CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE

Response to Comments / Final Environmental Impact Report
SCH# 2022020129

Prepared by

November 2022

City of Mountain View

In conjunction with

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TABLE OF CONTENTS

City of Mountain View Housing Element Update, Response to Comments/Final Environmental Impact Report

CHAPTER 1
Introduction

This Final Environmental Impact Report (EIR) has been prepared by the City of Mountain View ("City") (Lead Agency) pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines to present the environmental analysis of the proposed City of Mountain View Housing Element Update Project ("HEU" or "Project") to the public for review and for agency decision-makers to use in their consideration of the HEU.[1] This chapter summarizes the CEQA process for the HEU, explains the CEQA context for this Final EIR and new information provided herein, and describes the organization of this document.

1.0 CEQA Process

1.0.1 Notice of Preparation

Pursuant to the requirements of CEQA for the initiation of environmental review, on February 4, 2022, the City sent a Notice of Preparation (NOP) to the State Clearinghouse, responsible and trustee government agencies, organizations, and individuals potentially interested in the Project. The NOP requested that agencies with regulatory authority over any aspect of the Project describe that authority and identify relevant environmental issues that should be addressed in the EIR. Interested members of the public were also invited to comment. The comment period for the NOP extended from February 4, 2022 to March 7, 2022, during which time, the City accepted written comments on the scope of the EIR.[2] A scoping meeting was held by the City on February 24, 2022 to accept oral comments. Oral and written comments received during the comment period addressed a range of topics including biological resources, cultural resources and tribal cultural resources, hazards and hazardous materials, land use and planning, population and housing, public services and recreation, and transportation.

1.0.2 Notice and Public Review of the Draft EIR

The City issued a Notice of Availability (NOA) of the Draft EIR on July 22, 2022, announcing the availability of the Draft EIR for public review and comment. The NOA noticed a 45-day public review and comment period on the Draft EIR, starting Friday July 22, 2022, ending on Monday September 5, 2022.[3] During the public review and comment period on the Draft EIR, a

[1] The *California Environmental Quality Act* can be found in the California Public Resources Code, Section 21000 et seq. The State CEQA Guidelines, formally known as the *Guidelines for California Environmental Quality Act*, can be found in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.

[2] Late comments were also accepted and received through March 14, 2022.

[3] Due to the Labor Day holiday on September 5, 2022, comments were accepted through September 6, 2022.

public hearing at the City of Mountain View Environmental Planning Commission (EPC) was held on Wednesday, August 3, 2022.

The City encouraged agencies and interested parties to submit written comments on the Draft EIR to the City Community Development Department by email or U.S. mail. By the end of the comment period, the City received 7 comment letters. A list of the commenters is provided in Chapter 3, Section 3.2, *List of Commenters,* of this Final EIR.

1.0.3 Response to Comments / Final EIR

The City has prepared written responses to comments received during the public review and comment period for the Draft EIR. These comments and the "Response to Comments" are provided in Chapter 3 of this Final EIR. Chapter 3 provides all written comments (submitted by email) together with oral comments received at the hearing conducted by the EPC.

In addition to providing the comments and responses to comments on the Draft EIR, this document includes necessary updates and other modifications and clarifications to the text and exhibits in the Draft EIR in Chapter 4, *Errata to the Draft EIR*. The Draft EIR, together with the comments, responses to comments, and other information included in this Response to Comments document constitutes the Final EIR, consistent with State CEQA Guidelines Section 15132, *Contents of Final Environmental Impact Report*. Due to the large volume of text contained in the Draft EIR and its appendices, this Response to Comments/ Final EIR does not contain the full text of the Draft EIR, which remains available in a separate volume and is included here by reference.

The Draft EIR, this Response to Comments / Final EIR, and all supporting technical documents can be found on the Project website at: **https://www.mvhousingelement.org/** and on the State Clearinghouse Website at: **https://ceqanet.opr.ca.gov/Project/2022020129**.

1.1 Intended Use of the Final EIR

The City of Mountain View, as Lead Agency, will make the decision whether to certify the Final EIR in accordance with Section 15090 of the State CEQA Guidelines. Before the City may approve the proposed Project, it must independently review and consider the information contained in the Final EIR, certifying that the Final EIR adequately discloses the environmental effects of the HEU, that the Final EIR has been completed in conformance with CEQA, and that the decision-making body of the Lead Agency independently reviewed and considered the information contained in the Final EIR. Certification of the Final EIR would indicate the City's determination that the Final EIR adequately evaluated the environmental impacts that could be associated with the HEU.

Once complete and certified, the Final EIR will provide the CEQA compliance documentation upon which the City of Mountain View's consideration of, and action on, all applicable land use permits and other approvals (collectively, "approvals") for the proposed Project may be based.

The Final EIR will also provide the CEQA compliance to be relied upon by Responsible Agencies and Trustee Agencies in considering and acting upon other project approvals under their jurisdiction.

1.2 Mitigation Monitoring and Reporting Program

Public Resources Code Section 21081.6 and State CEQA Guidelines Section 15097 (*Mitigation Monitoring or Reporting*) require public agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of specified environmental findings related to an EIR (also mitigated negative declarations). Accordingly, as Lead Agency, the City has prepared a MMRP for the proposed HEU; the MMRP is included as **Appendix A** to this document.

The intent of the MMRP is to track and successfully implement the mitigation measures identified within the Final EIR and adopted as part of the Project to avoid or mitigate significant effects on the environment. The MMRP is designed to ensure compliance with the mitigation measures during and after Project implementation. If the City decides to approve the Project, it would adopt the MMRP at the time of Project approval and would be responsible for conducting the monitoring included in the MMRP for the life of the Project. An introduction describing the components of the MMRP and terms used therein is included as part of Appendix A.

1.3 New Information in the Final EIR

Responses to comments received on the Draft EIR focus on comments that pertain to the adequacy of the analysis in the Draft EIR or to other aspects pertinent to the potential effects of the Project on the environment pursuant to CEQA. Comments that address topics beyond the purview of the EIR or CEQA are noted as such for the public record. Where comments have triggered changes to text or exhibits in the Draft EIR, these changes appear as part of the specific response and are consolidated in Chapter 4, *Errata to the Draft EIR*.

If "significant new information" is added to an EIR after a notice of public review of the Draft EIR document has been given (in this case, July 22, 2022, for the Draft EIR), but before final certification of the EIR, the Lead Agency must issue a new notice and recirculate the Draft EIR for further comment and consultation. State CEQA Guidelines Section 15088.5 (*Recirculation of an EIR Prior to Certification*), specifies the following:

> "Significant new information" requiring recirculation include, for example, a disclosure showing that:
>
> (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
>
> (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it; or

(4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."

None of the changes to the Draft EIR identified in this document meet any of the above conditions. Therefore, recirculation of any part of this Final EIR not required. The information presented in the Draft EIR and this document support this determination by the City.

1.4 Organization of This Final EIR

Following this **Chapter 1, *Introduction***, this Response to Comments / Final EIR is organized as described below:

- **Chapter 2, *Updated Project Information*** – This chapter presents updates to information that pertains to the HEU.
- **Chapter 3, *Comments and Responses*** – This chapter presents a roster showing each public agency, organization, or individual that provided comments on the Draft EIR generally during the public review and comment period for the Draft EIR. This chapter also includes copies of the written comments received by email during the public review and comment period on the Draft EIR. Specific responses to the individual comments in each correspondence are provided after each letter. Finally, this chapter includes responses to verbal comments received on the Draft EIR at the City of Mountain View EPC meeting held on Wednesday, August 3, 2022. Responses are presented to summarize verbal comments, grouped by topic.
- **Chapter 4, *Errata to the Draft EIR*** – This chapter presents all updates made to provide clarification, amplification, and corrections to the text and exhibits in the Draft EIR - changes either initiated by City staff or responses to comments received during the public review and comment period on the Draft EIR. Changes that respond to specific comments are also stated or referenced in the corresponding response provided in Chapter 3, *Consolidated Comments and Responses*.
- **Appendices** –The appendices include the MMRP for the HEU.

CHAPTER 2
Updated Project Information

2.0 Introduction

This section discusses new or updated information that the City has determined relates to the City of Mountain View Housing Element Update (HEU or Project), related approvals or requirements, or other information mentioned in the Draft EIR. Although none of the updates discussed here are changes to the Project or the Draft EIR that could result in changes to the environmental analysis in the Draft EIR under CEQA, the City has decided that these changes warrant disclosure in this Response to Comments document for informational purposes for the public and decision-makers of the HEU.

None of the information in this chapter is considered "significant new information" defined in State CEQA Guidelines Section 15088.5 and requiring recirculation of any part of this Final EIR (see Chapter 1, *Introduction*).

2.1 Updates Related to the Project

2.1.1 Updates to the HEU

Based on comments received on the Draft Housing Element Update from the California Department of Housing and Community Development (HCD) , changes have been made to the HEU. The changes are mainly related to the provision of programs or recategorization of information presented in the Draft HEU. None of these changes materially affect or alter the analysis or conclusions of the Draft EIR.

The sites inventory has been updated and is now 17,779 units. This change is based on several factors, which do not have a meaningful effect on the environmental impacts of the growth:

- Projects that started construction before January 2022 have been added (approximately 1,381 units). These units would have already been considered in any environmental analysis.

- Other newly submitted projects were added to the "Pipeline" list (approximately 900 units). These units comply with existing zoning and general plan designations.

- Two additional sites were added to the opportunity sites in the inventory. One site (1500 North Shoreline Boulevard) complies with existing zoning and General Plan designation,

the other (1250 Grant Road) is consistent with the rezoning adopted concurrent with the Housing Element (amendments to the Grant Phyllis Precise Plan),and is within the growth projected for its environmental analysis. The addition of these two sites results in a gain of approximately 2,000 units.

- Methodology changes and removal of some opportunity sites in the sites inventory result in a loss of approximately 1,220 units. This includes the removal of three APNs associated with 500 W El Camino Real. The other, more significant change involve the further discounting on large multi-tenant retail sites whereby an 80 percent reduction has been applied towards the realistic unit capacity. This takes a more conservative unit capacity estimate should these sites develop at lower densities than projected or with non-housing uses.

The updates to the Housing Sites Inventory fall within the growth envelope analyzed in the Draft EIR. While the number of units in the Housing Sites Inventory did increase somewhat, much of this increase is due to the inclusion of additional units that are under construction in the City and other newly submitted projects. With the removal of some opportunity sites and other development capacity-related changes, a balancing effect occurs. The Draft EIR focused on changes in development potential in the City based on amendments to the General Plan, rezonings, and programs anticipated to be adopted with the proposed HEU. The updates to the proposed HEU and Housing Sites Inventory are consistent with that development potential increase, although it is acknowledged that some additional capacity could be realized during the HEU-period that was anticipated beyond 2031 in the Draft EIR. However, the analysis considers the growth potential as a whole, so these changes would not materially affect or alter the analysis or conclusions of the Draft EIR.

CHAPTER 3
Comments and Responses

3.1 Introduction

This section contains the comment letters, emails, and oral comments received on the Draft EIR. Following each comment letter is a response by the City intended to supplement, clarify, or amend information provided in the Draft EIR or refer the reader to the appropriate place in the document where the requested information can be found. Responses focus on comments that pertain to the adequacy of the analysis in the EIR or to other aspects pertinent to the potential effects of the HEU on the environment pursuant to CEQA. Comments that address topics beyond the purview of the EIR or CEQA are noted as such for the public record. Where comments have triggered changes to the Draft EIR, these changes appear as part of the specific response and are consolidated in Chapter 4, *Errata to the Draft EIR*, where they are listed in the order that the revision would appear in the Draft EIR document.

3.2 List of Commenters

Table 3-1, below, lists each public agency, organization, and individual that provided comments on the Draft EIR generally during the public review and comment period for the Draft EIR, which began on July 22, 2022,. September 5, 2022.[1] The comments addressed in this Final EIR are presented in the order of the commenters listed below. Commenters have an alphabetic designation that corresponds to the category of commenter, such as "A" for public agencies. A number follows the alphabetic designation to indicate the sequence of the comment submissions. For example, "A-1" is the first public agency comment submission identified, as shown below. Specific comments within each correspondence also are identified by a numeric designator that reflects the numeric sequence of the specific comment within the correspondence (e.g., "A-3-3" for the third comment in Comment Letter A-3). Section 3.4, which follows later in this chapter, reproduces each letter with the numeric comment brackets indicated, followed by the responses to each comment.

[1] Due to the Labor Day holiday on September 5, 2022, comments were accepted through September 6, 2022.

TABLE 3-1
COMMENT LETTERS RECEIVED CONCERNING THE DRAFT EIR

Designator	Name/Entity	Author(s) of Comment Letter/e-mail	Date Received
Agencies			
A-1	Santa Clara Valley Transportation Authority (VTA)	Robert Swierk, AICP, Principal Transportation Planner	September 1, 2022
A-2	California Department of Toxic Substances Control (DTSC)	Gavin McCreary, Project Manager, Site Evaluation and Remediation Unit	September 2, 2022
A-3	Mountain View Los Altos High School District (MVLA)	Nellie Meyer, Ed.D., Superintendent	September 2, 2022
A-4	Santa Clara Valley Water District (Valley Water)	Kevin Thai, CFM, Associate Engineer – Civil, Community Projects Review Unit	September 6, 2022
Organizations			
O-1	Mountain View YIMBY	David Watson	July 31, 2022
O-2	Santa Clara Valley Audubon Society (SCVAS) & GreenSpacesMV	Shani Kleinhaus, Environmental Advocate, SCVAS & Bruce England, GreenSpacesMV	September 5, 2022
Individuals			
I-1	Hala Alshahwany		September 3, 2022

A public hearing to receive verbal comments on the Draft EIR was held at the City of Mountain View Environmental Planning Commission (EPC) meeting on Wednesday, August 3, 2022. **Table 3-2** below lists persons who provided verbal comments at the City of Mountain View EPC Public Hearing on the Draft EIR. No members of the public provided comments on the Draft EIR during the meeting. A summary of comments raised by members of the EPC during the EPC Public Hearing and responses to comments are provided in Section 3.5 below.

TABLE 3-2
ENVIRONMENTAL PLANNING COMMISSION PUBLIC SPEAKERS AND COMMISSIONERS

Environmental Planning Commission Public Hearing – August 3, 2022

Public Speakers

- No members of the public provided comments

Environmental Planning Commissioners

- Chair William Cranston
- Vice Chair Joyce Yin
- Chris Clark
- Hank Dempsey
- Jose Gutierrez
- Preeti Hehmeyer
- Alex Nunez

3.3 Responses to Individual Comment Letters

This section includes copies of the written comments received by email during the public review and comment period on the Draft EIR. Specific responses to the individual comments in each correspondence are provided after each letter.

As described in Section 3.2 above, each correspondence is identified by an alphabetic designation that corresponds to the category of commenter, such as "O" for organizations, and a number follows the alphabetic designation to designate the sequence of the comment submissions (e.g., "O-2" for the second organization comment letter). Specific comments within each correspondence also are identified by a numeric designator that reflects the numeric sequence of the specific comment within the correspondence (e.g., "O-2-3" for the third comment in Comment Letter O-2).

Responses focus on comments that pertain to the adequacy of the analysis in the EIR or to other aspects pertinent to the potential effects of the HEU on the environment pursuant to CEQA. Comments that address topics beyond the purview of the EIR or CEQA are noted as such for the public record. Where comments have triggered changes to the Draft EIR, these changes appear as part of the specific response and are consolidated in Chapter 4, *Errata to the Draft EIR*, where they are listed in the order that the revision would appear in the Draft EIR document.

Santa Clara Valley Transportation Authority

Comment Letter A-1

September 1, 2022

City of Mountain View
Community Development Department
Attention: Ellen Yau, Senior Planner
500 Castro Street, P.O. Box 7540
Mountain View, CA 94039-7540

RE: Mountain View Housing Element Update DEIR and Draft Document

Dear Ellen,

VTA appreciates the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Mountain View Housing Element Update (HEU), as well as the draft HEU document. VTA has reviewed the DEIR and draft HEU document and has the following comments: A-1-1

Consistency of Draft HEU Document with VTA Land Use & Development Review Policy

VTA has reviewed the draft HEU document at a high level for consistency with the VTA Board-adopted Land Use & Development Review Policy (see https://www.vta.org/programs/land-use-transportation-luti-program). The VTA Land Use & Development Review Policy establishes a framework for VTA's involvement in local comprehensive planning and development review processes. Overall, VTA believes that the draft HEU exemplifies several of the guiding principles in VTA's policy, including "Support Transit-Supportive Development in Close Proximity to Transit" and "Prioritize Sustainable Travel Behavior." These topics are discussed further in the sections below. A-1-2

VTA Guiding Principle to Support Transit-Supportive Development

VTA supports the direction of the HEU to concentrate many of the Opportunity Sites in the Inventory within walking distance of frequent transit services (including Caltrain, VTA light rail, and VTA Rapid and local bus service along El Camino Real) as well as shops and services. This will help increase opportunities for residents to walk, bike and take transit for daily activities, resulting in reduced Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions. A-1-3

VTA notes that a substantial percentage of the housing capacity in the draft HEU Inventory is in the North Bayshore area, which is not located on the core transit network and is not as well served by shops and services as other areas of the city. VTA is supportive of the City's efforts to balance jobs and housing within the City, and VTA encourages the City to continue its efforts to make North Bayshore a place where daily trips can be accomplished without a car, including supporting the Mountain View TMA and MVgo shuttle, supporting the A-1-4

Mountain View Community Shuttle, continuing to prioritize transit on Shoreline Boulevard and Charleston Boulevard, and including strong Transportation Demand Management (TDM) requirements with new development in North Bayshore.

A-1-4

VTA Guiding Principle to Prioritize Sustainable Travel Behavior

VTA supports the inclusion of several policies in draft HEU Chapter 3 that prioritize the use of sustainable travel behavior including walking, bicycling and taking transit. This includes:

- Policy 1.1 to "Ensure that adequate residential land is available to accommodate the City's RHNA, with special focus on Precise Plan areas near transit, employment centers, and services";
- Policy 1.3 to "Maintain or improve the character and quality of neighborhoods through upgrades to existing developments, sensitively designed new developments, improved streetscapes, and better access to schools, parks, goods, services, jobs, transportation, and other needs"; and
- Policy 1.6 to "Provide incentives, such as reduced parking standards and/or reductions in other development standards and fees, to facilitate the development of housing that is affordable to lower- and moderate-income households." VTA notes that reduced parking standards will also help incentivize the use of sustainable travel modes by residents.

A-1-5

DEIR Mitigation Measure TRA-1, Implement VMT Reduction Measures

VTA supports the inclusion of Mitigation Measure TRA-1, Implement VMT Reduction Measures, to address VMT generated by residential projects in the Housing Element Update that do not "screen out" of VMT analysis requirements. This mitigation measure should help incentivize sustainable travel behavior, building on the draft HEU polices noted above. VTA notes that the discussion of potential VMT mitigation measures in the City's VMT guidelines in Mitigation Measure TRA-1 (on pages 4.14-23 to 4.14-24 of the DEIR) includes some measures that may primarily apply to employment projects, or where the studies supporting the VMT reductions may only provide evidence for employment projects. VTA recommends that the EIR text be revised to note this caveat.

A-1-6

Preservation of Local Retail in Village Center Locations

VTA notes that the draft HEU Inventory includes a number of "Village Centers" across the City, including some along El Camino Real and some in other locations such as the Blossom Valley shopping center at Cuesta & Miramonte. VTA supports the concept of intensifying land uses at Village Centers if they are located close to frequent transit, shops and services. However, adding housing must be done carefully at these locations to prevent the loss of retail and services. The loss of these other uses could make it more difficult to walk, bike and take transit, both for residents of the newly-constructed housing and residents in nearby neighborhoods. This could increase VMT and GHG per capita, working against transportation and climate goals.

A-1-7

VTA staff has discussed this issue with City staff recently and understands that the risk of displacement or loss of local retail in these Village Center locations originates from their inclusion in the City's General Plan itself, coupled with recent housing laws which, when layered together, may have unintended consequences in terms of retail displacement. VTA encourages the City to continue to explore strategies to preserve local retail services even as needed housing development is proposed and approved in Mountain View, and VTA staff is open to further discussions on this topic.

