

**Addendum To The  
Final Environmental Impact Report  
For The  
San Diego State University  
2007 Campus Master Plan Revision**

State Clearinghouse No. 2007021020

**Prepared for:**

California State University, San Diego State University  
CSU Board of Trustees

**April 2010**

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## APPENDIX

- A. Technical Memorandum, San Diego State University Student Union Project, Scientific Resources Associated, April 2010

## **1.0 INTRODUCTION**

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This document is an Addendum to the Final Environmental Impact Report ("Final EIR" or "2007 Master Plan EIR") prepared pursuant to the California Environmental Quality Act ("CEQA") for the San Diego State University ("SDSU") 2007 Campus Master Plan Revision, SCH No. 2007021020 (November 2007). The Final EIR was certified as adequate by the Board of Trustees of the California State University ("CSU") on November 14, 2007.<sup>1</sup>

Concurrent with certification of the Final EIR, CSU approved the SDSU 2007 Campus Master Plan Revision ("2007 Master Plan"), which identified numerous buildings and facilities necessary to support campus growth and development. One of the components of the 2007 Master Plan was the renovation and expansion of the existing student union, known as the Aztec Center. The Aztec Center component of the 2007 Master Plan included renovation and expansion of the existing facility, resulting in a student union approximately 161,000 gross square feet ("GSF") in size. In response to student direction, SDSU has since revised the Aztec Center component of the 2007 Master Plan and now proposes to demolish the existing facility and build in its place a new structure approximately 195,000 GSF in size.

This Addendum describes the previously approved Aztec Center project and the proposed revisions to the project, and provides an analysis of the potential environmental effects associated with the revised Aztec Center project as compared to the previously approved Aztec Center project. The scope of this Addendum is limited to the Aztec Center component of the 2007 Master Plan; no other revisions to the 2007 Master Plan are proposed. Any information contained herein regarding the other components of the 2007 Master Plan is provided for background purposes only.

For the reasons explained below, the proposed revisions to the Aztec Center component of the 2007 Master Plan would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects and, therefore, the revisions do not trigger the need for further environmental analysis in a subsequent or supplemental EIR under the requirements of CEQA and the CEQA Guidelines.<sup>2</sup>

### **1.1 SUPPLEMENTAL OR SUBSEQUENT EIR NOT REQUIRED**

Under CEQA, a lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary to the EIR but none of the conditions described in CEQA Guidelines section 15162 calling for preparation of a subsequent EIR have occurred. (CEQA Guidelines, section 15164(a).)

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<sup>1</sup> On February 11, 2010, following legal challenge, the Superior Court of the State of California, County of San Diego North County Division, the Honorable Thomas P. Nugent presiding, ruled that the 2007 Master Plan Final EIR is adequate under CEQA. (Del Cerro Action Council, et al. v. Board of Trustees of California State University, Case No. GIC 855643.)

<sup>2</sup> See, specifically, sections 15164 (addendum) and 15162 (subsequent EIR) of the CEQA Guidelines.

CEQA Guidelines section 15162 provides that when an EIR has been certified for a project, a subsequent EIR shall be prepared for that project if the lead agency determines one or more of the following have occurred:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR...due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR...due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete...shows any of the following:
  - (A) The project will have one or more significant effects not discussed in the previous EIR...;
  - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
  - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

As explained below in **Section 2.0**, Analysis, there is no substantial evidence in light of the whole record that the proposed revisions to the Aztec Center component of the 2007 Master Plan would result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect. Additionally, there is no new information not previously known that shows new significant environmental effects or an increase in the severity of previously identified significant effects. For these reasons, preparation of an addendum is appropriate under these circumstances. An addendum need not be circulated for public review and can be attached to the Final EIR. (CEQA Guidelines, section 15164(c).)

## 2.0 ANALYSIS

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This section describes the previously approved Aztec Center component of the 2007 Master Plan that was analyzed in the Final EIR, and the Aztec Center project now proposed. Following the project description, the section presents a summary of the environmental analysis presented in the Final EIR relative to the Aztec Center project, followed by a comparative analysis of the project as revised.

### 2.1 PROJECT DESCRIPTION

#### *2007 Master Plan, Including Student Union/Aztec Center Expansion*

The 2007 Master Plan approved by the Trustees on November 14, 2007 and analyzed in the Final EIR, was comprised of the following project components:

- i) Student Enrollment Increase: Increase in student enrollment from 25,000 full-time equivalent students ("FTES") to 35,000 FTES;
- ii) Adobe Falls Faculty/Staff Housing: Development of faculty/staff housing units on a 33-acre site north of the central campus;
- iii) Alvarado Campus: Development of approximately 612,000 GSF of academic/research/medical space, and a 552,000 GSF parking structure in the northeastern portion of the campus;
- iv) Alvarado Hotel: Development of a 60,000 GSF, six story hotel with up to 120 rooms and suites, located on the north central campus;
- v) Campus Conference Center: Development of a 70,000 GSF, 3-story building for meeting/conference space on a one-half acre site on the central campus;
- vi) Student Housing: Demolition of existing student housing structures and the construction of five new housing structures, resulting in a net increase of 2,976 new student housing beds on campus; and
- vii) Student Union/Aztec Center Expansion and Renovation: Renovation and expansion of the existing Aztec Center student union, including necessary demolition.

Specific to the Student Union/Aztec Center Expansion and Renovation component of the 2007 Master Plan, the Final EIR described this project component as follows:

The Student Union component of the proposed project would be constructed in the near-term following project approval, during the 2008-2009 timeframe, and consists of the renovation and 70,000 GSF expansion of the existing Aztec Center. The Aztec Center expansion would provide additional social space, recreation facilities, student organization offices, food services and retail services, and would provide an additional student gathering space to accommodate the future increase in student enrollment....

Construction of this component would necessitate the demolition of the 5,200 GSF La Tienda building adjacent to the Aztec Center, the exterior "arched" breezeway, and the outdoor picnic/eating area, which are all located immediately west of the Aztec Center. The La Tienda building site, plus the exterior breezeway and picnic table area, will be redesigned to support the 70,000 GSF, 4 story (1 subterranean and up to 3 above ground) Aztec Center expansion.

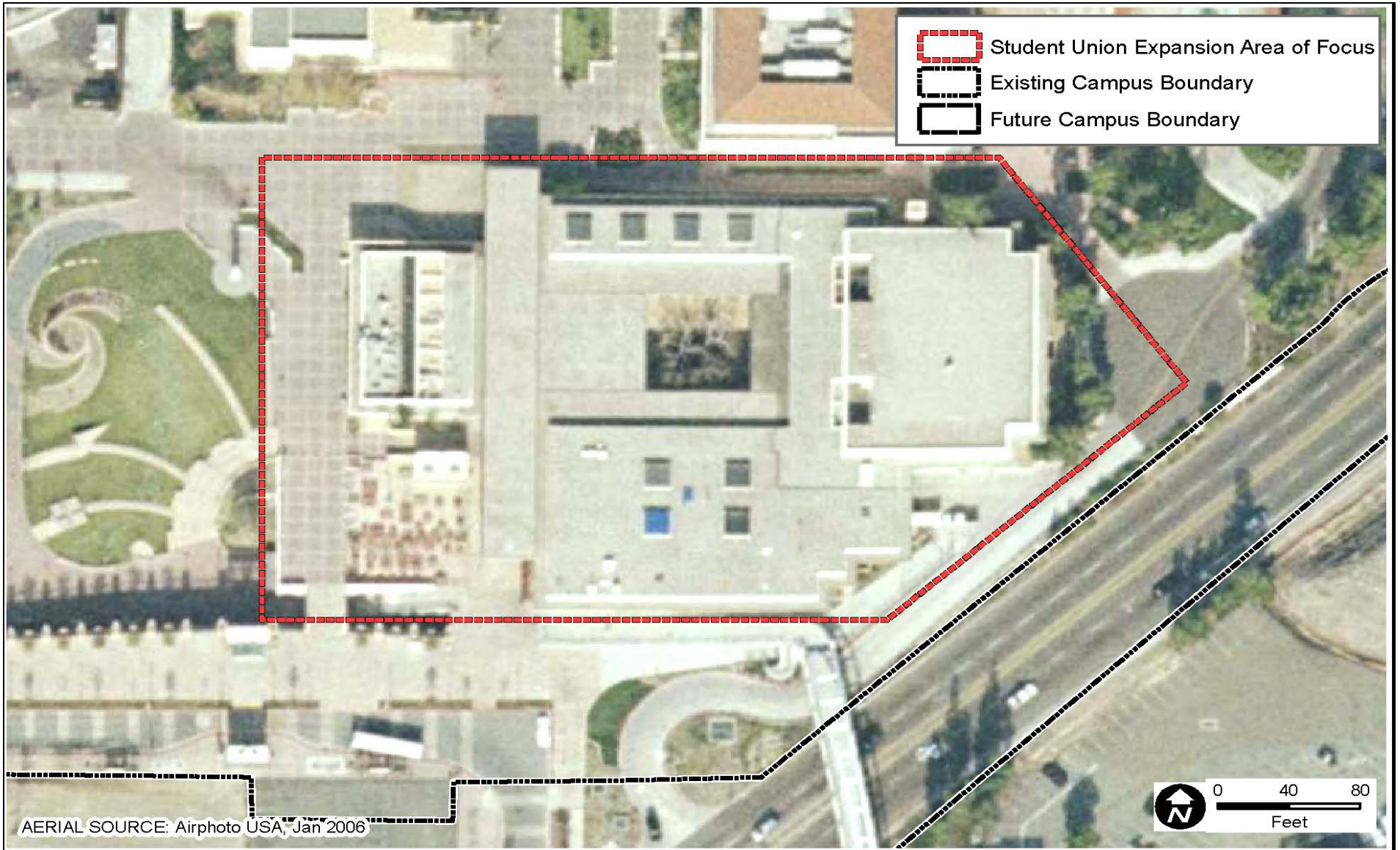
This project component would provide additional eating venues, gathering spaces, meeting rooms and student service offices and facilities. Placement of this expanded student facility in this area expands upon the existing activity node, which includes the transit station, student services center, and satellite bookstore, all within this portion of campus. Design parameters of the modern Mission Revival style prevalent in this portion of the campus would be utilized. Landscape treatment, pedestrian walkways, and wayfinding features would be incorporated into the ultimate site design.... (Draft EIR, pp. 1.0-47 - 1.0-49.)

