

Noise

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# APPENDIX H

**North Canyon Ranch Project EIR  
Appendix G: Noise Calculation Worksheets  
FHWA RD-77-108 Traffic Noise Model**

| Scenario    | Roadway  | ADT     | Speed (mph) | # of Lanes | Median Width (ft) | Distance from Center of Nearest Travel Lane (ft) | Hard/Soft Site | Average Leq(1hour) by Time (dB) |         |       | CNEL (dB) | Distance (ft) from Centerline to CNEL Contour |       |       |       |
|-------------|--|---------|-------------|------------|-------------------|--|----------------|---------------------------------|---------|-------|-----------|---|-------|-------|-------|
|             |  |         |             |            |                   |  |                | Day                             | Evening | Night |           | 70 dB   | 65 dB | 63 dB | 60 dB |
| Existing    | Falcon Street, west of Erringer Road                     | 309     | 35          | 4          | 12                | 50   | Soft           | 46.6                            | 43.6    | 38.4  | 47.6      | <50   | <50   | <50   | <50   |
| Existing    | Simi Town Center Way, east of First Street               | 8,900   | 35          | 4          | 12                | 50   | Soft           | 61.2                            | 58.2    | 52.9  | 62.2      | <50   | <50   | 65    | 104   |
| Existing    | Simi Town Center Way, west of Erringer Road              | 10,300  | 35          | 4          | 12                | 50   | Soft           | 61.8                            | 58.8    | 53.6  | 62.8      | <50   | 53    | 72    | 114   |
| Existing    | Erringer Road, from Falcon Street to Alamo Street        | 7,300   | 45          | 4          | 12                | 50   | Soft           | 63.0                            | 60.3    | 54.9  | 64.1      | <50   | 64    | 87    | 139   |
| Existing    | Erringer Road, from Alamo Street to Simi Town Center Way | 17,800  | 45          | 4          | 12                | 50   | Soft           | 66.8                            | 64.2    | 58.7  | 68.0      | 54  | 117   | 158   | 251   |
| Existing    | 118 Freeway (SR 118), from First Street to Erringer Road | 112,000 | 65          | 6          | 68                | 50   | Soft           | 77.4                            | 74.8    | 69.3  | 78.5      | 424   | 912   | 1,240 | 1,966 |
| Existing WP | Falcon Street, east of First Street                      | 400     | 35          | 4          | 12                | 50   | Soft           | 47.7                            | 44.7    | 39.5  | 48.7      | <50   | <50   | <50   | <50   |
| Existing WP | Falcon Street, west of Erringer Road                     | 509     | 35          | 4          | 12                | 50   | Soft           | 48.8                            | 45.8    | 40.5  | 49.8      | <50   | <50   | <50   | <50   |
| Existing WP | Simi Town Center Way, east of First Street               | 9,000   | 35          | 4          | 12                | 50   | Soft           | 61.2                            | 58.3    | 53.0  | 62.2      | <50   | <50   | 66    | 104   |
| Existing WP | Simi Town Center Way, west of Erringer Road              | 10,300  | 35          | 4          | 12                | 50   | Soft           | 61.8                            | 58.8    | 53.6  | 62.8      | <50   | 53    | 72    | 114   |
| Existing WP | Erringer Road, from Falcon Street to Alamo Street        | 7,400   | 45          | 4          | 12                | 50   | Soft           | 63.0                            | 60.4    | 54.9  | 64.1      | <50   | 65    | 88    | 140   |
| Existing WP | Erringer Road, from Alamo Street to Simi Town Center Way | 18,100  | 45          | 4          | 12                | 50   | Soft           | 66.9                            | 64.3    | 58.8  | 68.0      | 55  | 118   | 160   | 254   |