A-1-7

Thank you again for the opportunity to review this project. Please do not hesitate to contact me at 408-321-5949 or robert.swierk@vta.org to discuss any questions you may have on this letter.

Sincerely,

Robert Swierk

Robert Swierk, AICP
Principal Transportation Planner

Letter A-1 Response: VTA, September 1, 2022

A-1-1 This is a general comment that includes introductory remarks and serves to introduce the more specific comments that are responded to in detail below.

A-1-2 Comments regarding the merits of the HEU do not raise a significant environmental issue or specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

A-1-3 Comments regarding the merits of the HEU do not raise a significant environmental issue or specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

A-1-4 Comments regarding the merits of the HEU do not raise a significant environmental issue or specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

It is noted that the City is working on transit projects, including a reversible bus lane along the Shoreline Boulevard corridor, to improve transit access to and from the North Bayshore Precise Plan area. Protected bike lanes on Shoreline Boulevard between Middlefield Road and Terra Bella Avenue and additional bike lane safety improvements are also planned to encourage non-vehicle trips. Phases 2 and 3 of the Charleston Bus Boulevard will also prioritize movement of high-occupancy modes over single occupancy vehicles in North Bayshore to incentivize higher utilization of mass transit. Additionally, the North Bayshore Master Plan will include robust Transportation Demand Management (TDM) measures and aggressive mode share targets to facilitate mode shift and meet gateway trip caps.

A-1-5 Comments regarding the merits of the HEU do not raise a significant environmental issue or specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

A-1-6 The City notes this distinction and has added following footnote to the bottom of p. 4.14-24 of the Draft EIR (new text is underlined):

> [1] Some of the measures may primarily apply to employment projects or have studies supporting the VMT reductions that only provide evidence for employment projects. These measures are included for consideration for mixed-use residential projects.

A-1-7 Comments regarding the merits of the HEU do not raise a significant environmental issue or specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

As discussed in Draft EIR Section 4.14, on General Plan Village Center and El Camino Real Village Center retails sites, the retail development would be replaced on-site as part of a mixed-use residential/retail development. The zoning updates at these sites would require the provision of retail or similar neighborhood-serving uses, at a minimum, an amount to replace the existing commercial floor area or as determined by an analysis of typical amounts of such uses in the underlying zone.

Comment Letter A-2

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Jared Blumenfeld
Secretary for
Environmental Protection

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

September 2, 2022

Ms. Ellen Yau
Senior Planner
City of Mountain View
500 Castro Street, P.O. Box 7540
Mountain View, CA 94039-7540
Ellen.Yau@mountainview.gov

DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CITY OF MOUNTAIN VIEW HOUSING ELEMENT – DATED JULY 2022 (STATE CLEARINGHOUSE NUMBER: 2022020129)

Dear Ms. Yau:

The Department of Toxic Substances Control (DTSC) received a Draft Environmental Impact Report (EIR) for the City of Mountain View Housing Element (Project). The Lead Agency is receiving this notice from DTSC because the Project includes one or more of the following: groundbreaking activities, work in close proximity to a roadway, presence of site buildings that may require demolition or modifications, importation of backfill soil, and/or work on or in close proximity to an agricultural or former agricultural site. A-2-1

DTSC recommends that the following issues be evaluated in the Hazards and Hazardous Materials section of the EIR:

1. A State of California environmental regulatory agency such as DTSC or Regional Water Quality Control Board (RWQCB), or a qualified local agency that meets the requirements of Assembly Bill 304 (AB304) should provide regulatory concurrence that any of the sites proposed for housing are safe for construction and the proposed use. A-2-2

2. The EIR acknowledges that historic and future activities on or near the proposed housing sites have resulted in the release of hazardous wastes/substances and are documented on DTSC's Envirostor and the RWQCB's Geotracker databases. A-2-3

The EIR also identifies other past and future activities, including past agricultural practices and removal of existing structures, that could potentially result in the release of hazardous wastes/substances. In instances in which releases have occurred or may occur, at sites not already overseen by DTSC, RWQCB, or other AB304 approved agencies, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. The EIR should also identify the mechanism(s) to initiate any required investigation and/or remediation and the government agency who will be responsible for providing appropriate regulatory oversight. A-2-3

3. Refiners in the United States started adding lead compounds to gasoline in the 1920s in order to boost octane levels and improve engine performance. This practice did not officially end until 1992 when lead was banned as a fuel additive in California. Tailpipe emissions from automobiles using leaded gasoline contained lead and resulted in aerially deposited lead (ADL) being deposited in and along roadways throughout the state. ADL-contaminated soils still exist along roadsides and medians and can also be found underneath some existing road surfaces due to past construction activities. Due to the potential for ADL-contaminated soil DTSC, recommends collecting soil samples for lead analysis prior to performing any intrusive activities for the project described in the EIR. A-2-4

4. If buildings or other structures are to be demolished on any project sites included in the proposed project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition, and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with DTSC's 2006 *Interim Guidance Evaluation of School Sites with Potential Contamination from Lead Based Paint, Termiticides, and Electrical Transformers*. A-2-5

5. If any projects initiated as part of the proposed project require the importation of soil to backfill any excavated areas, proper sampling should be conducted to ensure that the imported soil is free of contamination. DTSC recommends the imported materials be characterized according to *DTSC's 2001 Information Advisory Clean Imported Fill Material*. A-2-6

6. If any sites included as part of the proposed project have been used for agricultural, weed abatement or related activities, proper investigation for A-2-7

organochlorinated pesticides should be discussed in the EIR. DTSC recommends the current and former agricultural lands be evaluated in accordance with DTSC's 2008 *Interim Guidance for Sampling Agricultural Properties (Third Revision)*. A-2-7

DTSC appreciates the opportunity to comment on the EIR. Should you choose DTSC to provide oversight for any environmental investigations, please visit DTSC's Site Mitigation and Restoration Program page to apply for lead agency oversight. Additional information regarding voluntary agreements with DTSC can be found at DTSC's Brownfield website. A-2-8

If you have any questions, please contact me at (916) 255-3710 or via email at Gavin.McCreary@dtsc.ca.gov.

Sincerely,

Gavin McCreary
Project Manager
Site Evaluation and Remediation Unit
Site Mitigation and Restoration Program
Department of Toxic Substances Control

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Mr. Dave Kereazis
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Letter A-2 Response: DTSC, September 2, 2022

A-2-1 This is a general comment that includes introductory remarks and serves to introduce the more specific comments that are responded to in detail below. The comments regarding the components of the proposed Project are noted and are consistent with the discussion in Chapter 3, *Project Description*, of the Draft EIR. This comment raises neither significant environmental issues nor specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088.

A-2-2 The City agrees that in the event that hazardous materials are identified at a given development site at concentrations above regulatory action levels, the appropriate regulatory agency should be engaged to oversee investigation and cleanup. This is consistent with the regulations summarized in Section 4.8.3, *Regulatory Setting*, in Section 4.8, *Hazards and Hazardous Materials*.

A-2-3 Consistent with the above Response to Comment A-2-2, the City agrees that for sites where information is identified that indicates the potential to encounter hazardous materials at concentrations above regulatory action levels, those sites will require investigation consistent with the regulations and Mitigation Measure HAZ-1 described in Section 4.8, *Hazards and Hazardous Materials*. In the event that hazardous materials are identified at concentrations above regulatory action levels, cleanup would be required to address the hazardous materials. The Draft EIR identifies mechanisms to initiate investigation and remediation, if needed, as discussed below. No edits for the Draft EIR are needed to respond to this comment.

The City of Mountain View Standard Conditions of Approval require the project applicant to prepare a Toxic Assessment report as part of the building permit submittal, demonstrating that hazardous materials do not exist on the site or that construction activities and the proposed use of this site are approved by any regulatory agencies with jurisdiction. No building permits will be issued until each agency and/or department with jurisdiction has released the site as clean or a site toxics mitigation plan has been approved.

Mitigation Measure HAZ-1, *Phase I Environmental Site Assessment*, requires that the project applicant prepare a Phase I environmental site assessment in accordance with American Society for Testing and Materials Standard E1527 for listed hazardous materials sites. The Phase I assessment would evaluate whether a proposed development site has or may have environmental issues that could affect the development of the site.

A-2-4 As discussed above in Responses to Comment A-2-3, the City has established mechanisms that require project applicants to evaluate proposed development sites for hazardous materials, which would include testing for aerially-deposited lead in the event that the proposed project proposes ground-disturbing work in roadways.

A-2-5 See Responses to Comments A-2-2 and A-2-3. No edits for the Draft EIR are needed to respond to this comment.

A-2-6 The City agrees that project applicants must demonstrate that imported fill does not contain hazardous materials at concentrations above regulatory action levels. This information would be required as part of the building permit submittal discussed above in the Response to Comment A-2-3.

A-2-7 See Responses to Comments A-2-2 and A-2-3. No edits for the Draft EIR are needed to respond to this comment.

A-2-8 This is a general comment that includes concluding remarks and provides resources for future consultation and program review. The City appreciates this information and looks forward to working with DTSC on future projects.

MVLA
HIGH SCHOOL DISTRICT
Serving the communities of Mountain View, Los Altos and Los Altos Hills

MOUNTAIN VIEW LOS ALTOS HIGH SCHOOL DISTRICT

September 2, 2022

Comment Letter A-3

City of Mountain View
Community Development Department
Attn: Ellen Yau
500 Castro Street, PO Box 7540
Mountain View, CA 94039-7540
Ellen.Yau@mountainview.gov

RE: Mountain View-Los Altos Union High School District Comment Letter on the Draft EIR for the City of Mountain View Housing Element Update

Dear Ms. Yau:

The Mountain View-Los Altos Union High School District ("District") hereby submits its comments on the City of Mountain View's ("City") Draft Environmental Impact Report ("Draft EIR") for the City of Mountain View Housing Element Update ("Project"). The District's comments concern the need to provide assurances that funding for new schools to serve the Project area will be in place and the unstudied Project impacts on the Districts' schools will be analyzed. As a result, the Draft EIR needs revision and recirculation to disclose the significant new information to the public and allow comment on the new information and realistic mitigations for already-known unmitigated impacts from the Project.

A-3-1

The District must mention that it has actively collaborated with the City for years, but the City has not reciprocated with that same level of collaboration. In fact, the District feels it has been repeatedly ignored. That is especially true, now, when the City is considering housing that will generate 2,930 students to the District's schools. The District's alarm over the years has now reached a panic level. In order for the Project to be successful, the City must understand that school infrastructure is not an afterthought and must be a forethought and considered now. Many of the District's concerns in this letter could have been resolved earlier had the City consulted long ago with the District.

The District is comprised of (i) two comprehensive high schools, Los Altos High School and Mountain View High School, which have consistently been ranked in the top 500 high schools nationally; (ii) an alternative high school, Alta Vista, that the State Department of Education has repeatedly honored as a Model Continuation High School; and (iii) an Adult School that provides vital educational and social

services that enable residents to improve their lives and prepare for well-paying and fulfilling careers. The District prides itself on ensuring the best quality education for all its students. With the City's assistance, the District can ensure a high-quality education for incoming students generated by the Project.

A-3-1

Although this letter is technical in nature due to the subject matter, the District wishes to emphasize that its comments are meant to help the City fully evaluate and mitigate the potential impacts to the schools. The District desires mutual cooperation and collaboration with the City to ensure the continued high quality of life in the City and education in its schools.

Draft EIR Comments

Although the Project is expected to generate 15,000 new residences and 2,930 new students to the District's schools, the Draft EIR fails to analyze any impacts on the District's schools except to say that the school developer fees will mitigate any impacts. SB 50 declares that the payment of the developer fees ("Developer Fees") authorized by Education Code section 17620 constitutes "full and complete mitigation of the impacts of any legislative or adjudicative act on the provision of adequate school facilities." (Gov. Code § 65995(h); see, *Id*. § 65996(a).) However, California courts have since acknowledged that Developer Fees do not constitute full and complete mitigation for school-related impacts unrelated to school capacity. (*Chawanakee Unified Sch. Dist. v. Cty. Of Madera* (2011) 196 Cal.App.4th 1016.) For example, the Court identified traffic, air quality, and noise impacts that must be considered in the Draft EIR. (*Id*. at p. 1029.) Since school facilities are a critical part of any residential development and are a critical part of this Project, the City must consider the impacts on the District's schools throughout the Draft EIR impact categories.

A-3-2

I. Hazards and Hazardous Materials

On page 4.8-22, the Draft EIR attempts to analyze whether the Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The Draft EIR only identifies and analyzes the impacts on 10 schools, but it omits the District's Mountain View High School site. Thus, the Draft EIR must also analyze the hazards and hazardous materials impacts on the District's Mountain View High School site and revise this section accordingly.

A-3-3

II. Public Services

The Draft EIR states that adherence to General Plan Policies POS-5.3 and POS-5.4 would reduce the potential effects to school facilities associated with increased enrollment as a result of the population growth. POS-5.3 is to ensure school facilities are constructed to serve community needs to the extent allowed by state law. POS-5.4 requires the City to collaborate with local school districts on their facility needs and provide information on development and growth trends. Additionally, General Plan Policy POS-5.2 requires collaboration with the District on new school development and intensification to accommodate population growth while preserving and protecting public parks and playgrounds. Because the District is already over capacity and the Project will increase capacity, in line with the

A-3-4

above policies, the City must consult with the District to ensure that school facilities that need to be expanded or created are identified in the Project and adequately funded to meet these General Plan policies. A-3-4

Further, the Draft EIR underestimated the capacity impacts of the Project on the District's schools. The Draft EIR states that the District's student enrollment was approximately 4,563 students for the 2020-2021 school year and the existing capacity at the schools is 3,287, which according to the Draft EIR puts the District over capacity, currently, by 1,276 students. Per the Draft EIR, the Project will then add an additional 2,930 students, which would put the District over capacity by 4,206 students. A-3-5

To put how impactful the added students is into perspective, the enrollment at the District's two comprehensive high schools is 2,220 students at Mountain View High School and 2,125 students at Los Altos High School, so the additional 2,930 students generated by the Project could support an entirely new high school site, with potential redistribution of students among those three comprehensive high schools. Therefore, the City must revise this section to correctly analyze the capacity impacts from the Project and the resulting environmental impacts of that redistribution (e.g., traffic). A-3-6

To reiterate, the Draft EIR simply states that payment of Developer Fees constitutes full and complete mitigation of school impacts from development. Even though payment of Developer Fees legally mitigates capacity needs at schools, the reality is Developer Fees are insufficient to construct new classrooms and school sites. This is due largely to the facts that statutory Developer Fees are set by statute (Gov. Code § 65995) and fail to acknowledge the differences in costs of school construction from one school district to another. This particularly burdens school districts in high cost of living areas, like the City, where both land and construction costs drastically exceed other parts of the state. Developer Fees fail to contemplate the special facilities needs of the districts experiencing rapid growth. Without adequate funding, the increase in students, combined with the already over capacity schools may require the District to spend valuable resources on temporary solutions to the District's facilities problems, such as the purchase or lease of portable classrooms to house the new students. A-3-7

Further, payment of Developer Fees does not mitigate the Project's significant impacts on the District's schools concerning air quality, noise, pedestrian safety, traffic and transportation, utilities, and any other environmental impacts. (*Chawanakee Unified Sch. Dist. v. Cty. Of Madera* (2011) 196 Cal.App.4th 1016.) These must be analyzed and provided for in a recirculated draft EIR. A-3-8

III. District Consultation

Pursuant to Government Code sections 65352 and 65352.2, the City is required to coordinate planning of school facilities with school districts. Specifically, Government Code section 65352 (a) (2) states "before a legislative body takes action to adopt or substantially amend a general plan, the planning agency shall refer the proposed action to . . . . an elementary, high school, or unified school district within the area covered by the proposed action." Government Code section 65352.2 (d)(2) advises the local agency and school district to review and consider "[o]ptions for the siting of new schools whether or not the local city or counties existing land use element appropriately reflects the demand for public A-3-9

school facilities and ensures that new planned development reserves location for public schools in the most appropriate locations." The legislature's intent was clear that local agency planning should include siting of school sites and coordination between the City and District.

A-3-9

Further, over the past few years, the District has consulted with the City on the potential siting of a new high school site at the 17-acre parcel of land located at West Middlefield Road and Moffett Boulevard (the "Shenandoah Property"), currently owned by the United States Department of Army ("Army"). Since District's schools are already over capacity, the District has a substantial need for the Shenandoah Property. Thus, although the City and Army may also have needs for the Shenandoah Property, the City should identify this site in its Draft EIR as a potential new high school site, regardless of recent, unbinding comments from the property owners.

A-3-10

IV. Transportation

Although the California Environmental Quality Act ("CEQA") no longer considers vehicle delay as a significant impact, potential educational disruption and safety impacts are still required where increased traffic and congestion causes secondary impacts to students' education and safety hazards for pedestrians, bicyclists, and other traffic. The Draft EIR did not analyze the Project's potential addition to, and delay of, bus and automobile drop-off and pick-up activities at the District's schools. The added delay could disrupt the educational day and contribute to more frequent absences. Such disruptions would detract from the most effective educational program. The District understands that this is only a Program EIR, but the City must ensure that prior to approving any of the 15,000 housing units, the above transportation impacts have been analyzed and mitigated, where necessary. The City should also include the following mitigation measure or a similar one to mitigate traffic impacts to the District's schools: "Payment of fair share costs by a developer for traffic and transportation impacts shall be made prior to issuance of a building permit."

A-3-11

Further, because the Project anticipates an increase of 15,000 new residences to the City and 2,930 new students into the District, the Draft EIR must include analysis of the safety impacts of increased vehicle traffic and student pedestrian traffic to and from the District's school sites, especially considering that the District's schools and surrounding infrastructure and housing, were not built to sustain an additional 2,930 students. Thus, the Draft EIR must be revised with an analysis of the Project's impacts on the vehicle movements to and from the District's schools, impacts on pedestrian traffic to and from the District's schools and circulation and congestion during student drop-off and pickup.

A-3-12

Although the Draft EIR articulates a General Plan Policy MOB-6.1 to promote Safe Routes to Schools programs for schools serving the City, it does not actually analyze whether there are impacts on the school routes and safety of students traveling to and from the school sites during construction and Project operation. (Draft EIR, p. 4.14-19.) The Draft EIR must include this analysis and whether there are adequate safety features, such as sufficiently sized sidewalks, bike lanes, crosswalks, stop signs, traffic signals, etc. Without additional analysis, there is no way to confirm whether the Project will have less than significant transportation and secondary impacts upon the District's school operations.

A-3-13

The City should also include the following mitigation measure or a similar one to mitigate pedestrian safety impacts: "Payment of fair share costs by a developer for pedestrian wayfaring improvements that adhere to Safe Routes to Schools shall be made prior to issuance of a building permit." A-3-13

V. Conclusion

The District desires that the Project's potential significant impacts to the students, parents, faculty, and staff of the District's schools are fully analyzed and mitigated. Given the lack of analyses in the Draft EIR, the District respectfully requests that the Draft EIR be revised to include those analyses and mitigation measures, as set forth herein and recirculated per the requirements of CEQA. A-3-14

Sincerely,
Nellie Meyer, Ed.D.
Superintendent

cc: City of Mountain View City Council
City of Mountain View Environment Planning Commission
City of Mountain View City Manager
MVLA Board of Trustees

Letter A-3 Response: MVLA, September 2, 2022

A-3-1 This is a general comment that includes introductory remarks and serves to introduce the more specific comments that are responded to in detail below. To the extent the comment relates to the merits of the Project it is forwarded to the decision makers for consideration.

