



CALIFORNIA HOSPITAL TOWER PROJECT

Addendum #1 to the California Hospital Tower EIR

State Clearinghouse No. 2021020515

Prepared For:

**CAMPUS PLANNING AND ENVIRONMENTAL STEWARDSHIP
University of California
One Shields Avenue
436 Mrak Hall
Davis, California 95616**

Prepared By:

**ICF
980 9th Street, Suite 1200
Sacramento, CA 95814**

April 2023

Contact: Heather Davis, Interim Director of Environmental Planning
530-752-6043

TABLE OF CONTENTS

Section		Page
1	PROJECT INFORMATION.....	1-1
2	INTRODUCTION	2-1
	2.1 Purpose of this Addendum.....	2-1
	2.2 Organization of the Addendum	2-3
3	ENVIRONMENTAL REVIEW OF PROJECT ACTIVITIES	3-1
4	REFERENCES	4-1

Attachment A. California Hospital Tower EIR Revised Project Equipment and Mitigation Assumptions

1 PROJECT INFORMATION

- Project title:** Addendum #1 to the California Hospital Tower EIR
- Project location:** University of California, Davis – Sacramento Campus, Sacramento, California
- Lead agency’s name and address:** The Regents of the University of California
1111 Franklin Street
Oakland, CA 94607
- Contact person:** Heather Davis, Interim Director of Environmental Planning
UC Davis Campus Planning and Environmental Stewardship
530.752.6043
- Project sponsor’s name and address:** University of California, Davis
One Shields Avenue
436 Mrak Hall
Davis, CA 95616-8678
- Location of administrative record:** See Project Sponsor

Previously Certified California Hospital Tower EIR: The California Hospital Tower Project was analyzed in the Environmental Impact Report (EIR) certified in November 2021 (State Clearinghouse No. 2021020515). In conformance with State CEQA Guidelines 15164, this addendum is being prepared to address a minor technical change to the EIR.

This addendum documents that none of the conditions described in Section 15162 of the State CEQA Guidelines have occurred and the California Hospital Tower Project will not have any new significant or more severe effects that were not already discussed in the EIR for the University of California (UC) Davis California Hospital Tower Project. The California Hospital Tower Project includes construction of a new hospital tower at the UC Davis Health Sacramento Campus. It will be connected to the existing main hospital building, and includes two new helipads, as well as construction of Parking Structure 5 and upgrades to the campus’ Central Utility Plant (CUP). The California Hospital Tower Project EIR is available for review at the following locations:

- UC Davis Campus Planning and Environmental Stewardship in 436 Mrak Hall on the UC Davis campus
- UC Davis Health Center, Facilities Design and Construction, 4800 Second Avenue, Suite 3010, Sacramento, CA 958178.
- Reserves at Shields Library on the UC Davis campus
- Online at: <https://environmentalplanning.ucdavis.edu/california-tower>

2 INTRODUCTION

2.1 PURPOSE OF THIS ADDENDUM

After certification of the EIR, construction of the California Hospital Tower Project commenced, as well as implementation of all required mitigation. Mitigation Measure AQ-2a requires the reduction of emissions during construction by prohibiting electric-power cranes, which prohibition has been determined to be infeasible. Therefore, an addendum is required to revise the EIR to replace this mitigation measure. Based on the analysis presented in this addendum, no subsequent CEQA document is necessary for the California Hospital Tower Project.

2.1.1 Infeasibility of Mitigation Measure AQ-2a

The contractors for the projects covered under the California Hospital Tower EIR have indicated that electric cranes are not available to meet project needs. UC Davis construction management staff have conducted its own market research to determine whether electric cranes are available in a feasible manner to meet project schedules and have concluded that viable electric crane options to construct the project and comply with Mitigation Measure AQ-2a do not exist. As a result, UC Davis staff has determined that compliance with Mitigation Measure AQ-2a is not feasible at the present time; therefore, a modification to Mitigation Measure AQ-2a in the California Hospital Tower Project EIR and Mitigation Monitoring and Reporting Plan (MMRP) is necessary.

The revision to the California Hospital Tower Mitigation Measure AQ-2a will be made as follows:

- From: “All construction contractors working on PS5, California Tower, make-ready projects, and demolition of the East Wing of the main hospital must use electric-powered cranes. Diesel or fossil-fuel powered cranes are prohibited.”
- To: “All construction contractors working on PS5, California Tower, make-ready projects, and demolition of the East Wing of the main hospital must use electric-powered cranes to the extent feasible. If it is determined that use of electric cranes is not feasible, all construction contractors working on the above-referenced projects shall identify and substitute (in place of diesel or fossil fuel-powered equipment), additional electrified equipment to the extent necessary to result in no new or increased impacts.”

