Los Angeles County
Metropolitan Transportation Authority

Link Union Station

Noise and Vibration Study

June 2019

Metro

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ACRONYMS

CEQA	California Environmental Quality Act
CHSRA	California High-Speed Rail Authority
CNEL	community noise equivalent level
dB	decibel
dBA	A-weighted decibel
EIR	Environmental Impact Report
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HSR	High-Speed Rail
LAUS	Los Angeles Union Station
L_{dn}	day-night average sound level
L_{eq}	equivalent noise level
L_{max}	maximum sound level
LOSSAN	Los Angeles-San Diego-San Luis Obispo
Metro	Los Angeles County Metropolitan Transportation Authority
Mph	Miles per Hour
ML	Monitoring Location
NA	not applicable
project	Link Union Station project
PPV	peak particle velocity
RMS	root mean square
ROW	right-of-way
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SCAG	Southern California Association of Governments
VdB	velocity in decibels
U.S.	United States

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ES.0 Executive Summary

This noise and vibration study was prepared pursuant to the California Environmental Quality Act (CEQA) to determine the short-term-construction and long-term noise and vibration impacts of the proposed project and the build alternative (which is evaluated separately in this report) and to identify mitigation measures to reduce significant impacts.

FTA's Transit Noise and Vibration Impact Assessment (FTA 2018) manual, FRA's High-Speed Ground Transportation Noise and Vibration Impact Assessment (FRA 2012) manual, and California High-Speed Rail Authority's (CHSRA) Environmental Methodology Guidelines (CHSRA 2014) were implemented as the methodology to evaluate the noise and vibration impacts of the regional/intercity rail and high-speed rail (HSR) components of the project, respectively.

To provide a baseline to evaluate the potential for noise and vibration impacts, noise and vibration measurements were conducted at monitoring locations associated with sensitive land uses where sensitive receptors occur near the project. The sensitive receptor locations are used for predictions and represent a cluster of sensitive receptors, which is consistent with FTA/FRA guidance and regulations. The measurements identified that noise and vibration levels in the project study area are consistent with those located near active rail lines and in urban environments.

Operational noise and vibration levels were analyzed for the proposed project and the build alternative in 2026, 2031, and 2040 conditions. A summary of the impacts is as follows:

- 2026 – For the 2026 condition, the proposed project or the build alternative would result in moderate impacts on 24 multifamily residences (all at William Mead Homes).
- 2031 – For the 2031 condition:
    - The proposed project would result in moderate impacts on 73 multifamily residences (40 William Mead Homes units and 33 Mozaic Apartment units), and severe impacts on 40 multifamily residences (all William Mead Homes units) and a park adjacent to William Mead Homes.
    - The build alternative would result in moderate impacts on 76 multifamily residences (40 William Mead Homes units and 36 Mozaic Apartment units), and severe impacts on 40 multifamily residences (all William Mead Homes units) and a park adjacent to William Mead Homes.
- 2040 – For the 2040 condition:
    - The proposed project would result in moderate impacts on 49 multifamily residential units (16 at William Mead Homes and 33 at the Mozaic Apartment units), and severe impacts on 30 multifamily residential units (24 at William Mead Homes and 6 at the Mozaic Apartments) and a park adjacent to William Mead Homes.

- The build alternative would result in moderate impacts on 66 multifamily residential units (24 William Mead Homes units and 42 Mozaic Apartment units), and severe impacts on a park adjacent to William Mead Homes.

A summary of the impact determinations for each of the receptors is below:

- For William Mead Homes, moderate and severe impacts were identified, and upon implementation of Mitigation Measure NV-1 (as described in Section 10.1), operational noise impacts for the proposed project or the build alternative would be reduced to a level less than significant.
- For Mozaic Apartments, moderate and severe impacts were identified; however the Mozaic Apartments were recently constructed, and their design includes building materials to ensure interior noise levels from railroad activity at Los Angeles Union Station (LAUS) are maintained below applicable thresholds. With or without implementation of the proposed project (or the build alternative), interior sound levels are assumed to be 45 dBA L_{dn} or lower, because noise attenuation measures in the form of thick pane windows and concrete structures (as opposed to other noise absorbing materials) are already in place, as required by the City of Los Angeles. As with the existing train movements at LAUS, with the project, the majority of (e.g., over 80%) the train movements will occur during daytime hours during the peak-period, rather than during nighttime hours when rail activity could result in greater sleep disturbance. For these reasons, impacts would be less than significant.
- The Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility do not have outdoor uses and are not predicted to be subjected to noise levels that exceed severe or moderate noise limits. Additionally, these two facilities are comprised of buildings made from concrete with thick windows. Project interior noise levels are estimated to be at least 20 dB lower than those experienced at the exterior of these structures consistent with USDOT FHWA guidance for interior sound level attenuation which would be similar for railroad noise sources (FHWA 2011). Interior noise levels would be below 45 dBA L_{dn}, which is a level that the U.S. Environmental Protection Agency (U.S. EPA) has identified as a level that does not interfere with interior activities (e.g., speech and sleeping), and interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons described above. A less than significant impact would occur.
- For Metro Senior Housing and One Santa Fe Apartments, no moderate or severe impacts were identified, and a less than significant impact would occur.

No operational vibration impacts would result from the proposed project or the build alternative.

Construction-related noise would exceed FTA's construction noise guidelines at sensitive receptors nearest to the project, including the William Mead Homes and Mozaic Apartments. Mitigation Measure NV-2 (described in Section 10.2) includes provisions for construction of temporary noise barriers around stationary equipment; rerouting truck traffic away from residential areas; siting stationary construction equipment as far away from sensitive land uses as practicable; sequencing construction such that noisy

operations are conducted during the same time period; avoidance of nighttime activity; and use of alternative construction methods, such as drilled piles instead of impact piles to reduce construction-related noise impacts. Although mitigation would reduce construction noise, impacts would still exceed applicable thresholds in some areas, and impacts would remain significant and unavoidable.

Construction-related vibration impacts are also predicted to occur at Mozaic Apartments and William Mead Homes. Mitigation of construction-related vibration impacts would be similar to that for construction-related noise. Upon implementation of Mitigation Measure NV-2 and NV-3 (described in Section 10.2), construction related noise and vibration impacts, as well as associated annoyance related to construction-related noise and vibration impacts would be reduced to a level less than significant.

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1.0 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro) is proposing the Link Union Station Project to transform Los Angeles Union Station (LAUS) from a "stub-end tracks station" into a "run-through tracks station" with a new passenger concourse that would improve the efficiency of the station and accommodate future growth and transportation demands in the region.

1.1 Project Location and Study Area

LAUS is located at 800 Alameda Street in the City of Los Angeles, California. LAUS is bounded by US-101 to the south, Alameda Street to the west, Cesar Chavez Avenue to the north, and Vignes Street to the east. Figure 1-1 depicts the regional location and general vicinity of LAUS.

Figure 1-2 depicts the project study area, which encompasses the extent of environmental study associated with potential direct, indirect, and cumulative impacts from implementation of the project. The project study area includes three main segments (Segment 1: Throat Segment, Segment 2: Concourse Segment, and Segment 3: Run-Through Segment). The existing conditions within each segment are summarized north to south below.

- Segment 1: Throat Segment – This segment, known as the LAUS throat, includes the area north of the platforms, from Main Street at the north to Cesar Chavez Avenue at the south. In the throat segment, all arriving and departing trains traverse five lead tracks into and out of the rail yard, except for one location near the Vignes Street Bridge where the tracks reduce to four lead tracks. Currently, special track work consisting of multiple turnouts and double-slip switches are used in the throat to direct trains into and out of the appropriate assigned terminal platform tracks.
- Segment 2: Concourse Segment – This segment is between Cesar Chavez Avenue and US-101 and includes LAUS, the rail yard, the Garden Tracks (stub-end tracks where private train cars are currently stored, just north of the platforms and adjacent to the existing Gold Line aerial guideway), the East Portal building, the baggage handling building with aboveground parking areas and access roads, the ticketing/waiting halls, and the pedestrian passageway with connecting ramps and stairways below the rail yard.
- Segment 3: Run-Through Segment – This segment is south of LAUS and extends east/west from Alameda Street to the west bank of the Los Angeles River and north/south from Keller Yard to Control Point (CP) Olympic. This segment includes US-101, the Commercial Street/Ducommun Street corridor, Metro Red and Purple Lines Maintenance Yard (Division 20 Rail Yard), BNSF West Bank Yard, Keller Yard, the main line tracks on the west bank of the Los Angeles River, from Keller Yard to CP Olympic, and the "Amtrak Lead Track" connecting the main line tracks with Amtrak's Los Angeles Maintenance Facility. Businesses within the run-through segment are primarily industrial and manufacturing related.

The project study area has a dense street network ranging from major highways to local city streets. The roadways within the project study area include the El Monte Busway, US-101, Bolero Lane, Leroy Street, Bloom Street, Cesar Chavez Avenue, Commercial Street, Ducommun Street, Jackson Street, East Temple Street, Banning Street, First Street, Alameda Street, Garey Street, Vignes Street, Main Street, Aliso Street, Avila Street, Bauchet Street, and Center Street.

1.2 Proposed Project Overview

The proposed project components are summarized north to south below.

- Throat and Elevated Rail Yard – The proposed project includes subgrade and structural improvements in Segment 1 of the project study area (throat segment) to increase the elevation of the tracks leading to the rail yard. The proposed project includes the addition of one new lead track in the throat segment for a total of six lead tracks to facilitate enhanced operations for regional/intercity rail service providers (Metrolink/Amtrak) and accommodate the planned High-Speed Rail (HSR) system within a shared track alignment. Regional/intercity and HSR trains would share the two western lead tracks in the throat segment. The rail yard would be elevated approximately 15 feet. New passenger platforms with individualized canopies would be constructed on the elevated rail yard, with an underlying assumption that the platform infrastructure and associated vertical circulation elements (stairs, escalators, and elevators) would be modified at a later date to accommodate the planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed. North of CP Chavez, the proposed project also includes safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.
- Above-Grade Passenger Concourse with New Expanded Passageway – The proposed project includes an above-grade passenger concourse with new expanded passageway in Segment 2 of the project study area (concourse segment). The above-grade passenger concourse with new expanded passageway would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The new passenger concourse would create an opportunity for an outdoor, community-oriented space and enhance Americans with Disabilities Act (ADA) accessibility at LAUS. The elevated portion of the above-grade passenger concourse would be located above the rail yard, approximately 90 feet above the existing grade with new plazas east and west of the elevated rail yard (East and West Plazas). The new expanded passageway would be located below the rail yard to provide additional passenger travel-path convenience and options. Amtrak ticketing and baggage check-in services would occur at two locations at the east and west ends of LAUS, and new carousels would be constructed within the new expanded passageway. The above-grade passenger concourse includes a canopy over the West Plaza up to 70 feet in height, with individual canopies that would extend up to 25 feet over each platform. New vertical circulation elements (VCEs) would also be constructed throughout the concourse to

enhance passenger movements throughout LAUS while meeting ADA and National Fire Protection Association (NFPA) platform egress code requirements.

- Run-Through Tracks – The proposed project includes up to 10 new run-through tracks (including a new loop track) south of LAUS in Segment 3 of the project study area (run-through segment). The run-through tracks would facilitate connections for regional/intercity rail trains and HSR trains from LAUS to the main line tracks on the west bank of the Los Angeles River. A "common" viaduct/deck over US-101 and embankment south of US-101, from Vignes Street to Center Street, would be constructed wide enough to support regional/intercity rail run-through service, and future run-through service for the planned HSR system.

The proposed project would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, positive train control (PTC), and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad right-of-way (ROW); additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

1.3 Build Alternative Overview

The primary differences between the proposed project and the build alternative are related to the lead tracks north of LAUS and the new passenger concourse. Compared to the proposed project, the build alternative includes the following:

- Dedicated Lead Tracks North of LAUS – The build alternative includes reconstruction of the throat, with two new lead tracks that would be located outside of the existing railroad ROW, facilitating a dedicated track alignment, with a total of seven lead tracks. Reconfiguration of Bolero Lane and Leroy Street would also be required.
- At-Grade Passenger Concourse – The build alternative includes an at-grade passenger concourse below the rail yard.

All other infrastructure elements are similar to the proposed project. The components of the build alternative are described north to south below.

- Throat and Elevated Rail Yard – The build alternative accommodates future HSR trains on dedicated lead tracks in the throat segment. The build alternative includes the addition of two new lead tracks for a total of seven lead tracks in the throat segment (with future HSR trains and some express/intercity services using the two western dedicated lead tracks and most regional/intercity trains using the five eastern lead tracks). The rail yard would be elevated approximately 15 feet. New passenger platforms with a grand canopy covering the elevated rail yard would be constructed, with an underlying assumption that the platform infrastructure and associated vertical circulation elements (stairs, escalators, and elevators) would be modified at a later date to accommodate the

planned HSR system. The existing railroad bridges in the throat segment at Vignes Street and Cesar Chavez Avenue would also be reconstructed under the build alternative. North of CP Chavez, the build alternative also includes safety improvements at the Main Street public at-grade crossing on the west bank of the Los Angeles River (medians, restriping, signals, and pedestrian and vehicular gate systems) to facilitate future implementation of a quiet zone by the City of Los Angeles.

- At-Grade Passenger Concourse – The build alternative includes a new at-grade passenger concourse that would include space dedicated for passenger circulation, waiting areas, ancillary support functions (back-of-house uses, baggage handling, etc.), transit-serving retail, office/commercial uses, and open spaces and terraces. The at-grade passenger concourse would also create an opportunity for an outdoor, community-oriented space and enhanced ADA accessibility. The at-grade passenger concourse would be constructed below the elevated rail yard. Amtrak ticketing and baggage check-in services would occur at a centralized location where new carousels would be constructed at the concourse level. The at-grade passenger concourse also includes new plazas east and west of the elevated rail yard (East and West Plazas), and a grand canopy that would extend up to 70 feet above the elevated rail yard and West Plaza. New vertical circulation elements would also be constructed throughout the concourse to enhance passenger movements throughout LAUS while meeting ADA and NFPA platform egress code requirements.
- Run-Through Tracks – The build alternative includes up to 10 new run-through tracks (including a new loop track) in the run-through segment. All infrastructure south of LAUS is the same as described above for the proposed project.

The build alternative would also require modifications to US-101 and local streets (including potential street closures and geometric modifications); railroad signal, positive train control, and communications-related improvements; modifications to the Gold Line light rail platform and tracks; modifications to the main line tracks on the west bank of the Los Angeles River; modifications to Keller Yard and BNSF West Bank Yard (First Street Yard); modifications to the Amtrak lead track; new access roadways to the railroad ROW; additional ROW; new utilities; utility relocations, replacements, and abandonments; and new drainage facilities/water quality improvements.

Figure 1-1. Project Location and Regional Vicinity

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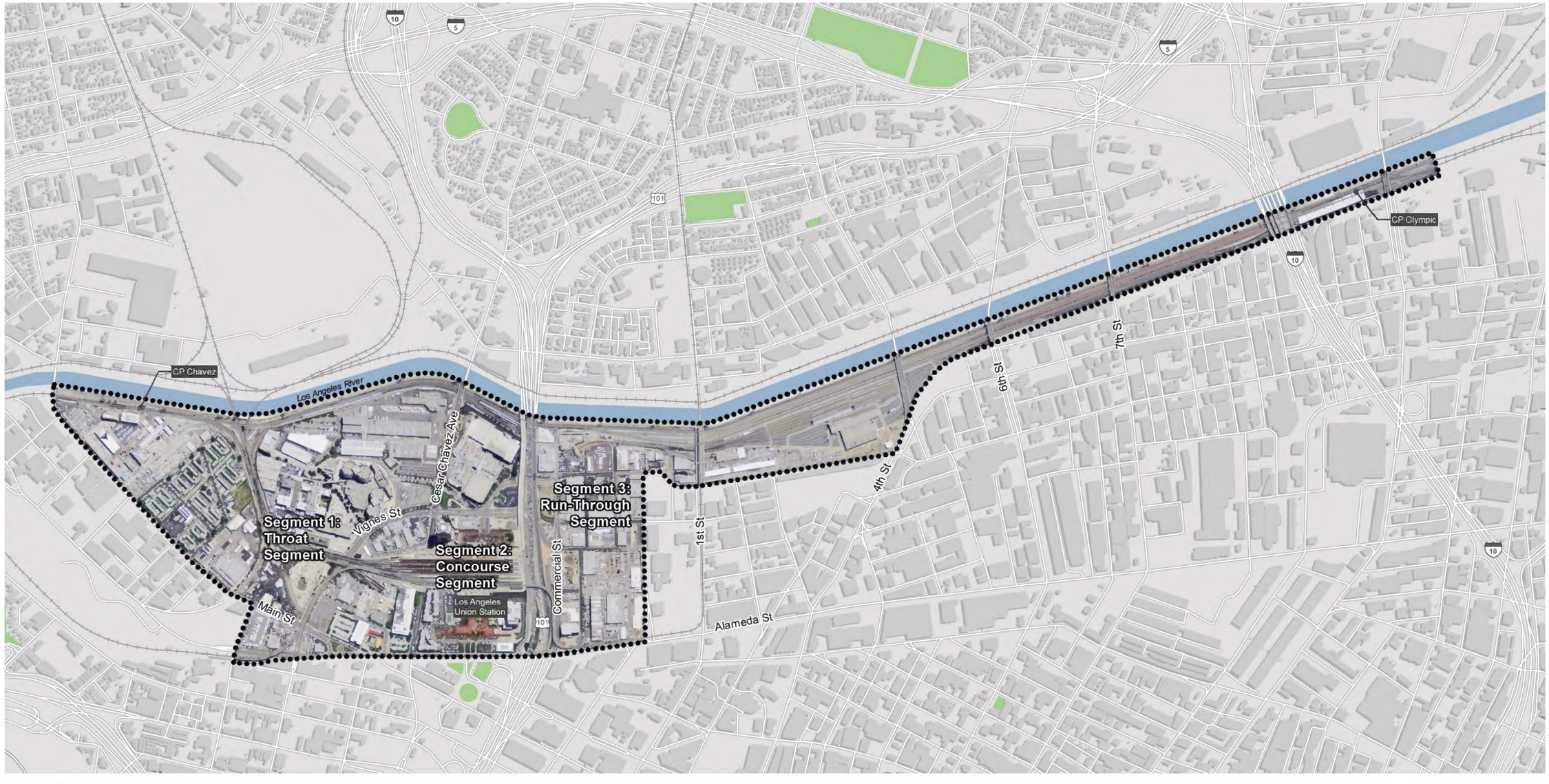
Figure 1-2. Project Study Area



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1.4 Report Background

This noise and vibration study was prepared to identify potential noise and vibration impacts in accordance with CEQA. The report provides a discussion of the proposed project and the differences associated with the build alternative, the physical setting of the project study area, and the noise and vibration regulatory framework applicable to the project. The assessment identifies the existing noise and vibration conditions and provides an analysis of potential noise and vibration impacts that may occur from short-term construction activities and long-term operation. The track alignment associated with the proposed project or the build alternative is the key infrastructure element that has variations in terms of the construction and operational noise and vibration impact analysis, primarily due to the proximity of proposed infrastructure to sensitive receptors.

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2.0 Purpose

The objectives of this study are to:

1. Describe the regulatory framework for noise and vibration.
2. Describe the methods used for characterizing existing conditions and evaluating construction and operational impacts.
3. Determine the short-term construction and long-term noise and vibration impacts of the proposed project and for the build alternative.
4. Identify mitigation measures to reduce impacts to the extent feasible.

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3.0 Approach

This section describes the overall approach to preparing the noise and vibration impact analysis for construction and operation. The approach includes:

- Acoustic terminology description
- Vibration terminology description
- Methods for assessing operational noise sources
- Operational vibration
- Construction noise
- Construction vibration

FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2018), as well as FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (FRA 2012) manuals were followed to evaluate the environmental impacts of the project. Additionally, the operational noise assessment implements the methods provided in CHSRA's *Environmental Methodology Guidelines* (CHSRA 2014), as applicable. Noise and vibration impacts were assessed using procedures followed by the FTA for regional/intercity rail improvements because FRA defers to FTA procedures for this type of evaluation. Because the project accommodates the planned HSR system, the FRA and CHSRA procedures are also considered.

3.1 Acoustic Terminology

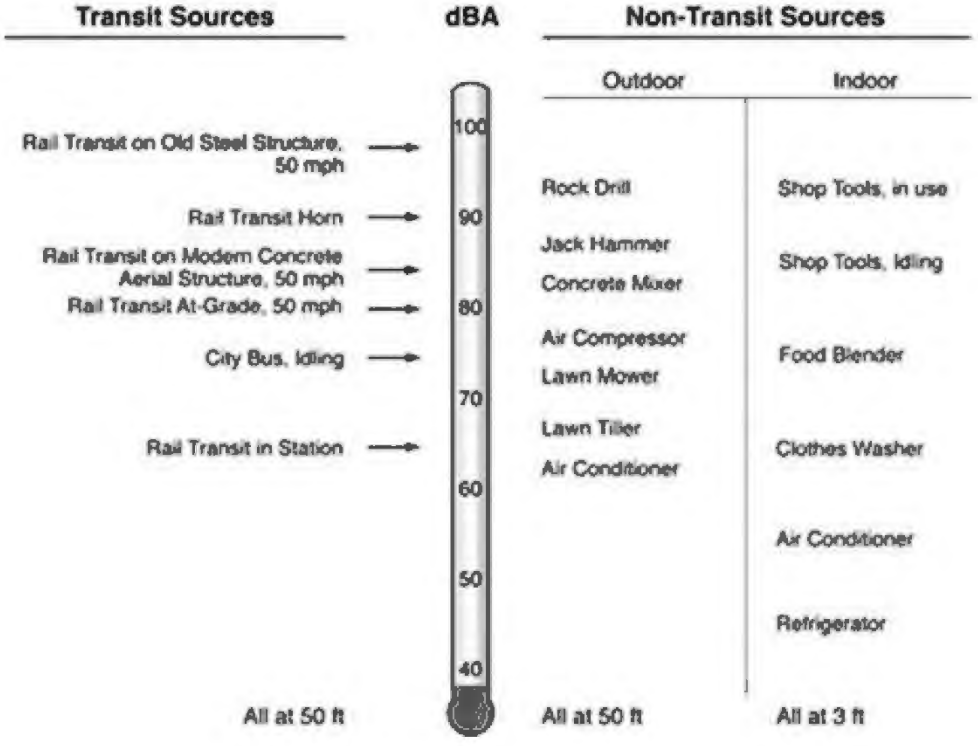
Noise levels are presented on a logarithmic scale to account for the large pressure response range of the human ear. This logarithmic scale is expressed in units of decibels (dB). A dB is defined as the ratio between a measured value and a reference value usually corresponding to the lower threshold of human hearing. The lower threshold of human hearing is defined as 20 micropascals. Typically, a noise analysis examines 11 octave (or 33 1/3 octave) bands ranging from 16 hertz (low) to 16,000 hertz (high). This octave band encompasses the human audible frequency range. Because the human ear does not perceive every frequency with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system, known as an A-weighted decibel (dBA).

An inherent property of the logarithmic dB scale is that the sound pressure levels of two separate sources are not directly additive. For example, if a sound of 50 dBA is added to another sound of 50 dBA in the proximity, the result is a 3-dB increase, which is a total of 53 dBA and not an arithmetic doubling to 100 dBA. The human ear perceives changes in sound pressure level relative to changes in "loudness." Scientific research demonstrates the following general relationships between sound level and human perception for two sound levels with the same or very similar frequency characteristics:

- One dBA is the practical limit of accuracy for sound measurement systems and corresponds to an approximate 10 percent variation in the sound pressure level. A 1-dBA increase or decrease is a non-perceptible change in sound.
- Three dBA increase or decrease is a doubling (or halving) of acoustic pressure level, and it corresponds to the threshold of change in loudness perceptible in a laboratory environment. In practice, the average person is not able to distinguish a 3-dBA difference in environmental sound outdoors.
- Five dBA increase or decrease is described as a perceptible change in sound level and is a discernible change in an outdoor environment.
- Ten dBA increase or decrease is a tenfold increase or decrease in acoustic pressure level but is perceived as a doubling or halving in loudness (e.g., the average person would judge a 10-dBA change in sound level to be twice or half as loud).

Figure 3-1 depicts estimations of common noise sources and outdoor acoustic environments. It provides the comparison of relative loudness for each of these sources.

Figure 3-1. Relative Loudness



Source: FTA 2018

Noise levels can be measured, modeled, and presented in various formats. The noise metrics that were employed in this analysis have the following definitions:

- *L_{eq}* (equivalent noise level)*:* Conventionally expressed in dBA, the L_{eq} is the energy-averaged, A-weighted sound level over a specified time period. It is defined as the steady, continuous sound level over a specified time, which has the same acoustic energy as the actual varying sound levels over the specified period.
- *L_{max}* (maximum sound level)*:* The maximum A-weighted sound level as determined during a specified measurement period. It can also be described as the maximum instantaneous sound pressure level generated by a piece of equipment or during a construction activity.
- *L_{dn}* (day-night average sound level)*:* The L_{dn} is the average, hourly A-weighted L_{eq} for a 24-hour period with a 10 dB penalty added to sound levels occurring during the nighttime hours (10:00 PM to 7:00 AM) to account for individuals' increased sensitivity to noise levels during nighttime hours.
- *CNEL* (community noise equivalent level): CNEL is another average A-weighted L_{eq} sound level measured over a 24-hour period; however, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5 dB to sound levels occurring during evening hours (7:00 PM to 10:00 PM) and 10 dB to noise levels occurring during nighttime hours (10:00 PM to 7:00 AM).

3.2 Vibration Terminology

As noted in the FTA's *Noise and Vibration Impact Assessment* (FTA 2018), both train operations and construction activities can be a source of groundborne vibration. As discussed above, FRA has adopted FTA's procedures and guidance for this vibration impact assessment. During the construction phase, activities such as driving piles and operating heavy equipment may cause groundborne vibration. Due to the weight of train equipment, the operation of trains can also cause groundborne vibration. Vibration is an oscillatory motion, which can be described in terms of displacement, velocity, or acceleration. Velocity or acceleration is typically used to describe vibration. The following two descriptors are frequently used when discussing quantification of vibration:

- *Peak particle velocity (PPV)*: the maximum instantaneous positive or negative peak of the vibration signal
- *Root mean square (RMS):* the square root of the average of the squared amplitude of the vibration signal, which is typically calculated over a 1-second period

3.3 Methods for Assessing Operational Noise Sources

3.3.1 Rail Noise

The steps described in the FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), as well as the FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment Manual* (FRA 2012) was followed to evaluate the environmental impacts of the project. Additionally, the operational noise assessment implements the methods provided in California High-Speed Rail Authority's (CHSRA)

Environmental Methodology Guidelines (CHSRA 2014). FTA and FRA methodology identifies a noise screening procedure, a general noise assessment, and a detailed noise assessment, which are outlined below.

- *Noise Screening Procedure* – Following the FTA and FRA noise screening procedure, the project type was identified (e.g., commuter rail main line, commuter rail station, HSR main line, and HSR station). Project-to-receiver screening distances are provided in the manuals for each of these project types. Adjustments to the generic screening distances are made to suit a particular project using the methodology in Section 5 of the FTA manual and Chapter 4 of the FRA manual (FTA 2018 and FRA 2012). For the project, the largest (i.e., longest) project-to-receiver screening distance identified is associated with the commuter rail main line activity. FTA indicated that the potential for noise impacts beyond 750 feet is minimal for commuter rail main line activity (FTA 2018). Receivers outside of this distance do not require further noise analysis. Receivers within the screening distance are carried forward for the general noise assessment.
- *General Noise Assessment* – Following this methodology, the existing noise level and the project noise level are estimated and compared with the impact criteria contained in the manual. The estimations include parameters such as project type and location of alternatives, representative noise-source levels, design speed, and time and frequency of operation. Because severe noise impacts were identified as part of the general noise assessment for rail noise, the noise analysis then proceeded to the more detailed noise assessment.
- *Detailed Noise Assessment* – Following FTA's and FRA's detailed noise assessment methodology, the noise impacts associated with the project were quantified through an in-depth analysis. The methodologies outlined in Section 4.5 of the FTA manual and Chapter 5 of the FRA manual (FTA 2018 and FRA 2012) were used to calculate the L_{dn} noise levels attributable to train operations on the rail alignment under the existing, future-no-project, and future-with-project scenarios (project-related contribution). Receivers of interest (i.e., potential noise-sensitive receptors) were selected using the guidance provided in Section 4.5 of the FTA manual, which is very similar to the guidance in the FRA manual for the planned HSR system (FTA 2018 and FRA 2012).

The project requires a Detailed Noise Assessment. The noise modeling effort associated with the detailed noise assessment accounted for the construction fleet and duration to construct the proposed project and the build alternative, as well as the number of train movements anticipated to pass through LAUS during daytime and nighttime hours throughout operation. The following assumptions were made as part of the detailed noise assessment.

- The typical train speed along the alignment(s) through the project study area north of the station and for trains running before connecting to the main line tracks would be limited to 20 to 25 miles per hour (mph). For this analysis, 25 mph was used.
- Train speeds at LAUS would be 15 mph and are assumed to increase up to 30 mph after trains exit LAUS terminal tracks.

- Future train movements and consists (e.g., the number of locomotives and cars per train movement anticipated to pass through LAUS) are based off those provided in the *Link US Rail Planning Technical Memorandum* (HDR 2018).
- There are two private at-grade rail crossings southwest of the "wye," where trains enter and exit LAUS in the throat segment near William Mead Homes. Operationally, the use of horns for trains entering and exiting the station is restricted, unless workers are present on the ground or if the locomotive engineer judges a situation to be a safety issue. The two private at-grade rail crossings are at a location that triggers safety issues because they are located along a blind curve. In 2018, Metro conducted a train horn use study (independent of this report) to identify the percentage of trains using a horn at these crossings (Metro 2018). The general approach of this study included 1 day of train traffic monitoring near the at-grade crossings to identify when a train horn was used. At the time of hearing a train horn, a basic noise measurement of the horn level was conducted using a cell phone. This study identified that 44 percent of trains sound their horns at the two private at-grade rail crossings. Consistent with the data obtained by Metro, for the purposes of this report, noise modeling assumes that 44 percent of trains utilizing tracks that intersect these two private at-grade crossings would continue to use horns as they approach the blind turn in the future.
- At the Main Street public at-grade rail crossing, the same train horn study referenced above identified that 100 percent of trains sound their horn at this crossing. Therefore, consistent with the data obtained by Metro, for the purposes of this report, the noise modeling assumes that 100 percent of trains use horns at the Main Street crossing. Upon implementation of a Quiet Zone by the City of Los Angeles, the improvements may help to reduce noise at William Mead Homes in the future. It is currently unknown when a quiet zone at this location will be approved by the California Public Utilities Commission; therefore, reduced noise levels resulting from implementation of a quiet zone at this location are only considered as part of the cumulative noise impact evaluation.
- The future noise exposure would be the combination of the existing noise exposure and the additional project-related noise exposure. Train movement volumes are projected to increase in the future as identified in the *Link US Rail Planning Technical Memorandum* (HDR 2018) provided as an appendix to this report, and these increases are defined as project-related operational noise sources where there are existing tracks in operation. These train movements are incorporated into the noise modeling conducted for 2026, 2031, and 2040. The 2026 and 2031 years correspond to the two major phases of project implementation (interim condition and full build-out condition), and the 2040 condition corresponds to the horizon years and timeframe for corresponding service goals and objectives of multiple statewide plans and mandates. A summary of the project-related capacity enhancements associated with each scenario is provided below:
    - 2026: Two new regional/intercity rail run-through tracks from Platform 4 at LAUS (interim condition)

  - 2031: All regional/intercity rail improvements at LAUS including the reconstructed throat, elevated rail yard and new passenger concourse, and up to ten run-through tracks (full build-out condition)
  - 2040: Full operation of HSR service at LAUS

- Where there are no tracks currently in operation, such as areas just south of LAUS, the train movements for 2026, 2031, and 2040 are treated as a new noise source.
- In 2026, as part of the proposed project or the build alternative, the following assumptions were incorporated into the noise modeling:
  - Some Metrolink trains that provide service to/from south of LAUS would use the new run-through tracks to access the station.
  - Amtrak Pacific Surfliner trains operating to and from the south would use the run-through tracks as well (subject to schedule coordination with Metrolink trains using the same tracks). This would reduce the total number of trains operating in the throat area.
  - Amtrak long-distance trains would continue to access LAUS from the north as they currently do.
- In 2031, as part of the proposed project or the build alternative, the following assumptions were incorporated into the noise modeling:
  - Amtrak Pacific Surfliner trains departing to or arriving from locations south of LAUS would use the run-through-tracks.
  - Because access to the Amtrak Los Angeles Maintenance Facility cannot be accomplished via the new run-through tracks, it is assumed that all Amtrak long-distance trains and 60 of the daily Amtrak Pacific Surfliner trains (approximately two thirds of all trains) would access the Amtrak Los Angeles Maintenance Facility as they currently do from the north through the throat segment and then follow tracks south along the west side of the Los Angeles River.
- In 2040, as part of the proposed project or the build alternative, the following assumptions were incorporated into the noise modeling:
  - The majority of the Metrolink trains accessing LAUS from the north would need to utilize the tracks on the east bank of the Los Angeles River to accommodate HSR service anticipated to be in operation. From there, the trains would cross using the northernmost bridge to access the throat.
  - Because access to the Amtrak Los Angeles Maintenance Facility cannot be accomplished via the new run-through tracks, it is assumed that all Amtrak long-distance trains and 60 of the daily Amtrak Pacific Surfliner trains would access the Amtrak Los Angeles Maintenance Facility as they currently do from LAUS north through the throat and then utilizing tracks south along the west bank of the Los Angeles River.

- North of LAUS, Amtrak Pacific Surfliner trains would continue to use the tracks on the west bank of the Los Angeles River.
- Metrolink and Amtrak trains are assumed to be operating using diesel fuel, and for safety purposes, would continue to use horns at private crossings in the throat segment.

- Because actual train schedules have not been prepared by the rail operators for the years of analysis (2026, 2031, and 2040), it is not possible at this time to calculate a peak daytime noise level for "daytime use only" noise-sensitive land uses, such as parks; therefore, the daytime L_{eq} is used to assess "daytime use only" impacts on noise-sensitive land uses.
- For construction-related impacts, activities in the concourse segment (Segment 2) and run-through segment (Segment 3) would generally involve the same noise-generating activities for the proposed project or the build alternative; however, the quantity of excavation and related truck trips would be greater for the build alternative due to the at-grade concourse compared with the proposed project and the above-grade passenger concourse with —new expanded passageway.