Based on the City's Regional Housing Needs Assessment (RHNA) allocation mandated by the State, the HEU plans for an additional 11,135 dwelling units plus a sizeable "buffer." The Draft EIR evaluated the potential for approximately 15,000 multi-family housing units (including approximately 96 accessory dwelling units) during the HEU planning period as a maximum scenario for purposes of the CEQA evaluation, understanding that the buffer size and the final sites selected for inclusion in the Housing Element will be determined by the City Council upon adoption of the HEU. Of this, approximately 13,600 units are already allowed under the City's adopted General Plan, zoning, and Precise Plans and the remaining 1,400 units would be created through rezonings and General Plan amendments. In addition, the EIR also analyzes a possible increase in housing production from rezonings and General Plan Amendments of approximately 2,700 units beyond 2031. The City is required by State law to adopt a HEU to meet the RHNA.

This EIR is a Program EIR, which has been prepared to evaluate the anticipated environmental effects of the proposed HEU in conformance with the provisions of CEQA and the CEQA *Guidelines*. As a program EIR, this EIR analyzes potential impacts of development that would be allowed by the HEU without having site-specific development proposals in hand, and broadly considers proposed sites, their environmental setting, and potential impacts that could stem from their development. Readers will note that the level of detail is different than in a project-specific EIR, which generally considers a single, specific proposal on an individual site. Future discretionary actions that would be facilitated by the HEU's adoption, such as those related to the development of housing, would be assessed to determine consistency with the analysis provided in this program EIR.

The Draft EIR discussed school facilities for MVLA in Section 4.13, *Public Services and Recreation*. Consistent with the comment and as described in the Draft EIR, all 15,000 units projected during the HEU planning period would conservatively generate approximately 2,930 students for MVLA schools, using the RHNA allocation percentages for above and below market-rate units (Draft EIR p. 4.13-16). However, as explained more in Response to Comment A-3-6 below, the capacity increase is also analyzed in the Draft EIR in context of the changes to development capacity in the City proposed as part of the HEU. Of the new units, only a small percentage (approximately 1,250 units in the sites inventory and 2,850 units beyond 2031) would result from changes in City policy, zoning, or Precise Plans, and the

balance could theoretically occur with or without the Project because it is consistent with existing policy, zoning, and Precise Plans.

As also discussed further in Response to Comment A-3-2 below, Senate Bill (SB) 50 authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities and restricts the ability of the City to deny project approvals on the basis that public school facilities are inadequate. Payment of school fees is required by SB 50 for all new residential development projects and is considered full and complete mitigation of any school impacts. As such, the City cannot require additional mitigation for any impacts on school facilities or due to the inadequacy of school facilities. Nonetheless, the City will continue to collaborate with the District on their facility needs and provide information on development and growth trends as well as ensuring school facilities are constructed to serve community needs to the extent allowed by State law.

This comment raises neither new significant environmental issues nor specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088.

A-3-2 Potential impacts of the HEU on schools, including MVLA schools, were discussed in Section 4.13, *Public Services and Recreation*, of the Draft EIR in accordance with the requirements of CEQA. Importantly, and as discussed in the Draft EIR, CEQA's treatment of public services impacts is narrowly defined to include only those impacts that would arise from the provision of new or physically altered governmental facilities, *the construction of which could cause significant environmental effects* (emphasis added). The precise significance criteria used in Section 4.13 of the Draft EIR, and also in CEQA Guidelines Appendix G (XV)(a) asks:

> *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: 1) Fire protection; 2) Police protection; 3) Schools; 4) Parks; and 5) Other public facilities?*

CEQA regulations and applicable case law on this issue demonstrate the threshold concerns only the environmental effects associated with the provision of new or altered physical public service facilities.[2] School capacities, service ratios, and other performance objectives are relevant to the analysis only within the context of whether or not new or expanded facilities would be required to meet defined criteria related to

[2] CEQA Guidelines Section 15382 restricts the effects that CEQA mitigation addresses to those "significant effects on the environment" which are defined to include "adverse change in any of the physical conditions within the area affected by the project" "An economic or social change by itself shall not be considered a significant effect on the environment." 14 Cal. Code Regs. §15382.

those service objectives, and what the environmental effects would be of providing those facilities.

The Draft EIR addressed impacts to public services within this legally-defined context in Section 4.13 of the Draft EIR. The Draft EIR described that the HEU would result in an increase in school-aged children enrollment in MVLA schools which would worsen an existing capacity exceedance. As such, facility updates to increase capacity would also likely be required. However, the new students would be added to the district-wide enrollment of MVLA schools incrementally over time, if and when development occurs, and any expansion of school facilities would be required to undergo environmental review as they are identified. Appropriate measures would be identified and implemented as applicable to reduce any construction-related or operational environmental effects of those facilities. Compliance with General Plan policies and payment of school impact fees were also acknowledged in the Draft EIR (p. 4.13-16) to reduce the social and economic impacts of the HEU (that is, the non-CEQA impacts of the HEU).

As discussed in Section 4.13.3 of the Draft EIR, the Leroy F. Greene School Facilities Act of 1998, or SB 50, authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities, and restricts the ability of local agencies to deny project approvals on the basis that public school facilities (classrooms, auditoriums, etc.) are inadequate. School impact fees are collected at the time when building permits are issued. Payment of school fees is required by SB 50 for all new residential development projects and is considered full and complete mitigation of any school impacts. School impact fees are payments to offset capital cost impacts associated with new developments, which result primarily from costs of additional school facilities, related furnishings and equipment, and projected capital maintenance requirements. As such, agencies cannot require additional mitigation for any impacts on school facilities or due to the inadequacy of school facilities. However, indirect impacts related to school attendance or construction of new facilities must still be considered under CEQA (e.g., indirect impacts on traffic, air quality, noise).

Indirect impacts to schools were considered throughout the Draft EIR. Schools were included as "sensitive receptors" in the air quality section of the Draft EIR (see Draft EIR Section 4.2) and as "noise-sensitive land uses" in the noise section of the Draft EIR (Draft EIR Section 4.11). Impacts related to hazardous materials, substances, or waste in proximity to schools were also analyzed in Section 4.8, *Hazards and Hazardous Materials*, of the Draft EIR. Section 4.14, *Transportation*, analyzed impacts relative to conflicts with a program, plan, ordinance or policy addressing the circulation system, including City General Plan Policy MOB-6.1, which promotes Safe Routes to Schools (SRTS) programs for all schools serving the City (Draft EIR p. 4.14-18-19). Additionally, residential-generated VMT includes vehicle travel for school trips, and trip reduction measures are included in Mitigation Measure TRA-1.

Trip reduction measures are intended to apply broadly in the City and include goals to reduce transportation-related impacts to schools.

A-3-3 Section 4.8, *Hazards and Hazardous Materials*, has been revised to include Mountain View High School and other public schools inadvertently left off of the list of public schools. The Draft EIR on p. 4.8-6 has been corrected consistent with the above (new text is underlined):

Proximity to Schools

The following public schools are located in Mountain View:

- Stevenson Elementary School at 750 San Pierre Way
- Theuerkauf Elementary School at 1625 San Luis Avenue
- ~~Waldorf School of the Peninsula at 180 North Rengstorff Avenue~~
- Landels Elementary School at 115 West Dana Street
- Mariano Castro Elementary School at 500 Toft Street
- ~~St. Joseph Mountain View at 1120 Miramonte Avenue~~
- Monta Loma Elementary at 460 Thompson Avenue
- Springer Elementary School at 1120 Rose Avenue
- Benjamin Bubb Elementary School at 525 Hans Avenue
- Amy Imai Elementary School (previously Huff) at 253 Martens Avenue
- Mountain View High School at 3535 Truman Avenue
- Alta Vista High School at 1325 Bryant Avenue
- Vargas Elementary School at 220 N Whisman Road
- Mistral Elementary School at 505 Escuela Avenue
- Graham Middle School at 1175 Castro Street
- Crittenden Middle School at 1701 Rock Street

A number of private schools including Waldorf School of the Peninsula (180 North Rengstorff Avenue), St. Joseph Mountain View (1120 Miramonte Avenue), St. Francis High School (1885 Miramonte Avenue), German International School of Silicon Valley (310 Easy Street), Mountain View Academy (360 S Shoreline Blvd), St. Stephen Lutheran School (320 Moorpark Way), and Khan Lab School (1200 Villa Street) are also located in the City. There is also a proposed new school site for the Los Altos School District located at the corner of California Street and Showers Drive.

The Draft EIR on p. 4.8-22 has also been corrected consistent with the above (new text is underlined; deleted text is shown in ~~strikethrough~~):

> As discussed in Section 4.8.2, *Environmental Setting, Proximity to Schools,* there are ~~ten~~ 14 public schools and a number of private schools located within Mountain View. The accidental release or spill of hazardous materials transported through the vicinity near schools could expose school children and staff to hazardous materials.

See Final EIR Chapter 4, *Errata to the Draft EIR*, for the revised language. These editorial changes do not alter the conclusions of the EIR.

A-3-4 The comment references City General Plan policies POS-5.2, POS-5.3, and POS-5.4. The policies are listed in the *Regulatory Setting* of Section 4.13, *Public Services and Recreation*, of the Draft EIR (p. 4.13-9). As discussed in the Draft EIR, the City's adherence to General Plan Policy POS-5.3 and POS-5.4, described under Section 4.13.3 would reduce the potential social and economic effects to school facilities associated with increased enrollment as a result of population growth (Draft EIR p. 4.13-16).

Pursuant to these polices, and as noted in Section 4.13.3 of the Draft EIR, the City will cooperate with the school districts to:

- ensure that school facilities are constructed to serve community needs to the extent allowed by state law
- collaborate with school districts on their facilities needs and provide information on development and growth trends.

A-3-5 As discussed in Section 4.13, the Draft EIR acknowledges that school year 2020-2021 MVLA enrollment exceeded the capacity described in the *2020 MVLA Developer Fee Study*, and that the addition of potential school-aged children enrollment as a result of the HEU would worsen this existing capacity exceedance (Draft EIR p. 4.13-16). As such, the Draft EIR does not underestimate the capacity impacts on MVLA schools. See also Response to Comment A-3-6 below, which explains the capacity increase in context of the changes to development capacity unit the City proposed as part of the HEU. Of the new units, only a small percentage (approximately 1,250 units in the sites inventory and 2,850 units beyond 2031) would result from changes in City policy, zoning, or Precise Plans, and the balance could theoretically occur with or without the Project because it is consistent with existing policy, zoning, and Precise Plans.

A-3-6 As discussed in Response to Comment A-3-2, CEQA regulations and applicable case law on this issue demonstrate the threshold concerns only the *environmental* effects associated with the provision of new or altered physical public service facilities.[3] School capacities, service ratios, and other performance objectives are relevant to the analysis only within the context of whether or not new or expanded facilities would be required to meet defined criteria related to those service objectives, and what the environmental effects would be of providing those facilities.

As discussed in Chapter 3, *Project Description*, future development on identified sites identified in the HEU would continue to be at the discretion of individual property owners and will be largely dependent on market forces and -- in the case of affordable housing -- available funding and/or other incentives (Draft EIR p. 3-12). The Draft EIR analyzes the impacts associated with the site inventory to 2031, an increase in approximately 15,000 dwelling units, focused primarily along the commercial corridors and in areas that currently accommodate commercial/industrial uses, mixed uses, and/or multifamily housing. Of this, approximately 13,600 units are already allowed under the City's adopted General Plan, zoning, and Precise Plans and the remaining 1,400 units would be created through rezonings and General Plan amendments. The EIR also analyzes a possible increase in housing production from rezonings and General Plan Amendments of approximately 2,700 units beyond 2031 (Draft EIR p. 3-11). As such, the Draft EIR acknowledges two student generation scenarios: (1) new units enabled by changes in development capacity via rezoning which would conservatively generate approximately 1,279 new students for MVLA schools, assuming the use the MVLA's below market rate multifamily unit student generation rate for all units; and (2) all 15,000 units projected during the HEU planning period which would conservatively generate approximately 2,930 students.[4]

Of the new units, only a small percentage (approximately 1,250 units in the sites inventory and 2,850 units beyond 2031) would result from changes in City policy, zoning, or Precise Plans, and the balance could theoretically occur with or without the Project because it is consistent with existing policy, zoning, and Precise Plans. As noted above, the 1,279 new students estimated as a result of 4,100 new units enabled by changes in development capacity via rezoning presented the most conservative scenario through the assumption that all of these units would generate students at MVLA's below market rate multifamily unit student generation rate for all units.

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3 CEQA Guidelines Section 15382 restricts the effects that CEQA mitigation addresses to those "significant effects on the environment" which are defined to include "adverse change in any of the physical conditions within the area affected by the project" "An economic or social change by itself shall not be considered a significant effect on the environment." 14 Cal. Code Regs. §15382.

4 It is noted that per the updates to the HEU and Housing Sites Inventory (described in Chapter 2 of this FEIR), that the sites inventory has been updated and is now 17,779 units. While the number of units in the Housing Sites Inventory did increase somewhat, much of this increase is due to the inclusion of additional units that are under construction in the City and other newly submitted projects. With the removal of some opportunity sites and other development capacity-related changes, a balancing effect occurs. The Draft EIR focused on changes in development potential in the City based on amendments to the General Plan, rezonings, and programs anticipated to be adopted with the proposed HEU which remains 4,100 units. As such, these changes do not materially affect or alter the analysis or conclusions of the Draft EIR

However, it is noted that multifamily units would likely include a portion of what the MVLA would consider market rate units, resulting in slightly lower student generation rates. For example, assuming 85 percent of the 4,100 units develop as below market rate units, approximately 1,117 students would be anticipated as a result of new units enabled by changes in development capacity via rezoning. [5] Additionally, 2,850 of the units would represent the increase in housing production from rezonings and General Plan Amendments beyond 2031, or outside of the planning period of the HEU (considered more long-term). The 1,250 units enabled by changes in development capacity via rezoning within the HEU planning period (considered more near-term) would generate approximately 390 new students for MLVA schools, conservatively using the MVLA's below market rate multifamily unit student generation rate for all units.

The Draft EIR described that the HEU would result in an increase in school-aged children enrollment in MVLA schools which would worsen an existing capacity exceedance. As such, facility updates to increase capacity would also likely be required. However, the new students would be added to the district-wide enrollment of MVLA schools incrementally over time, if and when development occurs, and any expansion of school facilities would be required to undergo environmental review as they are identified. Appropriate measures would be identified and implemented as applicable to reduce any construction-related or operational effects of those facilities (Draft EIR p. 4.13-16). As such, facility updates to increase capacity are acknowledged in the Draft EIR as likely to occur. However, due to the incremental nature of development under the proposed HEU and that the District's most recent long-term Facilities Master Plan[6] does not identify the need for a new school site given its forecast peak enrollment of 5,023 students in school year 2021-22, it would be speculative to assume where a new school site may be needed to accurately depict potential environmental impacts resulting from a new school site.

As discussed in Response to Comment A-3-2 above, indirect impacts to schools, including transportation, were considered throughout the Draft EIR. See also Responses to Comments A-3-11 through A-3-13 for specific responses to transportation-related comments raised below.

Regardless, any additional residential development in the City would proceed with the full expectation of the District's involvement in the development process in a manner that meets the needs of the District and the students it serves.

A-3-7 The commenter's assertion that SB 50 fees are financially inadequate is an economic consideration which is outside of CEQA's purview. As discussed in Response to

[5] As described on Draft EIR p. 4.13-16, the MVLA uses a student generation rate of 0.047 9-12 grade students for market rate multifamily residential units and a student generation rate of 0.312 9-12 grade students for below market rate multifamily residential units based on the *Mountain View Los Altos Union High School District Response to the Notice of Preparation for the EIR*, March 8, 2022.

[6] MLVA, 2018. *Mountain View Los Altos High School District Master Plan*, March 3, 2018. Available at: https://www.mvla.net/documents/About-MVLA/District-Plans--Reports/MVLA-Facilities-Master-Plan-Final.pdf.

Comment A-3-2 above, SB 50 authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities and restricts the ability of the City to deny project approvals on the basis that public school facilities are inadequate. Payment of school fees is required by SB 50 for all new residential development projects and is considered full and complete mitigation of any school impacts. As such, the City cannot require additional mitigation for any impacts on school facilities or due to the inadequacy of school facilities. The City will continue to collaborate with the District on their facility needs and provide information on development and growth trends as well as ensuring school facilities are constructed to serve community needs to the extent allowed by State law.

A-3-8 See Response to Comment A-3-2 regarding indirect impacts related to schools that were analyzed in the Draft EIR, including those related to air quality, noise, transportation, and hazards and hazardous materials. See also Responses to Comments A-3-11 through A-3-13 for specific responses to transportation-related comments raised below. Additionally, as discussed in Section 4.2, *Air Quality*, the air quality analysis prepared in the Draft EIR related to criteria air pollutants was a plan-level analysis, consistent with Bay Area Air Quality Management District (BAAQMD) recommendations. As such, the significance of the impact of criteria air pollutant emissions generated were based on consistency with regional air quality planning, including an evaluation of population growth and growth in VMT. Any resulting indirect impacts on schools would therefore be subsumed in this analysis. Additionally, project applicants proposing projects that exceed BAAQMD screening levels would be required to prepare a project-level criteria air pollutant assessment of construction and operational emissions at the time the project is proposed. Regarding utilities, any increased demand for utilities service related to schools would be considered incremental and would not rise to a level where a service provider could not provide service or where new utility facilities would be constructed that would result in significant environmental effects due to construction or relocation.

Regarding the statement that the Draft EIR should be revised and recirculated, while information has been added to the Draft EIR in response to comments and as City-initiated updates (see Chapter 4 of this document), no significant new information (e.g., as defined in CEQA Guidelines Section 15088.5 as information leading to identification of a new significant impact or a substantial increase in the severity of an impact) has been identified since publication of the Draft EIR and, consequently, there is no basis for the District's request that the Draft EIR be recirculated.

A-3-9 See Response to Comment A-3-4 regarding City policies that require consultation with school districts. As noted in Response to Comment A-3-4, pursuant to these polices, and as noted in Section 4.13.3 of the Draft EIR, the City will continue to cooperate with the school districts to: (1) ensure that school facilities are constructed to serve community needs to the extent allowed by state law; and (2) collaborate with school districts on their facilities needs and provide information on development and growth trends. Notice of the proposed HEU and a 45-day comment period was

provided pursuant to Government Code §65352 to the MVLA. It is the City's continued expectation that any additional residential development in the City would proceed in partnership with MVLA.

A-3-10 Identification of a school site is not part of the purview of this EIR. A school district through its school facilities planning process may identify a site, and at such point, the City (pursuant to the General Plan policies listed in Response to Comment A-3-4 and discussed in the Draft EIR under Section 4.13.3) will continue to collaborate with the schools district on their facility needs and provide information on development and growth trends as well as ensuring school facilities are constructed to serve community needs to the extent allowed by state law. Furthermore, the referenced "Shenandoah Property" is located outside of city limits and is not under control of the City, as it is owned by the United States Department of the Army. As such, it is not appropriate for the City to identify this site as a potential school site in the Draft EIR.

MVLA would be expected to lead the siting of any new school location and the City would collaborate with the District to achieve its facilities goals, as outlined in the City's General Plan policies. If and when a proposal is formalized to develop the site (or any other site) for the District's use, appropriate environmental review would be required to determine the environmental effects of the undertaking, in compliance with CEQA and other applicable regulations.

A-3-11 Traffic congestion or measures of vehicular delay are not an environmental impact under CEQA per State CEQA Guidelines Section 15064.3. As discussed in Response to Comment A-3-2, Draft EIR Section 4.14, *Transportation*, analyzed impacts relative to conflicts with a program, plan, ordinance or policy addressing the circulation system, including City General Plan Policy MOB-6.1, which promotes Safe Routes to Schools programs for all schools serving the City. Implementation of the HEU would be subject to and implement General Plan policies applicable to transit, bicycle, and pedestrian facilities and service, and development projects under the HEU would be subject to all applicable City guidelines, standards, and specifications related to transit, bicycle, or pedestrian facilities (Draft EIR p. 4.14-18-19).

As also discussed in Response to Comment A-3-2 and Response to Comment A-3-6, performance objectives for schools are relevant to the analysis only within the context of whether or not new or expanded facilities would be required to meet defined criteria related to those service objectives, and what the environmental effects would be of providing those facilities.

