			
Name	**Average**	**Building**	**No.**	**Coordinates (ground)**		
	Height	**Percent**		**X**	**Y**	**Z**
	ft	%		ft	ft	ft
Building1	18.00	80	1	34,923,376.0	14,126,442.0	130.00
			2	34,924,276.0	14,126,457.0	130.00
Building2	18.00	80	3	34,923,808.0	14,125,751.0	130.00
			4	34,923,668.0	14,125,777.0	130.00
Building3	18.00	80	5	34,923,388.0	14,125,656.0	130.00
			6	34,924,024.0	14,125,527.0	130.00
			7	34,924,700.0	14,125,525.0	130.00

Dudek
M Greene / J Leech

21 December 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future w/o Proj
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0
M2	2	1	0.0	71.6	66	71.6	10	Snd Lvl	71.6	0.0	8	-8.0
M3	3	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
R1	4	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
R2	5	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
R3	6	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
R4	7	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
R5	9	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0
R6	11	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
R7	12	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
R8	13	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
R9	14	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
R10	15	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
R11	16	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
R12	17	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
R13	18	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
R14	19	1	0.0	57.5	66	57.5	10	----	57.5	0.0	8	-8.0
R15	24	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0
R16	27	1	0.0	56.0	66	56.0	10	----	56.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	19	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								

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future with Proj

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Nicolaus Rd E of Nelson Ln - WB	34.0	point4	4	34,927,612.0	14,129,586.0	130.00				Average	
		point6	6	34,925,284.0	14,129,529.0	130.00				Average	
		point7	7	34,924,004.0	14,129,507.0	130.00				Average	
		point8	8	34,920,676.0	14,129,447.0	130.00					
Aviation Blvd - N of Nicolaus Rd NB	35.0	point9	9	34,920,668.0	14,129,449.0	130.00				Average	
		point10	10	34,920,660.0	14,130,095.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB	40.0	point15	15	34,920,772.0	14,125,316.0	130.00				Average	
		point14	14	34,920,800.0	14,126,739.0	130.00				Average	
		point13	13	34,920,792.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - WB	45.0	point23	23	34,920,672.0	14,125,286.0	130.00				Average	
		point22	22	34,919,260.0	14,125,286.0	130.00					
Nelson Ln - S of Lincoln BP - NB	22.0	point25	25	34,920,752.0	14,124,655.0	130.00				Average	
		point24	24	34,920,760.0	14,125,195.0	130.00					
Nicolaus Rd W of Nelson Ln - WB	17.0	point5	5	34,919,280.0	14,129,394.0	130.00				Average	
		point50	50	34,920,304.0	14,129,386.0	130.00				Average	
		point26	26	34,920,600.0	14,129,379.0	130.00					
Nicolaus Rd E of Nelson Ln - EB	34.0	point30	30	34,920,700.0	14,129,348.0	130.00				Average	
		point29	29	34,924,004.0	14,129,407.0	130.00				Average	
		point28	28	34,925,284.0	14,129,429.0	130.00				Average	
		point27	27	34,927,612.0	14,129,486.0	130.00					
Nicolaus Rd W of Nelson Ln - EB	17.0	point31	31	34,920,608.0	14,129,429.0	130.00				Average	
		point51	51	34,920,308.0	14,129,414.0	130.00				Average	
		point32	32	34,919,280.0	14,129,420.0	130.00					
Aviation Blvd - N of Nicolaus Rd SB	35.0	point34	34	34,920,628.0	14,130,095.0	130.00				Average	
		point33	33	34,920,636.0	14,129,448.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB	40.0	point35	35	34,920,612.0	14,129,371.0	130.00				Average	
		point36	36	34,920,644.0	14,128,874.0	130.00				Average	

		point37	37	34,920,712.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - EB	45.0	point46	46	34,919,260.0	14,125,201.0	130.00				Average	
		point47	47	34,920,672.0	14,125,201.0	130.00					
Nelson Ln - S of Lincoln BP - SB	22.0	point48	48	34,920,712.0	14,125,199.0	130.00				Average	
		point49	49	34,920,704.0	14,124,655.0	130.00					
1st Street - E. of Proj site to Chambers	45.0	point52	52	34,923,384.0	14,125,734.0	130.00				Average	
		point53	53	34,924,012.0	14,125,606.0	130.00				Average	
		point54	54	34,924,712.0	14,125,608.0	130.00				Average	
		point55	55	34,925,480.0	14,125,623.0	130.00				Average	
		point56	56	34,925,596.0	14,125,658.0	130.00				Average	
		point57	57	34,925,900.0	14,125,707.0	130.00					
3rd Street - E. of Proj site to Chambers	45.0	point59	59	34,923,372.0	14,126,371.0	130.00				Average	
		point60	60	34,924,700.0	14,126,396.0	130.00				Average	
		point61	61	34,925,096.0	14,126,500.0	130.00				Average	
		point62	62	34,926,032.0	14,126,525.0	130.00					
Lincoln Bypass - E. of Nelson Ln - EB	45.0	point114	114	34,920,796.0	14,125,205.0	130.00				Average	
		point116	116	34,921,348.0	14,125,174.0	130.00				Average	
		point117	117	34,922,108.0	14,125,133.0	130.00				Average	
		point118	118	34,922,848.0	14,125,119.0	130.00				Average	
		point119	119	34,923,296.0	14,125,069.0	130.00				Average	
		point120	120	34,923,792.0	14,124,974.0	130.00				Average	
		point121	121	34,924,396.0	14,124,786.0	130.00				Average	
		point122	122	34,924,836.0	14,124,591.0	130.00				Average	
		point123	123	34,925,104.0	14,124,451.0	130.00				Average	
		point124	124	34,925,572.0	14,124,157.0	130.00				Average	
		point115	115	34,926,048.0	14,123,772.0	130.00					
Lincoln Bypass - E. of Nelson Ln - WB	45.0	point125	125	34,926,160.0	14,123,802.0	130.00				Average	
		point127	127	34,925,940.0	14,124,007.0	130.00				Average	
		point128	128	34,925,596.0	14,124,265.0	130.00				Average	
		point129	129	34,925,204.0	14,124,516.0	130.00				Average	
		point130	130	34,924,844.0	14,124,706.0	130.00				Average	
		point131	131	34,924,556.0	14,124,836.0	130.00				Average	
		point132	132	34,924,008.0	14,125,032.0	130.00				Average	
		point133	133	34,923,476.0	14,125,148.0	130.00				Average	
		point134	134	34,923,060.0	14,125,213.0	130.00				Average	
		point135	135	34,922,792.0	14,125,235.0	130.00				Average	
		point136	136	34,921,864.0	14,125,253.0	130.00				Average	
		point126	126	34,920,812.0	14,125,285.0	130.00					
Roadway31	42.0	point147	147	34,923,368.0	14,125,737.0	130.00				Average	
		point149	149	34,923,256.0	14,125,739.0	130.00				Average	

		point150	150	34,923,148.0	14,125,740.0	130.00				Average	
		point151	151	34,923,076.0	14,125,753.0	130.00				Average	
		point152	152	34,922,968.0	14,125,806.0	130.00				Average	
		point153	153	34,922,896.0	14,125,818.0	130.00				Average	
		point154	154	34,922,756.0	14,125,818.0	130.00				Average	
		point148	148	34,922,484.0	14,125,818.0	130.00					
Roadway32	12.0	point155	155	34,923,364.0	14,126,369.0	130.00				Average	
		point157	157	34,923,236.0	14,126,365.0	130.00				Average	
		point158	158	34,922,752.0	14,126,363.0	130.00				Average	
		point159	159	34,922,696.0	14,126,360.0	130.00				Average	
		point160	160	34,922,612.0	14,126,325.0	130.00				Average	
		point161	161	34,922,548.0	14,126,267.0	130.00					
Roadway33	42.0	point164	164	34,922,508.0	14,126,243.0	130.00				Average	
		point174	174	34,922,324.0	14,126,408.0	130.00				Average	
		point165	165	34,922,136.0	14,126,570.0	130.00				Average	
		point166	166	34,922,144.0	14,126,617.0	130.00				Average	
		point167	167	34,922,124.0	14,126,654.0	130.00				Average	
		point168	168	34,922,084.0	14,126,672.0	130.00				Average	
		point169	169	34,922,044.0	14,126,664.0	130.00				Average	
		point170	170	34,922,032.0	14,126,646.0	130.00					
Roadway34	42.0	point175	175	34,922,028.0	14,126,640.0	130.00				Average	
		point180	180	34,922,024.0	14,126,609.0	130.00				Average	
		point176	176	34,922,040.0	14,126,581.0	130.00				Average	
		point177	177	34,922,068.0	14,126,556.0	130.00				Average	
		point178	178	34,922,100.0	14,126,557.0	130.00				Average	
		point179	179	34,922,128.0	14,126,570.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB-2	40.0	point183	183	34,920,792.0	14,127,449.0	130.00				Average	
		point12	12	34,920,724.0	14,128,874.0	130.00				Average	
		point11	11	34,920,696.0	14,129,342.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB-2	40.0	point184	184	34,920,712.0	14,127,449.0	130.00				Average	
		point38	38	34,920,720.0	14,126,739.0	130.00				Average	
		point39	39	34,920,692.0	14,125,316.0	130.00					
Roadway38	42.0	point185	185	34,922,476.0	14,125,748.0	130.00				Average	
		point186	186	34,922,476.0	14,125,508.0	130.00					
Roadway39	42.0	point187	187	34,922,204.0	14,125,498.0	130.00				Average	
		point189	189	34,922,804.0	14,125,501.0	130.00				Average	
		point190	190	34,922,892.0	14,125,484.0	130.00				Average	
		point191	191	34,923,016.0	14,125,441.0	130.00				Average	
		point192	192	34,923,164.0	14,125,373.0	130.00				Average	
		point193	193	34,923,240.0	14,125,354.0	130.00					

