

**APPENDIX C**  
**AIR QUALITY**

Metro's Regional Connector Transit Corridor  
Supplemental Environmental Impact Study -  
Air Quality Appendix

Prepared June 2014

Air Quality Appendix Index

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Table 1-1: Summary of Maximum Daily Emissions

| Alternative                   | Daily Emissions (lbs/day) |     |     |     |      |       |
|-------------------------------|---------------------------|-----|-----|-----|------|-------|
|                               | VOC                       | NOx | CO  | SO2 | PM10 | PM2.5 |
| Locally Preferred Alternative | 32                        | 124 | 257 | 1   | 6    | 3     |
| Alternative 1                 | 32                        | 124 | 257 | 1   | 6    | 2     |
| Alternative 2                 | 26                        | 123 | 248 | 1   | 6    | 2     |
| Alternative 3                 | 47                        | 316 | 375 | 2   | 11   | 1     |
| Alternative 4                 | 38                        | 195 | 266 | 1   | 7    | 5     |
| Threshold of Significance     | 75                        | 100 | 550 | 150 | 150  | 55    |

Note:

If threshold exceeded, then cell highlighted red.





Table 1-3: Summary of Annual Construction Emissions - Alternative 1

Alternative 1

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |              |              |              | 2015                           |              |              |              |              |              |              |              |              |              |              |              |              |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10           | 11           | 12           | 1                              | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           |              |
| Phase                            | <b>ROG Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |              |              |              | <b>ROG Emissions (lbs/day)</b> |              |              |              |              |              |              |              |              |              |              |              |              |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 9.54         | 9.54         | 9.54         | 9.54                           | 12.77        | 12.77        | 12.77        | 12.77        | 24.91        | 24.91        | 24.91        | 24.91        | 24.91        | 24.91        | 24.91        | 24.91        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --           | --           | --           | --                             | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>9.54</b>  | <b>9.54</b>  | <b>9.54</b>  | <b>9.54</b>                    | <b>12.77</b> | <b>12.77</b> | <b>12.77</b> | <b>12.77</b> | <b>24.91</b> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.12         | 0.12         | 0.12         | 0.12                           | 0.10         | 0.10         | 0.10         | 0.10         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.71         | 0.71         | 0.71         | 0.71                           | 0.63         | 0.63         | 0.63         | 0.63         | 1.27         | 1.27         | 1.27         | 1.27         | 1.27         | 1.27         | 1.27         | 1.27         |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.83</b>  | <b>0.83</b>  | <b>0.83</b>  | <b>0.83</b>                    | <b>0.73</b>  | <b>0.73</b>  | <b>0.73</b>  | <b>0.73</b>  | <b>1.43</b>  |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>10.36</b> | <b>10.36</b> | <b>10.36</b> | <b>10.36</b>                   | <b>13.51</b> | <b>13.51</b> | <b>13.51</b> | <b>13.51</b> | <b>26.35</b> |

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |              |              |              | 2015                           |              |              |              |              |               |               |               |               |               |               |               |               |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10           | 11           | 12           | 1                              | 2            | 3            | 4            | 5            | 6             | 7             | 8             | 9             | 10            | 11            | 12            |               |
| Phase                            | <b>NOx Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |              |              |              | <b>NOx Emissions (lbs/day)</b> |              |              |              |              |               |               |               |               |               |               |               |               |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 53.46        | 53.46        | 53.46        | 53.46                          | 54.90        | 54.90        | 54.90        | 54.90        | 108.11        | 108.11        | 108.11        | 108.11        | 108.11        | 108.11        | 108.11        | 108.11        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --           | --           | --           | --                             | --           | --           | --           | --           | --            | --            | --            | --            | --            | --            | --            | --            |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>53.46</b> | <b>53.46</b> | <b>53.46</b> | <b>53.46</b>                   | <b>54.90</b> | <b>54.90</b> | <b>54.90</b> | <b>54.90</b> | <b>108.11</b> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.34         | 0.34         | 0.34         | 0.34                           | 0.30         | 0.30         | 0.30         | 0.30         | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 8.46         | 8.46         | 8.46         | 8.46                           | 7.39         | 7.39         | 7.39         | 7.39         | 14.77         | 14.77         | 14.77         | 14.77         | 14.77         | 14.77         | 14.77         | 14.77         |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>8.79</b>  | <b>8.79</b>  | <b>8.79</b>  | <b>8.79</b>                    | <b>7.69</b>  | <b>7.69</b>  | <b>7.69</b>  | <b>7.69</b>  | <b>15.28</b>  |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>62.26</b> | <b>62.26</b> | <b>62.26</b> | <b>62.26</b>                   | <b>62.59</b> | <b>62.59</b> | <b>62.59</b> | <b>62.59</b> | <b>123.39</b> |

| YEAR                             | 2014                          |             |             |             |             |             |             |             |             |               |               |               | 2015                          |               |               |               |               |               |               |               |               |               |               |               |               |
|----------------------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|---------------|---------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MONTH                            | 1                             | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10            | 11            | 12            | 1                             | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            |               |
| Phase                            | <b>CO Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |               |               |               | <b>CO Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |               |               |
| Construction Equipment Emissions | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 116.01        | 116.01        | 116.01        | 116.01                        | 121.32        | 121.32        | 121.32        | 121.32        | 236.47        | 236.47        | 236.47        | 236.47        | 236.47        | 236.47        | 236.47        | 236.47        |
| Fugitive Dust Emissions          | --                            | --          | --          | --          | --          | --          | --          | --          | --          | --            | --            | --            | --                            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>116.01</b> | <b>116.01</b> | <b>116.01</b> | <b>116.01</b>                 | <b>121.32</b> | <b>121.32</b> | <b>121.32</b> | <b>121.32</b> | <b>236.47</b> |
| Construction Worker Commuting    | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 4.17          | 4.17          | 4.17          | 4.17                          | 3.80          | 3.80          | 3.80          | 3.80          | 6.33          | 6.33          | 6.33          | 6.33          | 6.33          | 6.33          | 6.33          | 6.33          |
| Haul Truck Emissions             | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 3.24          | 3.24          | 3.24          | 3.24                          | 2.84          | 2.84          | 2.84          | 2.84          | 5.68          | 5.68          | 5.68          | 5.68          | 5.68          | 5.68          | 5.68          | 5.68          |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>7.41</b>   | <b>7.41</b>   | <b>7.41</b>   | <b>7.41</b>                   | <b>6.64</b>   | <b>6.64</b>   | <b>6.64</b>   | <b>6.64</b>   | <b>12.01</b>  |
| <b>Total</b>                     | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>123.42</b> | <b>123.42</b> | <b>123.42</b> | <b>123.42</b>                 | <b>127.96</b> | <b>127.96</b> | <b>127.96</b> | <b>127.96</b> | <b>248.49</b> |

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |             |             |             | 2015                           |             |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |             |
| Phase                            | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.52        | 0.52        | 0.52        | 0.52                           | 0.52        | 0.52        | 0.52        | 0.52        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.52</b> | <b>0.52</b> | <b>0.52</b> | <b>0.52</b>                    | <b>0.52</b> | <b>0.52</b> | <b>0.52</b> | <b>0.52</b> | <b>1.00</b> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.01        | 0.01        | 0.01        | 0.01                           | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.02        | 0.02        | 0.02        | 0.02                           | 0.02        | 0.02        | 0.02        | 0.02        | 0.03        | 0.03        | 0.03        | 0.03        | 0.03        | 0.03        | 0.03        | 0.03        |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b>                    | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.04</b> |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.54</b> | <b>0.54</b> | <b>0.54</b> | <b>0.54</b>                    | <b>0.54</b> | <b>0.54</b> | <b>0.54</b> | <b>0.54</b> | <b>1.05</b> |

| YEAR                             | 2014                            |             |             |             |             |             |             |             |             |             |             |             | 2015                            |             |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |             |
| Phase                            | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.84        | 0.84        | 0.84        | 0.84                            | 0.91        | 0.91        | 0.91        | 0.91        | 1.77        | 1.77        | 1.77        | 1.77        | 1.77        | 1.77        | 1.77        | 1.77        |
| Fugitive Dust Emissions          | --                              | --          | --          | --          | --          | --          | --          | --          | --          | 0.11        | 0.11        | 0.11        | 0.11                            | 0.11        | 0.11        | 0.11        | 0.11        | 0.19        | 0.19        | 0.19        | 0.19        | 0.19        | 0.19        | 0.19        | 0.19        |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.95</b> | <b>0.95</b> | <b>0.95</b> | <b>0.95</b>                     | <b>1.02</b> | <b>1.02</b> | <b>1.02</b> | <b>1.02</b> | <b>1.95</b> |
| Construction Worker Commuting    | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 1.67        | 1.67        | 1.67        | 1.67                            | 1.67        | 1.67        | 1.67        | 1.67        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        |
| Haul Truck Emissions             | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.69        | 0.69        | 0.69        | 0.69                            | 0.65        | 0.65        | 0.65        | 0.65        | 1.30        | 1.30        | 1.30        | 1.30        | 1.30        | 1.30        | 1.30        | 1.30        |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>2.37</b> | <b>2.37</b> | <b>2.37</b> | <b>2.37</b>                     | <b>2.32</b> | <b>2.32</b> | <b>2.32</b> | <b>2.32</b> | <b>4.08</b> |
| <b>Total</b>                     | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>3.32</b> | <b>3.32</b> | <b>3.32</b> | <b>3.32</b>                     | <b>3.34</b> | <b>3.34</b> | <b>3.34</b> | <b>3.34</b> | <b>6.04</b> |

| YEAR                             | 2014                             |             |             |      |      |      |      |      |      |      |      |      | 2015                             |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------------|----------------------------------|-------------|-------------|------|------|------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| MONTH                            | 1                                | 2           | 3           | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 1                                | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |      |
| Phase                            | <b>PM2.5 Emissions (lbs/day)</b> |             |             |      |      |      |      |      |      |      |      |      | <b>PM2.5 Emissions (lbs/day)</b> |      |      |      |      |      |      |      |      |      |      |      |      |
| Construction Equipment Emissions | 0.00                             | 0.00        | 0.00        | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.78 | 0.78 | 0.78 | 0.78                             | 0.84 | 0.84 | 0.84 | 0.84 | 1.62 | 1.62 | 1.62 | 1.62 | 1.62 | 1.62 | 1.62 | 1.62 |
| Fugitive Dust Emissions          | --                               | --          | --          | --   | --   | --   | --   | --   | --   | 0.02 | 0.02 | 0.02 | 0.02                             | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                      | <b>0.00</b> | <b>0.00</b> |      |      |      |      |      |      |      |      |      |                                  |      |      |      |      |      |      |      |      |      |      |      |      |

Table 1-3: Summary of Annual Construction Emissions - Alternative 1

Alternative 1

| YEAR                             | 2016                           |              |              |              |              |              |              |              |              |              |              |              | 2017                           |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                              | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>ROG Emissions (lbs/day)</b> |              |              |              |              |              |              |              |              |              |              |              | <b>ROG Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 31.05                          | 31.05        | 31.05        | 31.05        | 31.05        | 15.16        | 15.16        | 15.16        | 15.16        | 15.16        | 15.16        | 15.16        | 18.07                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Fugitive Dust Emissions          | --                             | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>31.05</b>                   | <b>31.05</b> | <b>31.05</b> | <b>31.05</b> | <b>31.05</b> | <b>15.16</b> | <b>18.07</b>                   | <b>0.00</b> |
| Construction Worker Commuting    | 0.14                           | 0.14         | 0.14         | 0.14         | 0.14         | 0.06         | 0.06         | 0.06         | 0.06         | 0.06         | 0.06         | 0.06         | 0.05                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Haul Truck Emissions             | 1.15                           | 1.15         | 1.15         | 1.15         | 1.15         | 0.57         | 0.57         | 0.57         | 0.57         | 0.57         | 0.57         | 0.57         | 0.53                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| <b>Offsite Subtotal</b>          | <b>1.29</b>                    | <b>1.29</b>  | <b>1.29</b>  | <b>1.29</b>  | <b>1.29</b>  | <b>0.63</b>  | <b>0.57</b>                    | <b>0.00</b> |
| <b>Total</b>                     | <b>32.34</b>                   | <b>32.34</b> | <b>32.34</b> | <b>32.34</b> | <b>32.34</b> | <b>15.79</b> | <b>18.65</b>                   | <b>0.00</b> |

| YEAR                             | 2016                           |               |               |               |               |              |              |              |              |              |              |              | 2017                           |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|--------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                              | 2             | 3             | 4             | 5             | 6            | 7            | 8            | 9            | 10           | 11           | 12           | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>NOx Emissions (lbs/day)</b> |               |               |               |               |              |              |              |              |              |              |              | <b>NOx Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 110.86                         | 110.86        | 110.86        | 110.86        | 110.86        | 54.57        | 54.57        | 54.57        | 54.57        | 54.57        | 54.57        | 54.57        | 53.46                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Fugitive Dust Emissions          | --                             | --            | --            | --            | --            | --           | --           | --           | --           | --           | --           | --           | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>110.86</b>                  | <b>110.86</b> | <b>110.86</b> | <b>110.86</b> | <b>110.86</b> | <b>54.57</b> | <b>53.46</b>                   | <b>0.00</b> |
| Construction Worker Commuting    | 0.46                           | 0.46          | 0.46          | 0.46          | 0.46          | 0.18         | 0.18         | 0.18         | 0.18         | 0.18         | 0.18         | 0.18         | 0.17                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Haul Truck Emissions             | 13.08                          | 13.08         | 13.08         | 13.08         | 13.08         | 6.54         | 6.54         | 6.54         | 6.54         | 6.54         | 6.54         | 6.54         | 5.84                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| <b>Offsite Subtotal</b>          | <b>13.54</b>                   | <b>13.54</b>  | <b>13.54</b>  | <b>13.54</b>  | <b>13.54</b>  | <b>6.72</b>  | <b>6.01</b>                    | <b>0.00</b> |
| <b>Total</b>                     | <b>124.39</b>                  | <b>124.39</b> | <b>124.39</b> | <b>124.39</b> | <b>124.39</b> | <b>61.29</b> | <b>59.47</b>                   | <b>0.00</b> |

| YEAR                             | 2016                          |               |               |               |               |               |               |               |               |               |               |               | 2017                          |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                             | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            | 1                             | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>CO Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |               | <b>CO Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 246.58                        | 246.58        | 246.58        | 246.58        | 246.58        | 120.13        | 120.13        | 120.13        | 120.13        | 120.13        | 120.13        | 120.13        | 116.01                        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Fugitive Dust Emissions          | --                            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --                            | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>246.58</b>                 | <b>246.58</b> | <b>246.58</b> | <b>246.58</b> | <b>246.58</b> | <b>120.13</b> | <b>116.01</b>                 | <b>0.00</b> |
| Construction Worker Commuting    | 5.82                          | 5.82          | 5.82          | 5.82          | 5.82          | 2.33          | 2.33          | 2.33          | 2.33          | 2.33          | 2.33          | 2.33          | 2.13                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Haul Truck Emissions             | 5.05                          | 5.05          | 5.05          | 5.05          | 5.05          | 2.52          | 2.52          | 2.52          | 2.52          | 2.52          | 2.52          | 2.52          | 2.26                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| <b>Offsite Subtotal</b>          | <b>10.87</b>                  | <b>10.87</b>  | <b>10.87</b>  | <b>10.87</b>  | <b>10.87</b>  | <b>4.85</b>   | <b>4.39</b>                   | <b>0.00</b> |
| <b>Total</b>                     | <b>257.45</b>                 | <b>257.45</b> | <b>257.45</b> | <b>257.45</b> | <b>257.45</b> | <b>124.99</b> | <b>120.40</b>                 | <b>0.00</b> |

| YEAR                             | 2016                           |             |             |             |             |             |             |             |             |             |             |             | 2017                           |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 1.00                           | 1.00        | 1.00        | 1.00        | 1.00        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 0.52                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>1.00</b>                    | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>0.48</b> | <b>0.52</b>                    | <b>0.00</b> |
| Construction Worker Commuting    | 0.01                           | 0.01        | 0.01        | 0.01        | 0.01        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Haul Truck Emissions             | 0.03                           | 0.03        | 0.03        | 0.03        | 0.03        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| <b>Offsite Subtotal</b>          | <b>0.04</b>                    | <b>0.04</b> | <b>0.04</b> | <b>0.04</b> | <b>0.04</b> | <b>0.02</b>                    | <b>0.00</b> |
| <b>Total</b>                     | <b>1.05</b>                    | <b>1.05</b> | <b>1.05</b> | <b>1.05</b> | <b>1.05</b> | <b>0.50</b> | <b>0.54</b>                    | <b>0.00</b> |

| YEAR                             | 2016                            |             |             |             |             |             |             |             |             |             |             |             | 2017                            |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 1.90                            | 1.90        | 1.90        | 1.90        | 1.90        | 0.92        | 0.92        | 0.92        | 0.92        | 0.92        | 0.92        | 0.92        | 0.84                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Fugitive Dust Emissions          | 0.19                            | 0.19        | 0.19        | 0.19        | 0.19        | 0.08        | 0.08        | 0.08        | 0.08        | 0.08        | 0.08        | 0.08        | 0.08                            | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>2.08</b>                     | <b>2.08</b> | <b>2.08</b> | <b>2.08</b> | <b>2.08</b> | <b>0.99</b> | <b>0.92</b>                     | <b>0.00</b> |
| Construction Worker Commuting    | 2.79                            | 2.79        | 2.79        | 2.79        | 2.79        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Haul Truck Emissions             | 1.23                            | 1.23        | 1.23        | 1.23        | 1.23        | 0.61        | 0.61        | 0.61        | 0.61        | 0.61        | 0.61        | 0.61        | 0.58                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| <b>Offsite Subtotal</b>          | <b>4.02</b>                     | <b>4.02</b> | <b>4.02</b> | <b>4.02</b> | <b>4.02</b> | <b>1.73</b> | <b>1.70</b>                     | <b>0.00</b> |
| <b>Total</b>                     | <b>6.10</b>                     | <b>6.10</b> | <b>6.10</b> | <b>6.10</b> | <b>6.10</b> | <b>2.72</b> | <b>2.62</b>                     | <b>0.00</b> |

| YEAR                             | 2016                             |             |             |             |             |             |             |             |             |             |             |             | 2017                             |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 1.74                             | 1.74        | 1.74        | 1.74        | 1.74        | 0.84        | 0.84        | 0.84        | 0.84        | 0.84        | 0.84        | 0.84        | 0.78                             | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        |
| Fugitive Dust Emissions          | 0.03                             | 0.03        | 0.03        | 0.03        | 0.03        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>1.77</b>                      | <b>1.77</b> | <b>1.77</b> | <b>1.77</b> | <b>1.77</b> | <b>0.86</b> | <b>0.79</b>                      | <b>0.00</b> |
| Construction Worker Commuting    | 0.04                             | 0.04        | 0.04        | 0.04        | 0.04        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02                             | 0.00        | 0.00        | 0.00        |             |             |             |             |             |             |             |             |