See **Figure 1.0-16**, Student Union Area of Focus, excerpted from the 2007 Master Plan EIR, which depicts the location of the existing Aztec Center and the proposed area of expansion.

#### *2010 Revised Aztec Center*

The revised Aztec Center component of the 2007 Master Plan consists of demolition of the existing approximate 91,000 GSF structure and construction of a new 195,000 GSF building in its place. Thus, the revised Aztec Center project would be approximately 34,000 GSF larger than the previously approved project. The revised Aztec Center would be constructed on the same footprint as the 2007 project, and would be three levels above grade with a partial basement, similar to the previously approved project. To accommodate the increase in GSF, the revised project would be approximately 10 feet higher above grade than the previously approved project (62 feet v. 52 feet). In all other respects, the revised Aztec Center project would be similar to the previously approved project.

The revised Aztec Center would serve the same function as the previously approved 2007 project, which is to serve the on-campus student population and, as such, would provide eating venues, gathering spaces, meeting rooms, and student service offices and facilities. The Aztec Center would include a student lounge and study spaces; Associated Student offices; recreation, including a satellite fitness center, bowling alley and table games area; student life and leadership offices; lease space for Aztec Shops to provide three marketplace cafes, a grill/restaurant, and Aztec Market; retail space for a bank and STA Travel; a variety of meeting rooms including Student Council chambers; a ballroom, including a pre-function lounge and catering and support kitchen; multi-purpose theater for events, dance,



and movie viewing, with retractable seating; and support facilities, including, storage recycling / trash, and loading dock.

The new building would be constructed to achieve LEED Platinum Certification, the highest certification that can be attained from the U.S. Green Building Council rating, and it would exceed the California Building Code Title 24 energy standards (2005 version) by 40 percent. The exterior of the building would be designed based upon the California Mission architectural vernacular of the original, core campus buildings and spaces.

## **2.2 ENVIRONMENTAL ANALYSIS**

The following is an analysis of the potential environmental effects associated with the revised Aztec Center project relative to the previously approved Aztec Center expansion and renovation.

### **Aesthetics and Visual Quality**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that visual impacts associated with the Aztec Center expansion/renovation would be substantial due, in part, to the fact that the expansion would include a more modern look as compared to the existing building; however because the renovation constituted an improvement to existing structures, impacts would not be adverse. (Draft EIR, p. 3.1-54.)

With respect to lighting impacts, the 2007 Master Plan EIR determined the expanded and renovated facilities would result in lighting impacts similar to that of the existing conditions via use of high-pressure sodium and metal halide lights in the form of tall lighting poles, decorative wall fixtures, ground lighting, and safety lights. The renovated Aztec Center lighting layout would be visible by the same viewers as those capable of seeing the existing lighting layout, which primarily consists of pedestrians and motorists for short duration in passing. Therefore, impacts would be less than significant. (Draft EIR, pp. 3.1-69 - 3.1-71.)

#### ***Revised Aztec Center***

While somewhat larger in scale, the revised Aztec Center would be designed in an architectural style reminiscent of the Spanish mission vernacular of the original 1930's era of the SDSU campus and, therefore, would be more compatible with the surrounding structures than the previously approved project. Therefore, the revised Aztec Center project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to aesthetics and visual quality.



## **Air Quality**

### ***2007 Master Plan EIR***

#### Construction-Related Impacts

The 2007 Master Plan EIR analyzed the construction-related impacts associated with the Aztec Center expansion/renovation both independently and under the assumption that the project would be constructed simultaneously with two other 2007 Master Plan components, the Alvarado Hotel and the first phase of Student Housing. (Draft EIR, p. 3.2-13.) The analysis determined that independent construction of the Student Union would not result in significant impacts. (Draft EIR, p. 3.2-16 [Table 3.2-4].) However, when combined with construction of the other two components, emissions of reactive organic gases ("ROG") would exceed permissible thresholds, thereby resulting in a significant impact. (Draft EIR, pp. 3.2-16 - 3.2-17 [Table 3.2-4].) The analysis further determined that with mitigation, the impacts would be reduced to below significance thresholds. (Draft EIR, pp. 3.2-22 [Table 3.2-7].)

#### Operation-Related Impacts

The 2007 Master Plan EIR analyzed the operation-related impacts resulting from three main source categories: area sources, stationary sources, and mobile sources. The analysis determined that the 2007 Master Plan, including the Aztec Center component, would result in significant operation-related impacts due to emissions of ROG. The main source of these pollutants is the increased vehicular traffic and increased consumer products use generated by the increased student enrollment. (Draft EIR, p. 3.2-34 [Table 3.2-15].)

#### Health Risk Analysis

The 2007 Master Plan EIR analyzed the health risks associated with 2007 Master Plan project emissions and determined the excess cancer risks and hazards would be below the significance thresholds. (Draft EIR, pp. 3.2-36 - 3.2-38.)

#### Global Climate Change

The 2007 Master Plan EIR analyzed the potential impacts associated with global climate change and determined that the 2007 Master Plan project would not result in significant impacts. (Draft EIR, pp. 3.2-38 - 3.2-48.)

#### Conclusion

The 2007 Master Plan EIR recommended, and CSU adopted, mitigation measures to reduce the identified significant impacts. Because there are no feasible mitigation measures to reduce the potential air quality impacts attributable to the increased consumer products use and vehicle trips (i.e., ROG emissions), long-term air quality impacts attributable to project operation would be significant and unavoidable. (Draft EIR p. 3.2-53.)

### ***Revised Aztec Center Analysis***

In connection with preparation of this addendum, an air quality analysis was conducted by Scientific Resources Associated to address the potential air quality impacts associated with construction and operation of the revised

Aztec Center in the context of the Master Plan analysis. A copy of the SRA report is provided as Appendix A to this addendum. Relevant portions of the report's analysis are presented below.

### Construction Emissions

Construction emissions relating to the revised Aztec Center project were calculated using the URBEMIS Model for three overall phases: demolition, site grading, and building construction, including paving. Emissions were then compared with the emission estimates for the previously approved Aztec Center project that were presented in the 2007 Master Plan EIR.

To address impacts associated with demolition of the existing Student Union and construction of the new building, the URBEMIS Model, Version 9.2.4, was run to evaluate the construction-related emissions. Demolition of the existing Student Union would take place over a period of four to five months, with one month for required abatement activities and three to four months for the demolition itself. For conservative purposes, a demolition period of just four months was assumed. Overall construction activities were assumed to require 20 months, consistent with the proposed schedule.

**Table 1** presents a comparison of the emissions calculated for the revised Aztec Center project with the emissions calculated for the previously approved project as presented in the 2007 Master Plan EIR.

**Table 1**  
**Construction Emissions Comparison (lbs/day)**  
**Previously Approved Aztec Center/Revised Aztec Center**

Construction Project/Phase	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<i>Revised Aztec Center Student Union Project</i>						
<i>Demolition</i>						
Fugitive Dust	-	-	-	-	22.68	4.72
Off-Road Diesel	1.14	7.68	4.68	0.00	0.59	0.54
On-Road Diesel	1.79	23.36	8.97	0.03	1.06	0.91
Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00
<b>Total</b>	<b>2.97</b>	<b>31.10</b>	<b>14.70</b>	<b>0.03</b>	<b>24.34</b>	<b>6.18</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Grading</i>						
Fugitive Dust	-	-	-	-	8.14	1.70
Off-Road Diesel	4.17	33.25	14.65	0.00	1.82	1.68
Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01
<b>Total</b>	<b>4.22</b>	<b>33.34</b>	<b>16.22</b>	<b>0.00</b>	<b>9.98</b>	<b>3.39</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Paving</i>						
Paving Offgassing	0.07	-	-	-	-	-
Paving Off-Road Diesel	1.27	7.79	4.79	0.00	0.69	0.63
Paving On-Road Diesel	0.024	0.25	0.10	0.00	0.01	0.01
Paving Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00
<b>Total</b>	<b>1.39</b>	<b>8.10</b>	<b>5.87</b>	<b>0.00</b>	<b>0.71</b>	<b>0.64</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Building Construction</i>						

Building Construction Off-Road Diesel	5.67	29.51	19.61	0.00	2.45	2.25
Building Construction Vendor Trips	0.17	1.89	1.60	0.00	0.09	0.08
Building Construction Worker Trips	0.38	0.71	12.18	0.02	0.12	0.06
Architectural Coating Offgassing	19.85	-	-	-	-	-
Architectural Coatings Worker Trips	0.03	0.06	1.01	0.00	0.01	0.01
<b>Total</b>	<b>26.10</b>	<b>32.17</b>	<b>34.40</b>	<b>0.02</b>	<b>2.67</b>	<b>2.40</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Previously Approved Aztec Center Student Union Project</i>						
<i>Grading</i>						
Fugitive Dust	-	-	-	-	0.25	0.05
Off-Road Diesel	5.54	35.77	45.50	-	1.36	1.21
On-Road Diesel	0.56	10.75	2.05	0.02	0.28	0.28
Worker Trips	0.05	0.13	1.28	0.00	0.00	0.00
<b>Total</b>	<b>6.15</b>	<b>46.65</b>	<b>48.83</b>	<b>0.02</b>	<b>1.89</b>	<b>1.54</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Building Construction</i>						
Building Construction Off-Road Diesel	5.31	33.94	43.33	-	1.17	1.04
Building Construction Worker Trips	0.13	0.08	1.63	0.00	0.02	0.02
Architectural Coating Offgassing	14.70	-	-	-	-	-
Architectural Coatings Worker Trips	0.13	0.08	1.63	0.00	0.02	0.02
<b>Total</b>	<b>20.27</b>	<b>34.10</b>	<b>46.59</b>	<b>0.00</b>	<b>1.21</b>	<b>1.08</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

<sup>a</sup>From Table 1 (SDAPCD Rule 20.2 standards and City of San Diego Significance Thresholds).