Roadway40	42.0	point219	219	34,923,244.0	14,125,666.0	130.00				Average	
		point220	220	34,923,244.0	14,125,510.0	130.00				Average	
		point221	221	34,923,236.0	14,125,422.0	130.00				Average	
		point222	222	34,923,220.0	14,125,376.0	130.00					
Roadway41	42.0	point223	223	34,922,040.0	14,126,555.0	130.00				Average	
		point225	225	34,922,012.0	14,126,471.0	130.00				Average	
		point226	226	34,922,012.0	14,126,091.0	130.00					
Roadway33-2	42.0	point234	234	34,921,436.0	14,126,706.0	130.00				Average	
		point173	173	34,920,844.0	14,126,706.0	130.00					
Roadway33-2	42.0	point235	235	34,922,032.0	14,126,646.0	130.00				Average	
		point171	171	34,921,940.0	14,126,685.0	130.00				Average	
		point172	172	34,921,856.0	14,126,705.0	130.00				Average	
		point233	233	34,921,436.0	14,126,706.0	130.00					
Roadway41-2	42.0	point236	236	34,922,012.0	14,126,091.0	130.00				Average	
		point227	227	34,921,760.0	14,126,086.0	130.00				Average	
		point228	228	34,921,700.0	14,126,089.0	130.00				Average	
		point229	229	34,921,620.0	14,126,113.0	130.00				Average	
		point230	230	34,921,544.0	14,126,164.0	130.00				Average	
		point231	231	34,921,484.0	14,126,226.0	130.00				Average	
		point232	232	34,921,444.0	14,126,338.0	130.00				Average	
		point224	224	34,921,436.0	14,126,681.0	130.00					
Roadway32-2	42.0	point237	237	34,922,548.0	14,126,267.0	130.00				Average	
		point162	162	34,922,492.0	14,126,179.0	130.00				Average	
		point163	163	34,922,476.0	14,126,092.0	130.00				Average	
		point156	156	34,922,480.0	14,125,831.0	130.00					
Roadway39-2	42.0	point238	238	34,923,240.0	14,125,354.0	130.00				Average	
		point194	194	34,923,364.0	14,125,340.0	130.00				Average	
		point195	195	34,923,500.0	14,125,340.0	130.00				Average	
		point196	196	34,923,592.0	14,125,330.0	130.00				Average	
		point197	197	34,923,700.0	14,125,306.0	130.00				Average	
		point198	198	34,923,824.0	14,125,259.0	130.00				Average	
		point199	199	34,923,920.0	14,125,234.0	130.00				Average	
		point200	200	34,924,172.0	14,125,166.0	130.00				Average	
		point201	201	34,924,384.0	14,125,099.0	130.00				Average	
		point202	202	34,924,476.0	14,125,071.0	130.00				Average	
		point203	203	34,924,540.0	14,125,064.0	130.00				Average	
		point204	204	34,924,616.0	14,125,043.0	130.00					
Roadway39-2-2	42.0	point239	239	34,924,616.0	14,125,043.0	130.00				Average	
		point205	205	34,924,672.0	14,125,010.0	130.00				Average	
		point206	206	34,924,728.0	14,124,970.0	130.00				Average	

		point207	207	34,924,768.0	14,124,946.0	130.00				Average	
		point208	208	34,924,892.0	14,124,892.0	130.00				Average	
		point209	209	34,925,148.0	14,124,772.0	130.00				Average	
		point210	210	34,925,280.0	14,124,722.0	130.00				Average	
		point211	211	34,925,408.0	14,124,695.0	130.00				Average	
		point212	212	34,925,504.0	14,124,695.0	130.00				Average	
		point213	213	34,925,616.0	14,124,706.0	130.00				Average	
		point214	214	34,925,708.0	14,124,728.0	130.00				Average	
		point215	215	34,925,792.0	14,124,764.0	130.00				Average	
		point216	216	34,925,840.0	14,124,808.0	130.00				Average	
		point217	217	34,925,876.0	14,124,855.0	130.00				Average	
		point218	218	34,925,900.0	14,124,936.0	130.00				Average	
		point188	188	34,925,900.0	14,125,206.0	130.00					
Roadway48	42.0	point240	240	34,924,620.0	14,125,064.0	130.00				Average	
		point241	241	34,924,656.0	14,125,153.0	130.00				Average	
		point242	242	34,924,688.0	14,125,265.0	130.00				Average	
		point243	243	34,924,688.0	14,125,527.0	130.00					
Roadway49	42.0	point244	244	34,921,884.0	14,126,718.0	130.00				Average	
		point245	245	34,921,908.0	14,126,836.0	130.00				Average	
		point246	246	34,921,896.0	14,126,921.0	130.00				Average	
		point247	247	34,921,872.0	14,127,700.0	130.00				Average	
		point248	248	34,921,600.0	14,127,703.0	130.00				Average	
		point249	249	34,921,600.0	14,127,961.0	130.00				Average	
		point250	250	34,921,580.0	14,128,100.0	130.00				Average	
		point251	251	34,921,472.0	14,128,504.0	130.00					
Roadway50	42.0	point252	252	34,920,828.0	14,128,204.0	130.00				Average	
		point253	253	34,920,904.0	14,128,209.0	130.00				Average	
		point254	254	34,920,996.0	14,128,245.0	130.00				Average	
		point255	255	34,921,228.0	14,128,423.0	130.00				Average	
		point256	256	34,921,320.0	14,128,465.0	130.00				Average	
		point257	257	34,921,476.0	14,128,510.0	130.00				Average	
		point258	258	34,921,736.0	14,128,583.0	130.00				Average	
		point259	259	34,921,860.0	14,128,594.0	130.00					
Roadway51	42.0	point260	260	34,921,876.0	14,127,966.0	130.00				Average	
		point261	261	34,921,872.0	14,128,595.0	130.00				Average	
		point262	262	34,921,864.0	14,128,862.0	130.00					
1st Street - Chmbrs to Joiner	45.0	point265	265	34,925,900.0	14,125,707.0	130.00				Average	
		point58	58	34,927,640.0	14,125,770.0	130.00					
3rd Street - Chmbrs to Joiner	45.0	point266	266	34,926,032.0	14,126,525.0	130.00				Average	
		point63	63	34,927,644.0	14,126,561.0	130.00					

Dudek 21 December
M. Greene / J. Leech TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future with Proj

Roadway	Points		Segment										
Name	Name	No.	Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Nicolaus Rd E of Nelson Ln - WB	point4	4	688	97	40	2	40	1	40	0	0	0	0
	point6	6	688	97	40	2	40	1	40	0	0	0	0
	point7	7	688	97	40	2	40	1	40	0	0	0	0
	point8	8											
Aviation Blvd - N of Nicolaus Rd NB	point9	9	704	97	40	2	40	1	40	0	0	0	0
	point10	10											
NelsonLn -NicolausLn to LinclnBy - NB	point15	15	1813	97	40	2	40	1	40	0	0	0	0
	point14	14	1813	97	40	2	40	1	40	0	0	0	0
	point13	13											
Lincoln Bypass - W. of Nelson Ln - WB	point23	23	980	85	65	2	65	13	65	0	0	0	0
	point22	22											
Nelson Ln - S of Lincoln BP - NB	point25	25	1854	97	40	2	40	1	40	0	0	0	0
	point24	24											
Nicolaus Rd W of Nelson Ln - WB	point5	5	1639	97	40	2	40	1	40	0	0	0	0
	point50	50	1639	97	40	2	40	1	40	0	0	0	0
	point26	26											
Nicolaus Rd E of Nelson Ln - EB	point30	30	1342	97	40	2	40	1	40	0	0	0	0
	point29	29	1342	97	40	2	40	1	40	0	0	0	0
	point28	28	1342	97	40	2	40	1	40	0	0	0	0
	point27	27											
Nicolaus Rd W of Nelson Ln - EB	point31	31	1270	97	40	2	40	1	40	0	0	0	0
	point51	51	1270	97	40	2	40	1	40	0	0	0	0
	point32	32											
Aviation Blvd - N of Nicolaus Rd SB	point34	34	1148	97	40	2	40	1	40	0	0	0	0
	point33	33											