Regarding the suggested mitigation measure, the City's Standard Conditions of Approval (Transportation Impact Fee) require that project applicants pay the City's Transportation Impact Fee for the development prior to the issuance of any building permits and prior to approval of the parcel or final map. The City's Transportation Impact Fee (City Code Chapter 43) is based on the *City of Mountain View*

Multimodal Improvement Plan Traffic Impact Fee Nexus Study (2018) which established the required nexus between anticipated future development in the City and the need for certain improvements to the local transportation facilities. Transportation improvements are intended to provide adequate transportation infrastructure that is needed to protect the health, safety, and general welfare of the citizens to facilitate access to jobs, homes, schools, goods, and services (see Section 43.3).

Regarding the request for a specific transportation fee "to mitigate traffic impacts to the District's schools", the City does not have an adopted fee for this issue, nor is it aware of any precedent for such a fee. Establishment of a fee would require identification of an impact, a nexus study, and determination of proportionality. Due to the nature of the proposed Project and lack of detail on specific projects that could be developed under the HEU, the extent of any potentially necessary improvements is not known, and as such it is unclear whether such a fee would be legal under the Mitigation Fee Act (Gov't Code §§ 66000 – 66025) and Assembly Bill 602 (2021).

See also Response to Comment A-3-13 regarding specific transportation analysis required for development projects during the City's entitlement process.

A-3-12 As discussed in Response to Comment A-3-11, development projects under the HEU would be subject to all applicable City guidelines, standards, and specifications related to transit, bicycle, or pedestrian facilities, including General Plan Policy MOB-6.1, and Policy MOB 1.6, which provides traffic calming, especially in neighborhoods and around schools, parks and gathering places. Traffic congestion or measures of vehicular delay are not an environmental impact under CEQA per State CEQA Guidelines Section 15064.3.

A-3-13 See Responses to Comments A-3-11 and A-3-12. Development projects proposed under the HEU that generate at least 20 net new peak-hour trips (or those within a Precise Plan area) would require completion of a Multi-modal Transportation Analysis (MTA) during the entitlement process. The MTA would ensure that the proposed development conforms with City policies (including traffic calming, neighborhood intrusion, and enhancing publicly accessible bicycle, pedestrian, and transit connections), that adequate multimodal site access and circulation are provided to local schools serving the proposed residential projects, appropriate fair-share fees are identified, and that operational improvements support pedestrian, bicycle, and transit quality of service.

Additionally, the City has an ongoing commitment to fund the Safe Routes To School (STRS) program and have been working with the school districts to ensure that students receive safety training. The City's SRTS program also include ongoing infrastructure planning and improvement in the vicinity of schools, including walking audits. Proposed projects will also comply with the City's Comprehensive Modal

Plan, AccessMV, to ensure proper analysis of the potential impacts on the bicycle level of traffic stress, pedestrian quality of service, potential transit demand, and vehicle conditions under existing and planned development scenarios. Additionally, the City's commitment to ending traffic fatalities and serious injuries on Mountain View roadways through Vision Zero is reflected in the STRS program, the Local Road Safety Plan, and forthcoming Active Transportation Plan (ATP)—all of which focus on delivering roadway improvements and safety counter-measures along the Safe Routes to School network.

A-3-14 This is a general comment that includes concluding remarks, and reiterates comments made above. As a result, no specific response is given here. Pursuant to the impacts related to the scope of the EIR, these have been adequately analyzed.

Regarding the statement that the Draft EIR should be revised and recirculated, while information has been added to the Draft EIR in response to comments and as City-initiated updates (see Chapter 4 of this document), no significant new information (e.g., as defined in CEQA Guidelines Section 15088.5 as information leading to identification of a new significant impact or a substantial increase in the severity of an impact) has been identified since publication of the Draft EIR and, consequently, there is no basis for the District's request that the Draft EIR be recirculated.

The City will continue to collaborate with the District on their facility needs and provide information on development and growth trends as well as ensuring school facilities are constructed to serve community needs to the extent allowed by State law, pursuant to the General Plan policies discussed above and in the Draft EIR under Section 4.13.3.

Comment Letter A-4

From: Kevin Thai <KThai@valleywater.org>
Sent: Tuesday, September 6, 2022 3:28 PM
To: Yau, Ellen <Ellen.Yau@mountainview.gov>
Subject: RE: DEIR for the City of Mountain View's Housing Element Update Project

Hi Ellen,

Here is Valley Water's comment:

As noted in the Water Supply Assessment and draft EIR, there is the potential for water shortages in multiple dry years. Water conservation is an important component of the county's future water supply and the draft EIR lists a number of measures the City requires of new development; Valley Water appreciates Mountain View's commitment to water conservation. To meet future needs as allowed in the proposed Housing Element, additional water demand management and conservation measures will need to be implemented. Consistent with General Plan Policy INC 5.2: Citywide water conservation, Valley Water suggests that all new multifamily development be required to install separate submeters to each unit to encourage efficient water use. Studies have shown that adding submeters can reduce water use 15 to 30 percent. A-4-1

Thanks,
Kevin

KEVIN THAI, CFM
ASSOCIATE ENGINEER - CIVIL
Community Projects Review Unit
Tel. (408) 630-3157 / CPRU Hotline: (408) 630-2650

Santa Clara Valley Water District is now known as:

Valley Water

Clean Water • Healthy Environment • Flood Protection

5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

Letter A-4 Response: Valley Water, September 6, 2022

A-4-1 As discussed in Section 4.15, *Utilities and Service Systems*, of the Draft EIR, projects developed as a result of the HEU would be required to comply with Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen Code). The supplement to the 2019 CALGreen Code (effective July 1, 2021) requires that submeters be installed to measure water usage of individual rental dwelling units for multifamily and dwelling units in mixed-use residential/commercial buildings. The comment does not raise any new environmental issues that have not already been adequately described and evaluated in the Draft EIR, and no further response is required.

Comment Letter O-1

Mountain View YIMBY

July 31, 2022

Ellen Yau, Senior Planner
City of Mountain View, Community Development Department
P.O. Box 7540
Mountain View, CA 94039

Re: Comments on Draft Environmental Impact Report for Mountain View's Housing Element Update (SCH #2022020129)

Dear Senior Planner Yau,

Mountain View YIMBY, an organization with members who live, work, and/or do business in the city, is submitting these comments on the Draft Environmental Impact Report (DEIR) for Mountain View's Housing Element Update. We hope our comments will help the Community Development Department craft a final EIR that supports a robust, fully compliant housing element, and that serves as the foundation for tiered, efficient environmental review of subsequent rezonings and housing approvals. O-1-1

1. The EIR should analyze alternatives that would fully accommodate the city's RHNA

Mountain View's RHNA for the 2023-2030 planning period (11,135 units) translates into roughly 1,400 units/year, or 1.6x the current rate of production contemplated by the No Project Alternative (derived from 5th Cycle APRs). O-1-2

The Housing Sites Inventory concludes that rezoning for merely 1,400 above-baseline units by 2030—units that would not be built if the regulatory status quo remained in place—will suffice. Yet as the comment letter from Mountain View YIMBY dated July 13 shows, a historically-grounded assessment of pipeline capacity suggests that the city should aim to rezone for about **4,900 above-baseline units by 2030**.

It is imperative that the final EIR analyze alternatives that provide additional rezoning scenarios. Without this, there is a real risk that the housing element update will go off the rails, as follows:

- **Train Wreck #1**. In this scenario, HCD would reject the pipeline/status-quo capacity analysis of the current housing element draft, and require the city to commit to a much more ambitious rezoning plan. The city would find itself unable to complete the requisite environmental review for a compliant plan prior to the deadline for housing element adoption. The city would thus fall out of compliance, resulting in loss of affordable housing funds and exposure to the builder's remedy.

- **Train Wreck #2**. In this scenario, HCD would provisionally accept the city's pipeline/status-quo capacity analysis, but require the housing element to include a program for mid-cycle rezoning in case the pipeline's yield falls short of projections. (HCD has imposed similar requirements on other cities that made sunny forecasts of ADU production.) Then, in this scenario, the pipeline yield does fall short, but the city is unable to pull off a timely mid-cycle rezoning because the housing element EIR didn't lay the groundwork for it. HCD responds by decertifying the housing element, cutting off affordable housing funds and exposing the city to the builder's remedy.

O-1-2

2. The EIR should acknowledge the legal effect of a housing element

The Housing Accountability Act generally prohibits cities from denying or "rendering infeasible" an affordable housing project, as defined, if the project "is proposed on a site that is identified as suitable … for very low, low-, or moderate-income households in the jurisdiction's housing element, and [is] consistent with the density specified in the housing element, even though it is inconsistent with both the jurisdiction's zoning ordinance and general plan land use designation." (Gov Code 65589.5(d)(5)(A) (emphasis added).)

O-1-3

The upshot is that while Mountain View would still have discretion after adopting its housing element to enact a different rezoning plan (with conforming housing-element amendments), the city's *failure* to complete a legally adequate rezoning would not leave the zoning status quo in place. Rather, the city would be legally compelled to waive zoning and other forms of local land-use control that prevent the development of inventory sites at "post-rezoning" densities contemplated by the housing element.

The EIR should forthrightly acknowledge the legal effect of the housing element in order to fully disclose the consequences of the housing element's adoption.

3. The analysis of the No Project Alternative should discuss environmental impacts of noncompliance with the Housing Element Law

Under 5.4.1 (Land Use and Planning Impacts of the No Project Alternative), the DEIR states "The land use and zoning designations currently in place would continue under the land use decisions and development parameters that currently exist in the City" (5-10). This is false. If the city does not adopt a substantially compliant housing element, it will forfeit authority to deny or "render infeasible" 20% low-income and 100% moderate-income projects on the basis of the city's zoning code and general plan land-use designations. (Gov Code 65589.5(d)(5); Elmendorf, "A Primer on California's 'Builder's Remedy' for Housing-Element Noncompliance" (UCLA Lewis Center for Regional Policy Studies, April 2022)) There is also the possibility of a court order suspending the city's authority to issue certain classes of building permits (Gov Code 65755(a)), and, eventually, a court-led rewriting of the city's housing element (Gov Code 65585(l)).

O-1-4

Inherently, it is very hard to predict how these consequences of noncompliance would affect the amount, type and distribution of housing development in Mountain View. The EIR therefore needn't address this topic in great detail. But if the EIR is to serve its function as an

informational document, it should provide the responsible decision makers with at least a rudimentary outline of the potential environmental effects of noncompliance.

O-1-4

4. The final EIR should discuss statewide and regional environmental benefits of higher growth alternatives

The DEIR asserts that the Reduced Sites Alternative is the "environmentally superior alternative" because "this lesser-intensity development would presumably emit fewer overall emissions" than the other alternatives (5-17). This statement about the environmental effects of curtailing development in Mountain View may be formally true within the artificial world that CEQA has created, but it bears little resemblance to the real world.

O-1-5

Increasing the size of Mountain View's housing stock is an unequivocal environmental (and economic) win from national, statewide, and regional perspectives. The more people whose preference to live in Mountain View can be accommodated, the fewer people will end up living in places where they produce more CO2, displace wildlife, fill wetlands, bulldoze scenic vistas, disrupt the management of wildfire, and congest highways. CEQA may be blind to the environmental impacts of people whom Mountain View would fence out by restricting housing development, but CEQA's elision does not launch them off Planet Earth. If there's a feasible alternative that would allow them to live in Mountain View—an already urbanized area in a mild climate with many job opportunities—that alternative is almost surely the actual environmentally superior alternative.

It would be a welcome change for the final EIR to honor CEQA's purpose of "inform[ing] the government and public about a proposed activity's potential environmental impacts" (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369, 382) by addressing the **substantial environmental benefits**, not just the local downsides, of higher growth alternatives.

Thank you for considering these comments.

Regards,

David Watson
On behalf of Mountain View YIMBY

Letter O-1 Response: Mountain View YIMBY, July 31, 2022

O-1-1 This is a general comment that includes introductory remarks and serves to introduce the more specific comments that are responded to in detail below. This comment raises neither significant environmental issues nor specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088.

O-1-2 As noted on p. 5-1 of the Draft EIR, Chapter 5, *Alternatives to the Project*, is provided to "describe and evaluate alternatives to the Project" with the primary purpose of providing "decision-makers and the public with a qualitative review of alternatives to the Project that eliminate or substantially reduce any identified adverse environmental impacts while, at the same time, attaining most of the basic objectives of the Project." Section 15126.6(a) states that "an EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation." Section 15126.6(f) describes a "rule of reason," stating that an EIR "set forth only those alternatives necessary to permit a reasoned choice," and "the EIR need examine in detail only the ones that the Lead Agency determines could feasibly attain most of the basic objectives of the project." An EIR is not required to consider alternatives to a component of a project, but only alternatives to the project *as a whole*. (See State CEQA Guidelines Section 15126.6(a); *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 993.) Variations of the same alternative are also not required; "what is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned." (*Residents Ad Hoc Stadium Comm. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286; see also *Cherry Valley Pass Acres & Neighbors v. City of Beaumont* (2010) 190 Cal.App.4th 316, 355-56 [rejecting need to analyze every variation on the alternative continuum for housing project].)

Comments regarding the merits of the Project, including requested variations of housing and rezoning scenarios, do not raise a significant environmental issue or specific question about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

O-1-3 This comment does not raise a significant *environmental* issue or specific questions about the analyses or information in the Draft EIR that would require response pursuant to State CEQA Guidelines Section 15088. The comment will be included as a part of the record and made available to the decision makers prior to a final decision on the proposed HEU.

O-1-4 Chapter 5, *Alternatives to the Project*, identifies the consequences of not adopting a housing element that is not compliant with State law. This alternative is analyzed consistent with Section 15126.6(e) of the CEQA Guidelines, which state that the No Project Alternative must include the assumption that conditions at the time the NOP of an EIR was circulated for public review would not be changed because the Project would not be implemented, as well as the events or actions that would reasonably be expected to occur in the foreseeable future if the Project were not approved.

The Draft EIR described that the No Project Alternative would also introduce a new significant and unavoidable impact related to land use and planning. The No Project Alternative would not meet any of the objectives of the HEU, nor is it legally feasible to implement. The No Project Alternative would not provide housing to fulfill the requirements of State law or meet the City's RHNA requirements, which result in a significant and unavoidable land use and planning impact, as compared to the less-than-significant impacts associated with the proposed HEU and the Reduced Sites Alternative (Draft EIR pp. 5-18 – 5-19).

Additionally, it is impossible to currently predict whether any applications for development under the "Builders' Remedy" would be submitted, where such development would be proposed, how many applications there would be, and the development potential associated with any proposal. Therefore, the No Project Alternative need not analyze such speculative outcomes.

O-1-5 See Response to Comment O-1-2 regarding the requirements and purpose of the analysis of alternatives in the Draft EIR. As stated in CEQA Guidelines Section 15126.6, the principal purpose of an EIR's analysis of alternatives is to describe and consider a range of reasonable alternatives to the project that would avoid or substantially lessen any of the identified significant effects of the project. Alternatives with higher growth assumptions would be unlikely to avoid or substantially lessen any of the identified significant effects of the Project on the environment, and were therefore not considered.

Comment Letter O-2

September 5, 2022

Ellen Yau
Community Development Department, First Floor
500 Castro Street, PO Box 7540, Mountain View, CA 94039-7540
Ellen.Yau@mountainview.gov

Re: City of Mountain View Housing Element Update Draft EIR, SCH# 2022020129

Dear Ms. Yau

The Santa Clara Valley Audubon Society (SCVAS) is one of the largest National Audubon Society chapters in California. Our mission is to promote the enjoyment, understanding, and protection of birds and other wildlife by engaging people of all ages in birding, education, and conservation. We appreciate the opportunity to comment on the Draft Environmental Impact report (DEIR) for the City of Mountain View Housing Element Update. GreenspacesMV is a community group in Mountain View, CA striving for healthy communities thriving with urban tree canopy, nature, and native biodiversity.

Our organizations' interest in this project focuses on potential impacts to biological resources. We are especially interested in North Bayshore, where (based on the 2017 North Bayshore Precise Plan) the Housing Element Update allows for up to 9,850 new multi-family residential units and 3.6 million square feet of office and commercial development.

O-2-1

We believe that the North Bayshore Precise Plan requirements and development standards should be updated to reflect new scientific knowledge regarding lighting. The near-extirpation condition of burrowing owl populations in our region is also of concern. North Bayshore and the adjacent Shoreline Parks are critically important to many species of birds, and of great importance to the public. Birdwatchers often document the presence and abundance of birds on eBird[1].

[1] Launched in 2002, eBird is a citizen science-based, national database administered by the Cornell Lab of Ornithology and the National Audubon Society. eBird provides rich data sources for basic information on bird abundance and distribution at a variety of spatial and temporal scales. Reports to eBird help deepen our understanding of local, regional and international trends in bird populations and bird migration. For example:

- Charleston Retention Basin: http://ebird.org/ebird/hotspot/L284760
- Charleston Slough/Coast Casey Forebay: http://ebird.org/ebird/hotspot/L730351
- Shoreline Park: http://ebird.org/ebird/hotspot/L271482
- Shoreline Lake: http://ebird.org/ebird/hotspot/L594012

We submit the following comments:

1. Artificial Light at Night

   Since the adoption of the North Bayshore Precise Plan, new scientific studies have revealed the pervasive and harmful impacts of most available LED light fixtures on ecosystems and on all living organisms: plants, insects, mammals, birds and more. This is because life on Earth evolved with light as a primary cue for biological function and ecological webs. The length of daylight hours, and changes in the length of daylight hours, both control life cycles and behavior in all living organisms. This pervasive influence of light is augmented by the attraction or aversion responses to light in many animals, where light can attract them to harmful situations or deprives them from habitats and blocks habitat connectivity, increasing fragmentation. Because of the inherent control of hormonal pathways by light, exposure to outdoor light at night also exacerbates illness (cancer, obesity, mental health) in humans[2]. O-2-2

   The International Dark Sky Association State of the Science 2022 report[3] and the attached 2021 compilation by the Sierra Club both include many references to scientific studies published since 2020 that highlight the injury to ecosystems, species, and human health associated with bright lighting, especially in the blue light of the spectrum. Scientists now recommend that lighting should be always kept to the minimum brightness and a Correlated Color Temperature of no more than 2400 Kelvin. The Housing Element should include new standards that reflect these recommendations.

   The adopted North Bayshore Precise Plan should be amended so that, at least in North Bayshore, the Housing Element can 1) eliminate minimum lighting requirements; 2) require lighting to be of minimal feasible brightness, and trespass of no more than 0.1 food candle; 3) require lighting fixtures of 2400 Kelvin or less for all outdoor lighting. In addition, all outdoor lighting fixtures should be capable of accepting 7-pin controls that can enable use of dimmers, timers, motion sensors, and networking. Lighting should be actively controlled through means such as dimmers and motion-sensing switches so as to reduce illuminances or extinguish lighting altogether when the light is not needed.

2. Canopy, Trees and the Urban Forest

   Trees and the urban forest provide multiple environmental benefits to the city, including reducing heat-island effects, absorbing CO2 and harmful air-polluting particulates, providing shade and beauty, and contributing positively to health and cognition[4]. The City of Mountain O-2-3

[2] For example, Outdoor light at night, overweight, and obesity in school-aged children and adolescents, https://www.sciencedirect.com/science/article/abs/pii/S0269749122005206

[3] https://www.darksky.org/wp-content/uploads/2022/06/IDA-State-of-the-Science-2022-EN.pdf

[4] Urban trees and human health (a scoping review): https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7345658/

View, and the DEIR, allow development projects to pay fees or donate trees when there is no suitable on-site location for replacement trees. The overall loss of trees and canopy to housing development, however, has been highly noticeable and controversial in Mountain View.

Please analyze a realistic forecast of the impact of the project on the city's urban canopy, including the identification of places where replacement trees can be planted as mitigation for the impact. If the cumulative loss of trees and canopy cannot be adequately replaced (due to a shortage of appropriate planting sites), or the canopy cannot be replaced in a reasonable period of time, then the loss of trees and canopy should be considered a significant, unavoidable biological impact.

