



Council Agenda Report

To: Mayor Grisanti and the Honorable Members of the City Council

Prepared by: Tyler Eaton, Associate Planner

Reviewed By: Richard Mollica, Planning Director

Approved by: Steve McClary, City Manager

Date prepared: July 21, 2022

Meeting date: August 8, 2022

Subject: Zoning Text Amendment No. 22-001 – Amendments to the Malibu Municipal Code Dark Sky Ordinance to Update Light Trespass for Service Stations

RECOMMENDED ACTION: 1) After the City Attorney reads the title of the ordinance, introduce on first reading Ordinance No. 502 (Exhibit 1) determining the amendment is exempt from the California Environmental Quality Act (CEQA), and approving Zoning Text Amendment (ZTA) No. 22-001 amending Malibu Municipal Code (MMC) Section 17.41.050(G) of Chapter 17.41 (Malibu Dark Sky) regarding allowable light trespass from service station properties onto the public right-of-way; and 2) Direct staff to schedule second reading and adoption of Ordinance No. 502 for the August 22, 2022 Regular City Council meeting.

WORK PLAN: This item was included as Item #5.I. in the Adopted Work Plan for Fiscal Year 2022-2023.

FISCAL IMPACT: Funding for this amendment is included in the Adopted Budget for Fiscal Year 2022-2023 in Account No. 101-2004-5100-00 Building Safety Division Professional Services).

DISCUSSION: On March 28, 2022, the City Council initiated an amendment to the Dark Sky Ordinance (DSO) in order to reduce the light trespass requirement for commercial properties abutting the public right-of-way. Staff was directed to work with the City's Dark Sky lighting consultant, Mr. James Benya, to develop the language of the amendment. In coordination with Mr. Benya and the Planning Commission, staff developed language that

will provide a path to allow service stations to comply with the DSO while not diminishing the goals of the ordinance. The DSO is contained in the MMC and therefore, no changes are required to the City's Local Coastal Program.

Background

The City's DSO is contained in MMC Chapter 17.41 and became effective on October 15, 2018. On January 13, 2022, the City Council adopted Ordinance No. 496 amending the DSO compliance deadlines for all zoning districts¹, except for parcels with service stations. The compliance deadlines are as follows:

1. Outdoor lighting at service station properties shall comply by October 15, 2019.
2. Outdoor lighting in commercial zones, including, but not limited to, CN, CC, CV, CG, RVP, and RD zoning districts shall comply by October 15, 2022.
3. Outdoor lighting in all remaining residential zones, including, but not limited to, SF, MF, MFBF, RR, PD, MH, and I zoning districts shall comply by October 15, 2022.

Since 2019, staff has been trying to get service stations to comply with the DSO requirements. At the City Council's direction, staff brought on Mr. Benya in 2021 to serve as the City's lighting engineer consultant since the service stations were struggling to comply with the current strict trespass requirements. To date, only one of six service stations in the City appears to have demonstrated full compliance (Chevron located at 23670 Pacific Coast Highway). The Chevron station has installed its lights and has been partially inspected, but a final inspection with the City's lighting consultant is required to verify compliance with the light trespass requirements. The goal is to have the consultant conduct a final inspection for all six service stations in one night, and at the same time train staff to perform this type of inspection in the future.

The remaining five service stations have all submitted applications to comply with the DSO. All five have shown they can comply with all aspects of the DSO, except for the light trespass requirement along property lines that are adjacent to the public right-of-way. Mr. Benya ran many test models and studied numerous redesign options to try to find a path to comply, but determined the only way to do so (without granting individual deviations pursuant to MMC Section 17.41.70) is to amend the DSO to extend the light trespass boundary line from the property boundary to areas within the public right-of-way. This will not conflict with the intent of the DSO as the public rights-of-way are already lit with streetlights that have a higher luminosity than the anticipated light trespass from the adjacent properties. To the naked eye, the light trespass, even with the proposed changes to the light trespass boundary line, will be generally unnoticeable. As the DSO currently exists, the remaining five service stations would require deviations in order to be approved.

¹ To view the zoning district acronym guide, visit https://library.qcode.us/lib/malibu_ca/pub/municipal_code/item/title_17-chapter_17_06-17_06_010

City Council Initiated Amendment

At its February 28, 2022 meeting, the City Council directed staff to prepare an amendment for the DSO's trespass requirements with respect to commercial properties, including service stations and their property lines abutting the public right-of-way. At the May 16, 2022 Planning Commission meeting, staff, in coordination with Mr. Benya, recommended an amendment to the DSO which included a trespass boundary line towards the center of the right-of-way. The recommendation was offered to all commercial properties as directed by Council.

Planning Commission Recommendations

Recommended Field Trip

While the Planning Commission recommended approval of the ordinance with modifications, they also recommended, that prior to adopting a revised DSO, that the City Council host a joint in-the-field meeting with the Planning Commission to visit one of the service stations with Mr. Benya. The purpose of the joint meeting would be for the City Council, Planning Commission, and members of the public to observe the trespass issues with actual field measurements and analysis. Adopting this recommendation would require the consultant to come to Malibu at a cost of approximately \$3,000. Though staff's recommendation is to adopt the proposed DSO on August 8, as directed by the Council on February 22, 2022, alternatively, the City Council may hold a public hearing on August 8 and direct staff to schedule the in-the-field meeting, followed by a second public hearing to finalize the proposed DSO.

Recommended Amendment

The Planning Commission's proposed language is primarily in line with staff's recommendation with one noticeable distinction. The Planning Commission recommended that the trespass be limited to the paved portion of the road. Mr. Benya and staff recommends that the trespass line be measured at 25 feet from the property line rather than the edge of the paved road. Setting the line at this location will allow the service stations to design a compliant plan without requiring a deviation. A new Section 5 is now proposed by Mr. Benya to ensure that trespass is measured consistently during inspections. A limit at 25 feet will also avoid any confusion about where the edge of pavement lies given that the edge of pavement often erodes and moves, and it would be different for every service station; thus, resulting in unpredictable and inequitable results. A costly survey beyond the parcel's boundaries would also be required for every application to identify the edge of pavement.

Additionally, the Planning Commission recommended that the new trespass allowance should only be afforded to the service stations. The Planning Commission only recommended changes for subsections 3 and 4 of staff's recommendation. The Planning Commission's recommendation is shown in regular type font below and the language proposed by staff and Mr. Benya from the Planning Commission meeting is shown in underline.

3. From any service station onto a public right-of-way, the maximum allowable light trespass shall be 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the edge of the paved road closest to the subject property.
4. From all other properties other than the service stations onto the adjacent public right-of-way, the maximum allowable light trespass must not exceed 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the property line.