NelsonLn -NicolausLn to LinclnBy - SB	point35	35	1207	97	40	2	40	1	40	0	0	0	0
	point36	36	1207	97	40	2	40	1	40	0	0	0	0
	point37	37											
Lincoln Bypass - W. of Nelson Ln - EB	point46	46	1378	85	65	2	65	13	65	0	0	0	0
	point47	47											
Nelson Ln - S of Lincoln BP - SB	point48	48	2158	97	40	2	40	1	40	0	0	0	0
	point49	49											
1st Street - E. of Proj site to Chambers	point52	52	330	97	25	2	25	1	25	0	0	0	0
	point53	53	330	97	25	2	25	1	25	0	0	0	0
	point54	54	330	97	25	2	25	1	25	0	0	0	0
	point55	55	330	97	25	2	25	1	25	0	0	0	0
	point56	56	330	97	25	2	25	1	25	0	0	0	0
	point57	57											
3rd Street - E. of Proj site to Chambers	point59	59	270	97	25	2	25	1	25	0	0	0	0
	point60	60	270	97	25	2	25	1	25	0	0	0	0
	point61	61	270	97	25	2	25	1	25	0	0	0	0
	point62	62											
Lincoln Bypass - E. of Nelson Ln - EB	point114	114	2993	95	65	2	65	3	65	0	0	0	0
	point116	116	2993	95	65	2	65	3	65	0	0	0	0
	point117	117	2993	95	65	2	65	3	65	0	0	0	0
	point118	118	2993	95	65	2	65	3	65	0	0	0	0
	point119	119	2993	95	65	2	65	3	65	0	0	0	0
	point120	120	2993	95	65	2	65	3	65	0	0	0	0
	point121	121	2993	95	65	2	65	3	65	0	0	0	0
	point122	122	2993	95	65	2	65	3	65	0	0	0	0
	point123	123	2993	95	65	2	65	3	65	0	0	0	0
	point124	124	2993	95	65	2	65	3	65	0	0	0	0
	point115	115											
Lincoln Bypass - E. of Nelson Ln - WB	point125	125	2650	95	65	2	65	3	65	0	0	0	0
	point127	127	2650	95	65	2	65	3	65	0	0	0	0
	point128	128	2650	95	65	2	65	3	65	0	0	0	0
	point129	129	2650	95	65	2	65	3	65	0	0	0	0
	point130	130	2650	95	65	2	65	3	65	0	0	0	0
	point131	131	2650	95	65	2	65	3	65	0	0	0	0
	point132	132	2650	95	65	2	65	3	65	0	0	0	0
	point133	133	2650	95	65	2	65	3	65	0	0	0	0
	point134	134	2650	95	65	2	65	3	65	0	0	0	0

	point135	135	2650	95	65	2	65	3	65	0	0	0	0
	point136	136	2650	95	65	2	65	3	65	0	0	0	0
	point126	126											
Roadway31	point147	147	290	97	25	2	25	1	25	0	0	0	0
	point149	149	290	97	25	2	25	1	25	0	0	0	0
	point150	150	290	97	25	2	25	1	25	0	0	0	0
	point151	151	290	97	25	2	25	1	25	0	0	0	0
	point152	152	290	97	25	2	25	1	25	0	0	0	0
	point153	153	290	97	25	2	25	1	25	0	0	0	0
	point154	154	290	97	25	2	25	1	25	0	0	0	0
	point148	148											
Roadway32	point155	155	290	97	25	2	25	1	25	0	0	0	0
	point157	157	290	97	25	2	25	1	25	0	0	0	0
	point158	158	290	97	25	2	25	1	25	0	0	0	0
	point159	159	290	97	25	2	25	1	25	0	0	0	0
	point160	160	290	97	25	2	25	1	25	0	0	0	0
	point161	161											
Roadway33	point164	164	640	97	25	2	25	1	25	0	0	0	0
	point174	174	640	97	25	2	25	1	25	0	0	0	0
	point165	165	640	97	25	2	25	1	25	0	0	0	0
	point166	166	640	97	25	2	25	1	25	0	0	0	0
	point167	167	640	97	25	2	25	1	25	0	0	0	0
	point168	168	640	97	25	2	25	1	25	0	0	0	0
	point169	169	640	97	25	2	25	1	25	0	0	0	0
	point170	170											
Roadway34	point175	175	640	97	25	2	25	1	25	0	0	0	0
	point180	180	640	97	25	2	25	1	25	0	0	0	0
	point176	176	640	97	25	2	25	1	25	0	0	0	0
	point177	177	640	97	25	2	25	1	25	0	0	0	0
	point178	178	640	97	25	2	25	1	25	0	0	0	0
	point179	179											
NelsonLn -NicolausLn to LinclnBy - NB-2	point183	183	1048	97	40	2	40	1	40	0	0	0	0
	point12	12	1048	97	40	2	40	1	40	0	0	0	0
	point11	11											
NelsonLn -NicolausLn to LinclnBy - SB-2	point184	184	2062	97	40	2	40	1	40	0	0	0	0
	point38	38	2062	97	40	2	40	1	40	0	0	0	0
	point39	39											

Roadway38	point185	185	20	97	25	2	25	1	25	0	0	0	0
	point186	186											
Roadway39	point187	187	20	97	25	2	25	1	25	0	0	0	0
	point189	189	20	97	25	2	25	1	25	0	0	0	0
	point190	190	20	97	25	2	25	1	25	0	0	0	0
	point191	191	20	97	25	2	25	1	25	0	0	0	0
	point192	192	20	97	25	2	25	1	25	0	0	0	0
	point193	193											
Roadway40	point219	219	10	97	25	2	25	1	25	0	0	0	0
	point220	220	10	97	25	2	25	1	25	0	0	0	0
	point221	221	10	97	25	2	25	1	25	0	0	0	0
	point222	222											
Roadway41	point223	223	210	97	35	2	35	1	35	0	0	0	0
	point225	225	210	97	35	2	35	1	35	0	0	0	0
	point226	226											
Roadway33-2	point234	234	1780	97	35	2	35	1	35	0	0	0	0
	point173	173											
Roadway33-2	point235	235	830	97	35	2	35	1	35	0	0	0	0
	point171	171	830	97	35	2	35	1	35	0	0	0	0
	point172	172	830	97	35	2	35	1	35	0	0	0	0
	point233	233											
Roadway41-2	point236	236	760	97	35	2	35	1	35	0	0	0	0
	point227	227	760	97	35	2	35	1	35	0	0	0	0
	point228	228	760	97	35	2	35	1	35	0	0	0	0
	point229	229	760	97	35	2	35	1	35	0	0	0	0
	point230	230	760	97	35	2	35	1	35	0	0	0	0
	point231	231	760	97	35	2	35	1	35	0	0	0	0
	point232	232	760	97	35	2	35	1	35	0	0	0	0
	point224	224											
Roadway32-2	point237	237	300	97	25	2	25	1	25	0	0	0	0
	point162	162	300	97	25	2	25	1	25	0	0	0	0
	point163	163	300	97	25	2	25	1	25	0	0	0	0
	point156	156											
Roadway39-2	point238	238	10	97	25	2	25	1	25	0	0	0	0
	point194	194	10	97	25	2	25	1	25	0	0	0	0
	point195	195	10	97	25	2	25	1	25	0	0	0	0
	point196	196	10	97	25	2	25	1	25	0	0	0	0

	point197	197	10	97	25	2	25	1	25	0	0	0	0
	point198	198	10	97	25	2	25	1	25	0	0	0	0
	point199	199	10	97	25	2	25	1	25	0	0	0	0
	point200	200	10	97	25	2	25	1	25	0	0	0	0
	point201	201	10	97	25	2	25	1	25	0	0	0	0
	point202	202	10	97	25	2	25	1	25	0	0	0	0
	point203	203	10	97	25	2	25	1	25	0	0	0	0
	point204	204											
Roadway39-2-2	point239	239	30	97	25	2	25	1	25	0	0	0	0
	point205	205	30	97	25	2	25	1	25	0	0	0	0
	point206	206	30	97	25	2	25	1	25	0	0	0	0
	point207	207	30	97	25	2	25	1	25	0	0	0	0
	point208	208	30	97	25	2	25	1	25	0	0	0	0
	point209	209	30	97	25	2	25	1	25	0	0	0	0
	point210	210	30	97	25	2	25	1	25	0	0	0	0
	point211	211	30	97	25	2	25	1	25	0	0	0	0
	point212	212	30	97	25	2	25	1	25	0	0	0	0
	point213	213	30	97	25	2	25	1	25	0	0	0	0
	point214	214	30	97	25	2	25	1	25	0	0	0	0
	point215	215	30	97	25	2	25	1	25	0	0	0	0
	point216	216	30	97	25	2	25	1	25	0	0	0	0
	point217	217	30	97	25	2	25	1	25	0	0	0	0
	point218	218	30	97	25	2	25	1	25	0	0	0	0
	point188	188											
Roadway48	point240	240	90	97	25	2	25	1	25	0	0	0	0
	point241	241	90	97	25	2	25	1	25	0	0	0	0
	point242	242	90	97	25	2	25	1	25	0	0	0	0
	point243	243											
Roadway49	point244	244	110	97	25	2	25	1	25	0	0	0	0
	point245	245	110	97	25	2	25	1	25	0	0	0	0
	point246	246	110	97	25	2	25	1	25	0	0	0	0
	point247	247	110	97	25	2	25	1	25	0	0	0	0
	point248	248	110	97	25	2	25	1	25	0	0	0	0
	point249	249	110	97	25	2	25	1	25	0	0	0	0
	point250	250	110	97	25	2	25	1	25	0	0	0	0
	point251	251											
Roadway50	point252	252	250	97	25	2	25	1	25	0	0	0	0

	point253	253	250	97	25	2	25	1	25	0	0	0	0
	point254	254	250	97	25	2	25	1	25	0	0	0	0
	point255	255	250	97	25	2	25	1	25	0	0	0	0
	point256	256	250	97	25	2	25	1	25	0	0	0	0
	point257	257	250	97	25	2	25	1	25	0	0	0	0
	point258	258	250	97	25	2	25	1	25	0	0	0	0
	point259	259											
Roadway51	point260	260	110	97	25	2	25	1	25	0	0	0	0
	point261	261	110	97	25	2	25	1	25	0	0	0	0
	point262	262											
1st Street - Chmbrs to Joiner	point265	265	580	97	25	2	25	1	25	0	0	0	0
	point58	58											
3rd Street - Chmbrs to Joiner	point266	266	370	97	25	2	25	1	25	0	0	0	0
	point63	63											