| Existing WP | 118 Freeway (SR 118), from First Street to Erringer Road | 112,600 | 65          | 6          | 68                | 50   | Soft           | 77.5                            | 74.8    | 69.3  | 78.6      | 425   | 916   | 1,245 | 1,973 |
| Future      | Falcon Street, east of First Street                      | 6,600   | 35          | 4          | 12                | 50   | Soft           | 59.9                            | 56.9    | 51.7  | 60.9      | <50   | <50   | 54    | 85    |
| Future      | Falcon Street, west of Erringer Road                     | 6,600   | 35          | 4          | 12                | 50   | Soft           | 59.9                            | 56.9    | 51.7  | 60.9      | <50   | <50   | 54    | 85    |
| Future      | Simi Town Center Way, east of First Street               | 12,700  | 35          | 4          | 12                | 50   | Soft           | 62.7                            | 59.8    | 54.5  | 63.7      | <50   | 61    | 83    | 131   |
| Future      | Simi Town Center Way, west of Erringer Road              | 15,000  | 35          | 4          | 12                | 50   | Soft           | 63.4                            | 60.5    | 55.2  | 64.5      | <50   | 68    | 93    | 147   |
| Future      | Erringer Road, from Falcon Street to Alamo Street        | 19,200  | 45          | 4          | 12                | 50   | Soft           | 67.2                            | 64.5    | 59.1  | 68.3      | 57  | 123   | 167   | 264   |
| Future      | Erringer Road, from Alamo Street to Simi Town Center Way | 21,500  | 45          | 4          | 12                | 50   | Soft           | 67.7                            | 65.0    | 59.5  | 68.8      | 61  | 132   | 180   | 285   |
| Future      | 118 Freeway (SR 118), from First Street to Erringer Road | 123,700 | 65          | 6          | 68                | 50   | Soft           | 77.9                            | 75.2    | 69.7  | 79.0      | 453   | 975   | 1,325 | 2,101 |
| Future WP   | Falcon Street, east of First Street                      | 7,000   | 35          | 4          | 12                | 50   | Soft           | 60.1                            | 57.2    | 51.9  | 61.2      | <50   | <50   | 56    | 88    |
| Future WP   | Falcon Street, west of Erringer Road                     | 6,800   | 35          | 4          | 12                | 50   | Soft           | 60.0                            | 57.0    | 51.8  | 61.0      | <50   | <50   | 55    | 87    |
| Future WP   | Simi Town Center Way, east of First Street               | 12,800  | 35          | 4          | 12                | 50   | Soft           | 62.8                            | 59.8    | 54.5  | 63.8      | <50   | 61    | 83    | 132   |
| Future WP   | Simi Town Center Way, west of Erringer Road              | 15,000  | 35          | 4          | 12                | 50   | Soft           | 63.4                            | 60.5    | 55.2  | 64.5      | <50   | 68    | 93    | 147   |
| Future WP   | Erringer Road, from Falcon Street to Alamo Street        | 19,300  | 45          | 4          | 12                | 50   | Soft           | 67.2                            | 64.6    | 59.1  | 68.3      | 57  | 123   | 167   | 265   |
| Future WP   | Erringer Road, from Alamo Street to Simi Town Center Way | 21,800  | 45          | 4          | 12                | 50   | Soft           | 67.7                            | 65.1    | 59.6  | 68.8      | 62  | 133   | 181   | 288   |
| Future WP   | 118 Freeway (SR 118), from First Street to Erringer Road | 124,300 | 65          | 6          | 68                | 50   | Soft           | 77.9                            | 75.2    | 69.8  | 79.0      | 454   | 978   | 1,330 | 2,107 |