As mentioned previously, the objective of this amendment is to allow the service stations to achieve compliance without obtaining a deviation, as directed by the Council in February. The Planning Commission's recommendation may result in some service stations still requiring deviations pursuant to Mr. Benya. However, staff is recommending allowing the 25-foot trespass limit to only service stations which is consistent with Planning Commission's recommendation.

Staff Recommended Amendment

Mr. Benya reviewed the Planning Commission's recommendation and was concerned that the Planning Commission's proposed trespass allowance would not achieve the objective of this amendment. It is possible that some of the service stations would still require deviations if the Planning Commission's trespass line was adopted. Staff's proposed amendment to the City Council was crafted with guidance from Mr. Benya, who determined that the proposed changes would not make a measurable difference on what is seen if adopted. Mr. Benya came to this determination by conducting additional tests through his computer modeling software to establish the minimum distance needed for trespass from the subject properties into the right-of-way in order to achieve the objective (Figure 1). The results of the study concluded that if the lights from the canopy were permitted to trespass 25 feet from the property line abutting the public right-of-way, all service stations should be able to comply (Exhibit 3). The goal is not to allow all service stations to trespass to the 25-foot limit but to have a standard that allows them to comply without a deviation, while not negatively impacting the Dark Skies policies.

Approximately 25 feet from the property line (staff recommendation)

Pacific Coast Highway

Westbound right lane

Westbound left lane

Center/left turn lane

Eastbound left lane

Eastbound right lane

Curb/Drop Off/Parking

Sidewalk

Site Property Line

FX-10

FX-11

FX-12

FX-13

FX-14

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Station Store Structure 12' tall

Pump Equipment

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FX-3

FX-4

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Sheds

Adjacent Property

Shared street entrance

Shared lighting

Site Property Line

Wall 6' tall

Site Property Line

Wall 12' tall

FX-3 typical 18' tall

Beachfront Properties

The red lines represent the 0.25 foot-candle (fc) isoline
The green lines represent the 1.0 fc isoline
The purple (magenta) line represents the 2.5 fc isoline
The orange line represents approximately 25 feet from the property line

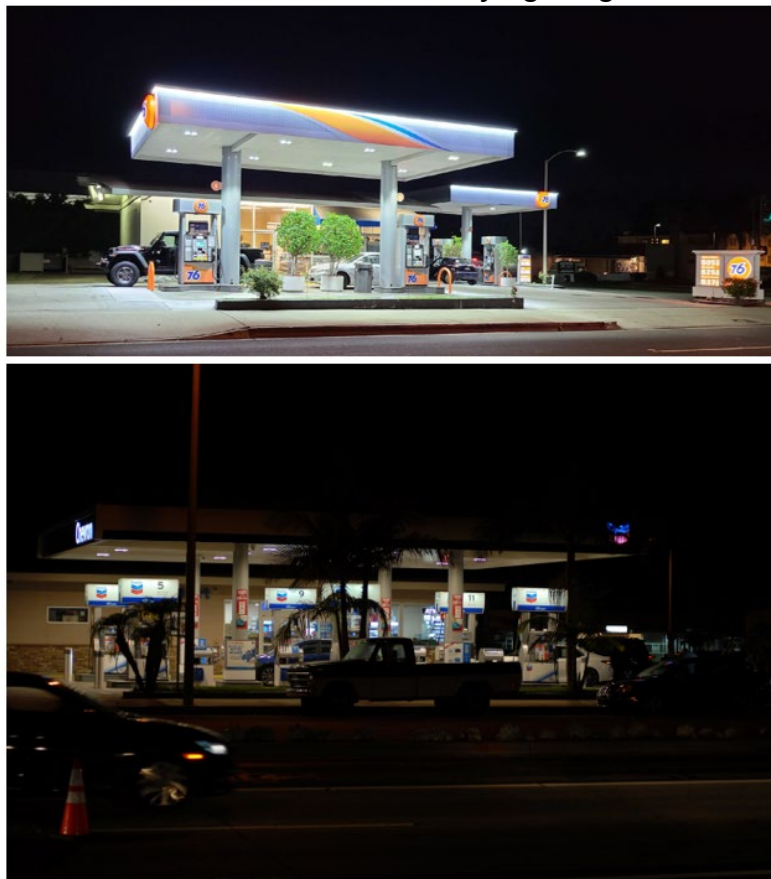
The 25-foot recommendation is slightly further into the public right-of-way than the edge of the paved road, which was the suggestion of the Planning Commission. Based on the recommendations from the Planning Commission, Mr. Benya revised the recommendation as follows, with changes from the original text shown in ~~striketrough~~/underline.

1. From any property onto a residential property, ESHA, ESHA buffer, Pacific Ocean, beaches, and public viewing areas, the maximum allowable light trespass shall be 0.1 foot-candles (1.076 lux) measured facing the light source(s) in any plane and at any height or place on the affected property, ESHA, ESHA buffer, Pacific Ocean, beaches or public viewing area.
2. From any property onto a non-residential property other than the public right-of-way, ESHA, ESHA buffer, Pacific Ocean, beaches, and public viewing areas, the maximum allowable light trespass shall be 0.25 foot-candles (2.69 lux) measured in any plane and at any height or place on the affected property facing the light source(s).
3. From any service station onto a public right-of-way, the maximum allowable light trespass shall be 0.25 foot-candles (2.69 lux), measured in the horizontal plane at any point into the public right-of-way, 25 feet from the property line after the end of nautical twilight.
4. From all other properties other than the service stations onto the adjacent public right-of-way, the maximum allowable light trespass must not exceed 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the property line.
5. Measurements
6. Measurements shall be taken with an illuminance light meter accurate to 1/100th of a footcandle and having been calibrated to National Institute of Standards and Technology (NIST) standard within two years. Horizontal plane measurements shall be made according to the meter manufacturer's instructions. Signs must be turned off for said measurements.
7. Measurements shall be made wherein the lighting from the service station is turned on and off and the difference between street lighting and street lighting plus canopy lighting shall determine the trespass from canopy lighting.

Effectiveness of Malibu's DSO

On May 16, 2022, during the Planning Commission public hearing, staff received correspondence regarding a service station in Pasadena that was used as a model for a Dark Sky-friendly service station. The correspondent cited the service station as using “dramatically-pleasing elimination of light source glare”. Mr. Benya examined this service station and determined that the example given was not the best for a Lighting Zone 1 (LZ1) service station, which is what Malibu's DSO was intended to be. When compared to photographs of the one Malibu service station that has installed their Dark Sky lighting (Chevron located at 23670 Pacific Coast Highway), the Pasadena example appears much brighter to the human eye than what is required for Malibu's service stations under the DSO (Figure 2). Malibu's DSO produces a much warmer light, restricts light to the subject property to the maximum extent feasible, and ultimately creates less light pollution. The City's consultant confirmed that Malibu's DSO was one of the most restrictive he has been involved in and therefore, one of the best examples of a DSO that he has seen.