2.1.2 California Hospital Tower Project Environmental Impact Report

In November 2021, The Regents of the University of California certified the Final EIR (State Clearinghouse Number 2021020515; University of California 2021) for the California Hospital Tower Project. The California Hospital Tower Project EIR evaluated the project-level impacts of a 14-story hospital tower, construction of Parking Structure 5, Central Utility Plant (CUP) upgrades, make-ready projects, and demolition of the East Main Hospital Wing on the Sacramento Campus. The CUP upgrades included analysis of facility upgrades to provided increased capacity, including three new 2,000 kW emergency generators, three water chillers, and one electric heat pump. The California Hospital Tower EIR also analyzed a revision to the 2020 LRDP Update height restrictions in the Hospital land use designation from 200 feet to 270 feet for areas within 180 feet of the property line. The California Hospital Tower Project EIR was prepared in accordance with Section 15168 of

the CEQA Guidelines and Public Resources Code Section 21094. The Final EIR is available online: [https:// environmentalplanning.ucdavis.edu/california-tower](https://environmentalplanning.ucdavis.edu/california-tower).

State CEQA Guidelines Regarding an Addendum

If, after certification of an EIR, minor technical changes or additions are necessary and none of the conditions described in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred, an addendum to the EIR may be prepared for a subsequent approval of a portion of the overall program originally analyzed.

Public Resources Code (PRC) Section 21166 and Sections 15162 through 15163 of the State CEQA Guidelines describe the conditions under which subsequent document would be prepared.

When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:

- (a) Substantial changes are proposed in the Project that will require major revisions of the previous EIR or MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (b) Substantial changes occur with respect to the circumstances under which the Project is undertaken that will require major revisions of the previous EIR or MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (c) 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 or MND was certified as complete was adopted, shows any of the following:
 - o The project will have one or more significant effects not discussed in the previous EIR or MND;
 - o Significant effects previously examined will be substantially more severe than shown in the previous EIR or MND;
 - o 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
 - o Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR or MND would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The infeasibility of Mitigation Measure AQ-2a does not entail significant changes that would require environmental review. Therefore, an addendum would be required to provide information on the proposed changes to California Hospital Tower Project EIR.

Section 15164 of the CEQA Guidelines provides that a lead agency may prepare an addendum to a previously adopted EIR if some changes or additions are necessary, but none of the conditions described above for Section 15162 calling for preparation of a subsequent document have occurred. CEQA allows lead agencies to restrict review of modifications to a previously approved project to the incremental effects associated with the proposed modifications, compared against the anticipated effects of the previously approved project (in this case, the California Hospital Tower Project).

Changes discussed herein to the approved California Hospital Tower Project and any altered conditions since certification of the EIR in November 2021 would:

- not result in any new significant environmental effects, and
- not substantially increase the severity of previously identified significant effects.

In addition, no new information of substantial importance has arisen that shows that:

- the California Hospital Tower Project would have new significant effects,
- the California Hospital Tower Project would have substantially more severe effects,
- mitigation measures or alternatives previously found to be infeasible would in fact be feasible, or
- mitigation measures or alternatives that are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment.

As described in Chapter 3 of this document, none of the conditions described above from CEQA Guidelines Section 15162 calling for preparation of a subsequent document have occurred. Therefore, the differences between the approved California Hospital Tower Project, as described in the certified EIR, and the project modifications now being considered constitute changes, consistent with CEQA Guidelines Section 15164, that may be addressed in an addendum to the EIR.

2.2 ORGANIZATION OF THE ADDENDUM

This addendum is organized into the following chapters:

Chapter 1 – Project Information: provides a summary of information about the California Hospital Tower Project EIR, including lead agency, and contact information.

Chapter 2 – Introduction: summarizes the purpose of the addendum, the California Hospital Tower EIR, and this document's organization.

Chapter 3 – Environmental Review of Project Activities: includes an environmental checklist for each resource topic related to Mitigation Measure AQ-2a. This section of the addendum analyzes the potential effects on the existing physical environment from revising Mitigation Measure AQ-2a. This analysis has been prepared to determine whether any of the conditions described above that would require preparation of a subsequent or supplemental EIR would occur as a result of this revision.