Appendix A of this report provides a summary of the fundamental equations used for this analysis. Appendix A also provides the noise model input assumptions and the output (i.e., calculated noise levels) of the rail noise analysis.

3.3.2 Three-Dimensional Predictive Model

Operational sound levels can be assessed using the FTA/FRA spreadsheet models; however, efficiencies can be gained by implementing "off-the-shelf" acoustic modeling software that implements the calculation methods of the FTA/FRA spreadsheets. Additionally, analysis of complex rail operations, such as loop tracks, are not easily accomplished via the spreadsheet models. Therefore, for this assessment, three-dimensional off-the-shelf predictive models, such as SoundPLAN software, were used to calculate rail noise levels implementing the FTA/FRA methods for regional/intercity rail, light-rail transit, and HSR trains. These modeling programs conform to the FTA/FRA standard for rail noise sources. The SoundPLAN model includes an array of data inputs, such as sound sources, topography, buildings, and ground characteristics, such as paved areas and vegetated areas. The following steps were taken to implement the FTA/FRA standard for rail noise sources in SoundPLAN:

- FTA/FRA spreadsheets were used to identify some source terms (i.e., noise levels) for each train set that would operate on a given rail line at 50 feet.
- Each train configuration (i.e., Metrolink, Amtrak Pacific Surfliner, Amtrak long distance, and HSR) and the number of train movements on a given track location were entered into SoundPLAN. The resultant level was compared against the items developed in Step A to ensure consistency.
- Each source term was applied to specific rail lines based on estimates of train movements for 2026, 2031, and 2040 as outlined in the *Link US Rail Planning Technical Memorandum* (HDR 2018), which included a mix of Metrolink regional rail trains, Amtrak Pacific Surfliner and long-distance trains, and HSR trains. The years 2026 and 2031 correspond to the two

major phases of project implementation (interim condition and full build-out condition). The year 2040 corresponds to the horizon years and corresponding service goals and objectives of multiple statewide plans and mandates.

- The proposed project and the build alternative scenarios were modeled utilizing each specific track alignment and configuration, and estimated train movements for each independent rail operator (Metrolink, Amtrak, and CHSRA).
- Idling train noise was calculated via point sources in the SoundPLAN model, and the source terms were generated using FTA's methods (FTA 2018). Attenuation impacts of the point sources were calculated implementing the International Organization for Standardization's standard International Organization for Standardization 9613-2 *Acoustics – Attenuation of Sound during Propagation Outdoors* (International Organization for Standardization 1996).
- Modeling included terrain contours to capture terrain changes, including those associated with the elevated rail yard under the proposed project or the build alternative. Buildings were modeled as three-dimensional shapes to capture attenuation impacts. Although there are small patches of grass and dirt in the project study area, the noise predictions conservatively assume a uniformly hard and acoustically reflective surface like that of a paved area.

Operational noise levels were compared with the relevant noise impact criteria identified in Section 4.0. Noise levels associated with special trackwork, such as crossovers, were also included in this assessment for sensitive receptors located within 200 feet of the proposed project or build alternative alignment. Although the CHSRA *Environmental Methodology Guidelines* exclude these potential sound and vibration sources (CHSRA 2014), because regional/intercity rail trains are evaluated, these sources are considered in this assessment.

3.3.3 Wheel/Rail Noise

Wheel squeal is the noise produced by wheel-rail interaction, particularly on a curve where the radius of curvature is smaller than allowed by the separation of the axles in a wheel set. Wheel squeal has not been included in the noise projections because wheel squeal is highly variable, which makes accurate projections difficult. However, the FTA and FRA manuals indicate that standard steel wheel on steel rail systems tend to initiate curve squeal at curves with radii less than 100 times the truck wheelbase (FTA 2018 and FRA 2012).

For the trains in the project study area, assuming a truck wheelbase of 9 feet, wheel squeal would initiate on curves with a radius of 900 feet or less. North of LAUS, the planned track curvature for the proposed project or the build alternative have radii of less than 900 feet, which is similar to the existing curves in this area. Measurements in this area were used to identify existing occurrences of wheel squeal at nearby noise-sensitive land uses, such as William Mead Homes. South of LAUS, the proposed curvature would also have radii of less than 900 feet; however, no noise-sensitive receptors occur within the screening distance (Section 3.3.1).

3.3.4 Traffic Noise

Based on the low trip generation and the existing background traffic counts, no modeling of vehicular traffic noise was undertaken as part of this analysis (see *Link US Traffic Impact Assessment, Appendix D of this EIR*).

3.4 Operational Vibration

The FTA and FRA procedures for a general operational vibration assessment (as outlined in Section 6 of the FTA manual and Chapter 8 of the FRA manual) were used for this analysis (FTA 2018 and FRA 2012). The FTA/FRA assessment procedure requires the following data:

- Number of daily vibration events – The number of daily events was classified as frequent because there would be over 70 vibration events of the same kind per day.
- Receiver land use designation (categories specified above) – Category 2 (for the residences) or Category 3 (parks, schools, daycare) land use designations were used for all of the receivers analyzed.
- Vibration source levels – The source levels were derived from Figure 6-4 of the FTA manual (FTA 2018) using the curve for "locomotive-powered passenger or freight" and Table 8-1 of the FRA manual (FRA 2012).
- Distance from source to receiver (building) footprints – The distance between the source (i.e., rail centerline) and the receiver was measured using geographic information system.
- Train speed, suspension, wheel condition (worn or flat-spots), and track condition – Train speed estimates would range from 20 to 25 mph. Because the train types are regional/intercity rail and HSR, the train's wheels were assumed to be in good condition (i.e., no flat spots).
- Number of floors above grade to the receiver – The upper floors of the Mozaic Apartments and William Mead Homes were considered relative to the project-related source of potential noise and vibration.
- Soil characteristics of ground between the vibration source and receiver – Soil propagation characteristics were assumed to be normal (rather than efficient) based on the State Soil Geographic database for California (National Cooperative Soil Survey 2011). Typical vibration-sensitive structures were assumed to be large masonry buildings based on field observations.
- Receiver construction/foundation type and description, including whether it is fragile or extremely fragile – Using the generalized ground surface vibration curve, the RMS velocity level data at the receiver distance of interest were adjusted based on the factors affecting the source, factors affecting the vibration path, and factors affecting the receiver, as specified in FTA manual (FTA 2018). Structure types and associated adjustments were also obtained from the FTA manual (FTA 2018).

The potential for damage to adjacent architectural resources as a result of project-related operational vibration was analyzed in addition to the modeled noise- and vibration-sensitive receivers. Following FTA methodology, the potential for vibration damage and annoyance was assessed at sensitive land uses within.

3.5 Construction Noise

Noise from construction activity is generated by the broad array of powered, noise-producing mechanical equipment used in the construction process. This equipment ranges from hand-held pneumatic tools to excavators, loaders, a variety of trucks, and tie and rail handling equipment. To assess potential noise impacts from construction, this noise analysis used the methodology in Section 7 of the FTA manual and Chapter 10 of the FRA manual, which are identical to one another (FTA 2018 and FRA 2012).

The noise exposure at a receiver location was calculated from the dB addition of all operating construction equipment using the equations and methodology described in the FTA/FRA manuals (FTA 2018 and FRA 2012). For example, the attenuation rate used as a point source was 6 dB per doubling of distance. The intervening ground was generally hard surfaced; therefore, any additional reduction from ground impacts was negligible. Where applicable, shielding effects from intervening structures were accounted for using the same shielding calculations used in the rail noise analysis (FTA 2018 and FRA 2012).

Table 7-1 of the FTA manual presents the construction source noise emission levels at a reference distance of 50 feet (FTA 2018). The noise emission levels for construction equipment planned to be on site is indicated in Table 8-5. Construction equipment used in the analysis included trucks, loaders, rollers, mobile cranes, ballast tampers, generators, and other items. The range in noise levels typically generated by the equipment assumed for the analysis ranges from 74 dBA L_{eq} (e.g., water trucks) to 101 dBA L_{eq} (e.g., impact pile driver) at a distance of 50 feet.

3.6 Construction Vibration

To assess potential vibration impacts from construction, this vibration analysis used the methodology contained in Section 7.2 of the FTA manual and Chapter 10.2 of the FRA manual, which are identical to one another (FTA 2018; FRA 2012). The potential for damage to structures from project-related construction vibration was analyzed for the sensitive receivers discussed above. Vibration source levels for a variety of typical construction equipment types are outlined in Table 7-4 of the FTA manual (reproduced in this report as Table 3-1), in terms of PPV in inches per second at a reference distance of 25 feet from the source and velocity in decibels (VdB) at 25 feet (FTA 2018 and FRA 2012). For this analysis, the source of typical vibration levels for an impact pile driver (0.644 inch per second PPV) and vibratory roller (0.210 inch per second PPV) was utilized.

Table 3-1. Typical Construction Equipment Vibration Levels

Equipment/Source		PPV at 25 Feet (inch/second)	Approximate LVa at 25 Feet
Pile driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile driver (vibratory)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)	—	0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller	—	0.210	94
Hoe ram	—	0.089	87
Large bulldozer	—	0.089	87
Caisson drilling	—	0.089	87
Loaded trucks	—	0.076	86
Jackhammer	—	0.035	79
Small bulldozer	—	0.003	58

Source: FTA 2018

Notes:

[a] ***RMS VdB reference 1 microinch per second***

L_v=vibration velocity level; RMS=root mean square; PPV=peak particle velocity; VdB=velocity in decibels

3.6.1 Approach to Project Noise and Vibration Analysis

The most prominent areas where operational noise and vibration levels are variable for the proposed project and the build alternative is in the throat segment, near William Mead Homes, due to the variation in track alignment (shared tracks or dedicated tracks). Train movements through LAUS in the 2026, 2031, and 2040 conditions would be the same for the proposed project or the build alternative, and would be substantially higher than existing levels (HDR 2018).

For the proposed project and the build alternative, the detailed construction scenarios and equipment information developed in April 2018 was used to estimate noise and vibration levels for the construction activities having the most daily equipment usage (i.e., daily engine hours). The construction-related noise and vibration impacts are anticipated to be the same for both the proposed project and the build alternative considered; however, construction activities associated with build alternative would be slightly closer to some sensitive receptors at William Mead Homes.

4.0 Noise/Vibration Criteria

4.1 Noise Impact Criteria

4.1.1 Federal Regulations and Guidelines

Several federal laws and guidelines are relevant to the assessment of ground transportation noise and vibration impacts and are applicable to the project:

- The Noise Control Act of 1972 (42 United States [U.S.] Code § 4910) was the first comprehensive statement of national noise policy. It declared that "it is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."
- The FTA Transit Noise and Vibration Impact Assessment Manual (U.S. Department of Transportation FTA 2018) provides the methodology and impact criteria applicable to conventional passenger rail and transit components associated with the project.
- The FRA High-Speed Ground Transportation Noise and Vibration Impact Assessment (FRA 2012) provides the methodology and impact criteria applicable to high speed rail components associated with the project.

FTA published a newly revised noise and vibration impact assessment manual in 2018. The FRA impact assessment guidance is primarily to address noise and vibration from projects with train speeds of 90 to 250 mph, while providing reference to the FTA manual for projects with conventional train speeds below 90 mph. The impact criteria in both guidance documents are based on the goal of maintaining a noise environment considered acceptable for land uses, where noise may have an impact. The noise exposure is measured in terms of the L_{dn} for residential land uses or in terms of the hourly equivalent sound level for other land uses.

The FTA states that in cases where changes are proposed to an existing transit system, its cumulative noise criteria can be used (FTA 2018). In the case of this project, the cumulative noise criteria are appropriate in most areas, as the existing facility is being modified with an exception being the area immediately south of the station where the new run-through tracks would be constructed.

In FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) and FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment Manual* (FRA 2012), noise impact criteria for operation of rail facilities are based on the change in outdoor noise exposure using a sliding scale with three land use categories and three degrees of impact. The criteria were established to reflect a heightened community annoyance caused by late-night, or early-morning service, as well as communities' varying sensitivity to noise from projects during different ambient noise conditions.

For operational rail noise, FTA's and FRA's three land use categories are as follows:

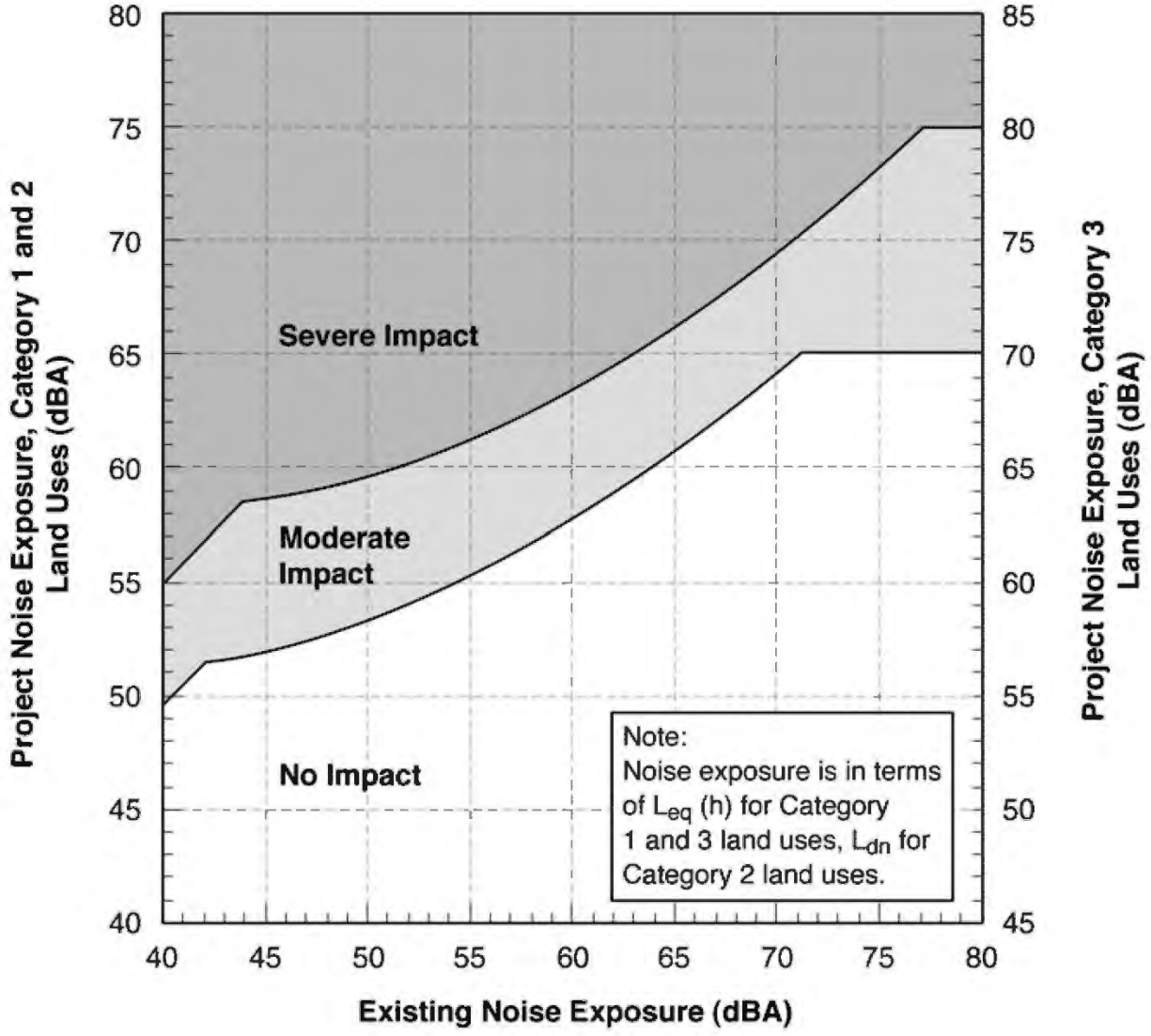
- *Noise Category 1* – Tracts of land where quiet is an essential element in their intended purpose, such as outdoor amphitheaters, concert pavilions, and National Historic Landmarks with significant outdoor use.
- *Noise Category 2* – Residences and buildings where people normally sleep, including homes, hospitals, and hotels.
- *Noise Category 3* – Institutional land uses (i.e., schools, places of worship, libraries) with use typically during the daytime and evening. Other uses in this category can include medical offices, conference rooms, recording studios, concert halls, cemeteries, monuments, museums, historical sites, parks, and recreational facilities.

The three categories are determined from general land use information about each receiver. No Category 1 receivers are located within 1 mile of the proposed alignments, which is well beyond the typical FTA screening distance for noise or vibration impacts. Outdoor hourly L_{dn} applies to Category 2, whereas outdoor hourly L_{eq} applies to Category 3.

Noise impacts on Category 2 and Category 3 land uses as a result of a project are assessed by comparing existing and future project-related outdoor noise levels. Figure 4-1, Figure 4-2, and Figure 4-3 illustrate the FTA noise impact criteria as they relate to each land use category. As shown on Figure 4-1, the criterion for each degree of impact is based on a sliding scale dependent on the existing noise exposure and the increase in noise exposure attributable to the project. Figure 4-1 shows project based noise impact criteria, and Figure 4-2 and Figure 4-3 illustrate cumulative noise impact criteria. Based on FTA/FRA criteria, potential noise impacts fall into three types: no impact, moderate impact, and severe impact (FTA 2018 and FRA 2012). The impact categories are described further below:

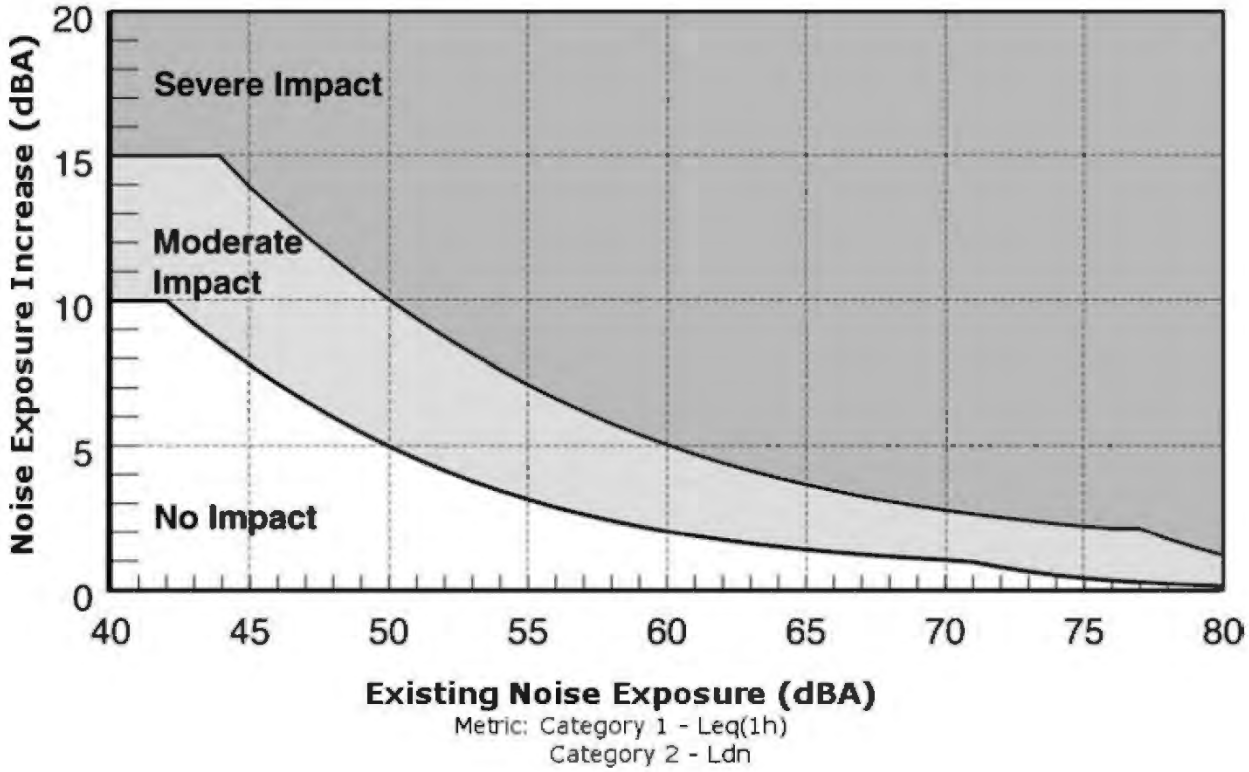
- *No impact* – A project on average would result in an insignificant increase in the number of instances where people are highly annoyed by new noise. No impact typically corresponds to a less than significant impact under CEQA.
- *Moderate impact* – The change in cumulative noise is noticeable to most people but may not be sufficient to cause strong, adverse community reactions. A moderate impact typically corresponds to a less than significant impact under CEQA.
- *Severe impact* – A significant percentage of people would be highly annoyed by the noise, perhaps resulting in vigorous community reaction. A severe impact typically corresponds to a significant impact under CEQA.

Figure 4-1. Federal Transit Administration Noise Impact Criteria



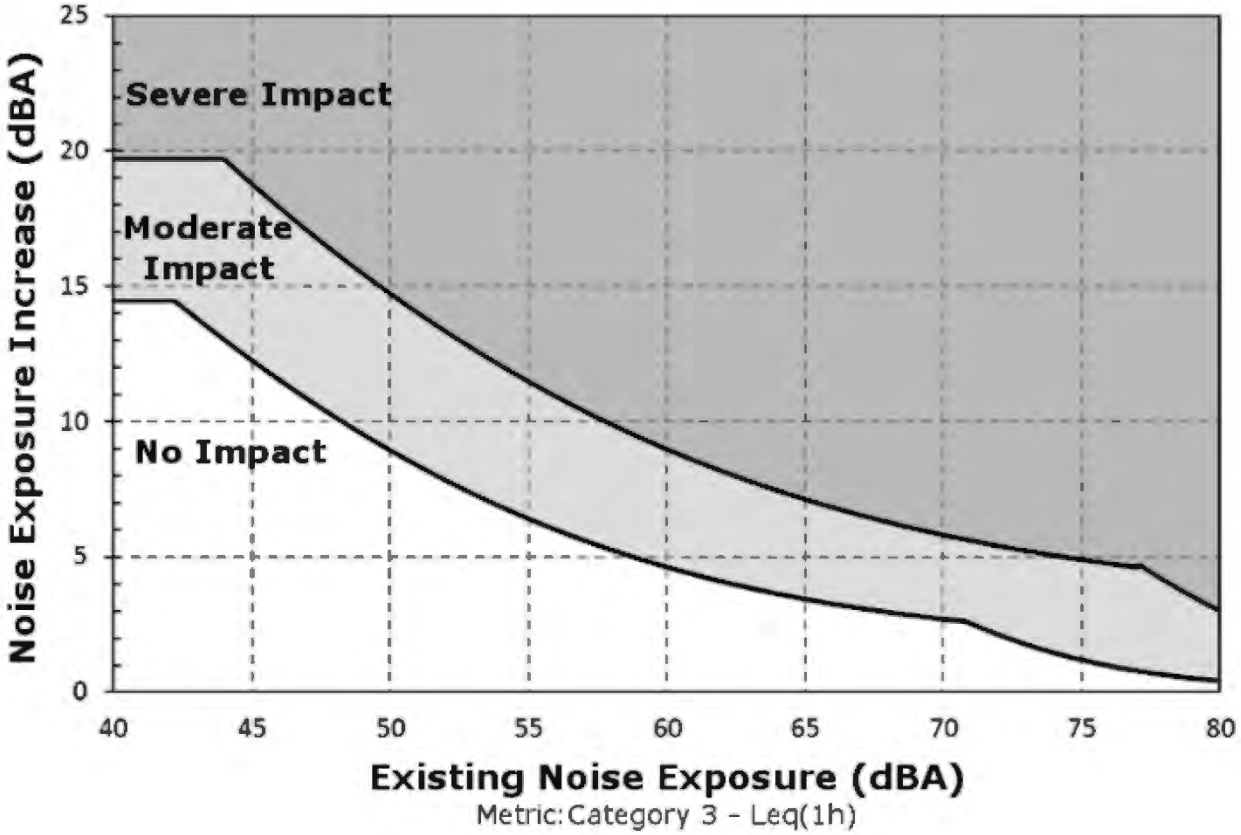
Source: FTA 2018

Figure 4-2. Federal Transit Administration Cumulative Noise Levels Allowed by Criteria Category 2 Lands



Source: FTA 2018

Figure 4-3. Federal Transit Administration Cumulative Noise Levels Allowed by Criteria Category 3 Lands



Source: FTA 2018

Using FTA's sliding impact criterion for Category 2 receivers, an existing environment of 50 dBA L_{dn} would experience a moderate impact if the rail project creates a noise exposure of approximately 53 dBA to 59 dBA L_{dn} or if there is an increase of 9 to 15 dB (Table 4-1). Section 7.0 contains tables listing suggested construction noise impact criteria depending upon the level of detail/understanding of the construction phase (FTA 2018). For the more detailed approach applicable to the project, the FTA's guidelines for assessment of construction noise shown in Table 4-2 are suggested for use due to different noise levels for daytime and nighttime construction. Daytime is defined as 7:00 AM to 10:00 PM, and nighttime is defined as 10:00 PM to 7:00 AM.

Table 4-1. Noise Levels Defining Impact for Federal Transit Administration/Federal Railroad Administration Projects

Existing Noise Exposure (dBA)	Project Noise Impact Exposure (dBA)					
	Category 1 (Leq (1 hour)) or 2 (Ldn) Sites			Category 3 Sites (Leq (1hour))		
Leq (1 hour) or Ldn	No Impact	Moderate Impact	Severe Impact	No Impact	Moderate Impact	Severe Impact
<43	<Ambient+10	Ambient + 10 to 15	>Ambient+15	<Ambient+15	Ambient + 15 to 20	>Ambient+20
43	<52	52-58	>58	<57	57-63	>63
44	<52	52-58	>58	<57	57-63	>63
45	<52	52-58	>58	<57	57-63	>63
46	<53	53-59	>59	<58	58-64	>64
47	<53	53-59	>59	<58	58-64	>64
48	<53	53-59	>59	<58	58-64	>64
49	<54	54-59	>59	<59	59-64	>64
50	<54	54-59	>59	<59	59-64	>64
51	<54	54-60	>60	<59	59-65	>65
52	<55	55-60	>60	<60	60-65	>65
53	<55	55-60	>60	<60	60-65	>65
54	<55	55-61	>61	<60	60-66	>66
55	<56	56-61	>61	<61	61-66	>66
56	<56	56-62	>62	<61	61-67	>67
57	<57	57-62	>62	<62	62-67	>67
58	<57	57-62	>62	<62	62-67	>67
59	<58	58-63	>63	<63	63-68	>68
60	<58	58-63	>63	<63	63-68	>68

Table 4-1. Noise Levels Defining Impact for Federal Transit Administration/Federal Railroad Administration Projects

Existing Noise Exposure (dBA)	Project Noise Impact Exposure (dBA)					
	Category 1 (Leq (1 hour)) or 2 (Ldn) Sites			Category 3 Sites (Leq (1hour))		
Leq (1 hour) or Ldn	No Impact	Moderate Impact	Severe Impact	No Impact	Moderate Impact	Severe Impact
61	<59	59-64	>64	<64	64-69	>69
62	<59	59-64	>64	<64	64-69	>69
63	<60	60-65	>65	<65	65-70	>70
64	<61	61-65	>65	<66	66-70	>70
65	<61	61-66	>66	<66	66-71	>71
66	<62	62-67	>67	<67	67-72	>72
67	<63	63-67	>67	<68	68-72	>72
68	<63	63-68	>68	<68	68-73	>73
69	<64	64-69	>69	<69	69-74	>74
70	<65	65-69	>69	<70	70-74	>74
71	<66	66-70	>70	<71	71-75	>75
72	<66	66-71	>71	<71	71-76	>76
73	<66	66-71	>71	<71	71-76	>76
74	<66	66-72	>72	<71	71-77	>77
75	<66	66-73	>73	<71	71-78	>78
76	<66	66-74	>74	<71	71-79	>79
77	<66	66-74	>74	<71	71-79	>79
>77	<66	66-75	>75	<71	71-80	>80

Notes:

dBA=velocity in decibels; L_{eq}=equivalent noise level; L_{dn}= day-night average sound level

Table 4-2. Prescriptive Federal Transit Administration Construction Noise Assessment Guidelines

Land Use	8-Hour Leq (dBA)		30-Day Average Ldn (dBA)
	Day	Night	
Residential	80	70	75[a]
Commercial	85	85	80[b]
Industrial	90	90	85[b]

Source: FTA 2018

Notes:

[a] ***In urban areas with very high ambient noise levels (L_{dn} greater than 65 dB), L_{dn} from construction operations should not exceed existing ambient + 10 dB.***

[b] ***24-hour L_{eq}, not L_{dn}***

dBA=velocity in decibels; L_{eq}=equivalent noise level; L_{dn}= day-night average sound level

4.1.2 State Regulations

At the state level, the California Noise Control Act was enacted in 1973 (Health and Safety Code Section 46010, et seq.). It provides for the Department of Health Services' Office of Noise Control to offer assistance to local communities developing local noise control programs and work with the Office of Planning and Research to provide guidance for the preparation of the required noise elements in city and county general plans, pursuant to Government Code Section 65302(f).

CEQA (Section 21000, et seq.) is a state statute passed in 1970. CEQA requires state and local agencies to identify the significant environmental impacts of their actions, including potential impacts from noise and vibration and avoid or mitigate those impacts when feasible.

The State of California has established land use compatibility criteria that provide guidance on the compatibility of different types of land uses based upon the existing community noise level. These guidelines are often adopted by city and county agencies for land use planning purposes. However, the State of California has not adopted specific noise criteria that are applicable to rail projects. Therefore, the noise impact assessment is based on the guidelines provided by FTA and FRA.

4.1.3 Local Regulations

The project is located in the City of Los Angeles. The City of Los Angeles' municipal code noise regulations are generally not applicable to operational noise from the project; however, construction noise is restricted via Section 41.40 of the municipal code, which stipulates that:

> *No person shall, between the hours of 9:00 PM and 7:00 AM of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the*

> *disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and wilfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this Code.*

The City may provide permission to work outside of these hours where it is in the public interest, or where a hardship, injustice, or unreasonable delay would result from its interruption during the hours provided in Section 41.40 of the Municipal Code.

4.2 Vibration

4.2.1 Federal Regulations

The evaluation of vibration impact levels, stated as VdB, is based on the land use category and the number of vibration events per day. The impact level also depends on the type of analysis being conducted (i.e., groundborne vibration or groundborne noise).

The FTA manual provides guidelines to assess human response to different levels of groundborne noise and vibration, as shown in Table 4-3. There are no Category 1 land uses considered within the screening distance (Section 3.3.1). The majority of vibration-sensitive land uses in the project study area are Category 2 land uses. The term "frequent events" is defined as more than 70 vibration events per day, while the term "infrequent events" is defined as less than 70 vibration events per day.

For areas where existing vibration levels exceed the thresholds provided in Table 4-3, FTA and FRA have identified that an impact would occur if the project vibration levels result in an increase of 3 VdB or more.

Groundborne noise is normally not a consideration when trains are at grade (i.e., not underground). In these situations, the airborne noise is the major consideration. Groundborne noise generally becomes an important consideration for subways or other projects in which part of the alignment includes a tunnel.

FTA and FRA construction-related vibration guidelines call for investigation of the potential for vibration-induced damage to fragile or extremely fragile buildings (FTA 2018 and FRA 2012). Damage to a building is possible (but not necessarily probable) if ground vibration levels exceed the following criteria:

- Exceeds 0.20-inch-per-second PPV (approximately 100 VdB) for fragile buildings
- Exceeds 0.12-inch-per-second PPV (approximately 95 VdB) for extremely fragile buildings

No fragile or extremely fragile buildings are located within the screening distance (Section 3.3.1) to the project study area. Table 4-3 presents the groundborne vibration and noise impact criteria.

Construction vibration is assessed based on the potential for damage and the likelihood of annoyance. FTA and FRA indicate engineered concrete and masonry structures have damage criteria of 0.3 PPV (inches per

second). To assess the potential for construction vibration annoyance, the same vibration thresholds as those identified in Table 4-3 for operational vibration are applied.

Table 4-3. Groundborne Vibration and Noise Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 micro inch/second)			Groundborne Noise Impact Levels (dB re 20 micro Pascals)		
	Frequent Eventsa	Occasional Eventsb	Infrequent Eventsc	Frequent Eventsa	Occasional Eventsb	Infrequent Eventsc
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[c]	65 VdB[c]	65 VdB[c]	NA[d]	NA[d]	NA[d]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Source: FTA 2018; FRA 2012

Notes:

[a] ***Frequent events is defined as more than 70 vibration events per day.***

[b] ***Occasional events is defined as between 30 and 70 vibration events of the same source per day.***

[c] ***Infrequent events is defined as fewer than 70 vibration events per day.***

This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air-conditioning systems and stiffened floors. Vibration-sensitive equipment is not sensitive to groundborne noise.

dB=decibel; dBA=A-weighted decibel; NA=not applicable; VdB=velocity in decibels

4.2.2 State Regulations

Groundborne vibration criteria pursuant to CEQA is provided in Section 5.0.

4.2.3 Local Regulations

The City of Los Angeles does not identify vibration standards or thresholds in its municipal code or other ordinances.

5.0 CEQA Thresholds of Significance

For the purposes of this noise and vibration study, the proposed project or build alternative would have a significant impact on noise and vibration if it would:

A. Expose 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.

B. Expose persons to or generation of excessive groundborne vibration or groundborne noise levels.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

D. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

These thresholds of significance are considered in the noise and vibration impact assessment in Section 8.0.

5.1 Issues Requiring No Further Consideration

Threshold E and F do not apply to the project because no noise-sensitive land uses would be located within an airport land use plan or in the vicinity of a private airstrip. Therefore, there would be no impact, and no further discussion is required.

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6.0 Noise- and Vibration-Sensitive Land Uses and Sensitive Receptors

The following discussion provides a description of the noise- and vibration-sensitive land uses where sensitive receptors in the project study area (Category 2 and 3 land uses) occur. The receptor locations are used for predictions and represent a cluster of sensitive receptors, which is consistent with the FTA/FRA guidance and regulations. The noise analysis area includes those noise-sensitive areas within the screening distance (Section 3.3.1) approximately 750 feet of the two alignments (proposed project and build alternative). Because vibration attenuates more quickly with distance, the vibration analysis area is substantially smaller; therefore, it includes only those vibration-sensitive land uses and structures within 100 feet of the considered alignments.

Figure 6-1 identifies sensitive receptors in the project study area (Category 2 and 3 land uses), and community noise and vibration measurement locations for modeled receivers. Noise- and vibration-sensitive land uses include William Mead Homes, Metro Senior Housing, Mozaic Apartments, One Santa Fe Apartments, a daycare/elementary school (Ann Street Elementary), and a park (i.e., athletic fields at the William Mead Homes). Two jails are also located within the analysis area; however, there are no outdoor uses at these jails. For this reason, the jails were evaluated for indoor noise exposure from the proposed project and build alternative (i.e., sleep disturbance).

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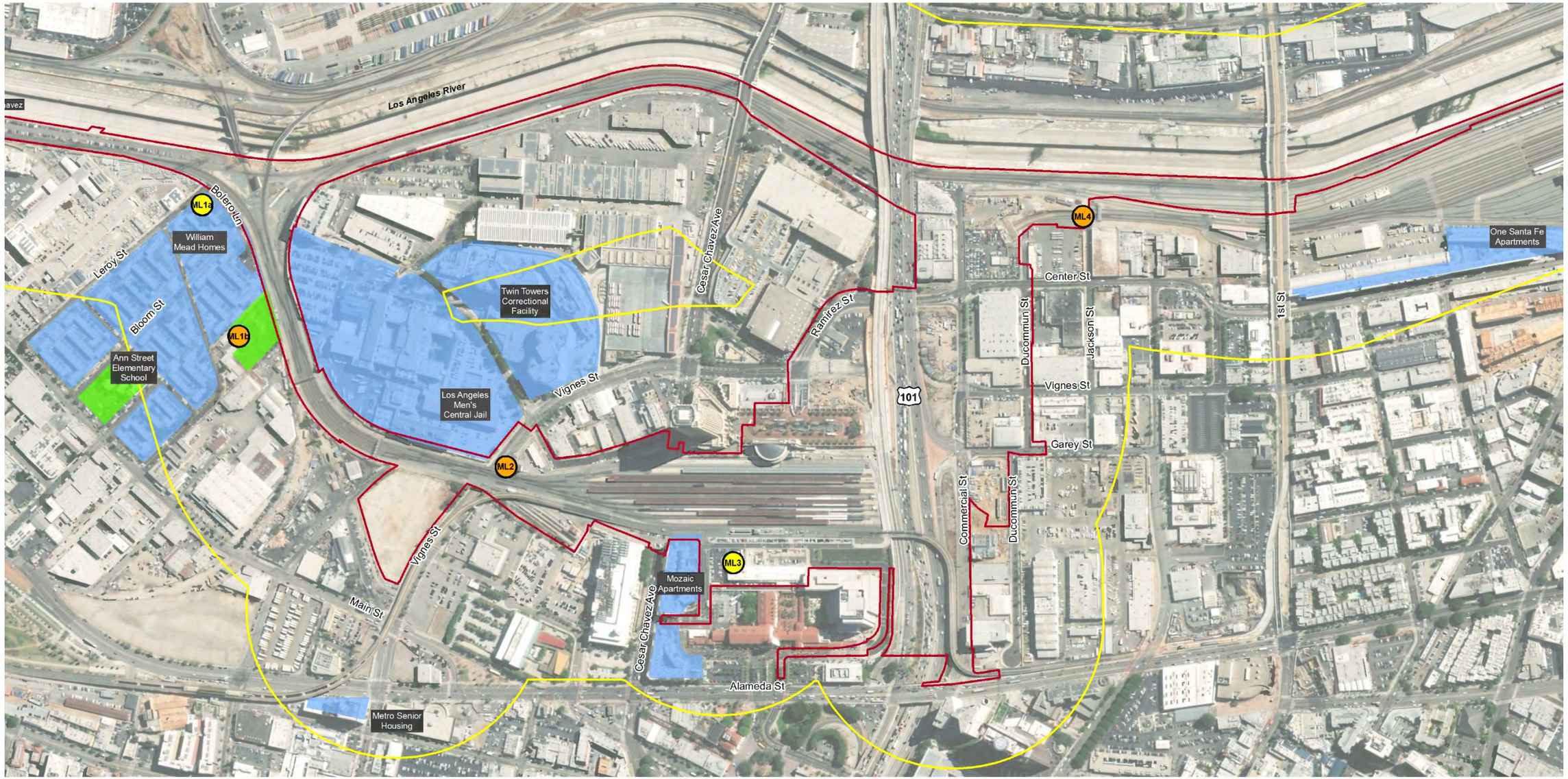
Figure 6-1. Noise- and Vibration-Sensitive Land Uses, Community Noise and Vibration Measurement Locations, and Sensitive Receptor Clusters



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7.0 Existing Conditions

7.1 Noise Conditions

Metro completed a baseline sound survey to identify existing noise exposure at noise-sensitive land uses where sensitive receptors occur within the project study area. Table 7-1 provides the measured existing noise levels at noise-sensitive land uses in the project study area. Multiple residences are within the noise analysis study area. Permissions to enter Monitoring Locations (ML) 2 through 4 were not granted, so alternative locations representative of each noise-sensitive receptor were used to determine noise levels. Measurements at noise-sensitive land uses were taken from January 24 through January 26, 2017.

Table 7-1. Existing Noise Levels

Site ID	Location	Noise Levels (dBA)		
		Ldn	Leq (day)	Leq (night)
ML1a	William Mead Homes	69	66	62
ML1b	Athletic Fields at William Mead Homes	69	66	61
ML2	Twin Towers Correctional Facility (Terminal Tower)	73	71	66
ML3	Mozaic Apartments (Amtrak Baggage Handling Building)	67	64	60
ML4	One Santa Fe Apartments and Studios (Emergency Security Operations Center)	71	64	64

Notes:
dBA=A-weighted decibel; ID=identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; L_{max}=maximum sound level; ML=monitoring location

Appendix B provides more details on the measurement effort.

7.1.1 Monitoring Location 1 – William Mead Homes

William Mead Homes is located in Segment 1 of the project study area, which is in close proximity to the lead tracks in the throat segment.

Two locations (Figure 7-1) were selected to monitor noise levels: one on a building rooftop located approximately 112 feet from the tracks (ML1a), and one in the facility athletic fields (ML1b). These two locations were selected due to security concerns identified by management personnel of the William Mead Homes when approached about selecting ground level locations. Ground locations near Building 16 of the William Mead Homes would not be suitable due to high likelihood of equipment tampering or theft. At the athletic fields, the location selected was adjacent to the park and within a fenced area that is secured, which

was agreed to with the management of William Mead Homes since other locations at the athletic fields were identified as having a high likelihood of equipment tampering or theft. The noise meter at ML1a was set up January 24, 2017, at 10:30 AM, and the noise meter at ML1b was set up the same day at 9:48 AM. The meters were secured in place using security chains or sand bags, while the meters were stored in padlocked cases (Figure 7-1 and Figure 7-2). The connected microphones were calibrated before being placed in the direction of the tracks. Several observed sounds could be heard, including the rolling trains, their horns, and their wheels on the track. For security reasons, ML1a was set on the rooftop of a home. Normal residential noises were heard, including music and street traffic. ML1b was located near the athletic fields in close proximity to the maintenance yard where equipment was stored and retrieved, including a lawnmower and motorized carts filled with tools. Figure 7-3 and Figure 7-4 are time history charts of the monitored 1-hour L_{eq} levels.

Figure 7-1. Monitoring Location 1a – Noise Meter Location

Figure 7-2. Monitoring Location 1b – Noise Meter Location

Figure 7-3. Monitoring Location 1a – Hourly Equivalent Noise Level Time History

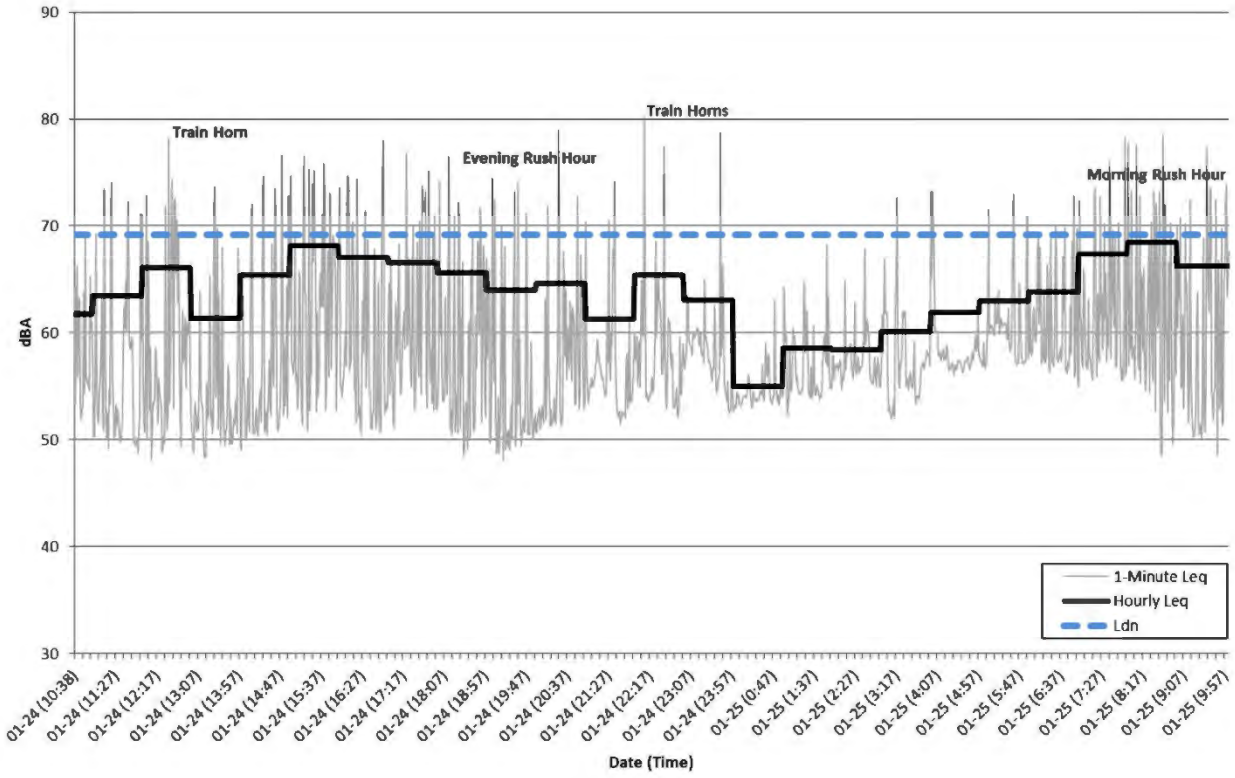
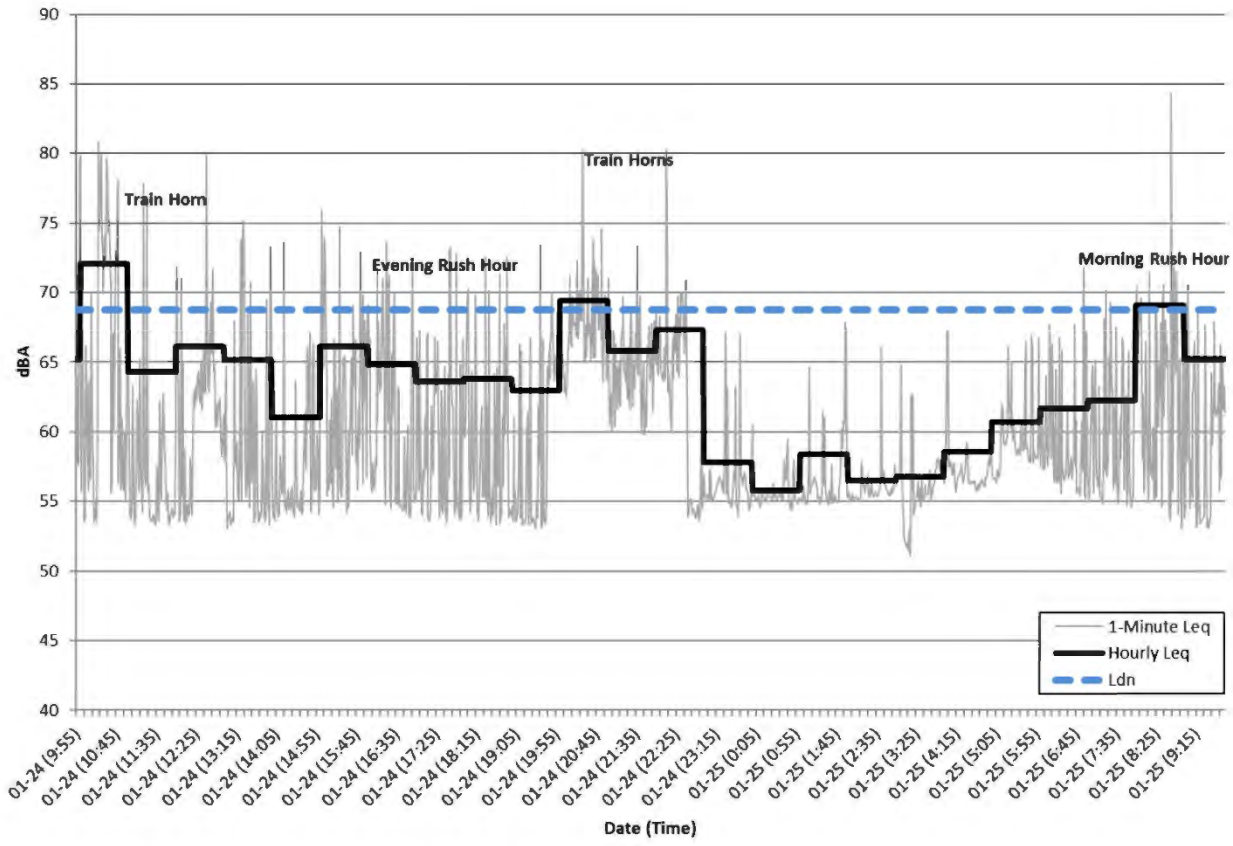


Figure 7-4. Monitoring Location 1b – Hourly Equivalent Noise Level Time History

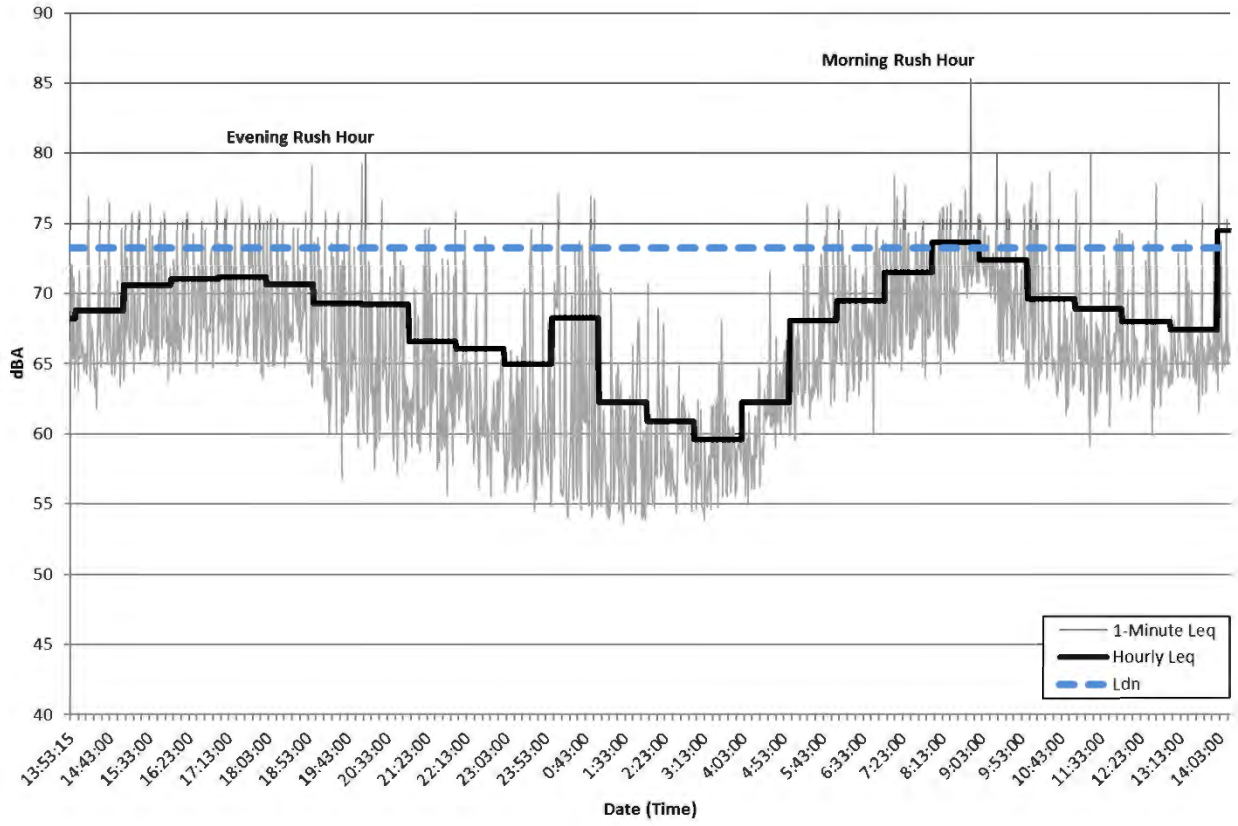


7.1.2 Monitoring Location 2 – Twin Towers Correctional Facility

Permission was not granted to access the correctional facility, so the terminal tower was determined to be a suitable location and is approximately 366 feet from the original location (Figure 7-5). The terminal tower location was closer in proximity to the railroad tracks by approximately 43 feet. A noise meter was set up January 25, 2017, at 1:52 PM. The meter was calibrated, and secured to a nearby fencepost (Figure 7-5). Observed noises at this location include street traffic, idle trains, and active trains. Figure 7-6 is a time-history chart of the measured hourly L_{eq}.

Figure 7-5. Monitoring Location 2 – Noise Meter Location

Figure 7-6. Monitoring Location 2 – Hourly Equivalent Noise Level Time History

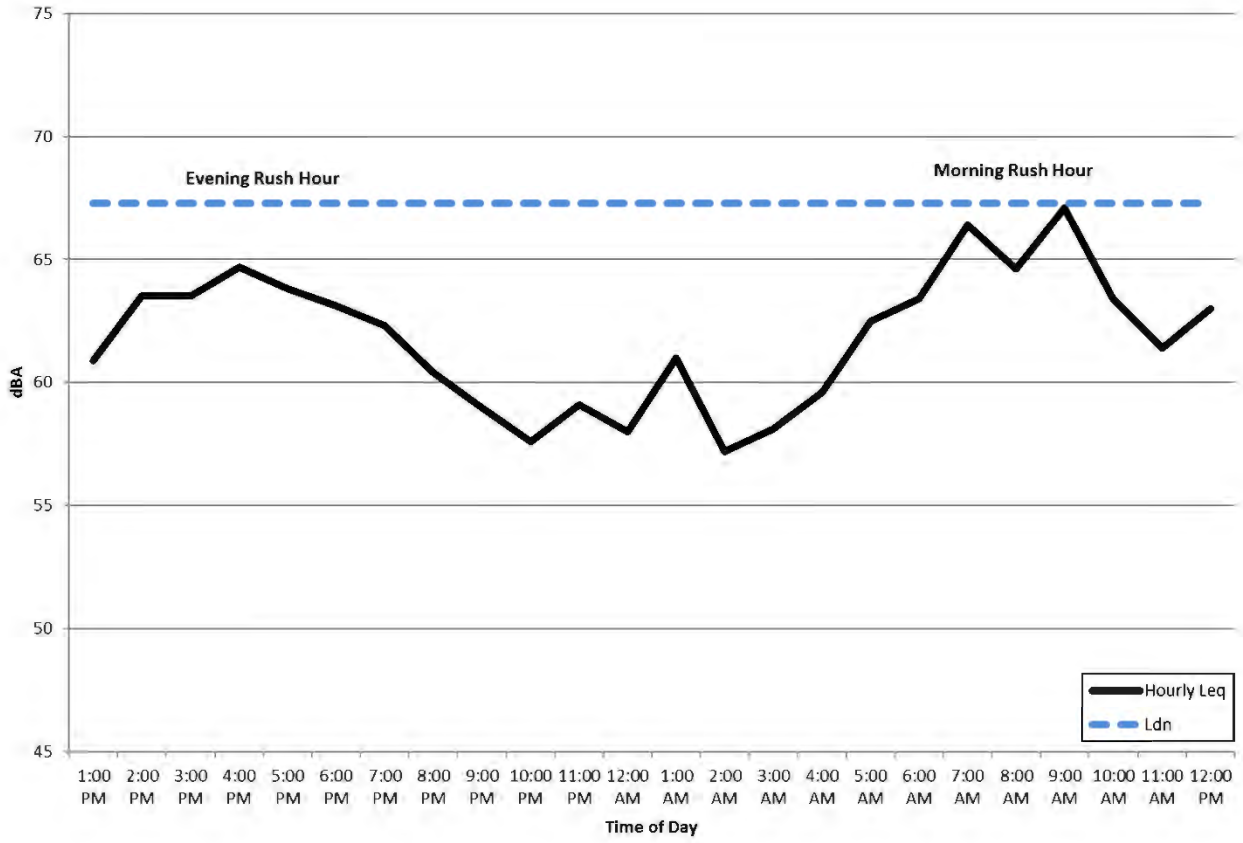


7.1.3 Monitoring Location 3 – Mozaic Apartments

Noise monitoring to capture exiting ambient conditions, including sounds from the railyard, were conducted adjacent to the Mozaic Apartments on the rooftop of the Amtrak Baggage Handling building (Figure 7-7). This location is representative of existing noise levels at the Mozaic Apartment Building, located approximately 50 feet from the nearest Gold Line tracks. The noise monitor was set up on January 24, 2017 at 1:37 PM on the northeast corner of the rooftop of the building. Winds were calm during the measurement effort. The sound level meter was field calibrated and secured for 24 hours on a tripod that was kept on the rooftop with sandbags. Observed noises at this location included street traffic, idling trains, moving trains, and the public address system at LAUS. Figure 7-8 is a time-history chart of the measured hourly Leq. Because of equipment limitations at this location, 1-minute Leq intervals could not be collected and are not included on Figure 7-8.

Figure 7-7. Monitoring Location 3 – Noise Meter Location

Figure 7-8. Monitoring Location 3 – Hourly Equivalent Noise Level Time History

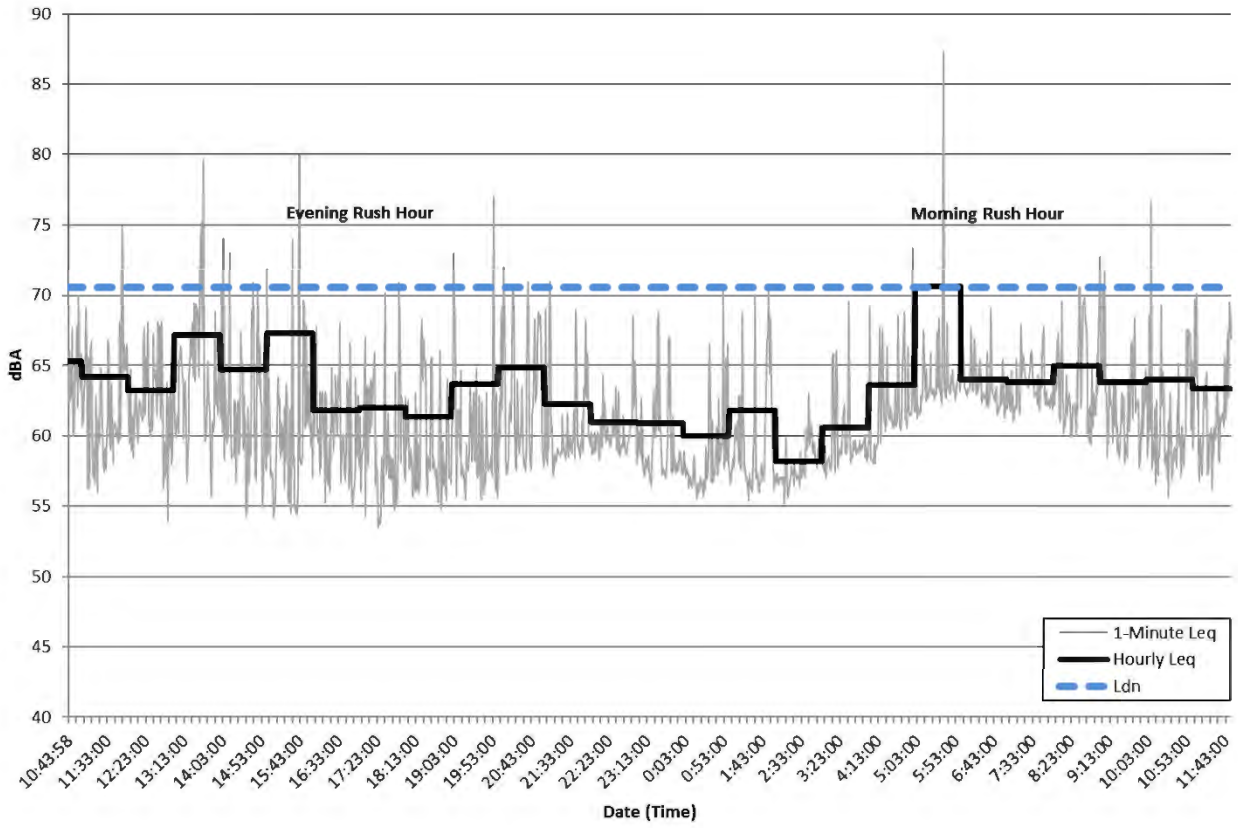


7.1.4 Monitoring Location 4 – One Santa Fe Apartments and Studios

Permission to enter the apartments was not granted, so the Metro Emergency Security Operations Center was determined to be a suitable location. It is located approximately 1,151 feet north of the apartments (Figure 7-9). This location is roughly the same distance from the existing railroad tracks as the One Santa Fe Apartment complex and in a similar acoustical environment (i.e., urban, exposed to roadway and railroad traffic, etc.). The noise meter was calibrated and secured to the fence closest to the tracks using sandbags and security rope (Figure 7-9) on January 25, 2017, at 10:43 AM. The observed noises at this location include street traffic, idle buses, and bus traffic entering and exiting the parking lot. Figure 7-10 is a time-history chart of the ML-4 measurement data.

Figure 7-9. Monitoring Location 4 – Noise Meter Location

Figure 7-10. Monitoring Location 4 – Hourly Equivalent Noise Level Time History



7.2 Vibration Conditions

Groundborne vibration was measured at vibration-sensitive structures. These measurements were completed at ML1a at William Mead Homes (Figure 7-11) and ML3 at the Mozaic Apartments), the two vibration-sensitive structures within the screening distance of the project. Vibration measurements were completed with a seismic grade, low noise accelerometer firmly fixed to the ground.

7.2.1 Monitoring Location 1a – William Mead Homes

While the noise meters were collecting data for 24 hours at William Mead Homes, vibration measurements were completed near ML1a for 30 minutes. The monitoring unit was placed at William Mead Homes on the lawn in front of the nearest structure to the rail corridor (Figure 7-11) approximately 30 feet from the building in the direction of the train tracks. Rail vibration events were measured, which included Metrolink and Amtrak trains. Vibration levels during train events were variable with the highest monitored VdB 1-second L_{max}, provided in Table 7-2, which have been adjusted to be representative of the nearest William Mead Homes building. Because the vibration sensor was located approximately 30 feet from the building in the direction of the train tracks, and the measured vibration levels are considered representative of levels at the William Mead Homes' Building 16. Measurements focused on the railroad traffic on the tracks located nearby; however, other vibration inducing events, such as roadway vehicular passby events were

observed. Generally the highest vibration levels measured resulted from train passby events. Figure 7-12 provides a 1-second time history chart of the monitored VdB with train events identified.

Figure 7-11. Monitoring Location 1a – Vibration Measurement at William Mead Homes

Figure 7-12. Monitoring Location 1a – 1-Second Velocity in Decibels Time History with Rail Events

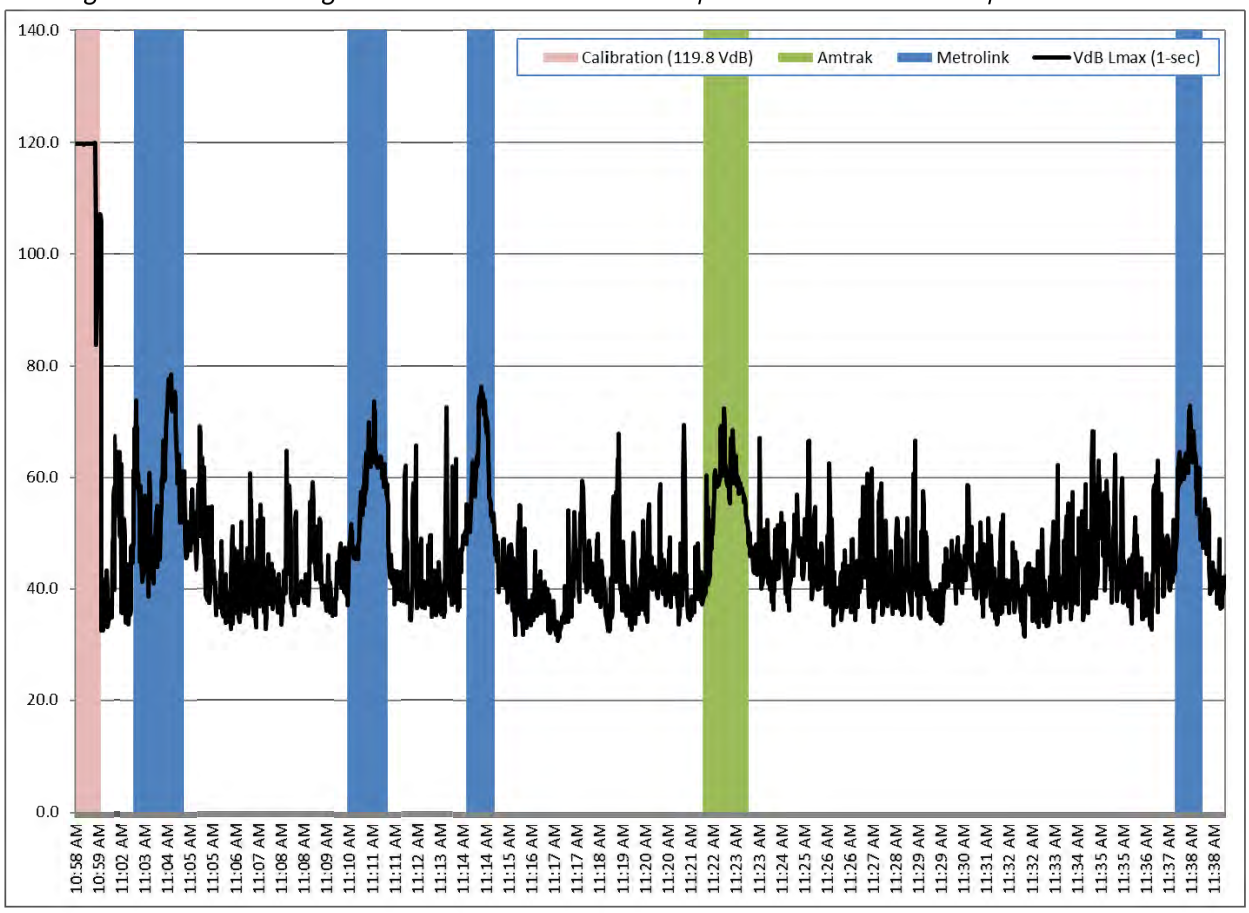


Table 7-2. Vibration from Train Events at Monitoring Location 1a (William Mead Homes)

Time (AM)	Train	Configuration	Track	Vibration Levels (Lmax VdB)	Adjusted to Nearest WMH Building*
11:03–11:04	Metrolink	One locomotive, five cars	Near	78	69
11:10–11:11	Metrolink	One locomotive, five cars	Far	74	65
11:14–11:15	Metrolink	One locomotive, four cars	Near	76	67
11:22–11:23	Amtrak*	Two locomotives, eight cars (long distance) One locomotive, six cars (Surfliner)	Far	72	63
11:37–11:38	Metrolink	One locomotive, six cars	Far	73	64

Notes:
Two Amtrak trains passed by between 11:22 AM and 11:23 AM.
****Adjusted for distance and building structure type***
L_{max}=maximum sound level; VdB=velocity in decibels

Measurement results from this location indicate that existing vibration levels from Metrolink trains and Amtrak trains are similar, with the Metrolink trains slightly higher. This is likely a function of the specific train's speed in combination with the weight of the vehicles as they passed by the vibration monitor.

7.2.2 Monitoring Location 3 – Mozaic Apartments

While a noise meter was collecting data for 24 hours at the Amtrak Baggage Handling Building, short-term vibration measurements were completed near ML3 for approximately 1 hour (Figure 7-13). The monitoring unit was firmly affixed to the sidewalk with adhesive at a distance representative of the corner of the nearest point of the Mozaic Apartment complex to the rail yard platforms. Rail vibration events were measured, including the Gold Line, Metrolink, and Amtrak trains, which were operating on several different tracks accessing various platforms.

Adjacent to the sidewalk is a local roadway that, at times, had vehicular traffic while a transit vibration event was also occurring. Vibration levels during train events were variable with the highest monitored one-1-second VdB provided in Table 7-3. Existing vibration levels exceed the FTA/FRA threshold for Category 2 land uses near a frequent rail corridor (Section 4.2.1). The focus of the vibration measurements was to identify vibration from railroad and transit related events; therefore, efforts were not made to specifically log other events, such as automobile passby events. An impact would occur if the project results in an increased vibration levels of 3 VdB or greater than existing levels. Figure 7-14 provides a 1-second time history chart of the monitored VdB with train events identified.