Table 1-4: Summary of Annual Construction Emissions - Alternative 2

**Alternative 2**

| YEAR                             | 2014                           |             |             |             |             |             |             |             |              |              |              |              | 2015                           |              |              |              |              |              |              |              |              |              |              |              |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9            | 10           | 11           | 12           | 1                              | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           |
| Phase                            | <b>ROG Emissions (lbs/day)</b> |             |             |             |             |             |             |             |              |              |              |              | <b>ROG Emissions (lbs/day)</b> |              |              |              |              |              |              |              |              |              |              |              |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 9.54         | 9.54         | 9.54         | 9.54         | 12.77                          | 12.77        | 12.77        | 12.77        | 24.91        | 24.91        | 24.91        | 24.91        | 24.91        | 24.91        | 12.77        | 12.77        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --           | --           | --           | --           | --                             | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           |
| <i>Onsite Subtotal</i>           | <i>0.00</i>                    | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>9.54</i>  | <i>9.54</i>  | <i>9.54</i>  | <i>9.54</i>  | <i>12.77</i>                   | <i>12.77</i> | <i>12.77</i> | <i>12.77</i> | <i>24.91</i> | <i>24.91</i> | <i>24.91</i> | <i>24.91</i> | <i>24.91</i> | <i>24.91</i> | <i>12.77</i> | <i>12.77</i> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.12         | 0.12         | 0.12         | 0.12         | 0.10                           | 0.10         | 0.10         | 0.10         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.10         | 0.10         |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.71         | 0.71         | 0.71         | 0.71         | 0.63                           | 0.63         | 0.63         | 0.63         | 1.27         | 1.27         | 1.27         | 1.27         | 1.27         | 1.27         | 0.63         | 0.63         |
| <i>Offsite Subtotal</i>          | <i>0.00</i>                    | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.83</i>  | <i>0.83</i>  | <i>0.83</i>  | <i>0.83</i>  | <i>0.73</i>                    | <i>0.73</i>  | <i>0.73</i>  | <i>0.73</i>  | <i>1.43</i>  | <i>1.43</i>  | <i>1.43</i>  | <i>1.43</i>  | <i>1.43</i>  | <i>1.43</i>  | <i>0.73</i>  | <i>0.73</i>  |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>10.36</b> | <b>10.36</b> | <b>10.36</b> | <b>10.36</b> | <b>13.51</b>                   | <b>13.51</b> | <b>13.51</b> | <b>13.51</b> | <b>26.35</b> | <b>26.35</b> | <b>26.35</b> | <b>26.35</b> | <b>26.35</b> | <b>26.35</b> | <b>13.51</b> | <b>13.51</b> |

| YEAR                             | 2014                           |             |             |             |             |             |             |             |              |              |              |              | 2015                           |              |              |              |               |               |               |               |               |               |              |              |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9            | 10           | 11           | 12           | 1                              | 2            | 3            | 4            | 5             | 6             | 7             | 8             | 9             | 10            | 11           | 12           |
| Phase                            | <b>NOx Emissions (lbs/day)</b> |             |             |             |             |             |             |             |              |              |              |              | <b>NOx Emissions (lbs/day)</b> |              |              |              |               |               |               |               |               |               |              |              |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 53.46        | 53.46        | 53.46        | 53.46        | 54.90                          | 54.90        | 54.90        | 54.90        | 108.11        | 108.11        | 108.11        | 108.11        | 108.11        | 108.11        | 54.90        | 54.90        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --           | --           | --           | --           | --                             | --           | --           | --           | --            | --            | --            | --            | --            | --            | --           | --           |
| <i>Onsite Subtotal</i>           | <i>0.00</i>                    | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>53.46</i> | <i>53.46</i> | <i>53.46</i> | <i>53.46</i> | <i>54.90</i>                   | <i>54.90</i> | <i>54.90</i> | <i>54.90</i> | <i>108.11</i> | <i>108.11</i> | <i>108.11</i> | <i>108.11</i> | <i>108.11</i> | <i>108.11</i> | <i>54.90</i> | <i>54.90</i> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.34         | 0.34         | 0.34         | 0.34         | 0.30                           | 0.30         | 0.30         | 0.30         | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          | 0.30         | 0.30         |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 8.46         | 8.46         | 8.46         | 8.46         | 7.39                           | 7.39         | 7.39         | 7.39         | 14.77         | 14.77         | 14.77         | 14.77         | 14.77         | 14.77         | 7.39         | 7.39         |
| <i>Offsite Subtotal</i>          | <i>0.00</i>                    | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>8.79</i>  | <i>8.79</i>  | <i>8.79</i>  | <i>8.79</i>  | <i>7.69</i>                    | <i>7.69</i>  | <i>7.69</i>  | <i>7.69</i>  | <i>15.28</i>  | <i>15.28</i>  | <i>15.28</i>  | <i>15.28</i>  | <i>15.28</i>  | <i>15.28</i>  | <i>7.69</i>  | <i>7.69</i>  |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>62.26</b> | <b>62.26</b> | <b>62.26</b> | <b>62.26</b> | <b>62.59</b>                   | <b>62.59</b> | <b>62.59</b> | <b>62.59</b> | <b>123.39</b> | <b>123.39</b> | <b>123.39</b> | <b>123.39</b> | <b>123.39</b> | <b>123.39</b> | <b>62.59</b> | <b>62.59</b> |

| YEAR                             | 2014                          |             |             |             |             |             |             |             |               |               |               |               | 2015                          |               |               |               |               |               |               |               |               |               |               |               |
|----------------------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|---------------|---------------|---------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MONTH                            | 1                             | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9             | 10            | 11            | 12            | 1                             | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            |
| Phase                            | <b>CO Emissions (lbs/day)</b> |             |             |             |             |             |             |             |               |               |               |               | <b>CO Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |               |
| Construction Equipment Emissions | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 116.01        | 116.01        | 116.01        | 116.01        | 121.32                        | 121.32        | 121.32        | 121.32        | 236.47        | 236.47        | 236.47        | 236.47        | 236.47        | 236.47        | 121.32        | 121.32        |
| Fugitive Dust Emissions          | --                            | --          | --          | --          | --          | --          | --          | --          | --            | --            | --            | --            | --                            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            |
| <i>Onsite Subtotal</i>           | <i>0.00</i>                   | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>116.01</i> | <i>116.01</i> | <i>116.01</i> | <i>116.01</i> | <i>121.32</i>                 | <i>121.32</i> | <i>121.32</i> | <i>121.32</i> | <i>236.47</i> | <i>236.47</i> | <i>236.47</i> | <i>236.47</i> | <i>236.47</i> | <i>236.47</i> | <i>121.32</i> | <i>121.32</i> |
| Construction Worker Commuting    | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 4.17          | 4.17          | 4.17          | 4.17          | 3.80                          | 3.80          | 3.80          | 3.80          | 6.33          | 6.33          | 6.33          | 6.33          | 6.33          | 6.33          | 3.80          | 3.80          |
| Haul Truck Emissions             | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 3.24          | 3.24          | 3.24          | 3.24          | 2.84                          | 2.84          | 2.84          | 2.84          | 5.68          | 5.68          | 5.68          | 5.68          | 5.68          | 5.68          | 2.84          | 2.84          |
| <i>Offsite Subtotal</i>          | <i>0.00</i>                   | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>7.41</i>   | <i>7.41</i>   | <i>7.41</i>   | <i>7.41</i>   | <i>6.64</i>                   | <i>6.64</i>   | <i>6.64</i>   | <i>6.64</i>   | <i>12.01</i>  | <i>12.01</i>  | <i>12.01</i>  | <i>12.01</i>  | <i>12.01</i>  | <i>12.01</i>  | <i>6.64</i>   | <i>6.64</i>   |
| <b>Total</b>                     | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>123.42</b> | <b>123.42</b> | <b>123.42</b> | <b>123.42</b> | <b>127.96</b>                 | <b>127.96</b> | <b>127.96</b> | <b>127.96</b> | <b>248.49</b> | <b>248.49</b> | <b>248.49</b> | <b>248.49</b> | <b>248.49</b> | <b>248.49</b> | <b>127.96</b> | <b>127.96</b> |

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |             |             |             | 2015                           |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.52        | 0.52        | 0.52        | 0.52        | 0.52                           | 0.52        | 0.52        | 0.52        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 0.52        | 0.52        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <i>Onsite Subtotal</i>           | <i>0.00</i>                    | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.52</i> | <i>0.52</i> | <i>0.52</i> | <i>0.52</i> | <i>0.52</i>                    | <i>0.52</i> | <i>0.52</i> | <i>0.52</i> | <i>1.00</i> | <i>1.00</i> | <i>1.00</i> | <i>1.00</i> | <i>1.00</i> | <i>1.00</i> | <i>0.52</i> | <i>0.52</i> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01                           | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02                           | 0.02        | 0.02        | 0.02        | 0.03        | 0.03        | 0.03        | 0.03        | 0.03        | 0.03        | 0.02        | 0.02        |
| <i>Offsite Subtotal</i>          | <i>0.00</i>                    | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.02</i> | <i>0.02</i> | <i>0.02</i> | <i>0.02</i> | <i>0.02</i>                    | <i>0.02</i> | <i>0.02</i> | <i>0.02</i> | <i>0.04</i> | <i>0.04</i> | <i>0.04</i> | <i>0.04</i> | <i>0.04</i> | <i>0.04</i> | <i>0.02</i> | <i>0.02</i> |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.54</b> | <b>0.54</b> | <b>0.54</b> | <b>0.54</b> | <b>0.54</b>                    | <b>0.54</b> | <b>0.54</b> | <b>0.54</b> | <b>1.05</b> | <b>1.05</b> | <b>1.05</b> | <b>1.05</b> | <b>1.05</b> | <b>1.05</b> | <b>0.54</b> | <b>0.54</b> |

| YEAR                             | 2014                            |             |             |             |             |             |             |             |             |             |             |             | 2015                            |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.84        | 0.84        | 0.84        | 0.84        | 0.91                            | 0.91        | 0.91        | 0.91        | 1.77        | 1.77        | 1.77        | 1.77        | 1.77        | 1.77        | 0.91        | 0.91        |
| Fugitive Dust Emissions          | --                              | --          | --          | --          | --          | --          | --          | --          | 0.14        | 0.14        | 0.14        | 0.14        | 0.14                            | 0.14        | 0.14        | 0.14        | 0.24        | 0.24        | 0.24        | 0.24        | 0.24        | 0.24        | 0.14        | 0.14        |
| <i>Onsite Subtotal</i>           | <i>0.00</i>                     | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.99</i> | <i>0.99</i> | <i>0.99</i> | <i>0.99</i> | <i>1.06</i>                     | <i>1.06</i> | <i>1.06</i> | <i>1.06</i> | <i>2.01</i> | <i>2.01</i> | <i>2.01</i> | <i>2.01</i> | <i>2.01</i> | <i>2.01</i> | <i>1.06</i> | <i>1.06</i> |
| Construction Worker Commuting    | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 1.67        | 1.67        | 1.67        | 1.67        | 1.67                            | 1.67        | 1.67        | 1.67        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        | 2.79        | 1.67        | 1.67        |
| Haul Truck Emissions             | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.69        | 0.69        | 0.69        | 0.69        | 0.65                            | 0.65        | 0.65        | 0.65        | 1.30        | 1.30        | 1.30        | 1.30        | 1.30        | 1.30        | 0.65        | 0.65        |
| <i>Offsite Subtotal</i>          | <i>0.00</i>                     | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>2.37</i> | <i>2.37</i> | <i>2.37</i> | <i>2.37</i> | <i>2.32</i>                     | <i>2.32</i> | <i>2.32</i> | <i>2.32</i> | <i>4.08</i> | <i>4.08</i> | <i>4.08</i> | <i>4.08</i> | <i>4.08</i> | <i>4.08</i> | <i>2.32</i> | <i>2.32</i> |
| <b>Total</b>                     | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>3.35</b> | <b>3.35</b> | <b>3.35</b> | <b>3.35</b> | <b>3.38</b>                     | <b>3.38</b> | <b>3.38</b> | <b>3.38</b> | <b>6.09</b> | <b>6.09</b> | <b>6.09</b> | <b>6.09</b> | <b>6.09</b> | <b>6.09</b> | <b>3.38</b> | <b>3.38</b> |

Table 1-4: Summary of Annual Construction Emissions - Alternative 2

| YEAR                             | 2014                             |             |             |             |             |             |             |             |             |             |             |             | 2015                             |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.00                             | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.78        | 0.78        | 0.78        | 0.78        | 0.84                             | 0.84        | 0.84        | 0.84        | 1.62        | 1.62        | 1.62        | 1.62        | 1.62        | 1.62        | 0.84        | 0.84        |
| Fugitive Dust Emissions          | --                               | --          | --          | --          | --          | --          | --          | --          | 0.02        | 0.02        | 0.02        | 0.02        | 0.02                             | 0.02        | 0.02        | 0.02        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.02        | 0.02        |
| <i>Onsite Subtotal</i>           | <i>0.00</i>                      | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.80</i> | <i>0.80</i> | <i>0.80</i> | <i>0.80</i> | <i>0.86</i>                      | <i>0.86</i> | <i>0.86</i> | <i>0.86</i> | <i>1.66</i> | <i>1.66</i> | <i>1.66</i> | <i>1.66</i> | <i>1.66</i> | <i>1.66</i> | <i>0.86</i> | <i>0.86</i> |
| Construction Worker Commuting    | 0.00                             | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02                             | 0.02        | 0.02        | 0.02        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.04        | 0.02        | 0.02        |
| Haul Truck Emissions             | 0.00                             | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.31        | 0.31        | 0.31        | 0.31        | 0.27                             | 0.27        | 0.27        | 0.27        | 0.53        | 0.53        | 0.53        | 0.53        | 0.53        | 0.53        | 0.27        | 0.27        |
| <i>Offsite Subtotal</i>          | <i>0.00</i>                      | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.00</i> | <i>0.33</i> | <i>0.33</i> | <i>0.33</i> | <i>0.33</i> | <i>0.29</i>                      | <i>0.29</i> | <i>0.29</i> | <i>0.29</i> | <i>0.57</i> | <i>0.57</i> | <i>0.57</i> | <i>0.57</i> | <i>0.57</i> | <i>0.57</i> | <i>0.29</i> | <i>0.29</i> |
| <b>Total</b>                     | <b>0.00</b>                      | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>1.13</b> | <b>1.13</b> | <b>1.13</b> | <b>1.13</b> | <b>1.15</b>                      | <b>1.15</b> | <b>1.15</b> | <b>1.15</b> | <b>2.23</b> | <b>2.23</b> | <b>2.23</b> | <b>2.23</b> | <b>2.23</b> | <b>2.23</b> | <b>1.15</b> | <b>1.15</b> |





Table 1-5: Summary of Annual Construction Emissions - Alternative 3

**Alternative 3**

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |             |              |              | 2015                           |              |              |              |              |              |              |              |              |              |              |              |       |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11           | 12           | 1                              | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           |       |
| Phase                            | <b>ROG Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |              |              | <b>ROG Emissions (lbs/day)</b> |              |              |              |              |              |              |              |              |              |              |              |       |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00         | 20.74        | 20.74                          | 25.84        | 25.84        | 25.84        | 25.84        | 25.84        | 37.99        | 37.99        | 37.99        | 37.99        | 37.99        | 37.99        | 12.14 |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --           | --           | --                             | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --    |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>  | <b>20.74</b> | <b>20.74</b>                   | <b>25.84</b> | <b>25.84</b> | <b>25.84</b> | <b>25.84</b> | <b>25.84</b> | <b>37.99</b> | <b>37.99</b> | <b>37.99</b> | <b>37.99</b> | <b>37.99</b> | <b>12.14</b> |       |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.16         | 0.16         | 0.13                           | 0.13         | 0.13         | 0.13         | 0.13         | 0.20         | 0.20         | 0.20         | 0.20         | 0.20         | 0.20         | 0.07         |       |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00         | 0.00         | 0.00                           | 0.00         | 0.00         | 0.00         | 0.00         | 0.63         | 0.63         | 0.63         | 0.63         | 0.63         | 0.63         | 0.63         |       |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.16</b>  | <b>0.16</b>  | <b>0.13</b>                    | <b>0.13</b>  | <b>0.13</b>  | <b>0.13</b>  | <b>0.13</b>  | <b>0.84</b>  | <b>0.84</b>  | <b>0.84</b>  | <b>0.84</b>  | <b>0.84</b>  | <b>0.84</b>  | <b>0.70</b>  |       |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>20.90</b> | <b>20.90</b> | <b>25.98</b>                   | <b>25.98</b> | <b>25.98</b> | <b>25.98</b> | <b>25.98</b> | <b>38.82</b> | <b>38.82</b> | <b>38.82</b> | <b>38.82</b> | <b>38.82</b> | <b>38.82</b> | <b>12.84</b> |       |

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |             |               |               | 2015                           |               |               |               |               |               |               |               |               |               |               |              |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|---------------|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11            | 12            | 1                              | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12           |
| Phase                            | <b>NOx Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |               |               | <b>NOx Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |              |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 254.93        | 254.93        | 254.47                         | 254.47        | 254.47        | 254.47        | 254.47        | 307.68        | 307.68        | 307.68        | 307.68        | 307.68        | 307.68        | 53.21        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --            | --            | --                             | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --           |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>254.93</b> | <b>254.93</b> | <b>254.47</b>                  | <b>254.47</b> | <b>254.47</b> | <b>254.47</b> | <b>254.47</b> | <b>307.68</b> | <b>307.68</b> | <b>307.68</b> | <b>307.68</b> | <b>307.68</b> | <b>53.21</b>  |              |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.45          | 0.45          | 0.40                           | 0.40          | 0.40          | 0.40          | 0.40          | 0.61          | 0.61          | 0.61          | 0.61          | 0.61          | 0.61          | 0.20         |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00          | 0.00          | 0.00                           | 0.00          | 0.00          | 0.00          | 0.00          | 7.39          | 7.39          | 7.39          | 7.39          | 7.39          | 7.39          | 7.39         |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.45</b>   | <b>0.45</b>   | <b>0.40</b>                    | <b>0.40</b>   | <b>0.40</b>   | <b>0.40</b>   | <b>0.40</b>   | <b>7.99</b>   | <b>7.99</b>   | <b>7.99</b>   | <b>7.99</b>   | <b>7.99</b>   | <b>7.99</b>   | <b>7.59</b>  |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>255.37</b> | <b>255.37</b> | <b>254.87</b>                  | <b>254.87</b> | <b>254.87</b> | <b>254.87</b> | <b>254.87</b> | <b>315.67</b> | <b>315.67</b> | <b>315.67</b> | <b>315.67</b> | <b>315.67</b> | <b>315.67</b> | <b>60.80</b> |

| YEAR                             | 2014                          |             |             |             |             |             |             |             |             |             |               |               | 2015                          |               |               |               |               |               |               |               |               |               |               |               |
|----------------------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|---------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MONTH                            | 1                             | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11            | 12            | 1                             | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            |
| Phase                            | <b>CO Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |               |               | <b>CO Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |               |
| Construction Equipment Emissions | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 198.48        | 198.48        | 202.14                        | 202.14        | 202.14        | 202.14        | 202.14        | 317.29        | 317.29        | 317.29        | 317.29        | 317.29        | 317.29        | 115.15        |
| Fugitive Dust Emissions          | --                            | --          | --          | --          | --          | --          | --          | --          | --          | --          | --            | --            | --                            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>198.48</b> | <b>198.48</b> | <b>202.14</b>                 | <b>202.14</b> | <b>202.14</b> | <b>202.14</b> | <b>202.14</b> | <b>317.29</b> | <b>317.29</b> | <b>317.29</b> | <b>317.29</b> | <b>317.29</b> | <b>115.15</b> |               |
| Construction Worker Commuting    | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 5.56          | 5.56          | 5.07                          | 5.07          | 5.07          | 5.07          | 5.07          | 7.60          | 7.60          | 7.60          | 7.60          | 7.60          | 7.60          | 2.53          |
| Haul Truck Emissions             | 0.00                          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00          | 0.00          | 0.00                          | 0.00          | 0.00          | 0.00          | 0.00          | 2.84          | 2.84          | 2.84          | 2.84          | 2.84          | 2.84          | 2.84          |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>5.56</b>   | <b>5.56</b>   | <b>5.07</b>                   | <b>5.07</b>   | <b>5.07</b>   | <b>5.07</b>   | <b>5.07</b>   | <b>10.44</b>  | <b>10.44</b>  | <b>10.44</b>  | <b>10.44</b>  | <b>10.44</b>  | <b>10.44</b>  | <b>5.37</b>   |
| <b>Total</b>                     | <b>0.00</b>                   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>204.03</b> | <b>204.03</b> | <b>207.20</b>                 | <b>207.20</b> | <b>207.20</b> | <b>207.20</b> | <b>207.20</b> | <b>327.73</b> | <b>327.73</b> | <b>327.73</b> | <b>327.73</b> | <b>327.73</b> | <b>327.73</b> | <b>120.52</b> |

| YEAR                             | 2014                           |             |             |             |             |             |             |             |             |             |             |             | 2015                           |             |             |             |             |             |             |             |             |             |             |      |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12   |
| Phase                            | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |      |
| Construction Equipment Emissions | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 1.18        | 1.18        | 1.17                           | 1.17        | 1.17        | 1.17        | 1.17        | 1.65        | 1.65        | 1.65        | 1.65        | 1.65        | 1.65        | 0.48 |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --   |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>1.18</b> | <b>1.18</b> | <b>1.17</b>                    | <b>1.17</b> | <b>1.17</b> | <b>1.17</b> | <b>1.17</b> | <b>1.65</b> | <b>1.65</b> | <b>1.65</b> | <b>1.65</b> | <b>1.65</b> | <b>0.48</b> |      |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.01        | 0.01        | 0.01                           | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.00 |
| Haul Truck Emissions             | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00                           | 0.00        | 0.00        | 0.00        | 0.00        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02 |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.01</b> | <b>0.01</b> | <b>0.01</b>                    | <b>0.01</b> | <b>0.01</b> | <b>0.01</b> | <b>0.01</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.02</b> |      |
| <b>Total</b>                     | <b>0.00</b>                    | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>1.19</b> | <b>1.19</b> | <b>1.18</b>                    | <b>1.18</b> | <b>1.18</b> | <b>1.18</b> | <b>1.18</b> | <b>1.68</b> | <b>1.68</b> | <b>1.68</b> | <b>1.68</b> | <b>1.68</b> | <b>0.50</b> |      |