Chapter 4 – References: lists references used in the preparation of this document

3 ENVIRONMENTAL REVIEW OF PROJECT ACTIVITIES

UC Davis has determined that, in accordance with PRC Section 21166 and Section 15164 of the State CEQA Guidelines, minor technical changes or additions to the EIR are necessary to address the modifications to the approved California Hospital Tower Project EIR. An addendum to a certified EIR is prepared when changes to a project are required, and the changes:

- will not result in any new significant environmental effects, and/or
- will not substantially increase the severity of previously identified effects.

The analysis of environmental effects provided below addresses the same impacts addressed in the California Hospital Tower Project EIR. The environmental analysis evaluates whether, for each applicable environmental resource topic there are any changes in the project or the circumstances under which it would be undertaken that would result in new or substantially more severe environmental impacts than considered in the California Hospital Tower Project EIR. This analysis focuses only on those topics potentially affected by the proposed change in the mitigation measure (because that mitigation measure was identified to reduce impacts in those topical areas), which are air quality, greenhouse gas emissions, and hazards and hazardous materials. The University has defined the column headings in the environmental checklist as follows:

Impact Examined in the California Hospital Tower Project EIR? “Yes” is stated where the potential impacts were examined in the California Hospital Tower Project EIR.

Do Proposed Changes Involve New or Substantially More Severe Significant Impacts? This question is answered with a “yes” or “no,” as substantiated by the discussion provided below the table. If the response is “yes,” additional CEQA analysis is required.

Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts? This question is answered with a “yes” or “no,” as substantiated by the discussion provided below the table. If the response is “yes,” additional CEQA analysis is required.

Do Mitigation Measures in the California Hospital Tower Project EIR Address/ Resolve Impacts, Including Impacts That Would Otherwise be New or Substantially More Severe? This question is answered with a “yes,” “no,” or “N/A,” as substantiated by the discussion provided below the table. The answer N/A indicates there was no potential impact under the California Hospital Tower Project EIR and there would be no change to the impact conclusion.

3.1.1 Air Quality

Section 3.2 of the California Hospital Tower Project EIR addresses the air quality effects of the project by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation. The air quality regulatory setting and environmental conditions at the project site are the same as described in the California Hospital Tower Project EIR.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Air Quality	Impact Examined in California Hospital Tower Project EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2020 LRDP Update SEIR Address/ Resolve Impacts, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
a) Conflict with or obstruct implementation of the applicable air quality plan?	Yes	No	No	N/A
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	Yes	No	No	Yes
c) Expose sensitive receptors to substantial pollutant concentrations?	Yes	No	No	Yes
d) Create objectionable odors affecting a substantial number of people?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a, b, c, d) The California Hospital Tower Project EIR found significant and unavoidable impacts after mitigation for exposure of sensitive receptors to construction generated diesel particulate matter (DPM). Air quality impacts from conflicts with the applicable air quality plan, construction and operations generated emissions, exposure of receptors to localized particulate matter, asbestos, and operations generated toxic air contaminants (TAC), and odors were found to be less than significant or less than significant with mitigation.

The construction emissions analysis conducted for the California Hospital Tower Project EIR assumed electric-powered cranes would be used to construct the project, pursuant to Mitigation Measure AQ-2a. After evaluating the market availability of the electric cranes necessary to build the project, UC Davis staff have determined that electric-powered cranes are not currently available in the market place to serve the project needs and diesel-powered alternatives must be used to enable near-term construction of certain parts of the project. Specifically, one diesel crane will operate for approximately two days for facility erection and deck pouring activities for construction of Parking Structure 5 (PS 5). Diesel cranes will also be required to construct the temporary ambulance area and for foundational activities for the California Tower (approximately 1 year). The project team has confirmed electric tower cranes are available for all remaining work on the California Tower, pursuant to Mitigation Measure AQ-2a.

Substituting diesel for electric cranes during the activities noted above will slightly increase construction criteria pollutant and DPM emissions, relative to the quantities analyzed in the California Hospital Tower Project EIR. However, Mitigation Measure AQ-2a is being revised to require electrification of alternative equipment types. In developing the revised Mitigation Measure AQ-2a, UC Davis performed a detailed review of currently verified equipment control technologies and consulted with industry experts regarding the availability of electric powered equipment to replace equipment previously intended to be powered by diesel and/or fossil fuels.