Figure 2: Pasadena service station example (top) vs. Malibu (bottom) with installed Dark Sky lighting²



² Pasadena Unocal 76 service station photo within public correspondence (Top) (May 16, 2022); Malibu Chevron service station staff photo (Bottom) (November 2021).

ENVIRONMENTAL REVIEW: The Planning Director has analyzed the proposed amendment. CEQA applies only to projects which have the potential for causing a significant effect on the environment. Pursuant to CEQA Guidelines Section 15308, actions taken by regulatory agencies, as authorized by State or local ordinance, which assure the maintenance, restoration, enhancement, or protection of the environment are exempt from CEQA. The DSO, inclusive of the proposed amendment, enhances the environment by implementing an regulations that reduces the City's light pollution.

CORRESPONDENCE: On May 16, 2022, staff received comments from Mr. Ryan Embree. A response to his concern is addressed in the *Effectiveness of Malibu's DSO* section above. Additionally, Chair Kraig Hill of the Planning Commission submitted additional comments regarding the proposed amendment and asked that particular attention should be placed on *The Enforcement Process* starting on page 4 of his letter. The complete correspondences are provided as Exhibit 4.

PUBLIC NOTICE: On July 14, 2022, a Notice of Public Hearing was published in a newspaper of general circulation within the City of Malibu and mailed to all interested parties (Exhibit 5).

SUMMARY: Staff recommends that the City Council introduce on first reading Ordinance No. 502 (Exhibit 1) approving ZTA No. 22-001 to update the DSO's light trespass requirements for service station properties.

EXHIBITS:

1. Ordinance No. 502
2. Planning Commission Resolution No. 22-39
3. James Benya Findings
4. Correspondence
5. Notice of Public Hearing

ORDINANCE NO. 502

AN ORDINANCE OF THE CITY OF MALIBU DETERMINING THE AMENDMENTS ARE EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, AND APPROVING ZONING TEXT AMENDMENT NO. 22-001 AMENDING MALIBU MUNICIPAL CODE SECTION 17.41.050(G) OF CHAPTER 17.41 (MALIBU DARK SKY) REGARDING ALLOWABLE LIGHT TRESPASS FROM SERVICE STATION PROPERTIES ONTO THE PUBLIC RIGHT-OF-WAY

The City Council of the City of Malibu does ordain as follows:

SECTION 1. Recitals.

A. On March 28, 2022, the City Council adopted Resolution No. 22-08: 1) initiating a Zoning Text Amendment (ZTA) to amend Malibu Municipal Code Section 17.41.050(G) of Chapter 17.41 (Malibu Dark Sky) regarding allowable light trespass from commercial properties onto the public right-of-way; and 2) directing the Planning Commission to schedule a public hearing regarding the ZTA and provide a recommendation to the Council whether to approve, modify, or reject the amendment.

B. On April 21, 2022, a Notice of Planning Commission Public Hearing was published in a newspaper of general circulation within the City of Malibu.

C. On May 16, 2022, the Planning Commission held a duly noticed public hearing on the subject ZTA, reviewed and considered the agenda report, reviewed and considered written reports, public testimony, and other information on the record and adopted Planning Commission Resolution No. 22-39 recommending the City Council adopt the proposed ZTA, as amended, and recommended the City Council consider the following recommendations: 1) that the light trespass only be allowed for gas station properties; 2) that the new trespass line be the edge of the paved road nearest the subject parcel; and 3) that the City Council and Planning Commission conduct a field trip with the City's Dark Sky consultant to discuss the trespass issues.

D. On July 14, 2022, a Notice of City Council Public Hearing was published in a newspaper of general circulation within the City of Malibu indicating that the City Council would hold public hearing to consider the proposed amendment.

SECTION 2. Environmental Review.

This Ordinance was assessed in accordance with the authority and criteria contained in the California Environmental Quality Act (CEQA), the State CEQA Guidelines (the Guidelines), and the environmental regulations of the City. The City Council hereby finds that this ordinance is not subject to CEQA because the adoption of this ordinance is consistent with to Section 15308 of Title 14 of the California Code of Regulations, this Ordinance is exempt from the requirements of CEQA because it is an action taken by a regulatory agency, as authorized by state or local ordinance, which assures the maintenance, restoration, enhancement, or protection of the environment.

SECTION 3. Findings for Malibu Municipal Code Amendment.

Pursuant to MMC Section 17.74.040, the City Council hereby makes the following findings:

A. The subject zoning text amendment is consistent with the objectives, policies, general land uses and programs specified in the General Plan and is designed to facilitate compliance with Ordinance No. 434 which was adopted to protect and promote public health, safety, welfare, quality of life and the ability to view the night sky in alignment with the City's goals of preserving coastal resources and maintaining its unique rural character.

B. The City Council held a public hearing, reviewed the subject zoning text amendment application for compliance with the City of Malibu General Plan, Malibu Municipal Code and the Malibu Local Coastal Program, and finds that the zoning text amendment is consistent and recommends approval.

SECTION 4. Amendments.

A. MMC Section 17.41.050(G) Subsections 1 and 2 are amended to read as follows:

1. From any property onto a residential property, ESHA, ESHA buffer, Pacific Ocean, beaches, and public viewing areas, the maximum allowable light trespass shall be 0.1 foot-candles. (1.076 lux) measured facing the light source(s) in any plane and at any height or place on the affected property, ESHA, ESHA buffer, Pacific Ocean, beaches or public viewing area.
2. From any property onto a non-residential property other than the public right-of-way, ESHA, ESHA buffer, Pacific Ocean, beaches, and public viewing areas, the maximum allowable light trespass shall be 0.25 foot-candles. (2.69 lux) measured in any plane and at any height or place on the affected property facing the light source(s).

B. MMC Section 17.41.050(G) Subsection 3, 4 and 5 shall be added as follows:

3. From any service station onto a public right-of-way, the maximum allowable light trespass shall be 0.25 foot-candles (2.69 lux), measured in the horizontal plane at any point into the public right-of-way, 25 feet from the property line after the end of nautical twilight.
4. From all other properties other than the service stations onto the adjacent public right-of-way, the maximum allowable light trespass must not exceed 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the property line.

5. Measurements

- a. Measurements shall be taken with an illuminance light meter accurate to 1/100th of a foot-candle and having been calibrated to National Institute of Standards and Technology (NIST) standard within two years. Horizontal plane measurements shall be made according to the meter manufacturer's instructions. Signs must be turned off for said measurements.
- b. Measurements shall be made wherein the lighting from the service station is turned on and off and the difference between street lighting and street lighting plus canopy lighting shall determine the trespass from canopy lighting.

SECTION 5. Certification.

The City Clerk shall certify the passage and adoption of this Ordinance and enter it into the book of original ordinances.

PASSED, APPROVED AND ADOPTED this ____ day of _____ 2022.

PAUL GRISANTI, Mayor

ATTEST:

KELSEY PETTIJOHN, City Clerk
(seal)

Date: _____

APPROVED AS TO FORM:

THIS DOCUMENT HAS BEEN REVIEWED
BY THE CITY ATTORNEY'S OFFICE

TREVOR RUSIN, Interim City Attorney

Any action challenging the final decision of the City made as a result of the public hearing on this application must be filed within the time limits set forth in Section 1.12.010 of the Malibu Municipal Code and Code of Civil Procedure.

CITY OF MALIBU PLANNING COMMISSION
RESOLUTION NO. 22-39

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MALIBU DETERMINING THE AMENDMENTS ARE EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, AND RECOMMENDING THAT THE CITY COUNCIL APPROVE ZONING TEXT AMENDMENT NO. 22-001 AMENDING MALIBU MUNICIPAL CODE SECTION 17.41.050(G) OF CHAPTER 17.41 (MALIBU DARK SKY) REGARDING ALLOWABLE LIGHT TRESPASS FROM COMMERCIAL AND INSTITUTIONALLY ZONED PROPERTIES ONTO THE PUBLIC RIGHT-OF-WAY

The Planning Commission of the City of Malibu does hereby find, order and resolve as follows:

Section 1. Recitals.

A. On March 28, 2022, the City Council adopted Resolution No. 22-08 initiating Zoning Text Amendment (ZTA) No. 22-001, amending Malibu Municipal Code Section 17.41.050(G) of (Chapter 17.41 (Malibu Dark Sky) regarding allowable light trespass from commercial and institutionally zoned properties onto the public right-of-way.

B. On April 21, 2022, a Notice of Planning Commission Public Hearing was published in a newspaper of general circulation within the City of Malibu and mailed to interested parties.

C. On May 16, 2022, the Planning Commission held a duly noticed public hearing to discuss Dark Sky Ordinance (DSO) amendment, reviewed and considered the staff report, reviewed and considered written reports, public testimony, and other information in the record.

Section 2. Environmental Review.

Pursuant to CEQA Guidelines Section 15061(b)(3), where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The Planning Commission determined that the proposed amendments are required by State law and will not result in changes from existing development standards, such as density limits and environmental resource protection standards; consequently, there is no possibility the amendment will have a significant effect on the environment and accordingly, and the exemption set forth in Section 15061(b)(3) applies.

Section 3. Proper Measuring of Light Trespass.

The measurements listed in MMC Section 17.41.050(G) shall be made by a qualified person using a commercial grade illuminance meter with resolution of 0.01 footcandles (0.1 lux) or better. The meter shall have been calibrated to National Institute of Standards and Technology standards within the prior 12 months by a recognized testing laboratory and shall be equipped with a tripod with leveling device. Photographic light meters shall not be used. Measurements shall be made at 10-foot intervals all along the property line with care to avoid body shadow. Using a scaled plan drawing plan or an aerial image (e.g., Google Maps or Google earth) as a base, record readings

data including meter height above ground, meter location and meter orientation, both vertically and horizontally. Photographic documentation is recommended.

Section 4. Zoning Text Amendment.

The proposed zoning text amendment to MMC Section 17.41.050(G) shall read as follows:

- G. Allowable Light Trespass. Outdoor lighting shall not cause light trespass exceeding the following amounts, measured with a light meter at the property line of the property on which the light is trespassing:
1. From any property onto a residential property, ESHA, ESHA buffer, Pacific Ocean, beaches, and public viewing areas, the maximum allowable light trespass shall be 0.1 foot-candles (1.076 lux) measured facing the light source(s) in any plane and at any height or place on the affected property, ESHA, ESHA buffer, Pacific Ocean, beaches or public viewing area.
 2. From any property onto a non-residential property other than the public right-of-way, ESHA, ESHA buffer, Pacific Ocean, beaches, and public viewing areas, the maximum allowable light trespass shall be 0.25 foot-candles (2.69 lux) measured in any plane and at any height or place on the affected property facing the light source(s).
 3. From any service station onto a public right-of-way, the maximum allowable light trespass shall be 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the edge of the paved road closest to the subject property.
 4. From all other properties, other than service stations, onto the adjacent public right-of-way, the maximum allowable light trespass must not exceed 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the property line.

Section 5. Zoning Text Amendment Findings.

Pursuant to Malibu Municipal Code Section 17.74.040, the Planning Commission hereby makes the following findings and recommends to the City Council that the MMC be amended as stated in Section 4 of this resolution.

A. The subject zoning text amendment is consistent with the objectives, policies, general land uses and programs specified in the General Plan. The proposed amendment serves to enhance the Malibu General Plan Mission Statement, protect public safety and preserve Malibu's natural and cultural resources.

B. The Planning Commission held a public hearing, reviewed the subject zoning text amendment application for compliance with the City of Malibu General Plan, Malibu Municipal Code and the Malibu Local Coastal Program, and finds that the zoning text amendment is consistent and recommends approval.

Section 6. Other Recommendations.

In addition to recommending approval of the Zoning Text Amendment, the Planning Commission hereby recommends the City Council and Planning Commission jointly conduct field visits with the City's lighting consultant to observe the impact of the proposed amendment prior to adoption of the ordinance.

Section 7. Planning Commission Action.

Based on the foregoing findings and evidence contained in the record, the Planning Commission hereby recommends that the City Council approve the Zoning Text Amendments contained in Section 4 of this resolution.

Section 8. The Planning Commission shall certify the adoption of this Resolution.

PASSED, APPROVED AND ADOPTED this 16th day of May 2022.