O-2-3

3. Burrowing Owls

Shoreline Park's Burrowing Owl breeding population has declined significantly since the adoption of the North Bayshore Precise Plan. In 2017, the focus was still on conservation of the population, whereas the current focus is on recovery of the population. Population decline is partially attributed to encroachment and disturbance caused by humans (and often, their dogs) that use Shoreline grasslands for recreation. Disruptive behaviors occur despite signage and day-time ranger patrol. The only mitigation that is currently successful is fencing.

With the increase in population expected in North Bayshore, the encroachment can be expected during the day and at night. We ask for a mitigation measure that will install fencing to extend existing fences and allow the park to close and become inaccessible after closing hours, see Figure 1 for recommended fencing below..

O-2-4

Effects of nature on cognitive functioning, emotional well-being, and other dimensions of mental health: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6656547/

Effects of trees on academic success: https://aslathedirt.files.wordpress.com/2016/01/li-sullivan.pdf

Nature conservancy benefits of urban trees: https://www.nature.org/content/dam/tnc/nature/en/documents/Public_Health_Benefits_Urban_Trees_FINAL.pdf

Urban forests and climate change (discusses benefits of urban forests to physical and mental health): https://www.fs.usda.gov/ccrc/topics/urban-forests and

Effects of vegetation on reducing frustration levels for drivers: https://journals.sagepub.com/doi/abs/10.1177/0013916503256267

Figure 1: recommended fencing for Shoreline park (existing fencing in blue, first priority for additional fencing in red, second priority for additional fencing in yellow)

O-2-4

Thank you for the opportunity to provide comments,

Shani Kleinhaus
Environmental Advocate
Santa Clara VAlley Audubon Society
advocate@scvas.org

Bruce England
GreenSpacesMV
greenspacesmv.org

Resources and References that helped inform Sierra Club's Light Pollution Policy Update

(Last updated 3/7/2021)

Over 70 resources and references (including websites, articles, publications, and reports) were reviewed during Sierra Club's March 2021 update to its light pollution national policy. The list is only provided to document resources used during policy development. Inclusion of any given resource in this list should *not* be construed as an endorsement by Sierra Club. The main resources consulted are listed below, organized by a relevant category. Several resources cover multiple issues, but each is only listed once.

Sierra Club Advocacy

Sierra Club AddUp Petition to City Mayors: Protect the Night Against Light Pollution (started in Feb 2018)
https://addup.sierraclub.org/campaigns/protect-the-night

Sierra Club Articles

On the Hunt for Stars: In Search of a Truly Dark Night Sky. Heather Smith, Feb 27, 2018. SIERRA magazine, March/April 2018 edition. https://www.sierraclub.org/sierra/2018-2-march-april/feature/hunt-for-stars-dark-skies-preserves-and-parks

Reclaiming the Night. SIERRA magazine. Katie O'Reilly. https://www.sierraclub.org/sierra/slideshow/reclaiming-night

General Educational Resources

National Park Service Night Skies, www.nps.gov/subjects/nightskies

Light pollution - a global discussion. Schulte-Römer, N., Dannemann, E., Meier, J. (2018): Helmholtz Centre for Environmental Research - UFZ, Leipzig, 248 pp.
http://www.lightpollutiondiscussion.net

The Right to Dark Skies, 2016, United Nations Educational, Scientific and Cultural Organization (UNESCO Mexico)
https://unesdoc.unesco.org/ark:/48223/pf0000246131

Our nights are getting brighter, and Earth is paying the price, by Nadia Drake, National Geographic, published April 3, 2019
https://www.nationalgeographic.com/science/2019/04/nights-are-getting-brighter-earth-paying-the-price-light-pollution-dark-skies/

Treat artificial light like other forms of pollution, say scientists. Jonathan Watts, The Guardian. Nov 2, 2020.
https://www.theguardian.com/environment/2020/nov/02/treat-artificial-light-form-pollution-environment
Excerpt: "What stands out is how pervasive the effects are. The effects were found everywhere – microbes, invertebrates, animals and plants," said the lead author, Kevin Gaston, a professor at the university's Environment and Sustainability Institute. "We need to start thinking about lighting in the way we think of other big systemic pressures like climate change."

Light pollution – extent, effects and approaches. TAB-Fokus no. 25, Jun 2020, Office of Technology Assessment at the German Bundestag. Christoph Schröter-Schlaack, et al.
http://www.tab-beim-bundestag.de/en/news/20200828.html
Summary: In addition to the intended effects, the increasing use of artificial outdoor lighting also entails a number of undesirable side effects referred to as light pollution. Artificial lighting can disturb the circadian rhythms of humans and animals, which are controlled by the change of day and night, and is suspected of being involved in the development of various diseases. Moreover, the increasing illumination of the night influences the natural behaviour of animals. Besides habitat changes, the consequences are ranging from changes in hunting or reproductive behaviour to the deadly attraction effect of light sources, e. g. for insects. However, the longterm consequences of these changes for entire populations, communities or landscapes are still poorly understood. Options for reducing light pollution exist both technologically and in terms of regulation and approval of lighting installations.

Light Pollution Is Taking Away Our Night Skies. Here's Why That Matters. 11/13/2019. HuffPost. By Kyla Mandel
https://www.huffpost.com/entry/city-light-pollution-night-sky-star-protection_n_5dc9d1fee4b00927b2381233
Some cities and states are trying to protect our night sky "for the health and wellbeing for all living things."

Light Pollution Trends

Artificially lit surface of Earth at night increasing in radiance and extent, by Christopher C. M. Kyba, Theres Kuester, Alejandro Sánchez de Miguel, Kimberly Baugh, Andreas Jechow, Franz Hölker, Jonathan Bennie, Christopher D. Elvidge, Kevin J. Gaston, and Luis Guanter. Science Advances 22 Nov 2017: Vol. 3, no. 11, e1701528, DOI: 10.1126/sciadv.1701528 http://advances.sciencemag.org/content/3/11/e1701528

Abstract: A central aim of the "lighting revolution" (the transition to solid-state lighting technology) is decreased energy consumption. This could be undermined by a rebound effect of increased use in response to lowered cost of light. We use the first-ever calibrated satellite radiometer designed for night lights to show that from 2012 to 2016, Earth's artificially lit outdoor area grew by 2.2% per year, with a total radiance growth of 1.8% per year. Continuously lit areas brightened at a rate of 2.2% per year. Large differences in national growth rates were observed, with lighting remaining stable or decreasing in only a few countries. These data are not consistent with global scale energy reductions but rather indicate increased light pollution, with corresponding negative consequences for flora, fauna, and human well-being.

The new world atlas of artificial night sky brightness. Falchi, F., Cinzano, P., Duriscoe, D., Kyba, C.C.M., Elvidge, C.D., Baugh, K., Portnow, B.A., Rybnikova, N.A., & Furgoni, R. (2016). Science Advances, 2:e1600377. https://advances.sciencemag.org/content/2/6/e1600377

Abstract: Artificial lights raise night sky luminance, creating the most visible effect of light pollution—artificial skyglow. Despite the increasing interest among scientists in fields such as ecology, astronomy, health care, and land-use planning, light pollution lacks a current quantification of its magnitude on a global scale. To overcome this, we present the world atlas of artificial sky luminance, computed with our light pollution propagation software using new high-resolution satellite data and new precision sky brightness measurements. This atlas shows that more than 80% of the world and more than 99% of the U.S. and European populations live under light-polluted skies. The Milky Way is hidden from more than one-third of humanity, including 60% of Europeans and nearly 80% of North Americans. Moreover, 23% of the world's land surfaces between 75°N and 60°S, 88% of Europe, and almost half of the United States experience light-polluted nights.

Light pollution in USA and Europe: The good, the bad and the ugly. F. Falchi, R. Furgoni, T.A. Gallaway, N.A. Rybnikova, B.A. Portnov, K. Baugh, P. Cinzano, C.D. Elvidge, Elsevier Journal of Environmental Management, Volume 248, 2019, 109227, 15 October 2019 http://www.sciencedirect.com/science/article/pii/S0301479719309296

Abstract: Light pollution is a worldwide problem that has a range of adverse effects on human health and natural ecosystems. Using data from the New World Atlas of Artificial Night Sky Brightness, VIIRS-recorded radiance and Gross Domestic Product (GDP) data, we compared light pollution levels, and the light flux to the population size and GDP at the State and County levels in the USA and at Regional (NUTS2) and Province (NUTS3) levels in Europe. We found 6800-fold differences between the most and least polluted regions in Europe, 120-fold differences in their light flux per capita, and 267-fold differences in flux per GDP unit. Yet, we found even greater differences between US counties: 200,000-fold differences in sky pollution, 16,000-fold differences in light flux per capita, and 40,000-fold differences in light flux per GDP unit. These findings may inform policy-makers, helping to reduce energy waste and adverse environmental, cultural and health consequences associated with light pollution.

Global Trends in Exposure to Light Pollution in Natural Terrestrial Ecosystems. Bennie, J.; Duffy, J.P.; Davies, T.W.; Correa-Cano, M.E.; Gaston, K.J. Remote Sens. 2015, 7, 2715-2730. https://www.mdpi.com/2072-4292/7/3/2715

Abstract: The rapid growth in electric light usage across the globe has led to increasing presence of artificial light in natural and semi-natural ecosystems at night. This occurs both due to direct illumination and skyglow - scattered light in the atmosphere. There is increasing concern about the effects of artificial light on biological processes, biodiversity and the functioning of ecosystems. We combine intercalibrated Defense Meteorological Satellite Program's Operational Linescan System (DMSP/OLS) images of stable night-time lights for the period 1992 to 2012 with a remotely sensed landcover product (GLC2000) to assess recent changes in exposure to artificial light at night in 43 global ecosystem types. We find that Mediterranean-climate ecosystems have experienced the greatest increases in exposure, followed by temperate ecosystems. Boreal, Arctic and montane systems experienced the lowest increases. In tropical and subtropical regions, the greatest increases are in mangroves and subtropical needleleaf and mixed forests, and in arid regions increases are mainly in forest and agricultural areas. The global ecosystems experiencing the greatest increase in exposure to artificial light are already localized and fragmented, and often of particular conservation importance due to high levels of diversity, endemism and rarity. Night time remote sensing can play a key role in identifying the extent to which natural ecosystems are exposed to light pollution.

Direct measurement of the contribution of street lighting to satellite observations of nighttime light emissions from urban areas. Kyba, C, et al. Lighting Research & Technology. October 2020. https://doi.org/10.1177/1477153520958463

Abstract: Nighttime light emissions are increasing in most countries worldwide, but which types of lighting are responsible for the increase remains unknown. Also unknown is what fraction of outdoor light emissions and associated energy use are due to

public light sources (i.e. streetlights) or various types of private light sources (e.g. advertising). Here we show that it is possible to measure the contribution of street lighting to nighttime satellite imagery using 'smart city' lighting infrastructure. The city of Tucson, USA, intentionally altered its streetlight output over 10 days, and we examined the change in emissions observed by satellite. We find that streetlights operated by the city are responsible for only 13% of the total radiance (in the 500–900 nm band) observed from Tucson from space after midnight (95% confidence interval 10–16%). If Tucson did not dim their streetlights after midnight, the contribution would be 18% (95% confidence interval 15–23%). When streetlights operated by other actors are included, the best estimates rise to 16% and 21%, respectively. Existing energy and lighting policy related to the sustainability of outdoor light use has mainly focused on street lighting. These results suggest an urgent need for consideration of other types of light sources in outdoor lighting policy.

Anthropogenic Light Disrupts Natural Light Cycles in Critical Conservation Areas, Seymoure, B, et al. (August 19, 2019). https://ssrn.com/abstract=3439670
Abstract: Anthropogenic lighting drastically alters nocturnal environments, threatening a wide range of species by disrupting light regimes that regulate fundamental biological processes such as reproduction, foraging, and predator defense. We translate satellite measures of anthropogenic light radiating from the earth to a biologically relevant measurement – the amount of light scattered back to the earth (horizontal illuminance). Anthropogenic light exceeding the natural level produced by stars, galactic light, and airglow on a clear moonless night (i.e., new moon conditions) affects 22.9% of the Earth's terrestrial surface, as well as 51.0% of Key Biodiversity Area units, 77.1% of Global Protected Area units, and approximately 20% of the most biodiverse areas for mammals, birds, and amphibians. Thus, due to anthropogenic sources, these environments experience at least double the levels of natural illuminance during half of the night hours in a year. To facilitate biological interpretation of these levels of anthropogenic illuminance observed globally, we undertook a systematic literature review of animal responses to changing nocturnal light levels. Known biological effects from the current anthropogenic illuminance levels range from behavioral and physiological alterations to increased mortality, which have been documented in 117 species from 23 orders and 8 classes. These findings provide a biological perspective on global light pollution, and they identify regions where reductions in anthropogenic illuminance would yield the greatest benefits for conserving biodiversity.

Effects of the COVID-19 Lockdown on Urban Light Emissions: Ground and Satellite Comparison. Bustamante-Calabria, M, Sánchez de Miguel, A, et al. Remote Sensing. Jan 2021, Vol 13, Issue 2, 258. https://www.mdpi.com/2072-4292/13/2/258
Abstract Excerpt: 'Lockdown' periods in response to COVID-19 have provided a unique opportunity to study the impacts of economic activity on environmental pollution (e.g., NO2, aerosols, noise, light)... Here, to analyze the effect of lockdown on urban light emissions, we use ground and satellite data for Granada, Spain, during the COVID-19 induced confinement of the city's population from 14 March until 31 May 2020. We find a clear decrease in light pollution due both to a decrease in light emissions from the city and to a decrease in anthropogenic aerosol content in the atmosphere which resulted in less light being scattered. A clear correlation between the abundance of PM10 particles and sky brightness is observed, such that the more polluted the atmosphere the brighter the urban night sky.

Environmental and Social Justice

Light pollution inequities in the continental United States: A distributive environmental justice analysis. Nadybal S.M., Collins T.W., Grineski S.E.. Environmental Research, Vol 189, 2020, 109959. http://www.sciencedirect.com/science/article/pii/S0013935120308549
Abstract: Excessive exposure to ambient light at night is a well-documented hazard to human health, yet analysts have not examined it from an environmental justice (EJ) perspective. We conducted the first EJ study of exposure to light pollution by testing for socially disparate patterns across the continental United States (US)... We found evidence of disparities in exposures to light pollution based on racial/ethnic minority and low-to-mid socioeconomic statuses. Americans of Asian, Hispanic or Black race/ethnicity had population-weighted mean exposures to light pollution in their neighborhoods that were approximately two times that of White Americans... neighborhoods composed of higher proportions of Blacks, Hispanics, Asians, or renter-occupants experienced greater exposures to ambient light at night. Stratified analyses indicated that those patterns of inequity did not substantially vary based on urban-rural context. Findings have implications for understanding environmental influences on health disparities, raise concerns about the potential for a multiple environmental jeopardy situation, and highlight the need for policy actions to address light pollution.

An incandescent truth: Disparities in energy-efficient lighting availability and prices in an urban U.S. county. Reames, Tony G., Michael A. Reiner, and M. Ben Stacey. (2018) Applied Energy 218:95-103. https://www.sciencedirect.com/science/article/abs/pii/S0306261918302769
Abstract Excerpt: In the U.S. lighting represents about 9% of the average household's primary energy consumption and 20% of the average household's energy bill. Lighting in U.S. homes is in a state of transition with steady growth in the adoption of more energy-efficient lighting technology, such as, compact florescent lamps (CFL) and light-emitting diodes (LEDs). However, the adoption of energy-efficient lighting is not equitably distributed across socioeconomic groups, with poorer households less likely to adopt than higher-income households... We found that (1) energy-efficient bulbs were less available in high-poverty areas and

smaller stores; (2) energy-efficient bulbs were more expensive in high-poverty areas and smaller stores; (3) upgrade costs from incandescent and halogen lamps (IHLs) to CFLs or LEDs were higher in high poverty areas; and (4) both poverty and store type were significant predictors of LED availability, while store type was the most significant predictor of LED price variability. We suggest several ways that the development and implementation of energy efficiency policies and programs may consider these disparities that affect access and affordability, in order to achieve a more just energy-efficient transition.

Up in smoke: Characterizing the population exposed to flaring from unconventional oil and gas development in the contiguous US. Cushing Lara J, et al. Feb 2021. Environmental Research Letters. Vol. 16, No 3. https://iopscience.iop.org/article/10.1088/1748-9326/abd3d4

Abstract Excerpt: The disposal of waste gas via intentional combustion (flaring) from unconventional oil and gas (UOG) development has also been on the rise, and may expose nearby residents to toxic air pollutants, light pollution and noise… We found that three basins accounted for over 83% of all UOG flaring activity in the contiguous US over the 8 year study period. We estimated that over half a million people in these basins reside within 5 km of a flare, and 39% of them lived near more than 100 nightly flares. Black, indigenous, and people of color were disproportionately exposed to flaring.

Light Pollution in San Antonio, TX: An Environmental Justice Issue. Alvarez, V, et al. May 2020. Environmental Studies Student Works. Trinity University. https://digitalcommons.trinity.edu/env_studocs/2

Abstract Excerpt: the environmental justice movement often overlooks the issue of light pollution, even though light pollution is higher in urban low-income areas. There is a lack of studies examining how light pollution varies between communities on a regional, state, or municipal scale... The mid-income neighborhoods had the greatest median and maximum light pollution levels, while high-income neighborhoods had the lowest median illuminance. These results indicate that mid-income neighborhoods are subject to the greatest amount of light pollution by area and intensity.

Ecological, Wildlife and Human Impacts

Ecological light pollution. Longcore, T. and Rich, C. (2004), Frontiers in Ecology and the Environment, 2: 191-198. https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/1540-9295%282004%29002%5B0191%3AELP%5D2.0.CO%3B2

Abstract: Ecologists have long studied the critical role of natural light in regulating species interactions, but, with limited exceptions, have not investigated the consequences of artificial night lighting. In the past century, the extent and intensity of artificial night lighting has increased such that it has substantial effects on the biology and ecology of species in the wild. We distinguish “astronomical light pollution”, which obscures the view of the night sky, from “ecological light pollution”, which alters natural light regimes in terrestrial and aquatic ecosystems. Some of the catastrophic consequences of light for certain taxonomic groups are well known, such as the deaths of migratory birds around tall lighted structures, and those of hatchling sea turtles disoriented by lights on their natal beaches. The more subtle influences of artificial night lighting on the behavior and community ecology of species are less well recognized, and constitute a new focus for research in ecology and a pressing conservation challenge.

Ecological consequences of artificial night lighting. Rich, C. and T. Longcore. (eds.). 2006. Island Press, Washington, D.C. https://www.urbanwildlands.org/ecanlbook.html

The first book to consider the environmental effects of the intentional illumination of the night. It brings together leading scientists from around the world to review the state of knowledge on the subject and to describe specific effects that have been observed across a full range of taxonomic groups, including mammals, birds, reptiles and amphibians, fishes, invertebrates, and plants… provides a scientific basis to begin addressing the challenge of conserving the nighttime environment. It cogently demonstrates the vital importance of this until-now neglected topic and is an essential new work for conservation planners, researchers, and anyone concerned with human impacts on the natural world.

Light Pollution Is a Driver of Insect Declines, by Owens, A, et al. (April 26, 2019) https://ssrn.com/abstract=3378835

Abstract: Insects around the world are rapidly declining. Concerns over what this loss means for food security and ecological communities have compelled a growing number of researchers to search for the key drivers behind the decline. Habitat loss, pesticide use, invasive species, and climate change all have likely played a role, but we posit here that artificial light at night (ALAN) is another important — but often overlooked — bringer of the insect apocalypse. We first discuss the history and extent of ALAN, and then present evidence that ALAN has led to insect declines through its interference with the development, movement, foraging, and reproductive success of diverse insect species, as well as its positive effect on insectivore predation. We conclude with a discussion of how artificial lights can be tuned to reduce their impacts on vulnerable populations. ALAN is unique among anthropogenic habitat disturbances in that it is fairly easy to ameliorate, and leaves behind no residual effects. Greater recognition of the ways in which ALAN impacts insects can help conservationists reduce or eliminate one of the major drivers of insect declines.