| Vehicle Class Fleet Mix and Time Distribution:<br>Local Roadways |                         |         |       |                                   |
|--|-------------------------|---------|-------|-----------------------------------|
| Vehicle Class  | Vehicle Class % at Time |         |       | Vehicle Class % of Total Vehicles |
|  | Day                     | Evening | Night |                                   |
| Automobile   | 77.7%                   | 12.7%   | 9.6%  | 97.50%                            |
| Medium Truck   | 87.4%                   | 5.1%    | 7.5%  | 1.80%                             |
| Heavy Truck  | 89.1%                   | 2.8%    | 8.1%  | 0.70%                             |

Source: City of Simi Valley, Simi Valley General Plan EIR, Volume II, Appendix E: Noise Data, June 2012.

| Vehicle Class Fleet Mix and Time Distribution:<br>118 Freeway (State Route 118) |                                      |         |       |  |
|---|--------------------------------------|---------|-------|--|
| Vehicle Class   | Vehicle Class % at Time <sup>1</sup> |         |       | Vehicle Class % of Total Vehicles <sup>2</sup> |
|   | Day                                  | Evening | Night |  |
| Automobile  | 77.7%                                | 12.7%   | 9.6%  | 95.80%   |
| Medium Truck  | 87.4%                                | 5.1%    | 7.5%  | 2.58%  |
| Heavy Truck   | 89.1%                                | 2.8%    | 8.1%  | 1.62%  |

<sup>1</sup> City of Simi Valley, Simi Valley General Plan EIR, Volume II, Appendix E: Noise Data.  
<sup>2</sup> Caltrans, Traffic Census Program, Truck Traffic: Annual Average Daily Truck Traffic: 2020.

**North Canyon Ranch Project EIR**  
**Appendix G: Noise Calculation Worksheets**  
**Construction Equipment Noise Levels - FHWA RCNM**

| Receptor                             | Phase Name            | Equipment                   | Quantity | RCNM Equipment     | Noise at 50 feet (dBA Lmax) | Usage Factor <sup>1</sup> | Average Noise Level at 50 feet (dBA Leq) | Distance (ft) | Barrier Insertion Loss (dBA) | Construction Equipment Leq (dBA) | Existing Ambient Noise Levels (dBA Leq) <sup>2</sup> | Construction Equipment Plus Ambient (dBA Leq) | Project Ambient Increase (dBA Leq) |
|--------------------------------------|-----------------------|-----------------------------|----------|--------------------|-----------------------------|---------------------------|--|---------------|------------------------------|----------------------------------|--|---|------------------------------------|
| Single Family Residences to the East | Site Preparation      | Tractors/Loaders/Backhoes   | 4        | Front End Loader   | 79                          | 40                        | 75                                       | 15            | 0                            | 85                               | 46.6   | 85.0  | 38.4                               |
|                                      |                       | Rubber Tired Dozers         | 1        | Dozer              | 82                          | 40                        | 78                                       | 15            | 0                            | 88                               | 46.6   | 88.0  | 41.4                               |
|                                      | Grading               | Excavators                  | 2        | Excavator          | 81                          | 40                        | 77                                       | 15            | 0                            | 87                               | 46.6   | 87.0  | 40.4                               |
|                                      |                       | Grader                      | 1        | Grader             | 85                          | 40                        | 81                                       | 15            | 0                            | 91                               | 46.6   | 91.0  | 44.4                               |
|                                      |                       | Dozers                      | 2        | Dozer              | 82                          | 40                        | 78                                       | 15            | 0                            | 88                               | 46.6   | 88.0  | 41.4                               |
|                                      |                       | Scrapers                    | 3        | Scraper            | 84                          | 40                        | 80                                       | 15            | 0                            | 90                               | 46.6   | 90.0  | 43.4                               |
|                                      |                       | Tractors/Loaders/Backhoes   | 2        | Front End Loader   | 79                          | 40                        | 75                                       | 15            | 0                            | 85                               | 46.6   | 85.0  | 38.4                               |
|                                      |                       | Water Truck                 | 1        | Flat Bed Truck     | 74                          | 40                        | 70                                       | 15            | 0                            | 80                               | 46.6   | 80.0  | 33.4                               |
|                                      | Building Construction | 3 Forklifts                 | 3        | Man Lift           | 75                          | 20                        | 68                                       | 85            | 0                            | 63                               | 46.6   | 63.1  | 16.5                               |
|                                      |                       | 1 Generator Set             | 1        | Generator          | 81                          | 50                        | 78                                       | 85            | 0                            | 73                               | 46.6   | 73.0  | 26.4                               |
|                                      |                       | 1 Rough Terrain Forklift    | 1        | Backhoe            | 78                          | 40                        | 74                                       | 85            | 0                            | 69                               | 46.6   | 69.0  | 22.4                               |
|                                      |                       | 2 Skid Steer Loaders        | 2        | Backhoe            | 78                          | 40                        | 74                                       | 85            | 0                            | 69                               | 46.6   | 69.0  | 22.4                               |
|                                      |                       | 3 Tractors/Loaders/Backhoes | 3        | Front End Loader   | 79                          | 40                        | 75                                       | 85            | 0                            | 70                               | 46.6   | 70.0  | 23.4                               |
|                                      |                       | 1 Welder                    | 1        | Welder/Torch       | 74                          | 40                        | 70                                       | 85            | 0                            | 65                               | 46.6   | 65.1  | 18.5                               |
|                                      | Paving                | 2 Pavers                    | 2        | Paver              | 77                          | 50                        | 74                                       | 110           | 0                            | 67                               | 46.6   | 67.0  | 20.4                               |
|                                      |                       | 2 Rollers                   | 2        | Roller             | 80                          | 20                        | 73                                       | 110           | 0                            | 66                               | 46.6   | 66.0  | 19.4                               |
|                                      |                       | 2 Paving Equipment          | 2        | Compactor (Ground) | 83                          | 20                        | 76                                       | 110           | 0                            | 69                               | 46.6   | 69.0  | 22.4                               |
|                                      | Arch. Coating         | 1 Air Compressor            | 1        | Compressor (Air)   | 78                          | 40                        | 74                                       | 85            | 0                            | 69                               | 46.6   | 69.0  | 22.4                               |