Figure 7-13. Monitoring Location 3 – Vibration Measurement at Mozaic Apartments

Figure 7-14. Monitoring Location 3 – 1-second Maximum Sound Level Velocity in Decibels with Time History

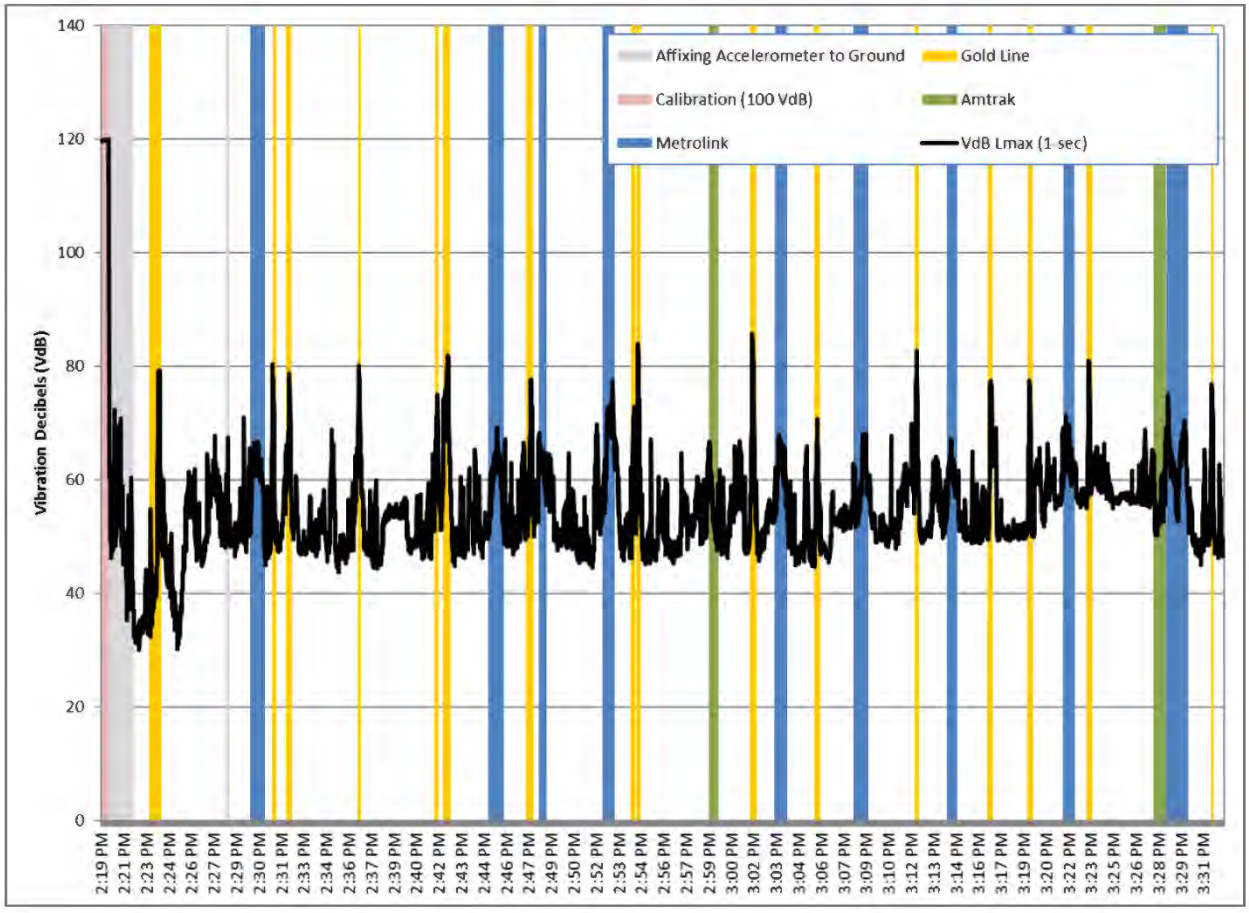


Table 7-3. Vibration from Train Events at Monitoring Location 3 (Mozaic Apartments)				
Time (PM)	Train	Configuration	Track Platform	Vibration Levels (VdB)
2:23–2:24	Gold Line	Two vehicles	1	79
2:30	Metrolink	Two locomotives, eight cars	5	67
2:31	Gold Line	Two vehicles	1	79
2:32	Gold Line	Two vehicles	2	79
2:36	Gold Line	Two vehicles*	1 and 2	80
2:37	Gold Line	Two vehicles	2	76
2:41	Gold Line	Two vehicles	2	75
2:42	Gold Line	Two vehicles	1	82
2:45–2:46	Metrolink	Two locomotive four cars	7	69
2:47–2:48	Gold Line	Two vehicles	1	78
2:48	Metrolink	One locomotive, four cars	5	68
2:52–2:53	Metrolink	One locomotive, five cars	4	77
2:54	Gold Line	Two vehicles	1	84
2:59	Amtrak	One locomotive, six cars	10	67*
3:01–3:02	Gold Line	Two vehicles	1	86*
3:04	Metrolink	One locomotive, four cars	10	66
3:05–3:06	Gold Line	Two vehicles	2	71
3:08	Metrolink	One locomotive, five cars	9	68
3:12	Gold Line	Two vehicles	1	83
3:14–3:15	Metrolink	One locomotive, four cars	5	67
3:17	Gold Line	Two vehicles	1	77
3:19	Gold Line	Two vehicles	2	78
3:22	Metrolink	One locomotive, six cars	7	71*

Table 7-3. Vibration from Train Events at Monitoring Location 3 (Mozaic Apartments)

Time (PM)	Train	Configuration	Track Platform	Vibration Levels (VdB)
3:23	Gold Line	Two vehicles	1	81
3:27	Amtrak	One locomotive, six cars	10	65*
3:28	Amtrak Metrolink Gold Line	One locomotive, six cars One locomotive, four cars Two vehicles	10 3 2	75
3:29–3:30	Metrolink	One locomotive, four cars	3	70
3:31	Gold Line	Two vehicles	2	77

Notes:

* ***A truck also passed by the sensor on the nearest roadway during the measurement.***

VdB=velocity in decibels

8.0 Impact Assessment

8.1 Operational Noise

THRESHOLD A AND C	A. Expose 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 C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

The results of the rail noise impact assessment are summarized in Table 8-1 in the 2026 condition, Table 8-2 in the 2031 condition, and Table 8-3 in the 2040 condition at the locations depicted on Figure 6-1.

The discussion below provides the impact assessment for the proposed project and the build alternative, and their associated operating conditions and increased levels of service in 2026, 2031, and 2040, as described in the *Link US Rail Planning Technical Memorandum* (HDR 2018).

8.1.1 Community Noise - 2026 Condition

Proposed Project and Build Alternative

For the 2026 condition, regional/intercity rail service would operate at increased levels of service as described in the *Link US Rail Planning Technical Memorandum* (HDR 2018). The proposed project and the build alternative are identical in terms of track alignment in Segment 1 because new lead tracks would not be constructed near William Mead Homes. In the concourse segment (Segment 2), Tracks 1 and 2 would be utilized by Metro's Gold Line, and the remaining tracks (Tracks 3 through 14) would be used by regional/intercity trains. In the run-through segment (Segment 3), construction of two new run-through tracks would result in a new source of project-related noise for land uses nearby.

As shown in Table 8-1, for the proposed project and the build alternative, noise levels in the 2026 condition would range from 45 to 67 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep) and 57 to 67 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic field near William Mead Homes). In 2026, moderate impacts (see Section 4.1.1 for definition) would occur at 24 multifamily residences (all at William Mead Homes). No moderate or severe impacts would occur at the Mozaic Apartments, Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, Metro Senior Housing, One Santa Fe Apartments, or the daycare and the park/athletic field near William Mead Homes.

Based on the results in Table 8-1, impacts are considered less than significant. The FRA and FTA manuals include provisions for consideration of mitigation for moderate impacts. Although implementation of Mitigation Measure NV-1 (as described in Section 10.1) is not required for the proposed project or the build alternative in the 2026 condition because impacts are considered less than significant, Metro may construct the sound wall in accordance with Mitigation Measure NV-1 earlier than 2031 to reduce

construction-related noise impacts and/or moderate operational noise impacts from increased train movements that may occur as early as 2026.

Figure 8-1 depicts the noise contours associated with the moderate impact areas at William Mead Homes for the proposed project or the build alternative in the 2026 condition. Noise levels at each individual modeled receiver are provided in Appendix C.

Table 8-1. Operational Noise Levels – Proposed Project and Build Alternative (2026 Condition)

Noise Sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure(dBA)	Proposed Project and Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	50-69	0	24
	3	2	66	57-67	0	0
Metro Senior Housing	2	123	60	50	0	0
Los Angeles County Men's Central Jail	2	4,000[a]	73	54	0	0
Twin Towers Correctional Facility	2	9,500[a]	73	54	0	0
Mozaic Apartments East Building	2	176	67	48-62	0	0
Mozaic Apartments West Building	2	96	67	45-51	0	0
One Santa Fe Apartments/Studios	2	438	71	45-61	0	0
Project Total	2	14,748[a]	60–73	45-67	0	24
	3	2	66	57-67	0	0

Notes:

[a] ***Approximately 4,000 inmates are housed at the Los Angeles Central Jail, and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore, only interior noise levels are of concern. The prisons are built out of concrete, and have thick windows to keep prisoners inside; therefore, interior sound levels are estimated to be at least 20 dBA lower than those calculated at the exterior of each facility.***

dBA=A-weighted decibel, L_{dn}=day-night average sound level used for Category 2 land uses, L_{eq}=equivalent noise level used for Category 3 Land Uses

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Figure 8-1. Noise Impact Areas at William Mead Homes – Proposed Project and Build Alternative (2026 Condition)

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8.1.2 Community Noise – 2031 Condition

Proposed Project

For the 2031 condition, regional/intercity rail service would operate at increased levels, as described in the *Link US Rail Planning Technical Memorandum* (HDR 2018). In the throat segment, the proposed project includes one new lead track that would be constructed within the railroad ROW in closer proximity to William Mead Homes (Building 16). In the concourse segment (Segment 2), Tracks 1 and 2 would be utilized by Metro's Gold Line, and the remaining tracks (Tracks 3 through 14) would be used by regional/intercity trains. In the run-through segment (Segment 3), construction of the new run-through tracks would result in increased project-related noise levels for land uses nearby.

As shown in Table 8-2, noise levels in the 2031 condition for the proposed project would range from 47 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep) and 63 to 73 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic field near William Mead Homes). As shown in Table 8-2, in the 2031 condition, the proposed project would result in moderate impacts on 73 multifamily residences (40 William Mead Homes units and 33 Mozaic Apartment units), and severe impacts on 40 multifamily residences (all William Mead Homes units) and one park/athletic field near William Mead Homes.

- For William Mead Homes, severe operational noise impacts in the 2031 condition is considered a significant impact. Mitigation Measure NV-1 (described in Section 10.1) is proposed to reduce operational noise impacts for the proposed project to a level less than significant.
- For the Mozaic Apartments, although exterior noise levels at the Mozaic Apartments would result in moderate noise impact at 33 units, specifically at the balconies of the units located closest to LAUS, mitigation measures are not proposed for consideration, because exterior areas (balconies) of the Mozaic Apartments are already exposed to relatively high existing noise levels from transit and railroad operations located at LAUS. The Mozaic Apartments were constructed in 2005 and, as part of the planning process, the developer was required to design the building in accordance with City of Los Angeles Municipal Code, Section 91.1207.14.2 since they are located in close proximity to railroad tracks. The City's code requires that new buildings located in close proximity to train tracks be constructed in such a manner to ensure interior sound levels are 45 dBA L_{dn} or lower. With or without implementation of the proposed project (or the build alternative), interior sound levels are assumed to be 45 dBA L_{dn} or lower because noise attenuation measures in the form of thick pane windows and concrete structures (as opposed to other noise absorbing materials) are already in place, as required by the City of Los Angeles. Furthermore, as with the existing train movements at LAUS, with the proposed project, most of (e.g., over 80%) the train movements would occur during daytime hours, during the peak-period, rather than during nighttime hours when rail activity could result in greater sleep disturbance. For these reasons, impacts are considered less than significant.
- The Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility are located within the project study area. These two jails do not have outdoor uses and are not predicted to be subjected to noise levels that exceed severe or moderate noise limits. Additionally, these two

facilities are comprised of buildings made with concrete with thick windows. Project interior noise levels are estimated to be at least 20 dB lower than those experienced at the exterior of these structures consistent with USDOT FHWA guidance for interior sound level attenuation which would be similar for railroad noise sources (FHWA 2011). Interior noise levels would be below 45 dBA L_{dn}, which is a level that the U.S. Environmental Protection Agency has identified as a level that does not interfere with interior activities (e.g., speech and sleeping) and has a low potential for annoyance (U.S. Environmental Protection Agency 1978). For the reasons above, impacts are considered less than significant.

- For the Metro Senior Housing and One Santa Fe Apartments, no moderate or severe impacts were identified, and impacts are considered less than significant.

Build Alternative

For the 2031 condition, regional/intercity rail service would operate at increased levels, as described in the *Link US Rail Planning Technical Memorandum* (HDR 2018). In the throat segment, the build alternative includes two new lead tracks that would encroach outside of the railroad ROW in closer proximity to William Mead Homes (Building 16). In the concourse segment, Tracks 1 and 2 would be utilized by Metro's Gold Line, and the remaining tracks (Tracks 3 through 14) would be used by regional/intercity trains. In the run-through segment, construction of the new run-through tracks would result in increased project-related noise levels for land uses nearby.

As shown in Table 8-2, noise levels in the 2031 condition for the build alternative would range from 47 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep) and 63 to 73 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic field near William Mead Homes). As shown in Table 8-2, in the 2031 condition, the build alternative would result in moderate impacts on 76 multifamily residences (40 William Mead Homes units and 36 Mozaic Apartment units) and severe impacts on 40 multifamily residences (all William Mead Homes units) and one park/athletic field near William Mead Homes.

- For William Mead Homes, severe operational noise impacts in the 2031 condition is considered a significant impact. Mitigation Measure NV-1 (described in Section 10.1) is proposed to reduce operational noise impacts for the build alternative to a level less than significant.
- For Mozaic Apartments, although exterior noise levels at the Mozaic Apartments would result in moderate noise impact at 36 units, mitigation measures are not proposed for consideration for the same reasons described above. Impacts are considered less than significant.
- For the Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons described above. Impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, no moderate or severe impacts were identified. Impacts are considered less than significant.

Figure 8-2 and Figure 8-3 depict the noise contours associated with moderate and severe impact areas at William Mead Homes in the 2031 condition for the proposed project and the build alternative, respectively. Noise levels at each individual modeled receiver are provided in Appendix C.

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Table 8-2. Operational Noise Levels – Proposed Project and Build Alternative (2031 Condition)

Noise Sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure (dBA)	Proposed Project			Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts	Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	59-75	40	40	59-75	40	40
	3	2	66	63-73	1	0	63-73	1	0
Metro Senior Housing	2	123	60	59	0	0	59	0	0
Los Angeles County Men's Central Jail	2	4,000[a]	73	62	0	0	62	0	0
Twin Towers Correctional Facility	2	9,500[a]	73	58	0	0	58	0	0
Mozaic Apartments East Building	2	176	67	53-66	0	33	53-66	0	36
Mozaic Apartments West Building	2	96	67	50-55	0	0	50-56	0	0
One Santa Fe Apartments/Studios	2	438	71	47-63	0	0	47-63	0	0
Project Total	2	14,748[a]	60–73	47-75	40	73	47-75	40	76
	3	2	66	63-73	1	0	63-73	1	0

Notes:

[a] ***Approximately 4,000 inmates are housed at the Los Angeles Central Jail, and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore, only interior noise levels are of concern. The prisons are built out of concrete, and have thick windows to keep prisoners inside; therefore, interior sound levels is estimated to be at least 20 dBA lower than those calculated at the exterior of each facility.***

dBA=A-weighted decibel; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

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Figure 8-2. Noise Impact Areas at William Mead Homes – Proposed Project (2031 Condition)

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Figure 8-3. Noise Impact Areas at William Mead Homes – Build Alternative (2031 Condition)

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8.1.3 Community Noise – 2040 Condition

Proposed Project

In the 2040 condition, additional regional/intercity rail train movements through LAUS are anticipated to occur, and the planned HSR system would be in operation, as described in the *Link US Rail Planning Technical Memorandum* (HDR 2018). In the throat segment, electrified HSR trains (that produce less noise than regional/intercity trains) would share the two western lead tracks while regional/intercity rail trains would operate on the remaining eastern four lead tracks. In the concourse segment, Tracks 1 and 2 would be utilized by Metro's Gold Line, and Tracks 3 through 6 would be used by CHSRA for the planned HSR system, while the remaining tracks would be used by regional/intercity rail trains. In the run-through segment, a greater amount of regional/intercity trains, in addition to HSR trains, would operate on up to 10 run-through tracks thereby resulting in higher project-related noise levels for noise-sensitive land uses nearby.

As shown in Table 8-3, noise levels in the 2040 condition for the proposed project would range from 47 to 75 dBA L_{dn} at Category 2 land uses (i.e., places where people sleep) and 56 to 73 dBA L_{eq} at Category 3 land uses (i.e., a daycare and the park/athletic facility near William Mead Homes). As shown in Table 8-3, in the 2040 condition, the proposed project would result in moderate impacts on 49 multifamily residential units (16 at William Mead Homes and 33 at the Mozaic Apartment units) and severe impacts on 30 multifamily residential units (24 at William Mead Homes and 6 at the Mozaic Apartments) and one park/athletic field near William Mead Homes.

- For William Mead Homes, severe noise impacts in the 2040 condition is considered a significant impact. Mitigation Measure NV-1 (described in Section 10.1) is proposed to reduce operational noise impacts for the proposed project to a level less than significant.
- For Mozaic Apartments, although noise attenuating measures are already in place, severe impacts would occur. For the same reasons as those described previously, interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower. Additionally, most of (e.g., over 80 percent) the train movements would occur during daytime hours, during the peak-period, rather than during nighttime hours when rail activity could result in greater sleep disturbance. Impacts are considered less than significant.
- For the Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons described above. Impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, no moderate or severe impacts were identified. Impacts are considered less than significant.

Build Alternative

In the 2040 condition, similar to the proposed project, additional regional/intercity rail train movements through LAUS are anticipated to occur, and the planned HSR system would be in operation as described in the *Link US Rail Planning Technical Memorandum* (HDR 2018).

Noise levels would be nearly the same predicted range at Category 2 land uses (48 to 75 dBA L_{dn}) and at Category 3 land uses (56 to 73 dBA L_{eq}) as the proposed project. As shown in Table 8-3, in the 2040 condition, the build alternative would result in moderate impacts on 66 multifamily residential units (24 William Mead Homes units and 42 Mozaic Apartment units). The build alternative would result in moderate impacts at 17 more noise-sensitive receptors (8 additional receptors at William Mead Homes and 9 additional receptors at Mozaic Apartments) than the proposed project. No severe impacts would occur at any multifamily residential units (compared to 24 receptors at William Mead Homes and 6 receptors at Mozaic Apartments for the proposed project).

At William Mead Homes, no severe impacts would occur as a result of implementing the build alternative because electrified HSR trains (that produce less noise than regional/intercity trains) would operate on the dedicated track alignment that is located closer to residential units than the proposed project. Although trains would operate closer to residential units at William Mead Homes, the HSR trains produce less noise, and for this reason, only moderate impacts would occur. At the rail yard near the Mozaic Apartments, the build alternative alignment is the same as the proposed project, and would include electrified HSR trains on Tracks 3 through 6. For this reason, sound levels for the build alternative are only slightly lower at the Mozaic Apartment units nearest to LAUS (e.g., 67 dBA Ldn for the build alternative vs. 68 dBA Ldn for the proposed project) and as a result no severe impacts would occur. Concentrating higher numbers of regional/intercity rail trains on tracks further away (e.g., Tracks 7 through 12) in combination with electrified HSR trains does result in greater moderate impacts at the Mozaic Apartments for the build alternative compared to the proposed project. So while there are a greater total number of impacts at the Mozaic Apartments than the proposed project, sound level would be less impactful for the reasons stated above, and no severe impacts at the Mozaic Apartments for the build alternative would occur.

A severe impact would still occur at the park/athletic field near William Mead Homes, similar to the proposed project.

- For William Mead Homes, severe operational noise impacts on the park/athletic field at William Mead Homes would still occur in the 2040 condition under the build alternative. These impacts are considered significant. Similar to the proposed project, Mitigation Measure NV-1 is proposed to reduce operational noise impacts for the build alternative to a level less than significant.
- For Mozaic Apartments, interior noise levels at the Mozaic Apartments are assumed to be 45 dBA L_{dn} or lower for the same reasons as described for the proposed project. Impacts are considered less than significant.

- For the Los Angeles County Men's Central Jail and the Twin Towers Correctional Facility, interior noise levels at the facilities would be 45 dBA L_{dn} or lower for the same reasons described for the proposed project. Impacts are considered less than significant.
- For the Metro Senior Housing and One Santa Fe Apartments, similar to the proposed project, no moderate or severe impacts were identified. Impacts are considered less than significant.

Table 8-5 depicts the noise contours associated with moderate and severe noise impact areas at William Mead Homes for the build alternative in the 2040 condition.

Figure 8-4 and Figure 8-5 depict the noise contours associated with moderate and severe noise impact areas at William Mead Homes for the proposed project and build alternative in the 2040 condition, respectively. Noise levels at each individual modeled receiver are provided in Appendix C.

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Table 8-3. Operational Noise Levels – Proposed Project and Build Alternative (2040 Condition)

Noise Sensitive Area Description	Land Use Category	Number of Uses	Existing Noise Exposure (dBA)	Proposed Project			Build Alternative		
				Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts	Range of Sound Levels (dBA)	Number of Severe Impacts	Number of Moderate Impacts
William Mead Homes	2	415	69	54-75	24	16	53-75	0	24
	3	2	66	56-73	1	0	56-73	1	0
Metro Senior Housing	2	123	60	54	0	0	54	0	0
Los Angeles County Men's Central Jail	2	4,000[a]	73	63	0	0	62	0	0
Twin Towers Correctional Facility	2	9,500[a]	73	59	0	0	59	0	0
Mozaic Apartments East Building	2	176	67	52-68	6	33	53-67	0	42
Mozaic Apartments West Building	2	96	67	49-58	0	0	50-56	0	0
One Santa Fe Apartments/Studios	2	438	71	47-63	0	0	48-64	0	0
Project Total	2	14,748[a]	60–73	47-75	30	49	48-75	0	66
	3	2	66	56-73	1	0	56-73	1	0

Notes:

[a] ***Approximately 4,000 inmates are housed at the Los Angeles County Men's Central Jail, and 9,500 inmates are housed at the Twin Towers Correctional Facilities. Neither correctional facility provides outdoor use areas for prisoners; therefore, only interior noise levels are of concern. The prisons are built out of concrete, and have thick windows to keep prisoners inside; therefore, interior sound levels are estimated to be at least 20 dBA lower than those calculated at the exterior of each facility.***

dBA=A-weighted decibel, L_{dn}=day-night average sound level, L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

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Figure 8-4. Noise Impact Areas at William Mead Homes – Proposed Project (2040 Condition)

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Figure 8-5. Noise Impact Areas at William Mead Homes - Build Alternative (2040 Condition)

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8.1.4 Community Noise – No Project Alternative

Under the no project alternative, due to the physical capacity constraints at LAUS, noise levels would remain high for sensitive receptors located near the existing track alignment, and train movements in the project study area are assumed to remain similar to existing conditions. Operational noise levels are anticipated to correspond to existing frequency for train movements, and would therefore remain unchanged. Figure 8-6 presents an estimate of existing train noise exposure at William Mead Homes. No impact would occur.

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Figure 8-6. Estimated Existing Train Noise Exposure at William Mead Homes (No Project Alternative)

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8.2 Operational Vibration

THRESHOLD B	Expose persons to or generation of excessive groundborne vibration or groundborne noise levels

Any vibration-sensitive land uses and structures near the proposed project or the build alternative would be limited to those Category 2 land uses within 200 feet of the alignment (i.e., the screening distance per FTA guidance). Category 2 uses within 200 feet of the proposed project or the build alternative include the first row of buildings at William Mead Homes and a portion of the front row building at the Mozaic Apartment complex. The results of the vibration analysis are provided in Table 8-4.

8.2.1 Proposed Project and Build Alternative (2026)

In the 2026 condition, although additional train movements would occur, there would be no changes to train speeds or the track alignment in Segment 1 of the project study area near William Mead Homes and, consequently, there would be no changes to vibration levels. In Segments 2 and 3 of the project study area, the track alignment would change slightly to accommodate Platform 4 modifications, a temporary run-through track ramp, and new run-through tracks crossing US-101. As a result, vibration levels would change slightly at the front row building of the Mozaic Apartment complex with regional/intercity rail trains operating at 10 mph on Tracks 3 and 4.

8.2.2 Proposed Project (2031)

For the proposed project, regional/intercity rail trains would operate on new lead tracks within the existing railroad ROW as close as 100 feet from the buildings within William Mead Homes at speeds of up to 35 miles per hour.

8.2.3 Proposed Project (2040)

For the proposed project, regional/intercity trains and HSR trains would operate on shared tracks as close as 100 feet from the William Mead Homes buildings. The proposed project would result in increased train movements in close proximity to Mozaic Apartments, with the Gold Line trains as close as 40 feet, HSR trains as close as 75 feet, and regional/intercity rail trains as close as 185 feet. The estimate of train movements is conservative to assess the highest anticipated vibration levels at the Category 2 land uses.

8.2.4 Build Alternative (2031)

Category 2 uses within 200 feet of the build alternative include the first row of buildings at William Mead Homes and a portion of the front row building at the Mozaic Apartment complex. Near William Mead Homes, regional/intercity rail trains would operate as close as 50 feet from buildings at speeds of up to 35 miles per hour.

8.2.5 Build Alternative (2040)

Category 2 uses within 200 feet of the build alternative include the first row of buildings at William Mead Homes and a portion of the front row building at the Mozaic Apartment complex. Near William Mead Homes, HSR trains would operate as close as 50 feet from buildings, and regional/intercity trains would operate as close as 115 feet away from the residential units.

The Terminal Annex building includes a large computer server. FTA generally does not consider these types of facilities sensitive to vibration; however, to address concerns identified in scoping, this analysis considers it a Category 3 vibration-sensitive use. The Terminal Annex is located 85 feet from the Gold Line within the screening distance identified in Section 3 of this report.

Table 8-4. Groundborne Vibration and Groundborne Noise Levels

Location	Rail Line	Existing Condition	2026		2031				2040			
			Proposed Project and Build Alternative		Proposed Project		Build Alternative		Proposed Project		Build Alternative	
		VdB	VdB	dBA[1]	VdB	dBA[1]	VdB	dBA[1]	VdB	dBA[1]	VdB	dBA[1]
William Mead Homes [3]	HSR	NA	No Change		NA[2]	NA	NA[2]	NA	55	20	63	28
	Regional/ Intercity Rail	69			68	33	71	37	68	33	68	33
Terminal Annex	Gold Line	Not Measured	57	21	57	21	57	21	57	21	57	21
	HSR	NA	NA[2]	NA	NA[2]	NA	NA[2]	NA	54	19	54	19
	Regional/ Intercity Rail		53	18	53	18	55	20	53	18	55	20
Mozaic Apartments	Gold Line	84	55	20	55	20	55	20	55	20	55	20
	HSR	NA	NA[2]	NA	NA[2]	NA	NA[2]	NA	43	8	43	8
	Regional/ Intercity Rail	77	56	21	56	21	56	21	56	21	53	18

Notes:

[1] ***FTA indicates that typical groundborne noise in dBA is calculated by subtracting 35 dB from the calculated VdB value. See Section 4.2 for vibration thresholds.***

[2] ***HSR infrastructure in the interim phase of the project would operate conventional passenger rail.***

[3] ***The westernmost William Mead Home building closest to the proposed project and build alternatives is within 200 feet but beyond 100 feet from crossovers.***

dBA=A-weighted decibel; HSR=High-Speed Rail; VdB=velocity in decibels

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Table 8-4 identifies operational, groundborne vibration and noise levels for the proposed project and the build alternative would be below the FTA impact criteria for Category 2 and Category 3 land uses (FTA 2018). Additionally, there are no predicted increases of 3 VdB or greater from operation of the proposed project or the build alternative; therefore, no operational, groundborne vibration or groundborne noise impacts are predicted for the proposed project or the build alternative. Impacts are considered less than significant.

8.3 Construction Noise

THRESHOLD D	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

8.3.1 Proposed Project and Build Alternative

Construction of the proposed project or the build alternative would take place in phases over the course of approximately 6 years. Construction activities associated with the project would result in temporary periods of relatively high noise levels. The noise levels from construction activities were estimated using the method described Section 3.3. The results are summarized in Table 8-5, which provides estimates of peak day noise levels for each construction phase and segment. This noise and vibration impact evaluation is conservative and adequately addresses any potential impacts that could occur in the interim condition because the detailed construction scenario prepared to support the environmental impact evaluation assumes all major project elements would be constructed concurrently. If run-through track infrastructure south of LAUS is constructed prior to the elevated rail yard and new passenger concourse, fewer construction-related noise and vibration impacts (based on reduced equipment use) are anticipated than reported herein because the greatest amount of potential impacts are addressed within this analysis.

As an example, if only two of the run-through tracks are constructed by 2026, the construction noise and vibration associated with those tracks would not occur in later years as is currently assumed in this analysis. It is anticipated that these run-through tracks would be constructed roughly where existing Tracks 3 and 4 are currently located, which is in close proximity to Mozaic Apartments. Construction noise and vibration that would have occurred during the build out of the entire proposed project would no longer occur in later years of project development; therefore, construction noise levels would be lower than those identified in Table 8-5. Vibration levels would be no higher than those predicted for the full build out of the proposed project under any phased run-through track scenario.

During construction, impacts would occur at Category 2 land uses at distances of up to approximately 250 feet under daytime (7:00 AM to 10:00 PM) impact criteria (i.e., 80 dBA L_{eq}) and approximately 300 feet under nighttime (10:00 PM to 7:00 AM) impact criteria (i.e., 70 dBA L_{eq}). It is anticipated that some construction work would take place during nighttime hours to achieve the efficiencies of working during off-peak times of the day and meet Metro's desired construction completion timeframe.

At William Mead Homes specifically, construction of the sound wall required as part of Mitigation Measure NV-1 (described in Section 10.2) would also result in construction noise impacts. Specifically, construction noise associated with the installation of the sound wall and use of heavy machinery is presented below.

Category 2 land uses (i.e., residential) exist within the respective daytime and nighttime impact distances (250 feet and 300 feet) and include William Mead Homes and Mozaic Apartments; therefore, the construction noise impact is considered a significant impact. Mitigation Measure NV-2 (described in Section 10.2) is proposed to reduce construction-related noise impacts. Mitigation Measure NV-3 (described in Section 10.2) also includes provisions to reduce the annoyances caused by construction-related noise impacts (in addition to vibration impacts). Although construction-related noise impacts would be reduced through implementation of Mitigation Measures NV-2 and NV-3, impacts would remain significant and unavoidable.

8.4 Construction Vibration

THRESHOLD B	Expose persons to or generation of excessive groundborne vibration or groundborne noise levels.

8.4.1 Proposed Project and Build Alternative

Construction of the proposed project or the build alternative would result in temporary vibration along the alignment from use of heavy equipment and machinery. Building demolition would also be required in limited circumstances along Commercial Street. The vibration levels from construction activities were estimated using the method described above, and the results are summarized in Table 8-7.

Two pieces of construction equipment (pile driver and vibratory roller) were utilized in this assessment because those pieces of equipment have the highest construction vibration levels anticipated to be utilized during construction. Vibration from pile driving has the highest vibratory level but would only be used for limited durations and at select locations where piles are required to be driven. The vibratory roller is more likely to be used especially in areas near noise-sensitive receivers. The vibratory roller is not predicted to damage structures because the vibratory roller would not be used within 25 feet of a sensitive structure, a distance that eliminates concern of structural damage. The source levels are estimates provided in the FTA guidance and are generally conservative; however, it is possible that ultimately whatever pile driver is used will have a somewhat different source level.

From an annoyance perspective, impact pile driving would be characterized as a frequent source of vibration, as there would more than 70 pile strikes (or events) per day. Mozaic Apartments are the nearest sensitive land uses and are within 300 feet from pile driving activities (if this construction technique is utilized). Additionally, use of the vibratory roller may occur near some sensitive land uses continuously over the course of several days and would be considered a frequent vibration source during construction. The vibratory roller would be used in closer proximity to sensitive areas, such as William Mead Homes (Category 2 land use). Per the FTA manual, the frequent impact threshold for Category 2 land uses is 72 VdB (FTA 2018).

Vibration from construction of the proposed project could be considered an annoyance to residential land uses situated within approximately 300 feet of an impact pile driver and 140 feet of the vibratory roller; however, pile driving activities would be restricted from occurring within 50 feet of a sensitive land use and therefore impacts from a damage perspective would occur. Nevertheless, because construction would occur within 300 feet of an impact pile driver and 140 feet of the vibratory roller from sensitive land uses, a severe impact would occur related to William Mead Homes and Mozaic Apartments from an annoyance perspective. This is considered a significant impact. Mitigation Measure NV-2 (described in Section 10.2) is proposed to reduce actual construction-related vibration impacts, while Mitigation Measure NV-3 (described in Section 10.2) is proposed to reduce the annoyances caused by construction-related vibration impacts. Upon implementation of proposed mitigation, impacts would be reduced to a level less than significant.

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Table 8-5. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1000
Segment 1: Throat Segment	NA	Drill rig	1	79	86	80	74	68	62	60
		Wheelloader	4	79						
		Excavator	3	81						
		Concrete mixer truck	1	79						
		Crane	1	81						
		Forklift	2	75						
		Water truck	2	74						
Segment 2: Concourse Segment	NA	Drill rig	1	79	86	80	74	68	62	60
		Wheelloader	4	79						
		Excavator	3	81						
		Concrete mixer truck	1	79						
		Crane	1	81						
		Forklift	2	75						
		Water truck	2	74						

Table 8-5. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1000
Segment 3: Run-Through Segment	Cast-in-drilled-hole piles	Drill rig	2	79	85	79	73	67	61	59
		Wheelloader	2	79						
		Concrete pump	2	81						
		Concrete mixer truck	4	79						
		Crane	1	81						
		Haul truck	2	76						
	Superstructure placement	Concrete pump	2	81	83	77	71	65	59	57
		Concrete mixer truck	3	79						
		Forklift	2	75						
		Crane	2	81						
	Pile driving for abutments	Pile driving machine	1	101	94	88	82	76	70	68
		Wheel loader	1	79						
		Crane	1	81						
	Bridge earthwork	Excavator	1	81	81	75	69	63	57	55

Table 8-5. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1000
		Wheel loader	1	79						
		Hauling truck	2	76						
		Water truck	1	74						
	Commercial Street earthwork	Dozer	2	82	84	78	72	66	60	58
		Wheel loader	2	79						
		Hauling truck	2	76						
		Water truck	1	74						
	Commercial Street paving	Backhoe	1	78	83	77	71	65	59	57
		Grader	1	85						
		Asphalt concrete paver	1	77						
		Roller compactor	1	80						
		Asphalt concrete /base delivery truck	1	74						
		Forklift	1	75						
		Water truck	1	74						

Table 8-5. Construction Noise Levels

Phase	Sub-Phase	Equipment[1]			Composite Sound Level (L_{eq}) at Distance[3]					
					Variable Distances (feet)					
		Type	Quantity	L_{max} at 50'[2]	50	100	200	400	800	1000
	Commercial Street concrete work	Concrete pump	2	81	84	78	72	66	60	58
		Concrete mixer truck	6	79						
	BNSF West Bank Yard earthwork	Dozer	2	82	84	78	72	66	60	58
		Wheel loader	2	79						
		Haul truck	2	76						
		Water truck	1	74						
	BNSF West Bank Yard rail placement	Compactor	1	83	85	79	73	67	61	59
		Ballast regulator	4	82						

Notes:

[1] ***Equipment mix obtained from project engineers 7/8/2016***

[2] ***Measured L_{max} at given reference distance obtained from the Federal Highway Administration Roadway Construction Noise Model, Federal Highway Administration 2018 and/or FTA Noise and Vibration Guidance 2018***

[3] ***Distance factor determined by the inverse square law defined as 6 dBA per doubling of distance as sound travels away from an idealized point.***

Usage factor assumed to be that identified in FHWA Roadway Construction Noise Model.