KRAIG HILL, Planning Commission Chair

ATTEST:



REBECCA EVANS, Recording Secretary

I CERTIFY THAT THE FOREGOING RESOLUTION NO. 22-39 was passed and adopted by the Planning Commission of the City of Malibu at the regular meeting thereof held on the 16th day of May 2022, by the following vote:

AYES:	5	Commissioners: Jennings, Smith, Mazza, Wetton, Hill
NOES:	0	
ABSTAIN:	0	
ABSENT:	0	



REBECCA EVANS, Recording Secretary

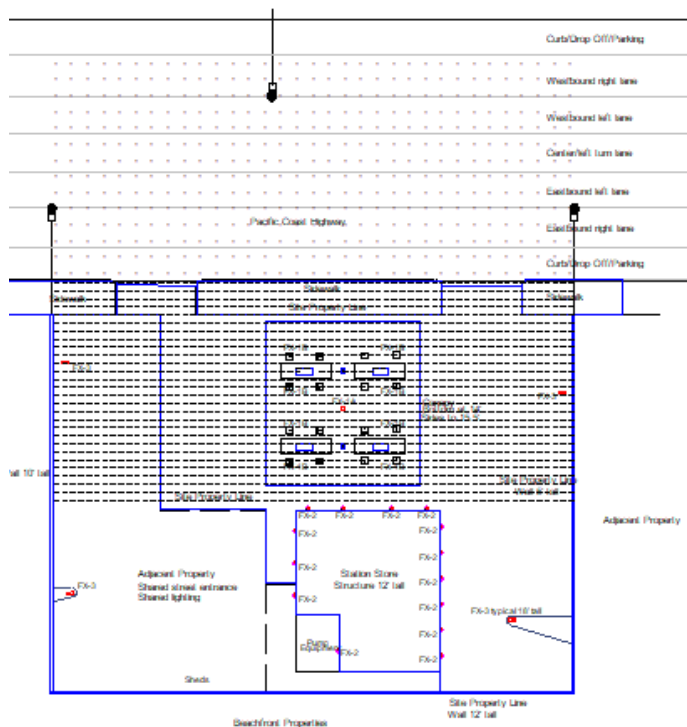
City of Malibu

STUDY ON LIGHT TRESPASS FROM SERVICE STATION LIGHTS

James R Benya, PE

June 8, 2022 rev 1

This study is conducted to help advise City Planners, Planning Commission and City Council on the issues and challenges of applying the Malibu Lighting Ordinance to service stations. The example being used involves the Mobil station at 21216 PCH at the intersection of Rambla Pacifico Street.



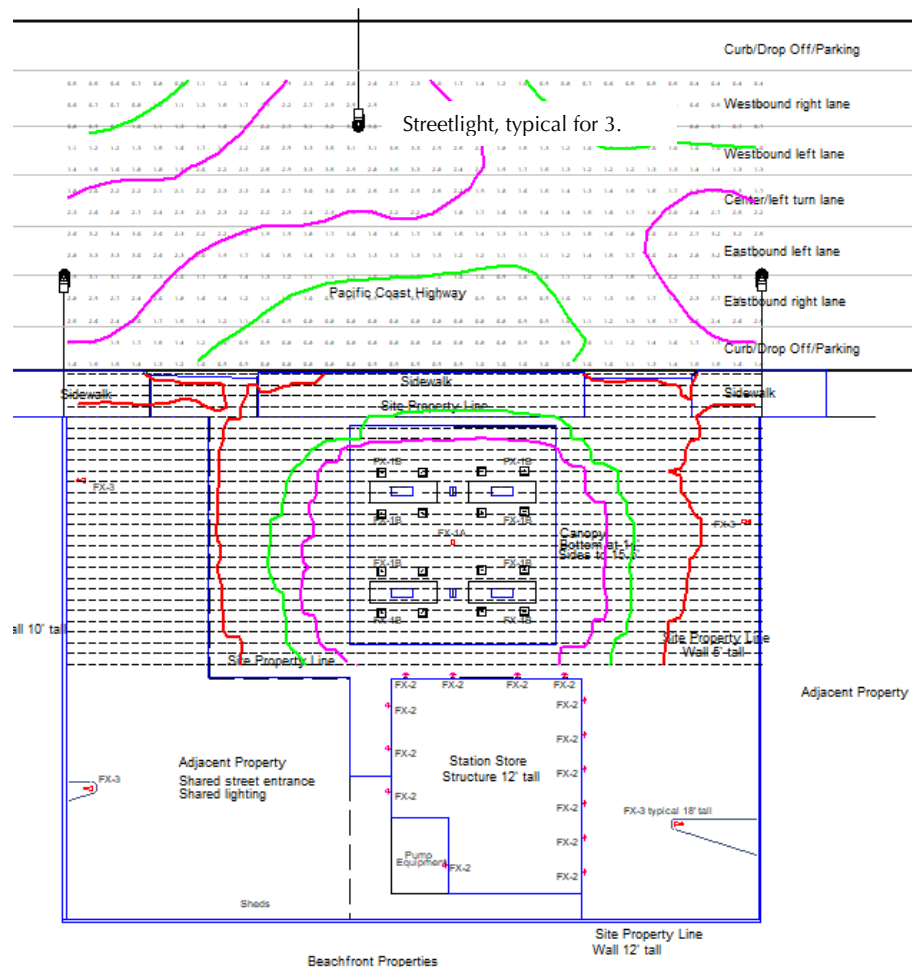
NOTE: There are significant limitations to this study, and it should not be assumed that it is complete or represents the actual lighting at the Mobil Station. It is based on a prior study that investigated the challenges of providing lighting for the service station pump area and the extent to which that lighting would create light trespass across the property line which is assumed to be the service station side of the sidewalk. Details of the service station were shown in a prior report. Other limitations include:

- (1) Lighting other than under the canopy is NOT included. For this service station, pole mounted lights were probably used near the fence line at both side property lines near the sidewalk. These were not included in this study because the lighting used for these locations must also be designed to meet the ordinance and it is assumed that better lighting would be provided that has not been designed yet.

- (2) Trespassing light contributed by signs mounted to the canopy or pumps is not included. These could cause more light trespass than the lighting systems, potentially much more.
- (3) Street light amounts are estimated based on the existing SCE high pressure sodium streetlights.
- (4) Light levels under the canopy at the pumps are based on IES recommended practices for Lighting Zone 2 (LZ2) pre-curfew and Lighting Zone 1 (LZ1) after curfew. It is dangerous to reduce light levels for traffic from sunset through nautical twilight, and in my professional opinion this consideration should be considered by the City of Malibu as it addresses the challenges of interpreting and applying the Ordinance.