As shown in **Table 1**, emissions would be less than significant for each construction phase for the revised Aztec Center project. This was also the case as to the previously approved project.

Consistent with the approach taken in the 2007 Master Plan EIR, a second analysis was conducted assuming that the revised Aztec Center project would be constructed simultaneously with two other Master Plan components, the Alvarado Hotel and Phase I of the Student Housing. **Table 2** presents a summary of the construction emissions for the three project components as compared to the emissions identified in the 2007 Master Plan EIR. As shown in **Table 2**, emissions of all pollutants, except ROG, would be below the significance thresholds. The ROG significance finding for the revised Aztec Center project is consistent with the 2007 Master Plan EIR, which also identified construction-related ROG emissions as a significant impact.<sup>3</sup>

<sup>3</sup> Although the analysis assumes simultaneous construction of the three project components, neither the Alvarado Hotel nor Student Housing will be under construction during construction of Aztec Center. Therefore, project impacts likely are overstated.

**Table 2**  
**Construction Emissions Comparison (lbs/day)**  
**Previously Approved/Revised Aztec Center, Alvarado Hotel, Student Housing Phase I**

<b>Construction Project/Phase</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Student Housing Phase 1	210.63	174.62	250.94	0	6.93	6.24
Alvarado Hotel	18.92	38.14	51.29	0	1.32	1.18
Revised Aztec Center	26.10	32.17	34.40	0.02	2.67	2.40
<b>Total<sup>b</sup></b>	<b>255.65<sup>a</sup></b>	<b>244.93</b>	<b>336.63</b>	<b>0.02</b>	<b>10.92</b>	<b>9.82</b>
<b>Total Previously Approved</b>	<b>249.82<sup>a</sup></b>	<b>246.86</b>	<b>348.82</b>	<b>0.00</b>	<b>9.46</b>	<b>8.50</b>
Significance Threshold <sup>c</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

<sup>a</sup> Exceeds threshold due to application of paints and coatings.

<sup>b</sup> Assumes simultaneous building construction phases.

<sup>c</sup> Table 1 (SDAPCD Rule 20.2 standards and City of San Diego Significance Thresholds).

### Operational Emissions

Operational emissions are calculated based on the square footage of buildings. As noted above, for the 2007 Master Plan EIR, three sources of operational emissions were identified: area source emissions, stationary source emissions, and vehicular emissions. Because vehicular emissions are based on student enrollment and the corresponding number of average daily trips, and because the revised Aztec Center project would not affect the student enrollment number or the number of daily trips generated, vehicular emissions are unaffected by the revised project.

Area source emissions were calculated using the URBEMIS Model, Version 9.2.4. Stationary source emissions were calculated on the basis that the increase in emissions would be proportional to the increase in Aztec Center square footage over what was analyzed in the 2007 Master Plan EIR, or approximately 34,000 additional GSF.

In 2005, the total developed square footage on the campus, including all indoor space, was 4,388,522 GSF; this is the amount that was utilized in conducting the 2007 air quality analysis. The revised Aztec Center project would increase campus square footage by 34,000 GSF over what was evaluated in the 2007 Master Plan EIR. This equates to an increase of 0.77 percent square feet. Campus-wide stationary source emissions, therefore, were assumed to increase by 0.77 percent over the totals presented in the previously certified 2007 Master Plan EIR. Operational emission increases are shown, along with the emissions analyzed in the Master Plan EIR, in **Table 3**.

**Table 3**  
**Revised Aztec Center**  
**Summary of Total Estimated Operational Emissions (Daily and Annual)**

Emission Source	Maximum Daily Emissions (lbs/day)					
	ROG	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Area Source Emissions	71.45	16.55	13.83	0.00	0.04	0.04
Stationary Sources Emissions	4.69	45.91	6.26	0.78	7.83	0.52
Vehicular Emissions	59.04	30.22	272.54	0.80	68.30	19.90
<b>Master Plan EIR Total</b>	<b>135.18</b>	<b>92.68</b>	<b>292.63</b>	<b>1.58</b>	<b>76.17</b>	<b>20.46</b>
Additional Area Source Emissions	0.34	0.35	1.83	0.00	0.01	0.01
Additional Stationary Source Emissions	0.08	0.74	0.10	0.01	0.13	0.01
<b>Total with Revised Aztec Center</b>	<b>135.60</b>	<b>93.77</b>	<b>294.56</b>	<b>1.59</b>	<b>7.21</b>	<b>20.48</b>
<i>Significance Threshold (lbs/day)<sup>a</sup></i>	<i>137</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>100</i>
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
	Annual Emissions (tons/year)					
	ROG	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Area Source Emissions	13.00	3.01	2.23	0.00	0.01	0.01
Stationary Sources Emissions	0.86	8.24	1.14	0.14	1.43	0.10
Vehicular Emissions	9.15	4.78	48.02	0.12	12.46	3.63
<b>Master Plan EIR Total</b>	<b>23.01</b>	<b>16.03</b>	<b>51.39</b>	<b>0.26</b>	<b>13.89</b>	<b>3.74</b>
Additional Area Source Emissions	0.06	0.06	0.33	0.00	0.00	0.00
Additional Stationary Source Emissions	0.01	0.13	0.02	0.00	0.02	0.00
<b>Total with Revised Aztec Center</b>	<b>23.08</b>	<b>16.22</b>	<b>51.74</b>	<b>0.26</b>	<b>13.91</b>	<b>3.74</b>
<i>Significance Threshold (tons/year)<sup>a</sup></i>	<i>15</i>	<i>40</i>	<i>100</i>	<i>40</i>	<i>15</i>	<i>15</i>
<b>Above Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Total (tons/day)</b>	<b>0.068</b>	<b>0.046</b>	<b>0.146</b>	<b>0.00079</b>	<b>0.038</b>	<b>0.010</b>
<b>Projected 2020 County Emissions (tons/day)</b>	<b>543.77</b>	<b>171.25</b>	<b>159.37</b>	<b>31.59</b>	<b>135.77</b>	<b>47.89</b>

<sup>a</sup>From Table 1 (SDAPCD Rule 20.2 standards and City of San Diego Significance Thresholds).

As shown in **Table 3**, total operational emissions are below the daily and annual thresholds for each pollutant except ROG, which would exceed the annual threshold. This impact was identified as a significant and unavoidable impact in the 2007 Master Plan EIR.

#### Health Risk Assessment

A health risk assessment was conducted to assess whether emissions of toxic air contaminants associated with the revised Aztec Center project would result in significant health risks. Increases in toxic air contaminant emissions were estimated based on the increase in square footage, the same methodology utilized in the certified 2007 Master Plan EIR. Because the revised Aztec Center project would increase overall campus square footage by 0.77 percent, toxic air contaminant emissions, and associated health risks predicted by the URBEMIS Model, would increase by this amount. As shown in **Table 4**, the increased risks would remain substantially below the significance threshold, and no significant impacts associated with toxic air contaminant emissions is predicted, consistent with the impacts identified in the 2007 Master Plan EIR.

**Table 4**  
**Revised Aztec Center**  
**Summary of Health Risk Analysis Results**

<b>Receptor Category</b>	<b>Excess Cancer Risk</b>	<b>Chronic Hazard</b>	<b>Acute Hazard</b>
Master Plan EIR Results			
Off-site Resident	0.0441 in a million	0.00106	0.261
On-site Student Resident	0.0171 in a million	0.000277	0.0662
On-site Worker	0.0254 in a million	0.000277	0.0662
Results with Revised Aztec Center			
Off-site Resident	0.0444 in a million	0.00107	0.263
On-site Student Resident	0.0172 in a million	0.000279	0.0667
On-site Worker	0.0256 in a million	0.000279	0.0667
<i>Significance Thresholds<sup>a</sup></i>	<i>10 in a million</i>	<i>1.0</i>	<i>1.0</i>

<sup>a</sup>Significance thresholds for incremental risks based on SDAPCD Rule 1210 thresholds.

### Greenhouse Gas Emissions

Construction and operation of the revised Aztec Center project would result in greenhouse gas ("GHG") emissions. Such emissions would be attributable to the use of construction equipment during the demolition, grading and building construction phases, as well as the increased use of natural gas in stationary sources on campus and indirect emissions attributable to electricity and water use.

Construction GHG emissions were calculated using the URBEMIS Model, Version 9.2.4. The URBEMIS Model does not calculate emissions of methane (CH<sub>4</sub>) or nitrous oxides (N<sub>2</sub>O); however, emissions of these GHGs in comparison with emissions of carbon dioxide (CO<sub>2</sub>) are negligible. The URBEMIS Model estimated that total GHG emissions from construction would be 841.00 metric tons (927.04 tons) of CO<sub>2</sub>. This level is below the screening threshold of 900 metric tons proposed by both the City of San Diego<sup>4</sup> and the California Air Pollution Control Officers Association ("CAPCOA"),<sup>5</sup> below which no further analysis would be required and no significant impacts would be anticipated.