A meta-analysis of biological impacts of artificial light at night. Nature Ecology & Evolution (2020), Dirk Sanders, Enric Frago, Rachel Kehoe, Christophe Patterson & Kevin J. Gaston
https://doi.org/10.1038/s41559-020-01322-x
https://datadryad.org/stash/dataset/doi:10.5061/dryad.wpzgmsbjn

Abstract: Natural light cycles are being eroded over large areas of the globe by the direct emissions and sky brightening that result from sources of artificial night-time light. This is predicted to affect wild organisms, particularly because of the central role that light regimes play in determining the timing of biological activity. Although many empirical studies have reported such effects, these have focused on particular species or local communities and have thus been unable to provide a general evaluation of the overall frequency and strength of these impacts. Using a new database of published studies, we show that exposure to artificial light at night induces strong responses for physiological measures, daily activity patterns and life history traits. We found particularly strong responses with regards to hormone levels, the onset of daily activity in diurnal species and life history traits, such as the number of offspring, predation, cognition and seafinding (in turtles). So far, few studies have focused on the impact of artificial light at night on ecosystem functions. The breadth and often strength of biological impacts we reveal highlight the need for outdoor artificial night-time lighting to be limited to the places and forms—such as timing, intensity and spectrum—where it is genuinely required by the people using it to minimize ecological impacts.

Longer photoperiods through range shifts and artificial light lead to a destabilizing increase in host–parasitoid interaction strength. Kehoe, R, Sanders, D, Cruse, D, et al. Journal of Animal Ecology. 2020; 89: 2508–2516.
https://doi.org/10.1111/1365-2656.13328

Excerpts: Many organisms are experiencing changing daily light regimes due to latitudinal range shifts driven by climate change and increased artificial light at night (ALAN). Activity patterns are often driven by light cycles, which will have important consequences for species interactions... Here we demonstrate that ALAN impact interacts with daylength and temperature by changing the interaction strength between a common day-active consumer species and its host in a predictable way. Our results further suggest that range expansion or ALAN-induced changes in light regimes experienced by insects and their natural enemies will result in unstable dynamics beyond key tipping points in daylength... Finally, the strong response of a diurnal host–parasitoid system reported here also emphasizes the importance of focussing on the impact of ALAN not just on nocturnal species but also on those that are chiefly diurnal, on which the effects of ALAN may be just as profound, if not as intuitive.

Artificial nightlight alters the predator–prey dynamics of an apex carnivore. Ditmer, MA, et al. (2020). Ecography
https://doi.org/10.1111/ecog.05251

Abstract Excepts: Our results indicate that deer used the anthropogenic environments to access forage and were more active at night than their wildland conspecifics. Despite higher nightlight levels, cougars killed deer at the wildland–urban interface, but hunted them in the relatively darkest locations. Light had the greatest effect of all covariates on where cougars killed deer at the wildland–urban interface. Both species exhibited functional responses to light pollution at fine scales; individual cougars and deer with less light exposure increasingly avoided illuminated areas when exposed to greater radiance, whereas deer living in the wildland–urban interface selected elevated light levels. We conclude that integrating estimates of light pollution into ecological studies provides crucial insights into how the dynamic human footprint can alter animal behavior and ecosystem function across spatial scales.

Coral Gametogenesis Collapse under Artificial Light Pollution. Ayalon et al. Current Biology. Nov 2020
https://doi.org/10.1016/j.cub.2020.10.039

Excerpts: Marine organisms, including coral reefs in particular, rely on the natural light cycles of sunlight and moonlight to regulate various physiological, biological, and behavioral processes. Here, we demonstrate that light pollution caused delayed gametogenesis and unsynchronized gamete release in two coral species, Acropora millepora and Acropora digitifera, from the Indo-Pacific Ocean… With the global transition toward LED lighting, which tends to have higher emissions in the blue spectrum, more coral reefs could be affected by artificial light, as blue light penetrates deeper into the water column. This spectral shift is expected to be amplified by the current rapid population growth in coastal regions... Our experimental results are corroborated by *in situ* observations, which have shown disruption of gametogenesis and loss of spawning synchrony in corals occurring at sites that are heavily polluted by artificial lights. These results demonstrate that artificial light must be considered in conservation plans for coral reefs near areas of human activity.

Sensory pollutants alter bird phenology and fitness across a continent. Senzaki, M., Barber, J.R., Phillips, J.N. et al. Nature 587, 605–609 (2020)
https://doi.org/10.1038/s41586-020-2903-7

Abstract: Expansion of anthropogenic noise and night lighting across our planet is of increasing conservation concern. Despite growing knowledge of physiological and behavioural responses to these stimuli from single-species and local-scale studies, whether these pollutants affect fitness is less clear, as is how and why species vary in their sensitivity to these anthropic stressors. Here we leverage a large citizen science dataset paired with high-resolution noise and light data from across the contiguous United States to assess how these stimuli affect reproductive success in 142 bird species. We find responses to both sensory pollutants linked to the functional traits and habitat affiliations of species. For example, overall nest success was negatively correlated with noise among birds in closed environments. Species-specific changes in reproductive timing and hatching success

in response to noise exposure were explained by vocalization frequency, nesting location and diet. Additionally, increased light-gathering ability of species' eyes was associated with stronger advancements in reproductive timing in response to light exposure, potentially creating phenological mismatches. Unexpectedly, better light-gathering ability was linked to reduced clutch failure and increased overall nest success in response to light exposure, raising important questions about how responses to sensory pollutants counteract or exacerbate responses to other aspects of global change, such as climate warming. These findings demonstrate that anthropogenic noise and light can substantially affect breeding bird phenology and fitness, and underscore the need to consider sensory pollutants alongside traditional dimensions of the environment that typically inform biodiversity conservation.

Bright lights in the big cities: migratory birds'exposure to artificial light. Horton, KG., Nilsson, C., et al, 2019. Frontiers in Ecology and the Environment, April 2019.
https://doi.org/10.1002/FEE.2029
https://www.youtube.com/watch?v=_gXSN2GmI8M
Abstract: Many species of migratory birds have evolved the ability to migrate at night, and the recent and rapid expansion of artificial light at night has markedly altered the nighttime sky through which they travel. Migrating birds regularly pass through heavily illuminated landscapes, and bright lights affect avian orientation. But risks to migrating birds from artificial light are not spatially or temporally uniform, representing a challenge for mitigating potential hazards and developing action plans to catalog risks at continental scales. We leveraged over two decades of remote-sensing data collected by weather surveillance radar and satellite-based sensors to identify locations and times of year when the highest numbers of migrating birds are exposed to light pollution in the contiguous US. Our continental-scale quantification of light exposure provides a novel opportunity for dynamic and targeted conservation strategies to address the hazards posed by light pollution to nocturnally migrating birds.

High-intensity urban light installation dramatically alters nocturnal bird migration. Van Doren BM, Horton KG, et al. Proceedings of the National Academy of Sciences, Oct 2017, 114 (42) 11175-11180
https://www.pnas.org/content/114/42/11175
Abstract Excerpt: Billions of nocturnally migrating birds move through increasingly photopolluted skies, relying on cues for navigation and orientation that artificial light at night (ALAN) can impair… We studied effects of ALAN on migrating birds by monitoring the beams of the National September 11 Memorial & Museum's "Tribute in Light" in New York, quantifying behavioral responses with radar and acoustic sensors and modeling disorientation and attraction with simulations… When the installation was illuminated, birds aggregated in high densities, decreased flight speeds, followed circular flight paths, and vocalized frequently… However, behavioral disruptions disappeared when lights were extinguished, suggesting that selective removal of light during nights with substantial bird migration is a viable strategy for minimizing potentially fatal interactions among ALAN, structmelures, and birds. Our results also highlight the value of additional studies describing behavioral patterns of nocturnally migrating birds in powerful lights in urban areas as well as conservation implications for such lighting installations.

The ecological impacts of nighttime light pollution: a mechanistic appraisal. Gaston, K. J., Bennie, J., Davies, T. W. and Hopkins, J., Biological Reviews, Vol 88, Issue 4, 2013, Cambridge Philosophical Society
https://onlinelibrary.wiley.com/doi/full/10.1111/brv.12036
Abstract: The ecological impacts of nighttime light pollution have been a longstanding source of concern, accentuated by realized and projected growth in electrical lighting. As human communities and lighting technologies develop, artificial light increasingly modifies natural light regimes by encroaching on dark refuges in space, in time, and across wavelengths. A wide variety of ecological implications of artificial light have been identified. However, the primary research to date is largely focused on the disruptive influence of nighttime light on higher vertebrates, and while comprehensive reviews have been compiled along taxonomic lines and within specific research domains, the subject is in need of synthesis within a common mechanistic framework. Here we propose such a framework that focuses on the cross-factoring of the ways in which artificial lighting alters natural light regimes (spatially, temporally, and spectrally), and the ways in which light influences biological systems, particularly the distinction between light as a resource and light as an information source. We review the evidence for each of the combinations of this cross-factoring. As artificial lighting alters natural patterns of light in space, time and across wavelengths, natural patterns of resource use and information flows may be disrupted, with downstream effects to the structure and function of ecosystems. This review highlights: (i) the potential influence of nighttime lighting at all levels of biological organisation (from cell to ecosystem); (ii) the significant impact that even low levels of nighttime light pollution can have; and (iii) the existence of major research gaps, particularly in terms of the impacts of light at population and ecosystem levels, identification of intensity thresholds, and the spatial extent of impacts in the vicinity of artificial lights.

Light Pollution, Circadian Photoreception, and Melatonin in Vertebrates. Grubisic M, Haim A, Bhusal P, Dominoni DM, Gabriel KMA, Jechow A, Kupprat F, Lerner A, Marchant P, Riley W, Stebelova K, van Grunsven RHA, Zeman M, Zubidat AE, Hölker F. Sustainability. 2019; 11(22):6400.
https://www.mdpi.com/2071-1050/11/22/6400
Abstract: Artificial light at night (ALAN) is increasing exponentially worldwide, accelerated by the transition to new efficient lighting technologies. However, ALAN and resulting light pollution can cause unintended physiological consequences. In vertebrates, production of melatonin—the "hormone of darkness" and a key player in circadian regulation—can be suppressed by

ALAN. In this paper, we provide an overview of research on melatonin and ALAN in vertebrates. We discuss how ALAN disrupts natural photic environments, its effect on melatonin and circadian rhythms, and different photoreceptor systems across vertebrate taxa. We then present the results of a systematic review in which we identified studies on melatonin under typical light-polluted conditions in fishes, amphibians, reptiles, birds, and mammals, including humans. Melatonin is suppressed by extremely low light intensities in many vertebrates, ranging from 0.01–0.03 lx for fishes and rodents to 6 lx for sensitive humans. Even lower, wavelength-dependent intensities are implied by some studies and require rigorous testing in ecological contexts. In many studies, melatonin suppression occurs at the minimum light levels tested, and, in better-studied groups, melatonin suppression is reported to occur at lower light levels. We identify major research gaps and conclude that, for most groups, crucial information is lacking. No studies were identified for amphibians and reptiles and long-term impacts of low-level ALAN exposure are unknown. Given the high sensitivity of vertebrate melatonin production to ALAN and the paucity of available information, it is crucial to research impacts of ALAN further in order to inform effective mitigation strategies for human health and the wellbeing and fitness of vertebrates in natural ecosystems.

Melatonin: a possible link between the presence of artificial light at night and reductions in biological fitness. Jones TM, Durrant J, Michaelides EB, Green MP. 2015, Phil. Trans. R. Soc. B 370: 20140122. https://royalsocietypublishing.org/doi/10.1098/rstb.2014.0122

Abstract: The mechanisms underpinning the ecological impacts of the presence of artificial night lighting remain elusive. One suspected underlying cause is that the presence of light at night (LAN) supresses nocturnal production of melatonin, a key driver of biological rhythm and a potent antioxidant with a proposed role in immune function. Here, we briefly review the evidence for melatonin as the link between LAN and changes in behaviour and physiology. We then present preliminary data supporting the potential for melatonin to act as a recovery agent mitigating the negative effects of LAN in an invertebrate. Adult crickets (Teleogryllus commodus), exposed to constant illumination, were provided with dietary melatonin (concentrations: 0, 10 or 100 µg ml−1) in their drinking water. We then compared survival, lifetime fecundity and, over a 4-week period, immune function (haemocyte concentration, lysozyme-like and phenoloxidase (PO) activity). Melatonin supplementation was able only partially to mitigate the detrimental effects of LAN: it did not improve survival or fecundity or PO activity, but it had a largely dose-dependent positive effect on haemocyte concentration and lysozyme-like activity. We discuss the implications of these relationships, as well as the usefulness of invertebrates as model species for future studies that explore the effects of LAN.

Waters under Artificial Lights: Does Light Pollution Matter for Aquatic Primary Producers? Grubisic, M. (2018), Limnology and Oceanography Bulletin, 27: 76-81. https://aslopubs.onlinelibrary.wiley.com/doi/abs/10.1002/lob.10254

Abstract: Bright night lights have become a symbol of development and prosperity in the modern world. But have you ever wondered how artificial light at night (ALAN) may be affecting living beings in our cities, and how it may be affecting us? As artificial illumination is transforming nocturnal environments around the world, light pollution associated with its use is becoming a topic of increasing interest in the scientific and public communities. Light pollution disrupts natural light regimes in many regions of the world, raising concerns about ecological and health impacts of this novel anthropogenic pressure. Most obviously, ALAN can influence night-active animals in urban and suburban areas, and most research in this growing field focuses on terrestrial organisms such as bats, birds, and insects. Effects on aquatic ecosystems are much less known. In particular, aquatic primary producers, such as microalgae, cyanobacteria, and plants, have rarely been studied despite their critical positioning in the base of aquatic food webs and the fundamental role that light plays in their ecology. For primary producers, light is a key source of both energy and environmental information; it influences their growth, production, and community structure. ALAN has therefore a large potential to influence their communities and induce bottom-up changes to aquatic ecosystems and ecosystem functions.

Global climate change and invariable photoperiods: A mismatch that jeopardizes animal fitness. Walker, WH, Meléndez-Fernández, OH, Nelson, RJ, Reiter, RJ. Ecol Evol. 2019; 9: 10044–10054. https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.5537

Abstract: The Earth's surface temperature is rising, and precipitation patterns throughout the Earth are changing; the source of these shifts is likely anthropogenic in nature. Alterations in temperature and precipitation have obvious direct and indirect effects on both plants and animals. Notably, changes in temperature and precipitation alone can have both advantageous and detrimental consequences depending on the species. Typically, production of offspring is timed to coincide with optimal food availability; thus, individuals of many species display annual rhythms of reproductive function. Because it requires substantial time to establish or re-establish reproductive function, individuals cannot depend on the arrival of seasonal food availability to begin breeding; thus, mechanisms have evolved in many plants and animals to monitor and respond to day length in order to anticipate seasonal changes in the environment. Over evolutionary time, there has been precise fine-tuning of critical photoperiod and onset/offset of seasonal adaptations. Climate change has provoked changes in the availability of insects and plants which shifts the timing of optimal reproduction. However, adaptations to the stable photoperiod may be insufficiently plastic to allow a shift in the seasonal timing of bird and mammal breeding. Coupled with the effects of light pollution which prevents these species from determining day length, climate change presents extreme evolutionary pressure that can result in severe deleterious consequences for individual species reproduction and survival. This review describes the effects of climate change on plants and animals,

defines photoperiod and the physiological events it regulates, and addresses the consequences of global climate change and a stable photoperiod.

Effects of street lighting technologies on the success and quality of pollination in a nocturnally pollinated plant. Macgregor, C. J., M. J. O. Pocock, R. Fox, and D. M. Evans. 2019. Ecosphere 10(1):e02550
https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1002/ecs2.2550
Abstract: Artificial light at night (ALAN) is an increasingly important driver of global change. Lighting directly affects plants, but few studies have investigated indirect effects mediated by interacting organisms. Nocturnal Lepidoptera are globally important pollinators, and pollen transport by moths is disrupted by lighting. Many street lighting systems are being replaced with novel, energy-efficient lighting, with unknown ecological consequences. Using the wildflower Silene latifolia, we compared pollination success and quality at experimentally lit and unlit plots, testing two major changes to street lighting technology: in lamp type, from high-pressure sodium lamps to light-emitting diodes, and in lighting regime, from full-night (FN) to part-night (PN) lighting. We predicted that lighting would reduce pollination. S. latifolia was pollinated both diurnally and nocturnally. Contrary to our predictions, flowers under FN lighting had higher pollination success than flowers under either PN lighting or unlit controls, which did not significantly differ from each other. Lamp type, lighting regime, and distance from the light all significantly affected aspects of pollination quality. These results confirm that street lighting could affect plant reproduction through indirect effects mediated by nocturnal insects, and further highlight the possibility for novel lighting technologies to mitigate the effects of ALAN on ecosystems.

Cascading effects of artificial light at night: resource-mediated control of herbivores in a grassland ecosystem. Bennie J, Davies TW, Cruse D, Inger R, Gaston KJ. 2015. Phil. Trans. R. Soc. B 370: 20140131.
https://royalsocietypublishing.org/doi/10.1098/rstb.2014.0131
Abstract: Artificial light at night has a wide range of biological effects on both plants and animals. Here, we review mechanisms by which artificial light at night may restructure ecological communities by modifying the interactions between species. Such mechanisms may be top-down (predator, parasite or grazer controlled), bottom-up (resource-controlled) or involve non-trophic processes, such as pollination, seed dispersal or competition. We present results from an experiment investigating both top-down and bottom-up effects of artificial light at night on the population density of pea aphids Acyrthosiphon pisum in a diverse artificial grassland community in the presence and absence of predators and under low-level light of different spectral composition. We found no evidence for top-down control of A. pisum in this system, but did find evidence for bottom-up effects mediated through the impact of light on flower head density in a leguminous food plant. These results suggest that physiological effects of light on a plant species within a diverse plant community can have detectable demographic effects on a specialist herbivore.

Artificial night light alters ecosystem services provided by biotic components. Singhal, R.K., Chauhan, J., Jatav, H.S. et al. Biologia Futura (2021).
https://doi.org/10.1007/s42977-020-00065-x
Abstract Excerpt: This review highlights the impact of ALAN on the ecosystem and its living and non-living components, emphasizing to the terrestrial and aquatic ecosystem. Further, we summarize the means of minimizing strategies of ALAN in the environment, which are very crucial to reduce the further spread of night light contamination in the environment and can be useful to minimize the drastic impacts on the ecosystem.

City lights and urban air. Stark, H., Brown, S., Wong, K. et al. Nature Geoscience, Vol 4, Nov 2011.
https://doi.org/10.1038/ngeo1300
https://s3.amazonaws.com/wbez-assets/curiouscity/ngeo_1300_NOV11_auproof2.pdf
https://cires.colorado.edu/news/bright-city-lights-affect-air-pollution
Here we show that city lights can also alter the concentration of nitrate radicals, an important atmospheric oxidant. These alterations have potential — albeit small — consequences for pollution levels the following day… We converted satellite data on light intensity into nitrate radical loss, using our aircraft measurements, and show that the infuence of city lights on nitrate radical loss can be large in regions outside Los Angeles... We also fnd that satellite-derived estimates of light levels tend to correlate positively with independent satellite-derived estimates of nitrogen dioxide. We therefore suggest that city lights are likely to infuence nitrogen dynamics in other regions of the globe.

Nighttime photochemistry: nitrate radical destruction by anthropogenic light sources. Stark, H, etal. CIRES, NOAA. 2010.
https://www.academia.edu/23527679/Nighttime_photochemistry_nitrate_radical_destruction_by_anthropogenic_light_sources
Abstract extract: show airborne and ground measurements of absolute light intensities from anthropogenic and natural light sources (e.g. industrial and street lighting, full moon) as a newly discovered NO3 loss process. This loss process has implications for nighttime pollutant levels and next-day ozone production.