L_{eq}=equivalent noise level; L_{max}=maximum sound level; NA=not applicable

Table 8-6. William Mead Homes Sound Wall Construction Noise Levels

Equipment	Quantity	Lmax at 50 feet	Composite dBA Leq (hourly) at Distance (feet)				
			50 feet	100 feet	200 feet	400 feet	500 feet
Backhoe	1	78	79	73	67	61	59
185 cubic foot per minute compressor	1	78					
Concrete pump truck	1	81					
400 amp welder	1	74					

Notes:
Usage factors obtained from FHWA RCNM 2006
dBA=A-weighted decibel; L_{eq}=equivalent noise level; L_{max}=maximum sound level

Table 8-7. Groundborne Vibration and Groundborne Noise Levels

Equipment	PPV at 25 feet (inch/ second)	VdB at 25 feet	50 feet		75 feet		100 feet		150 feet		200 feet		300 feet	
			PPV (inch/ second)	VdB	PPV (inch/ second)	VdB	PPV (inch/ second)	VdB	PPV (inch/ second)	VdB	PPV (inch/ second)	VdB	PPV (inch/ second)	VdB
Impact pile Driver	0.644	104	0.228	95	0.124	90	0.081	86	0.044	80	0.028	77	0.015	72
Vibratory roller	0.21	94	0.074	85	0.040	80	0.026	76	0.014	70	0.009	67	0.005	62

Notes:
PPV=peak particle velocity; VdB=velocity in decibels

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9.0 Cumulative Impacts Related to Noise and Vibration

Cumulative projects considered in the cumulative analysis include local development and transportation projects, as well as general growth within the Southern California Association of Governments (SCAG) region. This noise and vibration analysis includes an assessment of estimated train movements at LAUS and in the project study area to support forecasted population growth; therefore, the direct impact analysis already considers the cumulative noise levels and associated impacts of regional/intercity rail and HSR operational noise and vibration (2040 condition).

Cumulative noise and vibration impacts were considered by the SCAG as part of the Environmental Impact Report (EIR) prepared for the *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) (SCAG 2016). The cumulative regional noise and vibration impacts identified in that EIR include those typically associated with improvements along transportation corridors (e.g., railroads, highways, transit). The most prevalent noise sources identified in the RTP/SCS would be associated with roadway vehicle traffic, rail/transit, and aviation activity. Several impacts were identified within 500 feet of major transportation sources of noise, including rail lines used by regional/intercity rail and HSR.

Construction and operation of cumulative projects including other infrastructure improvements outside of the project study area required to implement system-wide efficiencies and changes in regional/intercity operations from implementation of the SCORE Program would add noise to the current noise environment and also reduce noise, if all improvements are fully implemented. For example, if rail projects, such as Link US, are built, some trips that people would otherwise make by car or via airplane would be offset by using regional/intercity trains. It is anticipated that all transportation sectors would gradually increase in noise as a result of the land use changes and transportation projects identified in the RTP/SCS EIR.

Construction of other projects in the project study area could occur concurrently with the construction of the proposed project or the build alternative, which cumulatively could also result in increased noise and vibration at noise-sensitive receptors. The greatest potential for a cumulative impact on the local noise environment would be the incremental addition of new regional/intercity rail service combined with HSR operations. As provided in the project-level analyses prior to implementation of mitigation, moderate and severe impacts would occur at William Mead Homes and Mozaic Apartments for the proposed project and the build alternative. Combined with other cumulative projects, these noise impacts could be cumulatively significant.

Program-level mitigation measures are identified in the RTP/SCS EIR, demonstrating that some form of mitigation is possible, and should be considered when moderate impacts occur consistent with FTA and FRA guidance. In the program-level environmental analysis for the RTP/SCS, noise walls near highways are identified as a potential mitigation measure to reduce transportation-related noise.

Construction impacts may overlap with other projects identified in the RTP/SCS EIR. However, the operational and construction noise impacts identified in Sections 8.0 and 10.0 of this document are inclusive of cumulative impacts, and mitigation would achieve reductions of direct and cumulative noise

and vibration impacts. However, despite the combination of project construction with other projects, even if the projects follow the application of the proposed mitigation, the noise and vibration impacts could be cumulatively considerable, especially if other cumulative projects include nighttime construction.

As part of the proposed project, safety improvements are proposed at Main Street because Metro is working with the City of Los Angeles to implement a future quiet zone for trains crossing at the Main Street public at-grade crossing. Potential noise reductions that may occur to sensitive receptors analyzed in this report were estimated if a quiet zone were implemented. Based on the results, noise levels would change only negligibly mainly due to the distance of the Main Street public at-grade crossing to sensitive receptors evaluated and because trains are assumed to keep using horns at the two private at-grade crossings in the throat segment adjacent to William Mead Homes. The horns being used at Main Street would not contribute to substantial noise reductions, although a quiet zone at Main Street would help to reduce some noise levels to sensitive receptors at William Mead Homes. Reduced horn noise at any receptor within William Mead Homes may also result in reduced sleep disturbance. The noise reductions resulting from the City's implementation of a quiet zone would result in a cumulative benefit.

An additional cumulative noise benefit could also be realized from implementation of the City of Los Angeles window replacement program for the William Mead Homes buildings located in close proximity to the rail lines. This retrofit project would include acoustical treatments of the buildings, such as sound attenuating windows. Approval of this program is ongoing. As with the quiet zone, the ultimate outcome of this effort is unknown. To be conservative, adjustments to noise levels (and the associated noise reduction benefits) were not considered as part of the quantitative project-level noise predictions for 2026, 2031, or 2040.

10.0 Mitigation

Implementation of the following mitigation measures would reduce significant impacts identified under CEQA related to noise and vibration. Where applicable, these mitigation measures incorporate mitigation measures identified in the SCAG RTP/SCS Final EIR (SCAG 2016).

10.1 Operational Noise Mitigation

Operational noise mitigation is typically achieved at the source (i.e., the train itself) or along the source-to-receiver path. FTA and FRA require that mitigation be considered to address moderate noise impacts, and be required to address severe noise impacts. The following mitigation measures are proposed:

NV-1 Construct Sound Wall: Prior to reaching the maximum daily regional/intercity train movement through LAUS in 2031 (770 trains), Metro shall construct a sound wall up to 22 feet in height to reduce operational noise impacts at William Mead Homes to a level less than significant. The sound wall shall be constructed of materials that achieve similar reductions or insertion loss at impacted receptors and shall have an approximate sound transmission class rating of 50 and a surface density of at least 4 pounds per square foot. Metro may construct the sound wall earlier than 2031 to reduce construction-related noise impacts and/or moderate operational noise impacts from increased train movements that may occur as early as 2026.

A sound wall's effectiveness is a function of the path length difference between the noise source (trains), receiver (William Mead Homes residents), and the wall. The projected sound levels at the receiver decrease in response to the placement of a sound wall, which increases the path length difference. Figure 10-1 and Figure 10-2 illustrate the approximate placement of the sound wall as proposed in Mitigation Measure NV-1 for the proposed project and the build alternative, respectively. Figure 10-3 through Figure 10-7 depict the noise contours after implementation of Mitigation Measure NV-1 at William Mead Homes for the proposed project and build alternative, for each year considered respectively.

Figure 10-1. Location of Sound Wall at William Mead Homes (Proposed Project)

Figure 10-2.-Location of Sound Wall at William Mead Homes (Build Alternative)

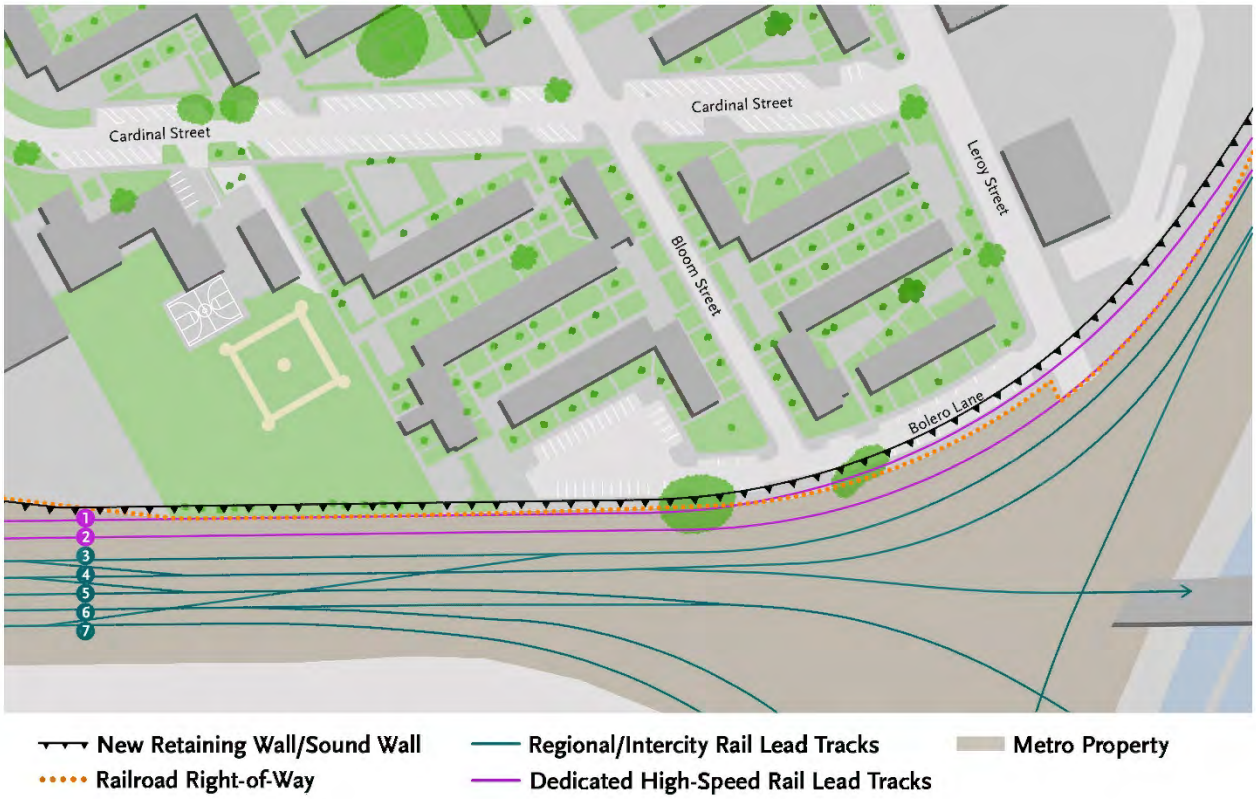

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Figure 10-3. Noise Impact Areas at William Mead Homes – Proposed Project and Build Alternative (2026 Condition with Mitigation)

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Figure 10-4. Noise Impact Areas at William Mead Homes – Proposed Project (2031 Condition with Mitigation)

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Figure 10-5. Noise Impact Areas at William Mead Homes – Build Alternative (2031 Condition with Mitigation)

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Figure 10-6. Noise Impact Areas at William Mead Homes – Proposed Project (2040 Condition with Mitigation)

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Figure 10-7. Noise Impact Areas at William Mead Homes – Build Alternative (2040 Condition with Mitigation)

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10.2 Construction Noise and Vibration Mitigation

General project construction noise and construction of the sound wall associated with NV-1 (described in Section 10.2) would exceed the FTA's construction noise guidelines at receptors nearest to the proposed alignment(s), including William Mead Homes and Mozaic Apartments. The following mitigation is proposed to address construction-related noise impacts:

NV-2 Employ Noise- and Vibration-Reducing Measures during Construction: The construction contractor shall employ measures to minimize and reduce construction noise and vibration. Noise and vibration reduction measures that would be implemented include, but are not limited to, the following:

- Design considerations and project layout:
  - Construct temporary noise walls, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers
  - Reroute truck traffic away from residential streets, if possible, and select streets with fewest residences if no alternatives are available
  - Site equipment on the construction site as far away from noise-sensitive sites as possible
  - Construct walled enclosures around especially noisy activities or clusters of noisy equipment (i.e., shields can be used around pavement breakers and loaded vinyl curtains can be draped under elevated structures)
- Sequence of operations:
  - Restrict pile driving to daytime periods
  - Combine noisy operations to occur in the same time period
    - The total noise level produced would not be significantly greater than the level produced if the operations were performed separately
  - Avoid nighttime activities to the maximum extent feasible
    - Sensitivity to noise increases during the nighttime hours in residential neighborhoods
- Alternative construction methods:
  - Avoid use of an impact pile driver in noise and/or vibration-sensitive areas, where possible
    - Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use

- Use specially-quieted equipment, such as quieted and enclosed air compressors and properly-working mufflers on all engines
- Select quieter demolition methods, where possible (e.g., sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers)

In an effort to keep construction noise levels below FTA's construction noise or vibration criteria, Metro shall monitor noise and vibration during the loudest and most vibration intensive types of construction activities. Continuous construction noise and vibration monitoring shall be conducted at the first row of residences at William Mead Homes and Mozaic Apartments, within 300 feet of construction activities, approximately). Monitors shall be deployed closest to the construction activity because demonstration of compliance with the construction thresholds at the nearest locations guarantees compliance further away. If FTA's construction noise or vibration criteria are exceeded, the contractor shall be alerted and directed by Metro to incorporate additional noise and vibration reduction methods (examples above).

NV-3 Prepare a Community Notification Plan for Project Construction: To proactively address community concerns related to construction noise and vibration, prior to construction, Metro and/or the construction contractor shall prepare and maintain a community notification plan. Components of the plan shall include initial information packets prepared and mailed to all residences within a 500-foot radius of project construction. Updates to the plan shall be prepared as necessary to indicate changes to the construction schedule or other processes. Metro shall identify a project liaison to be available to respond to questions from the community or other interested groups.

10.3 Level of Significance after Mitigation

10.3.1 Operation

Construction of the sound wall for the proposed project or the build alternative would mitigate all severe operational noise impacts on William Mead Homes in 2031 and 2040 by blocking the line of sight from the receptors to the noise source (e.g., locomotives and railcars). Moderate impacts would also be reduced in the 2026 condition if the sound wall is constructed. Operational noise levels for the proposed project or the build alternative would be reduced by 12 dB and 7 dB at impacted locations, respectively. Based on these reductions, upon implementation of mitigation, operational noise impacts would be reduced to a level less than significant. Table 10-1 summarizes the impact conditions before and after mitigation is applied.

Table 10-1. Operational Noise Levels at William Mead Homes (Unmitigated and Mitigated) (2040 Condition)

Receptor ID	Existing Noise Exposure (dBA)	Unmitigated Project Noise Exposure (dBA)		Mitigated Project Noise Exposure (dBA)		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact
		Proposed Project	Build Alternative	Proposed Project	Build Alternative	Proposed Project	Build Alternative	Proposed Project	Build Alternative	Proposed Project and Build Alternative
WM6	69	68	68	61	61	7	7	Moderate	Moderate	None
WM8	69	75	75	63	67	12	8	Severe	Severe	None
PK1	66	68	68	61	61	7	7	Severe	Severe	Proposed Project: Moderate[1] Build Alternative: None

Notes:

[1] ***The reason for the difference in sound levels is due to the slight variation in the location of the sound wall per Mitigation Measure NV-1***

dBA=A-weighted decibel; FTA=Federal Transit Administration; ID=identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level

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10.3.2 Construction

Implementation of Mitigation Measures NV-1 and NV-2 would reduce impacts on sensitive receptors associated with temporary, short-term increased equipment noise, groundborne noise, and vibration from project construction. Mitigation Measure NV-3 would reduce the annoyance of noise and vibration impacts during the construction phase.

Although the mitigation measures reduce noise generated during construction, noise levels would remain above 80 dBA L_{eq} (within 100 feet) during daytime hours throughout much of project study area and would result in the most impact within Segment 2, where the Mozaic Apartments occur.

Additionally, nighttime construction activities in close proximity to William Mead Homes and Mozaic Apartments could exceed 70 dBA L_{eq} at distances of up to 300 feet, which would exceed FTA's 8-hour nighttime noise standard. Based on these considerations, impacts related to construction would remain significant and unavoidable.

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11.0 References

California High-Speed Rail Authority (CHSRA). 2014. *Environmental Methodology Guidelines*.

Federal Highway Administration (FHWA). 2011. Noise: Analysis and Abatement Guidance. https://www.fhwa.dot.gov/Environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/polguide02.cfm

HDR. 2018. *Link US Rail Planning Technical Memorandum*.

International Organization for Standardization's standard. 1996. *Acoustics – Attenuation of Sound during Propagation Outdoors*. ISO 9613-2.

Los Angeles County Metropolitan Transportation Authority (Metro). 2018. *LA County Grade Crossing and Rail Corridor Study*.

Southern California Association of Governments (SCAG). 2016. *Regional Transportation Plan/Sustainable Communities Strategy Environmental Impact Report*.

U. S. Environmental Protection Agency (EPA). 1978. Protective Noise Levels, Condensed Version of EPA Levels Document.

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Appendix A:
Federal Transit Administration
Acoustic Modeling Input Data

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Noise emissions of railway traffic

LAUS_12	Rail track:	Direction:	Section: 1	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.7
0	3	1	16	151	-	56.7	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386093.644	3768905.678	93.38	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 2	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	1	16	151	-	56.8	52.7
0	1	0	16	203	-	51.2	43.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386104.970	3768904.234	93.32	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 3	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	1	16	151	-	56.7	52.9
0	1	0	16	203	-	51.2	43.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386072.904	3768910.668	93.58	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 4	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	1	16	203	-	51.2	53.8
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386062.371	3768915.046	93.73	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 5	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	1	16	203	-	51.2	53.7
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+398	386134.905	3769300.687	91.92	-	-	-	-	-

Noise emissions of railway traffic

LAUS_12	Rail track:	Direction:	Section: 6	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	1	16	203	-	51.2	53.7
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+481	386077.284	3768910.870	89.57	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 7	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.7
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386088.708	3768906.239	89.41	-	-	-	-	-

Throat5	Rail track:	Direction:	Section: 8	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	-	52.3	45.0
0	0	1	32	151	-	-	50.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.875	3769479.511	89.92	-	-	-	-	-
0+427	386528.833	3769712.436	89.92	-	-	-	-	-

Throat5	Rail track:	Direction:	Section: 9	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	-	52.3	45.0
0	0	1	32	151	-	-	50.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.718	3769479.515	89.92	-	-	-	-	-
0+094	386178.905	3769394.567	91.92	-	-	-	-	-

Throat5	Rail track:	Direction:	Section: 10	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	-	52.3	45.0
0	0	1	32	151	-	-	50.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+532	386527.929	3769722.157	89.92	-	-	-	-	-

Noise emissions of railway traffic

Throat5	Rail track:	Direction:	Section: 11	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	-	52.3	45.0
0	0	1	32	151	-	-	50.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.793	3769396.361	89.92	-	-	-	-	-
0+526	386528.159	3769717.272	89.92	-	-	-	-	-

Loop1	Rail track:	Direction:	Section: 12	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	9	1	32	203	-	59.3	51.9

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386626.714	3768836.135	84.15	-	-	-	-	-
0+754	386721.490	3769547.532	89.92	-	-	-	-	-

NE_3trk	Rail track:	Direction:	Section: 13	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	0	2	32	151	-	-	54.7
0	3	0	32	203	-	54.5	47.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.833	3769712.436	89.92	-	-	-	-	-
0+107	386635.696	3769718.031	91.31	-	-	-	-	-

AmtrakEast and SBL	Rail track:	Direction:	Section: 14	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386603.806	3769725.686	89.92	-	-	-	-	-
0+309	386912.028	3769750.728	91.91	-	-	-	-	-

Riverside	Rail track:	Direction:	Section: 15	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386823.638	3769577.065	89.26	-	-	-	-	-
0+256	386635.696	3769718.031	91.31	-	-	-	-	-

Noise emissions of railway traffic

North	Rail track:	Direction:	Section: 16	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	0	2	32	151	-	-	54.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386592.696	3769724.249	89.92	-	-	-	-	-
0+595	386894.000	3770187.092	91.44	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 17	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	8	32	203	-	60.9	61.0
0	48	6	32	151	-	66.3	59.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386460.712	3767860.643	79.58	-	-	-	-	-
0+290	386417.138	3768147.017	80.77	-	-	-	-	-

Loop2_Horn	Rail track:	Direction:	Section: 18	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	5	1	32	203	-	56.3	48.9

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386630.738	3769696.557	90.55	-	-	-	-	-
0+037	386663.231	3769678.137	90.50	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 19	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	8	32	203	-	60.9	61.0
0	48	6	32	151	-	66.3	59.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386456.132	3767859.838	79.84	-	-	-	-	-
0+177	386425.543	3768034.133	80.77	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 20	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	8	32	203	-	60.9	61.0
0	48	6	32	151	-	66.3	59.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.610	3768034.139	80.77	-	-	-	-	-
0+116	386412.591	3768149.464	80.77	-	-	-	-	-

Noise emissions of railway traffic

North6	Rail track:	Direction:	Section: 21	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	6	16	203	-	63.6	62.4
0	48	8	16	151	-	69.1	63.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.905	3769394.567	91.92	-	-	-	-	-
0+104	386134.905	3769300.687	91.92	-	-	-	-	-

North6	Rail track:	Direction:	Section: 22	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	16	203	-	55.0	47.7
0	0	1	16	151	-	-	53.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+152	386110.318	3769258.991	91.92	-	-	-	-	-

Throat5	Rail track:	Direction:	Section: 23	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	-	52.3	45.0
0	0	1	32	151	-	-	50.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.420	3769444.399	89.92	-	-	-	-	-
0+420	386491.280	3769703.788	89.92	-	-	-	-	-

Throat5	Rail track:	Direction:	Section: 24	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	-	52.3	45.0
0	0	1	32	151	-	-	50.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.338	3769444.437	89.92	-	-	-	-	-
0+070	386178.406	3769381.047	91.92	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 25	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.8
0	3	1	16	151	-	56.7	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+075	386203.614	3769425.526	89.92	-	-	-	-	-

Noise emissions of railway traffic

LAUS_12 | Rail track: | Direction: | Section: 26 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.7
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386109.172	3768903.494	93.32	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 27 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	1	16	203	-	51.2	52.9
0	3	0	16	151	-	56.8	43.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386121.048	3768901.251	93.10	-	-	-	-	-

LAUS12_wHSR4 | Rail track: | Direction: | Section: 28 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.9
0	3	1	16	151	-	56.8	52.8

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+399	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS12_wHSR4 | Rail track: | Direction: | Section: 29 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.7
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+354	386110.318	3769258.991	91.92	-	-	-	-	-

LAUS12_wHSR4 | Rail track: | Direction: | Section: 30 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	1	0	16	203	-	51.2	43.7
0	3	1	16	151	-	56.8	52.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.318	3769258.991	91.92	-	-	-	-	-
0+358	386026.567	3768912.709	93.81	-	-	-	-	-

GoldNB_Reloc | Rail track: | Direction: | Section: 31 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386006.651	3768862.937	91.29	-	-	-	-	-
0+853	385999.210	3769650.932	88.37	-	-	-	-	-

GoldSB_Reloc | Rail track: | Direction: | Section: 32 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386001.861	3768863.845	89.92	-	-	-	-	-
0+848	385995.788	3769646.440	88.31	-	-	-	-	-

Loop2_Horn | Rail track: | Direction: | Section: 33 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	5	1	32	203	-	56.3	48.9

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386731.600	3769516.995	89.92	-	-	-	-	-
0+053	386722.218	3769569.313	89.92	-	-	-	-	-

NE_3trk | Rail track: | Direction: | Section: 34 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	0	2	32	151	-	-	54.7
0	3	0	32	203	-	54.5	47.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386527.929	3769722.157	89.92	-	-	-	-	-
0+080	386607.050	3769730.723	89.92	-	-	-	-	-

NE_3trk | Rail track: | Direction: | Section: 35 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	0	2	32	151	-	-	54.7
0	3	0	32	203	-	54.5	47.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.159	3769717.272	89.92	-	-	-	-	-
0+065	386592.696	3769724.249	89.92	-	-	-	-	-

North				Rail track:	Direction:			Section: 36		Km: 0+000
Train type				Number of trains day	night	Speed km/h	Length per train m	Max	Emission level day dB(A)	night dB(A)
			0	0	2	32	151	-	-	54.7
Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]			Corrected Emission level day	night
0+000	386607.050	3769730.723	89.92	-	-	-			-	-
0+573	386889.616	3770188.510	91.44	-	-	-			-	-

Throat5				Rail track:	Direction:			Section: 37		Km: 0+000
Train type				Number of trains day	night	Speed km/h	Length per train m	Max	Emission level day dB(A)	night dB(A)
			0	0	1	32	151	yes	-	50.7
			0	2	0	32	203	-	52.3	45.0
Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]			Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-			-	-

Throat5				Rail track:	Direction:			Section: 38		Km: 0+221
Train type				Number of trains day	night	Speed km/h	Length per train m	Max	Emission level day dB(A)	night dB(A)
			0	0	1	32	151	-	-	50.7
			0	2	0	32	203	-	52.3	45.0
Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]			Corrected Emission level day	night
0+221	386300.889	3769623.792	89.92	-	-	-			-	-
0+436	386493.600	3769699.206	89.92	-	-	-			-	-

Loop2_Horn				Rail track:	Direction:			Section: 39		Km: 0+030
Train type				Number of trains day	night	Speed km/h	Length per train m	Max	Emission level day dB(A)	night dB(A)
			0	5	1	32	203	-	56.3	48.9
Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]			Corrected Emission level day	night
0+030	386663.160	3769662.289	90.02	-	-	-			-	-
0+074	386625.852	3769686.136	90.11	-	-	-			-	-

ThroatExit_S_W of River w Horn				Rail track:	Direction:			Section: 40		Km: 0+000
Train type				Number of trains day	night	Speed km/h	Length per train m	Max	Emission level day dB(A)	night dB(A)
			0	2	0	32	203	yes	69.7	62.0
Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]			Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-			-	-
0+098	386530.357	3769701.484	89.92	-	-	-			-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 41	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	70.7	63.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 42	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	yes	69.7	62.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 43	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	yes	69.7	62.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 44	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	yes	69.7	62.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 45	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	yes	69.7	62.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

Noise emissions of railway traffic

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 46	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	yes	69.7	62.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 47	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	2	0	32	203	yes	69.7	62.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 2	Rail track:	Direction:	Section: 48	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	0	2	32	151	yes	-	72.0
0	3	0	32	203	-	71.5	64.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386893.999	3770187.096	90.81	-	-	-	-	-
0+333	386973.752	3770507.725	-	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 1	Rail track:	Direction:	Section: 49	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	0	2	32	151	yes	-	72.0
0	3	0	32	203	-	71.5	64.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386889.614	3770188.507	91.05	-	-	-	-	-
0+331	386966.343	3770506.879	-	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 50	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 51	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 52	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 53	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 54	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 55	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

Noise emissions of railway traffic

ThroatExit_S_W of River	Rail track:	Direction:	Section: 56	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 57	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	3	0	32	203	yes	53.7	46.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

South2	Rail track:	Direction:	Section: 58	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	48	6	16	151	yes	69.1	62.3
0	13	8	16	203	-	63.6	63.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386026.567	3768912.709	93.81	-	-	-	-	-
0+329	386204.848	3768677.695	83.88	-	-	-	-	-

South2	Rail track:	Direction:	Section: 59	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	48	8	16	151	yes	69.1	63.5
0	13	8	16	203	-	63.6	63.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+311	386206.171	3768683.692	83.93	-	-	-	-	-

South2	Rail track:	Direction:	Section: 60	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	48	8	32	151	-	66.3	60.7
0	13	8	32	203	-	60.9	61.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.543	3768034.133	80.77	-	-	-	-	-
0+177	386456.132	3767859.838	79.84	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 61 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	48	8	32	151	-	66.3	60.7
0	13	8	32	203	-	60.9	61.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386206.171	3768683.692	83.93	-	-	-	-	-
0+969	386457.662	3767878.014	79.69	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 62 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	48	8	32	151	-	66.3	60.7
0	13	8	32	203	-	60.9	61.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386204.959	3768679.601	83.89	-	-	-	-	-
0+965	386453.503	3767877.061	79.94	-	-	-	-	-

Noise emissions of railway traffic

South10_HSR4	Rail track:	Direction:	Section: 1	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386026.567	3768912.709	93.81	-	-	-	-	-
0+329	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 2	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+316	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 3	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+311	386206.171	3768683.692	83.93	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 4	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+298	386206.171	3768683.692	83.93	-	-	-	-	-

South10	Rail track:	Direction:	Section: 5	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386062.371	3768915.046	93.73	-	-	-	-	-
0+289	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 6 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386072.904	3768910.668	93.58	-	-	-	-	-
0+278	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 7 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386077.284	3768910.870	89.57	-	-	-	-	-
0+272	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 8 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386088.708	3768906.239	89.41	-	-	-	-	-
0+260	386210.302	3768696.653	84.06	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 9 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	-	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386093.644	3768905.678	93.38	-	-	-	-	-
0+255	386210.302	3768696.653	84.06	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 10 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	-	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386104.970	3768904.234	93.32	-	-	-	-	-
0+249	386210.302	3768696.653	84.06	-	-	-	-	-

Noise emissions of railway traffic

South4 | Rail track: | Direction: | Section: 11 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386209.772	3768691.097	84.02	-	-	-	-	-
0+128	386333.643	3768659.816	83.82	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 12 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.543	3768034.133	80.77	-	-	-	-	-
0+177	386456.132	3767859.838	79.84	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 13 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386333.643	3768659.816	83.82	-	-	-	-	-
0+709	386425.610	3768034.139	80.77	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 14 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+890	386460.712	3767860.643	79.58	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 15 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386210.302	3768696.653	84.06	-	-	-	-	-
0+129	386334.825	3768663.917	83.82	-	-	-	-	-

Noise emissions of railway traffic

Loop1 | Rail track: | Direction: | Section: 16 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+368	386626.714	3768836.135	84.15	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 17 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386206.171	3768683.692	83.93	-	-	-	-	-
0+969	386457.662	3767878.014	79.69	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 18 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386204.959	3768679.601	83.89	-	-	-	-	-
0+965	386453.503	3767877.061	79.94	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 19 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386093.644	3768905.678	93.38	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 20 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386104.970	3768904.234	93.32	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 21	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386072.904	3768910.668	93.58	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 22	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386062.371	3768915.046	93.73	-	-	-	-	-

LAUS12_futureHSR4	Rail track:	Direction:	Section: 23	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+398	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 24	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+481	386077.284	3768910.870	89.57	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 25	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386088.708	3768906.239	89.41	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 26 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	39	7	32	151	-	65.4	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.875	3769479.511	89.92	-	-	-	-	-
0+427	386528.833	3769712.436	89.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 27 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.718	3769479.515	89.92	-	-	-	-	-
0+094	386178.905	3769394.567	91.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 28 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+532	386527.929	3769722.157	89.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 29 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.793	3769396.361	89.92	-	-	-	-	-
0+526	386528.159	3769717.272	89.92	-	-	-	-	-

Loop1 | Rail track: | Direction: | Section: 30 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	0	32	151	-	67.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386626.714	3768836.135	84.15	-	-	-	-	-
0+754	386721.490	3769547.532	89.92	-	-	-	-	-

NE_4trk | Rail track: | Direction: | Section: 31 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	10	32	151	-	66.0	61.7
0	10	0	32	203	-	59.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.833	3769712.436	89.92	-	-	-	-	-
0+107	386635.696	3769718.031	91.31	-	-	-	-	-

AmtrakEast, SBL, 20% Metrolink N | Rail track: | Direction: | Section: 32 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	12	4	32	151	-	60.3	57.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386603.806	3769725.686	89.92	-	-	-	-	-
0+309	386912.028	3769750.728	91.91	-	-	-	-	-

Riverside | Rail track: | Direction: | Section: 33 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386823.638	3769577.065	89.26	-	-	-	-	-
0+256	386635.696	3769718.031	91.31	-	-	-	-	-

North3 | Rail track: | Direction: | Section: 34 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	56	12	32	151	-	67.0	62.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386592.696	3769724.249	89.92	-	-	-	-	-
0+595	386894.000	3770187.092	91.44	-	-	-	-	-

South5_noHSR | Rail track: | Direction: | Section: 35 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386460.712	3767860.643	79.58	-	-	-	-	-
0+290	386417.138	3768147.017	80.77	-	-	-	-	-

Loop2 | Rail track: | Direction: | Section: 36 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386630.738	3769696.557	90.55	-	-	-	-	-
0+037	386663.231	3769678.137	90.50	-	-	-	-	-

South5_noHSR | Rail track: | Direction: | Section: 37 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386456.132	3767859.838	79.84	-	-	-	-	-
0+177	386425.543	3768034.133	80.77	-	-	-	-	-

South5_noHSR | Rail track: | Direction: | Section: 38 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.610	3768034.139	80.77	-	-	-	-	-
0+116	386412.591	3768149.464	80.77	-	-	-	-	-

Throa6 | Rail track: | Direction: | Section: 39 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	10	0	32	203	-	59.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.905	3769394.567	91.92	-	-	-	-	-
0+104	386134.905	3769300.687	91.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 40 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	10	0	32	203	-	59.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+152	386110.318	3769258.991	91.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 41 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.420	3769444.399	89.92	-	-	-	-	-
0+420	386491.280	3769703.788	89.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 42 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.338	3769444.437	89.92	-	-	-	-	-
0+070	386178.406	3769381.047	91.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 43 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+075	386203.614	3769425.526	89.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 44 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386109.172	3768903.494	93.32	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 45 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386121.048	3768901.251	93.10	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 46	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+399	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 47	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+354	386110.318	3769258.991	91.92	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 48	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.318	3769258.991	91.92	-	-	-	-	-
0+358	386026.567	3768912.709	93.81	-	-	-	-	-

GoldNB_Reloc	Rail track:	Direction:	Section: 49	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386006.651	3768862.937	91.29	-	-	-	-	-
0+853	385999.210	3769650.932	88.37	-	-	-	-	-

GoldSB_Reloc	Rail track:	Direction:	Section: 50	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386001.861	3768863.845	89.92	-	-	-	-	-
0+848	385995.788	3769646.440	88.31	-	-	-	-	-