The calculation of GHG emissions from stationary sources presented in the 2007 Master Plan EIR was based on student enrollment increases. As noted above, enrollment would not be affected by the revised Aztec Center project; therefore, there would be no change relative to the prior analysis.

Emissions from area sources were estimated based on the increased emissions attributable to an additional 34,000 GSF of development. CO<sub>2</sub> emissions were calculated with the URBEMIS Model. It was assumed that emissions of N<sub>2</sub>O and CH<sub>4</sub> would be negligible relative to emissions of CO<sub>2</sub>. According to the URBEMIS Model, the addition of 34,000 GSF of development would add an additional 66 metric tons (72 tons) of CO<sub>2</sub>. The certified 2007 Master

<sup>4</sup> City of San Diego, Memorandum, *Addressing Greenhouse Gas Emissions from Projects Subject to CEQA*, Cecilia Gallardo to Environmental Analysis Section, March 19, 2010.

<sup>5</sup> California Air Pollution Control Officers Association, *CEQA and Climate Change*, January 2008.

Plan EIR determined that the Master Plan project, including the Aztec Center, would generate approximately 32,677 tons per year of CO<sub>2</sub> equivalent emissions at project build-out year 2024/25. Therefore, the revised Student Union project would increase CO<sub>2</sub> emissions by less than 0.25 percent of that reported in the 2007 Master Plan EIR. This additional amount of GHG emissions -- 66 metric tons -- would not result in a significant impact.

The revised Aztec Center project will be constructed in accordance with California State University's Green Building Standards policy, which will improve energy efficiency relative to the existing Aztec Center building. Energy consumption will be lower than standard energy use for a building by 40 percent, and the revised Aztec Center will incorporate renewable energy sources such as solar panels, which will provide up to 14% of the building's energy usage. The building also will include natural ventilation systems, operable windows, dual glazing, low E glass, and numerous other measures to reduce energy usage and greenhouse gas emissions. The project would be designed to an exemplary level of sustainability and will incorporate energy efficiency and environmental friendly measures to meet LEED Platinum Certification, the highest certification that can be attained from the US Green Building Council rating.

In summary, the revised Aztec Center project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to air quality.

## **Biological Resources**

### *2007 Master Plan EIR*

The 2007 Master Plan EIR identified that the Aztec Center expansion site would be located on an area of campus that is extensively developed and, consequently, no sensitive biological resources are present or are expected to be present within the site. (Draft EIR, pp. 3.3-55.) Because the project would result in direct impacts to developed land only, impacts were not considered significant and no mitigation was necessary. (Draft EIR, pp. 3.3-63, 3.3-69.)

### *Revised Aztec Center Analysis*

The revised Aztec Center would be constructed in the same area of campus as the previously approved project and, therefore, would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to biological resources.

## **Cultural Resources**

### *2007 Master Plan EIR*

The 2007 Master Plan EIR determined that the existing Aztec Center and related buildings, which were constructed in 1966 and subsequent years, do not have any architectural or historical significance and, therefore, potential impacts to these structures would not be significant. (Draft EIR, p. 3.4-16.)

### ***Revised Aztec Center Analysis***

Construction of the revised Aztec Center would require demolition of the existing Aztec Center and related buildings, which do not have any architectural or historical significance and, therefore, would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to cultural resources.

### **Geotechnical/Soils**

#### ***2007 Master Plan EIR***

The EIR determined that implementation of the 2007 Master Plan, including the Aztec Center project, would result in potentially significant effects relating to erosion, unconsolidated soils, expansive soils, hard rock/excavatability, groundwater/seepage, and seismic shaking. (Draft EIR, pp. 3.5-12 - 3.5-14.) In response to the potential impacts, the EIR recommended, and CSU adopted, mitigation measures to reduce the potential impacts to levels below significance thresholds.

Included among the mitigation is a requirement that prior to the commencement of design and construction activities relating to the Master Plan components, including the Aztec Center project, SDSU is to conduct a geotechnical investigation in conformance with the requirements of the California Building Code ("CBC") and Uniform Building Code ("UBC"). The site-specific geotechnical investigations are to include subsurface exploration, laboratory testing, and geotechnical analysis, and are to address the potential for landslides/slope instability, erosion, unconsolidated soils, expansive soils, groundwater seepage, flood inundation and seismic shaking. Based on the results of the site-specific investigations, geotechnical design recommendations are to be developed and included within each respective project component's design and construction in conformance with any/all applicable CBC and UBC requirements. (Draft EIR, p. 3.5-19, GEO-1.) With implementation of the adopted mitigation, any potentially significant impacts would be reduced to levels below the significance thresholds.

#### ***Revised Aztec Center Analysis***

The revised Aztec Center would be constructed in the same location as the previously approved project and would be subject to the mitigation previously adopted by CSU. As such, the revised project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to geotechnical/soils.

### **Hazards and Hazardous Materials**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR identified that buildings within the Aztec Center expansion have documented areas of asbestos-containing materials and lead-based paint. (Draft EIR, p. 3.6-26.) The demolition of existing buildings and the associated disposal of building materials associated with project construction could result in potentially significant impacts due to the potential release of asbestos and lead paint. (*Id.*) As a result, the EIR recommended,



and CSU adopted, mitigation measures requiring that prior to demolition of any of the structures located within the Aztec Center expansion area of focus, SDSU is to conduct an asbestos survey and lead paint survey by certified asbestos and lead paint consultants, respectively. The information obtained from the survey is to be used during demolition to define removal quantities, estimate abatement costs, and otherwise refine the scope of work for the removal of asbestos and lead abatement in compliance with all applicable laws, during project demolition. (Draft EIR, p. 3.6-30.) With implementation of the adopted mitigation, any potentially significant impacts would be reduced to a level below significant.

### ***Revised Aztec Center Analysis***

Construction of the revised Aztec Center project would require the demolition of a larger structure than the previously approved project. The potential air quality emissions associated with this increased demolition were analyzed as part of the air quality analysis presented above. As to hazards and hazardous materials, the 2007 Master Plan EIR identified significant environmental effects associated with project demolition, and the mitigation adopted by CSU would reduce the identified impacts irrespective of the quantity of demolition to be undertaken. For these reasons, the revised Aztec Center project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to hazards and hazardous materials.

## **Hydrology and Water Quality**

### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that the Aztec Center expansion may increase the pollutant load in storm water run-off, which could potentially result in a significant impact to water quality. (Draft EIR, p. 3.7-21.) As to groundwater, if a groundwater lens were to be affected in connection with project construction, the EIR identified that impacts to the structural integrity of the proposed buildings and groundwater quality may be significant. (*Id.*) Relatedly, if groundwater is encountered during project construction, dewatering may be required, which could result in potentially significant impacts if not disposed of properly. (Draft EIR, p. 3.7-22.)

In response to the identified impacts, the EIR recommended, and CSU adopted, mitigation requiring that during the design phase of the Aztec Center expansion, SDSU is to incorporate certain best management practices into the project site design to reduce storm water runoff. (Draft EIR, p. 3.7-31, HWQ-8.) Additional mitigation requires that should dewatering be necessary during construction, all discharges shall be in accordance with San Diego Regional Water Quality Control Board requirements, and appropriate shoring devices shall be installed below or near the groundwater table to reduce the potential for caving or excavations due to groundwater seeps. (Draft EIR, pp. 3.7-32 - 3.7-33, HWQ-11.) With implementation of the adopted mitigation, any potentially significant impacts would be reduced to levels below significance thresholds.

### ***Revised Aztec Center Analysis***

The revised Aztec Center would have hydrology and water quality characteristics similar to the previously approved project and would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to hydrology and water quality.

### **Land Use and Planning**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that the Aztec Center expansion would be consistent with applicable land use plans and the existing surrounding uses in the area, and would not result in potentially significant impacts. (See e.g., Draft EIR, p. 3.8-16.)

#### ***Revised Aztec Center Analysis***

The revised Aztec Center would serve the same function as the previously approved project and would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to land use and planning.

### **Mineral Resources**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that because of the existing urban/developed nature of the Aztec Center site, coupled with the surrounding urban nature of the area, even though known or potential mineral resources may exist beneath these sites, extraction of potential mineral resources is not feasible. Therefore, impacts to potential mineral resources would be less than significant. (Draft EIR, p. 3.9-9.)

#### ***Revised Aztec Center Analysis***

The revised Aztec Center would be developed in the same location as the previously approved project and would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to mineral resources.

### **Noise**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that the 2007 Master Plan would result in potentially significant noise impacts attributable to construction activities and increased traffic noise levels associated with the increased student enrollment. (Draft EIR, pp. 3.10-10 - 3.10-19.) Mitigation was recommended, and adopted by CSU, that would reduce the identified impacts to a level below significant. (Draft EIR, pp. 3.10-20 - 3.10-23.) As to the Aztec

Center expansion, there are no residents in close proximity to the site and, therefore, any increases in noise levels would result in less than significant noise impacts. (Draft EIR, p. 3.10-13.)

#### ***Revised Aztec Center Analysis***

The revised Aztec Center would be constructed in the same location as the previously approved project and, therefore, would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to noise. Additionally, campus policies require that noise levels associated with on-campus construction activities comply with applicable noise standards.