Light Flicker from LED Lighting Systems-An Urgent Problem to Solve. GIES, T.H. (2016).
https://www.led-professional.com/resources-1/articles/lighting-flicker-from-led-lighting-systems/LpR53_p50-p59.pdf
Recent research has shown that fluctuations of short wavelength emissions are perceived to a higher extent and light flicker may have a huge influence on the well-being of end users.

Blue light excited retinal intercepts cellular signaling. Ratnayake, K., Payton, J.L., Lakmal, O.H. et al. Scientific Reports 8, 10207 (2018).
https://doi.org/10.1038/s41598-018-28254-8
Photoreceptor chromophore, 11-cis retinal (11CR) and the photoproduct, all-trans retinal (ATR), are present in the retina at higher concentrations and interact with the visual cells. Non-visual cells in the body are also exposed to retinal that enters the circulation. … we uncovered that blue light-excited ATR and 11CR irreversibly change/distort plasma membrane (PM) bound phospholipid; phosphatidylinositol 4,5 bisphosphate (PIP2) and disrupt its function. … The change in PIP2 was followed by an increase in the cytosolic calcium, excessive cell shape change, and cell death… These findings suggest that retinal exerts light sensitivity to both photoreceptor and non-photoreceptor cells, and intercepts crucial signaling events, altering the cellular fate.

Blue light from phone screens accelerates blindness, study finds. The Guardian. 8/9/2018
https://www.theguardian.com/society/2018/aug/09/blue-light-from-phone-screens-accelerates-blindness-study-finds
Research… has revealed that prolonged exposure to blue light triggers poisonous molecules to be generated in the eye's light-sensitive cells that can cause macular degeneration – an incurable condition that affects the middle part of vision. Blue light, which has a shorter wavelength and more energy compared with other colours, can gradually cause damage to the eyes.

How the marvel of electric light became a global blight to health. Dr. Richard G 'Bugs' Stevens. Aeon. August 3, 2018.
https://aeon.co/ideas/how-the-marvel-of-electric-light-became-a-global-blight-to-health
Excerpts: Light at night constitutes a massive assault on the ecology of the planet, including us… The electric light bulb is touted as one of the most significant technological advancements of human beings… But as with any new and spectacular technology, there are invariably unintended consequences… The current 'lightmare' traces back to the 1950s, when a road-building frenzy, including construction of the Interstate Highway System, aimed to solve the problem of congestion in the United States. But the roads turned out to increase congestion and pollution, including light pollution, too… More efficient energy-production and use, without concerted public education on reduction of use, can make the pollution problem worse… The hyper-aggressive marketing of bright, white LED street lighting to cities and towns has advanced to a breathtaking level. The US Department of Energy (DoE) and a group of international partners have launched an effort called 'Rise and Shine: Lighting the World with 10 Billion LED Bulbs' in 'a race to deploy 10 billion high-efficiency, high-quality and affordable lighting fixtures and bulbs (like LEDs) as quickly as possible'… In response to this relentless attack on night, the American Medical Association (AMA) stepped up and adopted an official policy statement in 2016... The reaction from the DoE and the Illuminating Engineering Society of North America (IES) was swift and highly critical of the AMA's audacity, asserting that the AMA was not qualified to make any statements on lighting. But this reaction was disingenuous because without the AMA statement, the nationwide retrofit would have continued unabated without regard to the environment or human health. Electric light can be a great benefit to people when used wisely. To get to the 'used wisely' part requires all the science happening now. But there must also be a desire for effective use of electric lighting on the part of government and the public… few people will leave the faucet running much longer than necessary. Yet some people think nothing of using more electricity than they actually need… In the life of the planet, destruction of night is as important an issue as the poisoning of water and air.

Artificial Light at Night (ALAN): A Potential Anthropogenic Component for the COVID-19 and HCoVs Outbreak. Khan ZA, Yumnamcha T, Mondal G, et al. Frontiers in endocrinology. 2020;11:622. Published 2020 Sep 10.
https://www.frontiersin.org/articles/10.3389/fendo.2020.00622/full
Abstract Excerpt: In this article, we tried to focus on the possible influence of this anthropogenic factor in human coronavirus (HCoV) outbreak. The relationship between the occurrences of coronavirus and the ascending curve of the night-light has also been delivered. The ALAN influences the physiology and behavior of bat, a known nocturnal natural reservoir of many Coronaviridae. The "threatened" and "endangered" status of the majority of bat species is mainly because of the destruction of their proper habit and habitat predominantly through artificial illumination. The stress exerted by ALAN leads to the impaired body functions, especially endocrine, immune, genomic integration, and overall rhythm features of different physiological variables and behaviors in nocturnal animals. Night-light disturbs "virus–host" synchronization and may lead to mutation in the genomic part of the virus and excessive virus shedding. We also proposed some future strategies to mitigate the repercussions of ALAN and for the protection of the living system in the earth as well.

Light pollution linked to preterm birth increase. Jan 25, 2021. Lehigh University. Science Daily.
https://www.sciencedaily.com/releases/2021/01/210125191821.htm
Scientists conducted the first study to examine the fetal health impact of light pollution based on a direct measure of skyglow, an important aspect of light pollution. Using an empirical regularity discovered in physics, called Walker's Law, a team found evidence of reduced birth weight, shortened gestational length and preterm births.

Association of Outdoor Artificial Light at Night With Mental Disorders and Sleep Patterns Among US Adolescents. Paksarian D, Rudolph KE, Stapp EK, et al. JAMA Psychiatry. 2020;77(12):1266–1275.
https://jamanetwork.com/journals/jamapsychiatry/article-abstract/2767698
https://edition.cnn.com/2020/07/08/health/night-light-pollution-disrupt-sleep-wellness/index.html
In this study, area-level outdoor ALAN was associated with less favorable sleep patterns and mood and anxiety disorder in adolescents. Future studies should elucidate whether interventions to reduce exposure to ALAN may positively affect mental and sleep health.

Astronomy Impacts

Light Pollution In California And Arizona. Walker, Merle F. *Publications of The Astronomical Society of The Pacific*, Vol. 85, No. 507, 1973, pp. 508–519. *Jstor*
http://www.jstor.org/stable/40675430
The present and future effect of artificial illumination on ground-based optical astronomical observations in California and Arizona is discussed. It is concluded that the effectiveness of all major observatories in these states is presently or potentially limited by light pollution. Consequently, it is essential that immediate efforts be undertaken to: (1) Control outdoor illumination to lengthen the useful life of existing observatory sites, and (2) Identify and protect the best remaining sites both within and outside the United States. The characteristics and probable locations of the best sites for ground-based optical astronomical observations are discussed.

Light Pollution: Outdoor lighting is a growing threat to astronomy. Riegel, Kurt W. Science, Vol. 179, No. 4080, Mar 1973, pp. 1285–1291.
https://pubmed.ncbi.nlm.nih.gov/17835929/
Abstract Excerpt: The level of skylight caused by outdoor lighting systems is growing at a very high rate, about 20 percent per year nationwide. In addition, the spectral distribution of man-made light pollution may change in the next decade from one containing a few mercury lines to one containing dozens of lines and a significantly increased continuum level. Light pollution is presently damaging to some astronomical programs, and it is likely to become a major factor limiting progress in the next decade... Some is due to promotional campaigns, in which questionable arguments involving public safety are presented. There are protective measures which might be adopted by the government; these would significantly aid observational astronomy, without compromising the legitimate outdoor lighting needs of society.

Flagstaff's Battle for Dark Skies. Portree D.S.F. Oct 2002, Griffith Observer, Vol 66 No 10
http://www2.lowell.edu/users/wes/GriffithObserver1crop.pdf
http://www.flagstaffdarkskies.org/international-dark-sky-city/flagstaffs-battle-for-dark-skies/

Public Safety

Blinded by the Lights: Levi's Stadium Lights May Be Airport Safety Hazard. By Stephen Stock, Michael Bott and Jeremy Carroll. NBC Bay Area. Sept 22, 2015
https://www.nbcbayarea.com/news/local/blinded-by-the-lights-levi-stadium-lights-may-be-airport-safety-hazard/102234/
Some pilots say powerful lights above and around the new Levi's Stadium can cause safety hazards for flights in and out of San Jose Mineta International Airport.

Why Lighting Claims Might Well Be Wrong, Paul Marchant, International Journal of Sustainable Lighting: Vol. 19 No. 1 (2017)
http://lightingjournal.org/index.php/path/article/view/71/79
This paper gives some background to claims of benefit from road lighting and why large beneficial claims may be suspect.

Feeling Safe in the Dark: Examining the Effect of Entrapment, Lighting Levels, and Gender on Feelings of Safety and Lighting Policy Acceptability. Boomsma C, et al. Environmental and Behavior, Vol 46 Issue 2, pp 193-212. Sept 2012.
https://journals.sagepub.com/doi/10.1177/0013916512453838
Importantly, as hypothesized, perceived safety mediated the effect of lighting on acceptability levels, suggesting that people can accept lower lighting levels when social safety is not threatened.

The effect of reduced street lighting on road casualties and crime in England and Wales: controlled interrupted time series analysis. Steinbach R, Perkins C, Tompson L, et al, J Epidemiol Community Health 2015;69:1118-1124.
https://jech.bmj.com/content/69/11/1118
Conclusions: This study found little evidence of harmful effects of switch off, part-night lighting, dimming, or changes to white light/LEDs on road collisions or crime in England and Wales.

Light Pollution Mitigation

National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds, Commonwealth of Australia, Jan 2020
https://www.environment.gov.au/biodiversity/publications/national-light-pollution-guidelines-wildlife

Audubon's Lights Out program
https://www.audubon.org/conservation/project/lights-out

LoNNe, Loss of the Night Network
http://www.cost-lonne.eu/recommendations/

Human and Environmental Effects of Light Emitting Diode (LED) Community Lighting, 2016, American Medical Association, CSAPH Report 2-A-16, Policy H-135.927
https://policysearch.ama-assn.org/policyfinder/detail/H-135.927?uri=%2FAMADoc%2FHOD-135.927.xml
https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/about-ama/councils/Council%20Reports/council-on-science-public-health/a16-csaph2.pdf
supports the proper conversion to community-based Light Emitting Diode (LED) lighting, which reduces energy consumption and decreases the use of fossil fuels.. encourages minimizing and controlling blue-rich environmental lighting by using the lowest emission of blue light possible to reduce glare... should be properly shielded to minimize glare and detrimental human and environmental effects, and... utilize the ability of LED lighting to be dimmed for off-peak time periods.

Advocating and Support for Light Pollution Control Efforts and Glare Reduction for Both Public Safety and Energy Savings, 2012, Policy H-135.937
https://policysearch.ama-assn.org/policyfinder/detail/light%20pollution?uri=%2FAMADoc%2FHOD.xml-0-308.xml
Our AMA: (1) will advocate that all future outdoor lighting be of energy efficient designs to reduce waste of energy and production of greenhouse gasses that result from this wasted energy use; (2) supports light pollution reduction efforts and glare reduction efforts at both the national and state levels; and (3) supports efforts to ensure all future streetlights be of a fully shielded design or similar non-glare design to improve the safety of our roadways for all, but especially vision impaired and older drivers.

International Dark-Sky Association, https://darksky.org, https://darksky.org/light-pollution
IDA Guidance for Electronic Message Centers (EMCs) – Digital billboards
https://www.darksky.org/wp-content/uploads/2019/10/EMC-Guidelines-IDA2019-1.1.pdf
IDA Criteria for Community-Friendly Outdoor Sports Lighting
https://www.darksky.org/wp-content/uploads/2018/03/IDA-Criteria-for-Community-Friendly-Outdoor-Sports-Lighting.pdf

Model Lighting Ordinances – Dark Sky Impacts, Flagstaff Dark Skies Coalition
http://www.flagstaffdarkskies.org/model-lighting-ordinances-dark-sky-impacts/

Led Lighting And Dark Skies: Are LEDs good for dark skies? Flagstaff Dark Skies Coalition.
http://www.flagstaffdarkskies.org/led-lighting-dark-skies/

Light Pollution and Lighting Codes: An Analysis of the Light Pollution Control Effectiveness of the IDA-IES Model Lighting Ordinance and the IDA Pattern Outdoor Lighting Code, Christian B. Luginbuhl, U.S. Naval Observatory Flagstaff Station, 15 January 2013
http://www.flagstaffdarkskies.org/wp-content/uploads/2013/02/Lighting-Codes-and-LP-Luginbuhl-130115.pdf
Excerpts: Under MLO standards, outside of MLO Lighting Zones 0 and 1, the total lumen allowances, direct uplight allowances, and amount of sky glow are notably greater than expected under POLC standards; in MLO Lighting Zones 3 and 4 they are dramatically greater. These lighting amounts and sky glow impacts are greater than what can be expected even when lighting is unregulated. The MLO Performance Method Option B provides notably poor control of direct uplight and therefore sky glow. Under the MLO Performance Method Option B there are no effective limitations on glare. MLO does not address lamp spectrum, and thus leaves this crucial aspect of light pollution unaddressed. Finally, the analysis shows that the MLO Prescriptive Hardscape Area and Performance Methods do not provide similar results in terms of total lumen amounts, uplight amounts, glare, or "offsite" impacts, an undesirable characteristic of a model regulation purporting to control light pollution. The Performance Method particularly allows for the most egregious forms of polluting lighting fixtures and designs. We find no evidence that communities adopting MLO can expect reduction in light pollution over that produced by typical unregulated lighting, despite the claims of MLO to be a method to "drastically reduce" light pollution.

Model Lighting Ordinance: Is the BUG rating method effective at limiting light trespass?, April/May 2012 issue of LEDs Magazine
https://www.ledsmagazine.com/architectural-lighting/outdoor-lighting/article/16698628/model-lighting-ordinance-is-the-bug-rating-method-effective-at-limiting-light-trespass-magazine
Excerpts: The MLO allows for the use of BUG ratings along with the performance method as long as there is no uplight used. This scenario would not only allow for more lumens on the site as compared to the prescriptive method, but also would allow for a greater amount of light spilling from the site than would be seen from sites that restrict the spill by using the calculation method. As proven from the studies done for this article, the BUG rating method cannot effectively control these extra lumens of spill light.

Hazard or Hope? LEDs and Wildlife. Longcore, Travis. (2018). LED Professional Review. 70. 52-57.
https://www.led-professional.com/resources-1/articles/hazard-or-hope-leds-and-wildlife
Conclusions: The efficiency benefits of LEDs and the resulting economic incentives will drive further conversion of outdoor and indoor lighting to the technology. If the tendency to light more when light is cheaper can be overcome, the other attributes of LEDs hold significant promise for reducing environmental effects. Realizing that promise requires designers and manufacturers to learn about and embrace the guidance that wildlife scientists can provide. In some instances it will be challenging - resisting the desire to up-light, using no more light than necessary, and educating clients on the benefits of spectral choices that do not look like daylight. In other contexts, environmental regulations are likely to dictate lighting choices and offer an opportunity if the industry is prepared to seize it. On each of the mitigation approaches - duration, direction, intensity, and spectrum - LEDs will inherently or can be designed to perform well. Whether they do in practice will be up to the LED professional.

Artificial Night Lighting and Protected Lands: Ecological Effects and Management Approaches (Revised August 2017). Longcore, T., and C. Rich. Natural Resource Report NPS/NRSS/NSNS/NRR—2017/1493. National Park Service, Fort Collins, Colorado.
https://irma.nps.gov/DataStore/DownloadFile/582058
Artificial night lighting represents a growing challenge for managers of parks and protected lands. The disruption of natural patterns of light and dark, which have been more or less reliable for millions of years, has a range of adverse consequences for wildlife across taxonomic groups and landscape types. This document reviews effects of artificial night lighting by habitat type and discusses the approaches available to land managers to mitigate and avoid certain adverse effects of artificial night lighting.

Rapid assessment of lamp spectrum to quantify ecological effects of light at night. Longcore, T., A. Rodríguez, B. Witherington, J. F. Penniman, L. Herf, and M. Herf. 2018. Journal of Experimental Zoology A 329:511-521.
https://onlinelibrary.wiley.com/doi/abs/10.1002/jez.2184
Abstract: For many decades, the spectral composition of lighting was determined by the type of lamp, which also influenced potential effects of outdoor lights on species and ecosystems. Light-emitting diode (LED) lamps have dramatically increased the range of spectral profiles of light that is economically viable for outdoor lighting. Because of the array of choices, it is necessary to develop methods to predict the effects of different spectral profiles without conducting field studies, especially because older lighting systems are being replaced rapidly. We describe an approach to predict responses of exemplar organisms and groups to lamps of different spectral output by calculating an index based on action spectra from behavioral or visual characteristics of organisms and lamp spectral irradiance. We calculate relative response indices for a range of lamp types and light sources and develop an index that identifies lamps that minimize predicted effects as measured by ecological, physiological, and astronomical indices. Using these assessment metrics, filtered yellow-green and amber LEDs are predicted to have lower effects on wildlife than high pressure sodium lamps, while blue-rich lighting (e.g., $K \geq 2200$) would have greater effects. The approach can be updated with new information about behavioral or visual responses of organisms and used to test new lighting products based on spectrum. Together with control of intensity, direction, and duration, the approach can be used to predict and then minimize the adverse effects of lighting and can be tailored to individual species or taxonomic groups.

The LED Paradox: How Light Pollution Challenges Experts to Reconsider Sustainable Lighting. Schulte-Römer, N.; Meier, J.; Söding, M.; Dannemann, E.; Sustainability 2019, 11, 6160.
https://www.mdpi.com/2071-1050/11/21/6160
Abstract: In the 21st century, the notion of "sustainable lighting" is closely associated with LED technology. In the past ten years, municipalities and private light users worldwide have installed light-emitting diodes in urban spaces and public streets to save energy. Yet an increasing body of interdisciplinary research suggests that supposedly sustainable LED installations are in fact unsustainable, because they increase light pollution. Paradoxically, blue-rich cool-white LED lighting, which is the most energy-efficient, also appears to be the most ecologically unfriendly. Biologists, physicians and ecologists warn that blue-rich LED light disturbs the circadian day-and-night rhythm of living organisms, including humans, with potential negative health effects on individual species and whole ecosystems. Can the paradox be solved? This paper explores this question based on our transdisciplinary research project Light Pollution—A Global Discussion. It reveals how light pollution experts and lighting professionals see the challenges and potential of LED lighting from their different viewpoints. This expert feedback shows that "sustainable LED lighting" goes far beyond energy efficiency as it raises complex design issues that imply stakeholder negotiation. It also suggests that the LED paradox may be solved in context, but hardly in principle.

Tuning the white light spectrum of light emitting diode lamps to reduce attraction of nocturnal arthropods. Longcore Travis, Aldern Hannah L., Eggers John F., Flores Steve, Franco Lesly, Hirshfield-Yamanishi Eric, Petrinec Laina N., Yan Wilson A. and Barroso André M. 2015, Phil. Trans. R. Soc. B37020140125
https://royalsocietypublishing.org/doi/abs/10.1098/rstb.2014.0125
Abstract: Artificial lighting allows humans to be active at night, but has many unintended consequences, including interference with ecological processes, disruption of circadian rhythms and increased exposure to insect vectors of diseases. Although ultraviolet and blue light are usually most attractive to arthropods, degree of attraction varies among orders. With a focus on future indoor lighting applications, we manipulated the spectrum of white lamps to investigate the influence of spectral composition on number of arthropods attracted. We compared numbers of arthropods captured at three customizable light-emitting diode (LED) lamps (3510, 2704 and 2728 K), two commercial LED lamps (2700 K), two commercial compact fluorescent lamps (CFLs; 2700 K) and a control. We configured the three custom LEDs to minimize invertebrate attraction based on published attraction curves for honeybees and moths. Lamps were placed with pan traps at an urban and two rural study sites in Los Angeles, California. For all invertebrate orders combined, our custom LED configurations were less attractive than the commercial LED lamps or CFLs of similar colour temperatures. Thus, adjusting spectral composition of white light to minimize attracting nocturnal arthropods is feasible; not all lights with the same colour temperature are equally attractive to arthropods.