| YEAR                             | 2014                            |             |             |             |             |             |             |             |             |             |             |             | 2015                            |             |             |             |             |              |              |              |              |              |             |      |
|----------------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|------|
| MONTH                            | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                               | 2           | 3           | 4           | 5           | 6            | 7            | 8            | 9            | 10           | 11          | 12   |
| Phase                            | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |              |              |              |              |              |             |      |
| Construction Equipment Emissions | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 6.37        | 6.37        | 6.59                            | 6.59        | 6.59        | 6.59        | 6.59        | 7.44         | 7.44         | 7.44         | 7.44         | 7.44         | 7.44        | 0.85 |
| Fugitive Dust Emissions          | --                              | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                              | --          | --          | --          | --          | 0.05         | 0.05         | 0.05         | 0.05         | 0.05         | 0.05        | 0.05 |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>6.37</b> | <b>6.37</b> | <b>6.59</b>                     | <b>6.59</b> | <b>6.59</b> | <b>6.59</b> | <b>6.59</b> | <b>7.49</b>  | <b>7.49</b>  | <b>7.49</b>  | <b>7.49</b>  | <b>7.49</b>  | <b>0.90</b> |      |
| Construction Worker Commuting    | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 2.23        | 2.23        | 2.23                            | 2.23        | 2.23        | 2.23        | 2.23        | 3.34         | 3.34         | 3.34         | 3.34         | 3.34         | 3.34        | 1.11 |
| Haul Truck Emissions             | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00                            | 0.00        | 0.00        | 0.00        | 0.00        | 0.65         | 0.65         | 0.65         | 0.65         | 0.65         | 0.65        | 0.65 |
| <b>Offsite Subtotal</b>          | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>2.23</b> | <b>2.23</b> | <b>2.23</b>                     | <b>2.23</b> | <b>2.23</b> | <b>2.23</b> | <b>2.23</b> | <b>3.99</b>  | <b>3.99</b>  | <b>3.99</b>  | <b>3.99</b>  | <b>3.99</b>  | <b>1.76</b> |      |
| <b>Total</b>                     | <b>0.00</b>                     | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>8.60</b> | <b>8.60</b> | <b>8.82</b>                     | <b>8.82</b> | <b>8.82</b> | <b>8.82</b> | <b>8.82</b> | <b>11.49</b> | <b>11.49</b> | <b>11.49</b> | <b>11.49</b> | <b>11.49</b> | <b>2.67</b> |      |

| YEAR                             | 2014                             |             |             |             |             |             |             |             |             |             |             |             | 2015                             |             |             |             |             |             |             |             |             |             |             |      |
|----------------------------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| MONTH                            | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12   |
| Phase                            | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |      |
| Construction Equipment Emissions | 0.00                             | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.03        | 0.03        | 0.03                             | 0.03        | 0.03        | 0.03        | 0.03        | 0.05        | 0.05        | 0.05        | 0.05        | 0.05        | 0.05        | 0.02 |
| Fugitive Dust Emissions          | --                               | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                               | --          | --          | --          | --          | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01 |
| <b>Onsite Subtotal</b>           | <b>0.00</b>                      | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b>                      | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.05</b> | <b>0.05</b> | <b>0.05</b> | <b>0.05</b> | <b>0.05</b> | <b>0.02</b> |      |
| Construction Worker Commuting    | 0.00                             | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.03        | 0.03        | 0.03                             | 0.03        | 0.03        | 0.03        | 0.03        | 0.05        | 0.05        | 0.05        | 0.05        | 0.05        | 0.05        | 0.02 |
| Haul Truck Emissions             | 0.00                             | 0.00        | 0.00        | 0.0         |             |             |             |             |             |             |             |             |                                  |             |             |             |             |             |             |             |             |             |             |      |

Table 1-5: Summary of Annual Construction Emissions - Alternative 3

**Alternative 3**

| YEAR                             | 2016                           |              |              |              |              |              |              |              |              |              |              |              | 2017                           |              |              |              |              |              |              |              |              |              |              |              |
|----------------------------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MONTH                            | 1                              | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           | 1                              | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 11           | 12           |
| Phase                            | <b>ROG Emissions (lbs/day)</b> |              |              |              |              |              |              |              |              |              |              |              | <b>ROG Emissions (lbs/day)</b> |              |              |              |              |              |              |              |              |              |              |              |
| Construction Equipment Emissions | 15.16                          | 15.16        | 30.32        | 15.16        | 15.16        | 15.16        | 15.16        | 15.16        | 15.16        | 30.32        | 30.32        | 45.48        | 36.15                          | 36.15        | 36.15        | 36.15        | 36.15        | 18.07        | 18.07        | 18.07        | 18.07        | 18.07        | 18.07        | 36.97        |
| Fugitive Dust Emissions          | --                             | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --                             | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           | --           |
| <b>Onsite Subtotal</b>           | <b>15.16</b>                   | <b>15.16</b> | <b>30.32</b> | <b>15.16</b> | <b>15.16</b> | <b>15.16</b> | <b>15.16</b> | <b>15.16</b> | <b>15.16</b> | <b>30.32</b> | <b>30.32</b> | <b>45.48</b> | <b>36.15</b>                   | <b>36.15</b> | <b>36.15</b> | <b>36.15</b> | <b>36.15</b> | <b>18.07</b> | <b>18.07</b> | <b>18.07</b> | <b>18.07</b> | <b>18.07</b> | <b>18.07</b> | <b>36.97</b> |
| Construction Worker Commuting    | 0.06                           | 0.06         | 0.12         | 0.06         | 0.06         | 0.06         | 0.06         | 0.06         | 0.06         | 0.12         | 0.12         | 0.17         | 0.10                           | 0.10         | 0.10         | 0.10         | 0.10         | 0.05         | 0.05         | 0.05         | 0.05         | 0.05         | 0.05         | 0.12         |
| Haul Truck Emissions             | 0.57                           | 0.57         | 1.15         | 0.57         | 0.57         | 0.57         | 0.57         | 0.57         | 0.57         | 1.15         | 1.15         | 1.72         | 1.05                           | 1.05         | 1.05         | 1.05         | 1.05         | 0.53         | 0.53         | 0.53         | 0.53         | 0.53         | 0.53         | 1.05         |
| <b>Offsite Subtotal</b>          | <b>0.63</b>                    | <b>0.63</b>  | <b>1.26</b>  | <b>0.63</b>  | <b>0.63</b>  | <b>0.63</b>  | <b>0.63</b>  | <b>0.63</b>  | <b>0.63</b>  | <b>1.26</b>  | <b>1.26</b>  | <b>1.89</b>  | <b>1.15</b>                    | <b>1.15</b>  | <b>1.15</b>  | <b>1.15</b>  | <b>1.15</b>  | <b>0.57</b>  | <b>0.57</b>  | <b>0.57</b>  | <b>0.57</b>  | <b>0.57</b>  | <b>0.57</b>  | <b>1.17</b>  |
| <b>Total</b>                     | <b>15.79</b>                   | <b>15.79</b> | <b>31.58</b> | <b>15.79</b> | <b>15.79</b> | <b>15.79</b> | <b>15.79</b> | <b>15.79</b> | <b>15.79</b> | <b>31.58</b> | <b>31.58</b> | <b>47.37</b> | <b>37.29</b>                   | <b>37.29</b> | <b>37.29</b> | <b>37.29</b> | <b>37.29</b> | <b>18.65</b> | <b>18.65</b> | <b>18.65</b> | <b>18.65</b> | <b>18.65</b> | <b>18.65</b> | <b>38.14</b> |

| YEAR                             | 2016                           |              |               |              |              |              |              |              |              |               |               |               | 2017                           |               |               |               |               |              |              |              |              |              |              |               |
|----------------------------------|--------------------------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|--------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| MONTH                            | 1                              | 2            | 3             | 4            | 5            | 6            | 7            | 8            | 9            | 10            | 11            | 12            | 1                              | 2             | 3             | 4             | 5             | 6            | 7            | 8            | 9            | 10           | 11           | 12            |
| Phase                            | <b>NOx Emissions (lbs/day)</b> |              |               |              |              |              |              |              |              |               |               |               | <b>NOx Emissions (lbs/day)</b> |               |               |               |               |              |              |              |              |              |              |               |
| Construction Equipment Emissions | 54.57                          | 54.57        | 109.14        | 54.57        | 54.57        | 54.57        | 54.57        | 54.57        | 54.57        | 109.14        | 109.14        | 163.71        | 111.76                         | 111.76        | 111.76        | 111.76        | 111.76        | 55.88        | 55.88        | 55.88        | 55.88        | 55.88        | 55.88        | 113.50        |
| Fugitive Dust Emissions          | --                             | --           | --            | --           | --           | --           | --           | --           | --           | --            | --            | --            | --                             | --            | --            | --            | --            | --           | --           | --           | --           | --           | --           | --            |
| <b>Onsite Subtotal</b>           | <b>54.57</b>                   | <b>54.57</b> | <b>109.14</b> | <b>54.57</b> | <b>54.57</b> | <b>54.57</b> | <b>54.57</b> | <b>54.57</b> | <b>54.57</b> | <b>109.14</b> | <b>109.14</b> | <b>163.71</b> | <b>111.76</b>                  | <b>111.76</b> | <b>111.76</b> | <b>111.76</b> | <b>111.76</b> | <b>55.88</b> | <b>55.88</b> | <b>55.88</b> | <b>55.88</b> | <b>55.88</b> | <b>55.88</b> | <b>113.50</b> |
| Construction Worker Commuting    | 0.18                           | 0.18         | 0.37          | 0.18         | 0.18         | 0.18         | 0.18         | 0.18         | 0.18         | 0.37          | 0.37          | 0.55          | 0.33                           | 0.33          | 0.33          | 0.33          | 0.33          | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.17         | 0.42          |
| Haul Truck Emissions             | 6.54                           | 6.54         | 13.08         | 6.54         | 6.54         | 6.54         | 6.54         | 6.54         | 6.54         | 13.08         | 13.08         | 19.62         | 11.68                          | 11.68         | 11.68         | 11.68         | 11.68         | 5.84         | 5.84         | 5.84         | 5.84         | 5.84         | 5.84         | 11.68         |
| <b>Offsite Subtotal</b>          | <b>6.72</b>                    | <b>6.72</b>  | <b>13.44</b>  | <b>6.72</b>  | <b>6.72</b>  | <b>6.72</b>  | <b>6.72</b>  | <b>6.72</b>  | <b>6.72</b>  | <b>13.44</b>  | <b>13.44</b>  | <b>20.17</b>  | <b>12.01</b>                   | <b>12.01</b>  | <b>12.01</b>  | <b>12.01</b>  | <b>12.01</b>  | <b>6.01</b>  | <b>6.01</b>  | <b>6.01</b>  | <b>6.01</b>  | <b>6.01</b>  | <b>6.01</b>  | <b>12.09</b>  |
| <b>Total</b>                     | <b>61.29</b>                   | <b>61.29</b> | <b>122.58</b> | <b>61.29</b> | <b>61.29</b> | <b>61.29</b> | <b>61.29</b> | <b>61.29</b> | <b>61.29</b> | <b>122.58</b> | <b>122.58</b> | <b>183.88</b> | <b>123.77</b>                  | <b>123.77</b> | <b>123.77</b> | <b>123.77</b> | <b>123.77</b> | <b>61.89</b> | <b>61.89</b> | <b>61.89</b> | <b>61.89</b> | <b>61.89</b> | <b>61.89</b> | <b>125.60</b> |

| YEAR                             | 2016                          |               |               |               |               |               |               |               |               |               |               |               | 2017                          |               |               |               |               |               |               |               |               |               |               |               |
|----------------------------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MONTH                            | 1                             | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            | 1                             | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            |
| Phase                            | <b>CO Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |               | <b>CO Emissions (lbs/day)</b> |               |               |               |               |               |               |               |               |               |               |               |
| Construction Equipment Emissions | 120.13                        | 120.13        | 240.27        | 120.13        | 120.13        | 120.13        | 120.13        | 120.13        | 120.13        | 240.27        | 240.27        | 360.40        | 249.89                        | 249.89        | 249.89        | 249.89        | 249.89        | 124.95        | 124.95        | 124.95        | 124.95        | 124.95        | 124.95        | 256.33        |
| Fugitive Dust Emissions          | --                            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --                            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            | --            |
| <b>Onsite Subtotal</b>           | <b>120.13</b>                 | <b>120.13</b> | <b>240.27</b> | <b>120.13</b> | <b>120.13</b> | <b>120.13</b> | <b>120.13</b> | <b>120.13</b> | <b>120.13</b> | <b>240.27</b> | <b>240.27</b> | <b>360.40</b> | <b>249.89</b>                 | <b>249.89</b> | <b>249.89</b> | <b>249.89</b> | <b>249.89</b> | <b>124.95</b> | <b>124.95</b> | <b>124.95</b> | <b>124.95</b> | <b>124.95</b> | <b>124.95</b> | <b>256.33</b> |
| Construction Worker Commuting    | 2.33                          | 2.33          | 4.65          | 2.33          | 2.33          | 2.33          | 2.33          | 2.33          | 2.33          | 4.65          | 4.65          | 6.98          | 4.26                          | 4.26          | 4.26          | 4.26          | 4.26          | 2.13          | 2.13          | 2.13          | 2.13          | 2.13          | 2.13          | 5.32          |
| Haul Truck Emissions             | 2.52                          | 2.52          | 5.05          | 2.52          | 2.52          | 2.52          | 2.52          | 2.52          | 2.52          | 5.05          | 5.05          | 7.57          | 4.53                          | 4.53          | 4.53          | 4.53          | 4.53          | 2.26          | 2.26          | 2.26          | 2.26          | 2.26          | 2.26          | 4.53          |
| <b>Offsite Subtotal</b>          | <b>4.85</b>                   | <b>4.85</b>   | <b>9.70</b>   | <b>4.85</b>   | <b>4.85</b>   | <b>4.85</b>   | <b>4.85</b>   | <b>4.85</b>   | <b>4.85</b>   | <b>9.70</b>   | <b>9.70</b>   | <b>14.55</b>  | <b>8.78</b>                   | <b>8.78</b>   | <b>8.78</b>   | <b>8.78</b>   | <b>8.78</b>   | <b>4.39</b>   | <b>4.39</b>   | <b>4.39</b>   | <b>4.39</b>   | <b>4.39</b>   | <b>4.39</b>   | <b>9.85</b>   |
| <b>Total</b>                     | <b>124.99</b>                 | <b>124.99</b> | <b>249.97</b> | <b>124.99</b> | <b>124.99</b> | <b>124.99</b> | <b>124.99</b> | <b>124.99</b> | <b>124.99</b> | <b>249.97</b> | <b>249.97</b> | <b>374.96</b> | <b>258.68</b>                 | <b>258.68</b> | <b>258.68</b> | <b>258.68</b> | <b>258.68</b> | <b>129.34</b> | <b>129.34</b> | <b>129.34</b> | <b>129.34</b> | <b>129.34</b> | <b>129.34</b> | <b>266.18</b> |

| YEAR                             | 2016                           |             |             |             |             |             |             |             |             |             |             |             | 2017                           |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                              | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>SO2 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.48                           | 0.48        | 0.97        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 0.97        | 0.97        | 1.45        | 0.97                           | 0.97        | 0.97        | 0.97        | 0.97        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 0.48        | 1.00        |
| Fugitive Dust Emissions          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --                             | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>Onsite Subtotal</b>           | <b>0.48</b>                    | <b>0.48</b> | <b>0.97</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.97</b> | <b>0.97</b> | <b>1.45</b> | <b>0.97</b>                    | <b>0.97</b> | <b>0.97</b> | <b>0.97</b> | <b>0.97</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>0.48</b> | <b>1.00</b> |
| Construction Worker Commuting    | 0.00                           | 0.00        | 0.01        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.01        | 0.01        | 0.01        | 0.01                           | 0.01        | 0.01        | 0.01        | 0.01        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.01        |
| Haul Truck Emissions             | 0.02                           | 0.02        | 0.03        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.03        | 0.03        | 0.05        | 0.03                           | 0.03        | 0.03        | 0.03        | 0.03        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.03        |
| <b>Offsite Subtotal</b>          | <b>0.02</b>                    | <b>0.02</b> | <b>0.04</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.04</b> | <b>0.04</b> | <b>0.06</b> | <b>0.04</b>                    | <b>0.04</b> | <b>0.04</b> | <b>0.04</b> | <b>0.04</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.02</b> | <b>0.04</b> |
| <b>Total</b>                     | <b>0.50</b>                    | <b>0.50</b> | <b>1.01</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>1.01</b> | <b>1.01</b> | <b>1.51</b> | <b>1.01</b>                    | <b>1.01</b> | <b>1.01</b> | <b>1.01</b> | <b>1.01</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>0.50</b> | <b>1.05</b> |

| YEAR                             | 2016                            |             |             |             |             |             |             |             |             |             |             |             | 2017                            |             |             |             |             |             |             |             |             |             |             |             |
|----------------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MONTH                            | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                               | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          |
| Phase                            | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM10 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             |
| Construction Equipment Emissions | 0.92                            | 0.92        | 1.83        | 0.92        | 0.92        | 0.92        | 0.92        | 0.92        | 0.92        | 1.83        | 1.83        | 2.75        | 1.96                            | 1.96        | 1.96        | 1.96        | 1.96        | 0.98        | 0.98        | 0.98        | 0.98        | 0.98        | 0.98        | 2.02        |
| Fugitive Dust Emissions          | 0.05                            | 0.05        | 0.12        | 0.06        | 0.06        | 0.06        | 0.06        | 0.06        | 0.06        | 0.13        | 0.13        | 0.18        | 0.12                            | 0.12        | 0.12        | 0.12        | 0.12        | 0.05        | 0.05        | 0.05        | 0.05        | 0.05        | 0.05        | 0.31        |
| <b>Onsite Subtotal</b>           | <b>0.97</b>                     | <b>0.97</b> | <b>1.95</b> | <b>0.98</b> | <b>0.98</b> | <b>0.98</b> | <b>0.98</b> | <b>0.98</b> | <b>0.98</b> | <b>1.96</b> | <b>1.96</b> | <b>2.93</b> | <b>2.08</b>                     | <b>2.08</b> | <b>2.08</b> | <b>2.08</b> | <b>2.08</b> | <b>1.03</b> | <b>1.03</b> | <b>1.03</b> | <b>1.03</b> | <b>1.03</b> | <b>1.03</b> | <b>2.33</b> |
| Construction Worker Commuting    | 1.12                            | 1.12        | 2.23        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 2.23        | 2.23        | 3.35        | 2.23                            | 2.23        | 2.23        | 2.23        | 2.23        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 1.12        | 2.79        |
| Haul Truck Emissions             | 0.61                            | 0.61        | 1.23        | 0.61        | 0.61        | 0.61        | 0.61        | 0.61        | 0.61        | 1.23        | 1.23        | 1.84        | 1.17                            | 1.17        | 1.17        | 1.17        | 1.17        | 0.58        | 0.58        | 0.58        | 0.58        | 0.58        | 0.58        | 1.17        |
| <b>Offsite Subtotal</b>          | <b>1.73</b>                     | <b>1.73</b> | <b>3.46</b> | <b>1.73</b> | <b>1.73</b> | <b>1.73</b> | <b>1.73</b> | <b>1.73</b> | <b>1.73</b> | <b>3.46</b> | <b>3.46</b> | <b>5.19</b> | <b>3.40</b>                     | <b>3.40</b> | <b>3.40</b> | <b>3.40</b> | <b>3.40</b> | <b>1.70</b> | <b>1.70</b> | <b>1.70</b> | <b>1.70</b> | <b>1.70</b> | <b>1.70</b> | <b>3.96</b> |
| <b>Total</b>                     | <b>2.70</b>                     | <b>2.70</b> | <b>5.41</b> | <b>2.71</b> | <b>2.71</b> | <b>2.71</b> | <b>2.71</b> | <b>2.71</b> | <b>2.71</b> | <b>5.42</b> | <b>5.42</b> | <b>8.12</b> | <b>5.47</b>                     | <b>5.47</b> | <b>5.47</b> | <b>5.47</b> | <b>5.47</b> | <b>2.73</b> | <b>2.73</b> | <b>2.73</b> | <b>2.73</b> | <b>2.73</b> | <b>2.73</b> | <b>6.29</b> |

| YEAR                             | 2016                             |             |             |             |             |             |             |             |             |             |             |             | 2017                             |             |             |             |             |                |      |      |      |      |      |      |
|----------------------------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|-------------|----------------|------|------|------|------|------|------|
| MONTH                            | 1                                | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | 10          | 11          | 12          | 1                                | 2           | 3           | 4           | 5           | 6              | 7    | 8    | 9    | 10   | 11   | 12   |
| Phase                            | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |             |             |             |             |             |             |             | <b>PM2.5 Emissions (lbs/day)</b> |             |             |             |             |                |      |      |      |      |      |      |
| Construction Equipment Emissions | 0.02                             | 0.02        | 0.03        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.02        | 0.03        | 0.03        | 0.05        | 0.03                             | 0.03        | 0.03        | 0.03        | 0.03        | 0.02           | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.04 |
| Fugitive Dust Emissions          | 0.01                             | 0.01        | 0.02        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.01        | 0.02        | 0.02        | 0.03        | 0.02                             | 0.02        | 0.02        | 0.02        | 0.02        | 0.01           | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.05 |
| <b>Onsite Subtotal</b>           | <b>0.02</b>                      | <b>0.02</b> | <b>0.05</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.03</b> | <b>0.05</b> | <b>0.05</b> | <b>0.08</b> | <b>0.05</b>                      | <b>0.05</b> | <b>0.05</b> | <b>0.05</b> | <b>0.05</b> | <b>0.02</b> </ |      |      |      |      |      |      |