### **Paleontological Resources**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that the location of the Aztec Center expansion project lies within geologic formations assigned a "high paleontological resource sensitivity" rating and would require a paleontological monitor to mitigate against the possible loss of fossils during construction-related activities. (Draft EIR, p. 3.11-13.) Mitigation recommended in the EIR, and adopted by CSU, requires geotechnical investigation prior to the commencement of construction; an on-site paleontological monitor, if warranted; and, the authority to halt excavation in the event of a paleontological discovery. (Draft EIR, pp. 3.11-15 - 3.11-16, PAL-1.) With implementation of the adopted mitigation, any potentially significant impacts would be reduced to levels below significance thresholds.

#### ***Revised Aztec Center Analysis***

The revised Aztec Center would be constructed in the same location as the previously approved project and would be subject to the same mitigation previously adopted by CSU. Therefore, construction of the revised Aztec Center project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to paleontological resources.

### **Population and Housing**

#### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that the 2007 Master Plan would be consistent with regional population and housing projections for the area and, therefore, would not result in potentially significant impacts. (Draft EIR, pp. 3.12-12 - 3.12-20.)

#### ***Revised Aztec Center Analysis***

The revised Aztec Center would not affect the population and housing characteristics of the previously approved project and, therefore, would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to population and housing.

## **Public Utilities and Services Systems**

### ***2007 Master Plan EIR***

The 2007 Master Plan EIR analyzed the potential environmental effects associated with the following public services and utilities: (i) water demand/supply and systems; (ii) sewer; (iii) parks and recreation; (iv) police; (v) fire; (vi) emergency medical service; (vii) campus emergency plans; (viii) libraries; (ix) schools; (x) solid waste disposal; and, (xi) energy. The analysis determined that implementation of the 2007 Master Plan would result in potentially significant impacts to sewer and water systems; police, fire and emergency medical services; and solid waste disposal services. (Draft EIR, pp. 3.13-20 - 3.13-35.) Mitigation recommended in the EIR and adopted by CSU will reduce the identified impacts to levels below significance thresholds. (Draft EIR, pp. 3.13-35 - 3.13-36.)

### ***Revised Aztec Center Analysis***

The revised Aztec Center would not significantly increase demands on public utilities and services beyond those of the previously approved project. The revised project would not increase student enrollment or the number of on-campus student housing units. Additionally, as discussed above relative to greenhouse gas emissions, the larger structure would not substantially increase energy use. As to water supply, the revised Aztec Center project would include water conserving plumbing fixtures such as high efficiency toilets (1.28 GPF), waterless urinals, and low flow lavatories (0.5 GPM), which will result in a 50 percent reduction in water use compared to 1992 EPACT baseline standard. In addition, the revised Aztec Center project will incorporate low-flow plumbing fixtures, efficient stormwater management (water conservation), and, capture, store and re-use site (stormwater/rainwater) water for irrigation. For these reasons, the revised Aztec Center project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to public utilities and service systems.

## **Transportation/Circulation and Parking**

### ***2007 Master Plan EIR***

The 2007 Master Plan EIR determined that construction of the 2007 Master Plan would result in potentially significant impacts attributable to construction vehicles and employee trips. (Draft EIR, p. 3.14-98.) Mitigation was proposed, and adopted by CSU, that would reduce the identified impacts to levels below significance thresholds. (Draft EIR, p. 3.14-108, TCP-25.)

The EIR also determined that the 2007 Master Plan would result in increased vehicle trips due to the increased student enrollment, hotel, and faculty/staff housing, and the increased vehicle trips would result in potentially significant traffic impacts to area roadways; potential impacts associated with parking capacity were determined to be less than significant. (Draft EIR, pp. 3.14-54 - 3.14-97.) Mitigation proposed in the EIR and adopted by CSU, if implemented, would reduce the identified impacts to levels below the significance thresholds. (Final EIR pp. 3.14-101 - 3.14-110.) However, due to the uncertainty associated with implementation of the mitigation, the impacts were determined to be significant and unavoidable. (Final EIR, p. 3.14-119.)

### *Revised Aztec Center Analysis*

Construction of the revised Aztec Center would not substantially increase on a daily basis the number of construction workers commuting to the site. Additionally, like the previously approved project, the revised Aztec Center would be utilized by students already on campus. Because the revised Aztec Center project would not increase campus enrollment, it would not result in an increase in the number of students or corresponding number of vehicle trips generated over those numbers previously considered and approved. Nor would the revised project increase the number of vehicles requiring parking. Therefore, the revised project would not result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to transportation/circulation and parking.

## **2.3 CONCLUSION**

Based on the analysis presented above, there is no substantial evidence in light of the whole record that the proposed revisions to the Aztec Center component of the 2007 Master Plan would result in new significant environmental effects or a substantial increase in the severity of a previously identified significant effect relative to the previously approved project. Additionally, there is no new information not previously known that shows new significant environmental effects or an increase in the severity of previously identified significant effects. For these reasons, preparation of a supplemental or subsequent EIR is not required and an addendum is appropriate.

## **APPENDIX A**

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Air Quality Technical Report

**Technical Memorandum  
San Diego State University  
Student Union Project**



Scientific Resources Associated

1328 Kaimalino Lane  
San Diego, CA 92109

**April 9, 2010**

This technical memorandum addresses the potential air quality impacts associated with construction and operation of the new Student Union (also known as the Aztec Center) at San Diego State University (SDSU). In 2007, an air quality analysis considered the potential impacts associated with renovation of the existing Student Union (approximately 91,000 square feet) and construction of a 70,000 square feet expansion; the results of that analysis were presented in the certified SDSU 2007 Campus Master Plan Revision Environmental Impact Report (Master Plan EIR). Since that time, SDSU has revised its plans for the Student Union and now intends to demolish the existing Student Union building and construct a new building in its place that will total approximately 195,000 square feet. This evaluation addresses the potential air quality impacts associated with construction and operation of the revised Student Union in the context of the Master Plan EIR analysis.

### *Construction Emissions*

Construction emissions were calculated using the URBEMIS Model for three overall phases: demolition, site grading, and building construction. It was also assumed that the area surrounding the Student Union would require minor amounts of paving. Emissions were then compared with the emission estimates for the previously approved Student Union that were presented in the Master Plan EIR.

To address impacts associated with demolition of the existing Student Union and construction of the new building, the URBEMIS Model, Version 9.2.4, was run to evaluate the construction-related emissions. Demolition of the existing Student Union would take place over a period of four to five months, with one month for required abatement activities and three to four months for the demolition itself. For conservative purposes, a demolition period of just four months was assumed. Overall construction activities were assumed to require 20 months.

As discussed in the Master Plan EIR, to determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation; or (b) result in a cumulatively considerable net increase of  $PM_{10}$  or exceed quantitative thresholds for  $O_3$  precursors, oxides of nitrogen ( $NO_x$ ) and volatile organic compounds (VOCs), project emissions may be evaluated based on the quantitative emission thresholds established by the San Diego APCD. As part of its air quality permitting process, the APCD has established thresholds in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIA).

For CEQA purposes, these thresholds can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. Since APCD does not have AQIA thresholds for emissions of VOCs, the use of the threshold for VOCs from the City of San Diego's Significance Thresholds (City of San Diego 2007) is appropriate. The screening thresholds are included in the table below.



Table 1  
SCREENING-LEVEL CRITERIA FOR AIR QUALITY IMPACTS

Pollutant	Total Emissions		
<b>Construction Emissions</b>			
	Lb. per Day		
Respirable Particulate Matter (PM <sub>10</sub> )	100		
Fine Particulate Matter (PM <sub>2.5</sub> )	100		
Oxides of Nitrogen (NO <sub>x</sub> )	250		
Oxides of Sulfur (SO <sub>x</sub> )	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	137		
<b>Operational Emissions</b>			
	Lb. Per Hour	Lb. per Day	Tons per Year
Respirable Particulate Matter (PM <sub>10</sub> )	---	100	15
Fine Particulate Matter (PM <sub>2.5</sub> )	---	100	15
Oxides of Nitrogen (NO <sub>x</sub> )	25	250	40
Oxides of Sulfur (SO <sub>x</sub> )	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	137	15

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or Hazardous Air Pollutants (HAPs). In San Diego County, APCD Regulation XII establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 1210, emissions of TACs that result in a cancer risk of 10 in 1 million or less and a health hazard index of one or less would not be required to notify the public of potential health risks. If a project has the potential to result in emissions of any TAC or HAP which result in a cancer risk of greater than 10 in 1 million, the project would be deemed to have a potentially significant impact.

Table 2 presents a comparison of the emissions calculated for the Student Union as revised, with the emissions calculated for the renovation and expansion of the Student Union as previously approved and proposed in the Master Plan EIR.