Dudek
M. Greene / J. Leech

21 December 2015
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future with Proj

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	4	1	34,920,576.0	14,127,884.0	130.00	5.00	0.00	66	10.0	8.0	
R2	5	1	34,920,596.0	14,126,797.0	130.00	5.00	0.00	66	10.0	8.0	
R3	6	1	34,920,188.0	14,129,261.0	130.00	5.00	0.00	66	10.0	8.0	
R4	7	1	34,925,012.0	14,129,367.0	130.00	5.00	0.00	66	10.0	8.0	
R5	8	1	34,924,056.0	14,129,572.0	130.00	5.00	0.00	66	10.0	8.0	
R6	9	1	34,923,744.0	14,125,522.0	130.00	5.00	0.00	66	10.0	8.0	
R7	11	1	34,923,644.0	14,126,490.0	130.00	5.00	0.00	66	10.0	8.0	
R8	12	1	34,924,932.0	14,126,518.0	130.00	5.00	0.00	66	10.0	8.0	
R9	13	1	34,924,284.0	14,126,326.0	130.00	5.00	0.00	66	10.0	8.0	
R10	14	1	34,924,008.0	14,125,662.0	130.00	5.00	0.00	66	10.0	8.0	
R11	15	1	34,923,772.0	14,125,795.0	130.00	5.00	0.00	66	10.0	8.0	
R12	16	1	34,923,396.0	14,125,784.0	130.00	5.00	0.00	66	10.0	8.0	
R13	17	1	34,923,484.0	14,125,570.0	130.00	5.00	0.00	66	10.0	8.0	
R14	18	1	34,924,572.0	14,125,473.0	130.00	5.00	0.00	66	10.0	8.0	
R15	19	1	34,926,624.0	14,125,684.0	130.00	5.00	0.00	66	10.0	8.0	
R16	24	1	34,926,456.0	14,126,594.0	130.00	5.00	0.00	66	10.0	8.0	
R17	25	1	34,922,224.0	14,126,572.0	130.00	5.00	0.00	66	10.0	8.0	
R18	26	1	34,922,384.0	14,126,291.0	130.00	5.00	0.00	66	10.0	8.0	Y
R19	27	1	34,923,352.0	14,125,650.0	130.00	5.00	0.00	66	10.0	8.0	
R20	28	1	34,923,124.0	14,126,279.0	130.00	5.00	0.00	66	10.0	8.0	
R21	29	1	34,922,580.0	14,125,728.0	130.00	5.00	0.00	66	10.0	8.0	
R22	31	1	34,922,092.0	14,125,398.0	130.00	5.00	0.00	66	10.0	8.0	
R23	32	1	34,923,180.0	14,125,500.0	130.00	5.00	0.00	66	10.0	8.0	
R24	33	1	34,921,792.0	14,126,831.0	130.00	5.00	0.00	66	10.0	8.0	

R25	34	1	34,921,348.0	14,128,445.0	130.00	5.00	0.00	66	10.0	8.0	
R26	37	1	34,921,964.0	14,128,976.0	130.00	5.00	0.00	66	10.0	8.0	
R27	38	1	34,923,944.0	14,125,267.0	130.00	5.00	0.00	66	10.0	8.0	
R28	39	1	34,924,520.0	14,125,098.0	130.00	5.00	0.00	66	10.0	8.0	
R29	40	1	34,926,020.0	14,124,842.0	130.00	5.00	0.00	66	10.0	8.0	
R30	41	1	34,924,724.0	14,125,017.0	130.00	5.00	0.00	66	10.0	8.0	
R31	42	1	34,925,472.0	14,124,561.0	130.00	5.00	0.00	66	10.0	8.0	
R32	44	1	34,923,320.0	14,125,391.0	130.00	5.00	0.00	66	10.0	8.0	
R33	45	1	34,924,724.0	14,125,418.0	130.00	5.00	0.00	66	10.0	8.0	
R34	46	1	34,924,724.0	14,125,380.0	130.00	5.00	0.00	66	10.0	8.0	
R35	48	1	34,924,572.0	14,125,313.0	130.00	5.00	0.00	66	10.0	8.0	Y

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future with Proj

Barrier									Points									
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht	Perturbs		On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				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	34,924,020.0	14,129,635.0	130.00	6.00	0.00	0	0		
									point2	2	34,924,044.0	14,129,560.0	130.00	6.00	0.00	0	0		
									point3	3	34,925,280.0	14,129,574.0	130.00	6.00					
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	34,923,996.0	14,129,365.0	130.00	6.00	0.00	0	0		
									point5	5	34,925,492.0	14,129,385.0	130.00	6.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	34,922,808.0	14,125,271.0	130.00	12.00	0.00	0	0		
									point7	7	34,923,076.0	14,125,249.0	130.00	12.00	0.00	0	0		
									point8	8	34,923,492.0	14,125,184.0	130.00	12.00	0.00	0	0		
									point9	9	34,924,032.0	14,125,067.0	130.00	12.00	0.00	0	0		
									point10	10	34,924,572.0	14,124,872.0	130.00	12.00	0.00	0	0		
									point11	11	34,924,860.0	14,124,742.0	130.00	12.00	0.00	0	0		
									point12	12	34,925,220.0	14,124,552.0	130.00	12.00					
Barrier5	W	0.00	99.99	0.00				0.00	point13	13	34,926,040.0	14,124,095.0	130.00	8.00	0.00	0	0		
									point15	15	34,925,580.0	14,124,447.0	130.00	8.00	0.00	0	0		
									point16	16	34,925,128.0	14,124,726.0	130.00	8.00	0.00	0	0		
									point17	17	34,924,776.0	14,124,901.0	130.00	8.00	0.00	0	0		
									point18	18	34,924,416.0	14,125,051.0	130.00	8.00	0.00	0	0		
									point19	19	34,923,988.0	14,125,180.0	130.00	8.00	0.00	0	0		
									point20	20	34,923,520.0	14,125,276.0	130.00	8.00	0.00	0	0		
									point21	21	34,923,016.0	14,125,328.0	130.00	8.00	0.00	0	0		
									point22	22	34,922,068.0	14,125,358.0	130.00	8.00					
Barrier5-2	W	0.00	99.99	0.00				0.00	point38	38	34,922,068.0	14,125,358.0	130.00	6.00	0.00	0	0		
									point23	23	34,922,060.0	14,126,407.0	130.00	6.00	0.00	0	0		
									point24	24	34,922,064.0	14,126,437.0	130.00	6.00	0.00	0	0		
									point25	25	34,922,088.0	14,126,474.0	130.00	6.00	0.00	0	0		
									point14	14	34,922,108.0	14,126,499.0	130.00	6.00					

Dudek 21 December 2015

M. Greene / J. Leech TNM 2.5

INPUT: BUILDING ROWS

PROJECT/CONTRACT: 8451

RUN: Lincoln Specific Plan - Future w

Building Row Name	Average Height	Building Percent	Points No.	Coordinates (ground) X	Y	Z
	ft	%		ft	ft	ft
Building1	18.00	80	1	34,923,376.0	14,126,442.0	130.00
			2	34,924,276.0	14,126,457.0	130.00
Building2	18.00	80	3	34,923,808.0	14,125,751.0	130.00
			4	34,923,668.0	14,125,777.0	130.00
Building3	18.00	80	5	34,923,388.0	14,125,656.0	130.00
			6	34,924,024.0	14,125,527.0	130.00
			7	34,924,612.0	14,125,526.0	130.00
Building4	18.00	80	8	34,922,116.0	14,125,409.0	130.00
			9	34,922,132.0	14,126,232.0	130.00
Building5	18.00	80	10	34,922,236.0	14,125,563.0	130.00
			11	34,922,432.0	14,125,570.0	130.00
Building6	18.00	80	12	34,922,504.0	14,125,568.0	130.00
			13	34,922,880.0	14,125,570.0	130.00
			14	34,923,192.0	14,125,435.0	130.00
Building7	18.00	80	15	34,923,272.0	14,125,413.0	130.00
			16	34,923,680.0	14,125,395.0	130.00
			17	34,924,028.0	14,125,284.0	130.00
Building8	18.00	80	18	34,924,140.0	14,125,242.0	130.00
			19	34,924,328.0	14,125,180.0	130.00
Building9	18.00	80	20	34,924,404.0	14,125,152.0	130.00
			21	34,924,588.0	14,125,104.0	130.00
Building10	18.00	80	22	34,924,672.0	14,125,078.0	130.00
			23	34,925,284.0	14,124,784.0	130.00
			24	34,925,456.0	14,124,756.0	130.00
			25	34,925,652.0	14,124,785.0	130.00
			26	34,925,792.0	14,124,849.0	130.00

			27	34,925,848.0	14,124,956.0	130.00
Building12	18.00	80	41	34,925,992.0	14,124,877.0	130.00
			42	34,925,988.0	14,125,168.0	130.00
Building14	18.00	80	44	34,924,564.0	14,125,116.0	130.00
			45	34,924,588.0	14,125,181.0	130.00
			46	34,924,612.0	14,125,251.0	130.00
			47	34,924,616.0	14,125,386.0	130.00
Building15	18.00	80	48	34,921,940.0	14,128,969.0	130.00
			49	34,921,952.0	14,128,830.0	130.00
			50	34,921,952.0	14,128,619.0	130.00

Dudek
M. Greene / J. Leech
21 December 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - Future with Proj
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	4	1	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
R2	5	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
R3	6	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
R4	7	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0
R5	8	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
R6	9	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
R7	11	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R8	12	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
R9	13	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
R10	14	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0
R11	15	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
R12	16	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0
R13	17	1	0.0	56.0	66	56.0	10	----	56.0	0.0	8	-8.0
R14	18	1	0.0	54.5	66	54.5	10	----	54.5	0.0	8	-8.0
R15	19	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
R16	24	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
R17	25	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
R18	26	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
R19	27	1	0.0	57.2	66	57.2	10	----	57.2	0.0	8	-8.0
R20	28	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
R21	29	1	0.0	58.5	66	58.5	10	----	58.5	0.0	8	-8.0
R22	31	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
R23	32	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
R24	33	1	0.0	59.8	66	59.8	10	----	59.8	0.0	8	-8.0
R25	34	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0

