



Memorandum

Date: April 11, 2017

To: Ms. Rebecca Mitchell, Mt. San Antonio College

From: Fred Greve, Greve & Associates, LLC

Subject: West Parcel Solar Project Update (Report #17-022)

A previous analysis of the construction impacts ("West Parcel Solar Project - Air Quality Construction Analysis," Report #15-104C, memo from Fred Greve, Greve & Associates to Mikaela Klein, MtSAC, dated August 30, 2015) showed that the project would be under the SCAQMD air quality thresholds. However, the project proposed at that time was just under the thresholds for NO_x during the "Grading with Import" and "Final Grading" phases. The grading plan for the project was changed slightly, and to be conservative it was decided that the construction emissions should be re-run to ensure that new impacts would not occur.

The entire site is approximately 27.7 acres, and approximately 17.25 acres of the site will be graded (previous grading area was 17.7 acres). Substantial grading and import of dirt will be required for the project. The current grading estimates are 177,500 cubic yards of cut (previously 172,708 cy), 316,500 cy of fill (previously 336,279 cy) with a net import of 139,000 cy (previously 163,571 cy). The import fill will come from the Physical Education Project (PEP) area.

Construction Emissions

Table 1 reproduces Table 3 in the August 30, 2015 report. The highest daily construction emissions for each phase are presented.

The grading plan changes result in almost no changes in the emission projections (Table 2). The emission projections that change are bolded. These changes are very minor and do not affect the findings in the previous air assessment.

In 2016, the SCAQMD released an updated version of CalEEMod (version 2016.3.1). The updated grading plan was re-run with the latest version of CalEEMod to ensure that no new impacts were predicted. The results are presented in Table 3.

Table 3 Construction Emissions for 2017 Grading Plan Using CalEEMod v.2016.3.1

| Activity | Pollutant Emissions (lbs./day) | | | | | |
|---|--------------------------------|-----------------|-------------|-----------------|------------------|-------------------|
| | ROG | NO _x | CO | SO _x | PM ₁₀ | PM _{2.5} |
| Collection, Clear & Grub | 1.8 | 17.5 | 8.4 | 0.2 | 8.1 | 4.3 |
| Grading with Import | 6.4 | 77.8 | 45.3 | 0.1 | 9.9 | 6.6 |
| Final Grading | 7.6 | 93.2 | 52.4 | 0.1 | 10.9 | 7.0 |
| Solar Installation | 0.5 | 3.4 | 3.5 | 0.0 | 0.6 | 0.3 |
| Restoration | 0.5 | 3.3 | 3.3 | 0.0 | 0.7 | 0.3 |
| Landscaping | 0.5 | 3.4 | 3.6 | 0.0 | 0.8 | 0.3 |
| Solar Install+Restoration +Landscaping | 1.4 | 10.1 | 10.4 | 0.0 | 2.1 | 1.0 |
| <i>SCQAMD Thresholds</i> | 75 | 100 | 550 | 150 | 150 | 55 |
| Exceed Threshold? | No | No | No | No | No | No |

The values that have changed since the August 2015 analysis are bolded in Table 3. Most of the values have changed slightly, but not enough to change the conclusions or recommendations in the previous report. A major portion of the CalEEMod v.2016.3.1 update was to improve the emission rates for construction equipment. The emission rates for construction equipment went up for some equipment while they went down for other pieces of equipment. This accounts for most of the change in the forecast.

CONCLUSION

Construction emissions were calculated for the updated grading plan with the version of CalEEMod used for the August 2015 analysis and with the CalEEMod version released in 2016. Both the analyses indicated that the no new impacts would occur with the updated

grading plan. The findings, recommendations, and conclusions in the August 2015 study for WPS do not need to be changed and are still valid.

Appendix

CalEEMod Output for Updated Grading CalEEMod v.2013.2.2

CalEEMod Output for Updated Grading CalEEMod v.2016.3.1

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|--------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|----------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.2057 | 1.0859 | 2.9760 | 8.4800e-003 | 0.6564 | 0.0117 | 0.6682 | 0.1757 | 0.0111 | 0.1868 | | | | | | 860.5973 |
| Unmitigated | 0.2057 | 1.0859 | 2.9760 | 8.4800e-003 | 0.6564 | 0.0117 | 0.6682 | 0.1757 | 0.0111 | 0.1868 | | | | | | 860.5973 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 69.70 | 13.20 | 6.80 | 233,117 | 233,117 |
| Total | 69.70 | 13.20 | 6.80 | 233,117 | 233,117 |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Light Industry | 16.60 | 8.40 | 6.90 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.542123 | 0.045435 | 0.198009 | 0.129481 | 0.019131 | 0.005886 | 0.019249 | 0.030178 | 0.001920 | 0.002234 | 0.004581 | 0.000701 | 0.001073 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e | |
|------------------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|------|---------|
| Category | lb/day | | | | | | | | | | lb/day | | | | | | |
| NaturalGas Mitigated | 5.3700e-003 | 0.0488 | 0.0410 | 2.9000e-004 | | 3.7100e-003 | 3.7100e-003 | | 3.7100e-003 | 3.7100e-003 | | | | | | | 58.8813 |
| NaturalGas Unmitigated | 5.3700e-003 | 0.0488 | 0.0410 | 2.9000e-004 | | 3.7100e-003 | 3.7100e-003 | | 3.7100e-003 | 3.7100e-003 | | | | | | | 58.8813 |

5.2 Energy by Land Use - NaturalGas

Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e | |
|------------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|----------|-----------|-----------|-----|-----|------|----------------|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | | |
| General Light Industry | 497.534 | 5.3700e-003 | 0.0488 | 0.0410 | 2.9000e-004 | | 3.7100e-003 | 3.7100e-003 | | 3.7100e-003 | 3.7100e-003 | | | | | | | 58.8813 |
| Total | | 5.3700e-003 | 0.0488 | 0.0410 | 2.9000e-004 | | 3.7100e-003 | 3.7100e-003 | | 3.7100e-003 | 3.7100e-003 | | | | | | | 58.8813 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------|----------------|--------|-----|----|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|------|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | | |
|-------|--------|-------------|-------------|--------|--|--------|--------|--|--------|--------|--|--|--|--|--|--|-------------|
| Total | 0.2235 | 1.0000e-005 | 1.0400e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | | 2.3400e-003 |
|-------|--------|-------------|-------------|--------|--|--------|--------|--|--------|--------|--|--|--|--|--|--|-------------|

Mitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e | |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-----------|-----------|-----|-----|------|--------------------|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | | |
| Architectural Coating | 0.0254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | | 0.0000 |
| Consumer Products | 0.1980 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | | 0.0000 |
| Landscaping | 1.0000e-004 | 1.0000e-005 | 1.0400e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | | 2.3400e-003 |
| Total | 0.2235 | 1.0000e-005 | 1.0400e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | | 2.3400e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|------------|-------------|-------------|-----------|
|----------------|--------|-----------|------------|-------------|-------------|-----------|

Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation
