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Appeal of EIR Certification One Oak Street (1500–1540 Market Street) Project

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DATE: August 30, 2017
TO: Angela Calvillo, Clerk of the Board of Supervisors
FROM: Lisa Gibson, Environmental Review Officer – (415) 575-9034
Diane Livia, Environmental Planner – (415) 575-8758
Rick Cooper, Senior Environmental Planner – (415) 575-9027
RE: File No. 170812, Planning Department Case No. 2009.0159E,
Appeal of the Environmental Impact Report Certification for the
One Oak Street (1500–1540 Market Street) Project, Block 0836,
Lots: 001,002, 003, 004, and 005
PROJECT SPONSOR: One Oak Owner, LLC
APPELLANT: Jason Henderson
HEARING DATE: September 5, 2017

INTRODUCTION

This memorandum updates the Planning Department’s previous memorandum, dated August 28, 2017, and submitted to the Board of Supervisors in response to the above-referenced appeal of an EIR certification. This current memorandum addresses the following two matters: 1. revisions to the design of the project that the project sponsor has recently initiated; and 2. Appellant’s supplemental submission to the Board of Supervisors, dated August 25, 2017, in support of the appeal. The revision to the project would not materially affect the conclusions regarding the physical, environmental effects of the revised project. The revisions to the project obviate the need for the legislative amendments to the height and bulk districts within the project site that were anticipated to be required as described in the certified EIR.

REVISIONS TO THE PROJECT DESIGN

Background

An environmental impact report for the project, case number 2005.0159E, was certified by the San Francisco Planning Commission on June 15, 2017 (“certified EIR”). The project described and analyzed in the certified EIR (“subject project”) consists of the demolition of existing buildings within the project site and removal of a parking lot on the project site at 1500-1540 Market Street and construction of a new 310-unit, 40-story residential tower (400-foot-tall, plus a 20-foot-tall perimeter parapet and 26-foot-tall mechanical penthouse) with ground-floor commercial space and one off-street loading space. The subject

project would also include a subsurface parking garage for residents. Bicycle parking for residents would be provided on a second-floor mezzanine; for visitors, bicycle parking would be provided in bicycle racks on adjacent sidewalks. The subject project would also include construction of a public plaza within the Oak Street right-of-way, construction of several wind canopies within the proposed plaza, construction of a freestanding MUNI elevator enclosure within the proposed Oak Plaza, and construction of one wind canopy within the sidewalk at the northeast corner of Market Street and Polk Street to reduce pedestrian-level winds.

The One Oak Street project's building site is comprised of Assessors Block 836, Lots 1, 2, 3, 4 and 5, from east to west. As described in the certified EIR on p. 3.5, the subject project would require a height and bulk district amendment to reclassify the 120/400-R-2 Height and Bulk designation, shifting it from a portion of the easternmost Lot 1 to a portion of the western half of Lot 5, designated 120-R-2. The subject project would require amendment of the *San Francisco General Plan* to revise Map 3 of the Market and Octavia Area Plan and Map 5 of the Downtown Area Plan, and amendment to the Height and Bulk Map HT07 in the San Francisco Planning Code to shift the 120/400-R-2 designation from a portion of Lot 1 to a portion of Lot 5 on Assessor's Block 0836 and reclassify the corresponding portion of Lot 1 to a height and bulk designation of 120-R-2.

Description of the Revised Project

Subsequent to the certification of the EIR, the subject project design was revised ("revised project") from that described and shown in the certified EIR¹. As shown in **Figure 1: Revised Project Tower Shift Diagram** of this memorandum, the revised project would shift the tower element of the proposed building (floors 13-40) 3.25 feet northeastward within the building site, parallel to the Market Street property line. With this shift, the westernmost 2.5 feet of the tower element, which would have been within a 120-R-2 Height and Bulk District, would be shifted outside of that district into the existing 120/400-R-2 Height and Bulk District. Accordingly, the entire tower element under the revised project would then be within the existing 120/400-R-2 Height and Bulk District. The revised project would not require any legislative amendments to the height and bulk districts within the project site.²

The northeastward shift of the tower element would be accompanied by a corresponding northeastward elongation of podium floors 4-12 by 3.25 feet, resulting in an increase to these floorplate areas of about 292 sq. ft. at each of the nine podium floors 4-12 (or about 245 gross square feet ["gsf"] of residential use per floor, totaling 2,205 gsf under the revised project). The increased area would not affect the residential unit count or the bedroom unit mix studied in the EIR. Rather, it would increase the room sizes at the eastern perimeter of floors 4-12.

¹ EIR pp. 2.1–2.36, as revised on RTC pp. 5.8–5.27.

² Recommendation of an ordinance amending the Zoning Map to shift the Height and Bulk District 120/400-R-2 designation from Lot 001 to Lot 005 on Assessor's Block 0836 and reclassifying Lot 001 on Assessor's Block 0836 to 120-R-2. Recommendation of a General Plan amendment to revise Map 3 of the Market and Octavia Area Plan to shift the Height and Bulk District 120/400-R-2 designation from Lot 001 to Lot 005 on Assessor's Block 0836 and reclassify Lot 001 on Assessor's Block 0836 to 120-R-2.



FIGURE 1: REVISED PROJECT TOWER SHIFT DIAGRAM

Source: SCB/Sm@hetta (2017)

The design revisions would not call for any change to the dimensions and configuration of podium levels 1-3 nor would they require any changes to the proposed site plan. Rather, the cantilevered overhang above the triple-height window wall at the eastern “prow” of the proposed building would be extended further northeastward by an additional 3.25 feet to accommodate the elongation of podium floors 4-12.

The revised project would not include any changes to the number and mix of residential units; the size and location of ground-floor retail; the proposed ground-floor site plan; pedestrian and vehicular circulation within the project site; the design and configuration of the publicly accessible open space offered and developed under the subject project; and the description and duration of project construction. The project would remain substantially the same as described in the certified EIR on Draft EIR pp. 2.1-2.36, as revised on RTC pp. 5.18-5.27.

Analysis of Potential Environmental Effects of the Revised Project

San Francisco Administrative Code Section 31.19(c)(1) states that a modified project must be reevaluated and that, “If, on the basis of such reevaluation, the Environmental Review Officer determines, based on the requirements of CEQA, that no additional environmental review is necessary, this determination and the reasons therefore shall be noted in writing in the case record, and no further evaluation shall be required by this Chapter.”