Lighting Levels Including Streetlights

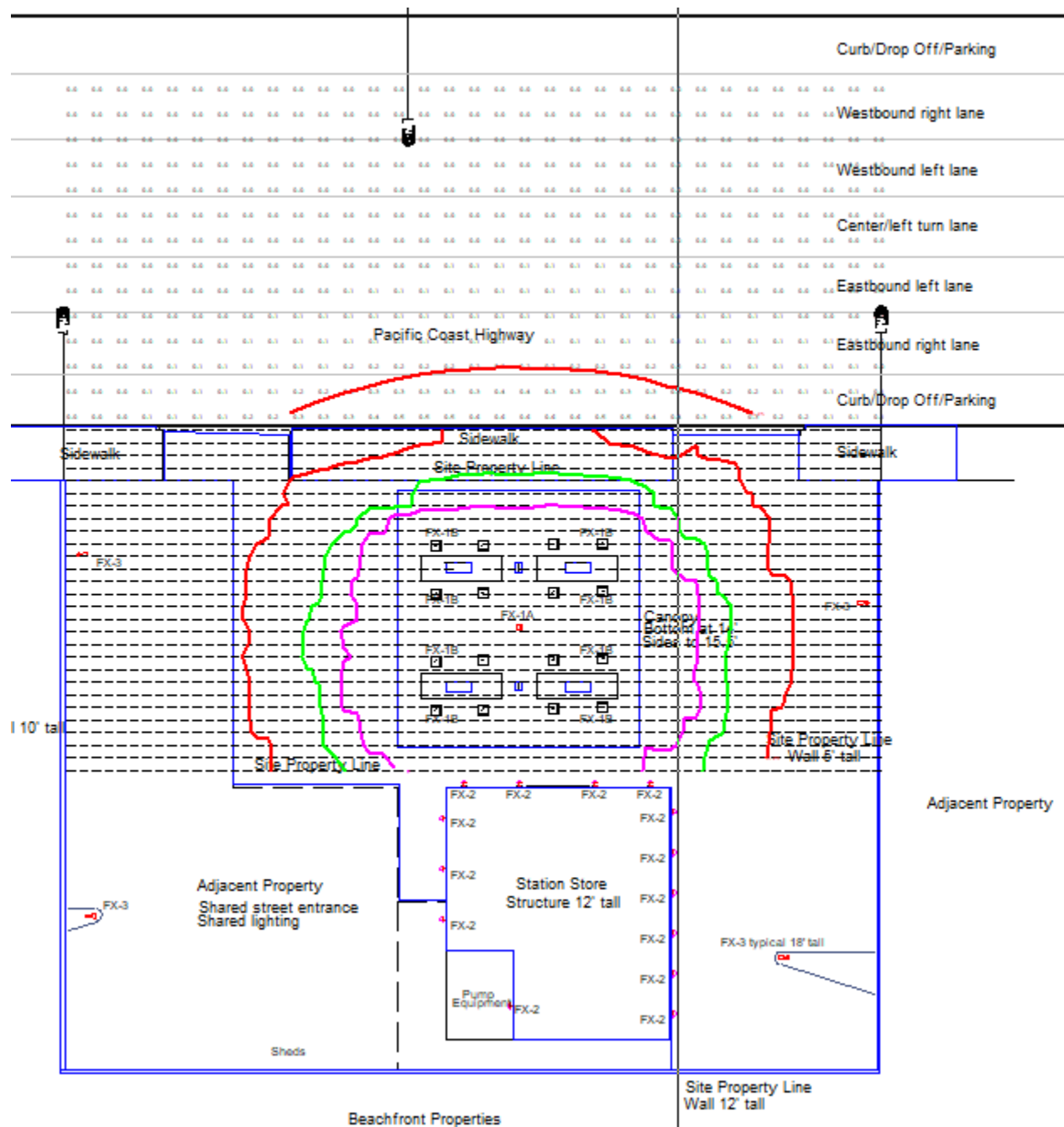
The following image shows calculated light levels for the service station, sidewalk, drives and immediately adjacent streetlights. These calculated levels do not consider the light from signs, buildings or light sources other than the service canopy and streetlights.



The red lines represent the 0.25 fc isoline. The green lines represent the 1.0 fc isoline, and the purple (magenta) line represents the 2.5 fc isoline. **Including streetlights**, the light levels at the property line will not comply with the Ordinance, but that's because of the streetlights.

The letter and intent of the Ordinance is to limit commercial light trespass onto adjacent properties to 0.25 footcandles (2.5 lux). As a general rule, streetlights in Malibu at commercial locations along PCH will illuminate the street to much higher levels. The question raised by City Staff is whether the light levels caused solely by the canopy lights at the property line are too strict for the situation.

The following computer model calculation repeats the above calculation, but with the streetlights turned off. The 0.25 fc isoline (red) projects outward into the eastbound lanes, approximately 25 feet beyond the property line. The light levels under the canopy are consistent with IES Lighting Zone 2, per the IES Lighting Handbook, Tenth Edition, Table 34.2.



Based on this analysis, I recommend that the City Of Malibu consider the following protocol for service station light trespass limits.

- (1) Light trespass from service stations, not including the contribution from signs or light bands attached to buildings, shall not exceed 0.25 footcandles, measured in the horizontal plane, at any point into the public right-of-way more than twenty-five feet (25') from the property line after the end of nautical twilight. Measurements shall be taken with an illuminance light meter accurate to 1/100th of a footcandle and having been calibrated to NIST standard within two years. Horizontal plane measurements shall be made according to the meter manufacturer's instructions.
- (2) Measurements shall be made wherein the lighting from the service station is turned on and off and the difference between street lighting and street lighting plus canopy lighting shall determine the trespass from canopy lighting. Sign lighting and brand lights, such as canopy outline lights, shall be turned off during measurements.

I further recommend that for other commercial properties that light trespass measurements for all properties under the Ordinance adopt similar detailed language.

In closing, I note that the exclusion for signs and related identity devices is a potential loophole that could be exploited by those wanting to circumvent the Ordinance. I recommend that you consider a study regarding how the Ordinance might be changed to prevent illuminated signs from becoming a means to circumvent the intent of the Ordinance and potentially increase the amount of light pollution in the Community.

For more information on twilight, see <https://www.timeanddate.com/astronomy/different-types-twilight.html> .

The start and end times of sunset and twilight can be determined for any day at <https://www.almanac.com/astronomy/sun-rise-and-set/CA/Malibu> .



05/16/22

Planning Dept.

Planning Commission

From: R Y A N <[REDACTED].com>
Sent: Monday, May 16, 2022 10:21 PM
To: Planning Commission
Subject: Fwd: No Glare 76 Station Walnut at Hill in Pas
Attachments: 20220301_Pas Walnut Hill.jpg

So everyone has the photo I took of a corner Unocal fuel station in Pasadena.

Ryan

From: R Y A N <[REDACTED].com>
Sent: Monday, May 16, 2022 10:05:01 PM
To: Richard Mollica <rmollica@malibucity.org>; teaton@malibucity.org <teaton@malibucity.org>; Steve McClary <smccclary@malibucity.org>; Patt Healy <[REDACTED].com>; Trevor Rusin <trevor.rusin@bbklaw.com>; Yolanda Bundy <ybandy@malibucity.org>; Patricia Salazar, Planning <psalazar@malibucity.org>; Kelsey Pettijohn <kpettijohn@malibucity.org>
Subject: Fwd: No Glare 76 Station Walnut at Hill in Pas

Here's my written comment of achievable gas station light cut-off to adjacent public street.

Please excuse dictation errors and typos.

