

## **Appendix E – Noise Modeling Results**

**Project-Generated Construction Source Noise Prediction Model**  
San Jose City Hall



| Location         | Distance to Nearest Receiver in feet | Combined Predicted Noise Level (L <sub>eq</sub> dBA) |    | Assumptions:     | Reference Emission                                       |                           |
|------------------|--------------------------------------|--|----|------------------|--|---------------------------|
|                  |                                      |  |    |                  | Noise Levels (L <sub>max</sub> ) at 50 feet <sup>1</sup> | Usage Factor <sup>1</sup> |
| Threshold*       | 388                                  | Daytime  | 60 | Man Lift         | 75   | 0.2                       |
|                  | 2,184                                | Nighttime  | 45 | Man Lift         | 75   | 0.2                       |
| From Commercial  | 150                                  |  | 68 | Front End Loader | 79   | 0.4                       |
| From Residential | 350                                  |  | 61 | Dump Truck       | 76   | 0.4                       |

Ground Type                      Hard  
Ground Factor                      0.00

| Predicted Noise Level <sup>2</sup> | L <sub>eq</sub> dBA at 50 feet <sup>2</sup> |
|------------------------------------|---|
| Man Lift                           | 68.0  |
| Man Lift                           | 68.0  |
| Front End Loader                   | 75.0  |
| Dump Truck                         | 72.0  |

**Combined Predicted Noise Level (L<sub>eq</sub> dBA at 50 feet)**

77.8

Sources:

<sup>1</sup> Obtained from the FHWA Roadway Construction Noise Model, Janu

<sup>2</sup> Based on the following from the Federal Transit Noise and Vibration

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

\*Project specific threshold

**Project-Generated Construction Source Noise Prediction Model**  
San Jose City Hall



| Location         | Distance to Nearest Receiver in feet | Combined Predicted Noise Level (L <sub>eq</sub> dBA) |    | Assumptions:     | Reference Emission                                       | Usage               |
|------------------|--------------------------------------|--|----|------------------|--|---------------------|
|                  |                                      |  |    |                  | Noise Levels (L <sub>max</sub> ) at 50 feet <sup>1</sup> | Factor <sup>1</sup> |
| Threshold*       | 630                                  | Daytime  | 60 | Man Lift         | 75   | 0.2                 |
|                  | 3,541                                | Nighttime  | 45 | Front End Loader | 79   | 0.4                 |
| From Commercial  | 150                                  |  | 72 | Dozer            | 82   | 0.4                 |
| From Residential | 350                                  |  | 65 | Backhoe          | 78   | 0.4                 |
|                  |                                      |  |    | Dump Truck       | 76   | 0.4                 |
|                  |                                      |  |    | Dump Truck       | 76   | 0.4                 |

Ground Type                      Hard  
Ground Factor                    0.00

| Predicted Noise Level <sup>2</sup> | L <sub>eq</sub> dBA at 50 feet <sup>2</sup> |
|------------------------------------|---|
| Man Lift                           | 68.0  |
| Front End Loader                   | 75.0  |
| Dozer                              | 78.0  |
| Backhoe                            | 74.0  |
| Dump Truck                         | 72.0  |
| Dump Truck                         | 72.0  |

**Combined Predicted Noise Level (L<sub>eq</sub> dBA at 50 feet)**

82.0

Sources:

