

HOPE - Helping Our Peninsula's Environment

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Planning and Building
Inspection Administration

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Monterey County Supervisors
Monterey County Planning Commission
Monterey County General Plan Staff

The Proposed Monterey County General Plan Update and Draft Environmental Impact Report

HOPE provides the following information related to the General Plan and its EIR –

1. Based on the best available science – Findings on the actual impacts of pesticide use.

* We respectfully request a response for each Finding if the County agrees or disagrees with each individual Finding and why.

2. A Chemical Pollution Element to be evaluated and used as feasible mitigation for the unfettered use of pesticides in Monterey County.

3. A map of the Present and historic range of native Monterey pine forest – to be incorporated into the GP GIS Vegetation maps.

4. A map of California red-legged-frog occurrences in Pebble Beach's native Monterey pine forest.

5. Based on the best available science – Findings on the actual impacts of light pollution.

* We respectfully request a response for each Finding if the County agrees or disagrees with each individual Finding and why.

6. A Light Pollution Element to be evaluated and used as feasible mitigation to minimize the light pollution in Monterey County.

Thank you.

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Pesticide Safety Element for Monterey County General Plan

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Informed Consent Pesticide Safety Policy

This Plan is intended to be Goal and Policy level work that guides preparation of a Pesticide Control Ordinance or a Code by defining the scope and limits of what they must address. It is not intended as a Pesticide Ordinance or a Code, though parts of it could be used for that.

This model Pesticide Safety Element has four improvements over typical Pesticide control laws:

1. It uses the best available science provided by the World Health Organization, the US Center for Disease Control, and the US-Environmental Protection Agency.
2. It controls what appears in the "nose of the beholder" in addition to what is emitted by the pesticide user,
3. It recognizes "invisible" and long-term pesticide impacts, and
4. It allows pesticide use, but only when fully informed consent is given by all potentially affected parties.

Pesticide Safety Goal

The purpose of this Pesticide Safety Element is to restore and maintain (our jurisdiction's¹) overall natural and healthful environment; to eliminate harmful and annoying unwanted pesticides in and adjacent to (our jurisdiction).

Pesticide Safety Findings

1. This Plan recognizes that pesticides are designed, created and used with the explicit intent to kill living creatures and other life. Pesticides are considered potential "weapons of mass destruction" by the U.S. government because they can cause harm, nuisance, annoyance, death and could even cause population extinction of humans and wildlife. They can interfere with individual and community activities, cause adverse health effects and harm property and reduce its value.
 - a. **Significant Ecological Impacts:** Pesticides are known to have unintentionally killed humans and millions of animals including livestock and many individuals of imperiled species officially recognized by endangered species laws including the Piping Plover;
 - b. **Significant Pesticide Damage:** Pesticides can cause cancer, chronic toxicity, teratogen effects, mutagenic effects, central nervous system effects, cardiovascular effects, kidney damage, liver damage, peripheral nervous system effects, immunological effects, gastrointestinal effects, reproductive effects, embryotoxicity, lung and respiratory effects, endocrine effects, blood cell disorders, damage to skin and eyes, skeletal damage, allergic sensitization and death;