Loop2	Rail track:	Direction:	Section: 51	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386731.600	3769516.995	89.92	-	-	-	-	-
0+053	386722.218	3769569.313	89.92	-	-	-	-	-

NE_4trk	Rail track:	Direction:	Section: 52	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	10	32	151	-	66.0	61.7
0	10	0	32	203	-	59.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386527.929	3769722.157	89.92	-	-	-	-	-
0+080	386607.050	3769730.723	89.92	-	-	-	-	-

NE_4trk	Rail track:	Direction:	Section: 53	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	10	32	151	-	66.0	61.7
0	10	0	32	203	-	59.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.159	3769717.272	89.92	-	-	-	-	-
0+065	386592.696	3769724.249	89.92	-	-	-	-	-

North2	Rail track:	Direction:	Section: 54	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	56	12	32	151	-	67.0	62.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386607.050	3769730.723	89.92	-	-	-	-	-
0+573	386889.616	3770188.510	91.44	-	-	-	-	-

Throat6	Rail track:	Direction:	Section: 55	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	yes	64.3	60.0
0	7	0	32	203	-	58.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-

Throat6			Rail track:	Direction:				Section: 56		Km: 0+221
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	30	7	32	151	-	64.3	60.0
			0	7	0	32	203	-	58.1	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+221	386300.889	3769623.792	89.92	-	-	-			-	-
0+436	386493.600	3769699.206	89.92	-	-	-			-	-

Throat6 plus Alt1			Rail track:	Direction:				Section: 57		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	30	7	32	151	yes	64.3	60.0
			0	7	0	32	203	-	58.1	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386520.669	3769727.961	89.92	-	-	-			-	-
0+610	386143.202	3769324.760	91.33	-	-	-			-	-

North 2 - Alt1 Shared Track 3			Rail track:	Direction:				Section: 58		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	56	12	32	151	yes	67.0	62.5
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386779.890	3769877.260	91.44	-	-	-			-	-
0+237	386606.048	3769737.832	90.09	-	-	-			-	-

HSR_2trk			Rail track:	Direction:				Section: 59		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	15	3	32	151	yes	61.2	56.5
			0	3	0	32	203	-	55.0	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386110.532	3769245.213	91.92	-	-	-			-	-
0+086	386143.202	3769324.760	91.33	-	-	-			-	-

Loop2_Horn			Rail track:	Direction:				Section: 60		Km: 0+030
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	30	0	32	203	-	64.5	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+030	386663.160	3769662.289	90.02	-	-	-			-	-
0+074	386625.852	3769686.136	90.11	-	-	-			-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 61	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 62	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 63	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 64	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 65	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 66	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 67	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 68	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 2	Rail track:	Direction:	Section: 69	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	84	18	32	151	yes	86.0	81.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386893.999	3770187.096	90.81	-	-	-	-	-
0+333	386973.752	3770507.725	-	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 1	Rail track:	Direction:	Section: 70	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	84	18	32	151	yes	86.0	81.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386889.614	3770188.507	91.05	-	-	-	-	-
0+331	386966.343	3770506.879	-	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 71	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 72	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 73	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 74	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 75	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River			Rail track:	Direction:				Section: 76		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	17	0	32	203	yes	62.0	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386530.357	3769701.484	89.92	-	-	-			-	-
0+037	386493.600	3769699.206	89.92	-	-	-			-	-

ThroatExit_S_W of River			Rail track:	Direction:				Section: 77		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	17	0	32	203	yes	62.0	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386721.464	3769547.605	89.92	-	-	-			-	-
0+032	386715.197	3769579.095	89.92	-	-	-			-	-

ThroatExit_S_W of River			Rail track:	Direction:				Section: 78		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	30	0	32	203	yes	64.5	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386689.207	3769634.305	90.24	-	-	-			-	-
0+038	386663.062	3769662.269	90.04	-	-	-			-	-

West of NW Merge with SBL/Amtrak East			Rail track:	Direction:				Section: 79		Km: 0+237
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	45	10	32	151	yes	66.0	61.7
			0	10	0	32	203	-	59.9	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+237	386606.048	3769737.832	90.09	-	-	-			-	-
0+323	386520.669	3769727.961	89.92	-	-	-			-	-

Noise emissions of railway traffic

LAUS_12 | Rail track: | Direction: | Section: 1 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386093.644	3768905.678	93.38	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 2 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386104.970	3768904.234	93.32	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 3 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386072.904	3768910.668	93.58	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 4 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386062.371	3768915.046	93.73	-	-	-	-	-

LAUS12_futureHSR4 | Rail track: | Direction: | Section: 5 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+398	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 6 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+481	386077.284	3768910.870	89.57	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 7 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386088.708	3768906.239	89.41	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 8 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	9	0	32	203	-	59.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.875	3769479.511	89.92	-	-	-	-	-
0+427	386528.833	3769712.436	89.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 9 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	9	0	32	203	-	59.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.718	3769479.515	89.92	-	-	-	-	-
0+094	386178.905	3769394.567	91.92	-	-	-	-	-

Throat6 | Rail track: | Direction: | Section: 10 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	9	0	32	203	-	59.5	-
0	64	10	32	175	-	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+532	386527.929	3769722.157	89.92	-	-	-	-	-

Noise emissions of railway traffic

Throat6 — Rail track: — Direction: — Section: 11 — Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	9	0	32	203	-	59.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.793	3769396.361	89.92	-	-	-	-	-
0+526	386528.159	3769717.272	89.92	-	-	-	-	-

Loop1 — Rail track: — Direction: — Section: 12 — Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	0	32	151	-	67.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386626.714	3768836.135	84.15	-	-	-	-	-
0+754	386721.490	3769547.532	89.92	-	-	-	-	-

NE_4trk — Rail track: — Direction: — Section: 13 — Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	10	32	151	-	66.0	61.7
0	14	0	32	203	-	61.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.833	3769712.436	89.92	-	-	-	-	-
0+107	386635.696	3769718.031	91.31	-	-	-	-	-

AmtrakEast, SBL, 20% Metrolink N — Rail track: — Direction: — Section: 14 — Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	180	40	32	151	-	72.0	67.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386603.806	3769725.686	89.92	-	-	-	-	-
0+309	386912.028	3769750.728	91.91	-	-	-	-	-

Riverside — Rail track: — Direction: — Section: 15 — Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386823.638	3769577.065	89.26	-	-	-	-	-
0+256	386635.696	3769718.031	91.31	-	-	-	-	-

North3	Rail track:	Direction:	Section: 16	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	-	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386592.696	3769724.249	89.92	-	-	-	-	-
0+595	386894.000	3770187.092	91.44	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 17	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386460.712	3767860.643	79.58	-	-	-	-	-
0+290	386417.138	3768147.017	80.77	-	-	-	-	-

Loop2	Rail track:	Direction:	Section: 18	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386630.738	3769696.557	90.55	-	-	-	-	-
0+037	386663.231	3769678.137	90.50	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 19	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386456.132	3767859.838	79.84	-	-	-	-	-
0+177	386425.543	3768034.133	80.77	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 20	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.610	3768034.139	80.77	-	-	-	-	-
0+116	386412.591	3768149.464	80.77	-	-	-	-	-

Throa6			Rail track:	Direction:				Section: 21		Km: 0+000
Train type			Number of trains		Speed	Length per		Emission level		
			day	night		train	Max	day	night	
					km/h	m		dB(A)	dB(A)	
		0	30	7	32	151	-	64.3	60.0	
		0	9	0	32	203	-	59.5	-	
		0	64	10	32	175	-	55.0	49.2	

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected	
Station	X	Y	Z	type	radius	reflections	Emission level	
km				[dB]	[dB]	[dB]	day	night
0+000	386178.905	3769394.567	91.92	-	-	-	-	-
0+104	386134.905	3769300.687	91.92	-	-	-	-	-

Throat6			Rail track:	Direction:				Section: 22		Km: 0+000
Train type			Number of trains		Speed	Length per		Emission level		
			day	night		train	Max	day	night	
					km/h	m		dB(A)	dB(A)	
		0	30	7	32	151	-	64.3	60.0	
		0	9	0	32	203	-	59.5	-	
		0	64	10	32	175	-	55.0	49.2	

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected	
Station	X	Y	Z	type	radius	reflections	Emission level	
km				[dB]	[dB]	[dB]	day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+152	386110.318	3769258.991	91.92	-	-	-	-	-

Throat6			Rail track:	Direction:				Section: 23		Km: 0+000
Train type			Number of trains		Speed	Length per		Emission level		
			day	night		train	Max	day	night	
					km/h	m		dB(A)	dB(A)	
		0	30	7	32	151	-	64.3	60.0	
		0	9	0	32	203	-	59.5	-	

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected	
Station	X	Y	Z	type	radius	reflections	Emission level	
km				[dB]	[dB]	[dB]	day	night
0+000	386207.420	3769444.399	89.92	-	-	-	-	-
0+420	386491.280	3769703.788	89.92	-	-	-	-	-

Throat6			Rail track:	Direction:				Section: 24		Km: 0+000
Train type			Number of trains		Speed	Length per		Emission level		
			day	night		train	Max	day	night	
					km/h	m		dB(A)	dB(A)	
		0	30	7	32	151	-	64.3	60.0	
		0	9	0	32	203	-	59.5	-	

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected	
Station	X	Y	Z	type	radius	reflections	Emission level	
km				[dB]	[dB]	[dB]	day	night
0+000	386207.338	3769444.437	89.92	-	-	-	-	-
0+070	386178.406	3769381.047	91.92	-	-	-	-	-

LAUS_12			Rail track:	Direction:				Section: 25		Km: 0+000
Train type			Number of trains		Speed	Length per		Emission level		
			day	night		train	Max	day	night	
					km/h	m		dB(A)	dB(A)	
		0	15	3	16	151	-	64.0	59.3	
		0	5	0	16	203	-	59.2	-	

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected	
Station	X	Y	Z	type	radius	reflections	Emission level	
km				[dB]	[dB]	[dB]	day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+075	386203.614	3769425.526	89.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 26 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386109.172	3768903.494	93.32	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 27 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386121.048	3768901.251	93.10	-	-	-	-	-

LAUS12 | Rail track: | Direction: | Section: 28 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+399	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS12 | Rail track: | Direction: | Section: 29 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+354	386110.318	3769258.991	91.92	-	-	-	-	-

LAUS12 | Rail track: | Direction: | Section: 30 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	5	0	16	203	-	59.2	-
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.318	3769258.991	91.92	-	-	-	-	-
0+358	386026.567	3768912.709	93.81	-	-	-	-	-

GoldNB_Reloc | Rail track: | Direction: | Section: 31 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386006.651	3768862.937	91.29	-	-	-	-	-
0+853	385999.210	3769650.932	88.37	-	-	-	-	-

GoldSB_Reloc | Rail track: | Direction: | Section: 32 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386001.861	3768863.845	89.92	-	-	-	-	-
0+848	385995.788	3769646.440	88.31	-	-	-	-	-

Loop2 | Rail track: | Direction: | Section: 33 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386731.600	3769516.995	89.92	-	-	-	-	-
0+053	386722.218	3769569.313	89.92	-	-	-	-	-

NE_4trk | Rail track: | Direction: | Section: 34 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	10	32	151	-	66.0	61.7
0	14	0	32	203	-	61.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386527.929	3769722.157	89.92	-	-	-	-	-
0+080	386607.050	3769730.723	89.92	-	-	-	-	-

NE_4trk	Rail track:	Direction:	Section: 35	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	10	32	151	-	66.0	61.7
0	14	0	32	203	-	61.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.159	3769717.272	89.92	-	-	-	-	-
0+065	386592.696	3769724.249	89.92	-	-	-	-	-

North2	Rail track:	Direction:	Section: 36	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	-	175	-	50.8	45.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386607.050	3769730.723	89.92	-	-	-	-	-
0+573	386889.616	3770188.510	91.44	-	-	-	-	-

Throat6	Rail track:	Direction:	Section: 37	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	yes	64.3	60.0
0	9	0	32	203	-	59.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-

Throat6	Rail track:	Direction:	Section: 38	Km: 0+221

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	7	32	151	-	64.3	60.0
0	9	0	32	203	-	59.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+221	386300.889	3769623.792	89.92	-	-	-	-	-
0+436	386493.600	3769699.206	89.92	-	-	-	-	-

Throat6 plus Alt1	Rail track:	Direction:	Section: 39	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2
0	9	0	32	203	-	59.5	-
0	30	7	32	151	-	64.3	60.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386520.669	3769727.961	89.92	-	-	-	-	-
0+610	386143.202	3769324.760	91.33	-	-	-	-	-

North 2 - Alt1 | Rail track: | Direction: | Section: 40 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386779.890	3769877.260	91.44	-	-	-	-	-
0+237	386606.048	3769737.832	90.09	-	-	-	-	-

HSR_2trk | Rail track: | Direction: | Section: 41 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2
0	9	0	32	203	-	59.5	-
0	30	7	32	151	-	64.3	60.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.532	3769245.213	91.92	-	-	-	-	-
0+086	386143.202	3769324.760	91.33	-	-	-	-	-

Loop2_Horn | Rail track: | Direction: | Section: 42 | Km: 0+030

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+030	386663.160	3769662.289	90.02	-	-	-	-	-
0+074	386625.852	3769686.136	90.11	-	-	-	-	-

ThroatExit_S_W of River w Horn | Rail track: | Direction: | Section: 43 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn | Rail track: | Direction: | Section: 44 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 45	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 46	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 47	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 48	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 49	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn | Rail track: | Direction: | Section: 50 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 2 | Rail track: | Direction: | Section: 51 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	10	3	32	203	yes	76.7	73.7
0	78	20	32	175	-	55.9	52.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386893.999	3770187.096	90.81	-	-	-	-	-
0+333	386973.752	3770507.725	-	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 1 | Rail track: | Direction: | Section: 52 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	10	3	32	203	yes	76.7	73.7
0	78	20	32	175	-	55.9	52.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386889.614	3770188.507	91.05	-	-	-	-	-
0+331	386966.343	3770506.879	-	-	-	-	-	-

ThroatExit_S_W of River | Rail track: | Direction: | Section: 53 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River | Rail track: | Direction: | Section: 54 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 55	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 56	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 57	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 58	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 59	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River | Rail track: | Direction: | Section: 60 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	yes	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

South10_HSR4 | Rail track: | Direction: | Section: 61 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1
0	16	15	16	175	-	46.3	48.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386026.567	3768912.709	93.81	-	-	-	-	-
0+329	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4 | Rail track: | Direction: | Section: 62 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1
0	16	15	16	175	-	46.3	48.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+316	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4 | Rail track: | Direction: | Section: 63 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1
0	16	15	16	175	-	46.3	48.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+311	386206.171	3768683.692	83.93	-	-	-	-	-

South10_HSR4 | Rail track: | Direction: | Section: 64 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1
0	16	15	16	175	-	46.3	48.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+298	386206.171	3768683.692	83.93	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 65 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386062.371	3768915.046	93.73	-	-	-	-	-
0+289	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 66 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386072.904	3768910.668	93.58	-	-	-	-	-
0+278	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 67 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386077.284	3768910.870	89.57	-	-	-	-	-
0+272	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 68 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	6	3	16	203	-	60.2	59.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386088.708	3768906.239	89.41	-	-	-	-	-
0+260	386210.302	3768696.653	84.06	-	-	-	-	-

Noise emissions of railway traffic

South10 | Rail track: | Direction: | Section: 69 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	-	64.8	59.5
0	6	3	16	203	-	60.2	59.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386093.644	3768905.678	93.38	-	-	-	-	-
0+255	386210.302	3768696.653	84.06	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 70 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	-	64.8	59.5
0	6	3	16	203	-	60.2	59.1

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386104.970	3768904.234	93.32	-	-	-	-	-
0+249	386210.302	3768696.653	84.06	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 71 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	15	7	32	203	-	61.5	60.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386209.772	3768691.097	84.02	-	-	-	-	-
0+128	386333.643	3768659.816	83.82	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 72 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.543	3768034.133	80.77	-	-	-	-	-
0+177	386456.132	3767859.838	79.84	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 73 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	15	7	32	203	-	61.5	60.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386333.643	3768659.816	83.82	-	-	-	-	-
0+709	386425.610	3768034.139	80.77	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 74 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	15	7	32	203	-	61.5	60.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+890	386460.712	3767860.643	79.58	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 75 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	15	7	32	203	-	61.5	60.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386210.302	3768696.653	84.06	-	-	-	-	-
0+129	386334.825	3768663.917	83.82	-	-	-	-	-

Loop1 | Rail track: | Direction: | Section: 76 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+368	386626.714	3768836.135	84.15	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 77 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	14	7	32	203	-	61.2	60.4
0	32	30	32	175	-	52.0	54.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386206.171	3768683.692	83.93	-	-	-	-	-
0+969	386457.662	3767878.014	79.69	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 78 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	15	7	32	203	-	61.5	60.4
0	32	30	32	175	-	52.0	54.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386204.959	3768679.601	83.89	-	-	-	-	-
0+965	386453.503	3767877.061	79.94	-	-	-	-	-

Alt1 West of NW Merge with SBL/Amtrak Ea | Rail track: | Direction: | Section: 79 | Km: 0+237

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2
0	14	0	32	203	-	61.3	-
0	45	10	32	151	-	66.0	61.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+237	386606.048	3769737.832	90.09	-	-	-	-	-
0+323	386520.669	3769727.961	89.92	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 1	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386860.517	3770117.624	91.43	-	-	-	-	-
0+012	386864.465	3770129.156	91.43	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 2	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386864.465	3770129.156	91.43	-	-	-	-	-
0+031	386875.484	3770158.456	91.44	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 3	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386875.484	3770158.456	91.44	-	-	-	-	-
0+012	386880.201	3770169.696	91.43	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 4	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386880.201	3770169.696	91.43	-	-	-	-	-
0+039	386895.602	3770205.999	91.09	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 5	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386796.784	3769931.452	90.62	-	-	-	-	-
0+012	386792.782	3769919.939	91.19	-	-	-	-	-

HSR_1trk | Rail track: | Direction: | Section: 6 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386796.784	3769931.452	90.62	-	-	-	-	-
0+209	386864.465	3770129.156	91.43	-	-	-	-	-

HSR_2trk_throat7 | Rail track: | Direction: | Section: 7 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386520.669	3769727.961	89.92	-	-	-	-	-
0+610	386143.202	3769324.760	91.33	-	-	-	-	-

HSR_2trk_conventional_North4 | Rail track: | Direction: | Section: 8 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386779.890	3769877.260	91.44	-	-	-	-	-
0+237	386606.048	3769737.832	90.09	-	-	-	-	-

HSR_2trk_Throat7 | Rail track: | Direction: | Section: 9 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	yes	63.6	59.3
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386524.324	3769733.414	89.89	-	-	-	-	-
0+620	386139.200	3769325.196	91.20	-	-	-	-	-

HSR_2trk_throat7 | Rail track: | Direction: | Section: 10 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	yes	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.532	3769245.213	91.92	-	-	-	-	-
0+086	386143.202	3769324.760	91.33	-	-	-	-	-

HSR_2trk_throat7	Rail track:	Direction:	Section: 11	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	yes	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386139.200	3769325.196	91.20	-	-	-	-	-
0+072	386110.318	3769258.991	91.92	-	-	-	-	-

HSR_2trk-4trak NOrth	Rail track:	Direction:	Section: 12	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	yes	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386792.782	3769919.939	91.19	-	-	-	-	-
0+272	386606.968	3769742.417	89.89	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 13	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386026.567	3768912.709	93.81	-	-	-	-	-
0+329	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 14	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+316	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 15	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+311	386206.171	3768683.692	83.93	-	-	-	-	-

South10_HSR4 | Rail track: | Direction: | Section: 16 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+298	386206.171	3768683.692	83.93	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 17 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386062.371	3768915.046	93.73	-	-	-	-	-
0+289	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 18 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386072.904	3768910.668	93.58	-	-	-	-	-
0+278	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 19 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386077.284	3768910.870	89.57	-	-	-	-	-
0+272	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 20 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	yes	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386088.708	3768906.239	89.41	-	-	-	-	-
0+260	386210.302	3768696.653	84.06	-	-	-	-	-

Noise emissions of railway traffic

South10 | Rail track: | Direction: | Section: 21 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	-	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386093.644	3768905.678	93.38	-	-	-	-	-
0+255	386210.302	3768696.653	84.06	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 22 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	18	3	16	151	-	64.8	59.5
0	3	1	16	203	-	57.7	53.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386104.970	3768904.234	93.32	-	-	-	-	-
0+249	386210.302	3768696.653	84.06	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 23 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386209.772	3768691.097	84.02	-	-	-	-	-
0+128	386333.643	3768659.816	83.82	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 24 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.543	3768034.133	80.77	-	-	-	-	-
0+177	386456.132	3767859.838	79.84	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 25 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386333.643	3768659.816	83.82	-	-	-	-	-
0+709	386425.610	3768034.139	80.77	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 26 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+890	386460.712	3767860.643	79.58	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 27 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386210.302	3768696.653	84.06	-	-	-	-	-
0+129	386334.825	3768663.917	83.82	-	-	-	-	-

Loop1 | Rail track: | Direction: | Section: 28 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+368	386626.714	3768836.135	84.15	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 29 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386206.171	3768683.692	83.93	-	-	-	-	-
0+969	386457.662	3767878.014	79.69	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 30 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	45	8	32	151	-	66.0	60.7
0	8	2	32	203	-	59.0	55.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386204.959	3768679.601	83.89	-	-	-	-	-
0+965	386453.503	3767877.061	79.94	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 31 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386093.644	3768905.678	93.38	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 32 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386104.970	3768904.234	93.32	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 33 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386072.904	3768910.668	93.58	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 34 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386062.371	3768915.046	93.73	-	-	-	-	-

LAUS12_futureHSR4 | Rail track: | Direction: | Section: 35 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+398	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 36 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+481	386077.284	3768910.870	89.57	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 37 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	32	151	-	61.2	56.5
0	3	0	32	203	-	55.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386088.708	3768906.239	89.41	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 38 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.875	3769479.511	89.92	-	-	-	-	-
0+427	386528.833	3769712.436	89.92	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 39 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.718	3769479.515	89.92	-	-	-	-	-
0+094	386178.905	3769394.567	91.92	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 40 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+532	386527.929	3769722.157	89.92	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 41	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.793	3769396.361	89.92	-	-	-	-	-
0+526	386528.159	3769717.272	89.92	-	-	-	-	-

Loop1	Rail track:	Direction:	Section: 42	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	0	32	151	-	67.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386626.714	3768836.135	84.15	-	-	-	-	-
0+754	386721.490	3769547.532	89.92	-	-	-	-	-

NE_5trk	Rail track:	Direction:	Section: 43	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	8	0	32	203	-	58.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.833	3769712.436	89.92	-	-	-	-	-
0+107	386635.696	3769718.031	91.31	-	-	-	-	-

AmtrakEast, SBL, 20% Metrolink N	Rail track:	Direction:	Section: 44	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	12	4	32	151	-	60.3	57.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386603.806	3769725.686	89.92	-	-	-	-	-
0+309	386912.028	3769750.728	91.91	-	-	-	-	-

Riverside	Rail track:	Direction:	Section: 45	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386823.638	3769577.065	89.26	-	-	-	-	-
0+256	386635.696	3769718.031	91.31	-	-	-	-	-

North4	Rail track:	Direction:	Section: 46	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	42	9	32	151	-	65.7	61.3

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386592.696	3769724.249	89.92	-	-	-	-	-
0+595	386894.000	3770187.092	91.44	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 47	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386460.712	3767860.643	79.58	-	-	-	-	-
0+290	386417.138	3768147.017	80.77	-	-	-	-	-

Loop2	Rail track:	Direction:	Section: 48	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386630.738	3769696.557	90.55	-	-	-	-	-
0+037	386663.231	3769678.137	90.50	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 49	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386456.132	3767859.838	79.84	-	-	-	-	-
0+177	386425.543	3768034.133	80.77	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 50	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.610	3768034.139	80.77	-	-	-	-	-
0+116	386412.591	3768149.464	80.77	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 51 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.905	3769394.567	91.92	-	-	-	-	-
0+104	386134.905	3769300.687	91.92	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 52 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+152	386110.318	3769258.991	91.92	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 53 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.420	3769444.399	89.92	-	-	-	-	-
0+420	386491.280	3769703.788	89.92	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 54 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	26	6	32	151	-	63.6	59.3
0	6	0	32	203	-	57.4	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.338	3769444.437	89.92	-	-	-	-	-
0+070	386178.406	3769381.047	91.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 55 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+075	386203.614	3769425.526	89.92	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 56 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	6	0	16	203	-	60.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386109.172	3768903.494	93.32	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 57 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	6	0	16	203	-	60.1	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386121.048	3768901.251	93.10	-	-	-	-	-

LAUS12 | Rail track: | Direction: | Section: 58 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+399	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS12 | Rail track: | Direction: | Section: 59 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+354	386110.318	3769258.991	91.92	-	-	-	-	-

LAUS12 | Rail track: | Direction: | Section: 60 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	15	3	16	151	-	64.0	59.3
0	3	0	16	203	-	57.7	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.318	3769258.991	91.92	-	-	-	-	-
0+358	386026.567	3768912.709	93.81	-	-	-	-	-

GoldNB_Reloc | Rail track: | Direction: | Section: 61 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386006.651	3768862.937	91.29	-	-	-	-	-
0+853	385999.210	3769650.932	88.37	-	-	-	-	-

GoldSB_Reloc | Rail track: | Direction: | Section: 62 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386001.861	3768863.845	89.92	-	-	-	-	-
0+848	385995.788	3769646.440	88.31	-	-	-	-	-

Loop2 | Rail track: | Direction: | Section: 63 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386731.600	3769516.995	89.92	-	-	-	-	-
0+053	386722.218	3769569.313	89.92	-	-	-	-	-

NE_5trk | Rail track: | Direction: | Section: 64 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	8	0	32	203	-	58.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386527.929	3769722.157	89.92	-	-	-	-	-
0+080	386607.050	3769730.723	89.92	-	-	-	-	-

NE_5trk | Rail track: | Direction: | Section: 65 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	8	0	32	203	-	58.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.159	3769717.272	89.92	-	-	-	-	-
0+065	386592.696	3769724.249	89.92	-	-	-	-	-

North4			Rail track:	Direction:				Section: 66		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	42	9	32	151	-	65.7	61.3
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386607.050	3769730.723	89.92	-	-	-			-	-
0+573	386889.616	3770188.510	91.44	-	-	-			-	-

Throat7			Rail track:	Direction:				Section: 67		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	26	6	32	151	yes	63.6	59.3
			0	6	0	32	203	-	57.4	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386203.614	3769425.526	89.92	-	-	-			-	-

Throat7			Rail track:	Direction:				Section: 68		Km: 0+221
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	26	6	32	151	-	63.6	59.3
			0	6	0	32	203	-	57.4	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+221	386300.889	3769623.792	89.92	-	-	-			-	-
0+436	386493.600	3769699.206	89.92	-	-	-			-	-

Loop2_Horn			Rail track:	Direction:				Section: 69		Km: 0+030
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	30	0	32	203	-	64.5	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+030	386663.160	3769662.289	90.02	-	-	-			-	-
0+074	386625.852	3769686.136	90.11	-	-	-			-	-

ThroatExit_S_W of River w Horn			Rail track:	Direction:				Section: 70		Km: 0+000
Train type				Number of trains		Speed	Length per		Emission level	
				day	night		train	Max	day	night
						km/h	m		dB(A)	dB(A)
			0	13	0	32	203	yes	77.9	-
Track	Coordinates of track axis			Track	Curve	Multiple			Corrected	
Station	X	Y	Z	type	radius	reflections			Emission level	
km				[dB]	[dB]	[dB]			day	night
0+000	386625.852	3769686.136	90.11	-	-	-			-	-
0+098	386530.357	3769701.484	89.92	-	-	-			-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 71	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 72	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 73	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 74	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 75	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 76	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 77	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 2	Rail track:	Direction:	Section: 78	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	84	18	32	151	yes	86.0	81.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386893.999	3770187.096	90.81	-	-	-	-	-
0+333	386973.752	3770507.725	-	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 1	Rail track:	Direction:	Section: 79	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	84	18	32	151	yes	86.0	81.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386889.614	3770188.507	91.05	-	-	-	-	-
0+331	386966.343	3770506.879	-	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 80	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 81	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 82	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 83	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 84	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 85	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 86	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 87	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	yes	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

HSR_2trk_West of NW Merge with SBL/Amtra	Rail track:	Direction:	Section: 88	Km: 0+272

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	yes	65.1	60.7
0	8	0	32	203	-	58.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+272	386606.968	3769742.417	89.89	-	-	-	-	-
0+355	386524.324	3769733.414	89.89	-	-	-	-	-

HSR_2trk_West of NW Merge with SBL/Amtra	Rail track:	Direction:	Section: 89	Km: 0+237

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	yes	65.1	60.7
0	8	0	32	203	-	58.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+237	386606.048	3769737.832	90.09	-	-	-	-	-
0+323	386520.669	3769727.961	89.92	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 1	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386860.517	3770117.624	91.43	-	-	-	-	-
0+012	386864.465	3770129.156	91.43	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 2	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386864.465	3770129.156	91.43	-	-	-	-	-
0+031	386875.484	3770158.456	91.44	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 3	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386875.484	3770158.456	91.44	-	-	-	-	-
0+012	386880.201	3770169.696	91.43	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 4	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386880.201	3770169.696	91.43	-	-	-	-	-
0+039	386895.602	3770205.999	91.09	-	-	-	-	-

HSR_2trk	Rail track:	Direction:	Section: 5	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386796.784	3769931.452	90.62	-	-	-	-	-
0+012	386792.782	3769919.939	91.19	-	-	-	-	-

HSR_1trk	Rail track:	Direction:	Section: 6	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386796.784	3769931.452	90.62	-	-	-	-	-
0+209	386864.465	3770129.156	91.43	-	-	-	-	-

HSR_2trk_throat7	Rail track:	Direction:	Section: 7	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386520.669	3769727.961	89.92	-	-	-	-	-
0+610	386143.202	3769324.760	91.33	-	-	-	-	-

HSR_2trk_conventional_North4	Rail track:	Direction:	Section: 8	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386779.890	3769877.260	91.44	-	-	-	-	-
0+237	386606.048	3769737.832	90.09	-	-	-	-	-

HSR_2trk_Throat7	Rail track:	Direction:	Section: 9	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386524.324	3769733.414	89.89	-	-	-	-	-
0+620	386139.200	3769325.196	91.20	-	-	-	-	-

HSR_2trk_throat7	Rail track:	Direction:	Section: 10	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.532	3769245.213	91.92	-	-	-	-	-
0+086	386143.202	3769324.760	91.33	-	-	-	-	-

HSR_2trk_throat7	Rail track:	Direction:	Section: 11	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386139.200	3769325.196	91.20	-	-	-	-	-
0+072	386110.318	3769258.991	91.92	-	-	-	-	-

HSR_2trk-4trak NOrth	Rail track:	Direction:	Section: 12	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386792.782	3769919.939	91.19	-	-	-	-	-
0+272	386606.968	3769742.417	89.89	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 13	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	19	5	16	175	yes	47.2	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386026.567	3768912.709	93.81	-	-	-	-	-
0+329	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 14	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	19	5	16	203	yes	65.3	61.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+316	386204.848	3768677.695	83.88	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 15	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	19	5	16	175	yes	47.2	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+311	386206.171	3768683.692	83.93	-	-	-	-	-

South10_HSR4	Rail track:	Direction:	Section: 16	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	19	5	16	175	yes	47.2	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+298	386206.171	3768683.692	83.93	-	-	-	-	-

South10	Rail track:	Direction:	Section: 17	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	5	16	151	yes	67.0	61.7
0	12	3	16	203	-	63.4	58.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386062.371	3768915.046	93.73	-	-	-	-	-
0+289	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 18 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	5	16	151	yes	67.0	61.7
0	12	3	16	203	-	63.4	58.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386072.904	3768910.668	93.58	-	-	-	-	-
0+278	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 19 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	5	16	151	yes	67.0	61.7
0	12	3	16	203	-	63.4	58.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386077.284	3768910.870	89.57	-	-	-	-	-
0+272	386209.772	3768691.097	84.02	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 20 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	5	16	151	yes	67.0	61.7
0	12	3	16	203	-	63.4	58.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386088.708	3768906.239	89.41	-	-	-	-	-
0+260	386210.302	3768696.653	84.06	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 21 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	5	16	151	-	67.0	61.7
0	12	3	16	203	-	63.4	58.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386093.644	3768905.678	93.38	-	-	-	-	-
0+255	386210.302	3768696.653	84.06	-	-	-	-	-

South10 | Rail track: | Direction: | Section: 22 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	5	16	151	-	67.0	61.7
0	12	3	16	203	-	63.4	58.6

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386104.970	3768904.234	93.32	-	-	-	-	-
0+249	386210.302	3768696.653	84.06	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 23 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	38	7	32	203	-	65.5	60.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386209.772	3768691.097	84.02	-	-	-	-	-
0+128	386333.643	3768659.816	83.82	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 24 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	17	4	32	203	-	62.0	58.0

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.543	3768034.133	80.77	-	-	-	-	-
0+177	386456.132	3767859.838	79.84	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 25 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	38	7	32	203	-	65.5	60.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386333.643	3768659.816	83.82	-	-	-	-	-
0+709	386425.610	3768034.139	80.77	-	-	-	-	-

South2 | Rail track: | Direction: | Section: 26 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	38	7	32	203	-	65.5	60.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+890	386460.712	3767860.643	79.58	-	-	-	-	-

South4 | Rail track: | Direction: | Section: 27 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	38	7	32	203	-	65.5	60.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386210.302	3768696.653	84.06	-	-	-	-	-
0+129	386334.825	3768663.917	83.82	-	-	-	-	-

Loop1 | Rail track: | Direction: | Section: 28 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	39	10	32	175	-	52.9	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386334.825	3768663.917	83.82	-	-	-	-	-
0+368	386626.714	3768836.135	84.15	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 29 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	39	10	32	175	-	52.9	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386206.171	3768683.692	83.93	-	-	-	-	-
0+969	386457.662	3767878.014	79.69	-	-	-	-	-

South4_HSR2 | Rail track: | Direction: | Section: 30 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	39	10	32	175	-	52.9	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386204.959	3768679.601	83.89	-	-	-	-	-
0+965	386453.503	3767877.061	79.94	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 31 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386093.644	3768905.678	93.38	-	-	-	-	-

LAUS_12 | Rail track: | Direction: | Section: 32 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+457	386104.970	3768904.234	93.32	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 33	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386072.904	3768910.668	93.58	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 34	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386062.371	3768915.046	93.73	-	-	-	-	-