Table 2-1: Hourly, Daily and Annual Emissions Summary (Construction Equipment) - Locally Preferred Alternative

Inputs: Locally Preferred Alternative/Baseline

| Phase | Description                     | Hours per Day | Start Month | End Month | Duration (months) |      |      |      | Number of Equipment |           |       |       |             |            |           |         |
|-------|---------------------------------|---------------|-------------|-----------|-------------------|------|------|------|---------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |               |             |           | 2014              | 2015 | 2016 | 2017 | Dozer               | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 20            | May-15      | Nov-16    | --                | 7    | 11   | --   | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 2     | Cut & Cover Along Flower Street | 20            | Sep-14      | Sep-17    | 4                 | 12   | 12   | 9    | 2                   | 4         | 2     | 1     | 0           | 0          | 0         | 5       |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

| Phase | Description                     | Year | ROG Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.082                           | 0.162     | 0.051 | 0.000 | 0.000       | 0.000      | 0.000     | 0.312   |
| 1     | EPBM Flower                     | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.061                           | 0.123     | 0.041 | 0.026 | 0.000       | 0.000      | 0.000     | 0.226   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.082                           | 0.162     | 0.051 | 0.031 | 0.000       | 0.000      | 0.000     | 0.312   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.102                           | 0.200     | 0.061 | 0.037 | 0.000       | 0.000      | 0.000     | 0.395   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.122                           | 0.236     | 0.071 | 0.041 | 0.000       | 0.000      | 0.000     | 0.474   |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

| Phase | Description                     | Year | CO Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|--------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                          | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.666                          | 2.265     | 0.492 | 0.000 | 0.000       | 0.000      | 0.000     | 2.335   |
| 1     | EPBM Flower                     | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.639                          | 2.157     | 0.479 | 0.301 | 0.000       | 0.000      | 0.000     | 2.224   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.666                          | 2.265     | 0.492 | 0.309 | 0.000       | 0.000      | 0.000     | 2.335   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.692                          | 2.368     | 0.505 | 0.316 | 0.000       | 0.000      | 0.000     | 2.442   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.718                          | 2.467     | 0.518 | 0.322 | 0.000       | 0.000      | 0.000     | 2.545   |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

| Phase | Description                     | Year | NOx Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.181                           | 1.714     | 0.135 | 0.000 | 0.000       | 0.000      | 0.000     | 0.631   |
| 1     | EPBM Flower                     | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.176                           | 1.673     | 0.132 | 0.083 | 0.000       | 0.000      | 0.000     | 0.609   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.181                           | 1.714     | 0.135 | 0.085 | 0.000       | 0.000      | 0.000     | 0.631   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.186                           | 1.754     | 0.137 | 0.086 | 0.000       | 0.000      | 0.000     | 0.652   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.191                           | 1.791     | 0.140 | 0.087 | 0.000       | 0.000      | 0.000     | 0.672   |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

| Phase | Description                     | Year | SO2 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 1     | EPBM Flower                     | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

| Phase | Description                     | Year | PM10 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                            | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 1     | EPBM Flower                     | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.006                            | 0.007     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.007                            | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                            | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.008                            | 0.009     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.027   |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

| Phase | Description                     | Year | PM2.5 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|-----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                             | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.006                             | 0.007     | 0.004 | 0.000 | 0.000       | 0.000      | 0.000     | 0.022   |
| 1     | EPBM Flower                     | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.006                             | 0.007     | 0.004 | 0.003 | 0.000       | 0.000      | 0.000     | 0.020   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.006                             | 0.007     | 0.004 | 0.003 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |

Table 2-1: Hourly, Daily and Annual Emissions Summary  
(Construction Equipment) - Locally Preferred Alternative

Hourly Emissions by Equipment

Daily Emissions

| Phase | Description                     | Year | Emissions (pounds per day) |        |       |      |      |       |
|-------|---------------------------------|------|----------------------------|--------|-------|------|------|-------|
|       |                                 |      | ROG                        | CO     | NOx   | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 12.14                      | 115.15 | 53.21 | 0.48 | 0.85 | 0.78  |
| 1     | EPBM Flower                     | 2016 | 15.16                      | 120.13 | 54.57 | 0.48 | 0.92 | 0.84  |
| 2     | Cut & Cover Along Flower Street | 2014 | 9.54                       | 116.01 | 53.46 | 0.52 | 0.84 | 0.78  |
| 2     | Cut & Cover Along Flower Street | 2015 | 12.77                      | 121.32 | 54.90 | 0.52 | 0.91 | 0.84  |
| 2     | Cut & Cover Along Flower Street | 2016 | 15.89                      | 126.45 | 56.29 | 0.52 | 0.98 | 0.90  |
| 2     | Cut & Cover Along Flower Street | 2017 | 18.90                      | 131.38 | 57.62 | 0.52 | 1.04 | 0.96  |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |       |      |      |      |       |
|-------|---------------------------------|------|---------------------------|-------|------|------|------|-------|
|       |                                 |      | ROG                       | CO    | NOx  | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 0.94                      | 8.87  | 4.10 | 0.04 | 0.07 | 0.06  |
| 1     | EPBM Flower                     | 2016 | 1.83                      | 14.54 | 6.60 | 0.06 | 0.11 | 0.10  |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.42                      | 5.10  | 2.35 | 0.02 | 0.04 | 0.03  |
| 2     | Cut & Cover Along Flower Street | 2015 | 1.69                      | 16.01 | 7.25 | 0.07 | 0.12 | 0.11  |
| 2     | Cut & Cover Along Flower Street | 2016 | 2.10                      | 16.69 | 7.43 | 0.07 | 0.13 | 0.12  |
| 2     | Cut & Cover Along Flower Street | 2017 | 1.87                      | 13.01 | 5.70 | 0.05 | 0.10 | 0.09  |

*Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).*

Source:

Construction equipment emission factors from OFFROAD2007

PM10 Size Fraction: CARB Speciation Profiles

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-2: Hourly, Daily and Annual Emissions Summary (Construction Equipment) - Alternative 1

Inputs: Alternative 1

| Phase | Description                     | Hours per Day | Start Month | End Month | Duration (months) |      |      |      | Number of Equipment |           |       |       |             |            |           |         |
|-------|---------------------------------|---------------|-------------|-----------|-------------------|------|------|------|---------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |               |             |           | 2014              | 2015 | 2016 | 2017 | Dozer               | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 20            | May-15      | Jan-17    | --                | 8    | 12   | 1    | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 2     | Cut & Cover Along Flower Street | 20            | Sep-14      | May-16    | 4                 | 12   | 5    | --   | 2                   | 4         | 2     | 1     | 0           | 0          | 0         | 5       |

Table 2-2: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Alternative 1  
Hourly Emissions by Equipment

| Phase | Description                     | Year | ROG Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.082                           | 0.162     | 0.051 | 0.000 | 0.000       | 0.000      | 0.000     | 0.312   |
| 1     | EPBM Flower                     | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 1     | EPBM Flower                     | 2017 | 0.122                           | 0.236     | 0.071 | 0.000 | 0.000       | 0.000      | 0.000     | 0.474   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.061                           | 0.123     | 0.041 | 0.026 | 0.000       | 0.000      | 0.000     | 0.226   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.082                           | 0.162     | 0.051 | 0.031 | 0.000       | 0.000      | 0.000     | 0.312   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.102                           | 0.200     | 0.061 | 0.037 | 0.000       | 0.000      | 0.000     | 0.395   |

Table 2-2: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Alternative 1  
Hourly Emissions by Equipment

| Phase | Description                     | Year | CO Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|--------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                          | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.666                          | 2.265     | 0.492 | 0.000 | 0.000       | 0.000      | 0.000     | 2.335   |
| 1     | EPBM Flower                     | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 1     | EPBM Flower                     | 2017 | 0.718                          | 2.467     | 0.518 | 0.000 | 0.000       | 0.000      | 0.000     | 2.545   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.639                          | 2.157     | 0.479 | 0.301 | 0.000       | 0.000      | 0.000     | 2.224   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.666                          | 2.265     | 0.492 | 0.309 | 0.000       | 0.000      | 0.000     | 2.335   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.692                          | 2.368     | 0.505 | 0.316 | 0.000       | 0.000      | 0.000     | 2.442   |

Table 2-2: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Alternative 1  
Hourly Emissions by Equipment

| Phase | Description                     | Year | NOx Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.181                           | 1.714     | 0.135 | 0.000 | 0.000       | 0.000      | 0.000     | 0.631   |
| 1     | EPBM Flower                     | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 1     | EPBM Flower                     | 2017 | 0.191                           | 1.791     | 0.140 | 0.000 | 0.000       | 0.000      | 0.000     | 0.672   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.176                           | 1.673     | 0.132 | 0.083 | 0.000       | 0.000      | 0.000     | 0.609   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.181                           | 1.714     | 0.135 | 0.085 | 0.000       | 0.000      | 0.000     | 0.631   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.186                           | 1.754     | 0.137 | 0.086 | 0.000       | 0.000      | 0.000     | 0.652   |

Table 2-2: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Alternative 1  
Hourly Emissions by Equipment

| Phase | Description                     | Year | SO2 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 1     | EPBM Flower                     | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 1     | EPBM Flower                     | 2017 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |

Table 2-2: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Alternative 1  
Hourly Emissions by Equipment

| Phase | Description                     | Year | PM10 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                            | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 1     | EPBM Flower                     | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 1     | EPBM Flower                     | 2017 | 0.008                            | 0.009     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.027   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.006                            | 0.007     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.007                            | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                            | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |

Table 2-2: Hourly, Daily and Annual Emissions Summary  
 (Construction Equipment) - Alternative 1  
Hourly Emissions by Equipment

| Phase | Description                     | Year | PM2.5 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|-----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                             | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.006                             | 0.007     | 0.004 | 0.000 | 0.000       | 0.000      | 0.000     | 0.022   |
| 1     | EPBM Flower                     | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 1     | EPBM Flower                     | 2017 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.006                             | 0.007     | 0.004 | 0.003 | 0.000       | 0.000      | 0.000     | 0.020   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.006                             | 0.007     | 0.004 | 0.003 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.023   |

Table 2-2: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 1  
Daily Emissions

| Phase | Description                     | Year | Emissions (pounds per day) |        |       |      |      |       |
|-------|---------------------------------|------|----------------------------|--------|-------|------|------|-------|
|       |                                 |      | ROG                        | CO     | NOx   | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 12.14                      | 115.15 | 53.21 | 0.48 | 0.85 | 0.78  |
| 1     | EPBM Flower                     | 2016 | 15.16                      | 120.13 | 54.57 | 0.48 | 0.92 | 0.84  |
| 1     | EPBM Flower                     | 2017 | 18.07                      | 124.95 | 55.88 | 0.48 | 0.98 | 0.90  |
| 2     | Cut & Cover Along Flower Street | 2014 | 9.54                       | 116.01 | 53.46 | 0.52 | 0.84 | 0.78  |
| 2     | Cut & Cover Along Flower Street | 2015 | 12.77                      | 121.32 | 54.90 | 0.52 | 0.91 | 0.84  |
| 2     | Cut & Cover Along Flower Street | 2016 | 15.89                      | 126.45 | 56.29 | 0.52 | 0.98 | 0.90  |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |       |      |      |      |       |
|-------|---------------------------------|------|---------------------------|-------|------|------|------|-------|
|       |                                 |      | ROG                       | CO    | NOx  | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 1.07                      | 10.13 | 4.68 | 0.04 | 0.08 | 0.07  |
| 1     | EPBM Flower                     | 2016 | 2.00                      | 15.86 | 7.20 | 0.06 | 0.12 | 0.11  |
| 1     | EPBM Flower                     | 2017 | 0.20                      | 1.37  | 0.61 | 0.01 | 0.01 | 0.01  |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.42                      | 5.10  | 2.35 | 0.02 | 0.04 | 0.03  |
| 2     | Cut & Cover Along Flower Street | 2015 | 1.69                      | 16.01 | 7.25 | 0.07 | 0.12 | 0.11  |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.87                      | 6.95  | 3.10 | 0.03 | 0.05 | 0.05  |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Source:  
 Construction equipment emission factors from OFFROAD2007  
 PM10 Size Fraction: CARB Speciation Profiles <http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Alternative 2

| Phase               | Description                     | Hours per Day | Start Month | End Month | Duration (months) |      |      |      | Number of Equipment |           |       |       |             |            |           |         |
|---------------------|---------------------------------|---------------|-------------|-----------|-------------------|------|------|------|---------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|                     |                                 |               |             |           | 2014              | 2015 | 2016 | 2017 | Dozer               | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1                   | EPBM Flower                     | 20            | May-15      | Oct-15    | --                | 6    | --   | --   | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 2                   | Cut & Cover Along Flower Street | 20            | Sep-14      | Dec-17    | 4                 | 12   | 12   | 12   | 2                   | 4         | 2     | 1     | 0           | 0          | 0         | 5       |
| Work days per month |                                 | 22            |             |           |                   |      |      |      |                     |           |       |       |             |            |           |         |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Hourly Emissions by Equipment

| Phase | Description                     | Year | ROG Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.082                           | 0.162     | 0.051 | 0.000 | 0.000       | 0.000      | 0.000     | 0.312   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.061                           | 0.123     | 0.041 | 0.026 | 0.000       | 0.000      | 0.000     | 0.226   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.082                           | 0.162     | 0.051 | 0.031 | 0.000       | 0.000      | 0.000     | 0.312   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.102                           | 0.200     | 0.061 | 0.037 | 0.000       | 0.000      | 0.000     | 0.395   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.122                           | 0.236     | 0.071 | 0.041 | 0.000       | 0.000      | 0.000     | 0.474   |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Hourly Emissions by Equipment

| Phase | Description                     | Year | CO Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|--------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                          | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.666                          | 2.265     | 0.492 | 0.000 | 0.000       | 0.000      | 0.000     | 2.335   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.639                          | 2.157     | 0.479 | 0.301 | 0.000       | 0.000      | 0.000     | 2.224   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.666                          | 2.265     | 0.492 | 0.309 | 0.000       | 0.000      | 0.000     | 2.335   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.692                          | 2.368     | 0.505 | 0.316 | 0.000       | 0.000      | 0.000     | 2.442   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.718                          | 2.467     | 0.518 | 0.322 | 0.000       | 0.000      | 0.000     | 2.545   |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Hourly Emissions by Equipment

| Phase | Description                     | Year | NOx Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.181                           | 1.714     | 0.135 | 0.000 | 0.000       | 0.000      | 0.000     | 0.631   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.176                           | 1.673     | 0.132 | 0.083 | 0.000       | 0.000      | 0.000     | 0.609   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.181                           | 1.714     | 0.135 | 0.085 | 0.000       | 0.000      | 0.000     | 0.631   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.186                           | 1.754     | 0.137 | 0.086 | 0.000       | 0.000      | 0.000     | 0.652   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.191                           | 1.791     | 0.140 | 0.087 | 0.000       | 0.000      | 0.000     | 0.672   |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Hourly Emissions by Equipment

| Phase | Description                     | Year | SO2 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Hourly Emissions by Equipment

| Phase | Description                     | Year | PM10 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                            | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.006                            | 0.007     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.007                            | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                            | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.008                            | 0.009     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.027   |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2

Hourly Emissions by Equipment

| Phase | Description                     | Year | PM2.5 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|-----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                             | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.006                             | 0.007     | 0.004 | 0.000 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.006                             | 0.007     | 0.004 | 0.003 | 0.000       | 0.000      | 0.000     | 0.020   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.006                             | 0.007     | 0.004 | 0.003 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |

Table 2-3: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 2  
Daily Emissions

| Phase | Description                     | Year | Emissions (pounds per day) |        |       |      |      |       |
|-------|---------------------------------|------|----------------------------|--------|-------|------|------|-------|
|       |                                 |      | ROG                        | CO     | NOx   | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 12.14                      | 115.15 | 53.21 | 0.48 | 0.85 | 0.78  |
| 2     | Cut & Cover Along Flower Street | 2014 | 9.54                       | 116.01 | 53.46 | 0.52 | 0.84 | 0.78  |
| 2     | Cut & Cover Along Flower Street | 2015 | 12.77                      | 121.32 | 54.90 | 0.52 | 0.91 | 0.84  |
| 2     | Cut & Cover Along Flower Street | 2016 | 15.89                      | 126.45 | 56.29 | 0.52 | 0.98 | 0.90  |
| 2     | Cut & Cover Along Flower Street | 2017 | 18.90                      | 131.38 | 57.62 | 0.52 | 1.04 | 0.96  |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |       |      |      |      |       |
|-------|---------------------------------|------|---------------------------|-------|------|------|------|-------|
|       |                                 |      | ROG                       | CO    | NOx  | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 0.80                      | 7.60  | 3.51 | 0.03 | 0.06 | 0.05  |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.42                      | 5.10  | 2.35 | 0.02 | 0.04 | 0.03  |
| 2     | Cut & Cover Along Flower Street | 2015 | 1.69                      | 16.01 | 7.25 | 0.07 | 0.12 | 0.11  |
| 2     | Cut & Cover Along Flower Street | 2016 | 2.10                      | 16.69 | 7.43 | 0.07 | 0.13 | 0.12  |
| 2     | Cut & Cover Along Flower Street | 2017 | 2.49                      | 17.34 | 7.61 | 0.07 | 0.14 | 0.13  |

*Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).*

*Source:*

Construction equipment emission factors from OFFROAD2007

PM10 Size Fraction: CARB Speciation Profiles

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3

Inputs: Alternative 3

| Phase               | Description                     | Hours per<br>Day | Start<br>Month | End<br>Month | Duration (months) |      |      |      | Number of Equipment |           |       |       |             |            |           |         |
|---------------------|---------------------------------|------------------|----------------|--------------|-------------------|------|------|------|---------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|                     |                                 |                  |                |              | 2014              | 2015 | 2016 | 2017 | Dozer               | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1                   | EPBM Flower WB                  | 20               | Jun-15         | Mar-16       | --                | 7    | 3    | --   | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 2                   | EPBM Flower EB                  | 20               | Oct-16         | May-17       | --                | --   | 3    | 5    | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 3                   | Grouting on Flower              | 20               | Nov-14         | Nov-15       | 2                 | 11   | --   | --   | 0                   | 0         | 0     | 0     | 4           | 4          | 4         | 5       |
| 4                   | Open Face/Shield on Flower      | 20               | Mar-16         | Dec-16       | --                | --   | 9    | --   | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 5                   | SEM on Flower                   | 20               | Dec-16         | Dec-17       | --                | --   | 1    | 12   | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 6                   | Cut & Cover Along Flower Street | 20               | Dec-17         | Feb-18       | --                | --   | --   | 1    | 2                   | 4         | 2     | 1     | 0           | 0          | 0         | 5       |
| Work days per month |                                 | 22               |                |              |                   |      |      |      |                     |           |       |       |             |            |           |         |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
 Hourly Emissions by Equipment

| Phase | Description                     | Year | ROG Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower WB                  | 2015 | 0.082                           | 0.162     | 0.051 | 0.000 | 0.000       | 0.000      | 0.000     | 0.312   |
| 1     | EPBM Flower WB                  | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 2     | EPBM Flower EB                  | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 2     | EPBM Flower EB                  | 2017 | 0.122                           | 0.236     | 0.071 | 0.000 | 0.000       | 0.000      | 0.000     | 0.474   |
| 3     | Grouting on Flower              | 2014 | 0.000                           | 0.000     | 0.000 | 0.000 | 0.573       | 0.055      | 0.182     | 0.226   |
| 3     | Grouting on Flower              | 2015 | 0.000                           | 0.000     | 0.000 | 0.000 | 0.701       | 0.065      | 0.215     | 0.312   |
| 4     | Open Face/Shield on Flower      | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 5     | SEM on Flower                   | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 5     | SEM on Flower                   | 2017 | 0.122                           | 0.236     | 0.071 | 0.000 | 0.000       | 0.000      | 0.000     | 0.474   |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.122                           | 0.236     | 0.071 | 0.041 | 0.000       | 0.000      | 0.000     | 0.474   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.082                           | 0.162     | 0.051 | 0.000 | 0.000       | 0.000      | 0.000     | 0.312   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.122                           | 0.236     | 0.071 | 0.000 | 0.000       | 0.000      | 0.000     | 0.474   |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
 Hourly Emissions by Equipment

| Phase | Description                     | Year | CO Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|--------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                          | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower WB                  | 2015 | 0.666                          | 2.265     | 0.492 | 0.000 | 0.000       | 0.000      | 0.000     | 2.335   |
| 1     | EPBM Flower WB                  | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 2     | EPBM Flower EB                  | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 2     | EPBM Flower EB                  | 2017 | 0.718                          | 2.467     | 0.518 | 0.000 | 0.000       | 0.000      | 0.000     | 2.545   |
| 3     | Grouting on Flower              | 2014 | 0.000                          | 0.000     | 0.000 | 0.000 | 4.695       | 0.694      | 2.310     | 2.224   |
| 3     | Grouting on Flower              | 2015 | 0.000                          | 0.000     | 0.000 | 0.000 | 4.713       | 0.707      | 2.352     | 2.335   |
| 4     | Open Face/Shield on Flower      | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 5     | SEM on Flower                   | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 5     | SEM on Flower                   | 2017 | 0.718                          | 2.467     | 0.518 | 0.000 | 0.000       | 0.000      | 0.000     | 2.545   |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.718                          | 2.467     | 0.518 | 0.322 | 0.000       | 0.000      | 0.000     | 2.545   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.666                          | 2.265     | 0.492 | 0.000 | 0.000       | 0.000      | 0.000     | 2.335   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.718                          | 2.467     | 0.518 | 0.000 | 0.000       | 0.000      | 0.000     | 2.545   |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
 Hourly Emissions by Equipment

| Phase | Description                     | Year | NOx Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower WB                  | 2015 | 0.181                           | 1.714     | 0.135 | 0.000 | 0.000       | 0.000      | 0.000     | 0.631   |
| 1     | EPBM Flower WB                  | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 2     | EPBM Flower EB                  | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 2     | EPBM Flower EB                  | 2017 | 0.191                           | 1.791     | 0.140 | 0.000 | 0.000       | 0.000      | 0.000     | 0.672   |
| 3     | Grouting on Flower              | 2014 | 0.000                           | 0.000     | 0.000 | 0.000 | 11.306      | 0.192      | 0.639     | 0.609   |
| 3     | Grouting on Flower              | 2015 | 0.000                           | 0.000     | 0.000 | 0.000 | 11.251      | 0.194      | 0.647     | 0.631   |
| 4     | Open Face/Shield on Flower      | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 5     | SEM on Flower                   | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 5     | SEM on Flower                   | 2017 | 0.191                           | 1.791     | 0.140 | 0.000 | 0.000       | 0.000      | 0.000     | 0.672   |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.191                           | 1.791     | 0.140 | 0.087 | 0.000       | 0.000      | 0.000     | 0.672   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.181                           | 1.714     | 0.135 | 0.000 | 0.000       | 0.000      | 0.000     | 0.631   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.191                           | 1.791     | 0.140 | 0.000 | 0.000       | 0.000      | 0.000     | 0.672   |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
 Hourly Emissions by Equipment

| Phase | Description                     | Year | SO2 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower WB                  | 2015 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 1     | EPBM Flower WB                  | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | EPBM Flower EB                  | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | EPBM Flower EB                  | 2017 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 3     | Grouting on Flower              | 2014 | 0.000                           | 0.000     | 0.000 | 0.000 | 0.028       | 0.004      | 0.014     | 0.013   |
| 3     | Grouting on Flower              | 2015 | 0.000                           | 0.000     | 0.000 | 0.000 | 0.028       | 0.004      | 0.014     | 0.013   |
| 4     | Open Face/Shield on Flower      | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 5     | SEM on Flower                   | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 5     | SEM on Flower                   | 2017 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
 Hourly Emissions by Equipment

| Phase | Description                     | Year | PM10 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                            | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower WB                  | 2015 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 1     | EPBM Flower WB                  | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | EPBM Flower EB                  | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | EPBM Flower EB                  | 2017 | 0.008                            | 0.009     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.027   |
| 3     | Grouting on Flower              | 2014 | 0.000                            | 0.000     | 0.000 | 0.000 | 0.269       | 0.007      | 0.022     | 0.022   |
| 3     | Grouting on Flower              | 2015 | 0.000                            | 0.000     | 0.000 | 0.000 | 0.277       | 0.007      | 0.022     | 0.023   |
| 4     | Open Face/Shield on Flower      | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 5     | SEM on Flower                   | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 5     | SEM on Flower                   | 2017 | 0.008                            | 0.009     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.027   |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.008                            | 0.009     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.027   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.008                            | 0.009     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.027   |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
 Hourly Emissions by Equipment

| Phase | Description                     | Year | PM2.5 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|-----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                             | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower WB                  | 2015 | 0.006                             | 0.007     | 0.004 | 0.000 | 0.000       | 0.000      | 0.000     | 0.022   |
| 1     | EPBM Flower WB                  | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | EPBM Flower EB                  | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | EPBM Flower EB                  | 2017 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 3     | Grouting on Flower              | 2014 | 0.000                             | 0.000     | 0.000 | 0.000 | 0.247       | 0.006      | 0.020     | 0.020   |
| 3     | Grouting on Flower              | 2015 | 0.000                             | 0.000     | 0.000 | 0.000 | 0.255       | 0.006      | 0.021     | 0.022   |
| 4     | Open Face/Shield on Flower      | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 5     | SEM on Flower                   | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 5     | SEM on Flower                   | 2017 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.006                             | 0.007     | 0.004 | 0.000 | 0.000       | 0.000      | 0.000     | 0.022   |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |

Table 2-4: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 3  
Daily Emissions

| Phase | Description                     | Year | Emissions (pounds per day) |        |        |      |      |       |
|-------|---------------------------------|------|----------------------------|--------|--------|------|------|-------|
|       |                                 |      | ROG                        | CO     | NOx    | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower WB                  | 2015 | 12.14                      | 115.15 | 53.21  | 0.48 | 0.85 | 0.78  |
| 1     | EPBM Flower WB                  | 2016 | 15.16                      | 120.13 | 54.57  | 0.48 | 0.92 | 0.84  |
| 2     | EPBM Flower EB                  | 2016 | 15.16                      | 120.13 | 54.57  | 0.48 | 0.92 | 0.84  |
| 2     | EPBM Flower EB                  | 2017 | 18.07                      | 124.95 | 55.88  | 0.48 | 0.98 | 0.90  |
| 3     | Grouting on Flower              | 2014 | 20.74                      | 198.48 | 254.93 | 1.18 | 6.37 | 5.86  |
| 3     | Grouting on Flower              | 2015 | 25.84                      | 202.14 | 254.47 | 1.17 | 6.59 | 6.06  |
| 4     | Open Face/Shield on Flower      | 2016 | 15.16                      | 120.13 | 54.57  | 0.48 | 0.92 | 0.84  |
| 5     | SEM on Flower                   | 2016 | 15.16                      | 120.13 | 54.57  | 0.48 | 0.92 | 0.84  |
| 5     | SEM on Flower                   | 2017 | 18.07                      | 124.95 | 55.88  | 0.48 | 0.98 | 0.90  |
| 6     | Cut & Cover Along Flower Street | 2017 | 18.90                      | 131.38 | 57.62  | 0.52 | 1.04 | 0.96  |

Annual Emissions - Alternative 3a (2nd/Hope Station (SEM))

| Phase | Description                     | Year | Emissions (tons per year) |       |       |      |      |       |
|-------|---------------------------------|------|---------------------------|-------|-------|------|------|-------|
|       |                                 |      | ROG                       | CO    | NOx   | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower WB                  | 2015 | 0.94                      | 8.87  | 4.10  | 0.04 | 0.07 | 0.06  |
| 1     | EPBM Flower WB                  | 2016 | 0.50                      | 3.96  | 1.80  | 0.02 | 0.03 | 0.03  |
| 2     | EPBM Flower EB                  | 2016 | 0.50                      | 3.96  | 1.80  | 0.02 | 0.03 | 0.03  |
| 2     | EPBM Flower EB                  | 2017 | 0.99                      | 6.87  | 3.07  | 0.03 | 0.05 | 0.05  |
| 3     | Grouting on Flower              | 2014 | 0.46                      | 4.37  | 5.61  | 0.03 | 0.14 | 0.13  |
| 3     | Grouting on Flower              | 2015 | 3.13                      | 24.46 | 30.79 | 0.14 | 0.80 | 0.73  |
| 4     | Open Face/Shield on Flower      | 2016 | 1.50                      | 11.89 | 5.40  | 0.05 | 0.09 | 0.08  |
| 5     | SEM on Flower                   | 2016 | 0.17                      | 1.32  | 0.60  | 0.01 | 0.01 | 0.01  |
| 5     | SEM on Flower                   | 2017 | 2.39                      | 16.49 | 7.38  | 0.06 | 0.13 | 0.12  |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.21                      | 1.45  | 0.63  | 0.01 | 0.01 | 0.01  |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Source:

Construction equipment emission factors from OFFROAD2007

PM10 Size Fraction: CARB Speciation Profiles

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Inputs: Alternative 4

| Phase | Description                     | Hours per<br>Day | Start<br>Month | End<br>Month | Duration (months) |      |      |      | Number of Equipment |           |       |       |             |            |           |         |
|-------|---------------------------------|------------------|----------------|--------------|-------------------|------|------|------|---------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |                  |                |              | 2014              | 2015 | 2016 | 2017 | Dozer               | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 20               | Jun-15         | Feb-17       | --                | 7    | 12   | 2    | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 2     | Grouting on Flower              | 20               | Feb-15         | Oct-15       | --                | 8    | --   | --   | 0                   | 0         | 0     | 0     | 2           | 2          | 2         | 5       |
| 3     | SEM on Flower                   | 20               | Apr-16         | May-17       | --                | --   | 9    | 5    | 2                   | 4         | 2     | 0     | 0           | 0          | 0         | 5       |
| 4     | Cut & Cover Along Flower Street | 20               | May-17         | Jul-17       | --                | --   | --   | 2    | 2                   | 4         | 2     | 1     | 0           | 0          | 0         | 5       |

Work days per month

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Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Hourly Emissions by Equipment

| Phase | Description                     | Year | ROG Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.082                           | 0.162     | 0.051 | 0.000 | 0.000       | 0.000      | 0.000     | 0.312   |
| 1     | EPBM Flower                     | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 1     | EPBM Flower                     | 2017 | 0.122                           | 0.236     | 0.071 | 0.000 | 0.000       | 0.000      | 0.000     | 0.474   |
| 2     | Grouting on Flower              | 2015 | 0.000                           | 0.000     | 0.000 | 0.000 | 0.350       | 0.032      | 0.107     | 0.312   |
| 3     | SEM on Flower                   | 2016 | 0.102                           | 0.200     | 0.061 | 0.000 | 0.000       | 0.000      | 0.000     | 0.395   |
| 3     | SEM on Flower                   | 2017 | 0.122                           | 0.236     | 0.071 | 0.000 | 0.000       | 0.000      | 0.000     | 0.474   |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.122                           | 0.236     | 0.071 | 0.041 | 0.000       | 0.000      | 0.000     | 0.474   |

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Hourly Emissions by Equipment

| Phase | Description                     | Year | CO Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|--------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                          | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.666                          | 2.265     | 0.492 | 0.000 | 0.000       | 0.000      | 0.000     | 2.335   |
| 1     | EPBM Flower                     | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 1     | EPBM Flower                     | 2017 | 0.718                          | 2.467     | 0.518 | 0.000 | 0.000       | 0.000      | 0.000     | 2.545   |
| 2     | Grouting on Flower              | 2015 | 0.000                          | 0.000     | 0.000 | 0.000 | 2.356       | 0.353      | 1.176     | 2.335   |
| 3     | SEM on Flower                   | 2016 | 0.692                          | 2.368     | 0.505 | 0.000 | 0.000       | 0.000      | 0.000     | 2.442   |
| 3     | SEM on Flower                   | 2017 | 0.718                          | 2.467     | 0.518 | 0.000 | 0.000       | 0.000      | 0.000     | 2.545   |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.718                          | 2.467     | 0.518 | 0.322 | 0.000       | 0.000      | 0.000     | 2.545   |

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Hourly Emissions by Equipment

| Phase | Description                     | Year | NOx Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.181                           | 1.714     | 0.135 | 0.000 | 0.000       | 0.000      | 0.000     | 0.631   |
| 1     | EPBM Flower                     | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 1     | EPBM Flower                     | 2017 | 0.191                           | 1.791     | 0.140 | 0.000 | 0.000       | 0.000      | 0.000     | 0.672   |
| 2     | Grouting on Flower              | 2015 | 0.000                           | 0.000     | 0.000 | 0.000 | 5.625       | 0.097      | 0.324     | 0.631   |
| 3     | SEM on Flower                   | 2016 | 0.186                           | 1.754     | 0.137 | 0.000 | 0.000       | 0.000      | 0.000     | 0.652   |
| 3     | SEM on Flower                   | 2017 | 0.191                           | 1.791     | 0.140 | 0.000 | 0.000       | 0.000      | 0.000     | 0.672   |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.191                           | 1.791     | 0.140 | 0.087 | 0.000       | 0.000      | 0.000     | 0.672   |

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Hourly Emissions by Equipment

| Phase | Description                     | Year | SO2 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|---------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                           | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 1     | EPBM Flower                     | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 1     | EPBM Flower                     | 2017 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 2     | Grouting on Flower              | 2015 | 0.000                           | 0.000     | 0.000 | 0.000 | 0.014       | 0.002      | 0.007     | 0.013   |
| 3     | SEM on Flower                   | 2016 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 3     | SEM on Flower                   | 2017 | 0.004                           | 0.005     | 0.003 | 0.000 | 0.000       | 0.000      | 0.000     | 0.013   |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.004                           | 0.005     | 0.003 | 0.002 | 0.000       | 0.000      | 0.000     | 0.013   |

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Hourly Emissions by Equipment

| Phase | Description                     | Year | PM10 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                            | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 1     | EPBM Flower                     | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 1     | EPBM Flower                     | 2017 | 0.008                            | 0.009     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.027   |
| 2     | Grouting on Flower              | 2015 | 0.000                            | 0.000     | 0.000 | 0.000 | 0.138       | 0.003      | 0.011     | 0.023   |
| 3     | SEM on Flower                   | 2016 | 0.007                            | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 3     | SEM on Flower                   | 2017 | 0.008                            | 0.009     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.027   |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.008                            | 0.009     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.027   |

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4

Hourly Emissions by Equipment

| Phase | Description                     | Year | PM2.5 Emissions (pounds per hour) |           |       |       |             |            |           |         |
|-------|---------------------------------|------|-----------------------------------|-----------|-------|-------|-------------|------------|-----------|---------|
|       |                                 |      | Dozer                             | Excavator | Crane | Drill | Grout Drill | Grout Comp | Grout Gen | Flatbed |
| 1     | EPBM Flower                     | 2015 | 0.006                             | 0.007     | 0.004 | 0.000 | 0.000       | 0.000      | 0.000     | 0.022   |
| 1     | EPBM Flower                     | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 1     | EPBM Flower                     | 2017 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 2     | Grouting on Flower              | 2015 | 0.000                             | 0.000     | 0.000 | 0.000 | 0.127       | 0.003      | 0.010     | 0.022   |
| 3     | SEM on Flower                   | 2016 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.023   |
| 3     | SEM on Flower                   | 2017 | 0.007                             | 0.008     | 0.005 | 0.000 | 0.000       | 0.000      | 0.000     | 0.025   |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.007                             | 0.008     | 0.005 | 0.003 | 0.000       | 0.000      | 0.000     | 0.025   |

Table 2-5: Hourly, Daily and Annual Emissions  
 Summary (Construction Equipment) - Alternative 4  
Daily Emissions

| Phase | Description                     | Year | Emissions (pounds per day) |        |        |      |      |       |
|-------|---------------------------------|------|----------------------------|--------|--------|------|------|-------|
|       |                                 |      | ROG                        | CO     | NOx    | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 12.14                      | 115.15 | 53.21  | 0.48 | 0.85 | 0.78  |
| 1     | EPBM Flower                     | 2016 | 15.16                      | 120.13 | 54.57  | 0.48 | 0.92 | 0.84  |
| 1     | EPBM Flower                     | 2017 | 18.07                      | 124.95 | 55.88  | 0.48 | 0.98 | 0.90  |
| 2     | Grouting on Flower              | 2015 | 16.04                      | 124.42 | 133.54 | 0.71 | 3.53 | 3.25  |
| 3     | SEM on Flower                   | 2016 | 15.16                      | 120.13 | 54.57  | 0.48 | 0.92 | 0.84  |
| 3     | SEM on Flower                   | 2017 | 18.07                      | 124.95 | 55.88  | 0.48 | 0.98 | 0.90  |
| 4     | Cut & Cover Along Flower Street | 2017 | 18.90                      | 131.38 | 57.62  | 0.52 | 1.04 | 0.96  |

Annual Emissions - Alternative 4

| Phase | Description                     | Year | Emissions (tons per year) |       |       |      |      |       |
|-------|---------------------------------|------|---------------------------|-------|-------|------|------|-------|
|       |                                 |      | ROG                       | CO    | NOx   | SO2  | PM10 | PM2.5 |
| 1     | EPBM Flower                     | 2015 | 0.94                      | 8.87  | 4.10  | 0.04 | 0.07 | 0.06  |
| 1     | EPBM Flower                     | 2016 | 2.00                      | 15.86 | 7.20  | 0.06 | 0.12 | 0.11  |
| 1     | EPBM Flower                     | 2017 | 0.40                      | 2.75  | 1.23  | 0.01 | 0.02 | 0.02  |
| 2     | Grouting on Flower              | 2015 | 1.41                      | 10.95 | 11.75 | 0.06 | 0.31 | 0.29  |
| 3     | SEM on Flower                   | 2016 | 1.50                      | 11.89 | 5.40  | 0.05 | 0.09 | 0.08  |
| 3     | SEM on Flower                   | 2017 | 0.99                      | 6.87  | 3.07  | 0.03 | 0.05 | 0.05  |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.42                      | 2.89  | 1.27  | 0.01 | 0.02 | 0.02  |

*Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).*

Source:

Construction equipment emission factors from OFFROAD2007

PM10 Size Fraction: CARB Speciation Profiles

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-6: Daily and Annual Emissions Summary (Haul Trucks) - Locally Preferred Alternative

Inputs: Locally Preferred Alternative/Baseline

| Phase | Description                     | Truck Trips | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 400       | May-15      | Nov-16    | 19    | --                | 8    | 11   | --   |
| 2     | Cut & Cover Along Flower Street | 20          | 400       | Sep-14      | Sep-17    | 37    | 4                 | 12   | 12   | 9    |

Daily vehicle miles traveled (round-trip) 20 (estimated value) Default value from URBEMIS

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | ROG                | CO   | NOx  | SO2  | PM10  |         |           |            |                 | PM2.5 |         |           |            |                 |
|       |                                 |      |                    |      |      |      | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 1     | EPBM Flower                     | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.71               | 3.24 | 8.46 | 0.02 | 0.69  | 0.31    | 0.03      | 0.02       | 0.33            | 0.35  | 0.29    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | PM10     |          |           |            |                 | PM2.5    |          |           |            |                 |
|       |                                 |      |                           |          |          |          | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 5.57E-02                  | 2.50E-01 | 6.50E-01 | 1.40E-03 | 5.71E-02 | 2.34E-02 | 2.79E-03  | 2.17E-03   | 2.87E-02        | 2.75E-02 | 2.16E-02 | 6.98E-04  | 9.31E-04   | 4.31E-03        |
| 1     | EPBM Flower                     | 2016 | 6.95E-02                  | 3.05E-01 | 7.91E-01 | 1.92E-03 | 7.43E-02 | 2.80E-02 | 3.84E-03  | 2.99E-03   | 3.95E-02        | 3.39E-02 | 2.57E-02 | 9.60E-04  | 1.28E-03   | 5.92E-03        |
| 2     | Cut & Cover Along Flower Street | 2014 | 3.11E-02                  | 1.43E-01 | 3.72E-01 | 6.98E-04 | 3.06E-02 | 1.37E-02 | 1.40E-03  | 1.09E-03   | 1.44E-02        | 1.56E-02 | 1.26E-02 | 3.49E-04  | 4.66E-04   | 2.15E-03        |
| 2     | Cut & Cover Along Flower Street | 2015 | 8.36E-02                  | 3.75E-01 | 9.75E-01 | 2.10E-03 | 8.57E-02 | 3.52E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 4.13E-02 | 3.24E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 2     | Cut & Cover Along Flower Street | 2016 | 7.58E-02                  | 3.33E-01 | 8.63E-01 | 2.10E-03 | 8.10E-02 | 3.05E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 3.70E-02 | 2.81E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 2     | Cut & Cover Along Flower Street | 2017 | 5.20E-02                  | 2.24E-01 | 5.78E-01 | 1.57E-03 | 5.78E-02 | 1.99E-02 | 3.14E-03  | 2.44E-03   | 3.23E-02        | 2.50E-02 | 1.83E-02 | 7.86E-04  | 1.05E-03   | 4.85E-03        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.  
MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.06   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-7: Daily and Annual Emissions Summary (Haul Trucks) - Alternative 1