R26	37	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
R27	38	1	0.0	58.8	66	58.8	10	----	58.8	0.0	8	-8.0
R28	39	1	0.0	58.0	66	58.0	10	----	58.0	0.0	8	-8.0
R29	40	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
R30	41	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0
R31	42	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
R32	44	1	0.0	59.6	66	59.6	10	----	59.6	0.0	8	-8.0
R33	45	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
R34	46	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
R35	48	1	0.0	54.5	66	54.5	10	----	54.5	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	35	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - FWP w Mit

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Nicolaus Rd E of Nelson Ln - WB	34.0	point4	4	34,927,612.0	14,129,586.0	130.00				Average	
		point6	6	34,925,284.0	14,129,529.0	130.00				Average	
		point7	7	34,924,004.0	14,129,507.0	130.00				Average	
		point8	8	34,920,676.0	14,129,447.0	130.00					
Aviation Blvd - N of Nicolaus Rd NB	35.0	point9	9	34,920,668.0	14,129,449.0	130.00				Average	
		point10	10	34,920,660.0	14,130,095.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB	40.0	point15	15	34,920,772.0	14,125,316.0	130.00				Average	
		point14	14	34,920,800.0	14,126,739.0	130.00				Average	
		point13	13	34,920,792.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - WB	45.0	point23	23	34,920,672.0	14,125,286.0	130.00				Average	
		point22	22	34,919,260.0	14,125,286.0	130.00					
Nelson Ln - S of Lincoln BP - NB	22.0	point25	25	34,920,752.0	14,124,655.0	130.00				Average	
		point24	24	34,920,760.0	14,125,195.0	130.00					
Nicolaus Rd W of Nelson Ln - WB	17.0	point5	5	34,919,280.0	14,129,394.0	130.00				Average	
		point50	50	34,920,304.0	14,129,386.0	130.00				Average	
		point26	26	34,920,600.0	14,129,379.0	130.00					
Nicolaus Rd E of Nelson Ln - EB	34.0	point30	30	34,920,700.0	14,129,348.0	130.00				Average	
		point29	29	34,924,004.0	14,129,407.0	130.00				Average	
		point28	28	34,925,284.0	14,129,429.0	130.00				Average	
		point27	27	34,927,612.0	14,129,486.0	130.00					
Nicolaus Rd W of Nelson Ln - EB	17.0	point31	31	34,920,608.0	14,129,429.0	130.00				Average	
		point51	51	34,920,308.0	14,129,414.0	130.00				Average	
		point32	32	34,919,280.0	14,129,420.0	130.00					
Aviation Blvd - N of Nicolaus Rd SB	35.0	point34	34	34,920,628.0	14,130,095.0	130.00				Average	
		point33	33	34,920,636.0	14,129,448.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB	40.0	point35	35	34,920,612.0	14,129,371.0	130.00				Average	
		point36	36	34,920,644.0	14,128,874.0	130.00				Average	

		point37	37	34,920,712.0	14,127,449.0	130.00					
Lincoln Bypass - W. of Nelson Ln - EB	45.0	point46	46	34,919,260.0	14,125,201.0	130.00				Average	
		point47	47	34,920,672.0	14,125,201.0	130.00					
Nelson Ln - S of Lincoln BP - SB	22.0	point48	48	34,920,712.0	14,125,199.0	130.00				Average	
		point49	49	34,920,704.0	14,124,655.0	130.00					
1st Street - E. of Proj site to Chambers	45.0	point52	52	34,923,384.0	14,125,734.0	130.00				Average	
		point53	53	34,924,012.0	14,125,606.0	130.00				Average	
		point54	54	34,924,712.0	14,125,608.0	130.00				Average	
		point55	55	34,925,480.0	14,125,623.0	130.00				Average	
		point56	56	34,925,596.0	14,125,658.0	130.00				Average	
		point57	57	34,925,900.0	14,125,707.0	130.00					
3rd Street - E. of Proj site to Chambers	45.0	point59	59	34,923,372.0	14,126,371.0	130.00				Average	
		point60	60	34,924,700.0	14,126,396.0	130.00				Average	
		point61	61	34,925,096.0	14,126,500.0	130.00				Average	
		point62	62	34,926,032.0	14,126,525.0	130.00					
Lincoln Bypass - E. of Nelson Ln - EB	45.0	point114	114	34,920,796.0	14,125,205.0	130.00				Average	
		point116	116	34,921,348.0	14,125,174.0	130.00				Average	
		point117	117	34,922,108.0	14,125,133.0	130.00				Average	
		point118	118	34,922,848.0	14,125,119.0	130.00				Average	
		point119	119	34,923,296.0	14,125,069.0	130.00				Average	
		point120	120	34,923,792.0	14,124,974.0	130.00				Average	
		point121	121	34,924,396.0	14,124,786.0	130.00				Average	
		point122	122	34,924,836.0	14,124,591.0	130.00				Average	
		point123	123	34,925,104.0	14,124,451.0	130.00				Average	
		point124	124	34,925,572.0	14,124,157.0	130.00				Average	
		point115	115	34,926,048.0	14,123,772.0	130.00					
Lincoln Bypass - E. of Nelson Ln - WB	45.0	point125	125	34,926,160.0	14,123,802.0	130.00				Average	
		point127	127	34,925,940.0	14,124,007.0	130.00				Average	
		point128	128	34,925,596.0	14,124,265.0	130.00				Average	
		point129	129	34,925,204.0	14,124,516.0	130.00				Average	
		point130	130	34,924,844.0	14,124,706.0	130.00				Average	
		point131	131	34,924,556.0	14,124,836.0	130.00				Average	
		point132	132	34,924,008.0	14,125,032.0	130.00				Average	
		point133	133	34,923,476.0	14,125,148.0	130.00				Average	
		point134	134	34,923,060.0	14,125,213.0	130.00				Average	
		point135	135	34,922,792.0	14,125,235.0	130.00				Average	
		point136	136	34,921,864.0	14,125,253.0	130.00				Average	
		point126	126	34,920,812.0	14,125,285.0	130.00					
Roadway31	42.0	point147	147	34,923,368.0	14,125,737.0	130.00				Average	
		point149	149	34,923,256.0	14,125,739.0	130.00				Average	

		point150	150	34,923,148.0	14,125,740.0	130.00				Average	
		point151	151	34,923,076.0	14,125,753.0	130.00				Average	
		point152	152	34,922,968.0	14,125,806.0	130.00				Average	
		point153	153	34,922,896.0	14,125,818.0	130.00				Average	
		point154	154	34,922,756.0	14,125,818.0	130.00				Average	
		point148	148	34,922,484.0	14,125,818.0	130.00					
Roadway32	12.0	point155	155	34,923,364.0	14,126,369.0	130.00				Average	
		point157	157	34,923,236.0	14,126,365.0	130.00				Average	
		point158	158	34,922,752.0	14,126,363.0	130.00				Average	
		point159	159	34,922,696.0	14,126,360.0	130.00				Average	
		point160	160	34,922,612.0	14,126,325.0	130.00				Average	
		point161	161	34,922,548.0	14,126,267.0	130.00					
Roadway33	42.0	point164	164	34,922,508.0	14,126,243.0	130.00				Average	
		point174	174	34,922,324.0	14,126,408.0	130.00				Average	
		point165	165	34,922,136.0	14,126,570.0	130.00				Average	
		point166	166	34,922,144.0	14,126,617.0	130.00				Average	
		point167	167	34,922,124.0	14,126,654.0	130.00				Average	
		point168	168	34,922,084.0	14,126,672.0	130.00				Average	
		point169	169	34,922,044.0	14,126,664.0	130.00				Average	
		point170	170	34,922,032.0	14,126,646.0	130.00					
Roadway34	42.0	point175	175	34,922,028.0	14,126,640.0	130.00				Average	
		point180	180	34,922,024.0	14,126,609.0	130.00				Average	
		point176	176	34,922,040.0	14,126,581.0	130.00				Average	
		point177	177	34,922,068.0	14,126,556.0	130.00				Average	
		point178	178	34,922,100.0	14,126,557.0	130.00				Average	
		point179	179	34,922,128.0	14,126,570.0	130.00					
NelsonLn -NicolausLn to LinclnBy - NB-2	40.0	point183	183	34,920,792.0	14,127,449.0	130.00				Average	
		point12	12	34,920,724.0	14,128,874.0	130.00				Average	
		point11	11	34,920,696.0	14,129,342.0	130.00					
NelsonLn -NicolausLn to LinclnBy - SB-2	40.0	point184	184	34,920,712.0	14,127,449.0	130.00				Average	
		point38	38	34,920,720.0	14,126,739.0	130.00				Average	
		point39	39	34,920,692.0	14,125,316.0	130.00					
Roadway38	42.0	point185	185	34,922,476.0	14,125,748.0	130.00				Average	
		point186	186	34,922,476.0	14,125,508.0	130.00					
Roadway39	42.0	point187	187	34,922,204.0	14,125,498.0	130.00				Average	
		point189	189	34,922,804.0	14,125,501.0	130.00				Average	
		point190	190	34,922,892.0	14,125,484.0	130.00				Average	
		point191	191	34,923,016.0	14,125,441.0	130.00				Average	
		point192	192	34,923,164.0	14,125,373.0	130.00				Average	
		point193	193	34,923,240.0	14,125,354.0	130.00					