LAUS12_futureHSR4	Rail track:	Direction:	Section: 35	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386056.081	3768911.282	93.66	-	-	-	-	-
0+398	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 36	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+481	386077.284	3768910.870	89.57	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 37	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.406	3769381.047	91.92	-	-	-	-	-
0+483	386088.708	3768906.239	89.41	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 38	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.875	3769479.511	89.92	-	-	-	-	-
0+427	386528.833	3769712.436	89.92	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 39	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386218.718	3769479.515	89.92	-	-	-	-	-
0+094	386178.905	3769394.567	91.92	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 40	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+532	386527.929	3769722.157	89.92	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 41	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.793	3769396.361	89.92	-	-	-	-	-
0+526	386528.159	3769717.272	89.92	-	-	-	-	-

Loop1	Rail track:	Direction:	Section: 42	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	0	32	151	-	67.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386626.714	3768836.135	84.15	-	-	-	-	-
0+754	386721.490	3769547.532	89.92	-	-	-	-	-

NE_5trk	Rail track:	Direction:	Section: 43	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	13	32	151	-	67.3	63.0
0	19	0	32	203	-	62.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.833	3769712.436	89.92	-	-	-	-	-
0+107	386635.696	3769718.031	91.31	-	-	-	-	-

AmtrakEast, SBL, 20% Metrolink N	Rail track:	Direction:	Section: 44	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	180	40	32	151	-	72.0	67.7

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386603.806	3769725.686	89.92	-	-	-	-	-
0+309	386912.028	3769750.728	91.91	-	-	-	-	-

Riverside	Rail track:	Direction:	Section: 45	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386823.638	3769577.065	89.26	-	-	-	-	-
0+256	386635.696	3769718.031	91.31	-	-	-	-	-

North4	Rail track:	Direction:	Section: 46	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386592.696	3769724.249	89.92	-	-	-	-	-
0+595	386894.000	3770187.092	91.44	-	-	-	-	-

South5_noHSR	Rail track:	Direction:	Section: 47	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386460.712	3767860.643	79.58	-	-	-	-	-
0+290	386417.138	3768147.017	80.77	-	-	-	-	-

Loop2	Rail track:	Direction:	Section: 48	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386630.738	3769696.557	90.55	-	-	-	-	-
0+037	386663.231	3769678.137	90.50	-	-	-	-	-

South5_noHSR | Rail track: | Direction: | Section: 49 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386456.132	3767859.838	79.84	-	-	-	-	-
0+177	386425.543	3768034.133	80.77	-	-	-	-	-

South5_noHSR | Rail track: | Direction: | Section: 50 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	89	16	32	151	-	69.0	63.8
0	30	14	32	203	-	64.5	63.4

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386425.610	3768034.139	80.77	-	-	-	-	-
0+116	386412.591	3768149.464	80.77	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 51 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386178.905	3769394.567	91.92	-	-	-	-	-
0+104	386134.905	3769300.687	91.92	-	-	-	-	-

Throat7_HSR | Rail track: | Direction: | Section: 52 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	-	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386174.760	3769396.376	89.92	-	-	-	-	-
0+152	386110.318	3769258.991	91.92	-	-	-	-	-

Throat7 | Rail track: | Direction: | Section: 53 | Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.420	3769444.399	89.92	-	-	-	-	-
0+420	386491.280	3769703.788	89.92	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 54	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386207.338	3769444.437	89.92	-	-	-	-	-
0+070	386178.406	3769381.047	91.92	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 55	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386177.817	3769354.950	91.92	-	-	-	-	-
0+075	386203.614	3769425.526	89.92	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 56	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386109.172	3768903.494	93.32	-	-	-	-	-

LAUS_12	Rail track:	Direction:	Section: 57	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	22	4	16	151	-	65.8	61.0
0	7	0	16	203	-	60.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-
0+532	386121.048	3768901.251	93.10	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 58	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386044.035	3768914.069	93.78	-	-	-	-	-
0+399	386134.905	3769300.687	91.92	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 59	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386039.054	3768912.182	93.75	-	-	-	-	-
0+354	386110.318	3769258.991	91.92	-	-	-	-	-

LAUS12	Rail track:	Direction:	Section: 60	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	32	5	16	175	-	49.3	43.5

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386110.318	3769258.991	91.92	-	-	-	-	-
0+358	386026.567	3768912.709	93.81	-	-	-	-	-

GoldNB_Reloc	Rail track:	Direction:	Section: 61	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386006.651	3768862.937	91.29	-	-	-	-	-
0+853	385999.210	3769650.932	88.37	-	-	-	-	-

GoldSB_Reloc	Rail track:	Direction:	Section: 62	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386001.861	3768863.845	89.92	-	-	-	-	-
0+848	385995.788	3769646.440	88.31	-	-	-	-	-

Loop2	Rail track:	Direction:	Section: 63	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386731.600	3769516.995	89.92	-	-	-	-	-
0+053	386722.218	3769569.313	89.92	-	-	-	-	-

NE_5trk	Rail track:	Direction:	Section: 64	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	13	32	151	-	67.3	63.0
0	19	0	32	203	-	62.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386527.929	3769722.157	89.92	-	-	-	-	-
0+080	386607.050	3769730.723	89.92	-	-	-	-	-

NE_5trk	Rail track:	Direction:	Section: 65	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	60	13	32	151	-	67.3	63.0
0	19	0	32	203	-	62.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386528.159	3769717.272	89.92	-	-	-	-	-
0+065	386592.696	3769724.249	89.92	-	-	-	-	-

North4	Rail track:	Direction:	Section: 66	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386607.050	3769730.723	89.92	-	-	-	-	-
0+573	386889.616	3770188.510	91.44	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 67	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	yes	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386203.614	3769425.526	89.92	-	-	-	-	-

Throat7	Rail track:	Direction:	Section: 68	Km: 0+221

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	36	8	32	151	-	65.1	60.7
0	11	0	32	203	-	60.3	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+221	386300.889	3769623.792	89.92	-	-	-	-	-
0+436	386493.600	3769699.206	89.92	-	-	-	-	-

Loop2_Horn	Rail track:	Direction:	Section: 69	Km: 0+030

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	-	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+030	386663.160	3769662.289	90.02	-	-	-	-	-
0+074	386625.852	3769686.136	90.11	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 70	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 71	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 72	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 73	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 74	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 75	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 76	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River w Horn	Rail track:	Direction:	Section: 77	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	13	0	32	203	yes	77.9	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 2	Rail track:	Direction:	Section: 78	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	10	3	32	203	yes	76.7	73.7
0	78	20	32	175	-	55.9	52.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386893.999	3770187.096	90.81	-	-	-	-	-
0+333	386973.752	3770507.725	-	-	-	-	-	-

Ventura, LOSSAN, Coast Starlight 1	Rail track:	Direction:	Section: 79	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	10	3	32	203	yes	76.7	73.7
0	78	20	32	175	-	55.9	52.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386889.614	3770188.507	91.05	-	-	-	-	-
0+331	386966.343	3770506.879	-	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 80	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386625.852	3769686.136	90.11	-	-	-	-	-
0+098	386530.357	3769701.484	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 81	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386663.431	3769678.014	90.52	-	-	-	-	-
0+127	386722.216	3769569.318	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 82	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386715.203	3769579.068	89.92	-	-	-	-	-
0+061	386689.207	3769634.305	90.24	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 83	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.098	3769706.166	89.92	-	-	-	-	-
0+102	386630.738	3769696.557	90.55	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 84	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386491.286	3769703.728	89.92	-	-	-	-	-
0+039	386530.098	3769706.166	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 85	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386530.357	3769701.484	89.92	-	-	-	-	-
0+037	386493.600	3769699.206	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 86	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	17	0	32	203	yes	62.0	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386721.464	3769547.605	89.92	-	-	-	-	-
0+032	386715.197	3769579.095	89.92	-	-	-	-	-

ThroatExit_S_W of River	Rail track:	Direction:	Section: 87	Km: 0+000

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	30	0	32	203	yes	64.5	-

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+000	386689.207	3769634.305	90.24	-	-	-	-	-
0+038	386663.062	3769662.269	90.04	-	-	-	-	-

HSR_2trk_West of NW Merge with SBL/Amtra	Rail track:	Direction:	Section: 88	Km: 0+272

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+272	386606.968	3769742.417	89.89	-	-	-	-	-
0+355	386524.324	3769733.414	89.89	-	-	-	-	-

HSR_2trk_West of NW Merge with SBL/Amtra	Rail track:	Direction:	Section: 89	Km: 0+237

Train type	Number of trains day	Number of trains night	Speed km/h	Length per train m	Max	Emission level day dB(A)	Emission level night dB(A)
0	64	10	32	175	yes	55.0	49.2

Track Station km	Coordinates of track axis X	Y	Z	Track type [dB]	Curve radius [dB]	Multiple reflections [dB]	Corrected Emission level day	night
0+237	386606.048	3769737.832	90.09	-	-	-	-	-
0+323	386520.669	3769727.961	89.92	-	-	-	-	-

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Appendix B:
Monitoring Data and Photos

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Table B-1. Monitoring Location 1a Acoustic Measurements		
Date	Time	dBA L_{eq}
01-24-2017	10:00 AM	61.8
01-24-2017	11:00 AM	63.4
01-24-2017	12:00 PM	66.1
01-24-2017	1:00 PM	61.3
01-24-2017	2:00 PM	65.4
01-24-2017	3:00 PM	68.2
01-24-2017	4:00 PM	67.1
01-24-2017	5:00 PM	66.5
01-24-2017	6:00 PM	65.6
01-24-2017	7:00 PM	64.0
01-24-2017	8:00 PM	64.6
01-24-2017	9:00 PM	61.3
01-24-2017	10:00 PM	65.4
01-24-2017	11:00 PM	63.1
01-25-2017	12:00 AM	55.0
01-25-2017	1:00 AM	58.6
01-25-2017	2:00 AM	58.4
01-25-2017	3:00 AM	60.1
01-25-2017	4:00 AM	61.9
01-25-2017	5:00 AM	63.0
01-25-2017	6:00 AM	63.9
01-25-2017	7:00 AM	67.4
01-25-2017	8:00 AM	68.5
01-25-2017	9:00 AM	66.3

Notes:
dBA=A-weighted decibel; L_{eq}=equivalent noise level

Table B-2. Monitoring Location 1b Acoustic Measurements		
Date	Time	dBA L_{eq}
1/24/2017	10:00 AM	72.0
1/24/2017	11:00 AM	64.3
1/24/2017	12:00 PM	66.1
1/24/2017	1:00 PM	65.1
1/24/2017	2:00 PM	61.0
1/24/2017	3:00 PM	66.1
1/24/2017	4:00 PM	64.8
1/24/2017	5:00 PM	63.6
1/24/2017	6:00 PM	63.8
1/24/2017	7:00 PM	62.9
1/24/2017	8:00 PM	69.4
1/24/2017	9:00 PM	65.8
1/24/2017	10:00 PM	67.3
1/24/2017	11:00 PM	57.8
1/25/2017	12:00 AM	55.8
1/25/2017	1:00 AM	58.4
1/25/2017	2:00 AM	56.5
1/25/2017	3:00 AM	56.8
1/25/2017	4:00 AM	58.6
1/25/2017	5:00 AM	60.7
1/25/2017	6:00 AM	61.7
1/25/2017	7:00 AM	62.3
1/25/2017	8:00 AM	69.1
1/25/2017	9:00 AM	65.2

Notes:
dBA=A-weighted decibel; L_{eq}=equivalent noise level

Table B-3. Monitoring Location 2 Acoustic Measurements		
Date	Time	dBA L_{eq}
1/25/2017	2:00 PM	68.7
1/25/2017	3:00 PM	70.6
1/25/2017	4:00 PM	71.0
1/25/2017	5:00 PM	71.2
1/25/2017	6:00 PM	70.6
1/25/2017	7:00 PM	69.3
1/25/2017	8:00 PM	69.2
1/25/2017	9:00 PM	66.6
1/25/2017	10:00 PM	66.1
1/25/2017	11:00 PM	65.0
1/26/2017	12:00 AM	68.3
1/26/2017	1:00 AM	62.2
1/26/2017	2:00 AM	60.9
1/26/2017	3:00 AM	59.6
1/26/2017	4:00 AM	62.2
1/26/2017	5:00 AM	68.1
1/26/2017	6:00 AM	69.5
1/26/2017	7:00 AM	71.5
1/26/2017	8:00 AM	73.6
1/26/2017	9:00 AM	72.4
1/26/2017	10:00 AM	69.6
1/26/2017	11:00 AM	68.9
1/26/2017	12:00 PM	68.0
1/26/2017	1:00 PM	67.4

Notes:
dBA=A-weighted decibel; L_{eq}=equivalent noise level

Table B-4. Monitoring Location 3 Acoustic Measurements		
Date	Time	dBA L_{eq}
1/24/2017	1:00 PM	60.9
1/24/2017	2:00 PM	63.5
1/24/2017	3:00 PM	63.5
1/24/2017	4:00 PM	64.7
1/24/2017	5:00 PM	63.8
1/24/2017	6:00 PM	63.1
1/24/2017	7:00 PM	62.3
1/24/2017	8:00 PM	60.4
1/24/2017	9:00 PM	59
1/24/2017	10:00 PM	57.6
1/24/2017	11:00 PM	59.1
1/25/2017	12:00 AM	58
1/25/2017	1:00 AM	61
1/25/2017	2:00 AM	57.2
1/25/2017	3:00 AM	58.1
1/25/2017	4:00 AM	59.6
1/25/2017	5:00 AM	62.5
1/25/2017	6:00 AM	63.4
1/25/2017	7:00 AM	66.4
1/25/2017	8:00 AM	64.6
1/25/2017	9:00 AM	67.1
1/25/2017	10:00 AM	63.4
1/25/2017	11:00 AM	61.4
1/25/2017	12:00 PM	63

Notes:
dBA=A-weighted decibel; L_{eq}=equivalent noise level

Table B-5. Monitoring Location 4 Acoustic Measurements		
Date	Time	dBA L_{eq}
1/25/2017	11:00 AM	64.2
1/25/2017	12:00 PM	63.2
1/25/2017	1:00 PM	67.2
1/25/2017	2:00 PM	64.7
1/25/2017	3:00 PM	67.3
1/25/2017	4:00 PM	61.8
1/25/2017	5:00 PM	62.0
1/25/2017	6:00 PM	61.3
1/25/2017	7:00 PM	63.7
1/25/2017	8:00 PM	64.9
1/25/2017	9:00 PM	62.3
1/25/2017	10:00 PM	61.0
1/25/2017	11:00 PM	60.9
1/26/2017	12:00 AM	60.0
1/26/2017	1:00 AM	61.8
1/26/2017	2:00 AM	58.2
1/26/2017	3:00 AM	60.5
1/26/2017	4:00 AM	63.6
1/26/2017	5:00 AM	70.7
1/26/2017	6:00 AM	64.0
1/26/2017	7:00 AM	63.8
1/26/2017	8:00 AM	65.0
1/26/2017	9:00 AM	63.8
1/26/2017	10:00 AM	64.0

Notes:
dBA=A-weighted decibel; L_{eq}=equivalent noise level

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Figure B-1. Monitoring Location 1a Noise Meter, #1

Figure B-2. Monitoring Location 1a Noise Meter, #2

Figure B-3. Monitoring Location 1a Noise Meter from Sidewalk, #1

Figure B-4. Monitoring Location 1a Noise Meter from Sidewalk, #2

Figure B-5. Monitoring Location 1a Noise Meter from Street

Figure B-6. Monitoring Location 1b Noise Meter, #1

Figure B-7. Monitoring Location 1b Noise Meter, #2

Figure B-8. Monitoring Location 1b Noise Meter, #3

Figure B-9. Monitoring Location 2
Noise Meter, #1

Figure B-10. Monitoring Location 2
Noise Meter, #2

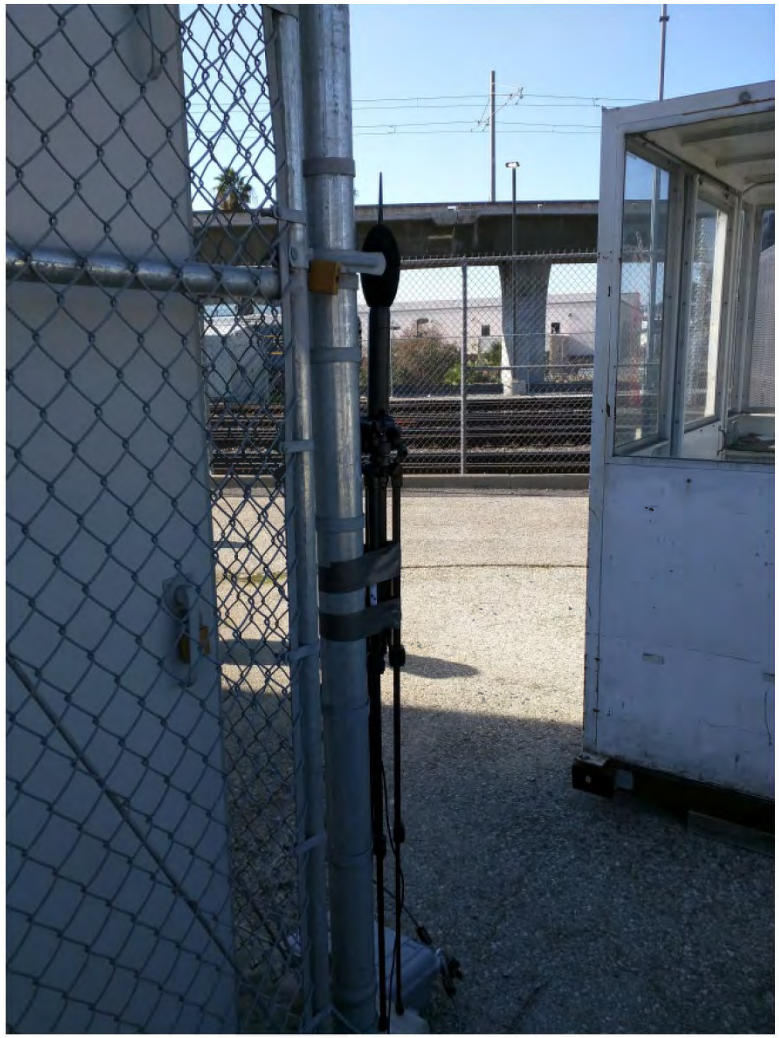

Figure B-11. Monitoring Location 2
Noise Meter, #3

Figure B-12. Monitoring Location 2
Noise Meter, #4

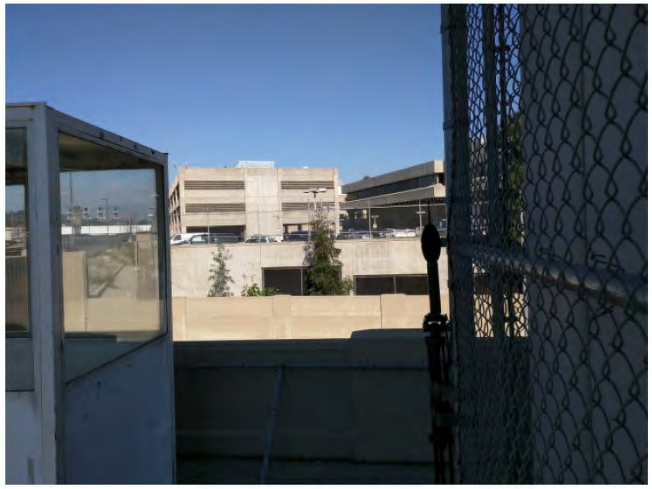

Figure B-15. Monitoring Location 3 Noise Meter, #3

Figure B-16. Monitoring Location 3 Noise Meter View of Tracks

Figure B-17. Monitoring Location 3 Vibration Measurement, #1

Figure B-18. Monitoring Location 3 Vibration Measurement, #2

Figure B-19. Monitoring Location 3 Vibration Meter Setup, #1

Figure B-20. Monitoring Location 3 Vibration Meter Setup, #2

Figure B-21. Monitoring Location 4 Noise Meter, #1

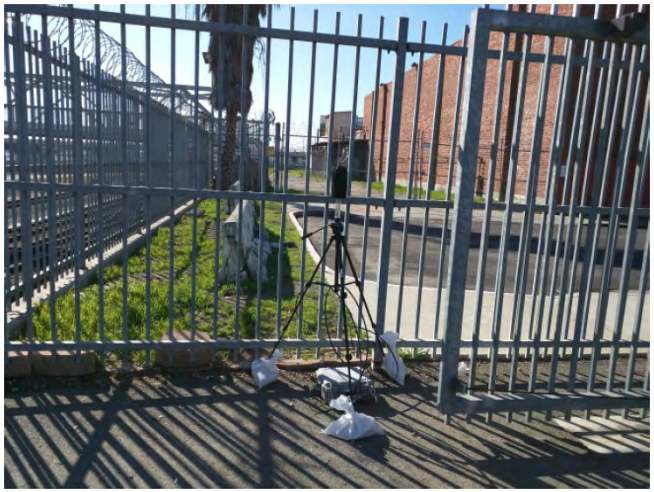

Figure B-22. Monitoring Location 4 Noise Meter, #2

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Appendix C:
Detailed Acoustic Modeling Results

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Table C-1. Operational Noise Levels – Proposed Project and Build Alternative (2026)

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
					Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative
William Mead Homes	WM1	3	1	66	50	67	72	0	2	5	None
	WM2	2	40	69	56	64	69	0	2	5	None
	WM3	2	40	69	54	64	69	0	2	5	None
	WM4	2	12	69	50	64	69	0	2	5	None
	WM5	2	11	69	53	64	69	0	2	5	None
	WM6	2	16	69	62	64	69	1	2	5	None
	WM7	2	38	69	54	64	69	0	2	5	None
	WM8	2	24	69	69	64	69	3	2	5	Moderate
	WM9	2	46	69	53	64	69	0	2	5	None
	WM10	2	20	69	54	64	69	0	2	5	None
	WM11	2	40	69	51	64	69	0	2	5	None
	WM12	2	40	69	51	64	69	0	2	5	None
	WM13	2	32	69	50	64	69	0	2	5	None
	WM14	2	40	69	54	64	69	0	2	5	None
	WM15	2	16	69	53	64	69	0	2	5	None
	PK1	3	1	66	64	67	72	2	2	5	None
Metro Senior Housing	MT1	2	123	60	50	58	63	0	2	5	None
Los Angeles County Men's Central Jail	CJ1	2	4000	73	54	66	71	0	2	5	None
Twin Towers Correctional Facility	TT1	2	9500	73	54	66	71	0	2	5	None
Mozaic Apartments East Building	MA12a	2	3	67	60	63	67	1	2	5	None
	MA13a	2	3	67	57	63	67	0	2	5	None
	MA14a	2	3	67	56	63	67	0	2	5	None
	MA15a	2	3	67	54	63	67	0	2	5	None
	MA1a	2	3	67	56	63	67	0	2	5	None
	MA2a	2	3	67	56	63	67	0	2	5	None
	MA3a	2	3	67	54	63	67	0	2	5	None

Table C-1. Operational Noise Levels – Proposed Project and Build Alternative (2026)

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
					Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative
	MA4a	2	3	67	52	63	67	0	2	5	None
	MA5a	2	3	67	51	63	67	0	2	5	None
	MA11a	2	3	67	48	63	67	0	2	5	None
	MA10a	2	3	67	48	63	67	0	2	5	None
	MA9a	2	3	67	49	63	67	0	2	5	None
	MA8a	2	3	67	49	63	67	0	2	5	None
	MA7a	2	3	67	50	63	67	0	2	5	None
	MA6a	2	3	67	51	63	67	0	2	5	None
	MA12b	2	3	67	61	63	67	1	2	5	None
	MA13b	2	3	67	58	63	67	1	2	5	None
	MA14b	2	3	67	57	63	67	0	2	5	None
	MA15b	2	3	67	55	63	67	0	2	5	None
	MA1b	2	3	67	59	63	67	1	2	5	None
	MA2b	2	3	67	57	63	67	0	2	5	None
	MA3b	2	3	67	54	63	67	0	2	5	None
	MA4b	2	3	67	53	63	67	0	2	5	None
	MA5b	2	3	67	52	63	67	0	2	5	None
	MA11b	2	3	67	48	63	67	0	2	5	None
	MA10b	2	3	67	48	63	67	0	2	5	None
	MA9b	2	3	67	49	63	67	0	2	5	None
	MA8b	2	3	67	49	63	67	0	2	5	None
	MA7b	2	3	67	50	63	67	0	2	5	None
	MA6b	2	3	67	51	63	67	0	2	5	None
	MA12c	2	3	67	62	63	67	1	2	5	None
	MA13c	2	3	67	59	63	67	1	2	5	None
	MA14c	2	3	67	58	63	67	1	2	5	None
	MA15c	2	3	67	56	63	67	0	2	5	None
	MA1c	2	3	67	60	63	67	1	2	5	None

Table C-1. Operational Noise Levels – Proposed Project and Build Alternative (2026)

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
					Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative
	MA2c	2	3	67	57	63	67	0	2	5	None
	MA3c	2	3	67	55	63	67	0	2	5	None
	MA4c	2	3	67	54	63	67	0	2	5	None
	MA5c	2	3	67	52	63	67	0	2	5	None
	MA11c	2	3	67	48	63	67	0	2	5	None
	MA10c	2	3	67	48	63	67	0	2	5	None
	MA9c	2	3	67	49	63	67	0	2	5	None
	MA8c	2	3	67	49	63	67	0	2	5	None
	MA7c	2	3	67	50	63	67	0	2	5	None
	MA6c	2	3	67	51	63	67	0	2	5	None
	MA12d	2	3	67	62	63	67	1	2	5	None
	MA13d	2	3	67	60	63	67	1	2	5	None
	MA14d	2	3	67	59	63	67	1	2	5	None
	MA15d	2	3	67	57	63	67	0	2	5	None
	MA1d	2	3	67	61	63	67	1	2	5	None
	MA2d	2	3	67	58	63	67	1	2	5	None
	MA3d	2	3	67	56	63	67	0	2	5	None
	MA4d	2	3	67	54	63	67	0	2	5	None
	MA5d	2	3	67	53	63	67	0	2	5	None
	MA11d	2	3	67	48	63	67	0	2	5	None
	MA10d	2	3	67	48	63	67	0	2	5	None
	MA9d	2	3	67	49	63	67	0	2	5	None
	MA8d	2	3	67	49	63	67	0	2	5	None
	MA7d	2	3	67	50	63	67	0	2	5	None
	MA6d	2	3	67	51	63	67	0	2	5	None
Mozaic Apartments West Building	MA16a	2	2	67	50	63	67	0	2	5	None
	MA17a	2	2	67	49	63	67	0	2	5	None
	MA18a	2	2	67	48	63	67	0	2	5	None

Table C-1. Operational Noise Levels – Proposed Project and Build Alternative (2026)

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
					Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative
	MA19a	2	2	67	48	63	67	0	2	5	None
	MA20a	2	2	67	45	63	67	0	2	5	None
	MA21a	2	2	67	45	63	67	0	2	5	None
	MA22a	2	2	67	45	63	67	0	2	5	None
	MA23a	2	2	67	46	63	67	0	2	5	None
	MA24a	2	2	67	46	63	67	0	2	5	None
	MA25a	2	2	67	49	63	67	0	2	5	None
	MA26a	2	2	67	46	63	67	0	2	5	None
	MA16b	2	2	67	50	63	67	0	2	5	None
	MA17b	2	2	67	49	63	67	0	2	5	None
	MA18b	2	2	67	49	63	67	0	2	5	None
	MA19b	2	2	67	48	63	67	0	2	5	None
	MA20b	2	2	67	45	63	67	0	2	5	None
	MA21b	2	2	67	45	63	67	0	2	5	None
	MA22b	2	2	67	45	63	67	0	2	5	None
	MA23b	2	2	67	46	63	67	0	2	5	None
	MA24b	2	2	67	46	63	67	0	2	5	None
	MA25b	2	2	67	49	63	67	0	2	5	None
	MA26b	2	2	67	46	63	67	0	2	5	None
	MA16c	2	2	67	51	63	67	0	2	5	None
	MA17c	2	2	67	50	63	67	0	2	5	None
	MA18c	2	2	67	49	63	67	0	2	5	None
	MA19c	2	2	67	49	63	67	0	2	5	None
	MA20c	2	2	67	45	63	67	0	2	5	None
	MA21c	2	2	67	45	63	67	0	2	5	None
	MA22c	2	2	67	45	63	67	0	2	5	None
	MA23c	2	2	67	46	63	67	0	2	5	None
	MA24c	2	2	67	46	63	67	0	2	5	None

Table C-1. Operational Noise Levels – Proposed Project and Build Alternative (2026)

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
					Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative
	MA25c	2	2	67	50	63	67	0	2	5	None
	MA26c	2	2	67	46	63	67	0	2	5	None
	MA16d	2	2	67	51	63	67	0	2	5	None
	MA17d	2	2	67	50	63	67	0	2	5	None
	MA18d	2	2	67	50	63	67	0	2	5	None
	MA19d	2	2	67	49	63	67	0	2	5	None
	MA20d	2	2	67	45	63	67	0	2	5	None
	MA21d	2	2	67	45	63	67	0	2	5	None
	MA22d	2	2	67	45	63	67	0	2	5	None
	MA23d	2	2	67	46	63	67	0	2	5	None
	MA24d	2	2	67	46	63	67	0	2	5	None
	MA25d	2	2	67	51	63	67	0	2	5	None
	MA26d	2	2	67	46	63	67	0	2	5	None
One Santa Fe Apartments	SF1	2	13	71	45	66	70	0	3	7	None
	SF2	2	13	71	54	66	70	0	3	7	None
	SF3	2	13	71	46	66	70	0	3	7	None
	SF4	2	13	71	55	66	70	0	3	7	None
	SF5	2	13	71	46	66	70	0	3	7	None
	SF6	2	13	71	56	66	70	0	3	7	None
	SF7	2	13	71	47	66	70	0	3	7	None
	SF8	2	13	71	58	66	70	0	3	7	None
	SF9	2	13	71	48	66	70	0	3	7	None
	SF10	2	13	71	60	66	70	0	3	7	None
	SF11	2	13	71	49	66	70	0	3	7	None
	SF12	2	13	71	61	66	70	0	3	7	None
	SF13	2	13	71	48	66	70	0	3	7	None
	SF14	2	13	71	48	66	70	0	3	7	None

Table C-1. Operational Noise Levels – Proposed Project and Build Alternative (2026)

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
					Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative	Moderate	Severe	Proposed Project or Build Alternative
	SF15	2	13	71	48	66	70	0	3	7	None
	SF16	2	13	71	47	66	70	0	3	7	None
	SF17	2	13	71	47	66	70	0	3	7	None
	SF18	2	13	71	47	66	70	0	3	7	None
	SF19	2	13	71	47	66	70	0	3	7	None
	SF20	2	13	71	47	66	70	0	3	7	None
	SF21	2	13	71	47	66	70	0	3	7	None
	SF22	2	13	71	48	66	70	0	3	7	None
	SF23	2	13	71	48	66	70	0	3	7	None
	SF24	2	13	71	60	66	70	0	3	7	None
	SF25	2	13	71	49	66	70	0	3	7	None
	SF26	2	13	71	61	66	70	0	3	7	None
	SF27	2	13	71	49	66	70	0	3	7	None
	SF28	2	13	71	61	66	70	0	3	7	None
	SF29	2	13	71	49	66	70	0	3	7	None
	SF30	2	13	71	61	66	70	0	3	7	None
	SF31	2	13	71	49	66	70	0	3	7	None
	SF32	2	13	71	49	66	70	0	3	7	None
	SF33	2	13	71	49	66	70	0	3	7	None
	SF34	2	13	71	49	66	70	0	3	7	None

Notes:
dBA=A-weighted decibel; FTA=Federal Transit Administration; ID=identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
William Mead Homes (Build Alternative Only)	WM1	3	1	66	63	67	66	2	2	5	None
	WM2	2	40	69	65	64	69	1	2	5	None
	WM3	2	40	69	64	64	69	1	2	5	Moderate
	WM4	2	12	69	59	64	69	0	2	5	None
	WM5	2	11	69	61	64	69	1	2	5	None
	WM6	2	16	69	70	64	69	4	2	5	Severe
	WM7	2	38	69	61	64	69	1	2	5	None
	WM8	2	24	69	75	64	69	7	2	5	Severe
	WM9	2	46	69	60	64	69	1	2	5	None
	WM10	2	20	69	61	64	69	1	2	5	None
	WM11	2	40	69	60	64	69	1	2	5	None
	WM12	2	40	69	60	64	69	1	2	5	None
	WM13	2	32	69	59	64	69	0	2	5	None
	WM14	2	40	69	61	64	69	1	2	5	None
	WM15	2	16	69	62	64	69	1	2	5	None
	PK1	3	1	66	73	67	72	8	2	5	Severe
Metro Senior Housing	MT1	2	123	60	59	58	60	2	2	5	Moderate
Los Angeles Central Jail	CJ1	2	4000	73	62	66	71	0	2	5	None
Twin Towers Correctional Facility	TT1	2	9500	73	58	66	71	0	2	5	None
Mozaic Apartments East Building	MA12a	2	3	67	64	63	67	2	2	5	Moderate
	MA13a	2	3	67	62	63	67	1	2	5	None
	MA14a	2	3	67	60	63	67	1	2	5	None
	MA15a	2	3	67	58	63	67	1	2	5	None
	MA1a	2	3	67	60	63	67	1	2	5	None
	MA2a	2	3	67	60	63	67	1	2	5	None
	MA3a	2	3	67	58	63	67	1	2	5	None

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA4a	2	3	67	57	63	67	0	2	5	None
	MA5a	2	3	67	55	63	67	0	2	5	None
	MA11a	2	3	67	53	63	67	0	2	5	None
	MA10a	2	3	67	53	63	67	0	2	5	None
	MA9a	2	3	67	53	63	67	0	2	5	None
	MA8a	2	3	67	54	63	67	0	2	5	None
	MA7a	2	3	67	54	63	67	0	2	5	None
	MA6a	2	3	67	55	63	67	0	2	5	None
	MA12b	2	3	67	65	63	67	2	2	5	Moderate
	MA13b	2	3	67	62	63	67	1	2	5	None
	MA14b	2	3	67	61	63	67	1	2	5	None
	MA15b	2	3	67	59	63	67	1	2	5	None
	MA1b	2	3	67	64	63	67	2	2	5	Moderate
	MA2b	2	3	67	61	63	67	1	2	5	None
	MA3b	2	3	67	59	63	67	1	2	5	None
	MA4b	2	3	67	57	63	67	0	2	5	None
	MA5b	2	3	67	56	63	67	0	2	5	None
	MA11b	2	3	67	53	63	67	0	2	5	None
	MA10b	2	3	67	53	63	67	0	2	5	None
	MA9b	2	3	67	53	63	67	0	2	5	None
	MA8b	2	3	67	54	63	67	0	2	5	None
	MA7b	2	3	67	54	63	67	0	2	5	None
	MA6b	2	3	67	55	63	67	0	2	5	None
	MA12c	2	3	67	66	63	67	2	2	5	Moderate
	MA13c	2	3	67	63	63	67	2	2	5	Moderate
	MA14c	2	3	67	62	63	67	1	2	5	None