CEQA Guidelines Section 15164 provides for the use of an memorandum to document the basis of a lead agency’s decision not to require a Subsequent or Supplemental EIR for a project that is already adequately covered in an existing certified EIR. The lead agency’s decision to use an memorandum must be supported by substantial evidence that the conditions that would trigger the preparation of a Subsequent EIR, as provided in CEQA Guidelines Section 15162, are not present.

Land Use and Land Use Planning

As noted above, the topic of Land Use and Land Use Planning was included in the EIR for informational purposes to contextualize for the reader the land use character of the project site and its surroundings.

The revised project consists of revisions that are limited to the configuration of the proposed building envelope above the third floor of the proposed One Oak building in order to bring the project into conformity with existing height and bulk limitations applicable to the project site. The revised project would not change the unit count or mix of residential units by number of bedrooms. It would not change the amount or location of ground-floor retail use, nor would it change the ground-level pedestrian, bicycle and vehicular circulation within the project site from that described and analyzed in the certified EIR.

For these reasons, the revised project would not cause any new significant impacts related to the EIR topic of Land Use and Land Use Planning that were not identified in the One Oak Street Project certified EIR. No new mitigation measures would be necessary to reduce significant impacts.

Transportation and Circulation

The revised project consists of revisions that are limited to the configuration of the proposed building envelope above the third floor of the proposed One Oak building. The revised project would not change the unit count or mix of residential units by number of bedrooms, or the amount of residential parking spaces or bicycle parking spaces provided under the subject project. It would not change the amount or location of ground-floor retail use, nor would it change the ground-level pedestrian, bicycle and vehicular circulation within the project site from that described and analyzed in the certified EIR. The revised project would not call for any substantial changes to the timing, location, and character of construction activities described and analyzed in the certified EIR.

For these reasons, the revised project would not cause any new significant impacts related to the EIR topic of Transportation and Circulation that were not identified in One Oak Street Project certified EIR, nor would the revised project cause the significant unavoidable impact previously identified in the One Oak Street Project certified EIR (cumulative construction) to become substantially more severe. No new mitigation measures would be necessary to reduce significant impacts.

Wind

The shift in the tower element's position 3.25 feet to the northeast and corresponding changes to elongate the podium by 3.25 feet to the northeast under the revised project would change the position and configuration of the building envelope. As such, the revised project has the potential to result in wind impacts that may differ from those reported in the certified EIR.

The EIR wind consultant, BMT Fluid Dynamics, conducted additional wind tunnel testing for the revised project configuration, using the same test point locations as for the certified EIR subject project, to compare the results reported in the certified EIR with those of the revised project (see Attachment A). The BMT revised project wind study yielded identical wind hazard criterion results as for the subject project studied in the certified EIR under both the project scenario and cumulative scenario. The wind hazard criterion of Planning Code Section 148 is the applicable significance threshold for evaluating wind impacts in San Francisco. BMT also studied wind comfort conditions under the revised project for informational purposes. The BMT revised project wind study yielded similar results with respect to wind comfort exceedances as under the project scenario (an increase of 1 mph at 5 test point locations and a decrease of 1 mph at 3 test point locations) as well as the project cumulative scenario (an increase of 1 mph at 5 test point locations and a decrease of 1 mph at 2 test point locations).

For these reasons, the revised project would not cause any new significant wind impact that was not identified in One Oak Street Project certified EIR. No new mitigation measures would be necessary to reduce significant impacts.

Shadow

The shift in the tower element's position 3.25 feet to the northeast under the revised project would change the position of the tower with respect to the affected Recreation and Park Department properties studied

in the certified EIR. As such, the revised project has the potential to result in shadow impacts that may differ from those reported in the certified EIR.

The EIR shadow consultant, PreVision Design, conducted additional shadow analysis for the revised project configuration to compare the results reported in the certified EIR, for Patricia's Green, and Page and Laguna Minipark, with those of the revised project (see Attachment B). In its analysis, the shadow consultant noted that typically, the percentage of annual shadow is expressed to an accuracy of two decimal places (0.00%). However, the changes in shading resulting from the proposed tower shift were so small they required an additional decimal point of accuracy (0.000%) to demonstrate any change in percentage value.

For Patricia's Green, the additional shadow study for the revised project found that on an annual basis, the revised project would result in 1,419 square foot hours ("sfh") of additional shadow annually relative to the subject project studied in the certified EIR, equal to an increase of 0.003% of the 66,622,661 sfh of Theoretical Annual Available Sunlight ("TAAS"). The revised project would not alter the number, range of dates, or date of maximum project-generated shading for Patricia's Green, nor would the maximum and average daily duration of shading be altered.

For Page and Laguna Minipark, the additional shadow study for the revised project found that on an annual basis, the revised project would result in 105 sfh of additional shadow annually relative to the subject project studied in the certified EIR, equal to an increase of 0.001% of the 24,402,522 sfh of TAAS. The revised project would not alter the number, range of dates, or date of maximum project-generated shading for Page and Laguna Minipark, nor would the maximum and average daily duration of shading be altered.

The revised project would increase the annual shadow load on Patricia's Green and Page and Laguna Minipark, by 0.003% and 0.001% respectively. The revised project would not substantially alter the times, dates, and areas of shading of these parks throughout the day and year. These very small increases in annual shadow load on these spaces would not have a material impact on the use and enjoyment of these parks and would therefore not change any of the conclusions of the certified EIR.

For these reasons, the revised project would not cause any new significant shadow impact that was not identified in the One Oak Street Project certified EIR. No new mitigation measures would be necessary to reduce significant impacts.

Conclusion

Based on the foregoing, the analyses conducted and the conclusions reached in the One Oak Street Project certified EIR certified on June 15, 2017 remain valid. The currently proposed revisions to the design of the building above the third floor would not cause any new significant impacts not identified in the One Oak Street Project certified EIR and would not cause the significant impact previously identified in the One Oak Street Project certified EIR to become substantially more severe. No new mitigation measures would be necessary to reduce significant impacts. No changes have occurred with respect to circumstances surrounding the project site that would result in significant environmental impacts to which the revised project would contribute considerably, and no new information has become available that shows that the

revised project would result in significant environmental impacts. Therefore, no supplemental environmental review is required beyond this memorandum.

APPELLANT'S SUPPLEMENTAL SUBMISSION

On August 25, 2017, the Appellant Jason Henderson submitted a supplemental submission to his original appeal letter filed with the Board of Supervisors on July 17, 2017. Appellant's supplemental submission does not raise any new environmental issues that were not already thoroughly addressed in the Draft EIR, the Responses to Comments document, and/or the Planning Department's appeal response memorandum, dated August 28, 2017.

Nonetheless, the department has chosen to supply additional response in this memorandum to concerns raised in the Appellant's supplemental submission, and to clarify issues and emphasize points already addressed in the EIR record.

Concerns Raised and Planning Department Responses

Concern 1: The Appellant asserts that the EIR is inadequate because it does not analyze alternatives with 0.25 or zero parking ratios.

Response 1: An alternative that provides 0.25 or no parking is not required under CEQA, because the purpose of an alternative is to lessen or avoid significant impacts of the proposed project, and in this instance a reduced or no parking alternative would not lessen or avoid the one identified significant impact for the project.

This concern is covered in the Responses to Comments Document beginning on page 4.48.

CEQA does not require analysis of every imaginable alternative. Rather, it mandates that agencies consider "a reasonable range of potentially feasible alternatives" that "would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen" any of its significant effects. (CEQA Guidelines, § 15126.6(a).) A lead agency may eliminate an alternative from detailed consideration in the EIR either because of its "inability to avoid significant environmental impacts", because it would not achieve most of the basic project objectives, or because it would be infeasible. (CEQA Guidelines, § 15126.6(c).)

As thoroughly described in EIR pp 4.C.87 and RTC pp 4.84, the Project would only result in one significant unavoidable impact: a cumulative construction-related traffic impact that would occur during the construction phase of the Project. (Impact C-TR-7). A reduced parking or no parking alternative would not avoid or mitigate this impact because construction activities would remain substantially the same, resulting in the same impact. Accordingly, a reduced parking or no parking alternative is not required as part of the EIR because such alternatives would not avoid or lessen the one identified significant adverse environmental impact of the proposed project.

Concern 2: The Appellant asserts that the EIR does not adequately analyze loading demand because it does not reflect present day trends in retail delivery on transit, pedestrians, and bicyclists.

Response 2: The EIR includes an analysis of the various elements of on-site and on-street loading operations. The EIR used the best available information to assess the loading impacts of the project.

As discussed in the RTC beginning on page 4.36, the SF Guidelines methodology for estimating truck and service vehicle loading demand assesses whether the peak loading demand could be accommodated within the proposed facilities, and considers the loading demand for the nine-hour period between 8 AM and 5 PM. As stated on EIR p. 4.C.56, the project loading demand of 28 delivery/service vehicle trips per day corresponds to a peak demand for two loading spaces, which would be accommodated within the proposed project's on-site loading supply. The proposed project and variant would not result in a significant loading impact, and therefore mitigation measures are not required. Appellant contends that this established methodology is flawed because it underestimates the number of e-commerce retail deliveries to the site. The City's loading demand methodology is based on the most recent and comprehensive information available, the 2002 *SF Guidelines* to assess the loading impacts of the project. Appellant provides no evidence to support its claim that the data is inaccurate. Accordingly, any increased loading demand could be accommodated within the loading spaces provided in the Project, as there would be available capacity outside the peak loading demand. Appellant's assertion also assumes that each delivery is delivered in a separate vehicle, whereas in buildings with multiple units, such as the proposed project, multiple residents are served with one delivery trip (e.g., UPS delivers multiple packages to one building address at one time).

The proposed project requires implementation of a Mitigation Monitoring and Reporting Program pursuant to Planning Code Section 309, Motion 19943. The project would be required to implement Improvement Measure I-TR-B: Loading Operations Plan. The Loading Operations Plan would include a set of guidelines related to the operation of the Oak Street driveways into the loading facilities, and large truck curbside access guidelines. It would specify driveway attendant responsibilities to ensure that truck queuing and/or substantial conflicts between project loading/unloading activities and pedestrians, bicyclists, transit and autos do not occur. Improvement Measure I-TR-B: Loading Operations Plan sets forth periodic review of loading operations by the SFMTA and the Planning Department to ensure that improvement measures are working.

Concern 3: The Appellant asserts that transit capacity serving the site is constrained and that the EIR should have studied expansion of transit capacity.

Response 3: The EIR concluded that the project would have no impacts on transit capacity, either at the project-level or cumulatively. No mitigation measures are required.

Appellant appears to be making a policy argument that the City should engage in a more comprehensive analysis of transit service and expansion. Such studies, analysis and comprehensive programs are conducted by the City on a regular basis. However, the purpose of CEQA is to analyze the impacts of the proposed project on the environment. The certified EIR fulfills CEQA's mandate by fully analyzing the potential impact of the proposed project on transit. Transit impacts of the proposed project are presented in the EIR in Impact TR-3, pp. 4.C.51- 4.C.54, for existing plus project conditions and in Impact C-TR-3, pp. 4.C.83-4.C.84, for 2040 cumulative conditions. This analysis concluded that the proposed project would not result in any significant transit impacts. Accordingly, no mitigation measures (such as expanding transit capacity) are required under CEQA.

Concern 4: The Appellant asserts that the EIR does not adequately analyze the impacts of valet parking on VMT and transportation impacts.

Response 4: The EIR adequately analyzed the transportation and circulation impacts of 155 parking spaces, including valet queuing, and found that the project would result in no significant impacts.

Appellant contends that the use of valet parking at the project will result in increased driving due to ease of access to cars by residents. Appellant provides no evidence to support this assertion. By contrast, the time delay associated with valet parking was addressed in the RTC at Page 4.19: “valet-assisted vehicle parking is included as part of the proposed project primarily due to the physical constraints of the project site, and not as a convenience for residents. Regardless of the method of vehicle parking and retrieval (i.e., valet-assisted or self-park), residents with parking spaces would have accessibility to their vehicle at all times. However, wait times for valet service, particularly during peak hours, would likely be inconvenient. This inconvenience may serve as a disincentive for residents to use private vehicles. Overall, the provision of valet-assisted parking is unlikely to have a significant effect on a resident’s decision to drive. Specifically, provision of valet-assisted parking at the project site is unlikely to result in more driving, because trip purpose and destination characteristics (i.e., distance, availability of parking, etc.), the key parameters affecting travel time and cost of the trip, would primarily determine the mode of travel for the resident. Providing valet-assisted parking at the destination, rather than within a residential building, would more likely affect residents’ decision to drive; however, this would not be affected whether the proposed project includes valet-assisted parking or not.”

Furthermore, the EIR adequately analyzed the transportation and circulation impacts of 155 parking spaces, including valet queuing (EIR pp. 4.C.42-4.C.45), passenger loading (EIR p. 4.C.57), and pedestrian safety (EIR pp. 4.C.51-4.C.54). This analysis did not provide any discounts for the use of valet parking, but rather analyzed the impact of each of the proposed parking spaces (155 spaces were studied in the Draft EIR, but the project sponsor has reduced the amount of parking to 136 spaces as currently proposed), assuming residents with parking spaces would have accessibility to their vehicle at all times. The EIR concluded that the Project’s proposed parking spaces would not result in any significant transportation or circulation impacts at pp 4.C.44. Accordingly, Appellant’s unsupported claims regarding the use of valet parking resulting in ease of access to cars or an increase in use of cars are not germane to the significant physical environmental impacts under CEQA.

Concern 5: The Appellant claims the City used the VMT threshold of significance inappropriately.

Response 5: The City’s VMT methodology and threshold of significance are supported by substantial evidence, as thoroughly analyzed and discussed in the EIR and the RTC.

Appellant expands on his objection to the City’s VMT methodology by claiming that the City should have adopted a different threshold of significance. Appellant cites *Mejia v. City of Los Angeles* (“*Mejia*”) (2005) 130 Cal.App.4th 322 and *East Sacramento Partnership for a Livable City v. City of Sacramento* (“*East Sacramento*”) (2016) 5 Cal.App.5th 281. *Mejia* is inapplicable because it involved a challenge to a Mitigated Negative Declaration—not an EIR. It is well-established law under CEQA that the “fair argument” test discussed in *Mejia* (and by Appellant) does not apply where the lead agency has prepared an EIR, as is the case here. Rather, it is a long-standing principle of CEQA law that the “substantial evidence” test is

applied to evaluate the lead agency's determinations. Here, the City has established that its adopted VMT methodology is supported by substantial evidence.

East Sacramento is also inapplicable. There, the court held that the City of Sacramento's threshold of significance based on "community values" reflected in the General Plan did not satisfy the CEQA requirement of substantial evidence. By contrast, in adopting its VMT methodology, the City carefully documented the studies and analysis supporting the VMT methodology and threshold of significance. As thoroughly explained in the EIR, RTC Response TR-2, and in the department's previous Appeal Response Letter, the San Francisco Planning Commission replaced automobile delay (vehicular level of service or LOS) with VMT criteria on March 3, 2016, pursuant to Resolution 19579, in compliance with California Senate Bill 743.

As explained on EIR pp. 4.C.34-4.C.35 and RTC pp. 4.17-4.18, the department relies on San Francisco Chained Activity Model Process ("SF-CHAMP") model runs prepared by the San Francisco County Transportation Authority to estimate VMT within different geographic locations (i.e., Traffic Analysis Zones, or "TAZ"s) throughout San Francisco. One rationale for using the SF-CHAMP maps to screen out projects, instead of a project-by-project detailed VMT analysis, is that most developments are not of a large enough scale and/or contain unique land uses to substantially alter the VMT estimates from SFCHAMP. As described on EIR p. 4.C.9, the existing average daily VMT per capita for the SF-CHAMP Traffic Analysis Zone in which the project site is located is 3.5, which is substantially less than the citywide average (7.9) and regional average (17.2) for the nine-county San Francisco Bay Area.

As noted by the court in *East Sacramento*, "CEQA grants agencies discretion to develop their own thresholds of significance (CEQA Guidelines, § 15064, subd. (d))." That discretion, however, is not unbounded, as the determination that the Project has no significant environmental impact must be supported by substantial evidence. (§ 21168.5)". *East Sacramento, supra*, 5 Cal.App.5th at 300 (citations omitted). As thoroughly discussed in the RTC and the EIR, substantial evidence supports the City's VMT methodology and threshold of significance. The cases Appellant cites simply have no bearing on this EIR or the VMT threshold of significance adopted by the City.

Concern 6: Appellant claims the EIR is inadequate because it failed to analyze wind impacts on bicyclists.

Response 6: The EIR correctly analyzed wind impacts, using established City methodology. Appellant has not demonstrated that the City's methodology is incorrect or not supported by substantial evidence in the record.

Appellant takes issue with the City's analysis of wind impacts. As discussed in the department's Response Letter, CEQA does not recommend the study of wind impacts in Appendix G. Rather, the City has elected to include such studies in its CEQA analyses. (See Admin. Code Section 31.10(a) [to analyze environmental impacts, the Planning department shall use the checklist from Appendix G of the CEQA Guidelines, and supplement with other environmental effects specific to the urban environment of San Francisco].) CEQA grants agencies discretion to develop their own thresholds of significance and an agency's choice of a significance threshold will be upheld if founded on substantial evidence. The Final EIR's use of a significance threshold consistent with established City standards is founded on substantial

evidence. The Appellant disagrees with the well-established methodology used in San Francisco EIRs to assess wind impacts, because it does not specifically study wind impacts on bicyclists. However, the Appellant does not offer an alternative methodology or evidence supporting a different methodology or threshold of significance, nor does the Appellant suggest that the studies relied upon by the City in support of Section 148 criteria are inaccurate or incorrect.

In response to similar comments on the Draft EIR regarding wind impacts on bicyclists, in preparing the Responses to Comments document, the Planning department inquired into how or whether other jurisdictions address the issue of wind impacts on bicyclists. As discussed on RTC p. 4.65, to date, there are no specific, widely accepted, industry standard criteria for the assessment of wind effects on bicyclists. There are, however, international criteria, known as the Lawson Criteria, used by government agencies in other parts of the world to establish a threshold wind speed at which cyclists would be expected to become destabilized. As noted in the department's previous Appeal Response Letter, the test points in the EIR's analysis are like those under a hypothetical analysis under the Lawson Criteria, except that the One Oak Street wind study also included test points in the crosswalks of the street. Overall, the Lawson Criteria are much less stringent than the City's Section 148 criteria. Consequently, the City's wind standard is far more protective of the public (including bicyclists) than the wind criterion employed elsewhere internationally.

Conclusion

The Planning Department conducted an in-depth and thorough analysis of the potential physical environmental effects of the proposed One Oak Street Project, consistent with CEQA, the CEQA Guidelines, and Chapter 31 of the San Francisco Administrative Code. Appellant has not demonstrated that the certified EIR is insufficient as an informational document, or that the Commission's findings and conclusions are unsupported by substantial evidence. The department conducted necessary studies and analyses, and provided the Commission with necessary information and documents in accordance with the department's environmental checklist and standard procedures, and pursuant to CEQA and the CEQA Guidelines.

Substantial evidence supports the Commission's findings and conclusions. For the reasons provided in this appeal response, the department believes that the certified EIR complies with the requirements of CEQA, the CEQA Guidelines, and Chapter 31 of the San Francisco Administrative Code, and provides an adequate, accurate, and objective analysis of the potential environmental impacts of the project. Therefore, the department respectfully recommends that the Board uphold the Commission's certification of the EIR and reject Appellant's appeal.

ATTACHMENTS:

Attachment A: BMT Fluid Mechanics, Letter, "One Oak Tower – Pedestrian Wind Microclimate," August 25, 2017

Attachment B: Prevision Design, Memo: "Effects of Tower Shift on Shading for One Oak Street Project." August 25, 2017

ATTACHMENT A
**BMT Fluid Mechanics, Letter, “One Oak Tower –
Pedestrian Wind Microclimate,” August 25, 2017**

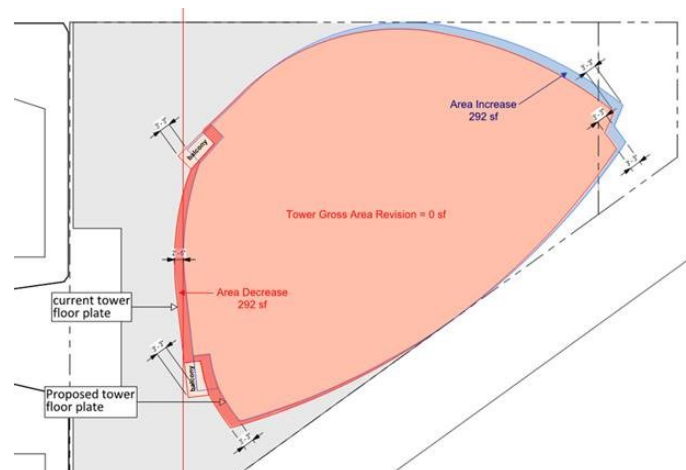
August 25th, 2017

Diane Livia
Environmental Planner
Planning Department, City and County of San Francisco
1650 Mission Street, Suite 400, San Francisco, CA 94103

One Oak Tower – Pedestrian Wind Microclimate

Dear Diane,

We are writing in connection with the recent notification received by BMT that confirms some minor changes to the position of the Tower. We understand that the key change, as indicated in the figure below, is the Tower shifts to the northeast by approximately 3'-3" along the Market Street property line axis, which results in an approximate 2'-6" shift to the east and 2'-1" shift to the north.



Wind tunnel testing was conducted comparing the original scenario and the shifted scenario in both project and cumulative surrounding conditions. The results are presented in the attached tables 1 and 2. The number and locations of wind hazard exceedances would be the same under the original and shifted scenarios for both the project conditions and the cumulative surrounding conditions.

Overall, from the perspective of the building's performance with respect to wind, the proposed changes to the position of the tower are minor and if made, the wind microclimate around the base of the tower would be materially the same. Therefore, the shifted tower design would not materially affect the results of the One Oak Wind Microclimate Study for the approved One Oak Project (Case No. 2009.0159E).

Yours sincerely,



Dr. Reed Cummings
Project Engineer
Wind Engineering



Max Lee CEng MIMechE
Project Manager
Wind Engineering

Table 1: Wind pedestrian comfort analysis results

Location No	Original One Oak Project in Existing Surrounds			Shifted One Oak Project in Existing Surrounds				Original One Oak Project in Cumulative Surrounds			Shifted One Oak Project in Cumulative Surrounds			
	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Original Project (mph)	Exceeds	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Original Project (mph)	Exceeds
1	23	52%	x	23	52%		x	21	49%	x	21	49%		x
2	17	34%	x	17	34%		x	16	29%	x	15	28%	-1	x
4	18	40%	x	18	40%		x	13	19%	x	13	19%		x
5	17	33%	x	16	32%	-1	x	13	20%	x	13	20%		x
6	16	32%	x	16	31%		x	18	41%	x	18	41%		x
7	10	6%		10	6%			11	9%		11	9%		
9	12	12%	x	11	10%	-1	x	13	18%	x	13	18%		x
10	11	9%		11	9%			10	7%		10	7%		
11	13	16%	x	13	16%		x	16	31%	x	16	31%		x
12	14	22%	x	14	23%		x	12	14%	x	12	14%		x
13	13	17%	x	13	17%		x	14	20%	x	14	20%		x
14	9	4%		9	4%			10	6%		10	7%		
15	12	15%	x	12	15%		x	11	10%	x	11	11%		x
16	14	21%	x	14	21%		x	12	15%	x	12	14%		x
17	8	2%		9	2%	+1		10	8%		10	8%		
18	16	32%	x	16	33%		x	12	13%	x	12	13%		x
19	12	13%	x	12	12%		x	13	19%	x	13	19%		x
20	9	5%		9	5%			11	10%		11	9%		
21	9	3%		9	3%			10	8%		11	8%	+1	
22	7	0%		8	2%	+1		9	3%		9	3%		
23	12	13%	x	12	13%		x	11	9%		11	9%		
24	9	4%		9	4%			11	10%	x	11	11%		x
25	15	25%	x	15	24%		x	13	20%	x	13	20%		x
26	10	6%		10	6%			11	11%	x	11	11%		x
27	15	25%	x	15	25%		x	17	34%	x	17	33%		x
28	15	29%	x	16	30%	+1	x	17	36%	x	17	35%		x
29	17	35%	x	17	34%		x	23	51%	x	23	51%		x
30	12	13%	x	12	13%		x	13	19%	x	13	20%		x
31	8	3%		8	3%			11	10%	x	11	10%		x
32	11	10%	x	11	10%		x	16	30%	x	16	31%		x
33	13	18%	x	13	19%		x	19	38%	x	19	38%		x
40	16	33%	x	16	32%		x	14	25%	x	14	26%		x

Table 1: Wind pedestrian comfort analysis results (con't)

Location No	Original One Oak Project in Existing Surrounds			Shifted One Oak Project in Existing Surrounds				Original One Oak Project in Cumulative Surrounds			Shifted One Oak Project in Cumulative Surrounds			
	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Original Project (mph)	Exceeds	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed exceeded 10% of time (mph)	Percentage of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Original Project (mph)	Exceeds
43	15	29%	x	15	27%		x	14	24%	x	14	24%		x
50	14	25%	x	14	25%		x	14	23%	x	14	23%		x
52	13	20%	x	13	20%		x	12	14%	x	12	14%		x
53	14	25%	x	14	24%		x	14	25%	x	15	26%	+1	x
54	15	30%	x	15	29%		x	19	42%	x	19	41%		x
56	19	43%	x	18	42%	-1	x	14	22%	x	14	21%		x
57	16	31%	x	16	30%		x	14	24%	x	14	24%		x
58	17	35%	x	17	35%		x	20	46%	x	20	45%		x
61	15	26%	x	15	27%		x	14	24%	x	14	25%		x
70	11	11%	x	11	11%		x	8	1%		8	1%		
71	13	17%	x	13	17%		x	12	12%	x	12	12%		x
72	15	27%	x	15	26%		x	12	15%	x	13	16%	+1	x
85	15	28%	x	15	28%		x	13	17%	x	12	16%	-1	x
92	14	20%	x	14	20%		x	22	53%	x	22	53%		x
97	15	24%	x	15	24%		x	16	31%	x	16	30%		x
101	11	11%	x	11	11%		x	12	12%	x	12	13%		x
105	23	55%	x	23	55%		x	22	52%	x	22	51%		x
111	15	27%	x	16	31%	+1	x	16	30%	x	16	30%		x
112	18	37%	x	18	38%		x	16	33%	x	16	32%		x
113	15	28%	x	15	28%		x	14	25%	x	15	26%	+1	x
114	13	17%	x	13	16%		x	10	7%		10	7%		
115	10	5%		10	5%			9	5%		9	5%		
116	10	5%		10	5%			11	12%	x	11	11%		x
117	12	15%	x	12	14%		x	24	56%	x	24	56%		x
118	11	10%	x	12	14%	+1	x	12	16%	x	13	17%	+1	x
	Average	Average	Sum	Average	Average	Change	Sum	Average	Average	Sum	Average	Average	Change	Sum
	13.5	20.8%	45	13.6	20.7%	+0.1	45	13.9	22.2%	46	14.0	22.1%	+0.1	46

Table 2: Wind hazard analysis results

Location No	Original One Oak Project in Existing Surrounds			Shifted One Oak Project in Existing Surrounds				Original One Oak Project in Cumulative Surrounds			Shifted One Oak Project in Cumulative Surrounds			
	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Original Project	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Original Project	Exceeds
1	46	27	x	46	27		x	46	20	x	46	20		x
2	34	0		34	0			34	0		34	0		
4	39	3	x	39	3		x	25	0		26	0		
5	38	1	x	37	1		x	27	0		28	0		
6	31	0		31	0			36	1	x	36	1		x
7	17	0		16	0			16	0		16	0		
9	21	0		21	0			24	0		23	0		
10	22	0		22	0			22	0		21	0		
11	26	0		26	0			33	0		33	0		
12	26	0		26	0			26	0		25	0		
13	22	0		22	0			29	0		30	0		
14	16	0		16	0			20	0		19	0		
15	22	0		23	0			18	0		18	0		
16	30	0		30	0			26	0		25	0		
17	14	0		13	0			20	0		20	0		
18	28	0		28	0			16	0		16	0		
19	25	0		25	0			20	0		20	0		
20	21	0		21	0			17	0		17	0		
21	16	0		16	0			16	0		16	0		
22	13	0		12	0			13	0		13	0		
23	23	0		23	0			16	0		16	0		
24	14	0		14	0			26	0		25	0		
25	33	0		33	0			21	0		21	0		
26	20	0		19	0			21	0		21	0		
27	29	0		28	0			35	0		35	0		
28	24	0		25	0			34	0		34	0		
29	33	0		32	0			45	24	x	45	24		x
30	24	0		24	0			26	0		26	0		
31	19	0		18	0			19	0		18	0		
32	20	0		20	0			31	0		30	0		
33	25	0		26	0			47	22	x	47	22		x
40	33	0		33	0			26	0		26	0		

Table 2: Wind hazard analysis results (con't)

Location No	Original One Oak Project in Existing Surrounds			Shifted One Oak Project in Existing Surrounds				Original One Oak Project in Cumulative Surrounds			Shifted One Oak Project in Cumulative Surrounds			
	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Original Project	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Original Project	Exceeds
43	31	0		30	0			31	0		31	0		
50	29	0		29	0			31	0		31	0		
52	27	0		27	0			27	0		27	0		
53	25	0		25	0			29	0		29	0		
54	24	0		24	0			40	4	x	40	4		x
56	35	0		36	0			31	0		31	0		
57	38	1	x	38	1		x	34	0		33	0		
58	34	0		34	0			45	14	x	45	14		x
61	28	0		28	0			26	0		26	0		
70	20	0		20	0			12	0		12	0		
71	26	0		26	0			28	0		26	0		
72	33	0		33	0			27	0		29	0		
85	32	0		32	0			24	0		24	0		
92	32	0		31	0			51	45	x	51	45		x
97	37	1	x	37	1		x	39	2	x	39	2		x
101	20	0		20	0			21	0		22	0		
105	50	41	x	50	41		x	49	32	x	49	32		x
111	32	0		32	0			33	0		33	0		
112	41	6	x	42	6		x	35	0		35	0		
113	30	0		30	0			28	0		28	0		
114	24	0		24	0			18	0		18	0		
115	18	0		18	0			13	0		13	0		
116	20	0		20	0			15	0		15	0		
117	19	0		19	0			48	42	x	48	42		x
118	22	0		22	0			26	0		26	0		
	Average	Sum	Sum	Average	Sum	Sum	Sum	Average	Sum	Sum	Average	Sum	Sum	Sum
	26.9	80	7	26.8	80	0	7	27.9	206	10	27.8	206	0	10

ATTACHMENT B
Prevision Design, Memo: “Effects of Tower Shift on
Shading for One Oak Street Project.” August 25, 2017



Ms. Diane Livia, Environmental Planner
Planning Department, City and County of San Francisco
1650 Mission Street, Suite 400
San Francisco, CA 94103

August 25, 2017

MEMO: Effects of Tower Shift Alternative on Shading cast by One Oak Street Project

Dear Ms. Livia:

Per your request, PreVision Design has prepared a comparative study quantifying the shading effects that would be generated by shifting the One Oak Project's 9,000 sf tower floorplate to the northeast by approximately 3'-3" along the Market Street property line axis (an approximate 2'-6" shift to the east and 2'-1" shift to the north, see diagram on page 3) relative to the project as analyzed. This memo compares the quantitative and timing effects such this Tower Shift Alternative would have on PreVision Design's previous study of project-generated shading on Patricia's Green, the Page & Laguna Mini Park, and the 11th/Natoma Park site, originally published on 5/30/2017.

Notes on Methodology:

1. Typically, the percentage of annual shadow is expressed to an accuracy of two decimal places (0.00%), however the changes in shading resulting from this tower shift are so small they require an additional decimal point of accuracy (0.000%) to demonstrate any change in percentage value.
2. Due to the graphical scale of the shadow diagrams relative to the small shift in size and location of new shadows, the difference between the graphics prepared for the project as previously analyzed and the Tower Shift Alternative's shading would not be easily perceptible. For this reason, updated shadow diagrams for the Tower Shift Alternative have not been generated.