Emissions generated by an individual piece of diesel equipment are a product of their emissions intensity and operating hours. Pursuant to Mitigation Measure LRDP-2b, all diesel equipment used to construct the project must use Tier 3 engines prior to 2025 and Tier 4 Final engines thereafter. The emissions intensity of Tier 3 and Tier 4 Final equipment is given in terms of grams of emissions generated per equipment horsepower-hour. Based on the factors, Attachment A shows the additional emissions that will be generated by use of diesel cranes during construction of PS 5, the temporary ambulance area, and the California Tower (foundations).

Electric equipment does not generate any direct emissions of criteria pollutants or DPM. Accordingly, electrification of the alternative equipment types pursuant to Mitigation Measure AQ-2a (as revised) will eliminate the direct emissions previously estimated for the equipment and assumed in the California Hospital Tower Project EIR air quality analysis. These emissions are shown in Attachment A. The attachment demonstrates that total emissions reductions achieved by the additional equipment electrification far exceeds emissions generated by diesel cranes that will now be used for PS 5, the temporary ambulance area, and foundational activities for the California Tower. Accordingly, no new or substantially more severe air quality impacts related to project construction would occur. The project would comply with all other mitigation measures outlined in the CA Tower EIR to reduce construction emissions and associated health risks.

Revisions to Mitigation Measure AQ-2a would not change any of the operational emissions analysis or conclusions presented in the California Hospital Tower Project EIR.

3.1.2 Greenhouse Gas Emissions

Section 3.7 of the California Hospital Tower Project EIR addresses the greenhouse gas (GHG) effects of the project by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation. The GHG regulatory setting and environmental conditions at the project site are the same as described in the California Hospital Tower Project EIR.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Greenhouse Gas Emissions	Impact Examined in California Hospital Tower Project EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the California Hospital Tower Project EIR Address/ Resolve Impacts, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Yes	No	No	N/A
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose or reducing the emissions of greenhouse gases?	Yes	No	No	Yes

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,b)The California Hospital Tower Project EIR concluded GHG impacts would be less than significant with mitigation or less than significant. As discussed in Section 3.2, *Air Quality*, diesel-powered cranes will be used for facility erection and deck pouring activities for construction of PS 5, construction of the temporary ambulance area, and for foundational activities for the California Tower. Mitigation Measure AQ-2a is being revised to require electrification of alternative equipment types.

GHG emissions generated by an individual piece of diesel equipment are a product of their emissions intensity and operating hours. Electric equipment does not generate any direct (i.e., tailpipe) GHGs, but results in minor indirect emissions from the generation of electricity used to power the equipment. The California Hospital Tower Project EIR assumed the diesel cranes would be electric, and the alternative equipment now being electrified were diesel-powered. Attachment A shows the net change in GHG emissions from the fuel substitutions pursuant to revisions to Mitigation Measure AQ-2a. The attachment demonstrates that the net emissions reductions achieved by the additional equipment electrification far exceeds emissions generated by diesel cranes that will now be used for PS 5, the temporary ambulance area, and foundational activities for the California Hospital Tower. Accordingly, no new or substantially more severe GHG impacts related to project construction would occur. The project would comply with all other mitigation measures outlined in the California Hospital Tower Project EIR to reduce construction emissions.

Revisions to Mitigation Measure AQ-2a would not change any of the operational emissions analysis or conclusions presented in the California Hospital Tower Project EIR.

3.1.3 Hazards and Hazardous Materials

Section 3.8 of the California Hospital Tower Project EIR addresses the hazards and hazardous materials effects of the project by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation. The hazards and hazardous materials regulatory setting and environmental conditions at the project site are the same as described in the California Hospital Tower Project EIR.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Hazards & Hazardous Materials	Impact Examined in California Hospital Tower Project EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the California Hospital Tower Project EIR Address/ Resolve Impacts, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Yes	No	No	N/A
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Yes	No	No	Yes
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Yes	No	No	Yes
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Yes	No	No	N/A
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	Yes	No	No	N/A
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Yes	No	No	N/A
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a, b, d, e, f, g) The analysis related to these resource topics would not change compared to what was analyzed in the California Hospital Tower EIR, as Mitigation Measure AQ-2a is not required.

Therefore, no new or substantially more severe impacts would occur and no mitigation would be required, and these topics are not analyzed further.