From: R Y A N
Sent: Thursday, March 3, 2022 4:43:20 PM
To: Richard Mollica <rmollica@malibucity.org>
Subject: No Glare 76 Station Walnut at Hill in Pas

There is a cutoff shadow line on the sidewalk parallel to the curb from the downlights' beam angle, more noticeable at the angled curb cut. It appears that the cut-off relies upon the fixtures' internal characteristic without any external hood or add-on accessory (hood, blinders, or "barn door" that are typical and commonplace for theater industry lighting fixtures or artistic lighting adjustment for light confinement.

Light-spill/trespass and foot-candles on sidewalk are not likely over-riding factors of mandatory criteria for this typical corner fuel station in the commercial district of Pasadena in the attached photo of Walnut Street and Hill Avenue, so such target values are not known and not likely as stringent applicable criteria. Regardless, in practice, witnessing this 76 Unocal station and its dramatically-pleasing elimination of light-source glare to nighttime passers-by eliminates the detriments of pupil constriction that would otherwise occur if point-source light, or over-illumination, existed. I predict that the "novelty" of over-illumination marketing will be quickly forgotten (and irrelevant upon city-wide implementation) and become erased from patrons' criteria of competitive marketing. The true aspects and amenities of the facility become readily apparent and more dominant to the purchase decision.

It is high-time that pollution from excess illumination be curtailed. Malibu deserves to achieve the benefits of the best current technology and expertise. Perhaps a registry of trade professionals can be established if a recalcitrant oil company or fuel station owner is unfamiliar with the state-of-the-art products and talent.

CC: Planning Commission, PD,

Recording Secretary, File

Date Received 05/16/22 Time 10:41 PM
 Planning Commission meeting of 05/16/22
 Agenda Item No. 5D
 Total No. of Pages 3

One thing about Caruso is that he hires Disney-grade visionaries to design his projects instead of traditional trade professionals that don't know how to complete a project before opening night.

Ryan



BY EMAIL ONLY

May 13, 2022

Tyler Eaton
Richard Mollica
Planning Commission and staff
City of Malibu
23825 Stuart Ranch Road
Malibu, California 90265

Some observations re enforcement of illumination standards

Re Item 5D – Zoning Text Amendment No. 22-001 / Dark Sky Ordinance Amendment

I wanted to better understand the practical meaning of lux measurements in the field, because the proposed amendments now include more specific values. For instance, MMC §17.41.050(G)(4) would read:

“From any residentially zoned property onto the adjacent public right-of-way, the maximum allowable light trespass must not exceed 0.25 foot-candles (2.69 lux) measured in any plane and at any height at the property line.”

So I purchased a “prosumer” grade lux meter for less than \$50 and undertook a little midnight research expedition. The meter I bought is likely not as accurate as what is specified in DSO Draft section 3, “Proper Measurement of Light Trespass,”¹ but my experience shows it to be fine for making ballpark estimates. It claims a resolution of 0.1 lux – the same resolution as spec’d in the Draft – it’s self-calibrating, and is spec’d as accurate within 4%. So it could be useful in all but the most borderline cases.

I took a few readings on my street, then went down to PCH and sampled a <1,000 ft. stretch between Big Rock Drive and Moonshadows restaurant (in between, not as far as either endpoint). In all cases, I tested the particular subsection quoted above, standing directly on the line between property and public right-of-way (*i.e.*, the edge of the shoulder). I took over 50 measurements, while snapping a photo of the readout with my iPhone. I’ve included a dozen of the photos here, to illustrate.

I learned a few things, and also came up with an idea for a more practical enforcement process than anything currently proposed.

1 “The measurements listed in MMC Section 17.41.050(G) shall be made by a qualified person using a commercial grade illuminance meter with resolution of 0.01 foot-candles (0.1 lux) or better. The meter shall have been calibrated to National Institute of Standards and Technology standards within the prior 12 months by a recognized testing laboratory and shall be equipped with a tripod with leveling device.....”

First, I found that it's not as important to hold the meter level as it is to aim it directly at the light source. So the language in Section three, that the meter "shall be equipped with a tripod with leveling device" may not be necessary in some situations (discussed further below).

Next, the nominal maximum value of 2.69 lux (or 0.25 FC) seems generally to be appropriate, for the particular situation I tested ("from any residentially zoned property onto the adjacent public right-of-way"). However, in real life, it is also quite dependent on the distance between the light source and the property line. A discrepancy arises because the illumination from single point-source light falls off exponentially with distance (as does the measurement of it). Yet to the naked eye, a source relatively far away, with a low lux reading, might still appear too bright to the eye – especially in contrast to a dark background. This could be called the "headlight effect": on a brightly-lit city street, oncoming headlights may be unremarkable, while on a dark desert road those same headlights could be literally blinding.

That might suggest that **the measurement process in the ordinance should (also) provide a *relative luminance standard***, where a point-source must be no more than X *lux above background*. (My meter actually has a relative measurement mode, but I haven't yet played with it.)

Following are contrasting examples from two locations, illustrating how the distance of the measurement plays a role that's both significant and not always obvious. (NOTE: **The photos don't convey the apparent brightness of the lights.** This is because the backlit meter, from a foot away, overexposes the camera, such that the numerals are washed out. So I had to match the exposure to the meter by selecting "the meter" on the iPhone screen, thereby reducing the overall exposure.)

In the first shot, the light source (on the front of a house) is ~30 feet from the edge of the street. The lux reading of 1.45 is well within the draft standard of 2.69 lux.



Yet the lights in that photo are among other similar fixtures arrayed across the whole front of the house. When perceived as a group they are quite bright. Here's that same house, photographed from *the other side of the street*, just to fit it all into the frame. If you were to add up the lux values across the front of the lot where it touches the street, you'd get something like $1.5 + 1.5 + 1.5 + 1.5 + \dots$. In other words, the apparent brightness of the house is cumulative of the individual sources, and is likely 10 lux or more. At a distance of ~30 ft. from the street, the meter captures only a narrow angle at a time, thereby illustrating the importance of the methodology of measuring every 10 feet along the property line.² **The ordinance should specify that the readings taken every ten feet shall be cumulative.**



As a contrasting example, the light fixture on the next page is mounted immediately adjacent to the right-of-way – the setback is basically zero. There's another fixture on the other side of the driveway, 15 feet away, also touching the right-of-way. Perceptually, they are way too bright.³ Because the setback is zero, the lux reading for just one of them (charitably taken from a few feet away) is quite high: 239.2. Together, the fixtures total nearly 480 lux – nearly 180 times the max allowable 2.69 lux. Here, where the light sources touch the right of way, maybe only something like a single Christmas tree bulb(?) could meet the 2.69 lux spec. **To address cases like this, we might want to say the measurement needs to be taken from at least 5 feet away from the source.** Even here, the fixtures would still need to be much, much dimmer.