- c. **Significant Harmful Nuisance:** Pesticides can interfere with health and cause work absence due to effects including -- breathing difficulty, nausea, vomiting, diarrhea, convulsions, coughing, abdominal pain, blurred vision, dizziness, disequilibrium, disorientation, skin rashes, fever, chills, weakness, exhaustion, fatigue, headaches, memory loss, loss of sequential thinking, anxiety, voice loss, hearing loss, irregular heartbeat, and loss of consciousness;
 - d. **Harm at Undetectable Exposures:** Pesticides exposures below the level of detection can cause biological and property damage which may not be discovered for years or generations;
 - e. **Harm at Distance:** Pesticides are known to have caused damage up to 50 miles from where they were applied, and regularly cause damage at two to three miles from where they were applied.
 - f. **Backlash:** Pesticides have caused pesticide resistance in pests including insects, mites, weeds and fungi.
 - g. Pesticides harm and kill beneficial species including pollinators and pest predators insects such as the Syrphid fly, a predator of the Lettuce aphid.
 - h. **Expensive Benefits Overstated:** Pesticides cost farmers about \$4 per pound and up to \$800 per acre; some nine million pounds of pesticide active ingredients are applied in Monterey County each year, yet more U.S. crops are lost to pests, before and after harvest (~37%) than before widespread pesticide use arose in the 1940's (~31%).
 - i. The International Food Policy Institute estimates the environmental, health and social costs of pesticide use in the U.S. at \$100-\$200 billion per year, or \$5-10 in damages for every dollar spent on pesticides.
 - j. Alternative Pest control practices could halve the use of chemical pesticides on 40 major U.S. crops without reducing crop yields. Indonesia cut pesticide use on rice by 65% and yields increased by 15%. Sweden cut pesticide use in half with virtually no decrease in harvest.
 - k. A 50% cut in U.S. pesticide use would raise average income for farmers about 9% and only raise retail food prices by about 0.2%.
2. **This Plan recognizes that synergistic and cumulative pesticide exposures can be more harmful than a single pesticide exposure.**

For example a one-time application of pesticide in a non-agricultural area may have few obvious health effects, but synergistic and cumulative pesticide intrusion exposures can exceed thresholds of harm and significance.

3. **This Plan recognizes that harm and complaints are often caused by short duration maximum pesticide concentrations rather than lower-level but more common-place pesticide exposures.**
4. **This Plan recognizes that pesticide harm and complaints are caused by actual exposures rather than a calculated, modeled, or estimated average pesticide concentration level.**

5. This Plan recognizes each Californian's Inalienable Constitutional Right to Safety.
6. This Plan recognizes that there is no right to pollute or cause harm.
7. This Plan recognizes the fundamental rights of each individual --
 - a. To be fully informed of a personally harmful action before it occurs, and
 - b. To refuse consent.

Pesticide-Free Restoration and Protection Actions

1. Within one year of adoption of this Plan and updated at least yearly -
 - a. **Use Inventory:** A complete inventory and map shall be prepared of all specific pesticides used, all locations of use, and maximum amounts used in the County; and
 - b. **Environmental Concentration Inventory:** Physical measurements shall be taken, as opposed to estimates or computer models, of maximum transient pesticide concentrations in air and water for each gas or liquid sprayed pesticide application in the inventory.

Except for disinfectants, for each application of gaseous or liquid sprayed pesticide the measurements shall separately electronically record, measure and map for all pesticide use locations in our (jurisdiction) for each specific pesticide --