**Table 2  
Construction Emissions Evaluation  
SDSU Student Union Emissions, lbs/day**

<b>Construction Project/Phase</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
<i>Revised Student Union Project</i>						
<i>Demolition</i>						
Fugitive Dust	-	-	-	-	22.68	4.72
Off-Road Diesel	1.14	7.68	4.68	0.00	0.59	0.54
On-Road Diesel	1.79	23.36	8.97	0.03	1.06	0.91
Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00
<b>Total</b>	<b>2.97</b>	<b>31.10</b>	<b>14.70</b>	<b>0.03</b>	<b>24.34</b>	<b>6.18</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Grading</i>						
Fugitive Dust	-	-	-	-	8.14	1.70
Off-Road Diesel	4.17	33.25	14.65	0.00	1.82	1.68
Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01
<b>Total</b>	<b>4.22</b>	<b>33.34</b>	<b>16.22</b>	<b>0.00</b>	<b>9.98</b>	<b>3.39</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Paving</i>						
Paving Offgassing	0.07	-	-	-	-	-
Paving Off-Road Diesel	1.27	7.79	4.79	0.00	0.69	0.63
Paving On-Road Diesel	0.02	0.25	0.10	0.00	0.01	0.01
Paving Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00
<b>Total</b>	<b>1.39</b>	<b>8.10</b>	<b>5.87</b>	<b>0.00</b>	<b>0.71</b>	<b>0.64</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Building Construction</i>						
Building Construction Off-Road Diesel	5.67	29.51	19.61	0.00	2.45	2.25
Building Construction Vendor Trips	0.17	1.89	1.60	0.00	0.09	0.08
Building Construction Worker Trips	0.38	0.71	12.18	0.02	0.12	0.06
Architectural Coating Offgassing	19.85	-	-	-	-	-
Architectural Coatings Worker Trips	0.03	0.06	1.01	0.00	0.01	0.01
<b>Total</b>	<b>26.10</b>	<b>32.17</b>	<b>34.40</b>	<b>0.02</b>	<b>2.67</b>	<b>2.40</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Previously Approved Student Union Project</i>						
<i>Grading</i>						
Fugitive Dust	-	-	-	-	0.25	0.05
Off-Road Diesel	5.54	35.77	45.50	-	1.36	1.21
On-Road Diesel	0.56	10.75	2.05	0.02	0.28	0.28
Worker Trips	0.05	0.13	1.28	0.00	0.00	0.00
<b>Total</b>	<b>6.15</b>	<b>46.65</b>	<b>48.83</b>	<b>0.02</b>	<b>1.89</b>	<b>1.54</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<i>Building Construction</i>						
Building Construction Off-Road Diesel	5.31	33.94	43.33	-	1.17	1.04
Building Construction Worker Trips	0.13	0.08	1.63	0.00	0.02	0.02
Architectural Coating Offgassing	14.70	-	-	-	-	-
Architectural Coatings Worker Trips	0.13	0.08	1.63	0.00	0.02	0.02
<b>Total</b>	<b>20.27</b>	<b>34.10</b>	<b>46.59</b>	<b>0.00</b>	<b>1.21</b>	<b>1.08</b>
Significance Threshold <sup>a</sup>	137	250	550	250	100	100
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

<sup>a</sup>From Table 1 (SDAPCD Rule 20.2 standards and City of San Diego Significance Thresholds).

As shown in Table 2, emissions would be less than significant for each construction phase for the revised Student Union project. This was also the case as to the previously approved Student Union project.

Consistent with the approach taken in the Master Plan EIR, this analysis assumes that the revised Student Union would be constructed simultaneously with two other Master Plan components, the Alvarado Hotel and Phase I of the Student Housing. Table 3 presents a summary of the construction emissions for all Phase 1 construction. As shown in Table 3, emissions of all pollutants, except reactive organic gases (ROG), would be below the significance thresholds. The ROG significance finding for the revised Student Union project is consistent with the Master Plan EIR, which also identified construction-related ROG emissions as a significant impact.

As discussed in the Master Plan EIR, use of available emissions reduction measures are recommended to reduce ROG emissions. Emissions minimization can be accomplished as follows:

- Use pre-coated building materials as much as possible.
- Use electrostatic spray, or hand paint applicators.
- Use lower volatility paint not exceeding 100 grams of ROG per liter.

**Table 3  
First Phase Construction Emissions, lbs/day**

<b>Construction Project/Phase</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Student Housing Phase I	210.63	174.62	250.94	0	6.93	6.24
Alvarado Hotel	18.92	38.14	51.29	0	1.32	1.18
Revised Student Union	26.10	32.17	34.40	0.02	2.67	2.40
<b>Total<sup>b</sup></b>	<b>255.65<sup>a</sup></b>	<b>244.93</b>	<b>336.63</b>	<b>0.02</b>	<b>10.92</b>	<b>9.82</b>
<b>Total, Phase I with Previously Approved Student Union Project</b>	<b>249.82<sup>a</sup></b>	<b>246.86</b>	<b>348.82</b>	<b>0.00</b>	<b>9.46</b>	<b>8.50</b>
Significance Threshold <sup>c</sup>	137	250	550	250	100	100
<b><i>Above Threshold?</i></b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

<sup>a</sup> Exceeds threshold due to application of paints and coatings.

<sup>b</sup> Assuming simultaneous building construction phases.

<sup>c</sup> From Table 1 (SDAPCD Rule 20.2 standards and City of San Diego Significance Thresholds).

### *Operational Emissions*

Operational emissions are calculated based on the square footage of buildings. For the Master Plan EIR, three sources of operational emissions were identified: area source emissions, stationary source emissions, and vehicular emissions. Because vehicular emissions are based on student enrollment and the corresponding number of average daily trips (ADT), and because the revised Student Union would not affect the student enrollment number or the number of daily trips generated, vehicular emissions are unaffected by the revised Student Union project. That is,

vehicular emissions associated with the revised Student Union project would be identical to those identified for the previously approved Student Union project.

Area source emissions were calculated using the URBEMIS Model, Version 9.2.4. Stationary source emissions were calculated on the basis that the increase in emissions would be proportional to the increase in Student Union square footage over what was analyzed in the Master Plan EIR, or approximately 34,000 additional square feet.

In 2005, the total developed square footage on the campus, including all indoor space, was 4,388,522 gross square feet; this is the amount that was utilized in conducting the 2007 air quality analysis. The revised Student Union project would increase campus square footage by 34,000 square feet over what was evaluated in the Master Plan Update EIR. This equates to an increase of 0.77 percent square feet. Campus-wide stationary source emissions, therefore, were assumed to increase by 0.77 percent over the totals presented in the previously certified Master Plan EIR.

Operational emission increases are shown, along with the emissions analyzed in the Master Plan EIR, in Table 4.

**Table 4**  
**Summary of Total Estimated Operational Emissions with Revised Student Union**

Emission Source	Maximum Daily Emissions (lbs/day)					
	ROG	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Area Source Emissions	71.45	16.55	13.83	0.00	0.04	0.04
Stationary Sources Emissions	4.69	45.91	6.26	0.78	7.83	0.52
Vehicular Emissions	59.04	30.22	272.54	0.80	68.30	19.90
<b>Master Plan EIR Total</b>	<b>135.18</b>	<b>92.68</b>	<b>292.63</b>	<b>1.58</b>	<b>76.17</b>	<b>20.46</b>
Additional Area Source Emissions	0.34	0.35	1.83	0.00	0.01	0.01
Additional Stationary Source Emissions	0.08	0.74	0.10	0.01	0.13	0.01
<b>Total with Revised Student Union</b>	<b>135.60</b>	<b>93.77</b>	<b>294.56</b>	<b>1.59</b>	<b>7.21</b>	<b>20.48</b>
<i>Significance Threshold (lbs/day)<sup>a</sup></i>	<i>137</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>100</i>
<b>Above Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
	Annual Emissions (tons/year)					
	ROG	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Area Source Emissions	13.00	3.01	2.23	0.00	0.01	0.01
Stationary Sources Emissions	0.86	8.24	1.14	0.14	1.43	0.10
Vehicular Emissions	9.15	4.78	48.02	0.12	12.46	3.63
<b>Master Plan EIR Total</b>	<b>23.01</b>	<b>16.03</b>	<b>51.39</b>	<b>0.26</b>	<b>13.89</b>	<b>3.74</b>
Additional Area Source Emissions	0.06	0.06	0.33	0.00	0.00	0.00
Additional Stationary Source Emissions	0.01	0.13	0.02	0.00	0.02	0.00
<b>Total with Revised Student Union</b>	<b>23.08</b>	<b>16.22</b>	<b>51.74</b>	<b>0.26</b>	<b>13.91</b>	<b>3.74</b>
<i>Significance Threshold (tons/year)<sup>a</sup></i>	<i>15</i>	<i>40</i>	<i>100</i>	<i>40</i>	<i>15</i>	<i>15</i>
<b>Above Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Total (tons/day)</b>	<b>0.068</b>	<b>0.046</b>	<b>0.146</b>	<b>0.00079</b>	<b>0.038</b>	<b>0.010</b>
<b>Projected 2020 County Emissions (tons/day)</b>	<b>543.77</b>	<b>171.25</b>	<b>159.37</b>	<b>31.59</b>	<b>135.77</b>	<b>47.89</b>

<sup>a</sup>From Table 1 (SDAPCD Rule 20.2 standards and City of San Diego Significance Thresholds).

As shown in Table 4, total operational emissions are below the daily and annual thresholds for each pollutant except ROG, which would exceed the annual threshold. This impact was identified as a significant and unavoidable impact in the Master Plan EIR.

*Health Risk Assessment*

In addition to the analysis of criteria pollutant emissions, a health risk assessment was conducted to assess whether emissions of toxic air contaminants associated with the revised Student Union project would result in significant health risks. Increases in toxic air contaminant emissions were estimated based on the increase in square footage, the same methodology utilized in the certified Master Plan EIR. Because the revised Student Union would increase overall campus square footage by 0.77 percent, toxic air contaminant emissions, and associated health risks predicted by the URBEMIS Model, would increase by this amount. However, as shown in Table 5, the increased risks would remain substantially below the significance threshold, and no additional significant impacts associated with toxic air contaminant emissions is predicted, consistent with the impacts identified in the Master Plan EIR.

**Table 5  
Summary of Health Risk Analysis Results with Revised Student Union**

<b>Receptor Category</b>	<b>Excess Cancer Risk</b>	<b>Chronic Hazard</b>	<b>Acute Hazard</b>
<b>Master Plan EIR Results</b>			
Off-site Resident	0.0441 in a million	0.00106	0.261
On-site Student Resident	0.0171 in a million	0.000277	0.0662
On-site Worker	0.0254 in a million	0.000277	0.0662
<b>Results with Revised Student Union</b>			
Off-site Resident	0.0444 in a million	0.00107	0.263
On-site Student Resident	0.0172 in a million	0.000279	0.0667
On-site Worker	0.0256 in a million	0.000279	0.0667
<i>Significance Thresholds<sup>a</sup></i>	<i>10 in a million</i>	<i>1.0</i>	<i>1.0</i>

<sup>a</sup>Significance thresholds for incremental risks based on SDAPCD Rule 1210 thresholds.