Roadway40	42.0	point219	219	34,923,244.0	14,125,666.0	130.00				Average	
		point220	220	34,923,244.0	14,125,510.0	130.00				Average	
		point221	221	34,923,236.0	14,125,422.0	130.00				Average	
		point222	222	34,923,220.0	14,125,376.0	130.00					
Roadway41	42.0	point223	223	34,922,040.0	14,126,555.0	130.00				Average	
		point225	225	34,922,012.0	14,126,471.0	130.00				Average	
		point226	226	34,922,012.0	14,126,091.0	130.00					
Roadway33-2	42.0	point234	234	34,921,436.0	14,126,706.0	130.00				Average	
		point173	173	34,920,844.0	14,126,706.0	130.00					
Roadway33-2	42.0	point235	235	34,922,032.0	14,126,646.0	130.00				Average	
		point171	171	34,921,940.0	14,126,685.0	130.00				Average	
		point172	172	34,921,856.0	14,126,705.0	130.00				Average	
		point233	233	34,921,436.0	14,126,706.0	130.00					
Roadway41-2	42.0	point236	236	34,922,012.0	14,126,091.0	130.00				Average	
		point227	227	34,921,760.0	14,126,086.0	130.00				Average	
		point228	228	34,921,700.0	14,126,089.0	130.00				Average	
		point229	229	34,921,620.0	14,126,113.0	130.00				Average	
		point230	230	34,921,544.0	14,126,164.0	130.00				Average	
		point231	231	34,921,484.0	14,126,226.0	130.00				Average	
		point232	232	34,921,444.0	14,126,338.0	130.00				Average	
		point224	224	34,921,436.0	14,126,681.0	130.00					
Roadway32-2	42.0	point237	237	34,922,548.0	14,126,267.0	130.00				Average	
		point162	162	34,922,492.0	14,126,179.0	130.00				Average	
		point163	163	34,922,476.0	14,126,092.0	130.00				Average	
		point156	156	34,922,480.0	14,125,831.0	130.00					
Roadway39-2	42.0	point238	238	34,923,240.0	14,125,354.0	130.00				Average	
		point194	194	34,923,364.0	14,125,340.0	130.00				Average	
		point195	195	34,923,500.0	14,125,340.0	130.00				Average	
		point196	196	34,923,592.0	14,125,330.0	130.00				Average	
		point197	197	34,923,700.0	14,125,306.0	130.00				Average	
		point198	198	34,923,824.0	14,125,259.0	130.00				Average	
		point199	199	34,923,920.0	14,125,234.0	130.00				Average	
		point200	200	34,924,172.0	14,125,166.0	130.00				Average	
		point201	201	34,924,384.0	14,125,099.0	130.00				Average	
		point202	202	34,924,476.0	14,125,071.0	130.00				Average	
		point203	203	34,924,540.0	14,125,064.0	130.00				Average	
		point204	204	34,924,616.0	14,125,043.0	130.00					
Roadway39-2-2	42.0	point239	239	34,924,616.0	14,125,043.0	130.00				Average	
		point205	205	34,924,672.0	14,125,010.0	130.00				Average	
		point206	206	34,924,728.0	14,124,970.0	130.00				Average	

		point207	207	34,924,768.0	14,124,946.0	130.00				Average	
		point208	208	34,924,892.0	14,124,892.0	130.00				Average	
		point209	209	34,925,148.0	14,124,772.0	130.00				Average	
		point210	210	34,925,280.0	14,124,722.0	130.00				Average	
		point211	211	34,925,408.0	14,124,695.0	130.00				Average	
		point212	212	34,925,504.0	14,124,695.0	130.00				Average	
		point213	213	34,925,616.0	14,124,706.0	130.00				Average	
		point214	214	34,925,708.0	14,124,728.0	130.00				Average	
		point215	215	34,925,792.0	14,124,764.0	130.00				Average	
		point216	216	34,925,840.0	14,124,808.0	130.00				Average	
		point217	217	34,925,876.0	14,124,855.0	130.00				Average	
		point218	218	34,925,900.0	14,124,936.0	130.00				Average	
		point188	188	34,925,900.0	14,125,206.0	130.00					
Roadway48	42.0	point240	240	34,924,620.0	14,125,064.0	130.00				Average	
		point241	241	34,924,656.0	14,125,153.0	130.00				Average	
		point242	242	34,924,688.0	14,125,265.0	130.00				Average	
		point243	243	34,924,688.0	14,125,527.0	130.00					
Roadway49	42.0	point244	244	34,921,884.0	14,126,718.0	130.00				Average	
		point245	245	34,921,908.0	14,126,836.0	130.00				Average	
		point246	246	34,921,896.0	14,126,921.0	130.00				Average	
		point247	247	34,921,872.0	14,127,700.0	130.00				Average	
		point248	248	34,921,600.0	14,127,703.0	130.00				Average	
		point249	249	34,921,600.0	14,127,961.0	130.00				Average	
		point250	250	34,921,580.0	14,128,100.0	130.00				Average	
		point251	251	34,921,472.0	14,128,504.0	130.00					
Roadway50	42.0	point252	252	34,920,828.0	14,128,204.0	130.00				Average	
		point253	253	34,920,904.0	14,128,209.0	130.00				Average	
		point254	254	34,920,996.0	14,128,245.0	130.00				Average	
		point255	255	34,921,228.0	14,128,423.0	130.00				Average	
		point256	256	34,921,320.0	14,128,465.0	130.00				Average	
		point257	257	34,921,476.0	14,128,510.0	130.00				Average	
		point258	258	34,921,736.0	14,128,583.0	130.00				Average	
		point259	259	34,921,860.0	14,128,594.0	130.00					
Roadway51	42.0	point260	260	34,921,876.0	14,127,966.0	130.00				Average	
		point261	261	34,921,872.0	14,128,595.0	130.00				Average	
		point262	262	34,921,864.0	14,128,862.0	130.00					
1st Street - Chmbrs to Joiner	45.0	point265	265	34,925,900.0	14,125,707.0	130.00				Average	
		point58	58	34,927,640.0	14,125,770.0	130.00					
3rd Street - Chmbrs to Joiner	45.0	point266	266	34,926,032.0	14,126,525.0	130.00				Average	
		point63	63	34,927,644.0	14,126,561.0	130.00					

Dudek 21 December
M. Greene / J. Leech TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - FWP w Mit

Roadway	Points		Segment										
Name	Name	No.	Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Nicolaus Rd E of Nelson Ln - WB	point4	4	688	97	40	2	40	1	40	0	0	0	0
	point6	6	688	97	40	2	40	1	40	0	0	0	0
	point7	7	688	97	40	2	40	1	40	0	0	0	0
	point8	8											
Aviation Blvd - N of Nicolaus Rd NB	point9	9	704	97	40	2	40	1	40	0	0	0	0
	point10	10											
NelsonLn -NicolausLn to LinclnBy - NB	point15	15	1813	97	40	2	40	1	40	0	0	0	0
	point14	14	1813	97	40	2	40	1	40	0	0	0	0
	point13	13											
Lincoln Bypass - W. of Nelson Ln - WB	point23	23	980	85	65	2	65	13	65	0	0	0	0
	point22	22											
Nelson Ln - S of Lincoln BP - NB	point25	25	1854	97	40	2	40	1	40	0	0	0	0
	point24	24											
Nicolaus Rd W of Nelson Ln - WB	point5	5	1639	97	40	2	40	1	40	0	0	0	0
	point50	50	1639	97	40	2	40	1	40	0	0	0	0
	point26	26											
Nicolaus Rd E of Nelson Ln - EB	point30	30	1342	97	40	2	40	1	40	0	0	0	0
	point29	29	1342	97	40	2	40	1	40	0	0	0	0
	point28	28	1342	97	40	2	40	1	40	0	0	0	0
	point27	27											
Nicolaus Rd W of Nelson Ln - EB	point31	31	1270	97	40	2	40	1	40	0	0	0	0
	point51	51	1270	97	40	2	40	1	40	0	0	0	0
	point32	32											
Aviation Blvd - N of Nicolaus Rd SB	point34	34	1148	97	40	2	40	1	40	0	0	0	0
	point33	33											

NelsonLn -NicolausLn to LinclnBy - SB	point35	35	1207	97	40	2	40	1	40	0	0	0	0
	point36	36	1207	97	40	2	40	1	40	0	0	0	0
	point37	37											
Lincoln Bypass - W. of Nelson Ln - EB	point46	46	1378	85	65	2	65	13	65	0	0	0	0
	point47	47											
Nelson Ln - S of Lincoln BP - SB	point48	48	2158	97	40	2	40	1	40	0	0	0	0
	point49	49											
1st Street - E. of Proj site to Chambers	point52	52	330	97	25	2	25	1	25	0	0	0	0
	point53	53	330	97	25	2	25	1	25	0	0	0	0
	point54	54	330	97	25	2	25	1	25	0	0	0	0
	point55	55	330	97	25	2	25	1	25	0	0	0	0
	point56	56	330	97	25	2	25	1	25	0	0	0	0
	point57	57											
3rd Street - E. of Proj site to Chambers	point59	59	270	97	25	2	25	1	25	0	0	0	0
	point60	60	270	97	25	2	25	1	25	0	0	0	0
	point61	61	270	97	25	2	25	1	25	0	0	0	0
	point62	62											
Lincoln Bypass - E. of Nelson Ln - EB	point114	114	2993	95	65	2	65	3	65	0	0	0	0
	point116	116	2993	95	65	2	65	3	65	0	0	0	0
	point117	117	2993	95	65	2	65	3	65	0	0	0	0
	point118	118	2993	95	65	2	65	3	65	0	0	0	0
	point119	119	2993	95	65	2	65	3	65	0	0	0	0
	point120	120	2993	95	65	2	65	3	65	0	0	0	0
	point121	121	2993	95	65	2	65	3	65	0	0	0	0
	point122	122	2993	95	65	2	65	3	65	0	0	0	0
	point123	123	2993	95	65	2	65	3	65	0	0	0	0
	point124	124	2993	95	65	2	65	3	65	0	0	0	0
	point115	115											
Lincoln Bypass - E. of Nelson Ln - WB	point125	125	2650	95	65	2	65	3	65	0	0	0	0
	point127	127	2650	95	65	2	65	3	65	0	0	0	0
	point128	128	2650	95	65	2	65	3	65	0	0	0	0
	point129	129	2650	95	65	2	65	3	65	0	0	0	0
	point130	130	2650	95	65	2	65	3	65	0	0	0	0
	point131	131	2650	95	65	2	65	3	65	0	0	0	0
	point132	132	2650	95	65	2	65	3	65	0	0	0	0
	point133	133	2650	95	65	2	65	3	65	0	0	0	0
	point134	134	2650	95	65	2	65	3	65	0	0	0	0

	point135	135	2650	95	65	2	65	3	65	0	0	0	0
	point136	136	2650	95	65	2	65	3	65	0	0	0	0
	point126	126											
Roadway31	point147	147	290	97	25	2	25	1	25	0	0	0	0
	point149	149	290	97	25	2	25	1	25	0	0	0	0
	point150	150	290	97	25	2	25	1	25	0	0	0	0
	point151	151	290	97	25	2	25	1	25	0	0	0	0
	point152	152	290	97	25	2	25	1	25	0	0	0	0
	point153	153	290	97	25	2	25	1	25	0	0	0	0
	point154	154	290	97	25	2	25	1	25	0	0	0	0
	point148	148											
Roadway32	point155	155	290	97	25	2	25	1	25	0	0	0	0
	point157	157	290	97	25	2	25	1	25	0	0	0	0
	point158	158	290	97	25	2	25	1	25	0	0	0	0
	point159	159	290	97	25	2	25	1	25	0	0	0	0
	point160	160	290	97	25	2	25	1	25	0	0	0	0
	point161	161											
Roadway33	point164	164	640	97	25	2	25	1	25	0	0	0	0
	point174	174	640	97	25	2	25	1	25	0	0	0	0
	point165	165	640	97	25	2	25	1	25	0	0	0	0
	point166	166	640	97	25	2	25	1	25	0	0	0	0
	point167	167	640	97	25	2	25	1	25	0	0	0	0
	point168	168	640	97	25	2	25	1	25	0	0	0	0
	point169	169	640	97	25	2	25	1	25	0	0	0	0
	point170	170											
Roadway34	point175	175	640	97	25	2	25	1	25	0	0	0	0
	point180	180	640	97	25	2	25	1	25	0	0	0	0
	point176	176	640	97	25	2	25	1	25	0	0	0	0
	point177	177	640	97	25	2	25	1	25	0	0	0	0
	point178	178	640	97	25	2	25	1	25	0	0	0	0
	point179	179											
NelsonLn -NicolausLn to LinclnBy - NB-2	point183	183	1048	97	40	2	40	1	40	0	0	0	0
	point12	12	1048	97	40	2	40	1	40	0	0	0	0
	point11	11											
NelsonLn -NicolausLn to LinclnBy - SB-2	point184	184	2062	97	40	2	40	1	40	0	0	0	0
	point38	38	2062	97	40	2	40	1	40	0	0	0	0
	point39	39											

Roadway38	point185	185	20	97	25	2	25	1	25	0	0	0	0
	point186	186											
Roadway39	point187	187	20	97	25	2	25	1	25	0	0	0	0
	point189	189	20	97	25	2	25	1	25	0	0	0	0
	point190	190	20	97	25	2	25	1	25	0	0	0	0
	point191	191	20	97	25	2	25	1	25	0	0	0	0
	point192	192	20	97	25	2	25	1	25	0	0	0	0
	point193	193											
Roadway40	point219	219	10	97	25	2	25	1	25	0	0	0	0
	point220	220	10	97	25	2	25	1	25	0	0	0	0
	point221	221	10	97	25	2	25	1	25	0	0	0	0
	point222	222											
Roadway41	point223	223	210	97	35	2	35	1	35	0	0	0	0
	point225	225	210	97	35	2	35	1	35	0	0	0	0
	point226	226											
Roadway33-2	point234	234	1780	97	35	2	35	1	35	0	0	0	0
	point173	173											
Roadway33-2	point235	235	830	97	35	2	35	1	35	0	0	0	0
	point171	171	830	97	35	2	35	1	35	0	0	0	0
	point172	172	830	97	35	2	35	1	35	0	0	0	0
	point233	233											
Roadway41-2	point236	236	760	97	35	2	35	1	35	0	0	0	0
	point227	227	760	97	35	2	35	1	35	0	0	0	0
	point228	228	760	97	35	2	35	1	35	0	0	0	0
	point229	229	760	97	35	2	35	1	35	0	0	0	0
	point230	230	760	97	35	2	35	1	35	0	0	0	0
	point231	231	760	97	35	2	35	1	35	0	0	0	0
	point232	232	760	97	35	2	35	1	35	0	0	0	0
	point224	224											
Roadway32-2	point237	237	300	97	25	2	25	1	25	0	0	0	0
	point162	162	300	97	25	2	25	1	25	0	0	0	0
	point163	163	300	97	25	2	25	1	25	0	0	0	0
	point156	156											
Roadway39-2	point238	238	10	97	25	2	25	1	25	0	0	0	0
	point194	194	10	97	25	2	25	1	25	0	0	0	0
	point195	195	10	97	25	2	25	1	25	0	0	0	0
	point196	196	10	97	25	2	25	1	25	0	0	0	0

	point197	197	10	97	25	2	25	1	25	0	0	0	0
	point198	198	10	97	25	2	25	1	25	0	0	0	0
	point199	199	10	97	25	2	25	1	25	0	0	0	0
	point200	200	10	97	25	2	25	1	25	0	0	0	0
	point201	201	10	97	25	2	25	1	25	0	0	0	0
	point202	202	10	97	25	2	25	1	25	0	0	0	0
	point203	203	10	97	25	2	25	1	25	0	0	0	0
	point204	204											
Roadway39-2-2	point239	239	30	97	25	2	25	1	25	0	0	0	0
	point205	205	30	97	25	2	25	1	25	0	0	0	0
	point206	206	30	97	25	2	25	1	25	0	0	0	0
	point207	207	30	97	25	2	25	1	25	0	0	0	0
	point208	208	30	97	25	2	25	1	25	0	0	0	0
	point209	209	30	97	25	2	25	1	25	0	0	0	0
	point210	210	30	97	25	2	25	1	25	0	0	0	0
	point211	211	30	97	25	2	25	1	25	0	0	0	0
	point212	212	30	97	25	2	25	1	25	0	0	0	0
	point213	213	30	97	25	2	25	1	25	0	0	0	0
	point214	214	30	97	25	2	25	1	25	0	0	0	0
	point215	215	30	97	25	2	25	1	25	0	0	0	0
	point216	216	30	97	25	2	25	1	25	0	0	0	0
	point217	217	30	97	25	2	25	1	25	0	0	0	0
	point218	218	30	97	25	2	25	1	25	0	0	0	0
	point188	188											
Roadway48	point240	240	90	97	25	2	25	1	25	0	0	0	0
	point241	241	90	97	25	2	25	1	25	0	0	0	0
	point242	242	90	97	25	2	25	1	25	0	0	0	0
	point243	243											
Roadway49	point244	244	110	97	25	2	25	1	25	0	0	0	0
	point245	245	110	97	25	2	25	1	25	0	0	0	0
	point246	246	110	97	25	2	25	1	25	0	0	0	0
	point247	247	110	97	25	2	25	1	25	0	0	0	0
	point248	248	110	97	25	2	25	1	25	0	0	0	0
	point249	249	110	97	25	2	25	1	25	0	0	0	0
	point250	250	110	97	25	2	25	1	25	0	0	0	0
	point251	251											
Roadway50	point252	252	250	97	25	2	25	1	25	0	0	0	0

	point253	253	250	97	25	2	25	1	25	0	0	0	0
	point254	254	250	97	25	2	25	1	25	0	0	0	0
	point255	255	250	97	25	2	25	1	25	0	0	0	0
	point256	256	250	97	25	2	25	1	25	0	0	0	0
	point257	257	250	97	25	2	25	1	25	0	0	0	0
	point258	258	250	97	25	2	25	1	25	0	0	0	0
	point259	259											
Roadway51	point260	260	110	97	25	2	25	1	25	0	0	0	0
	point261	261	110	97	25	2	25	1	25	0	0	0	0
	point262	262											
1st Street - Chmbrs to Joiner	point265	265	580	97	25	2	25	1	25	0	0	0	0
	point58	58											
3rd Street - Chmbrs to Joiner	point266	266	370	97	25	2	25	1	25	0	0	0	0
	point63	63											