Sources: Envicom Corporation, September 2022.

Federal Highway Administration, FHWA Roadway Construction Noise Model User's Guide: Final Report, January 2006.

<sup>1</sup> Usage factor is the percentage of time the equipment operates at full power.

<sup>2</sup> FHWA RD-77-108 modelled existing daytime noise level near Falcon Street, west of Erringer Road. (See preceding page of this Appendix.)

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**Construction Equipment Noise Levels - FHWA RCNM**

| Receptor                            | Phase Name            | Equipment                   | Quantity         | RCNM Equipment     | Noise at 50 feet (dBA Lmax) | Usage Factor <sup>1</sup> | Average Noise Level at 50 feet (dBA Leq) | Distance (ft) | Barrier Insertion Loss (dBA) | Construction Equipment Leq (dBA) | Existing Ambient Noise Levels (dBA Leq) <sup>2</sup> | Construction Equipment Plus Ambient (dBA Leq) | Project Ambient Increase (dBA Leq) |
|-------------------------------------|-----------------------|-----------------------------|------------------|--------------------|-----------------------------|---------------------------|--|---------------|------------------------------|----------------------------------|--|---|------------------------------------|
| Multifamily Residences to the South | Site Preparation      | Tractors/Loaders/Backhoes   | 4                | Front End Loader   | 79                          | 40                        | 75                                       | 20            | 0                            | 83                               | 51.2   | 83.0  | 31.8                               |
|                                     |                       | Rubber Tired Dozers         | 1                | Dozer              | 82                          | 40                        | 78                                       | 20            | 0                            | 86                               | 51.2   | 86.0  | 34.8                               |
|                                     | Grading               | Excavators                  | 2                | Excavator          | 81                          | 40                        | 77                                       | 20            | 0                            | 85                               | 51.2   | 85.0  | 33.8                               |
|                                     |                       | Grader                      | 1                | Grader             | 85                          | 40                        | 81                                       | 20            | 0                            | 89                               | 51.2   | 89.0  | 37.8                               |
|                                     |                       | Dozers                      | 2                | Dozer              | 82                          | 40                        | 78                                       | 20            | 0                            | 86                               | 51.2   | 86.0  | 34.8                               |
|                                     |                       | Scrapers                    | 3                | Scraper            | 84                          | 40                        | 80                                       | 20            | 0                            | 88                               | 51.2   | 88.0  | 36.8                               |
|                                     |                       | Tractors/Loaders/Backhoes   | 2                | Front End Loader   | 79                          | 40                        | 75                                       | 20            | 0                            | 83                               | 51.2   | 83.0  | 31.8                               |
|                                     |                       | Water Truck                 | 1                | Flat Bed Truck     | 74                          | 40                        | 70                                       | 20            | 0                            | 78                               | 51.2   | 78.0  | 26.8                               |
|                                     | Building Construction | 3 Forklifts                 | 3                | Man Lift           | 75                          | 20                        | 68                                       | 85            | 0                            | 63                               | 51.2   | 63.3  | 12.1                               |