- c) The nearest school to the California Hospital Tower Project is the Language Academy of Sacramento, approximately 0.3-mile south of the California Hospital Tower project site at 2850 49th Street. Hazardous materials and waste would continue to be handled at the California Tower. The school is just south of the existing CUP which is the project component closest to the school. The UC Davis Sacramento Campus has been operating adjacent to the school since 1978, and there have been no incidents involving the release of hazardous materials that have affected the school or required evacuation or any other emergency response to the school site. Continued compliance with existing safety plans, programs, practices, and procedures, as discussed in Section 3.8.1, *Existing Conditions* (e.g., UC Davis Environmental Health & Safety Plan), would reduce potential impacts involving hazardous materials/wastes within 0.25 mile of a school. As stated in the California Hospital Tower EIR, Mitigation Measures LRDP-AQ-2a, LRDP-AQ-2b, LRDP-AQ-2c, LRDP-AQ-3a, AQ-2a, and AQ-2b would further reduce impacts related to construction and operational emissions.

Electrification of the alternative equipment types pursuant to Mitigation Measure AQ-2a (as revised) will eliminate the direct emissions previously estimated for the equipment and assumed in the CA Tower EIR air quality analysis (Attachment A). These emissions are shown in Attachment A. As total emissions reductions achieved by the additional equipment electrification far exceeds emissions generated by diesel cranes that will now be used for project construction, no new or substantially more severe impacts related to hazards and hazardous materials within 0.25 mile of a school would occur. The project would comply with all other mitigation measures outlined in the California Hospital Tower Project EIR to reduce construction emissions and associated health risks.

3.1.4 Conclusion

Based on the information presented in this addendum to the California Hospital Tower Project EIR, the University has determined that the change to Mitigation Measure AQ-2a does not trigger the need for further environmental review under CEQA Guidelines Section 15162.

As described in Chapter 2 of this document, “Introduction,” and Chapter 3, “Environmental Review of Project Activities,” none of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent document have occurred. As documented throughout the environmental checklist and discussion, changes to the approved EIR in connection with this addendum and any altered conditions since certification of the EIR in November 2021 would:

- not result in any new significant environmental effects, and
- not substantially increase the severity of previously identified significant effects.
- In addition, no new information of substantial importance has arisen that shows that:
 - the Project would have new significant effects,
 - the Project would have substantially more severe effects,
 - mitigation measures or alternatives previously found to be infeasible would in fact be feasible, or
 - mitigation measures or alternatives that are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment.

Under CEQA Guidelines Section 15164, preparation of this addendum to document these determinations and to make minor and technical changes to the California Hospital Tower EIR is appropriate.

4 REFERENCES

INTRODUCTION

UC Davis. 2022. *California Hospital Tower Project Final Environmental Impact Report*. State Clearinghouse No. 2021020515.

ATTACHMENT A

**CALIFORNIA HOSPITAL TOWER EIR REVISED PROJECT EQUIPMENT AND
MITIGATION ASSUMPTIONS**

CA Tower EIR and Revised Project Equipment and Mitigation Assumptions

Phase	Equipment	Number per Day	Hours per Day	HP	LF	Operating Days*	Fuel Type	
							CA Tower EIR	Revised Project
P55 Facility Erection and Deck Pour	Cranes	1	8	231	0.29	2	Electric (MM-AQ-3a)	Diesel (T3)
Temp Ambulance Area	Cranes	1	8	231	0.29	262	Electric (MM-AQ-3a)	Diesel (T3)
Site Demo & Prep	Demolition Saw	2	8	81	0.73	240	Diesel (T3)	Electric (MM-AQ-3a)
Foundations	Cranes	2	8	231	0.29	174	Electric (MM-AQ-3a)	Diesel (T4)
Structural Steel	Welders	24	8	46	0.45	280	Diesel (T4)	Electric (MM-AQ-3a)
Concrete & Superstructure	Welders	18	8	46	0.45	262	Diesel (T4)	Electric (MM-AQ-3a)
Interior Buildout & Paving	Welders	16	8	46	0.45	935	Diesel (T4)	Electric (MM-AQ-3a)
Interior Buildout & Paving	Cement and Mortar Mixers	10	8	9	0.56	935	Diesel (T4)	Electric (MM-AQ-3a)
Interior Buildout & Paving	Pavers	1	8	130	0.42	935	Diesel (T4)	Electric (MM-AQ-3a)
East Wing Demolition	Concrete/Industrial Saw	1	8	81	0.73	261	Diesel (T4)	Electric (MM-AQ-3a)

* Operating days obtained from CA Tower EIR except for P55 Facility Erection and Deck Pour. This phase has already begun and the crane would only operate for two days.