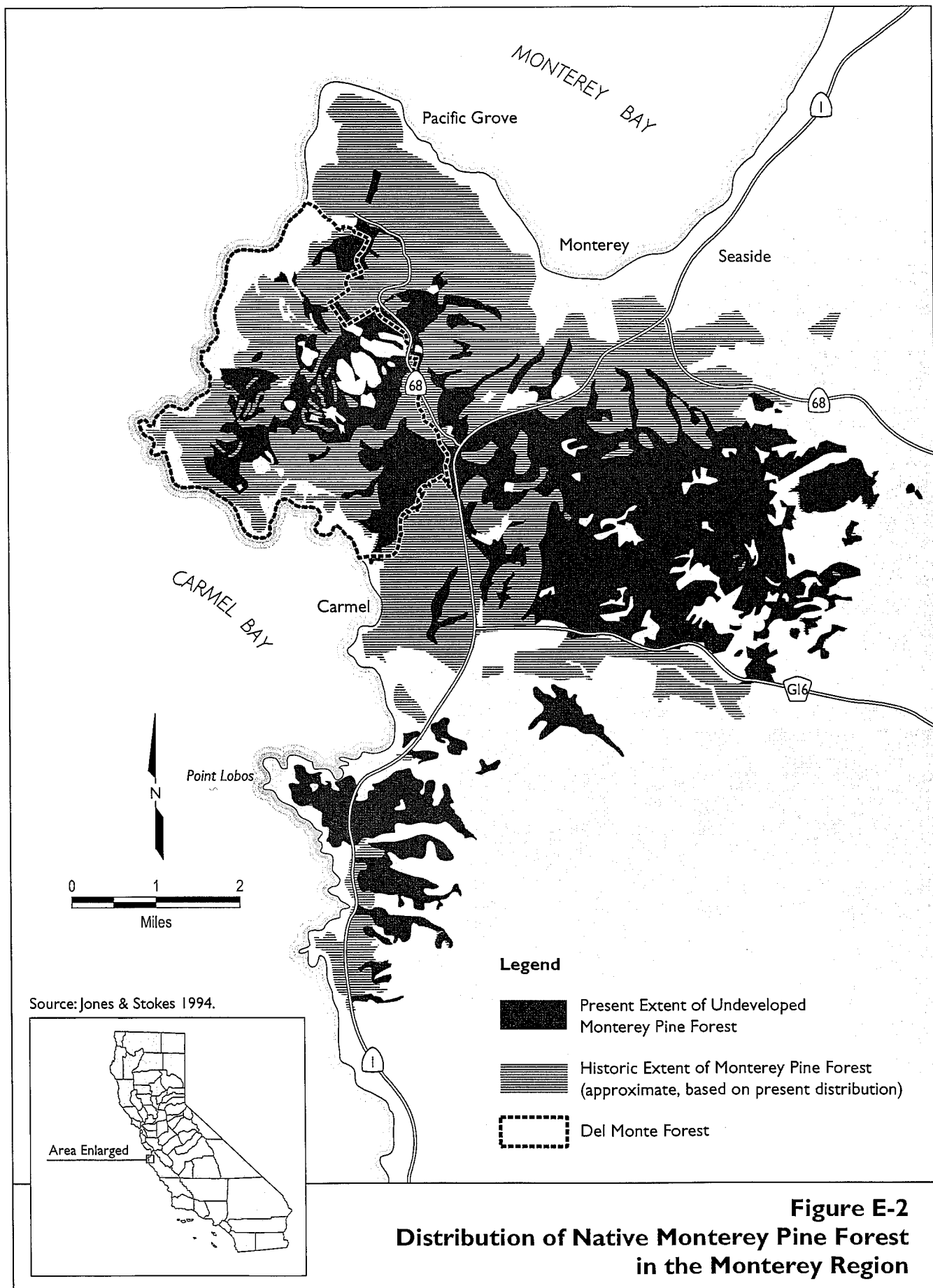
- I. The maximum instantaneous pesticide concentrations at all downwind property lines before, during and after each application,
 - II. The duration until pesticide concentrations are no longer detectable at any downwind property lines.
 - III. Monitoring and measurements shall be designed and operated to capture actual peak pesticide concentrations.
 - IV. If this inventory and mapping remains incomplete after one year, no pesticide application for any property may exceed half of the least number and smallest applications at that property in the previous five years.
- c. All inventory and maps and all information they are based upon shall be permanently retained.
2. **Use Requires Informed Consent:** To prevent pesticide trespass, harm, nuisance, annoyance and activity interference to humans, wildlife and property, no activity, existing or proposed, is permitted which can cause any pesticide contact with any party unwilling or unable to give their consent.
 3. **Fully Informed Consent:** To adequately warn people about the potential harms to their health, prior to any pesticide use, each person whose consent is required, must