## *Greenhouse Gas Emissions*

Construction and operation of the revised Student Union project would result in greenhouse gas (GHG) emissions. Such emissions would be attributable to the use of construction equipment during the demolition, grading and building construction phases, as well as the increased use of natural gas in stationary sources on campus and indirect emissions attributable to electricity and water use.

Construction GHG emissions were calculated using the URBEMIS Model, Version 9.2.4. The URBEMIS Model does not calculate emissions of methane (CH<sub>4</sub>) or nitrous oxides (N<sub>2</sub>O); however, emissions of these GHGs in comparison with emissions of carbon dioxide (CO<sub>2</sub>) are negligible. The URBEMIS Model estimated that total GHG emissions from construction would be 927.04 tons (841.00 metric tons) of CO<sub>2</sub>. This level is below the screening threshold of 900 metric tons proposed by both the City of San Diego<sup>1</sup> and the California Air Pollution Control Officers Association (CAPCOA)<sup>2</sup>, below which no further analysis would be required and no significant impacts would be anticipated.

The calculation of GHG emissions from stationary sources presented in the Master Plan EIR was based on student enrollment increases. However, as noted above, enrollment would be unaffected by the construction of the revised Student Union; therefore, there would be no change relative to the prior analysis.

Emissions from area sources were estimated based on the increased emissions attributable to an additional 34,000 square feet of development. Carbon dioxide (CO<sub>2</sub>) emissions were calculated with the URBEMIS Model. It was assumed that emissions of nitrous oxides (N<sub>2</sub>O) and methane (CH<sub>4</sub>) would be negligible relative to emissions of CO<sub>2</sub>. According to the URBEMIS Model, the addition of 34,000 square feet of development would add an additional 72 tons (66 metric tons) of CO<sub>2</sub>. The certified Master Plan EIR determined that the Master Plan project, including the Student Union, would generate approximately 32,677 tons per year of CO<sub>2</sub> equivalent emissions at project build-out year 2024/25. Therefore, the revised Student Union project would increase CO<sub>2</sub> emissions by less than 0.25 percent of that reported in the Master Plan EIR. This additional amount of GHG emissions -- 66 metric tons -- would not result in a significant impact.

Also, it is important to note that the revised Student Union project will be constructed in accordance with the California State University's Green Building Standards policy, which will improve energy efficiency relative to the existing Student Union building. Energy consumption in the revised Student Union will be lower than standard energy use for a building by 42 percent, according to the energy demand figures provided by SDSU.

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<sup>1</sup> City of San Diego. 2010. Memorandum, *Addressing Greenhouse Gas Emissions from Projects subject to CEQA*. Cecilia Gallardo to Environmental Analysis Section, March 19.

<sup>2</sup> California Air Pollution Control Officers Association. 2008. *CEQA and Climate Change*. January.

**ATTACHMENT**

**URBEMIS Model Output Files**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Urbemis\Urbemis 9.2.2\Projects\SDSU Student Union.urb924

Project Name: SDSU Student Union Update

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (lbs/day unmitigated)	4.22	33.34	16.22	0.03	23.01	1.83	24.84	4.81	1.68	6.49	4,003.50
2010 TOTALS (lbs/day mitigated)	4.22	33.34	16.22	0.03	22.79	1.83	24.34	4.75	1.68	6.18	4,003.50
2011 TOTALS (lbs/day unmitigated)	101.19	32.17	34.47	0.02	23.01	2.57	24.70	4.81	2.36	6.37	4,963.55
2011 TOTALS (lbs/day mitigated)	25.24	32.17	34.47	0.02	8.15	2.57	9.85	1.70	2.36	3.26	4,963.55
2012 TOTALS (lbs/day unmitigated)	100.75	30.21	33.02	0.02	0.09	2.35	2.45	0.03	2.16	2.19	4,963.26
2012 TOTALS (lbs/day mitigated)	25.67	30.21	33.02	0.02	0.09	2.35	2.45	0.03	2.16	2.19	4,963.26

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated



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	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 6/1/2010-9/30/2010 Active Days: 88	2.97	31.10	14.70	<b><u>0.03</u></b>	22.79	1.55	24.34	4.75	1.42	6.18	<b><u>4,003.50</u></b>
Demolition 06/01/2010-09/30/2010	2.97	31.10	14.70	0.03	22.79	1.55	24.34	4.75	1.42	6.18	4,003.50
Fugitive Dust	0.00	0.00	0.00	0.00	22.68	0.00	22.68	4.72	0.00	4.72	0.00
Demo Off Road Diesel	1.14	7.68	4.68	0.00	0.00	0.59	0.59	0.00	0.54	0.54	700.30
Demo On Road Diesel	1.79	23.36	8.97	0.03	0.11	0.96	1.06	0.03	0.88	0.91	3,178.80
Demo Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 10/1/2010-12/31/2010 Active Days: 66	<b><u>4.22</u></b>	<b><u>33.34</u></b>	<b><u>16.22</u></b>	0.00	<b><u>23.01</u></b>	<b><u>1.83</u></b>	<b><u>24.84</u></b>	<b><u>4.81</u></b>	<b><u>1.68</u></b>	<b><u>6.49</u></b>	3,632.62
Mass Grading 10/01/2010-01/31/2011	4.22	33.34	16.22	0.00	23.01	1.83	24.84	4.81	1.68	6.49	3,632.62
Mass Grading Dust	0.00	0.00	0.00	0.00	23.00	0.00	23.00	4.80	0.00	4.80	0.00
Mass Grading Off Road Diesel	4.17	33.25	14.65	0.00	0.00	1.82	1.82	0.00	1.68	1.68	3,446.03
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 1/3/2011-1/31/2011 Active Days: 21	3.91	30.84	15.70	0.00	<b><u>23.01</u></b>	1.70	<b><u>24.70</u></b>	<b><u>4.81</u></b>	1.56	<b><u>6.37</u></b>	3,632.58
Mass Grading 10/01/2010-01/31/2011	3.91	30.84	15.70	0.00	23.01	1.70	24.70	4.81	1.56	6.37	3,632.58
Mass Grading Dust	0.00	0.00	0.00	0.00	23.00	0.00	23.00	4.80	0.00	4.80	0.00
Mass Grading Off Road Diesel	3.87	30.75	14.24	0.00	0.00	1.69	1.69	0.00	1.56	1.56	3,446.03
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.05	0.08	1.46	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.55

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Time Slice 2/1/2011-2/28/2011	1.38	8.10	5.86	0.00	0.01	0.70	0.71	0.00	0.64	0.65	833.20
Active Days: 20											
Asphalt 02/01/2011-02/28/2011	1.38	8.10	5.86	0.00	0.01	0.70	0.71	0.00	0.64	0.65	833.20
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.27	7.79	4.79	0.00	0.00	0.69	0.69	0.00	0.63	0.63	670.80
Paving On Road Diesel	0.02	0.25	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.04
Paving Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 3/1/2011-11/30/2011	6.22	32.11	33.39	0.02	0.09	2.57	2.65	0.03	2.36	2.39	4,825.75
Active Days: 197											
Building 03/01/2011-01/31/2012	6.22	32.11	33.39	0.02	0.09	2.57	2.65	0.03	2.36	2.39	4,825.75
Building Off Road Diesel	5.67	29.51	19.61	0.00	0.00	2.45	2.45	0.00	2.25	2.25	2,874.13
Building Vendor Trips	0.17	1.89	1.60	0.00	0.01	0.08	0.09	0.00	0.07	0.08	399.51
Building Worker Trips	0.38	0.71	12.18	0.02	0.07	0.04	0.12	0.03	0.04	0.06	1,552.11
Time Slice 12/1/2011-12/30/2011	<b><u>101.19</u></b>	<b><u>32.17</u></b>	<b><u>34.47</u></b>	<b><u>0.02</u></b>	0.09	<b><u>2.57</u></b>	2.66	0.03	<b><u>2.36</u></b>	2.39	<b><u>4,963.55</u></b>
Active Days: 22											
Building 03/01/2011-01/31/2012	6.22	32.11	33.39	0.02	0.09	2.57	2.65	0.03	2.36	2.39	4,825.75
Building Off Road Diesel	5.67	29.51	19.61	0.00	0.00	2.45	2.45	0.00	2.25	2.25	2,874.13
Building Vendor Trips	0.17	1.89	1.60	0.00	0.01	0.08	0.09	0.00	0.07	0.08	399.51
Building Worker Trips	0.38	0.71	12.18	0.02	0.07	0.04	0.12	0.03	0.04	0.06	1,552.11
Coating 12/01/2011-01/31/2012	94.97	0.06	1.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.79
Architectural Coating	94.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.79

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Time Slice 1/2/2012-1/31/2012	<u>100.75</u>	<u>30.21</u>	<u>33.02</u>	<u>0.02</u>	<u>0.09</u>	<u>2.35</u>	<u>2.45</u>	<u>0.03</u>	<u>2.16</u>	<u>2.19</u>	<u>4,963.26</u>
Active Days: 22											
Building 03/01/2011-01/31/2012	5.79	30.15	32.01	0.02	0.09	2.35	2.44	0.03	2.16	2.19	4,825.49
Building Off Road Diesel	5.29	27.81	19.21	0.00	0.00	2.24	2.24	0.00	2.06	2.06	2,874.13
Building Vendor Trips	0.16	1.69	1.48	0.00	0.01	0.07	0.08	0.00	0.06	0.07	399.52
Building Worker Trips	0.34	0.65	11.33	0.02	0.07	0.04	0.12	0.03	0.04	0.06	1,551.84
Coating 12/01/2011-01/31/2012	94.97	0.06	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.77
Architectural Coating	94.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.77