	2023	2024	2025	2026	2027	2028	2029	2031
100%								
100%								
36%		64%						
		62%	38%					
			85%	15%				
			74%	26%				
			12%	28%	28%	28%	5%	
			12%	28%	28%	28%	5%	
			12%	28%	28%	28%	5%	
								100%

CA Tower EIR and Revised Project Equipment Emissions

Phase	Equipment	Total Emissions (tons) with CA Tower EIR Fuel Type Assumptions					Total Emissions (tons) with Revised Project Fuel Type Assumptions				
		ROG	NOx	PM10 Ex	PM2.5 Ex	CO2e*	ROG	NOx	PM10 Ex	PM2.5 Ex	CO2e*
P55 Facility Erection and Deck Pour	Cranes	-	-	-	-	0	0.00	0.00	0.00	0.00	1
Temp Ambulance Area	Cranes	-	-	-	-	16	0.02	0.32	0.01	0.01	67
Site Demo & Prep	Demolition Saw	0.03	0.62	0.03	0.03	129	-	-	-	-	25
Foundations	Cranes	-	-	-	-	19	0.01	0.05	0.00	0.00	89
Structural Steel	Welders	0.15	3.37	0.01	0.01	634	-	-	-	-	111
Concrete & Superstructure	Welders	0.10	2.37	0.01	0.01	445	-	-	-	-	77
Interior Buildout & Paving	Welders	0.33	7.51	0.02	0.02	1411	-	-	-	-	216
Interior Buildout & Paving	Cement and Mortar Mixers	0.05	1.14	0.00	0.00	215	-	-	-	-	34
Interior Buildout & Paving	Pavers	0.03	0.12	0.00	0.00	195	-	-	-	-	37
East Wing Demolition	Concrete/Industrial Saw	0.01	0.04	0.00	0.00	70	-	-	-	-	9

* Emissions presented in metric tons.

Summary of Total Emissions Changes with Equipment and Mitigation Revisions

Analysis	Total Emissions (tons)				
	ROG	NOx	PM10 Ex	PM2.5 Ex	CO2e*
CA Tower EIR	0.69	15.16	0.08	0.08	3,134
Revised Project	0.03	0.38	0.01	0.01	665
Net Change	-0.66	-14.78	-0.07	-0.07	-2,469

* Emissions presented in metric tons.

Conversions	
metric tons_pound	0.000453592
tons_gram	1.10E-06
metric tons_gram	1.00E-06
kw_hp	0.7457
MWh_kWh	0.001

CA Tower EIR Emission Factors

Diesel Equipment

Engine Tier	Max HP	g/bhp (CalEEMod)			
		ROG	NOx	PM10	PM2.5
Tier 3	49	0.29	4.63	0.28	0.28
	74	0.12	2.74	0.192	0.192
	119	0.12	2.74	0.192	0.192
	174	0.12	2.32	0.112	0.112
	299	0.12	2.32	0.088	0.088
	599	0.12	2.32	0.088	0.088
	750	0.12	2.32	0.088	0.088
	2000	0.12	2.32	0.088	0.088
Tier 4	49	0.12	2.75	0.008	0.008
	74	0.06	2.74	0.008	0.008
	119	0.06	0.26	0.008	0.008
	174	0.06	0.26	0.008	0.008
	299	0.06	0.26	0.008	0.008
	599	0.06	0.26	0.008	0.008
	750	0.06	0.26	0.008	0.008
	2000	0.06	2.24	0.016	0.016

Equipment (year)	g/bhp (CalEEMod)		
	CO2	CH4	CO2e
Cement and Mortar Mixers (all)	568.299	0.059	569.774
Saws (all)	568.299	0.027	568.974
Cranes (2023)	472.974	0.153	476.799
Cranes (2024)	472.964	0.153	476.789
Cranes (2025)	472.980	0.153	476.805
Pavers (2025-2029)	472.485	0.153	476.310
Welders (2025-2029)	568.299	0.054	569.649

Equipment Tier	Renewable Diesel Multiplier		
	NOx	CO	PM
Tier 3	90%	90%	70%
Tier 4	-	-	-

Electric Equipment

Year	lbs per MWh (eGRID)			
	CO2	CH4	N2O	CO2e
2023	327	0.03	0.00	329
2024	312	0.03	0.00	314
2025	295	0.03	0.00	297
2026	279	0.02	0.00	280
2027	267	0.02	0.00	268
2028	253	0.02	0.00	254
2029	238	0.02	0.00	239
2030	223	0.02	0.00	224
2031	208	0.02	0.00	209