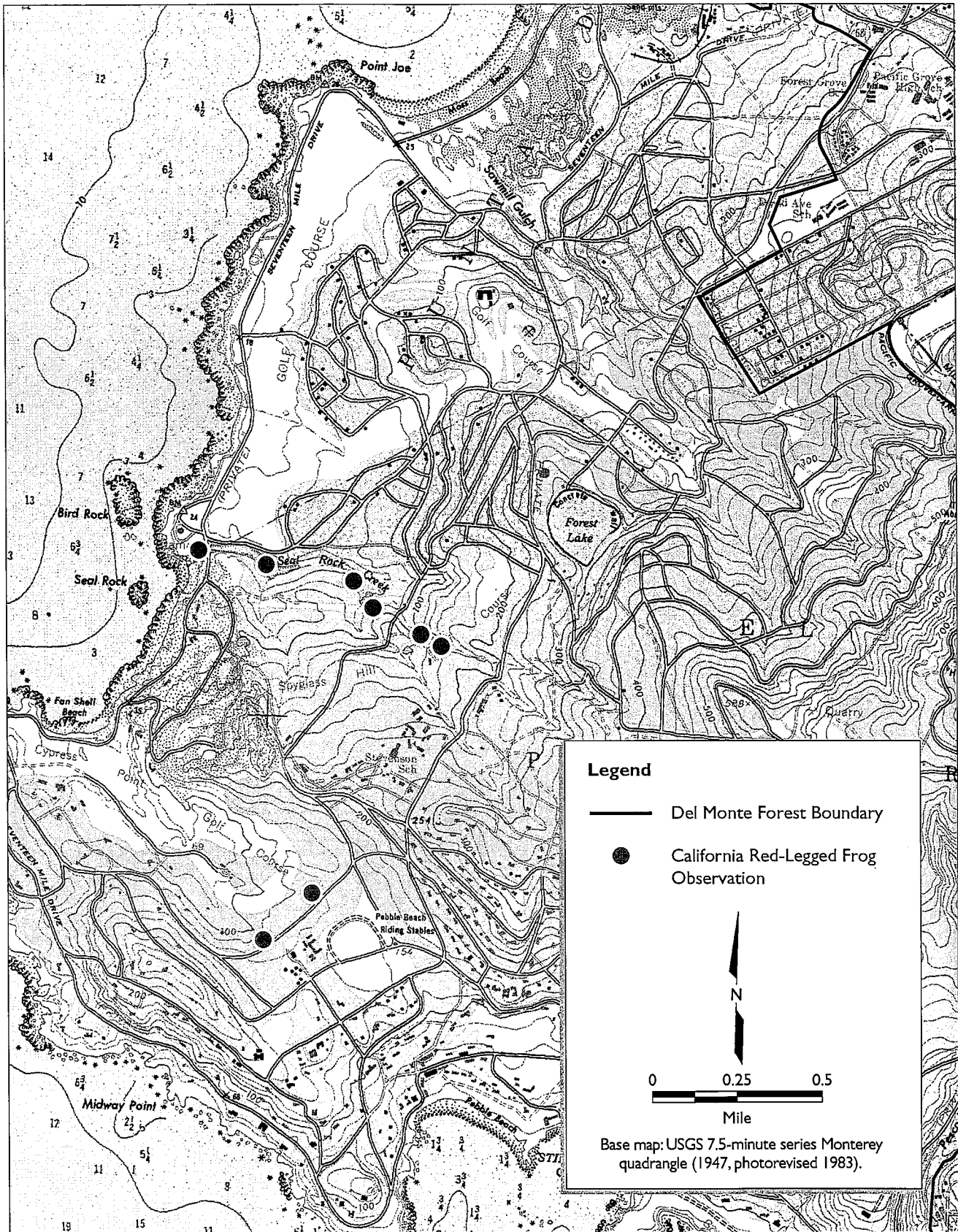
be given a readable copy of a true declaration clearly describing all intended maximum pesticide use, times and durations and all potential harms to their health from the activity. Consent is only valid when a copy of the declaration is signed by the party affected by the potential for pesticide trespass. Proxy signatures are not valid.

4. **Alternatives Prohibit Exemptions:** When no alternatives exist which are significantly less-toxic, pesticide use may be allowed, but only --
 - a. to alleviate an emergency, and
 - b. for indoor disinfectant use.

For example: Steam wands can be used to kill weeds and leaves only water. Hydrogen peroxide disinfectants degrade into water and oxygen after a few minutes. Feasible alternatives to agricultural pesticides which have been used for centuries include crop rotation, cover crops, timed planting, crop residue tillage, land fallowing, field flooding, and use of native biota control such as ladybugs and spiders.