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA15c	2	3	67	60	63	67	1	2	5	None
	MA1c	2	3	67	64	63	67	2	2	5	Moderate
	MA2c	2	3	67	62	63	67	1	2	5	None
	MA3c	2	3	67	59	63	67	1	2	5	None
	MA4c	2	3	67	58	63	67	1	2	5	None
	MA5c	2	3	67	57	63	67	0	2	5	None
	MA11c	2	3	67	53	63	67	0	2	5	None
	MA10c	2	3	67	53	63	67	0	2	5	None
	MA9c	2	3	67	53	63	67	0	2	5	None
	MA8c	2	3	67	54	63	67	0	2	5	None
	MA7c	2	3	67	54	63	67	0	2	5	None
	MA6c	2	3	67	55	63	67	0	2	5	None
	MA12d	2	3	67	66	63	67	3	2	5	Moderate
	MA13d	2	3	67	64	63	67	2	2	5	Moderate
	MA14d	2	3	67	63	63	67	1	2	5	Moderate
	MA15d	2	3	67	61	63	67	1	2	5	None
	MA1d	2	3	67	65	63	67	2	2	5	Moderate
	MA2d	2	3	67	63	63	67	1	2	5	Moderate
	MA3d	2	3	67	60	63	67	1	2	5	None
	MA4d	2	3	67	59	63	67	1	2	5	None
	MA5d	2	3	67	57	63	67	0	2	5	None
	MA11d	2	3	67	53	63	67	0	2	5	None
	MA10d	2	3	67	53	63	67	0	2	5	None
	MA9d	2	3	67	53	63	67	0	2	5	None
	MA8d	2	3	67	54	63	67	0	2	5	None
	MA7d	2	3	67	54	63	67	0	2	5	None

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA6d	2	3	67	55	63	67	0	2	5	None
Mozaic Apartments West Building	MA16a	2	2	67	54	63	67	0	2	5	None
	MA17a	2	2	67	53	63	67	0	2	5	None
	MA18a	2	2	67	53	63	67	0	2	5	None
	MA19a	2	2	67	53	63	67	0	2	5	None
	MA20a	2	2	67	50	63	67	0	2	5	None
	MA21a	2	2	67	50	63	67	0	2	5	None
	MA22a	2	2	67	50	63	67	0	2	5	None
	MA23a	2	2	67	50	63	67	0	2	5	None
	MA24a	2	2	67	51	63	67	0	2	5	None
	MA25a	2	2	67	53	63	67	0	2	5	None
	MA26a	2	2	67	51	63	67	0	2	5	None
	MA16b	2	2	67	54	63	67	0	2	5	None
	MA17b	2	2	67	54	63	67	0	2	5	None
	MA18b	2	2	67	53	63	67	0	2	5	None
	MA19b	2	2	67	53	63	67	0	2	5	None
	MA20b	2	2	67	50	63	67	0	2	5	None
	MA21b	2	2	67	50	63	67	0	2	5	None
	MA22b	2	2	67	50	63	67	0	2	5	None
	MA23b	2	2	67	50	63	67	0	2	5	None
	MA24b	2	2	67	51	63	67	0	2	5	None
	MA25b	2	2	67	53	63	67	0	2	5	None
	MA26b	2	2	67	51	63	67	0	2	5	None
	MA16c	2	2	67	55	63	67	0	2	5	None
	MA17c	2	2	67	54	63	67	0	2	5	None
	MA18c	2	2	67	54	63	67	0	2	5	None

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA19c	2	2	67	53	63	67	0	2	5	None
	MA20c	2	2	67	50	63	67	0	2	5	None
	MA21c	2	2	67	50	63	67	0	2	5	None
	MA22c	2	2	67	50	63	67	0	2	5	None
	MA23c	2	2	67	50	63	67	0	2	5	None
	MA24c	2	2	67	51	63	67	0	2	5	None
	MA25c	2	2	67	54	63	67	0	2	5	None
	MA26c	2	2	67	51	63	67	0	2	5	None
	MA16d	2	2	67	55	63	67	0	2	5	None
	MA17d	2	2	67	55	63	67	0	2	5	None
	MA18d	2	2	67	54	63	67	0	2	5	None
	MA19d	2	2	67	54	63	67	0	2	5	None
	MA20d	2	2	67	50	63	67	0	2	5	None
	MA21d	2	2	67	50	63	67	0	2	5	None
	MA22d	2	2	67	50	63	67	0	2	5	None
	MA23d	2	2	67	50	63	67	0	2	5	None
	MA24d	2	2	67	51	63	67	0	2	5	None
	MA25d	2	2	67	55	63	67	0	2	5	None
	MA26d	2	2	67	51	63	67	0	2	5	None
One Santa Fe Apartments	SF1	2	13	71	47	66	70	0	3	7	None
	SF2	2	13	71	56	66	70	0	3	7	None
	SF3	2	13	71	48	66	70	0	3	7	None
	SF4	2	13	71	56	66	70	0	3	7	None
	SF5	2	13	71	50	66	70	0	3	7	None
	SF6	2	13	71	58	66	70	0	3	7	None
	SF7	2	13	71	49	66	70	0	3	7	None

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	SF8	2	13	71	60	66	70	0	3	7	None
	SF9	2	13	71	50	66	70	0	3	7	None
	SF10	2	13	71	61	66	70	0	3	7	None
	SF11	2	13	71	51	66	70	0	3	7	None
	SF12	2	13	71	63	66	70	1	3	7	None
	SF13	2	13	71	50	66	70	0	3	7	None
	SF14	2	13	71	50	66	70	0	3	7	None
	SF15	2	13	71	50	66	70	0	3	7	None
	SF16	2	13	71	50	66	70	0	3	7	None
	SF17	2	13	71	50	66	70	0	3	7	None
	SF18	2	13	71	50	66	70	0	3	7	None
	SF19	2	13	71	49	66	70	0	3	7	None
	SF20	2	13	71	49	66	70	0	3	7	None
	SF21	2	13	71	49	66	70	0	3	7	None
	SF22	2	13	71	50	66	70	0	3	7	None
	SF23	2	13	71	50	66	70	0	3	7	None
	SF24	2	13	71	62	66	70	0	3	7	None
	SF25	2	13	71	51	66	70	0	3	7	None
	SF26	2	13	71	62	66	70	1	3	7	None
	SF27	2	13	71	51	66	70	0	3	7	None
	SF28	2	13	71	62	66	70	1	3	7	None
	SF29	2	13	71	51	66	70	0	3	7	None
	SF30	2	13	71	62	66	70	1	3	7	None
	SF31	2	13	71	51	66	70	0	3	7	None
	SF32	2	13	71	51	66	70	0	3	7	None
	SF33	2	13	71	51	66	70	0	3	7	None

Table C-2. Proposed Project – 2031 Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Project Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Cumulative Increase (dBA L_{dn} or L_{eq})	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	SF34	2	13	71	51	66	70	0	3	7	None

Notes:
dBA=A-weighted decibel; FTA=Federal Transit Administration; ID=Identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

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Table C-3. Build Alternative – 2031 Interim Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA Ldn or Leq)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
William Mead Homes (Build Alternative Only)	WM1	3	1	66	63	67	66	2	2	5	None
	WM2	2	40	69	65	64	69	1	2	5	None
	WM3	2	40	69	64	64	69	1	2	5	Moderate
	WM4	2	12	69	59	64	69	0	2	5	None
	WM5	2	11	69	61	64	69	1	2	5	None
	WM6	2	16	69	71	64	69	4	2	5	Severe
	WM7	2	38	69	61	64	69	1	2	5	None
	WM8	2	24	69	75	64	69	7	2	5	Severe
	WM9	2	46	69	61	64	69	1	2	5	None
	WM10	2	20	69	61	64	69	1	2	5	None
	WM11	2	40	69	60	64	69	1	2	5	None
	WM12	2	40	69	60	64	69	1	2	5	None
	WM13	2	32	69	59	64	69	0	2	5	None
	WM14	2	40	69	61	64	69	1	2	5	None
	WM15	2	16	69	62	64	69	1	2	5	None
	PK1	3	1	66	73	67	72	8	2	5	Severe
Metro Senior Housing	MT1	2	123	60	59	58	60	2	2	5	Moderate
Los Angeles Central Jail	CJ1	2	4000	73	62	66	71	0	2	5	None
Twin Towers Correctional Facility	TT1	2	9500	73	58	66	71	0	2	5	None
Mozaic Apartments East Building	MA12a	2	3	67	64	63	67	2	2	5	Moderate
	MA13a	2	3	67	62	63	67	1	2	5	None
	MA14a	2	3	67	60	63	67	1	2	5	None
	MA15a	2	3	67	58	63	67	1	2	5	None
	MA1a	2	3	67	60	63	67	1	2	5	None
	MA2a	2	3	67	60	63	67	1	2	5	None
	MA3a	2	3	67	58	63	67	1	2	5	None
	MA4a	2	3	67	57	63	67	0	2	5	None
	MA5a	2	3	67	55	63	67	0	2	5	None
	MA11a	2	3	67	53	63	67	0	2	5	None
	MA10a	2	3	67	53	63	67	0	2	5	None

Table C-3. Build Alternative – 2031 Interim Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA Ldn or Leq)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA9a	2	3	67	53	63	67	0	2	5	None
	MA8a	2	3	67	54	63	67	0	2	5	None
	MA7a	2	3	67	54	63	67	0	2	5	None
	MA6a	2	3	67	55	63	67	0	2	5	None
	MA12b	2	3	67	65	63	67	2	2	5	Moderate
	MA13b	2	3	67	63	63	67	1	2	5	Moderate
	MA14b	2	3	67	61	63	67	1	2	5	None
	MA15b	2	3	67	59	63	67	1	2	5	None
	MA1b	2	3	67	64	63	67	2	2	5	Moderate
	MA2b	2	3	67	61	63	67	1	2	5	None
	MA3b	2	3	67	59	63	67	1	2	5	None
	MA4b	2	3	67	57	63	67	0	2	5	None
	MA5b	2	3	67	56	63	67	0	2	5	None
	MA11b	2	3	67	53	63	67	0	2	5	None
	MA10b	2	3	67	53	63	67	0	2	5	None
	MA9b	2	3	67	53	63	67	0	2	5	None
	MA8b	2	3	67	54	63	67	0	2	5	None
	MA7b	2	3	67	54	63	67	0	2	5	None
	MA6b	2	3	67	55	63	67	0	2	5	None
	MA12c	2	3	67	66	63	67	2	2	5	Moderate
	MA13c	2	3	67	63	63	67	2	2	5	Moderate
	MA14c	2	3	67	62	63	67	1	2	5	None
	MA15c	2	3	67	60	63	67	1	2	5	None
	MA1c	2	3	67	65	63	67	2	2	5	Moderate
	MA2c	2	3	67	62	63	67	1	2	5	None
	MA3c	2	3	67	59	63	67	1	2	5	None
	MA4c	2	3	67	58	63	67	1	2	5	None
	MA5c	2	3	67	57	63	67	0	2	5	None
	MA11c	2	3	67	53	63	67	0	2	5	None
	MA10c	2	3	67	53	63	67	0	2	5	None
	MA9c	2	3	67	53	63	67	0	2	5	None

Table C-3. Build Alternative – 2031 Interim Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA Ldn or Leq)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA8c	2	3	67	54	63	67	0	2	5	None
	MA7c	2	3	67	54	63	67	0	2	5	None
	MA6c	2	3	67	55	63	67	0	2	5	None
	MA12d	2	3	67	66	63	67	3	2	5	Moderate
	MA13d	2	3	67	64	63	67	2	2	5	Moderate
	MA14d	2	3	67	63	63	67	1	2	5	Moderate
	MA15d	2	3	67	61	63	67	1	2	5	None
	MA1d	2	3	67	65	63	67	2	2	5	Moderate
	MA2d	2	3	67	63	63	67	1	2	5	Moderate
	MA3d	2	3	67	60	63	67	1	2	5	None
	MA4d	2	3	67	59	63	67	1	2	5	None
	MA5d	2	3	67	57	63	67	0	2	5	None
	MA11d	2	3	67	53	63	67	0	2	5	None
	MA10d	2	3	67	53	63	67	0	2	5	None
	MA9d	2	3	67	53	63	67	0	2	5	None
	MA8d	2	3	67	54	63	67	0	2	5	None
	MA7d	2	3	67	54	63	67	0	2	5	None
	MA6d	2	3	67	55	63	67	0	2	5	None
Mozaic Apartments West Building	MA16a	2	2	67	54	63	67	0	2	5	None
	MA17a	2	2	67	53	63	67	0	2	5	None
	MA18a	2	2	67	53	63	67	0	2	5	None
	MA19a	2	2	67	53	63	67	0	2	5	None
	MA20a	2	2	67	50	63	67	0	2	5	None
	MA21a	2	2	67	50	63	67	0	2	5	None
	MA22a	2	2	67	50	63	67	0	2	5	None
	MA23a	2	2	67	50	63	67	0	2	5	None
	MA24a	2	2	67	51	63	67	0	2	5	None
	MA25a	2	2	67	53	63	67	0	2	5	None
	MA26a	2	2	67	51	63	67	0	2	5	None
	MA16b	2	2	67	54	63	67	0	2	5	None
	MA17b	2	2	67	54	63	67	0	2	5	None

Table C-3. Build Alternative – 2031 Interim Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA Ldn or Leq)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	MA18b	2	2	67	53	63	67	0	2	5	None
	MA19b	2	2	67	53	63	67	0	2	5	None
	MA20b	2	2	67	50	63	67	0	2	5	None
	MA21b	2	2	67	50	63	67	0	2	5	None
	MA22b	2	2	67	50	63	67	0	2	5	None
	MA23b	2	2	67	50	63	67	0	2	5	None
	MA24b	2	2	67	51	63	67	0	2	5	None
	MA25b	2	2	67	53	63	67	0	2	5	None
	MA26b	2	2	67	51	63	67	0	2	5	None
	MA16c	2	2	67	55	63	67	0	2	5	None
	MA17c	2	2	67	54	63	67	0	2	5	None
	MA18c	2	2	67	54	63	67	0	2	5	None
	MA19c	2	2	67	53	63	67	0	2	5	None
	MA20c	2	2	67	50	63	67	0	2	5	None
	MA21c	2	2	67	50	63	67	0	2	5	None
	MA22c	2	2	67	50	63	67	0	2	5	None
	MA23c	2	2	67	50	63	67	0	2	5	None
	MA24c	2	2	67	51	63	67	0	2	5	None
	MA25c	2	2	67	54	63	67	0	2	5	None
	MA26c	2	2	67	51	63	67	0	2	5	None
	MA16d	2	2	67	56	63	67	0	2	5	None
	MA17d	2	2	67	55	63	67	0	2	5	None
	MA18d	2	2	67	54	63	67	0	2	5	None
	MA19d	2	2	67	54	63	67	0	2	5	None
	MA20d	2	2	67	50	63	67	0	2	5	None
	MA21d	2	2	67	50	63	67	0	2	5	None
	MA22d	2	2	67	50	63	67	0	2	5	None
	MA23d	2	2	67	50	63	67	0	2	5	None
	MA24d	2	2	67	51	63	67	0	2	5	None
	MA25d	2	2	67	56	63	67	0	2	5	None
	MA26d	2	2	67	51	63	67	0	2	5	None

Table C-3. Build Alternative – 2031 Interim Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA Ldn or Leq)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
One Santa Fe Apartments	SF1	2	13	71	47	66	70	0	3	7	None
	SF2	2	13	71	56	66	70	0	3	7	None
	SF3	2	13	71	48	66	70	0	3	7	None
	SF4	2	13	71	56	66	70	0	3	7	None
	SF5	2	13	71	50	66	70	0	3	7	None
	SF6	2	13	71	58	66	70	0	3	7	None
	SF7	2	13	71	49	66	70	0	3	7	None
	SF8	2	13	71	60	66	70	0	3	7	None
	SF9	2	13	71	50	66	70	0	3	7	None
	SF10	2	13	71	61	66	70	0	3	7	None
	SF11	2	13	71	51	66	70	0	3	7	None
	SF12	2	13	71	63	66	70	1	3	7	None
	SF13	2	13	71	50	66	70	0	3	7	None
	SF14	2	13	71	50	66	70	0	3	7	None
	SF15	2	13	71	50	66	70	0	3	7	None
	SF16	2	13	71	50	66	70	0	3	7	None
	SF17	2	13	71	50	66	70	0	3	7	None
	SF18	2	13	71	50	66	70	0	3	7	None
	SF19	2	13	71	49	66	70	0	3	7	None
	SF20	2	13	71	49	66	70	0	3	7	None
	SF21	2	13	71	49	66	70	0	3	7	None
	SF22	2	13	71	50	66	70	0	3	7	None
	SF23	2	13	71	50	66	70	0	3	7	None
	SF24	2	13	71	62	66	70	0	3	7	None
	SF25	2	13	71	51	66	70	0	3	7	None
	SF26	2	13	71	62	66	70	1	3	7	None
	SF27	2	13	71	51	66	70	0	3	7	None
	SF28	2	13	71	62	66	70	1	3	7	None
	SF29	2	13	71	51	66	70	0	3	7	None
	SF30	2	13	71	62	66	70	1	3	7	None
	SF31	2	13	71	51	66	70	0	3	7	None

Table C-3. Build Alternative – 2031 Interim Operational Noise Levels

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA Ldn or Leq)	Project Noise Exposure (dBA Ldn or Leq)	Absolute Impact Thresholds		Cumulative Increase (dBA Ldn or Leq)	Increase in Cumulative Noise Level Thresholds		FTA Level of Noise Impact
	SF32	2	13	71	51	66	70	0	3	7	None
	SF33	2	13	71	51	66	70	0	3	7	None
	SF34	2	13	71	51	66	70	0	3	7	None

Notes:
dBA=A-weighted decibel; FTA=Federal Transit Administration; ID=Identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
William Mead Homes	WM1	3	1	66	67	72	2	5	56	56	56	56	0	0	0	0	0	0	None	None	None	None
	WM2	2	40	69	64	69	2	5	60	60	59	59	1	1	0	0	0	0	None	None	None	None
	WM3	2	40	69	64	69	2	5	57	57	57	57	0	0	0	0	0	0	None	None	None	None
	WM4	2	12	69	64	69	2	5	54	54	53	53	1	1	0	0	0	0	None	None	None	None
	WM5	2	11	69	64	69	2	5	58	58	56	56	2	2	0	0	0	0	None	None	None	None
	WM6	2	16	69	64	69	2	5	68	68	61	61	7	7	2	2	1	1	Moderate	Moderate	None	None
	WM7	2	38	69	64	69	2	5	59	59	59	59	0	0	0	0	0	0	None	None	None	None
	WM8	2	24	69	64	69	2	5	75	75	63	67	12	8	7	7	1	2	Severe	Severe	None	Moderate
	WM9	2	46	69	64	69	2	5	59	59	58	58	1	1	0	0	0	0	None	None	None	None
	WM10	2	20	69	64	69	2	5	59	59	59	59	0	1	0	0	0	0	None	None	None	None
	WM11	2	40	69	64	69	2	5	55	55	55	55	0	0	0	0	0	0	None	None	None	None
	WM12	2	40	69	64	69	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	WM13	2	32	69	64	69	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	WM14	2	40	69	64	69	2	5	60	60	59	59	1	1	0	0	0	0	None	None	None	None
	WM15	2	16	69	64	69	2	5	56	56	56	56	0	0	0	0	0	0	None	None	None	None
	PK1	3	1	66	67	72	2	5	73	73	65	64	8	9	8	8	3	2	Severe	Severe	Moderate	None
Metro Senior Housing	MT1	2	123	60	58	63	2	5	54	54	54	54	0	0	1	1	1	1	None	None	None	None
Los Angeles Central Jail	CJ1	2	4000	73	66	71	2	5	62	63	62	63	0	0	0	0	0	0	None	None	None	None
Twin Towers Correctional Facility	TT1	2	9500	73	66	71	2	5	59	59	59	59	0	0	0	0	0	0	None	None	None	None
Mozaic Apartments East Building	MA12a	2	3	67	63	67	2	5	65	64	65	64	0	0	2	2	3	2	Moderate	Moderate	Moderate	Moderate
	MA13a	2	3	67	63	67	2	5	63	61	63	61	0	0	1	1	2	1	None	None	Moderate	None
	MA14a	2	3	67	63	67	2	5	61	60	61	60	0	0	1	1	1	1	None	None	None	None

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
	MA15a	2	3	67	63	67	2	5	59	58	59	58	0	0	1	1	1	1	None	None	None	None
	MA1a	2	3	67	63	67	2	5	61	60	61	60	0	0	1	1	1	1	None	None	None	None
	MA2a	2	3	67	63	67	2	5	61	60	61	60	0	0	1	1	1	1	None	None	None	None
	MA3a	2	3	67	63	67	2	5	59	59	59	59	0	0	1	1	1	1	None	None	None	None
	MA4a	2	3	67	63	67	2	5	57	59	57	59	0	0	0	1	1	0	None	None	None	None
		2	3	67	63	67	2	5	56	58	56	58	0	0	0	0	0	0	None	None	None	None
	MA11a	2	3	67	63	67	2	5	53	52	53	52	0	0	0	0	0	0	None	None	None	None
	MA10a	2	3	67	63	67	2	5	53	53	53	53	0	0	0	0	0	0	None	None	None	None
	MA9a	2	3	67	63	67	2	5	54	53	54	53	0	0	0	0	0	0	None	None	None	None
	MA8a	2	3	67	63	67	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	MA7a	2	3	67	63	67	2	5	55	54	55	54	0	0	0	0	0	0	None	None	None	None
	MA6a	2	3	67	63	67	2	5	55	55	55	55	0	0	0	0	0	0	None	None	None	None
	MA12b	2	3	67	63	67	2	5	66	67	66	67	0	0	2	3	3	2	Moderate	Moderate	Moderate	Moderate
	MA13b	2	3	67	63	67	2	5	64	62	64	62	0	0	2	1	2	2	Moderate	None	Moderate	Moderate
	MA14b	2	3	67	63	67	2	5	62	61	62	61	0	0	1	1	2	1	None	None	None	None
	MA15b	2	3	67	63	67	2	5	60	59	60	59	0	0	1	1	1	1	None	None	None	None
	MA1b	2	3	67	63	67	2	5	64	63	64	63	0	0	2	2	2	2	Moderate	None	Moderate	Moderate
	MA2b	2	3	67	63	67	2	5	62	62	62	62	0	0	1	1	1	1	None	None	None	None
	MA3b	2	3	67	63	67	2	5	59	61	59	61	0	0	1	1	1	1	None	None	None	None
	MA4b	2	3	67	63	67	2	5	58	60	58	60	0	0	0	1	1	0	None	None	None	None
	MA5b	2	3	67	63	67	2	5	56	58	56	58	0	0	0	1	0	0	None	None	None	None
	MA11b	2	3	67	63	67	2	5	53	52	53	52	0	0	0	0	0	0	None	None	None	None
	MA10b	2	3	67	63	67	2	5	53	53	53	53	0	0	0	0	0	0	None	None	None	None
	MA9b	2	3	67	63	67	2	5	54	53	54	53	0	0	0	0	0	0	None	None	None	None

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
	MA8b	2	3	67	63	67	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	MA7b	2	3	67	63	67	2	5	55	54	55	54	0	0	0	0	0	0	None	None	None	None
	MA6b	2	3	67	63	67	2	5	56	55	56	55	0	0	0	0	0	0	None	None	None	None
	MA12c	2	3	67	63	67	2	5	67	67	67	67	0	0	3	3	4	3	Moderate	Moderate	Severe	Moderate
	MA13c	2	3	67	63	67	2	5	64	63	64	63	0	0	2	1	2	2	Moderate	None	Moderate	Moderate
	MA14c	2	3	67	63	67	2	5	63	62	63	62	0	0	1	1	2	1	None	None	Moderate	None
	MA15c	2	3	67	63	67	2	5	61	60	61	60	0	0	1	1	1	1	None	None	None	None
	MA1c	2	3	67	63	67	2	5	64	66	64	66	0	0	2	2	2	2	Moderate	Moderate	Moderate	Moderate
	MA2c	2	3	67	63	67	2	5	62	64	62	64	0	0	1	2	2	1	None	Moderate	Moderate	None
	MA3c	2	3	67	63	67	2	5	60	62	60	62	0	0	1	1	1	1	None	None	None	None
	MA4c	2	3	67	63	67	2	5	58	60	58	60	0	0	1	1	1	1	None	None	None	None
	MA5c	2	3	67	63	67	2	5	57	59	57	59	0	0	0	1	1	0	None	None	None	None
	MA11c	2	3	67	63	67	2	5	53	52	53	52	0	0	0	0	0	0	None	None	None	None
	MA10c	2	3	67	63	67	2	5	53	53	53	53	0	0	0	0	0	0	None	None	None	None
	MA9c	2	3	67	63	67	2	5	54	53	54	53	0	0	0	0	0	0	None	None	None	None
	MA8c	2	3	67	63	67	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	MA7c	2	3	67	63	67	2	5	55	54	55	54	0	0	0	0	0	0	None	None	None	None
	MA6c	2	3	67	63	67	2	5	56	55	56	55	0	0	0	0	0	0	None	None	None	None
	MA12d	2	3	67	63	67	2	5	67	68	67	68	0	0	3	3	4	3	Moderate	Severe	Severe	Moderate
	MA13d	2	3	67	63	67	2	5	65	64	65	64	0	0	2	2	3	2	Moderate	Moderate	Moderate	Moderate
	MA14d	2	3	67	63	67	2	5	64	63	64	63	0	0	2	1	2	2	Moderate	None	Moderate	Moderate
	MA15d	2	3	67	63	67	2	5	62	62	62	62	0	0	1	1	2	1	None	None	Moderate	None
	MA1d	2	3	67	63	67	2	5	65	68	65	68	0	0	2	3	3	2	Moderate	Severe	Moderate	Moderate
	MA2d	2	3	67	63	67	2	5	63	65	63	65	0	0	1	2	2	1	None	Moderate	Moderate	None

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
	MA3d	2	3	67	63	67	2	5	61	63	61	63	0	0	1	1	1	1	None	None	None	None
	MA4d	2	3	67	63	67	2	5	59	62	59	62	0	0	1	1	1	1	None	None	None	None
	MA5d	2	3	67	63	67	2	5	58	60	58	60	0	0	0	1	1	0	None	None	None	None
	MA11d	2	3	67	63	67	2	5	53	52	53	52	0	0	0	0	0	0	None	None	None	None
	MA10d	2	3	67	63	67	2	5	53	53	53	53	0	0	0	0	0	0	None	None	None	None
	MA9d	2	3	67	63	67	2	5	54	53	54	53	0	0	0	0	0	0	None	None	None	None
	MA8d	2	3	67	63	67	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	MA7d	2	3	67	63	67	2	5	55	54	55	54	0	0	0	0	0	0	None	None	None	None
	MA6d	2	3	67	63	67	2	5	56	55	56	55	0	0	0	0	0	0	None	None	None	None
Mozaic Apartments West Building	MA16a	2	2	67	63	67	2	5	54	56	54	56	0	0	0	0	0	0	None	None	None	None
	MA17a	2	2	67	63	67	2	5	53	55	53	55	0	0	0	0	0	0	None	None	None	None
	MA18a	2	2	67	63	67	2	5	53	55	53	55	0	0	0	0	0	0	None	None	None	None
	MA19a	2	2	67	63	67	2	5	52	55	52	55	0	0	0	0	0	0	None	None	None	None
	MA20a	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA21a	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA22a	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA23a	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA24a	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA25a	2	2	67	63	67	2	5	53	53	53	53	0	0	0	0	0	0	None	None	None	None
	MA26a	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA16b	2	2	67	63	67	2	5	54	57	54	57	0	0	0	0	0	0	None	None	None	None
	MA17b	2	2	67	63	67	2	5	54	56	54	56	0	0	0	0	0	0	None	None	None	None
	MA18b	2	2	67	63	67	2	5	53	55	53	55	0	0	0	0	0	0	None	None	None	None
	MA19b	2	2	67	63	67	2	5	53	55	53	55	0	0	0	0	0	0	None	None	None	None

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
	MA20b	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA21b	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA22b	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA23b	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA24b	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA25b	2	2	67	63	67	2	5	54	54	54	54	0	0	0	0	0	0	None	None	None	None
	MA26b	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA16c	2	2	67	63	67	2	5	55	57	55	57	0	0	0	0	0	0	None	None	None	None
	MA17c	2	2	67	63	67	2	5	54	56	54	56	0	0	0	0	0	0	None	None	None	None
	MA18c	2	2	67	63	67	2	5	54	56	54	56	0	0	0	0	0	0	None	None	None	None
	MA19c	2	2	67	63	67	2	5	53	55	53	55	0	0	0	0	0	0	None	None	None	None
	MA20c	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA21c	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA22c	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA23c	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA24c	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA25c	2	2	67	63	67	2	5	55	55	55	55	0	0	0	0	0	0	None	None	None	None
	MA26c	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA16d	2	2	67	63	67	2	5	56	58	56	58	0	0	0	0	0	0	None	None	None	None
	MA17d	2	2	67	63	67	2	5	55	57	55	57	0	0	0	0	0	0	None	None	None	None
	MA18d	2	2	67	63	67	2	5	54	56	54	56	0	0	0	0	0	0	None	None	None	None
	MA19d	2	2	67	63	67	2	5	54	56	54	56	0	0	0	0	0	0	None	None	None	None
	MA20d	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	MA21d	2	2	67	63	67	2	5	50	49	50	49	0	0	0	0	0	0	None	None	None	None

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
	MA22d	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA23d	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA24d	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	MA25d	2	2	67	63	67	2	5	56	56	56	56	0	0	0	0	0	0	None	None	None	None
	MA26d	2	2	67	63	67	2	5	50	50	50	50	0	0	0	0	0	0	None	None	None	None
One Santa Fe Apartments	SF1	2	13	71	66	70	3	7	48	47	48	47	0	0	0	0	0	0	None	None	None	None
	SF2	2	13	71	66	70	3	7	57	56	57	56	0	0	0	0	0	0	None	None	None	None
	SF3	2	13	71	66	70	3	7	48	48	48	48	0	0	0	0	0	0	None	None	None	None
	SF4	2	13	71	66	70	3	7	58	57	58	57	0	0	0	0	0	0	None	None	None	None
	SF5	2	13	71	66	70	3	7	49	48	49	48	0	0	0	0	0	0	None	None	None	None
	SF6	2	13	71	66	70	3	7	59	58	59	58	0	0	0	0	0	0	None	None	None	None
	SF7	2	13	71	66	70	3	7	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	SF8	2	13	71	66	70	3	7	61	60	61	60	0	0	0	0	0	0	None	None	None	None
	SF9	2	13	71	66	70	3	7	51	50	51	50	0	0	0	0	0	0	None	None	None	None
	SF10	2	13	71	66	70	3	7	62	62	62	62	0	0	1	0	0	1	None	None	None	None
	SF11	2	13	71	66	70	3	7	52	51	52	51	0	0	0	0	0	0	None	None	None	None
	SF12	2	13	71	66	70	3	7	64	63	64	63	0	0	1	1	1	1	None	None	None	None
	SF13	2	13	71	66	70	3	7	51	51	51	51	0	0	0	0	0	0	None	None	None	None
	SF14	2	13	71	66	70	3	7	51	50	51	50	0	0	0	0	0	0	None	None	None	None
	SF15	2	13	71	66	70	3	7	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	SF16	2	13	71	66	70	3	7	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	SF17	2	13	71	66	70	3	7	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	SF18	2	13	71	66	70	3	7	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	SF19	2	13	71	66	70	3	7	49	49	49	49	0	0	0	0	0	0	None	None	None	None

Table C-4. 2040 Operational Noise Levels by Alternative

Noise-Sensitive Area Description	Receptor ID	Land Use Category	Number of Noise-Sensitive Sites Represented	Existing Noise Exposure (dBA L_{dn} or L_{eq})	Absolute Impact Thresholds		Increase in Cumulative Noise Level Thresholds		Unmitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Mitigated Project Noise Exposure (dBA L_{dn} or L_{eq})		Noise Reduction from Mitigation (Insertion Loss)		Unmitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Mitigated Cumulative Increase (dBA L_{dn} or L_{eq})		Unmitigated FTA Level of Noise Impact		Mitigated FTA Level of Noise Impact	
					Moderate	Severe	Moderate	Severe	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA	PP	BA
	SF20	2	13	71	66	70	3	7	50	49	50	49	0	0	0	0	0	0	None	None	None	None
	SF21	2	13	71	66	70	3	7	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	SF22	2	13	71	66	70	3	7	50	50	50	50	0	0	0	0	0	0	None	None	None	None
	SF23	2	13	71	66	70	3	7	51	50	51	50	0	0	0	0	0	0	None	None	None	None
	SF24	2	13	71	66	70	3	7	63	62	63	62	0	0	1	1	0	1	None	None	None	None
	SF25	2	13	71	66	70	3	7	51	51	51	51	0	0	0	0	0	0	None	None	None	None
	SF26	2	13	71	66	70	3	7	64	63	64	63	0	0	1	1	1	1	None	None	None	None
	SF27	2	13	71	66	70	3	7	52	51	52	51	0	0	0	0	0	0	None	None	None	None
	SF28	2	13	71	66	70	3	7	64	63	64	63	0	0	1	1	1	1	None	None	None	None
	SF29	2	13	71	66	70	3	7	52	52	52	52	0	0	0	0	0	0	None	None	None	None
	SF30	2	13	71	66	70	3	7	64	63	64	63	0	0	1	1	1	1	None	None	None	None
	SF31	2	13	71	66	70	3	7	52	52	52	52	0	0	0	0	0	0	None	None	None	None
	SF32	2	13	71	66	70	3	7	52	51	52	51	0	0	0	0	0	0	None	None	None	None
	SF33	2	13	71	66	70	3	7	52	51	52	51	0	0	0	0	0	0	None	None	None	None
	SF34	2	13	71	66	70	3	7	52	52	52	52	0	0	0	0	0	0	None	None	None	None

Notes:
BA=Build Alternative; dBA=A-weighted decibel; FTA=Federal Transit Administration; ID=identification; L_{dn}=day-night average sound level; L_{eq}=equivalent noise level; Metro=Los Angeles County Metropolitan Transportation Authority; PP=Proposed Project

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