<sup>1</sup> Obtained from the FHWA Roadway Construction Noise Model, Janu

<sup>2</sup> Based on the following from the Federal Transit Noise and Vibration

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

\*Project specific threshold

**Project-Generated Construction Source Noise Prediction Model**  
San Jose City Hall



| Location         | Distance to Nearest Receiver in feet | Combined Predicted Noise Level (L <sub>eq</sub> dBA) |    | Assumptions:          | Reference Emission                                       | Usage Factor <sup>1</sup> |
|------------------|--------------------------------------|--|----|-----------------------|--|---------------------------|
|                  |                                      |  |    |                       | Noise Levels (L <sub>max</sub> ) at 50 feet <sup>1</sup> |                           |
| Threshold*       | 969                                  | Daytime  | 60 | Crane                 | 81   | 0.16                      |
|                  | 5,449                                | Nighttime  | 45 | Man Lift              | 75   | 0.2                       |
| From Commercial  | 150                                  |  | 76 | Excavator             | 81   | 0.4                       |
| From Residential | 350                                  |  | 69 | Excavator             | 81   | 0.4                       |
|                  |                                      |  |    | Excavator             | 81   | 0.4                       |
|                  |                                      |  |    | Front End Loader      | 79   | 0.4                       |
|                  |                                      |  |    | Concrete Batch Plant  | 83   | 0.15                      |
|                  |                                      |  |    | Dozer                 | 82   | 0.4                       |
|                  |                                      |  |    | Backhoe               | 78   | 0.4                       |
|                  |                                      |  |    | Dump Truck            | 76   | 0.4                       |
|                  |                                      |  |    | Dump Truck            | 76   | 0.4                       |
|                  |                                      |  |    | Vacuum Street Sweeper | 82   | 0.1                       |

Ground Type                      Hard  
Ground Factor                      0.00

| Predicted Noise Level <sup>2</sup> | L <sub>eq</sub> dBA at 50 feet <sup>2</sup> |
|------------------------------------|---|
| Crane                              | 73.0  |
| Man Lift                           | 68.0  |
| Excavator                          | 77.0  |
| Excavator                          | 77.0  |
| Excavator                          | 77.0  |
| Front End Loader                   | 75.0  |
| Concrete Batch Plant               | 74.8  |
| Dozer                              | 78.0  |
| Backhoe                            | 74.0  |
| Dump Truck                         | 72.0  |
| Dump Truck                         | 72.0  |
| Vacuum Street Sweeper              | 72.0  |

**Combined Predicted Noise Level (L<sub>eq</sub> dBA at 50 feet)**

85.7

Sources:

<sup>1</sup> Obtained from the FHWA Roadway Construction Noise Model, Janu

<sup>2</sup> Based on the following from the Federal Transit Noise and Vibration

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

\*Project specific threshold

**Project-Generated Construction Source Noise Prediction Model**  
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| Location         | Distance to Nearest Receiver in feet | Combined Predicted Noise Level (L <sub>eq</sub> dBA) |    | Assumptions:          | Reference Emission                                       | Usage Factor <sup>1</sup> |
|------------------|--------------------------------------|--|----|-----------------------|--|---------------------------|
|                  |                                      |  |    |                       | Noise Levels (L <sub>max</sub> ) at 50 feet <sup>1</sup> |                           |
| Threshold*       | 870                                  | Daytime  | 60 | Grader                | 85   | 0.4                       |
|                  | 4,892                                | Nighttime  | 45 | Dozer                 | 82   | 0.4                       |
| From Commercial  | 150                                  |  | 75 | Compactor (ground)    | 83   | 0.2                       |
| From Residential | 350                                  |  | 68 | Backhoe               | 78   | 0.4                       |
|                  |                                      |  |    | Dump Truck            | 76   | 0.4                       |
|                  |                                      |  |    | Dump Truck            | 76   | 0.4                       |
|                  |                                      |  |    | Vacuum Street Sweeper | 82   | 0.1                       |

Ground Type                    Hard  
Ground Factor                    0.00

| Predicted Noise Level <sup>2</sup> | L <sub>eq</sub> dBA at 50 feet <sup>2</sup> |
|------------------------------------|---|
| Grader                             | 81.0  |
| Dozer                              | 78.0  |
| Compactor (ground)                 | 76.0  |
| Backhoe                            | 74.0  |
| Dump Truck                         | 72.0  |
| Dump Truck                         | 72.0  |
| Vacuum Street Sweeper              | 72.0  |

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**Combined Predicted Noise Level (L<sub>eq</sub> dBA at 50 feet)**  
84.8

Sources:

<sup>1</sup> Obtained from the FHWA Roadway Construction Noise Model, Janu

<sup>2</sup> Based on the following from the Federal Transit Noise and Vibration

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

\*Project specific threshold