

**Appendix G:
Noise Analysis Supporting Information**

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Mobile Construction Activity

Receptor: Single Family Residences within 100 feet

| Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements | | | | | | | | | | |
|---|-----------------------|--------------------------|----------|--------------------|-------------------------|---------------------|-----------------------|------------------|------|-------------|
| No. | Equipment Description | Reference (dBA) 50 ft | Quantity | Usage factor[1] | Distance to Receptor | Ground Effect[2] | Shielding (dBA)[3] | Calculated (dBA) | | Energy |
| | | Lmax | | | | | | Leq | | |
| 1 | Grader | 85 | 1 | 40 | 100 | 0 | 0 | 79.0 | 75.0 | 31622776.6 |
| 2 | Ground Compactor | 83.2 | 1 | 20 | 100 | 0 | 0 | 77.2 | 70.2 | 10446480.65 |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |

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|--|--|--|--|--|--|--|----------------|-----------|------------|-----------|
| | | | | | | | Lmax[4] | 79 | Leq | 76 |
|--|--|--|--|--|--|--|----------------|-----------|------------|-----------|

Notes:

[1] Percentage of time activity occurs each hour

[2] Assumes acoustically "hard" ground terrain

[3] Shielding due to soundwall

[4] Calculated Lmax is the loudest value

| Ldn Calculations | | | | | |
|--------------------|----------|------------|------|-------------|-------------|
| | Time | Hourly Leq | Leq' | 0.1*Leq | antiLog |
| Night | 12:00 AM | 0.0 | 0.0 | 0 | 1 |
| | 1:00 AM | 0.0 | 0.0 | 0 | 1 |
| | 2:00 AM | 0.0 | 0.0 | 0 | 1 |
| | 3:00 AM | 0.0 | 0.0 | 0 | 1 |
| | 4:00 AM | 0.0 | 0.0 | 0 | 1 |
| | 5:00 AM | 0.0 | 0.0 | 0 | 1 |
| Day | 6:00 AM | 0.0 | 0.0 | 0 | 1 |
| | 7:00 AM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 8:00 AM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 9:00 AM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 10:00 AM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 11:00 AM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 12:00 PM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 1:00 PM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 2:00 PM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 3:00 PM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 4:00 PM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 5:00 PM | 76.2 | 76.2 | 7.623964844 | 42069257.26 |
| | 6:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 7:00 PM | 0.0 | 0.0 | 0 | 1 |
| 8:00 PM | 0.0 | 0.0 | 0 | 1 | |
| Night | 9:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 10:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 11:00 PM | 0.0 | 0.0 | 0 | 1 |
| Sum | | | | | 462761842.8 |
| Sum/24 | | | | | 19281743.45 |
| Log10(Sum/24) | | | | | 7.2851463 |
| 10*Log10(Sum/24) | | | | | 72.851463 |
| 24 Hour Ldn | | | | | 73 |

Mobile Construction Activity

Receptor: Single Family Residences - 150 feet

| Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements | | | | | | | | | | | |
|---|-----------------------|--------------------------|----------|--------------------|-------------------------|---------------------|-----------------------|------------------|-----------|-------------|-----------|
| No. | Equipment Description | Reference (dBA) 50 ft | Quantity | Usage factor[1] | Distance to Receptor | Ground Effect[2] | Shielding (dBA)[3] | Calculated (dBA) | | Energy | |
| | | Lmax | | | | | | Leq | | | |
| 1 | Grader | 85 | 1 | 40 | 150 | 0 | 0 | 75.5 | 71.5 | 14054567.38 | |
| 2 | Ground Compactor | 83.2 | 1 | 20 | 150 | 0 | 0 | 73.7 | 66.7 | 4642880.291 | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| | | | | | | | | Lmax[4] | 75 | Leq | 73 |

Notes:

[1] Percentage of time activity occurs each hour

[2] Assumes acoustically "hard" ground terrain

[3] Shielding due to soundwall

[4] Calculated Lmax is the loudest value

| Ldn Calculations | | | | | |
|------------------|----------|------------|------|--------------------|-------------|
| | Time | Hourly Leq | Leq' | 0.1*Leq | antiLog |
| Night | 12:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 1:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 2:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 3:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 4:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 5:00 AM | 0.0 | 10.0 | 1 | 10 |
| Day | 6:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 7:00 AM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 8:00 AM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 9:00 AM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 10:00 AM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 11:00 AM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 12:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 1:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 2:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 3:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 4:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 5:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 6:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| | 7:00 PM | 72.7 | 72.7 | 7.271782326 | 18697447.67 |
| Night | 8:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 9:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 10:00 PM | 0.0 | 10.0 | 1 | 10 |
| | 11:00 PM | 0.0 | 10.0 | 1 | 10 |
| | | | | Sum | 243066911.7 |
| | | | | Sum/24 | 10127787.99 |
| | | | | Log10(Sum/24) | 7.005514601 |
| | | | | 10*Log10(Sum/24) | 70.05514601 |
| | | | | 24 Hour Ldn | 70 |