Inputs: Alternative 1

| Phase | Description                     | Truck Trips | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 400       | May-15      | Jan-17    | 21    | --                | 8    | 12   | 1    |
| 2     | Cut & Cover Along Flower Street | 20          | 400       | Sep-14      | May-16    | 21    | 4                 | 12   | 5    | --   |

Daily vehicle miles traveled (round-trip) 20 (estimated value) Default value from URBEMIS

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |         |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|---------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | PM10               |      |      |      |         |      |       |         |           | PM2.5      |                 |       |         |           |            |                 |
|       |                                 |      | ROG                | CO   | NOx  | SO2  | CO2     | CH4  | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 1696.86 | 0.03 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 1     | EPBM Flower                     | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 1     | EPBM Flower                     | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.71               | 3.24 | 8.46 | 0.02 | 1696.86 | 0.03 | 0.69  | 0.31    | 0.03      | 0.02       | 0.33            | 0.35  | 0.29    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 1696.86 | 0.03 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |        |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|--------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | PM10                      |          |          |          |        |          |          |          |           | PM2.5      |                 |          |          |           |            |                 |
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | CO2    | CH4      | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 5.57E-02                  | 2.50E-01 | 6.50E-01 | 1.40E-03 | 149.32 | 2.56E-03 | 5.71E-02 | 2.34E-02 | 2.79E-03  | 2.17E-03   | 2.87E-02        | 2.75E-02 | 2.16E-02 | 6.98E-04  | 9.31E-04   | 4.31E-03        |
| 1     | EPBM Flower                     | 2016 | 7.58E-02                  | 3.33E-01 | 8.63E-01 | 2.10E-03 | 223.98 | 3.49E-03 | 8.10E-02 | 3.05E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 3.70E-02 | 2.81E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 1     | EPBM Flower                     | 2017 | 5.78E-03                  | 2.49E-02 | 6.42E-02 | 1.75E-04 | 18.67  | 2.72E-04 | 6.42E-03 | 2.21E-03 | 3.49E-04  | 2.72E-04   | 3.59E-03        | 2.78E-03 | 2.04E-03 | 8.73E-05  | 1.16E-04   | 5.39E-04        |
| 2     | Cut & Cover Along Flower Street | 2014 | 3.11E-02                  | 1.43E-01 | 3.72E-01 | 6.98E-04 | 74.66  | 1.44E-03 | 3.06E-02 | 1.37E-02 | 1.40E-03  | 1.09E-03   | 1.44E-02        | 1.56E-02 | 1.26E-02 | 3.49E-04  | 4.66E-04   | 2.15E-03        |
| 2     | Cut & Cover Along Flower Street | 2015 | 8.36E-02                  | 3.75E-01 | 9.75E-01 | 2.10E-03 | 223.98 | 3.84E-03 | 8.57E-02 | 3.52E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 4.13E-02 | 3.24E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 2     | Cut & Cover Along Flower Street | 2016 | 3.16E-02                  | 1.39E-01 | 3.60E-01 | 8.73E-04 | 93.33  | 1.46E-03 | 3.38E-02 | 1.27E-02 | 1.75E-03  | 1.36E-03   | 1.79E-02        | 1.54E-02 | 1.17E-02 | 4.37E-04  | 5.82E-04   | 2.69E-03        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.  
MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.06   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-8: Daily and Annual Emissions Summary (Haul Trucks) - Alternative 2

Inputs: Alternative 2

| Phase | Description                     | Truck Trips | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 400       | May-15      | Oct-15    | 6     | --                | 6    | --   | --   |
| 2     | Cut & Cover Along Flower Street | 20          | 400       | Sep-14      | Dec-17    | 40    | 4                 | 12   | 12   | 12   |

Daily vehicle miles traveled (round-trip) 20 (estimated value) Default value from URBEMIS

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |         |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|---------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | PM10               |      |      |      |         |      |       |         |           | PM2.5      |                 |       |         |           |            |                 |
|       |                                 |      | ROG                | CO   | NOx  | SO2  | CO2     | CH4  | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 1696.86 | 0.03 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.71               | 3.24 | 8.46 | 0.02 | 1696.86 | 0.03 | 0.69  | 0.31    | 0.03      | 0.02       | 0.33            | 0.35  | 0.29    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 1696.86 | 0.03 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | PM10                      |          |          |          |          |          |          |          |           | PM2.5      |                 |          |          |           |            |                 |
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | CO2      | CH4      | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 4.18E-02                  | 1.87E-01 | 4.87E-01 | 1.05E-03 | 1.12E+02 | 1.92E-03 | 4.28E-02 | 1.76E-02 | 2.10E-03  | 1.63E-03   | 2.15E-02        | 2.06E-02 | 1.62E-02 | 5.24E-04  | 6.98E-04   | 3.23E-03        |
| 2     | Cut & Cover Along Flower Street | 2014 | 3.11E-02                  | 1.43E-01 | 3.72E-01 | 6.98E-04 | 7.47E+01 | 1.44E-03 | 3.06E-02 | 1.37E-02 | 1.40E-03  | 1.09E-03   | 1.44E-02        | 1.56E-02 | 1.26E-02 | 3.49E-04  | 4.66E-04   | 2.15E-03        |
| 2     | Cut & Cover Along Flower Street | 2015 | 8.36E-02                  | 3.75E-01 | 9.75E-01 | 2.10E-03 | 2.24E+02 | 3.84E-03 | 8.57E-02 | 3.52E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 4.13E-02 | 3.24E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 2     | Cut & Cover Along Flower Street | 2016 | 7.58E-02                  | 3.33E-01 | 8.63E-01 | 2.10E-03 | 2.24E+02 | 3.49E-03 | 8.10E-02 | 3.05E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 3.70E-02 | 2.81E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 2     | Cut & Cover Along Flower Street | 2017 | 6.94E-02                  | 2.99E-01 | 7.71E-01 | 2.10E-03 | 2.24E+02 | 3.26E-03 | 7.71E-02 | 2.65E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 3.34E-02 | 2.44E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.  
MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.06   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-9: Daily and Annual Emissions Summary (Haul Trucks) - Alternative 3

Inputs: Alternative 3

| Phase | Description                     | Truck Trips | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower WB                  | 20          | 400       | Jun-15      | Mar-16    | 10    | --                | 7    | 3    | --   |
| 2     | EPBM Flower EB                  | 20          | 400       | Oct-16      | May-17    | 8     | --                | --   | 3    | 5    |
| 3     | Grouting on Flower              | 0           | 0         | Nov-14      | Nov-15    | 13    | 2                 | 11   | --   | --   |
| 4     | Open Face/Shield on Flower      | 20          | 400       | Mar-16      | Dec-16    | 10    | --                | --   | 10   | --   |
| 5     | SEM on Flower                   | 20          | 400       | Dec-16      | Dec-17    | 13    | --                | --   | 1    | 12   |
| 6     | Cut & Cover Along Flower Street | 20          | 400       | Dec-17      | Feb-18    | 3     | --                | --   | --   | 1    |

Daily vehicle miles traveled (round-trip) 20 (estimated value) Default value from URBEMIS

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |         |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|---------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | PM10               |      |      |      |         |      |       |         |           | PM2.5      |                 |       |         |           |            |                 |
|       |                                 |      | ROG                | CO   | NOx  | SO2  | CO2     | CH4  | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower WB                  | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 1696.86 | 0.03 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 1     | EPBM Flower WB                  | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 2     | EPBM Flower EB                  | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 2     | EPBM Flower EB                  | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 3     | Grouting on Flower              | 2014 | 0.00               | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00  | 0.00    | 0.00      | 0.00       | 0.00            | 0.00  | 0.00    | 0.00      | 0.00       | 0.00            |
| 3     | Grouting on Flower              | 2015 | 0.00               | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00  | 0.00    | 0.00      | 0.00       | 0.00            | 0.00  | 0.00    | 0.00      | 0.00       | 0.00            |
| 4     | Open Face/Shield on Flower      | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 5     | SEM on Flower                   | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 5     | SEM on Flower                   | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |        |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|--------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | PM10                      |          |          |          |        |          |          |          |           | PM2.5      |                 |          |          |           |            |                 |
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | CO2    | CH4      | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower WB                  | 2015 | 4.88E-02                  | 2.19E-01 | 5.69E-01 | 1.22E-03 | 130.66 | 2.24E-03 | 5.00E-02 | 2.05E-02 | 2.44E-03  | 1.90E-03   | 2.51E-02        | 2.41E-02 | 1.89E-02 | 6.11E-04  | 8.15E-04   | 3.77E-03        |
| 1     | EPBM Flower WB                  | 2016 | 1.89E-02                  | 8.33E-02 | 2.16E-01 | 5.24E-04 | 56.00  | 8.73E-04 | 2.03E-02 | 7.62E-03 | 1.05E-03  | 8.15E-04   | 1.08E-02        | 9.24E-03 | 7.01E-03 | 2.62E-04  | 3.49E-04   | 1.62E-03        |
| 2     | EPBM Flower EB                  | 2016 | 1.89E-02                  | 8.33E-02 | 2.16E-01 | 5.24E-04 | 56.00  | 8.73E-04 | 2.03E-02 | 7.62E-03 | 1.05E-03  | 8.15E-04   | 1.08E-02        | 9.24E-03 | 7.01E-03 | 2.62E-04  | 3.49E-04   | 1.62E-03        |
| 2     | EPBM Flower EB                  | 2017 | 2.89E-02                  | 1.25E-01 | 3.21E-01 | 8.73E-04 | 93.33  | 1.36E-03 | 3.21E-02 | 1.11E-02 | 1.75E-03  | 1.36E-03   | 1.79E-02        | 1.39E-02 | 1.02E-02 | 4.37E-04  | 5.82E-04   | 2.69E-03        |
| 3     | Grouting on Flower              | 2014 | 0.00E+00                  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00   | 0.00E+00        | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00   | 0.00E+00        |
| 3     | Grouting on Flower              | 2015 | 0.00E+00                  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00   | 0.00E+00        | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00   | 0.00E+00        |
| 4     | Open Face/Shield on Flower      | 2016 | 6.31E-02                  | 2.78E-01 | 7.19E-01 | 1.75E-03 | 186.65 | 2.91E-03 | 6.75E-02 | 2.54E-02 | 3.49E-03  | 2.72E-03   | 3.59E-02        | 3.08E-02 | 2.34E-02 | 8.73E-04  | 1.16E-03   | 5.39E-03        |
| 5     | SEM on Flower                   | 2016 | 6.31E-03                  | 2.78E-02 | 7.19E-02 | 1.75E-04 | 18.67  | 2.91E-04 | 6.75E-03 | 2.54E-03 | 3.49E-04  | 2.72E-04   | 3.59E-03        | 3.08E-03 | 2.34E-03 | 8.73E-05  | 1.16E-04   | 5.39E-04        |
| 5     | SEM on Flower                   | 2017 | 6.94E-02                  | 2.99E-01 | 7.71E-01 | 2.10E-03 | 223.98 | 3.26E-03 | 7.71E-02 | 2.65E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 3.34E-02 | 2.44E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 6     | Cut & Cover Along Flower Street | 2017 | 5.78E-03                  | 2.49E-02 | 6.42E-02 | 1.75E-04 | 18.67  | 2.72E-04 | 6.42E-03 | 2.21E-03 | 3.49E-04  | 2.72E-04   | 3.59E-03        | 2.78E-03 | 2.04E-03 | 8.73E-05  | 1.16E-04   | 5.39E-04        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

| PM Size Fractions |        |
|-------------------|--------|
| PM10              | 0.4572 |
| PM2.5             | 0.0686 |
| PM2.5 EF          | 0.06   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-10: Daily and Annual Emissions Summary (Haul Trucks) - Alternative 4

Inputs: Alternative 4

| Phase | Description                     | Truck Trips | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 400       | Jun-15      | Feb-17    | 21    | --                | 7    | 12   | 2    |
| 2     | Grouting on Flower              | 0           | 0         | Feb-15      | Oct-15    | 9     | --                | 9    | --   | --   |
| 3     | SEM on Flower                   | 20          | 400       | Apr-16      | May-17    | 14    | --                | --   | 9    | 5    |
| 4     | Cut & Cover Along Flower Street | 20          | 400       | May-17      | Jul-17    | 3     | --                | --   | --   | 3    |
| 5     | SEM on Flower                   | 20          | 400       | Dec-16      | Dec-17    | 13    | --                | --   | 1    | 12   |
| 6     | Cut & Cover Along Flower Street | 20          | 400       | Dec-17      | Feb-18    | 3     | --                | --   | --   | 1    |

Daily vehicle miles traveled (round-trip) 20 (estimated value) Default value from URBEMIS

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |         |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|---------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | PM10               |      |      |      |         |      |       |         |           | PM2.5      |                 |       |         |           |            |                 |
|       |                                 |      | ROG                | CO   | NOx  | SO2  | CO2     | CH4  | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.63               | 2.84 | 7.39 | 0.02 | 1696.86 | 0.03 | 0.65  | 0.27    | 0.03      | 0.02       | 0.33            | 0.31  | 0.25    | 0.01      | 0.01       | 0.05            |
| 1     | EPBM Flower                     | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 1     | EPBM Flower                     | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 2     | Grouting on Flower              | 2015 | 0.00               | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 | 0.00  | 0.00    | 0.00      | 0.00       | 0.00            | 0.00  | 0.00    | 0.00      | 0.00       | 0.00            |
| 3     | SEM on Flower                   | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 3     | SEM on Flower                   | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 5     | SEM on Flower                   | 2016 | 0.57               | 2.52 | 6.54 | 0.02 | 1696.86 | 0.03 | 0.61  | 0.23    | 0.03      | 0.02       | 0.33            | 0.28  | 0.21    | 0.01      | 0.01       | 0.05            |
| 5     | SEM on Flower                   | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.53               | 2.26 | 5.84 | 0.02 | 1696.86 | 0.02 | 0.58  | 0.20    | 0.03      | 0.02       | 0.33            | 0.25  | 0.19    | 0.01      | 0.01       | 0.05            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |        |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|--------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | PM10                      |          |          |          |        |          |          |          |           | PM2.5      |                 |          |          |           |            |                 |
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | CO2    | CH4      | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 4.88E-02                  | 2.19E-01 | 5.69E-01 | 1.22E-03 | 130.66 | 2.24E-03 | 5.00E-02 | 2.05E-02 | 2.44E-03  | 1.90E-03   | 2.51E-02        | 2.41E-02 | 1.89E-02 | 6.11E-04  | 8.15E-04   | 3.77E-03        |
| 1     | EPBM Flower                     | 2016 | 7.58E-02                  | 3.33E-01 | 8.63E-01 | 2.10E-03 | 223.98 | 3.49E-03 | 8.10E-02 | 3.05E-02 | 4.19E-03  | 3.26E-03   | 4.31E-02        | 3.70E-02 | 2.81E-02 | 1.05E-03  | 1.40E-03   | 6.46E-03        |
| 1     | EPBM Flower                     | 2017 | 1.16E-02                  | 4.98E-02 | 1.28E-01 | 3.49E-04 | 37.33  | 5.43E-04 | 1.28E-02 | 4.42E-03 | 6.98E-04  | 5.43E-04   | 7.18E-03        | 5.56E-03 | 4.07E-03 | 1.75E-04  | 2.33E-04   | 1.08E-03        |
| 2     | Grouting on Flower              | 2015 | 0.00E+00                  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00   | 0.00E+00        | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00   | 0.00E+00        |
| 3     | SEM on Flower                   | 2016 | 5.68E-02                  | 2.50E-01 | 6.47E-01 | 1.57E-03 | 167.99 | 2.62E-03 | 6.08E-02 | 2.29E-02 | 3.14E-03  | 2.44E-03   | 3.23E-02        | 2.77E-02 | 2.10E-02 | 7.86E-04  | 1.05E-03   | 4.85E-03        |
| 3     | SEM on Flower                   | 2017 | 2.89E-02                  | 1.25E-01 | 3.21E-01 | 8.73E-04 | 93.33  | 1.36E-03 | 3.21E-02 | 1.11E-02 | 1.75E-03  | 1.36E-03   | 1.79E-02        | 1.39E-02 | 1.02E-02 | 4.37E-04  | 5.82E-04   | 2.69E-03        |
| 4     | Cut & Cover Along Flower Street | 2017 | 1.73E-02                  | 7.47E-02 | 1.93E-01 | 5.24E-04 | 56.00  | 8.15E-04 | 1.93E-02 | 6.63E-03 | 1.05E-03  | 8.15E-04   | 1.08E-02        | 8.34E-03 | 6.11E-03 | 2.62E-04  | 3.49E-04   | 1.62E-03        |
| 5     | SEM on Flower                   | 2016 | 5.68E-02                  | 2.50E-01 | 6.47E-01 | 1.57E-03 | 167.99 | 2.62E-03 | 6.08E-02 | 2.29E-02 | 3.14E-03  | 2.44E-03   | 3.23E-02        | 2.77E-02 | 2.10E-02 | 7.86E-04  | 1.05E-03   | 4.85E-03        |
| 5     | SEM on Flower                   | 2017 | 2.89E-02                  | 1.25E-01 | 3.21E-01 | 8.73E-04 | 93.33  | 1.36E-03 | 3.21E-02 | 1.11E-02 | 1.75E-03  | 1.36E-03   | 1.79E-02        | 1.39E-02 | 1.02E-02 | 4.37E-04  | 5.82E-04   | 2.69E-03        |
| 6     | Cut & Cover Along Flower Street | 2017 | 1.73E-02                  | 7.47E-02 | 1.93E-01 | 5.24E-04 | 56.00  | 8.15E-04 | 1.93E-02 | 6.63E-03 | 1.05E-03  | 8.15E-04   | 1.08E-02        | 8.34E-03 | 6.11E-03 | 2.62E-04  | 3.49E-04   | 1.62E-03        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.06   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-11: Daily and Annual Emissions Summary (Worker Commute) - Locally Preferred Alternative

Inputs: Locally Preferred Alternative/Baseline

| Phase | Description                     | No. of Crew | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 600       | May-15      | Nov-16    | 19    | --                | 8    | 11   | --   |
| 2     | Cut & Cover Along Flower Street | 30          | 900       | Sep-14      | Sep-17    | 37    | 4                 | 12   | 12   | 9    |

Daily vehicle miles traveled (round-trip) 30 (estimated value)

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | ROG                | CO   | NOx  | SO2  | PM10  |         |           |            |                 | PM2.5 |         |           |            |                 |
|       |                                 |      |                    |      |      |      | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.07               | 2.53 | 0.20 | 0.00 | 1.11  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 1     | EPBM Flower                     | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.12               | 4.17 | 0.34 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.10               | 3.80 | 0.30 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.09               | 3.49 | 0.27 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.07               | 3.19 | 0.25 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | PM10     |          |           |            |                 | PM2.5    |          |           |            |                 |
|       |                                 |      |                           |          |          |          | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 5.94E-03                  | 2.23E-01 | 1.78E-02 | 4.07E-04 | 9.81E-02 | 1.34E-03 | 9.31E-04  | 1.51E-03   | 9.43E-02        | 1.62E-02 | 1.28E-03 | 2.33E-04  | 5.82E-04   | 1.41E-02        |
| 1     | EPBM Flower                     | 2016 | 6.96E-03                  | 2.82E-01 | 2.22E-02 | 5.60E-04 | 1.35E-01 | 1.92E-03 | 1.28E-03  | 2.08E-03   | 1.30E-01        | 2.23E-02 | 1.76E-03 | 3.20E-04  | 8.00E-04   | 1.95E-02        |
| 2     | Cut & Cover Along Flower Street | 2014 | 5.28E-03                  | 1.83E-01 | 1.48E-02 | 3.06E-04 | 7.36E-02 | 1.00E-03 | 6.98E-04  | 1.13E-03   | 7.07E-02        | 1.22E-02 | 9.60E-04 | 1.75E-04  | 4.37E-04   | 1.06E-02        |
| 2     | Cut & Cover Along Flower Street | 2015 | 1.34E-02                  | 5.02E-01 | 3.99E-02 | 9.17E-04 | 2.21E-01 | 3.01E-03 | 2.10E-03  | 3.40E-03   | 2.12E-01        | 3.65E-02 | 2.88E-03 | 5.24E-04  | 1.31E-03   | 3.18E-02        |
| 2     | Cut & Cover Along Flower Street | 2016 | 1.14E-02                  | 4.61E-01 | 3.63E-02 | 9.17E-04 | 2.21E-01 | 3.14E-03 | 2.10E-03  | 3.40E-03   | 2.12E-01        | 3.65E-02 | 2.88E-03 | 5.24E-04  | 1.31E-03   | 3.18E-02        |
| 2     | Cut & Cover Along Flower Street | 2017 | 7.07E-03                  | 3.16E-01 | 2.47E-02 | 6.88E-04 | 1.66E-01 | 2.36E-03 | 1.57E-03  | 2.55E-03   | 1.59E-01        | 2.74E-02 | 2.16E-03 | 3.93E-04  | 9.82E-04   | 2.39E-02        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.12   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-12: Daily and Annual Emissions Summary (Worker Commute) - Alternative 1