5. When pesticide application received the required consent the use shall be monitored as described in Section 1(b) above.
6. (The jurisdiction) will provide free pesticide monitoring for anyone who asks, and provide public education about this service. The cost of monitoring shall be fully paid to the (jurisdiction) by the pesticide applicator in advance of the application. To avoid any financial conflict of interest the (jurisdiction) shall provide or hire the pesticide monitoring party who is prohibited from having any financial connection to the pesticide applicator.
7. **Jurisdiction Trespass:** To eliminate pesticide drift adversely affecting our area, (our jurisdiction e.g. Carmel or Monterey County) shall encourage avoidance and alternatives to all agencies and jurisdictions which have control over those pesticide use activities.
8. This Plan is intended to reflect the best available science. Whenever significantly improved information, alternatives, methods and equipment become available all policy related to this subject shall be updated within one year.
9. At all times (the jurisdiction e.g. Carmel or Monterey County) shall provide adequate resources to fully enforce this element and employ at least one full-time safety officer trained in pesticide detection and enforcement and pesticide free alternatives.
10. Compliance shall be encouraged with meaningful substantial fines collected, equal to the yearly cost of the pesticide application by each responsible party for violations of each provision of this policy. Such fines shall be wholly applied to providing non-toxic alternatives to pesticides and pesticide monitoring.





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Figure E-7
Known Distribution of California Red-Legged Frog
on the Monterey Peninsula

Model Light Pollution and Radiation Safety Element for Monterey County's General Plan

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Informed Consent Light and Radiation Pollution Safety Policy

Light & Radiation Pollution Prevention is not yet an Element separately required from Safety, but if it is easy enough for cities and counties to merely plug on in they might do so.

If you review our companion Model Noise Element you may see that it is almost identical in concept to this element. Noise Elements however, are required by California law.

You may notice that this Element has four improvements over typical light pollution laws:

1. It employs the best available science,
2. it includes limits on invisible radiation,
3. it is aimed at what appears in the "eye of the beholder" rather than what is emitted by the source of light or radiation, and
4. it allows light and radiation pollution if approval is given by all affected parties.

Light Pollution and Radiation Free Goal

The purpose of this light pollution and radiation prevention element is to restore and maintain healthful environment free of unwanted radiation, light pollution and sky glare; to eliminate harmful and annoying man-made unwanted light pollution and radiation caused in, and coming into Monterey County.

Light Pollution and Radiation Free Findings

1. This Plan recognizes that light and radiation pollution is not merely a nuisance, it can be a serious health hazard. Light pollution and radiation levels and types can easily cause vision and skin damage, annoyance, sleep interference, deep tissue biological damage and even death to humans and wildlife. It can interfere with individual and community activities including astronomical research, and harm property and reduce its value.
 - a. **Damage:** Continuous or transient light or radiation at and above a light intensity of 20 candelas per square centimeter (cd/cm^2) can cause optical and other biological damage;
 - b. **Annoying and Significant:** Direct Nighttime Light Pollution greater than 0.01 lux can be a significant impact and interfere with sleep; Direct Daytime Light Pollution above 10 candelas per sq. cm can be a significant impact and cause annoyance;
 - c. **Starlight Blocking:** Sky Glare levels of 0.001 lux barely permits star gazing; and

- d. **Invisible Harm:** Invisible low frequency infrared, microwaves and radio waves; and high frequency ultraviolet, x-rays and gamma rays can cause serious biological and property damage including death. Cell phone radiation can interfere with radio astronomy.
2. This Plan recognizes that relative levels of light or radiation intrusion compared to the existing light or radiation levels, are sometimes more important than absolute light and radiation levels.

For example 0.01 lux can be annoying or harmful in a dark natural area - a park, a trail, rural areas, or at a beach, but unnoticed downtown. Thus it is important to measure existing light and radiation level baselines rather than time averaged man-made light and radiation levels, which may be too high already.