Patricia's Green

On an annual basis, the Tower Shift Alternative would result in 1,419 sfh of *additional* shadow relative to the project as currently proposed, equal to an increase of 0.003% of the 66,622,661 sfh of Theoretical Annual Available Sunlight (TAAS) for Patricia's Green. The change would not alter the number, range of dates, or date of maximum project-generated shading, nor would the maximum and average daily duration of shading be altered¹. A detailed comparison of shading effects of the project as proposed vs. the Tower Shift Alternative on Patricia's Green is included on Page 4.

Page & Laguna Mini Park

On an annual basis, the Tower Shift Alternative would result in 105 sfh of *additional* shadow relative to the project as currently proposed, equal to an increase of 0.001% of the 24,402,522 sfh of TAAS for Page & Laguna Mini Park. The change would not alter the number, range of dates, or date of maximum project-generated shading, nor would the maximum and average daily duration of shading be altered. A detailed comparison of shading effects of the project as proposed vs. the Tower Shift Alternative on the Page & Laguna Mini Park is included on Page 5.

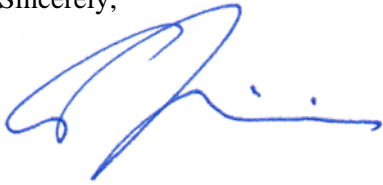
¹ Per city analysis standards, the study reflects samples taken every seven days and at 15 minute intervals on those dates, therefore it is possible that there exists some additional variance between the Project and the Tower Shift Alternative that falls within these interval tolerances.

11th/Natoma Park Site

On an annual basis, the Tower Shift Alternative would result in a 1,955 sfh *reduction* in shadow relative to the project as currently proposed, equal to a decrease of 0.003% of the 72,829,287 sfh of TAAS for the 11th/Natoma Park site. The change would also reduce the number of days affected by 14 days, alter the range of dates from Jun 9 - Jul 5 to Jun 16 - Jun 28, and reduce the average and maximum duration of shading by 1 minute. The date of maximum project-generated shading would remain the same, however the largest shadow on that date would be less than half as large (218 sf vs. 485 sf). A detailed comparison of shading effects of the project as proposed vs. the Tower Shift Alternative on the 11th/Natoma Park site is included on Page 6.

Please do not hesitate to contact me if there are any questions regarding this update memo, or if additional analysis is required.

Sincerely,



Adam Phillips
Principal, PreVision Design

cc: Rick Cooper

Tower Shift Diagram



TOWER SHIFT DIAGRAM

Patricia's Green

THEORETICAL ANNUAL AVAILABLE SUNLIGHT (TAAS)	PATRICIA'S GREEN
Area of Patricia's Green	0.41 acres (17,903 sf)
Hours of annual available sunlight	3721.4 hrs
TAAS for Patricia's Green	66,622,661 sfh

EXISTING (CURRENT) LEVELS OF SHADOW	PATRICIA'S GREEN
Existing annual total shading on park (sfh)	12,034,236 sfh
Existing shading as percentage of TAAS	18.063%

NEW SHADOW CAST BY THE PROPOSED ONE OAK STREET PROJECT	PATRICIA'S GREEN
Additional annual shading on Patricia's Green from Project	148,200 sfh
Additional annual shading from Project as percentage of TAAS	0.222%
Combined total annual shading existing + Project (sfh)	12,182,435 sfh
Combined total annual shading from existing + Project as percentage of TAAS	18.285%
Number of days when new shading from Project would occur	Approx. 96 days annually
Dates when new shadow from Project would be cast on Patricia's Green	Approx. 2/17 - 4/5 & 9/8 - 10/25
Annual range in duration of new Project shadow	Zero to approx. 47 min
Range in area of new Project shadow (sf)	Zero to 9,604 sf
Average daily duration of new Project shadow (when present)	Approx. 28 min.

MAXIMUM NEW SHADING BY THE PROPOSED PROJECT	PATRICIA'S GREEN
Dates of maximum new shading from proposed project (max sfh)	Mar 8 & Oct 4
Total new shading on date(s) of maximum shading (sfh)	3,561.35 sfh
Percentage new shadow on date(s) of maximum shading	2.066%
Longest duration of new shading (Date of maximum shading duration)	Approx. 39 min (Sep 20 & Mar 22)
Largest new shadow area at any time annually (Date & Time)	9,604.15 sf (Oct 4/Mar 8 at 8:30 AM)
Percentage of Patricia's Green covered by largest new shadow	53.647%

NEW SHADOW CAST BY THE PROPOSED TOWER SHIFT ALTERNATIVE	PATRICIA'S GREEN
Additional annual shading from Tower Shift Alternative only (sfh)	149,619 sfh
Additional annual shading from Tower Shift Alternative only as percentage of TAAS	0.225%
Combined total annual shading Existing + Tower Shift Alternative (sfh)	12,183,855 sfh
Combined shading from Existing + Tower Shift Alternative as percentage of TAAS	18.288%
Number of days when new shading from Tower Shift Alternative would occur	96 days annually
Dates when new shading from Tower Shift Alternative would occur	2/17 - 4/5 & 9/8 - 10/25
Annual range in duration of new Tower Shift Alternative shadow	Zero to approx. 47 min
Range in area of Tower Shift Alternative new shadows (sf)	Zero to 9,490 sf
Average daily duration of new Tower Shift Alternative shadow (when present)	Approx. 28 min.

PROPOSED TOWER SHIFT ALTERNATIVE MAX SHADING DAY(S)	PATRICIA'S GREEN
Dates of maximum Tower Shift Alternative new shading (max sfh)	Mar 8 & Oct 4
Total new shading on date(s) of maximum shading (sfh)	3,598.21 sfh
Percentage new shading on date(s) of maximum shading	2.087%
Longest duration of new shading (date of max shading duration)	Approx. 39 min (Sep 20 & Mar 22)
Largest new shadow area at any time annually (date & time)	9,490.21 sf (Oct 4/Mar 8 at 8:30 AM)
Percentage of Patricia's Green covered by largest new shadow	53.010%

Page & Laguna Mini Park

THEORETICAL ANNUAL AVAILABLE SUNLIGHT (TAAS)	PAGE AND LAGUNA MINI PARK
Area of Page and Laguna Mini Park	0.15 acres (6,557 sf)
Hours of annual available sunlight	3721.4 hrs
TAAS for Page and Laguna Mini Park	24,402,522 sfh

EXISTING (CURRENT) LEVELS OF SHADOW	PAGE AND LAGUNA MINI PARK
Existing annual total shading on park (sfh)	12,098,693 sfh
Existing shading as percentage of TAAS	49.580%