² Section 3. "...Measurements shall be made at 10-foot intervals all along the property line...."

³ Driving right past these fixtures is actually painful to the eye. Situated on a blind curve, they are hazardous.



The Enforcement Process

Draft Resolution NO. 22-39 discusses how measurements should be made,⁴ but doesn't address how that process should be integrated with Code Enforcement. Because violations are perceptible only at night, when Enforcement personnel are not typically on duty, some citizen/neighbor participation is necessary. I envision that community members could be involved in an initial stage of documentation and reporting; then, if that doesn't produce a compliant result, professional expertise could be brought in at a second stage. The following is one way it could work. If this idea turns out to be problematical for some reason, maybe it could be used as a springboard to a better idea.

The complainant would buy a “prosumer grade” lux meter for ~\$50, or borrow one, or get a community member to help them. (Optionally, the City could maintain a list of acceptable meter models, not as an exhaustive “approved list” but as examples.) Assuming these devices are accurate to within 4-5%, they can provide a rebuttable presumption in all but the most borderline cases.

The complainant (or proxy) would take a reading as indicated in the ordinance: at the property line, facing the light source; if there are multiple sources, taking a reading every ten feet along the property line. They would take a photo of the readout, as I have done in my

⁴ Section 3. Proper Measuring of Light Trespass.

examples. They would also include photo(s) showing some indicia of the location, *e.g.*, a shot of the light source that includes the street number or a notable landmark (the material of a fence, or a distinctive tree, etc.).

The complainant would submit the photo(s) to Code Enforcement along with a form documenting the circumstances. If the lux reading is significantly higher than allowed – say, at least 10% higher than spec – CE would notify the violator, and give them a choice: either to accept that the violation is valid and remedy it (*e.g.*, by substituting a compliant fixture), or to contest it – which then would invoke **the second stage of review**.

Only now does the draft’s “qualified person using a commercial grade illuminance meter” come into play, to settle the question with professional precision. For this, the City would charge both the complainant and the presumptive violator, say, \$250 each.⁵ Therein is the beauty of the arrangement: the complainant would be slow to press their case if there’s a possibility that they’d have to pay \$250; they’d only report a violation if they’re confident that it’s significantly above spec. Meanwhile, the presumptive violator is not likely to contest the initial reading unless it is indeed a close call; in any clear-cut case, they’d sooner accept the truth of the violation and put that \$250 towards remedying their fixtures. Because each party has some *potential burden* put upon them, they each have an incentive to “read the tea leaves” at the initial stage – ensuring that only the closest cases ever go on to the qualified professional.

* * * * *

Attached are a representative 10 out of the 50+ measurements I took on PCH (within <1,000 ft, as noted). I concentrated on fixtures that might conceivably be distracting to a driver – the more bright, point-source lights there are in a driver’s field of view, the more difficult it is to focus on the lights that matter, *e.g.*, oncoming headlights or brake lights. My samples ranged from 0.5 lux (compliant and unremarkable) to 32.29 lux (much too bright, at more than 10x the max of 2.69 lux). Anecdotally, there were too-bright lights on one out of every 4-5 houses (I didn’t count precisely).

The lux readings seem too dependent on *proximity* to PCH. A dim light close to the PCH might read high, while a brighter light further back might read low – yet the eye is affected more by the absolute brightness of the light than by its nearness. As an extreme example, I can see a particular bright light on PCH from my house, which must be several thousand feet away, yet it stands out against the night sky like a pin-prick to my retina.

– KH

⁵ \$500 total for a metering technician might be appropriate, if by comparison a PVD costs \$335.

Exhibit: 10 representative lux readings along PCH

Taken from the edge of the right-of-way; sorted from lowest to highest lux reading: 3.14 (almost compliant) to 32.39 (12x max allowed). Real-life brightness is much higher – these are underexposed in order to read the numerals on the bright meter.







**NOTICE OF PUBLIC HEARING
CITY OF MALIBU
CITY COUNCIL**

The Malibu City Council will hold a public hearing on **MONDAY, August 8, 2022, at 6:30 p.m.** on the project identified below. This meeting will be held via teleconference only in order to reduce the risk of spreading COVID-19 and pursuant to AB 361 and the County of Los Angeles Public Health Officer's Safer at Home Order. All votes taken during this teleconference meeting will be by roll call vote, and the vote will be publicly reported.

How to View the Meeting: No physical location from which members of the public may observe the meeting and offer public comment will be provided. Please view the meeting, which will be live streamed at <https://malibucity.org/video> and <https://malibucity.org/VirtualMeeting>.

How to Participate Before the Meeting: Members of the public are encouraged to submit email correspondence to citycouncil@malibucity.org before the meeting begins.

How to Participate During the Meeting: Members of the public may also speak during the meeting through the Zoom application. The City requests that you sign up to speak before the item you would like to speak on has been called by the Mayor and then you must be present in the Zoom conference to be recognized.

Please visit <https://malibucity.org/VirtualMeeting> and follow the directions for signing up to speak and downloading the Zoom application.

ZONING TEXT AMENDMENT NO. 22-001 – Consider an amendment, as initiated by the City Council, to the Malibu Municipal Code Chapter 17.41 (Malibu Dark Sky), amending Malibu Municipal Code Section 17.41.050(G) allowable light trespass for commercial and institutionally zoned properties onto the public right-of-way and consider the Planning Commission's recommendation on the proposed ordinance

Applicant:	City of Malibu
Location:	Citywide
Case Planner:	Tyler Eaton, Associate Planner (310) 456-2489, extension 273 teaton@malibucity.org

The California Environmental Quality Act (CEQA) applies only to projects which have the potential for causing a significant effect on the environment. Pursuant to CEQA Guidelines Section 15061(b)(3), where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. After analyzing the project listed above, the Planning Director determined that there is no possibility the amendment will have a significant effect on the environment and accordingly, the exemption set forth in Section 15061(b)(3) applies.

A written staff report will be available at or before the hearing for the project. All persons wishing to address the Council regarding this matter will be afforded an opportunity in accordance with the Council's procedures.

Copies of all related documents can be reviewed by any interested person at City Hall during regular business hours and are available at malibucity.org/darksky. Oral and written comments may be presented to the City Council on, or before, the date of the meeting.

IF YOU CHALLENGE THE CITY'S ACTION IN COURT, YOU MAY BE LIMITED TO RAISING ONLY THOSE ISSUES YOU OR SOMEONE ELSE RAISED AT THE PUBLIC HEARING DESCRIBED IN THIS NOTICE, OR IN WRITTEN CORRESPONDENCE DELIVERED TO THE CITY, AT OR PRIOR TO THE PUBLIC HEARING.

Richard Mollica, Planning Director

Publish Date: July 14, 2022