Inputs: Alternative 1

| Phase | Description                     | No. of Crew | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 600       | May-15      | Jan-17    | 21    | --                | 8    | 12   | 1    |
| 2     | Cut & Cover Along Flower Street | 30          | 900       | Sep-14      | May-16    | 21    | 4                 | 12   | 5    | --   |

Daily vehicle miles traveled (round-trip) 30 (estimated value)

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | ROG                | CO   | NOx  | SO2  | PM10  |         |           |            |                 | PM2.5 |         |           |            |                 |
|       |                                 |      |                    |      |      |      | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.07               | 2.53 | 0.20 | 0.00 | 1.11  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 1     | EPBM Flower                     | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 1     | EPBM Flower                     | 2017 | 0.05               | 2.13 | 0.17 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.12               | 4.17 | 0.34 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.10               | 3.80 | 0.30 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.09               | 3.49 | 0.27 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | PM10     |          |           |            |                 | PM2.5    |          |           |            |                 |
|       |                                 |      |                           |          |          |          | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 5.94E-03                  | 2.23E-01 | 1.78E-02 | 4.07E-04 | 9.81E-02 | 1.34E-03 | 9.31E-04  | 1.51E-03   | 9.43E-02        | 1.62E-02 | 1.28E-03 | 2.33E-04  | 5.82E-04   | 1.41E-02        |
| 1     | EPBM Flower                     | 2016 | 7.60E-03                  | 3.07E-01 | 2.42E-02 | 6.11E-04 | 1.47E-01 | 2.10E-03 | 1.40E-03  | 2.27E-03   | 1.41E-01        | 2.44E-02 | 1.92E-03 | 3.49E-04  | 8.73E-04   | 2.12E-02        |
| 1     | EPBM Flower                     | 2017 | 5.24E-04                  | 2.34E-02 | 1.83E-03 | 5.09E-05 | 1.23E-02 | 1.75E-04 | 1.16E-04  | 1.89E-04   | 1.18E-02        | 2.03E-03 | 1.60E-04 | 2.91E-05  | 7.28E-05   | 1.77E-03        |
| 2     | Cut & Cover Along Flower Street | 2014 | 5.28E-03                  | 1.83E-01 | 1.48E-02 | 3.06E-04 | 7.36E-02 | 1.00E-03 | 6.98E-04  | 1.13E-03   | 7.07E-02        | 1.22E-02 | 9.60E-04 | 1.75E-04  | 4.37E-04   | 1.06E-02        |
| 2     | Cut & Cover Along Flower Street | 2015 | 1.34E-02                  | 5.02E-01 | 3.99E-02 | 9.17E-04 | 2.21E-01 | 3.01E-03 | 2.10E-03  | 3.40E-03   | 2.12E-01        | 3.65E-02 | 2.88E-03 | 5.24E-04  | 1.31E-03   | 3.18E-02        |
| 2     | Cut & Cover Along Flower Street | 2016 | 4.75E-03                  | 1.92E-01 | 1.51E-02 | 3.82E-04 | 9.20E-02 | 1.31E-03 | 8.73E-04  | 1.42E-03   | 8.84E-02        | 1.52E-02 | 1.20E-03 | 2.18E-04  | 5.46E-04   | 1.33E-02        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.12   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-13: Daily and Annual Emissions Summary (Worker Commute) - Alternative 2

Inputs: Alternative 2

| Phase | Description                     | No. of Crew | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 600       | May-15      | Oct-15    | 6     | --                | 6    | --   | --   |
| 2     | Cut & Cover Along Flower Street | 30          | 900       | Sep-14      | Dec-17    | 40    | 4                 | 12   | 12   | 12   |

Daily vehicle miles traveled (round-trip) 30 (estimated value)

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | ROG                | CO   | NOx  | SO2  | PM10  |         |           |            |                 | PM2.5 |         |           |            |                 |
|       |                                 |      |                    |      |      |      | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.07               | 2.53 | 0.20 | 0.00 | 1.11  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 2     | Cut & Cover Along Flower Street | 2014 | 0.12               | 4.17 | 0.34 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2015 | 0.10               | 3.80 | 0.30 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2016 | 0.09               | 3.49 | 0.27 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 2     | Cut & Cover Along Flower Street | 2017 | 0.07               | 3.19 | 0.25 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | PM10     |          |           |            |                 | PM2.5    |          |           |            |                 |
|       |                                 |      |                           |          |          |          | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 4.45E-03                  | 1.67E-01 | 1.33E-02 | 3.06E-04 | 7.36E-02 | 1.00E-03 | 6.98E-04  | 1.13E-03   | 7.07E-02        | 1.22E-02 | 9.60E-04 | 1.75E-04  | 4.37E-04   | 1.06E-02        |
| 2     | Cut & Cover Along Flower Street | 2014 | 5.28E-03                  | 1.83E-01 | 1.48E-02 | 3.06E-04 | 7.36E-02 | 1.00E-03 | 6.98E-04  | 1.13E-03   | 7.07E-02        | 1.22E-02 | 9.60E-04 | 1.75E-04  | 4.37E-04   | 1.06E-02        |
| 2     | Cut & Cover Along Flower Street | 2015 | 1.34E-02                  | 5.02E-01 | 3.99E-02 | 9.17E-04 | 2.21E-01 | 3.01E-03 | 2.10E-03  | 3.40E-03   | 2.12E-01        | 3.65E-02 | 2.88E-03 | 5.24E-04  | 1.31E-03   | 3.18E-02        |
| 2     | Cut & Cover Along Flower Street | 2016 | 1.14E-02                  | 4.61E-01 | 3.63E-02 | 9.17E-04 | 2.21E-01 | 3.14E-03 | 2.10E-03  | 3.40E-03   | 2.12E-01        | 3.65E-02 | 2.88E-03 | 5.24E-04  | 1.31E-03   | 3.18E-02        |
| 2     | Cut & Cover Along Flower Street | 2017 | 9.43E-03                  | 4.21E-01 | 3.29E-02 | 9.17E-04 | 2.21E-01 | 3.14E-03 | 2.10E-03  | 3.40E-03   | 2.12E-01        | 3.65E-02 | 2.88E-03 | 5.24E-04  | 1.31E-03   | 3.18E-02        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.12   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-14: Daily and Annual Emissions Summary (Worker Commute) - Alternative 3

Inputs: Alternative 3

| Phase | Description                     | No. of Crew | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower WB                  | 20          | 600       | Jun-15      | Mar-16    | 10    | --                | 7    | 3    | --   |
| 2     | EPBM Flower EB                  | 20          | 600       | Oct-16      | May-17    | 8     | --                | --   | 3    | 5    |
| 3     | Grouting on Flower              | 40          | 1,200     | Nov-14      | Nov-15    | 13    | 2                 | 11   | --   | --   |
| 4     | Open Face/Shield on Flower      | 20          | 600       | Mar-16      | Dec-16    | 10    | --                | --   | 10   | --   |
| 5     | SEM on Flower                   | 20          | 600       | Dec-16      | Dec-17    | 13    | --                | --   | 1    | 12   |
| 6     | Cut & Cover Along Flower Street | 30          | 900       | Dec-17      | Feb-18    | 3     | --                | --   | --   | 1    |

Daily vehicle miles traveled (round-trip) 30 (estimated value)

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | ROG                | CO   | NOx  | SO2  | PM10  |         |           |            |                 | PM2.5 |         |           |            |                 |
|       |                                 |      |                    |      |      |      | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower WB                  | 2015 | 0.07               | 2.53 | 0.20 | 0.00 | 1.11  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 1     | EPBM Flower WB                  | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 2     | EPBM Flower EB                  | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 2     | EPBM Flower EB                  | 2017 | 0.05               | 2.13 | 0.17 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 3     | Grouting on Flower              | 2014 | 0.16               | 5.56 | 0.45 | 0.01 | 2.23  | 0.03    | 0.02      | 0.03       | 2.14            | 0.37  | 0.03    | 0.01      | 0.01       | 0.32            |
| 3     | Grouting on Flower              | 2015 | 0.13               | 5.07 | 0.40 | 0.01 | 2.23  | 0.03    | 0.02      | 0.03       | 2.14            | 0.37  | 0.03    | 0.01      | 0.01       | 0.32            |
| 4     | Open Face/Shield on Flower      | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 5     | SEM on Flower                   | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 5     | SEM on Flower                   | 2017 | 0.05               | 2.13 | 0.17 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.07               | 3.19 | 0.25 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |

Table 2-14: Daily and Annual Emissions Summary (Worker Commute) - Alternative 3  
Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | PM10     |          |           |            |                 | PM2.5    |          |           |            |                 |
|       |                                 |      |                           |          |          |          | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower WB                  | 2015 | 5.19E-03                  | 1.95E-01 | 1.55E-02 | 3.56E-04 | 8.58E-02 | 1.17E-03 | 8.15E-04  | 1.32E-03   | 8.25E-02        | 1.42E-02 | 1.12E-03 | 2.04E-04  | 5.09E-04   | 1.24E-02        |
| 1     | EPBM Flower WB                  | 2016 | 1.90E-03                  | 7.68E-02 | 6.05E-03 | 1.53E-04 | 3.68E-02 | 5.24E-04 | 3.49E-04  | 5.67E-04   | 3.54E-02        | 6.09E-03 | 4.80E-04 | 8.73E-05  | 2.18E-04   | 5.31E-03        |
| 2     | EPBM Flower EB                  | 2016 | 1.90E-03                  | 7.68E-02 | 6.05E-03 | 1.53E-04 | 3.68E-02 | 5.24E-04 | 3.49E-04  | 5.67E-04   | 3.54E-02        | 6.09E-03 | 4.80E-04 | 8.73E-05  | 2.18E-04   | 5.31E-03        |
| 2     | EPBM Flower EB                  | 2017 | 2.62E-03                  | 1.17E-01 | 9.13E-03 | 2.55E-04 | 6.13E-02 | 8.73E-04 | 5.82E-04  | 9.46E-04   | 5.89E-02        | 1.02E-02 | 8.00E-04 | 1.46E-04  | 3.64E-04   | 8.84E-03        |
| 3     | Grouting on Flower              | 2014 | 3.52E-03                  | 1.22E-01 | 9.84E-03 | 2.04E-04 | 4.90E-02 | 6.69E-04 | 4.66E-04  | 7.57E-04   | 4.71E-02        | 8.12E-03 | 6.40E-04 | 1.16E-04  | 2.91E-04   | 7.07E-03        |
| 3     | Grouting on Flower              | 2015 | 1.63E-02                  | 6.13E-01 | 4.88E-02 | 1.12E-03 | 2.70E-01 | 3.68E-03 | 2.56E-03  | 4.16E-03   | 2.59E-01        | 4.47E-02 | 3.52E-03 | 6.40E-04  | 1.60E-03   | 3.89E-02        |
| 4     | Open Face/Shield on Flower      | 2016 | 6.33E-03                  | 2.56E-01 | 2.02E-02 | 5.09E-04 | 1.23E-01 | 1.75E-03 | 1.16E-03  | 1.89E-03   | 1.18E-01        | 2.03E-02 | 1.60E-03 | 2.91E-04  | 7.28E-04   | 1.77E-02        |
| 5     | SEM on Flower                   | 2016 | 6.33E-04                  | 2.56E-02 | 2.02E-03 | 5.09E-05 | 1.23E-02 | 1.75E-04 | 1.16E-04  | 1.89E-04   | 1.18E-02        | 2.03E-03 | 1.60E-04 | 2.91E-05  | 7.28E-05   | 1.77E-03        |
| 5     | SEM on Flower                   | 2017 | 6.29E-03                  | 2.81E-01 | 2.19E-02 | 6.11E-04 | 1.47E-01 | 2.10E-03 | 1.40E-03  | 2.27E-03   | 1.41E-01        | 2.44E-02 | 1.92E-03 | 3.49E-04  | 8.73E-04   | 2.12E-02        |
| 6     | Cut & Cover Along Flower Street | 2017 | 7.86E-04                  | 3.51E-02 | 2.74E-03 | 7.64E-05 | 1.84E-02 | 2.62E-04 | 1.75E-04  | 2.84E-04   | 1.77E-02        | 3.05E-03 | 2.40E-04 | 4.37E-05  | 1.09E-04   | 2.65E-03        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.12   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-15: Daily and Annual Emissions Summary (Worker Commute) - Alternative 4

Inputs: Alternative 4

| Phase | Description                     | No. of Crew | Daily VMT | Start Month | End Month | Total | Duration (months) |      |      |      |
|-------|---------------------------------|-------------|-----------|-------------|-----------|-------|-------------------|------|------|------|
|       |                                 |             |           |             |           |       | 2014              | 2015 | 2016 | 2017 |
| 1     | EPBM Flower                     | 20          | 600       | Jun-15      | Feb-17    | 21    | --                | 7    | 12   | 2    |
| 2     | Grouting on Flower              | 20          | 600       | Feb-15      | Oct-15    | 9     | --                | 9    | --   | --   |
| 3     | SEM on Flower                   | 20          | 600       | Apr-16      | May-17    | 14    | --                | --   | 9    | 5    |
| 4     | Cut & Cover Along Flower Street | 30          | 900       | May-17      | Jul-17    | 3     | --                | --   | --   | 3    |
| 5     | SEM on Flower                   | 20          | 600       | Dec-16      | Dec-17    | 13    | --                | --   | 1    | 12   |
| 6     | Cut & Cover Along Flower Street | 20          | 600       | Dec-17      | Feb-18    | 3     | --                | --   | --   | 1    |

Daily vehicle miles traveled (round-trip) 30 (estimated value)

Daily Emissions

| Phase | Description                     | Year | Emissions (lb/day) |      |      |      |       |         |           |            |                 |       |         |           |            |                 |
|-------|---------------------------------|------|--------------------|------|------|------|-------|---------|-----------|------------|-----------------|-------|---------|-----------|------------|-----------------|
|       |                                 |      | ROG                | CO   | NOx  | SO2  | PM10  |         |           |            |                 | PM2.5 |         |           |            |                 |
|       |                                 |      |                    |      |      |      | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust | Total | Exhaust | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 0.07               | 2.53 | 0.20 | 0.00 | 1.11  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 1     | EPBM Flower                     | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 1     | EPBM Flower                     | 2017 | 0.05               | 2.13 | 0.17 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 2     | Grouting on Flower              | 2015 | 0.07               | 2.53 | 0.20 | 0.00 | 1.11  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 3     | SEM on Flower                   | 2016 | 0.06               | 2.33 | 0.18 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 3     | SEM on Flower                   | 2017 | 0.05               | 2.13 | 0.17 | 0.00 | 1.12  | 0.02    | 0.01      | 0.02       | 1.07            | 0.18  | 0.01    | 0.00      | 0.01       | 0.16            |
| 4     | Cut & Cover Along Flower Street | 2017 | 0.07               | 3.19 | 0.25 | 0.01 | 1.67  | 0.02    | 0.02      | 0.03       | 1.61            | 0.28  | 0.02    | 0.00      | 0.01       | 0.24            |
| 5     | SEM on Flower                   | 2016 | 0.86               | 3.79 | 9.81 | 0.02 | 0.92  | 0.35    | 0.05      | 0.04       | 0.49            | 0.51  | 0.32    | 0.01      | 0.02       | 0.16            |
| 5     | SEM on Flower                   | 2017 | 0.79               | 3.40 | 8.76 | 0.02 | 0.88  | 0.30    | 0.05      | 0.04       | 0.49            | 0.47  | 0.28    | 0.01      | 0.02       | 0.16            |
| 6     | Cut & Cover Along Flower Street | 2017 | 0.79               | 3.40 | 8.76 | 0.02 | 0.88  | 0.30    | 0.05      | 0.04       | 0.49            | 0.47  | 0.28    | 0.01      | 0.02       | 0.16            |

Table 2-15: Daily and Annual Emissions Summary (Worker Commute) - Alternative 4

Annual Emissions

| Phase | Description                     | Year | Emissions (tons per year) |          |          |          |          |          |           |            |                 |          |          |           |            |                 |
|-------|---------------------------------|------|---------------------------|----------|----------|----------|----------|----------|-----------|------------|-----------------|----------|----------|-----------|------------|-----------------|
|       |                                 |      | ROG                       | CO       | NOx      | SO2      | PM10     |          |           |            |                 | PM2.5    |          |           |            |                 |
|       |                                 |      |                           |          |          |          | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust | Total    | Exhaust  | Tire Wear | Brake Wear | Paved Road Dust |
| 1     | EPBM Flower                     | 2015 | 5.19E-03                  | 1.95E-01 | 1.55E-02 | 3.56E-04 | 8.58E-02 | 1.17E-03 | 8.15E-04  | 1.32E-03   | 8.25E-02        | 1.42E-02 | 1.12E-03 | 2.04E-04  | 5.09E-04   | 1.24E-02        |
| 1     | EPBM Flower                     | 2016 | 7.60E-03                  | 3.07E-01 | 2.42E-02 | 6.11E-04 | 1.47E-01 | 2.10E-03 | 1.40E-03  | 2.27E-03   | 1.41E-01        | 2.44E-02 | 1.92E-03 | 3.49E-04  | 8.73E-04   | 2.12E-02        |
| 1     | EPBM Flower                     | 2017 | 1.05E-03                  | 4.68E-02 | 3.65E-03 | 1.02E-04 | 2.45E-02 | 3.49E-04 | 2.33E-04  | 3.78E-04   | 2.36E-02        | 4.06E-03 | 3.20E-04 | 5.82E-05  | 1.46E-04   | 3.54E-03        |
| 2     | Grouting on Flower              | 2015 | 6.68E-03                  | 2.51E-01 | 2.00E-02 | 4.58E-04 | 1.10E-01 | 1.51E-03 | 1.05E-03  | 1.70E-03   | 1.06E-01        | 1.83E-02 | 1.44E-03 | 2.62E-04  | 6.55E-04   | 1.59E-02        |
| 3     | SEM on Flower                   | 2016 | 5.70E-03                  | 2.30E-01 | 1.81E-02 | 4.58E-04 | 1.10E-01 | 1.57E-03 | 1.05E-03  | 1.70E-03   | 1.06E-01        | 1.83E-02 | 1.44E-03 | 2.62E-04  | 6.55E-04   | 1.59E-02        |
| 3     | SEM on Flower                   | 2017 | 2.62E-03                  | 1.17E-01 | 9.13E-03 | 2.55E-04 | 6.13E-02 | 8.73E-04 | 5.82E-04  | 9.46E-04   | 5.89E-02        | 1.02E-02 | 8.00E-04 | 1.46E-04  | 3.64E-04   | 8.84E-03        |
| 4     | Cut & Cover Along Flower Street | 2017 | 2.36E-03                  | 1.05E-01 | 8.22E-03 | 2.29E-04 | 5.52E-02 | 7.86E-04 | 5.24E-04  | 8.51E-04   | 5.30E-02        | 9.14E-03 | 7.20E-04 | 1.31E-04  | 3.27E-04   | 7.96E-03        |
| 5     | SEM on Flower                   | 2016 | 8.53E-02                  | 3.75E-01 | 9.71E-01 | 2.36E-03 | 9.11E-02 | 3.43E-02 | 4.71E-03  | 3.67E-03   | 4.85E-02        | 5.02E-02 | 3.16E-02 | 1.18E-03  | 1.57E-03   | 1.59E-02        |
| 5     | SEM on Flower                   | 2017 | 4.34E-02                  | 1.87E-01 | 4.82E-01 | 1.31E-03 | 4.82E-02 | 1.66E-02 | 2.62E-03  | 2.04E-03   | 2.69E-02        | 2.56E-02 | 1.53E-02 | 6.55E-04  | 8.73E-04   | 8.84E-03        |
| 6     | Cut & Cover Along Flower Street | 2017 | 2.60E-02                  | 1.12E-01 | 2.89E-01 | 7.86E-04 | 2.89E-02 | 9.95E-03 | 1.57E-03  | 1.22E-03   | 1.62E-02        | 1.54E-02 | 9.17E-03 | 3.93E-04  | 5.24E-04   | 5.31E-03        |

Note: Construction assumed to occur 22 days per month (i.e., 5 days per week).

Comments:

INDEX formula used to look-up emission factor from "EMFAC\_Construction.xlsx" spreadsheet.