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - FWP w Mit

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1	4	1	34,920,584.0	14,127,886.0	130.00	5.00	0.00	66	10.0	8.0	
R2	5	1	34,920,596.0	14,126,797.0	130.00	5.00	0.00	66	10.0	8.0	
R3	6	1	34,920,188.0	14,129,261.0	130.00	5.00	0.00	66	10.0	8.0	
R4	7	1	34,925,012.0	14,129,367.0	130.00	5.00	0.00	66	10.0	8.0	
R5	8	1	34,924,056.0	14,129,572.0	130.00	5.00	0.00	66	10.0	8.0	
R6	9	1	34,923,744.0	14,125,522.0	130.00	5.00	0.00	66	10.0	8.0	
R7	11	1	34,923,644.0	14,126,490.0	130.00	5.00	0.00	66	10.0	8.0	
R8	12	1	34,924,932.0	14,126,518.0	130.00	5.00	0.00	66	10.0	8.0	
R9	13	1	34,924,284.0	14,126,326.0	130.00	5.00	0.00	66	10.0	8.0	
R10	14	1	34,924,008.0	14,125,662.0	130.00	5.00	0.00	66	10.0	8.0	
R11	15	1	34,923,772.0	14,125,795.0	130.00	5.00	0.00	66	10.0	8.0	
R12	16	1	34,923,396.0	14,125,784.0	130.00	5.00	0.00	66	10.0	8.0	
R13	17	1	34,923,484.0	14,125,570.0	130.00	5.00	0.00	66	10.0	8.0	
R14	18	1	34,924,572.0	14,125,473.0	130.00	5.00	0.00	66	10.0	8.0	
R15	19	1	34,926,624.0	14,125,684.0	130.00	5.00	0.00	66	10.0	8.0	
R16	24	1	34,926,456.0	14,126,594.0	130.00	5.00	0.00	66	10.0	8.0	
R17	25	1	34,922,224.0	14,126,572.0	130.00	5.00	0.00	66	10.0	8.0	
R18	26	1	34,922,384.0	14,126,291.0	130.00	5.00	0.00	66	10.0	8.0	
R19	27	1	34,923,352.0	14,125,650.0	130.00	5.00	0.00	66	10.0	8.0	
R20	28	1	34,923,124.0	14,126,279.0	130.00	5.00	0.00	66	10.0	8.0	
R21	29	1	34,922,580.0	14,125,728.0	130.00	5.00	0.00	66	10.0	8.0	
R22	31	1	34,922,092.0	14,125,401.0	130.00	5.00	0.00	66	10.0	8.0	Y
R23	32	1	34,923,180.0	14,125,500.0	130.00	5.00	0.00	66	10.0	8.0	
R24	33	1	34,921,792.0	14,126,831.0	130.00	5.00	0.00	66	10.0	8.0	

R25	34	1	34,921,348.0	14,128,445.0	130.00	5.00	0.00	66	10.0	8.0	
R26	37	1	34,921,964.0	14,128,976.0	130.00	5.00	0.00	66	10.0	8.0	
R27	38	1	34,923,944.0	14,125,267.0	130.00	5.00	0.00	66	10.0	8.0	
R28	39	1	34,924,520.0	14,125,098.0	130.00	5.00	0.00	66	10.0	8.0	
R29	40	1	34,926,020.0	14,124,842.0	130.00	5.00	0.00	66	10.0	8.0	
R30	41	1	34,924,724.0	14,125,017.0	130.00	5.00	0.00	66	10.0	8.0	
R31	42	1	34,925,472.0	14,124,561.0	130.00	5.00	0.00	66	10.0	8.0	Y
R32	44	1	34,923,320.0	14,125,391.0	130.00	5.00	0.00	66	10.0	8.0	
R33	45	1	34,924,724.0	14,125,418.0	130.00	5.00	0.00	66	10.0	8.0	
R34	46	1	34,924,724.0	14,125,380.0	130.00	5.00	0.00	66	10.0	8.0	
R35	48	1	34,924,572.0	14,125,313.0	130.00	5.00	0.00	66	10.0	8.0	

Dudek 21 December 2015
M. Greene / J. Leech TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - FWP w Mit

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 Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		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	34,924,020.0	14,129,635.0	130.00	6.00	0.00	0	0		
									point2	2	34,924,044.0	14,129,560.0	130.00	6.00	0.00	0	0		
									point3	3	34,925,280.0	14,129,574.0	130.00	6.00					
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	34,923,996.0	14,129,365.0	130.00	6.00	0.00	0	0		
									point5	5	34,925,492.0	14,129,385.0	130.00	6.00					
Barrier3	W	0.00	99.99	0.00				0.00	point6	6	34,922,808.0	14,125,271.0	130.00	12.00	0.00	0	0		
									point7	7	34,923,076.0	14,125,249.0	130.00	12.00	0.00	0	0		
									point8	8	34,923,492.0	14,125,184.0	130.00	12.00	0.00	0	0		
									point9	9	34,924,032.0	14,125,067.0	130.00	12.00	0.00	0	0		
									point10	10	34,924,572.0	14,124,872.0	130.00	12.00	0.00	0	0		
									point11	11	34,924,860.0	14,124,742.0	130.00	12.00	0.00	0	0		
									point12	12	34,925,220.0	14,124,552.0	130.00	12.00					
Barrier5	W	0.00	99.99	0.00				0.00	point13	13	34,926,040.0	14,124,095.0	130.00	8.00	2.00	5	0		
									point15	15	34,925,580.0	14,124,447.0	130.00	8.00	2.00	5	0		
									point16	16	34,925,128.0	14,124,726.0	130.00	8.00	2.00	5	0		
									point17	17	34,924,776.0	14,124,901.0	130.00	8.00	2.00	5	0		
									point18	18	34,924,416.0	14,125,051.0	130.00	8.00	2.00	5	0		
									point19	19	34,923,988.0	14,125,180.0	130.00	8.00	2.00	5	0		
									point20	20	34,923,520.0	14,125,276.0	130.00	8.00	2.00	5	0		
									point21	21	34,923,016.0	14,125,328.0	130.00	8.00	2.00	5	0		
									point22	22	34,922,068.0	14,125,358.0	130.00	8.00					
Barrier5-2	W	0.00	99.99	0.00				0.00	point38	38	34,922,068.0	14,125,358.0	130.00	6.00	2.00	5	0		
									point23	23	34,922,060.0	14,126,407.0	130.00	6.00	2.00	5	0		
									point24	24	34,922,064.0	14,126,437.0	130.00	6.00	2.00	5	0		
									point25	25	34,922,088.0	14,126,474.0	130.00	6.00	2.00	5	0		
									point14	14	34,922,108.0	14,126,499.0	130.00	6.00					
Local Resi Wall at R22	W	0.00	99.99	0.00				0.00	point43	43	34,922,068.0	14,125,394.0	130.00	6.00	2.00	5	0		
									point44	44	34,922,180.0	14,125,395.0	130.00	6.00					

Dudek 21 December 2015

M. Greene / J. Leech TNM 2.5

INPUT: BUILDING ROWS

PROJECT/CONTRACT: 8451

RUN: Lincoln Specific Plan - FWP w M

Building Row Name	Average Height	Building Percent	Points No.	Coordinates (ground) X	Y	Z
	ft	%		ft	ft	ft
Building1	18.00	80	1	34,923,376.0	14,126,442.0	130.00
			2	34,924,276.0	14,126,457.0	130.00
Building2	18.00	80	3	34,923,808.0	14,125,751.0	130.00
			4	34,923,668.0	14,125,777.0	130.00
Building3	18.00	80	5	34,923,388.0	14,125,656.0	130.00
			6	34,924,024.0	14,125,527.0	130.00
			7	34,924,612.0	14,125,526.0	130.00
Building4	18.00	80	8	34,922,116.0	14,125,409.0	130.00
			9	34,922,132.0	14,126,232.0	130.00
Building5	18.00	80	10	34,922,236.0	14,125,563.0	130.00
			11	34,922,432.0	14,125,570.0	130.00
Building6	18.00	80	12	34,922,504.0	14,125,568.0	130.00
			13	34,922,880.0	14,125,570.0	130.00
			14	34,923,192.0	14,125,435.0	130.00
Building7	18.00	80	15	34,923,272.0	14,125,413.0	130.00
			16	34,923,680.0	14,125,395.0	130.00
			17	34,924,028.0	14,125,284.0	130.00
Building8	18.00	80	18	34,924,140.0	14,125,242.0	130.00
			19	34,924,328.0	14,125,180.0	130.00
Building9	18.00	80	20	34,924,404.0	14,125,152.0	130.00
			21	34,924,588.0	14,125,104.0	130.00
Building10	18.00	80	22	34,924,672.0	14,125,078.0	130.00
			23	34,925,284.0	14,124,784.0	130.00
			24	34,925,456.0	14,124,756.0	130.00
			25	34,925,652.0	14,124,785.0	130.00
			26	34,925,792.0	14,124,849.0	130.00

INPUT: BUILDING ROWS **8451**

			27	34,925,848.0	14,124,956.0	130.00
Building12	18.00	80	41	34,925,992.0	14,124,877.0	130.00
			42	34,925,988.0	14,125,168.0	130.00
Building14	18.00	80	44	34,924,564.0	14,125,116.0	130.00
			45	34,924,588.0	14,125,181.0	130.00
			46	34,924,612.0	14,125,251.0	130.00
			47	34,924,616.0	14,125,386.0	130.00
Building15	18.00	80	48	34,921,940.0	14,128,969.0	130.00
			49	34,921,952.0	14,128,830.0	130.00
			50	34,921,952.0	14,128,619.0	130.00

Dudek
M. Greene / J. Leech
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8451
RUN: Lincoln Specific Plan - FWP w Mit
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

21 December 2015
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R2	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R3	6	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R4	7	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R5	8	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R6	9	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R7	11	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R8	12	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R9	13	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R10	14	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R11	15	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R12	16	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R13	17	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R14	18	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R15	19	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R16	24	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R17	25	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R18	26	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R19	27	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R20	28	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R21	29	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R22	31	1	0.0	72.6	66	72.6	10	Snd Lvl	60.5	12.1	8	4.1
R23	32	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R24	33	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R25	34	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

R26	37	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R27	38	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R28	39	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R29	40	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R30	41	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R31	42	1	0.0	71.0	66	71.0	10	Snd Lvl	62.8	8.2	8	0.2
R32	44	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R33	45	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R34	46	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
R35	48	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	35	0.0	0.6	12.1
All Impacted	2	8.2	10.1	12.1
All that meet NR Goal	2	8.2	10.1	12.1