Phase Assumptions

Phase: Demolition 6/1/2010 - 9/30/2010 - Default Demolition Description

Building Volume Total (cubic feet): 324000

Building Volume Daily (cubic feet): 54000

On Road Truck Travel (VMT): 750

Off-Road Equipment:

- 1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 10/1/2010 - 1/31/2011 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 4.6

Maximum Daily Acreage Disturbed: 1.15

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

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- 1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/1/2011 - 2/28/2011 - Default Paving Description

Acres to be Paved: 0.5

Off-Road Equipment:

- 2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/1/2011 - 1/31/2012 - Default Building Construction Description

Off-Road Equipment:

- 2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2011 - 1/31/2012 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100
- Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250
- Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100
- Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 6/1/2010-9/30/2010 Active Days: 88	2.97	31.10	14.70	<b>0.03</b>	<u>22.79</u>	1.55	<u>24.34</u>	<u>4.75</u>	1.42	<u>6.18</u>	<u>4,003.50</u>
Demolition 06/01/2010-09/30/2010	2.97	31.10	14.70	0.03	22.79	1.55	24.34	4.75	1.42	6.18	4,003.50
Fugitive Dust	0.00	0.00	0.00	0.00	22.68	0.00	22.68	4.72	0.00	4.72	0.00
Demo Off Road Diesel	1.14	7.68	4.68	0.00	0.00	0.59	0.59	0.00	0.54	0.54	700.30
Demo On Road Diesel	1.79	23.36	8.97	0.03	0.11	0.96	1.06	0.03	0.88	0.91	3,178.80
Demo Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 10/1/2010-12/31/2010 Active Days: 66	<u>4.22</u>	<b><u>33.34</u></b>	<u>16.22</u>	0.00	8.15	<u>1.83</u>	9.98	1.70	<u>1.68</u>	3.39	3,632.62
Mass Grading 10/01/2010-01/31/2011	4.22	33.34	16.22	0.00	8.15	1.83	9.98	1.70	1.68	3.39	3,632.62
Mass Grading Dust	0.00	0.00	0.00	0.00	8.14	0.00	8.14	1.70	0.00	1.70	0.00
Mass Grading Off Road Diesel	4.17	33.25	14.65	0.00	0.00	1.82	1.82	0.00	1.68	1.68	3,446.03
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 1/3/2011-1/31/2011 Active Days: 21	3.91	30.84	15.70	0.00	<u>8.15</u>	1.70	<u>9.85</u>	<u>1.70</u>	1.56	<u>3.26</u>	3,632.58
Mass Grading 10/01/2010-01/31/2011	3.91	30.84	15.70	0.00	8.15	1.70	9.85	1.70	1.56	3.26	3,632.58
Mass Grading Dust	0.00	0.00	0.00	0.00	8.14	0.00	8.14	1.70	0.00	1.70	0.00
Mass Grading Off Road Diesel	3.87	30.75	14.24	0.00	0.00	1.69	1.69	0.00	1.56	1.56	3,446.03
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.05	0.08	1.46	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.55

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Time Slice 2/1/2011-2/28/2011	1.38	8.10	5.86	0.00	0.01	0.70	0.71	0.00	0.64	0.65	833.20
Active Days: 20											
Asphalt 02/01/2011-02/28/2011	1.38	8.10	5.86	0.00	0.01	0.70	0.71	0.00	0.64	0.65	833.20
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.27	7.79	4.79	0.00	0.00	0.69	0.69	0.00	0.63	0.63	670.80
Paving On Road Diesel	0.02	0.25	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.04
Paving Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 3/1/2011-11/30/2011	6.22	32.11	33.39	0.02	0.09	2.57	2.65	0.03	2.36	2.39	4,825.75
Active Days: 197											
Building 03/01/2011-01/31/2012	6.22	32.11	33.39	0.02	0.09	2.57	2.65	0.03	2.36	2.39	4,825.75
Building Off Road Diesel	5.67	29.51	19.61	0.00	0.00	2.45	2.45	0.00	2.25	2.25	2,874.13
Building Vendor Trips	0.17	1.89	1.60	0.00	0.01	0.08	0.09	0.00	0.07	0.08	399.51
Building Worker Trips	0.38	0.71	12.18	0.02	0.07	0.04	0.12	0.03	0.04	0.06	1,552.11
Time Slice 12/1/2011-12/30/2011	<u>25.24</u>	<u>32.17</u>	<u>34.47</u>	<u>0.02</u>	0.09	<u>2.57</u>	2.66	0.03	<u>2.36</u>	2.39	<u>4,963.55</u>
Active Days: 22											
Building 03/01/2011-01/31/2012	6.22	32.11	33.39	0.02	0.09	2.57	2.65	0.03	2.36	2.39	4,825.75
Building Off Road Diesel	5.67	29.51	19.61	0.00	0.00	2.45	2.45	0.00	2.25	2.25	2,874.13
Building Vendor Trips	0.17	1.89	1.60	0.00	0.01	0.08	0.09	0.00	0.07	0.08	399.51
Building Worker Trips	0.38	0.71	12.18	0.02	0.07	0.04	0.12	0.03	0.04	0.06	1,552.11
Coating 12/01/2011-01/31/2012	19.02	0.06	1.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.79
Architectural Coating	18.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.79

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Time Slice 1/2/2012-1/31/2012	<u>25.67</u>	<u>30.21</u>	<u>33.02</u>	<u>0.02</u>	<u>0.09</u>	<u>2.35</u>	<u>2.45</u>	<u>0.03</u>	<u>2.16</u>	<u>2.19</u>	<u>4,963.26</u>
Active Days: 22											
Building 03/01/2011-01/31/2012	5.79	30.15	32.01	0.02	0.09	2.35	2.44	0.03	2.16	2.19	4,825.49
Building Off Road Diesel	5.29	27.81	19.21	0.00	0.00	2.24	2.24	0.00	2.06	2.06	2,874.13
Building Vendor Trips	0.16	1.69	1.48	0.00	0.01	0.07	0.08	0.00	0.06	0.07	399.52
Building Worker Trips	0.34	0.65	11.33	0.02	0.07	0.04	0.12	0.03	0.04	0.06	1,551.84
Coating 12/01/2011-01/31/2012	19.88	0.06	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.77
Architectural Coating	19.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	137.77

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 10/1/2010 - 1/31/2011 - Default Mass Site Grading/Excavation Description

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2011 - 1/31/2012 - Default Architectural Coating Description

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 60%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 60%









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2012	1.11	0.33	0.36	0.00	0.00	0.03	0.03	0.00	0.02	0.02	54.60
Building 03/01/2011-01/31/2012	0.06	0.33	0.35	0.00	0.00	0.03	0.03	0.00	0.02	0.02	53.08
Building Off Road Diesel	0.06	0.31	0.21	0.00	0.00	0.02	0.02	0.00	0.02	0.02	31.62
Building Vendor Trips	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.39
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.07
Coating 12/01/2011-01/31/2012	1.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52
Architectural Coating	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52

Phase Assumptions

Phase: Demolition 6/1/2010 - 9/30/2010 - Default Demolition Description

Building Volume Total (cubic feet): 324000

Building Volume Daily (cubic feet): 54000

On Road Truck Travel (VMT): 750

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 10/1/2010 - 1/31/2011 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 4.6

Maximum Daily Acreage Disturbed: 1.15

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

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3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/1/2011 - 2/28/2011 - Default Paving Description

Acres to be Paved: 0.5

Off-Road Equipment:

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/1/2011 - 1/31/2012 - Default Building Construction Description

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2011 - 1/31/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:





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2012	0.28	0.33	0.36	0.00	0.00	0.03	0.03	0.00	0.02	0.02	54.60
Building 03/01/2011-01/31/2012	0.06	0.33	0.35	0.00	0.00	0.03	0.03	0.00	0.02	0.02	53.08
Building Off Road Diesel	0.06	0.31	0.21	0.00	0.00	0.02	0.02	0.00	0.02	0.02	31.62
Building Vendor Trips	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.39
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.07
Coating 12/01/2011-01/31/2012	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52
Architectural Coating	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 10/1/2010 - 1/31/2011 - Default Mass Site Grading/Excavation Description

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2011 - 1/31/2012 - Default Architectural Coating Description

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 60%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 60%

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\valorie thompson\Application Data\Urbemis\Version9a\Projects\SDSU Student Union Area Sources.urb924

Project Name: SDSU Student Union Area Sources

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.34	0.35	1.83	0.00	0.01	0.01	397.21

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.34	0.35	1.83	0.00	0.01	0.01	397.21



Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.02	0.33	0.28	0.00	0.00	0.00	394.40
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.20						
TOTALS (lbs/day, unmitigated)	0.34	0.35	1.83	0.00	0.01	0.01	397.21

Area Source Changes to Defaults

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\valorie thompson\Application Data\Urbemis\Version9a\Projects\SDSU Student Union Area Sources.urb924

Project Name: SDSU Student Union Area Sources

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.06	0.06	0.33	0.00	0.00	0.00	72.49

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.06	0.06	0.33	0.00	0.00	0.00	72.49

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.06	0.05	0.00	0.00	0.00	71.98
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.04						
TOTALS (tons/year, unmitigated)	0.06	0.06	0.33	0.00	0.00	0.00	72.49

Area Source Changes to Defaults