Mobile Construction Activity

Receptor: Single Family Residences - 200 feet

| Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements | | | | | | | | | | |
|---|-----------------------|--------------------------|----------|--------------------|-------------------------|---------------------|-----------------------|------------------|------|-------------|
| No. | Equipment Description | Reference (dBA) 50 ft | Quantity | Usage factor[1] | Distance to Receptor | Ground Effect[2] | Shielding (dBA)[3] | Calculated (dBA) | | Energy |
| | | Lmax | | | | | | Leq | | |
| 1 | Grader | 85 | 1 | 40 | 200 | 0 | 0 | 73.0 | 69.0 | 7905694.15 |
| 2 | Ground Compactor | 83.2 | 1 | 20 | 200 | 0 | 0 | 71.2 | 64.2 | 2611620.164 |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |

| | | | | | | | | | | |
|--|--|--|--|--|--|--|----------------|-----------|------------|-----------|
| | | | | | | | Lmax[4] | 73 | Leq | 70 |
|--|--|--|--|--|--|--|----------------|-----------|------------|-----------|

Notes:

[1] Percentage of time activity occurs each hour

[2] Assumes acoustically "hard" ground terrain

[3] Shielding due to soundwall

[4] Calculated Lmax is the loudest value

| Ldn Calculations | | | | | |
|------------------|----------|------------|------|--------------------|-------------|
| | Time | Hourly Leq | Leq' | 0.1*Leq | antiLog |
| Night | 12:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 1:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 2:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 3:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 4:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 5:00 AM | 0.0 | 10.0 | 1 | 10 |
| Day | 6:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 7:00 AM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 8:00 AM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 9:00 AM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 10:00 AM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 11:00 AM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 12:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 1:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 2:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 3:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 4:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 5:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 6:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| | 7:00 PM | 70.2 | 70.2 | 7.021904853 | 10517314.31 |
| Night | 8:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 9:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 10:00 PM | 0.0 | 10.0 | 1 | 10 |
| | 11:00 PM | 0.0 | 10.0 | 1 | 10 |
| | | | | Sum | 136725178.1 |
| | | | | Sum/24 | 5696882.42 |
| | | | | Log10(Sum/24) | 6.755637256 |
| | | | | 10*Log10(Sum/24) | 67.55637256 |
| | | | | 24 Hour Ldn | 68 |

Mobile Construction Activity

Receptor: Single Family Residences - 250 feet

| Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements | | | | | | | | | | | |
|---|-----------------------|--------------------------|----------|--------------------|-------------------------|---------------------|-----------------------|------------------|------|-------------|--|
| No. | Equipment Description | Reference (dBA) 50 ft | Quantity | Usage factor[1] | Distance to Receptor | Ground Effect[2] | Shielding (dBA)[3] | Calculated (dBA) | | Energy | |
| | | Lmax | | | | | | Leq | | | |
| 1 | Grader | 85 | 1 | 40 | 250 | 0 | 0 | 71.0 | 67.0 | 5059644.256 | |
| 2 | Ground Compactor | 83.2 | 1 | 20 | 250 | 0 | 0 | 69.2 | 62.2 | 1671436.905 | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |

| | | | | | | | | | | |
|--|--|--|--|--|--|--|----------------|-----------|------------|-----------|
| | | | | | | | Lmax[4] | 71 | Leq | 68 |
|--|--|--|--|--|--|--|----------------|-----------|------------|-----------|

Notes:

- [1] Percentage of time activity occurs each hour
- [2] Assumes acoustically "hard" ground terrain
- [3] Shielding due to soundwall
- [4] Calculated Lmax is the loudest value

| Ldn Calculations | | | | | |
|------------------|----------|------------|------|-------------------------|--------------------|
| | Time | Hourly Leq | Leq' | 0.1*Leq | antiLog |
| Night | 12:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 1:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 2:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 3:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 4:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 5:00 AM | 0.0 | 10.0 | 1 | 10 |
| Day | 6:00 AM | 0.0 | 10.0 | 1 | 10 |
| | 7:00 AM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 8:00 AM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 9:00 AM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 10:00 AM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 11:00 AM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 12:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 1:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 2:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 3:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 4:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 5:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 6:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| | 7:00 PM | 68.3 | 68.3 | 6.828084827 | 6731081.161 |
| Night | 8:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 9:00 PM | 0.0 | 0.0 | 0 | 1 |
| | 10:00 PM | 0.0 | 10.0 | 1 | 10 |
| | 11:00 PM | 0.0 | 10.0 | 1 | 10 |
| | | | | Sum | 87504147.09 |
| | | | | Sum/24 | 3646006.129 |
| | | | | Log10(Sum/24) | 6.561817394 |
| | | | | 10*Log10(Sum/24) | 65.61817394 |
| | | | | 24 Hour Ldn | 66 |