3. This Plan recognizes that harm and complaints are more often caused by actual short duration maximum light and radiation levels rather than calculated average light and radiation levels.
4. This Plan recognizes that there can be significant long term energy cost savings by reducing or eliminating wholly unnecessary glare and light pollution.
5. This Plan recognizes each Californian's inalienable Right to Safety.
6. This Plan recognizes the fundamental rights of each individual --
 1. To be fully informed of a harmful action before it occurs, and
 2. To deny consent.

Light Pollution and Radiation Prevention Actions

1. Within one year of adoption of this Plan and updated at least yearly -
 - a. A complete inventory shall be prepared of -
 - I. All areas of natural nighttime light and radiation, and
 - II. Light pollution and radiation sources of all existing man-made activities experiencing transient and continuous nighttime light and radiation of at least 0.01 lux; and
 - b. Physical measurements shall be taken, as opposed to estimates or computer models, and maps shall be prepared of natural light and radiation levels in all public areas and legally accessible private lands, and of continuous and repeating transient maximum light and radiation levels for all light and radiation sources in the updated inventory of light and radiation levels of all man-made activities.

The measurements shall separately measure and map all light and radiation locations in our jurisdiction, and light and radiation levels, for --

- I. The Maximum Instantaneous man-made light and radiation levels and their durations, and

II. The difference of an area's average natural light and radiation level to that of the man-made intruding light and radiation level at the time of the intrusion in lux.

2. To prevent interference with star gazing and astronomy- no activity, existing or proposed, is permitted which can cause any transient or continuous light or radiation directed skyward.

For example: Light and radiation shielding can completely prevent all direct light from causing skyward glare and radio astronomy interference by cell phones. Use of low reflectance materials can greatly reduce and minimize the amount of indirect lighting and radiation causing skyward glare.

3. The only exceptions to section 2 are --

- a. Aircraft landing lighting,
- b. Temporary lighting for alleviation of an Emergency, and
- c. Telescope adjustments.

4. To prevent light trespass, radiation trespass, biological harm, property harm, annoyance and activity interference, no activity, existing or proposed, is permitted which can cause, on any party unwilling or unable to give their consent, any transient or continuous light or radiation of --

- a. Visible Light levels exceeding 0.01 lux per square cm.
- b. Natural light levels exceeding 0.01 lux, where any alternative exists.

For example: Light shielding can completely prevent all direct light from leaving a property boundary. Use of materials allowing no more than 10% reflectance can greatly reduce and minimize the amount of reflected lighting leaving a property boundary.

- c. Any amount of Gamma Ray Radiation,
- d. Any amount of X-ray Radiation,
- e. Any amount of Ultraviolet Radiation
- f. (Infrared Radiation $> 1 \text{ watt} / \text{cm}^2$)
- g. Any amount of Microwave Radiation
- h. (Radiowave Radiation $> 1 \text{ watt} / \text{cm}^2$)

5. The only exceptions to section 4a and 4b are --

- a. Temporary lighting for alleviation of an Emergency, and
- b. Temporary Holiday lighting.

6. To adequately warn people consenting to lighting levels exceeding 0.01 lux and and radiation levels exceeding 5 watts / cm^2 about the potential harm to their health,

each person giving consent must sign, and be given a copy of, a declaration clearly describing all potential maximum energy and durations of the lighting and harms to their health from the light or radiation causing activity.

7. To eliminate light and radiation coming in from outside which adversely affect our area, (our jurisdiction e.g. Carmel or Monterey County) shall encourage avoidance and alternatives to all those agencies and jurisdictions which have control over those light pollution and radiation activities.
8. This Plan is intended to reflect the best available science and current conditions. As new information becomes available all policy related to this subject shall be updated immediately.
9. At all times (the jurisdiction e.g. Carmel or Monterey County) shall provide adequate resources to fully enforce this element and employ at least one full-time safety officer trained in light pollution and radiation detection and enforcement and light pollution free and radiationless alternatives.
10. Compliance shall be encouraged with meaningful substantial fines collected, equal to the yearly cost of the light or radiation making equipment by each responsible party for violations of each provision of this policy. Such fines shall be wholly applied to providing light pollution and radiationless alternatives and light pollution and radiation monitoring.

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From: David Dilworth [David8@1hope.org]
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