|                                     |                       | 1 Generator Set             | 1                | Generator          | 81                          | 50                        | 78                                       | 85            | 0                            | 73                               | 51.2   | 73.0  | 21.8                               |
|                                     |                       | 1 Rough Terrain Forklift    | 1                | Backhoe            | 78                          | 40                        | 74                                       | 85            | 0                            | 69                               | 51.2   | 69.1  | 17.9                               |
|                                     |                       | 2 Skid Steer Loaders        | 2                | Backhoe            | 78                          | 40                        | 74                                       | 85            | 0                            | 69                               | 51.2   | 69.1  | 17.9                               |
|                                     |                       | 3 Tractors/Loaders/Backhoes | 3                | Front End Loader   | 79                          | 40                        | 75                                       | 85            | 0                            | 70                               | 51.2   | 70.1  | 18.9                               |
|                                     |                       | 1 Welder                    | 1                | Welder/Torch       | 74                          | 40                        | 70                                       | 85            | 0                            | 65                               | 51.2   | 65.2  | 14.0                               |
|                                     | Paving                | 2 Pavers                    | 2                | Paver              | 77                          | 50                        | 74                                       | 75            | 0                            | 70                               | 51.2   | 70.1  | 18.9                               |
|                                     |                       | 2 Rollers                   | 2                | Roller             | 80                          | 20                        | 73                                       | 75            | 0                            | 69                               | 51.2   | 69.1  | 17.9                               |
|                                     |                       | 2 Paving Equipment          | 2                | Compactor (Ground) | 83                          | 20                        | 76                                       | 75            | 0                            | 72                               | 51.2   | 72.0  | 20.8                               |
| Arch. Coating                       | 1 Air Compressor      | 1                           | Compressor (Air) | 78                 | 40                          | 74                        | 75                                       | 0             | 70                           | 51.2                             | 70.1   | 18.9  |                                    |

Sources: Envicom Corporation, September 2022.

Federal Highway Administration, FHWA Roadway Construction Noise Model User's Guide: Final Report, January 2006.

<sup>1</sup> Usage factor is the percentage of time the equipment operates at full power.

<sup>2</sup> Based on the FHWA RD-77-108 modelled existing daytime noise level from the 118 Freeway. (See first page of this Appendix.) Additional distance attenuation of 18.7 dBA was applied for a receptor approximately 1,450 feet from the centerline and 1,386 feet from the center of the outermost travel lane. A 7.5 dBA insertion loss was assumed from three intervening building rows, based on the FTA Transit Noise and Vibration Assessment Manual, September 2018. (I.e., 77.4 dBA Leq - 18.7 dBA - 7.5 dBA = 51.2 dBA Leq.)

**North Canyon Ranch Project EIR**  
**Appendix G: Noise Calculation Worksheets**  
**Construction Vibration Levels**

**Groundborne Vibration from Project Construction Equipment**

| <b>Receiving Land Use</b>            | <b>Equipment</b> | <b>PPV at 25 ft (in/sec) *</b> | <b>Distance (ft)</b> | <b>PPV, in/sec</b> |
|--------------------------------------|------------------|--------------------------------|----------------------|--------------------|
| Single Family Residences to the East | Large Bulldozer  | 0.089                          | 15                   | 0.191              |
|                                      | Loaded Trucks    | 0.076                          | 40                   | 0.038              |

Source: Envicom Corporation, September 2022.

\* Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.