MATCH formula used to identify row number and column number for each year-pollutant combination.

Paved Road PM10 Emission Factors

| Condition  | Emission Factor (g/VMT) |         |         |
|------------|-------------------------|---------|---------|
|            | High-ADT                | Low-ADT | Average |
| Average    | 0.37                    | 1.3     | 0.81    |
| Worst-Case | 0.64                    | 3.9     | 2.1     |

PM Size Fractions

|          |        |
|----------|--------|
| PM10     | 0.4572 |
| PM2.5    | 0.0686 |
| PM2.5 EF | 0.12   |

Source:

Midwest Research Institute (MRI). 1996. *Improvement of Specific Emission Factors (BADM Project No. 1)*. Final Report. March 29. Table ES-3.

PM10 and PM 2.5 Size Fractions: CARB Speciation Profiles. Profile Number 471 (PAVED ROAD DUST, 97 N AFTER)

<http://www.arb.ca.gov/ei/speciate/dnldopt.htm>

Table 2-16: Daily and Annual Fugitive Dust Emissions Summary - Locally Preferred Alternative

Locally Preferred Alternative

| Description                     | Soil (cy) | Start Month | End Month | Duration (months) |      |      |      |      | Duration (days) |      |      |      |      |
|---------------------------------|-----------|-------------|-----------|-------------------|------|------|------|------|-----------------|------|------|------|------|
|                                 |           |             |           | Total             | 2014 | 2015 | 2016 | 2017 | Total           | 2014 | 2015 | 2016 | 2017 |
| EPBM Flower                     | 27,834    | May-15      | Nov-16    | 19                | --   | 8    | 11   | --   | 418             | n/a  | 176  | 242  | n/a  |
| Cut & Cover Along Flower Street | 118,231   | Sep-14      | Sep-17    | 37                | 4    | 9    | --   | --   | 814             | 88   | 198  | n/a  | n/a  |

Note:  
 Construction Schedule: 22 days/month  
 (assumes 5 days per week)

Material Hauling Emissions

| Description                     | PM10 Annual Emissions (tons per year) |                 |                 |                 |                 | PM2.5 Annual Emissions (tons per year) |                 |                 |                 |                 | Daily Emissions (lbs/day) |                 |
|---------------------------------|---------------------------------------|-----------------|-----------------|-----------------|-----------------|--|-----------------|-----------------|-----------------|-----------------|---------------------------|-----------------|
|                                 | Total                                 | 2014            | 2015            | 2016            | 2017            | Total                                  | 2014            | 2015            | 2016            | 2017            | PM10                      | PM2.5           |
| EPBM Flower                     | 1.13E-02                              | n/a             | 4.78E-03        | 6.57E-03        | n/a             | 1.72E-03                               | n/a             | 7.23E-04        | 9.94E-04        | n/a             | 5.43E-02                  | 8.22E-03        |
| Cut & Cover Along Flower Street | 4.82E-02                              | 5.21E-03        | 1.17E-02        | n/a             | n/a             | 7.30E-03                               | 7.89E-04        | 1.77E-03        | n/a             | n/a             | 1.18E-01                  | 1.79E-02        |
| <b>Total</b>                    | <b>5.95E-02</b>                       | <b>5.21E-03</b> | <b>1.65E-02</b> | <b>6.57E-03</b> | <b>0.00E+00</b> | <b>9.01E-03</b>                        | <b>7.89E-04</b> | <b>2.50E-03</b> | <b>9.94E-04</b> | <b>0.00E+00</b> | <b>1.73E-01</b>           | <b>2.61E-02</b> |

Number of drops: 3

Note:  
 Yellow text - assumed value.

Daily emission calculations assume that emissions are spread evenly throughout construction period.

Table 2-17: Daily and Annual Fugitive Dust Emissions Summary - Alternative 1

Alternative 1

| Description                     | Soil (cy) | Start Month | End Month | Duration (months) |      |      |      |      | Duration (days) |      |      |      |      |
|---------------------------------|-----------|-------------|-----------|-------------------|------|------|------|------|-----------------|------|------|------|------|
|                                 |           |             |           | Total             | 2014 | 2015 | 2016 | 2017 | Total           | 2014 | 2015 | 2016 | 2017 |
| EPBM Flower                     | 44,292    | May-15      | Jan-17    | 21                | --   | 8    | 12   | 1    | 462             | n/a  | 176  | 264  | 22   |
| Cut & Cover Along Flower Street | 61,824    | Sep-14      | May-16    | 21                | 4    | 12   | 5    | --   | 462             | 88   | 264  | 110  | n/a  |

Note:  
Construction Schedule: 22 days/month  
(assumes 5 days per week)

Material Hauling Emissions

| Description                     | PM10 Annual Emissions (tons per year) |                 |                 |                 |                 | PM2.5 Annual Emissions (tons per year) |                 |                 |                 |                 | Daily Emissions (lbs/day) |                 |
|---------------------------------|---------------------------------------|-----------------|-----------------|-----------------|-----------------|--|-----------------|-----------------|-----------------|-----------------|---------------------------|-----------------|
|                                 | Total                                 | 2014            | 2015            | 2016            | 2017            | Total                                  | 2014            | 2015            | 2016            | 2017            | PM10                      | PM2.5           |
| EPBM Flower                     | 1.81E-02                              | n/a             | 6.88E-03        | 1.03E-02        | 8.60E-04        | 2.73E-03                               | n/a             | 1.04E-03        | 1.56E-03        | 1.30E-04        | 7.81E-02                  | 1.18E-02        |
| Cut & Cover Along Flower Street | 2.52E-02                              | 4.80E-03        | 1.44E-02        | 6.00E-03        | n/a             | 3.82E-03                               | 7.27E-04        | 2.18E-03        | 9.08E-04        | n/a             | 1.09E-01                  | 1.65E-02        |
| <b>Total</b>                    | <b>4.32E-02</b>                       | <b>4.80E-03</b> | <b>2.13E-02</b> | <b>1.63E-02</b> | <b>8.60E-04</b> | <b>6.55E-03</b>                        | <b>7.27E-04</b> | <b>3.22E-03</b> | <b>2.47E-03</b> | <b>1.30E-04</b> | <b>1.87E-01</b>           | <b>2.84E-02</b> |

Number of drops: 3

Note:  
Yellow text - assumed value.  
Daily emission calculations assume that emissions are spread evenly throughout construction period.

Table 2-18: Daily and Annual Fugitive Dust Emissions Summary - Alternative 2

Alternative 2

| Description                     | Soil (cy) | Start Month | End Month | Duration (months) |      |      |      |      | Duration (days) |      |      |      |      |
|---------------------------------|-----------|-------------|-----------|-------------------|------|------|------|------|-----------------|------|------|------|------|
|                                 |           |             |           | Total             | 2014 | 2015 | 2016 | 2017 | Total           | 2014 | 2015 | 2016 | 2017 |
| EPBM Flower                     | 15,974    | May-15      | Oct-15    | 6                 | --   | 6    | --   | --   | 132             | n/a  | 132  | n/a  | n/a  |
| Cut & Cover Along Flower Street | 154,526   | Sep-14      | Dec-17    | 40                | 4    | 12   | 12   | 12   | 880             | 88   | 264  | 264  | 264  |

Note:  
 Construction Schedule: 22 days/month  
 (assumes 5 days per week)

Material Hauling Emissions

| Description                     | PM10 Annual Emissions (tons per year) |          |          |          |          | PM2.5 Annual Emissions (tons per year) |          |          |          |          | Daily Emissions (lbs/day) |          |
|---------------------------------|---------------------------------------|----------|----------|----------|----------|--|----------|----------|----------|----------|---------------------------|----------|
|                                 | Total                                 | 2014     | 2015     | 2016     | 2017     | Total                                  | 2014     | 2015     | 2016     | 2017     | PM10                      | PM2.5    |
| EPBM Flower                     | 6.51E-03                              | n/a      | 6.51E-03 | n/a      | n/a      | 9.86E-04                               | n/a      | 9.86E-04 | n/a      | n/a      | 9.86E-02                  | 1.49E-02 |
| Cut & Cover Along Flower Street | 6.30E-02                              | 6.30E-03 | 1.89E-02 | 1.89E-02 | 1.89E-02 | 9.54E-03                               | 9.54E-04 | 2.86E-03 | 2.86E-03 | 2.86E-03 | 1.43E-01                  | 2.17E-02 |
| <b>Total</b>                    | 6.95E-02                              | 6.30E-03 | 2.54E-02 | 1.89E-02 | 1.89E-02 | 1.05E-02                               | 9.54E-04 | 3.85E-03 | 2.86E-03 | 2.86E-03 | 2.42E-01                  | 3.66E-02 |

Number of drops: 3

Note:  
 Yellow text - assumed value.  
 Daily emission calculations assume that emissions are spread evenly throughout construction period.

Table 2-19: Daily and Annual Fugitive Dust Emissions Summary - Alternative 3

Alternative 3

| Description                     | Soil (cy) | Start Month | End Month | Duration (months) |      |      |      |      | Duration (days) |      |      |      |      |
|---------------------------------|-----------|-------------|-----------|-------------------|------|------|------|------|-----------------|------|------|------|------|
|                                 |           |             |           | Total             | 2014 | 2015 | 2016 | 2017 | Total           | 2014 | 2015 | 2016 | 2017 |
| EPBM Flower WB                  | 13,917    | Jun-15      | Mar-16    | 10                | --   | 7    | 3    | --   | 220             | n/a  | 154  | 66   | n/a  |
| EPBM Flower EB                  | 13,917    | Oct-16      | May-17    | 8                 | --   | --   | 3    | 5    | 176             | n/a  | n/a  | 66   | 110  |
| Grouting on Flower              | 0         | Nov-14      | Nov-15    | 13                | 2    | 11   | --   | --   | 286             | 44   | 242  | n/a  | n/a  |
| Open Face/Shield on Flower      | 17,373    | Mar-16      | Dec-16    | 10                | --   | --   | 10   | --   | 220             | n/a  | n/a  | 220  | n/a  |
| SEM on Flower                   | 19,097    | Dec-16      | Dec-17    | 13                | --   | --   | 1    | 12   | 286             | n/a  | n/a  | 22   | 264  |
| Cut & Cover Along Flower Street | 20,925    | Dec-17      | Feb-18    | 3                 | --   | --   | --   | 1    | 66              | n/a  | n/a  | n/a  | 22   |

Note:

Construction Schedule: 22 days/month  
(assumes 5 days per week)

Material Hauling Emissions

| Description                     | PM10 Annual Emissions (tons per year) |                 |                 |                 |                 | PM2.5 Annual Emissions (tons per year) |                 |                 |                 |                 | Daily Emissions (lbs/day) |                 |
|---------------------------------|---------------------------------------|-----------------|-----------------|-----------------|-----------------|--|-----------------|-----------------|-----------------|-----------------|---------------------------|-----------------|
|                                 | Total                                 | 2014            | 2015            | 2016            | 2017            | Total                                  | 2014            | 2015            | 2016            | 2017            | PM10                      | PM2.5           |
| EPBM Flower WB                  | 5.67E-03                              | n/a             | 3.97E-03        | 1.70E-03        | n/a             | 8.59E-04                               | n/a             | 6.01E-04        | 2.58E-04        | n/a             | 5.16E-02                  | 7.81E-03        |
| EPBM Flower EB                  | 5.67E-03                              | n/a             | n/a             | 2.13E-03        | 3.54E-03        | 8.59E-04                               | n/a             | n/a             | 3.22E-04        | 5.37E-04        | 6.45E-02                  | 9.76E-03        |
| Grouting on Flower              | 0.00E+00                              | 0.00E+00        | 0.00E+00        | n/a             | n/a             | 0.00E+00                               | 0.00E+00        | 0.00E+00        | n/a             | n/a             | 0.00E+00                  | 0.00E+00        |
| Open Face/Shield on Flower      | 7.08E-03                              | n/a             | n/a             | 7.08E-03        | n/a             | 1.07E-03                               | n/a             | n/a             | 1.07E-03        | n/a             | 6.44E-02                  | 9.75E-03        |
| SEM on Flower                   | 7.78E-03                              | n/a             | n/a             | 5.99E-04        | 7.18E-03        | 1.18E-03                               | n/a             | n/a             | 9.07E-05        | 1.09E-03        | 5.44E-02                  | 8.24E-03        |
| Cut & Cover Along Flower Street | 8.53E-03                              | n/a             | n/a             | n/a             | 2.84E-03        | 1.29E-03                               | n/a             | n/a             | n/a             | 4.30E-04        | 2.58E-01                  | 3.91E-02        |
| <b>Total</b>                    | <b>3.47E-02</b>                       | <b>0.00E+00</b> | <b>3.97E-03</b> | <b>1.15E-02</b> | <b>1.36E-02</b> | <b>5.26E-03</b>                        | <b>0.00E+00</b> | <b>6.01E-04</b> | <b>1.74E-03</b> | <b>2.06E-03</b> | <b>4.93E-01</b>           | <b>7.47E-02</b> |

Number of drops: 3

Note:

Yellow text - assumed value.

Daily emission calculations assume that emissions are spread evenly throughout construction period.

Table 2-20: Daily and Annual Fugitive Dust Emissions Summary - Alternative 4

Alternative 4

| Description                     | Soil (cy) | Start Month | End Month | Duration (months) |      |      |      |      | Duration (days) |      |      |      |      |
|---------------------------------|-----------|-------------|-----------|-------------------|------|------|------|------|-----------------|------|------|------|------|
|                                 |           |             |           | Total             | 2014 | 2015 | 2016 | 2017 | Total           | 2014 | 2015 | 2016 | 2017 |
| EPBM Flower                     | 44,292    | Jun-15      | Feb-17    | 21                | --   | 7    | 12   | 2    | 462             | n/a  | 154  | 264  | 44   |
| Grouting on Flower              | 0         | Feb-15      | Oct-15    | 9                 | --   | 9    | --   | --   | 198             | n/a  | 198  | n/a  | n/a  |
| SEM on Flower                   | 22,487    | Apr-16      | May-17    | 14                | --   | --   | 9    | 5    | 308             | n/a  | n/a  | 198  | 110  |
| Cut & Cover Along Flower Street | 16,231    | May-17      | Jul-17    | 3                 | --   | --   | --   | 3    | 66              | n/a  | n/a  | n/a  | 66   |
| SEM on Flower                   | 19,097    | Dec-16      | Dec-17    | 13                | --   | --   | 1    | 12   | 286             | n/a  | n/a  | 22   | 264  |
| Cut & Cover Along Flower Street | 20,925    | Dec-17      | Feb-18    | 3                 | --   | --   | --   | 1    | 66              | n/a  | n/a  | n/a  | 22   |

Note:

Construction Schedule: 22 days/month  
(assumes 5 days per week)

Material Hauling Emissions

| Description                     | PM10 Annual Emissions (tons per year) |          |          |          |          | PM2.5 Annual Emissions (tons per year) |          |          |          |          | Daily Emissions (lbs/day) |          |
|---------------------------------|---------------------------------------|----------|----------|----------|----------|--|----------|----------|----------|----------|---------------------------|----------|
|                                 | Total                                 | 2014     | 2015     | 2016     | 2017     | Total                                  | 2014     | 2015     | 2016     | 2017     | PM10                      | PM2.5    |
| EPBM Flower                     | 1.81E-02                              | n/a      | 6.02E-03 | 1.03E-02 | 1.72E-03 | 2.73E-03                               | n/a      | 9.11E-04 | 1.56E-03 | 2.60E-04 | 7.81E-02                  | 1.18E-02 |
| Grouting on Flower              | 0.00E+00                              | n/a      | 0.00E+00 | n/a      | n/a      | 0.00E+00                               | n/a      | 0.00E+00 | n/a      | n/a      | 0.00E+00                  | 0.00E+00 |
| SEM on Flower                   | 9.16E-03                              | n/a      | n/a      | 5.89E-03 | 3.27E-03 | 1.39E-03                               | n/a      | n/a      | 8.92E-04 | 4.96E-04 | 5.95E-02                  | 9.01E-03 |
| Cut & Cover Along Flower Street | 6.61E-03                              | n/a      | n/a      | n/a      | 6.61E-03 | 1.00E-03                               | n/a      | n/a      | n/a      | 1.00E-03 | 2.00E-01                  | 3.04E-02 |
| SEM on Flower                   | 7.78E-03                              | n/a      | n/a      | 5.99E-04 | 7.18E-03 | 1.18E-03                               | n/a      | n/a      | 9.07E-05 | 1.09E-03 | 5.44E-02                  | 8.24E-03 |
| Cut & Cover Along Flower Street | 8.53E-03                              | n/a      | n/a      | n/a      | 2.84E-03 | 1.29E-03                               | n/a      | n/a      | n/a      | 4.30E-04 | 2.58E-01                  | 3.91E-02 |
| <b>Total</b>                    | 5.01E-02                              | 0.00E+00 | 6.02E-03 | 1.68E-02 | 2.16E-02 | 7.59E-03                               | 0.00E+00 | 9.11E-04 | 2.54E-03 | 3.28E-03 | 6.51E-01                  | 9.86E-02 |

Number of drops: 3

Note:

Yellow text - assumed value.

Daily emission calculations assume that emissions are spread evenly throughout construction period.

Localized Air Quality Impact Assessment - Localized Significance Thresholds (LST)

Table 3-1: LST Analysis - Locally Preferred Alternative/Baseline

| ID                  | Phase                           | Mitigated                                |       |      |       |
|---------------------|---------------------------------|--|-------|------|-------|
|                     |                                 | Maximum Daily Onsite Emissions (lbs/day) |       |      |       |
|                     |                                 | NOx                                      | CO    | PM10 | PM2.5 |
| 1                   | EPBM Flower                     | 55                                       | 120   | 1    | 1     |
| 2                   | Cut & Cover Along Flower Street | 58                                       | 131   | 1    | 1     |
| Allowable Emissions |                                 | 161                                      | 1,861 | 16   | 8     |

Table 3-2: LST Analysis - Alternative 1

| ID                  | Phase                           | Mitigated                                |       |      |       |
|---------------------|---------------------------------|--|-------|------|-------|
|                     |                                 | Maximum Daily Onsite Emissions (lbs/day) |       |      |       |
|                     |                                 | NOx                                      | CO    | PM10 | PM2.5 |
| 1                   | EPBM Flower                     | 55                                       | 120   | 1    | 1     |
| 2                   | Cut & Cover Along Flower Street | 56                                       | 126   | 1    | 1     |
| Allowable Emissions |                                 | 161                                      | 1,861 | 16   | 8     |

Table 3-3: LST Analysis - Alternative 2

| ID                  | Phase                           | Mitigated                                |       |      |       |
|---------------------|---------------------------------|--|-------|------|-------|
|                     |                                 | Maximum Daily Onsite Emissions (lbs/day) |       |      |       |
|                     |                                 | NOx                                      | CO    | PM10 | PM2.5 |
| 1                   | EPBM Flower                     | 53                                       | 115   | 1    | 1     |
| 2                   | Cut & Cover Along Flower Street | 58                                       | 131   | 1    | 1     |
| Allowable Emissions |                                 | 161                                      | 1,861 | 16   | 8     |

Table 3-4: LST Analysis - Alternative 3

| ID                  | Phase                           | Mitigated                                |       |      |       |
|---------------------|---------------------------------|--|-------|------|-------|
|                     |                                 | Maximum Daily Onsite Emissions (lbs/day) |       |      |       |
|                     |                                 | NOx                                      | CO    | PM10 | PM2.5 |
| 1                   | EPBM Flower WB                  | 55                                       | 120   | 1    | 1     |
| 2                   | EPBM Flower EB                  | 56                                       | 125   | 1    | 1     |
| 3                   | Grouting on Flower              | 64                                       | 51    | 2    | 2     |
| 4                   | Open Face/Shield on Flower      | 55                                       | 120   | 1    | 1     |
| 5                   | SEM on Flower                   | 56                                       | 125   | 1    | 1     |
| 6                   | Cut & Cover Along Flower Street | 58                                       | 131   | 1    | 1     |
| Allowable Emissions |                                 | 161                                      | 1,861 | 16   | 8     |

Table 3-5: LST Analysis - Alternative 4

| ID                  | Phase                           | Mitigated                                |       |      |       |
|---------------------|---------------------------------|--|-------|------|-------|
|                     |                                 | Maximum Daily Onsite Emissions (lbs/day) |       |      |       |
|                     |                                 | NOx                                      | CO    | PM10 | PM2.5 |
| 1                   | EPBM Flower                     | 56                                       | 125   | 1    | 1     |
| 2                   | Grouting on Flower              | 67                                       | 62    | 2    | 2     |
| 3                   | SEM on Flower                   | 56                                       | 125   | 1    | 1     |
| 4                   | Cut & Cover Along Flower Street | 58                                       | 131   | 1    | 1     |
| Allowable Emissions |                                 | 161                                      | 1,861 | 16   | 8     |