NEW SHADOW CAST BY THE PROPOSED ONE OAK STREET PROJECT	PAGE AND LAGUNA MINI PARK
Additional annual shading on Page and Laguna Mini Park from Project	9,576 sfh
Additional annual shading from Project as percentage of TAAS	0.039%
Combined total annual shading existing + Project (sfh)	12,108,269 sfh
Combined total annual shading from existing + Project as percentage of TAAS	49.619%
Number of days when new shading from Project would occur	Approx. 69 days annually
Dates when new shadow from Project would be cast on Page and Laguna Mini Park	Approx. May 19 - Jul 26
Annual range in duration of new Project shadow	Zero to approx. 28 min
Range in area of new Project shadow (sf)	Zero to 650 sf
Average daily duration of new Project shadow (when present)	Approx. 15 min.
MAXIMUM NEW SHADING BY THE PROPOSED PROJECT	PAGE AND LAGUNA MINI PARK
Dates of maximum new shading from proposed project (max sfh)	June 21
Total new shading on date(s) of maximum shading (sfh)	190.51 sfh
Percentage new shadow on date(s) of maximum shading	0.227%
Longest duration of new shading (Date of maximum shading duration)	Approx. 22 min (June 21)
Largest new shadow area at any time annually (Date & Time)	649.56 sf (Jul 5/ Jun 7 at 6:52 AM)
Percentage of Page and Laguna Mini Park covered by largest new shadow	9.906%

NEW SHADOW CAST BY THE PROPOSED TOWER SHIFT ALTERNATIVE	PAGE AND LAGUNA MINI PARK
Additional annual shading from Tower Shift Alternative only (sfh)	9,681 sfh
Additional annual shading from Tower Shift Alternative only as percentage of TAAS	0.040%
Combined total annual shading Existing + Tower Shift Alternative (sfh)	12,108,374 sfh
Combined shading from Existing + Tower Shift Alternative as percentage of TAAS	49.620%
Number of days when new shading from Tower Shift Alternative would occur	69 days annually
Dates when new shading from Tower Shift Alternative would occur	May 19 - Jul 26
Annual range in duration of new Tower Shift Alternative shadow	Zero to approx. 28 min
Range in area of Tower Shift Alternative new shadows (sf)	Zero to 779 sf
Average daily duration of new Tower Shift Alternative shadow (when present)	Approx. 15 min.
PROPOSED TOWER SHIFT ALTERNATIVE MAX SHADING DAY(S)	PAGE AND LAGUNA MINI PARK
Dates of maximum Tower Shift Alternative new shading (max sfh)	June 21
Total new shading on date(s) of maximum shading (sfh)	190.52 sfh
Percentage new shading on date(s) of maximum shading	0.227%
Longest duration of new shading (date of max shading duration)	Approx. 22 min (June 21)
Largest new shadow area at any time annually (date & time)	779.03 sf (Jul 5/ Jun 7 at 6:52 AM)
Percentage of Page and Laguna Mini Park covered by largest new shadow	11.880%

11th/Natoma Park Site

THEORETICAL ANNUAL AVAILABLE SUNLIGHT (TAAS)	11TH / NATOMA PARK SITE
Area of 11th / Natoma Park Site	0.45 acres (19,570 sf)
Hours of annual available sunlight	3721.4 hrs
TAAS for 11th / Natoma Park Site	72,829,287 sfh

EXISTING (CURRENT) LEVELS OF SHADOW	11TH / NATOMA PARK SITE
Existing annual total shading on park (sfh)	14,449,512 sfh
Existing shading as percentage of TAAS	19.840%

NEW SHADOW CAST BY THE PROPOSED ONE OAK STREET PROJECT	11TH / NATOMA PARK SITE
Additional annual shading on 11th / Natoma Park Site from Project	2,838 sfh
Additional annual shading from Project as percentage of TAAS	0.004%
Combined total annual shading existing + Project (sfh)	14,452,350 sfh
Combined total annual shading from existing + Project as percentage of TAAS	19.844%
Number of days when new shading from Project would occur	Approx. 27 days annually
Dates when new shadow from Project would be cast on 11th / Natoma Park Site	Approx. Jun 9 - Jul 5
Annual range in duration of new Project shadow	Zero to approx. 36 min
Range in area of new Project shadow (sf)	Zero to 485 sf
Average daily duration of new Project shadow (when present)	Approx. 18 min.
MAXIMUM NEW SHADING BY THE PROPOSED PROJECT	11TH / NATOMA PARK SITE
Dates of maximum new shading from proposed project (max sfh)	June 21
Total new shading on date(s) of maximum shading (sfh)	145.65 sfh
Percentage new shadow on date(s) of maximum shading	0.058%
Longest duration of new shading (Date of maximum shading duration)	Approx. 19 min (Jun 28 & Jun 14)
Largest new shadow area at any time annually (Date & Time)	485.49 sf (June 21 at 7:15 PM)
Percentage of 11th / Natoma Park Site covered by largest new shadow	2.481%

NEW SHADOW CAST BY THE PROPOSED TOWER SHIFT ALTERNATIVE	11TH / NATOMA PARK SITE
Additional annual shading from Tower Shift Alternative only (sfh)	883 sfh
Additional annual shading from Tower Shift Alternative only as percentage of TAAS	0.001%
Combined total annual shading Existing + Tower Shift Alternative (sfh)	14,450,394 sfh
Combined shading from Existing + Tower Shift Alternative as percentage of TAAS	19.841%
Number of days when new shading from Tower Shift Alternative would occur	13 days annually
Dates when new shading from Tower Shift Alternative would occur	Jun 16 - Jun 28
Annual range in duration of new Tower Shift Alternative shadow	Zero to approx. 35 min
Range in area of Tower Shift Alternative new shadows (sf)	Zero to 218 sf
Average daily duration of new Tower Shift Alternative shadow (when present)	Approx. 18 min.
PROPOSED TOWER SHIFT ALTERNATIVE MAX SHADING DAY(S)	11TH / NATOMA PARK SITE
Dates of maximum Tower Shift Alternative new shading (max sfh)	June 21
Total new shading on date(s) of maximum shading (sfh)	65.38 sfh
Percentage new shading on date(s) of maximum shading	0.026%
Longest duration of new shading (date of max shading duration)	Approx. 19 min (Jun 28 & Jun 14)
Largest new shadow area at any time annually (date & time)	217.94 sf (June 21 at 7:15 PM)
Percentage of 11th / Natoma Park Site covered by largest new shadow	1.114%