Evaluating Potential Spectral Impacts of Various Artificial Lights on Melatonin Suppression, Photosynthesis, and Star Visibility. Aubé M, Roby J, Kocifaj M (2013). PLOS ONE 8(7): e67798.
https://doi.org/10.1371/journal.pone.0067798
Abstract Excerpt: Artificial light at night can be harmful to the environment, and interferes with fauna and flora, star visibility, and human health. To estimate the relative impact of a lighting device, its radiant power, angular photometry and detailed spectral power distribution have to be considered. In this paper we focus on the spectral power distribution... In this paper we propose three new indices to characterize lamp spectra. These indices have been designed to allow a quick estimation of the potential impact of a lamp spectrum on melatonin suppression, photosynthesis, and star visibility. We used these new indices to compare various lighting technologies objectively. We also considered the transformation of such indices according to the propagation of light into the atmosphere as a function of distance to the observer. Among other results, we found that low pressure sodium, phosphor-converted amber light emitting diodes (LED) and LED 2700 K lamps filtered with the new Ledtech's Equilib filter showed a lower or equivalent potential impact on melatonin suppression and star visibility in comparison to high pressure sodium lamps. Low pressure sodium, LED 5000 K-filtered and LED 2700 K-filtered lamps had a lower impact on photosynthesis than did high pressure sodium lamps. Finally, we propose these indices as new standards for the lighting industry to be used in characterizing their lighting technologies.

Solid-State Roadway Lighting Design Guide: Volume 1: Guidance. National Academies of Sciences, Engineering, and Medicine. 2020. https://doi.org/10.17226/25678

Solid-State Roadwazy Lighting Design Guide: Volume 2: Research Overview. National Academies of Sciences, Engineering, and Medicine. 2020. https://doi.org/10.17226/25679

Assessment of Citizens' Actions against Light Pollution with Guidelines for Future Initiatives. Zielińska-Dabkowska, K.M.; Xavia, K.; Bobkowska, K. Sustainability. June 2020, 12, 4997.
https://doi.org/10.3390/su12124997
Abstract excerpt: This paper therefore investigates the various actions taken by citizens, as well as the challenges, methods, and tools involved, regarding good practices initiated by grass roots activism on how to reduce existing and potential light pollution. The results of a comparative analysis of 262 international case studies (lawsuits and online petitions) reveal that, since the 1990s, there has been an increase in the number of legal cases related to light pollution due to the rise in public awareness, the availability of scientific knowledge via the Internet, and the ability to take accurate lighting measurements and perform lighting simulations. Also, in the last decade a new tool for digital participation in the form of online petitions has established a new movement of citizen action to mitigate the effects of light pollution. Based on this information, a seven-step framework involving recommendations for citizen action has been developed. It is expected that this new knowledge will benefit those citizens planning future efforts involving the development, implementation, and monitoring processes of outdoor lighting. Additionally, it might support the evolution of planning and policy approaches that are sustainable and necessary to improve the application and installation of ecologically/biologically responsible illumination for towns, cities, and natural habitats.

Nevada Senate passes bill to form 'dark sky places' program. Feb 22, 2021. By Sam Metz, AP News
https://apnews.com/article/legislature-nevada-light-pollution-coronavirus-pandemic-kate-marshall-eb0f69ee3c5895b1f7dd4d89b1ea3ebc
Nevada's state Senate took a step toward ensuring stargazers will continue to enjoy picture-perfect constellations on Monday, passing a bill to recognize "dark sky places" with unobstructed views of galaxies hundreds of thousands of light years away.

Urban Lighting Research Transdisciplinary Framework—A Collaborative Process with Lighting Professionals. Pérez Vega, C.; Zielinska-Dabkowska, K.M.; Hölker, F. Int. J. Environ. Res. Public Health. 2021, 18, 624. https://doi.org/10.3390/ijerph18020624

Abstract Excerpt: Over the past decades, lighting professionals have influenced the experience of the night by brightly illuminating streets, buildings, skylines, and landscapes 24/7... a dual perspective on night-time was shaped and the visual enjoyment of visitors after dusk was prioritized over natural nightscapes (nocturnal landscapes). During this time, researchers of artificial light at night (ALAN) observed and reported a gradual increase in unnatural brightness and a shift in color of the night-time environment. As a consequence, ALAN has been identified as a relevant pollutant of aquatic and terrestrial habitats, and an environmental stressor, which may adversely affect a wide range of organisms, from micro-organisms to humans... This paper presents a framework to help reduce the existing gap of knowledge, because appropriate lighting applications depend upon it. Access to less light polluted nightscapes in urban environments is just as important as access to unpolluted water, food, and air.

On-line Workshop "Dark and Quiet Skies for Science and Society", Report and Recommendations, Dec 2020, coordinated by the United Nations Office for Outer Space Affairs https://unoosa.org/oosa/en/ourwork/psa/schedule/2020/2020_dark_skies.html

to propose to COPUOS [United Nations Committee on the Peaceful Uses of Outer Space]... recommendations, to be acted upon either by local governments or agreed to at an international level... This report analyses all artificial interference that can have a negative impact on the visibility of the night sky. These interferences can be logically grouped into three categories... effect caused by the artificial emission of visible light during the night,... impact that the very large number of communication satellites in Low Earth Orbit... to the interference that radio broadcasting... have on observations by radio telescopes.

Grasping darkness: the dark ecological network as a social-ecological framework to limit the impacts of light pollution on biodiversity. Challéat, S., et al. 2021. Ecology and Society 26(1):15. https://doi.org/10.5751/ES-12156-260115

Abstract excerpt: Artificial light at night (ALAN)... is increasingly recognized as a major threat to global biodiversity, which ultimately alters the amount, the quality, and the connectivity of available habitats for taxa... Here we present the concept of "dark ecological network." We show this concept is able to grasp the effects of ALAN in terms of habitat disturbances and integrates temporal dimensions of ecological processes into biodiversity conservation planning... we propose a course of action that consists of building an interdisciplinary repertoire of contextualized knowledge (e.g., impacts on wildlife, human/lightscape relationship, existing legal tools, etc.), in order to deduce from it a number of practical supports for the governance of the dark ecological network in response to societal and ecological issues.

Letter O-2 Response: SCVAS & GreenSpacesMV, September 5, 2022

O-2-1 The City of Mountain View appreciates input from the SCVAS and GreenSpacesMV concerning their interest in potential impacts to biological resources, especially in the North Bayshore planning area. The comment states that the North Bayshore Precise Plan requirements and development standards should be updated to reflect new scientific knowledge in three topic areas that are described in subsequent comments: lighting, loss of trees, and protection of burrowing owls at Shoreline Park. The introductory comment does not cite a deficiency in the Draft EIR and is noted.

O-2-2 Citing several credible sources, the comment states that the adopted North Bayshore Precise Plan should be amended to greater regulate outdoor LED light fixtures and thereby minimize the impacts of night lighting on wildlife. Through provided citations, the comment frames a discussion that certain types of lighting, specifically some LED lights, can negatively affect wildlife species. Several lighting management recommendations are provided which include eliminating minimum lighting requirements, reducing light brightness, requiring low Kelvin color temperature bulbs on outdoor lighting (2400 Kelvin or less), and the use of dimmers on outdoor lights. The comment only generally states that outdoor lighting can have negative effects on wildlife without specific mention of deficiencies in the DEIR analysis or a description of a specific mechanism by which wildlife species would be negatively affected by lighting. As the DEIR discloses, much of the planned new housing would be infill development that is away from avian movement corridors and distant from areas with natural wildlife habitat. The North Bayshore Precise Plan presently requires the incorporation of bird safe design measures for new construction and major renovations in the North Bayshore Precise Plan (Draft EIR, p. 4.3-26); however, the City does not have a "bird safe and dark sky" ordinance that addresses the topic of light pollution. Given the infill nature of the Project within developed portion of the City and the absence of a local ordinance that provides a nexus for impact significance, potential impacts to wildlife related to lighting would be less than significant and would not require mitigation. The suggestions from SCVAS and GreenSpacesMV and copies of the International Dark-Sky Association article, "Artificial Light at Night: State of the Science 2022" have been included in the record, where they may be considered by the City as part of the decision-making process.

O-2-3 The comment is concerned that the Project will impact urban trees and that there are inadequate locations to plant replacement trees, which it concludes will result in a loss of trees and tree canopy within the City. The comment further requests an analysis of potential impacts to trees and replacement sites, stating that if trees and canopy cannot be replaced in a reasonable timeframe, then the impact should be considered significant and unavoidable. The City plans to preserve and manage the

existing urban forest, with no substantial changes in urban tree canopy under the proposed Project. The City of Mountain View's Forestry Division recognizes urban trees as a valuable community resource. As such, the City closely regulates the removal of heritage trees, which it defines as any tree with a trunk circumference of 48" or more, measured at 54" above the natural grade, and any oak, redwood, or cedar tree with a circumference of 12" or more when measured 54" above natural grade. The City maintains a detailed process to remove trees, which requires approval by a certified arborist and a required planting plan. In keeping with the City's commitment to preserve its urban forest, the review of new developments under the HEU will include an evaluation of open space and landscaping plans. Tree removals performed under approved HEU projects would be done on a case-by-case basis in compliance with existing City policies protecting heritage trees under the direction of a qualified arborist and with an approved replanting plan.

O-2-4 The comment relates to the management and recovery of the burrowing owl population at Shoreline Park. It states that despite informational signage and ranger patrols, disruptive behaviors by humans and dogs continue to have a detrimental effect on owls. With the planned additional residences in the North Bayshore area, the comment speculates that encroachments into owl habitat will continue. As a remedy, the comment suggests the use of fencing around the park to make the area inaccessible to the public after hours. The North Bayshore Precise Plan area is the closest planning area to Shoreline Park. As noted in the Draft EIR (p. 4.3-9), the City supports an ongoing burrowing owl monitoring and management program in the park. The DEIR also recognized that the increased presence of people, pets (dogs and cats), and children related to residential development could have indirect impacts to burrowing owls at Shoreline Park (Draft EIR p. 4.3-15). The City of Mountain View Parks Division manages Shoreline Park as a recreational multi-use area for the benefit of burrowing owls. City biologists continue to identify and resolve potential wildlife management conflicts at Shoreline Park as they occur, including the ongoing monitoring, management, and protection of burrowing owls. Should park staff identify recreational conflicts with burrowing owls, they will respond accordingly in keeping with the *2017-2023 Parks, Recreation & Open Space Plan*, and the forthcoming *Shoreline Wildlife Management Plan*. In summer 2022, the City solicited comments on the *Shoreline Wildlife Management Plan*, which was the appropriate vehicle to suggest fencing options for owl protection. With these protections in place, even with a potential increase in local recreational pressure at Shoreline Park, the existing park management plans provide an appropriate means to manage burrowing owl populations within the City of Mountain View. No additional impacts were identified in the comment and no mitigation is required to address this indirect, less than significant impact.

Comment Letter I-1

From: Hala Alshahwany
To: Yau, Ellen; , Planning Division
Cc: , City Manager; City Council
Subject: Housing Element EIR Input
Date: Saturday, September 3, 2022 7:00:10 PM

Hello Ms. Yau, City Staff, and Council Members,

Thanks for the opportunity to comment on the draft EIR for the Housing Element proposal. The project's goal is to add 15,000 new residential units in MV to meet the next RHNA cycle requirements, adding significant population (30,000+ individuals), buildings and infrastructure to support this large increase.

I-1-1

I found the report lacking in addressing the serious adverse impacts of this project on existing residential population and natural resources and habitats in the city. The listed objectives on p.2-6 do call for protection of existing housing, encouraging new ones, removing constraints and providing fair housing, but when I looked at the potential impacts of various aspects of this big undertaking, the impacts descriptions were unrealistic and unsound, leading to very few mitigations, if any, to be presented.

The critical impacts in many sections were nearly all described as "non-conflicting" ones, listing no significant or adverse effects. This was clearly the approach in p.2-9 section 4.2 **Air Quality**, p.2-12, section 4.3 **Biological Resources**, p.2-17 section 4.7 **GHG Emissions**, p.2-19 section 4.10 **Land Use and Planning**, p.2-20 section 4.11 **Noise**, and p.2-12 section 4.13 **Public Services and Recreation**.

I-1-2

Typically impacts are listed and then evaluated through assessment and mitigation columns. Listing most of the above impacts as "non conflicting" is very misleading, because it's making an assumption that may or may be accurate. This evaluation seems ludicrous to me. The impacts should clearly be listed and then evaluated accordingly, without assumptions.

The magnitude of this project is logistically huge on a city our size. Constructing significant number of buildings and bringing nearly 40% more people with all the infrastructure needs should have significant impacts on every section listed above. This doesn't even include the **Transportation** section 4.14 p.2-23. The mitigations listed for the latter have shown to be ineffective in the past, and there is no guarantee they will work on this large scale proposal.

I-1-3

Please re-evaluate the significance of these impacts using better consultants and tools, and present an accurate and realistic assessment of how it can be accomplished while keeping us and our environment healthy and sustainable.

I-1-4

Thank you.
Hala Alshahwany
Cuesta Park Resident

Letter I-1: Hala Alshahwany, September 3, 2022

I-1-1 This is a general comment and does not identify specific issues other than general assertions of inadequacy, and, thus, no response is required. Throughout Chapter 4 the Draft EIR evaluates over 80 project-specific impacts as well as cumulative impacts and identifies 11 mitigation measures to avoid or reduce the severity or magnitude of significant impacts (also see Chapter 2, *Summary*).

The Draft EIR evaluated the potential for approximately 15,000 multi-family housing units (including approximately 96 accessory dwelling units) during the HEU planning period as a maximum scenario for purposes of the CEQA evaluation, understanding that the buffer size and the final sites selected for inclusion in the Housing Element will be determined by the City Council upon adoption of the HEU. It is important to note that approximately 13,600 units are already allowed under the City's adopted General Plan, zoning, and Precise Plans, and this development potential has been studied previously for potential environmental impacts in the larger Precise Plan EIRs and/or the City's General Plan EIR. The remaining 1,400 units would be created through rezonings and General Plan amendments. In addition, the EIR also analyzes a possible increase in housing production from rezonings and General Plan Amendments of approximately 2,700 units beyond 2031.

As such, only a small percentage of increased development potential (approximately 4,100 units) would result from changes in City policy, zoning, or Precise Plans, and the balance could theoretically occur with or without the Project because it is consistent with existing policy, zoning, and Precise Plans. While State law requires the Housing Element to include an inventory of housing sites and requires the City to appropriately zone sites for multifamily housing, the City is not required to actually develop/construct housing on these sites. Future development on identified sites would be at the discretion of individual property owners and would be largely dependent on market forces and -- in the case of affordable housing -- available funding and/or other incentives. Nonetheless, this EIR considers potential impacts of development that may result from adoption of the HEU, focusing on proposed actions to encourage housing production such as changes in allowable densities, changes in development standards, and adoption of incentives.

This EIR is a Program EIR, which has been prepared to evaluate the anticipated environmental effects of the proposed HEU in conformance with the provisions of CEQA and the CEQA *Guidelines*. As a program EIR, this EIR analyzes potential impacts of development that would be allowed by the HEU without having site-specific development proposals in hand, and broadly considers proposed sites, their environmental setting, and potential impacts that could stem from their development. Readers will note that the level of detail is different than in a project-specific EIR, which generally considers a single, specific proposal on an individual site. Future discretionary actions that would be facilitated by the HEU's adoption, such as those

related to the development of housing, would be assessed to determine consistency with the analysis provided in this program EIR.

I-1-2 It is unclear what the commenter is referring to as "non-conflicting" impacts. As discussed in Section 4.0 of the Draft EIR, impacts are classified as significant or less than significant. A Project impact is considered less than significant when the physical change caused by the project would not exceed the applicable significance threshold. A Project impact is considered significant if the Project would result in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of Project-related physical changes compared to specified significance thresholds, which may be qualitative or quantitative (Draft EIR p. 4.0-2). After mitigation is applied, impacts are classified as less than significant with mitigation or significant and unavoidable with mitigation.

The commenter then lists various pages and topics in the Summary Chapter of the Draft EIR (Chapter 2), but does not identify specific issues other than general assertions of inadequacy. As provided by Section 15123 of the CEQA *Guidelines*, Chapter 2 of the Draft EIR provides a brief summary of the HEU and its consequences. Chapter 2 is intended to summarize in a stand-alone section the Project described in Draft EIR Chapter 3, *Project Description*, the impacts and mitigation measures discussed in Draft EIR Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, and the alternatives analysis presented in Draft Chapter 5, *Alternatives to the Project*.

The commenter is directed to the Draft EIR Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, which is divided into technical sections (e.g., Section 4.2, *Air Quality*) that present the physical environmental setting, regulatory setting, significance criteria, methodology and assumptions, and impacts on the environment for each environmental resource issue area. Where required, potentially feasible mitigation measures are identified to lessen or avoid potentially significant impacts. Each section includes an analysis of project-specific and cumulative impacts for each issue area. Specifically, see Draft EIR Section 4.2, *Air Quality*; Section 4.3, *Biological Resources*; Section 4.7, *Greenhouse Gas Emissions*; Section 4.10, *Land Use and Planning*; Section 4.11, *Noise*; and Section 4.13, *Public Services and Recreation*.

I-1-3 This is a general comment and does not identify specific issues other than general assertions of inadequacy. See Response to Comment I-1-2 that directs the commenter to the information presented in the Draft EIR for the topics identified in the previous comment. With regard to impacts related to transportation, Section 4.14, *Transportation*, of the Draft EIR presents the physical environmental setting, regulatory setting, significance criteria, methodology and assumptions, and impacts on the environment for this topic.

Based on the adopted transportation policy, most residential projects will reduce vehicle miles traveled (VMT), the metric for measuring CEQA transportation impact and will meet the City's adopted thresholds. This measure of transportation impact measures the benefit of much needed housing in the region and quantifies the benefit in reduced vehicle travel by reducing the vehicle miles between housing and employment.

However, projects that do not meet the City adopted policy, Mitigation Measure TRA-1, Implement VMT Reduction Measures, was identified to reduce potentially significant VMT impacts associated with implementation of the proposed HEU. Individual multifamily housing development proposals that do not screen out from VMT impact analysis would be required to provide a quantitative VMT analysis using the methods outlined by the City's most recent VMT guidelines. Projects that result in a significant impact would be required to include travel demand management measures and/or physical measures (i.e. improving multimodal transportation network, improving street connectivity) to reduce VMT. The City's VMT guidelines identify four tiers of mitigation measures, all of which can be quantified within the VTA VMT tool. The measures contained within VTA's VMT tool are based on supporting studies which demonstrate the effectiveness of the VMT reductions.

Additionally, development projects proposed under the HEU that generate at least 20 net new peak-hour trips (or those within a Precise Plan area) would require completion of a Multi-modal Transportation Analysis (MTA) during the entitlement process, which would address many non-CEQA transportation concerns. The MTA would ensure that the proposed development conforms with City policies (including traffic calming, neighborhood intrusion, and enhancing publicly accessible bicycle, pedestrian, and transit connections), that adequate multimodal site access and circulation are provided, appropriate fair-share fees are identified, and that operational improvements support pedestrian, bicycle, and transit quality of service.

I-1-4 This is a general comment and does not identify specific issues other than general assertions of inadequacy. The Draft EIR meets all requirements of CEQA, including detailed analyses of potential direct, indirect, and cumulative impacts on the environment supported by a long list of references and exercise of appropriate methodologies and professional judgement, and provides enforceable mitigation measures for the significant impacts identified (Draft EIR Chapter 4).

3.4 Responses to Public Hearing Comments

This section presents responses to verbal comments received on the Draft EIR at the City of Mountain View EPC meeting held on Wednesday, August 3, 2022. Responses are presented to summarized verbal comments, grouped by topic. Rather than responding individually and repetitively, grouped responses by topic have been developed to address such comments comprehensively. Responses focus on comments raised that pertain to the adequacy of the analysis in the EIR or to other aspects pertinent to the potential effects of the Project on the environment pursuant to CEQA.

EPC Comment Response 1: Water Supply

A number of comments were provided on the HEU's effects on water supply and whether adequate water supply would be available to accommodate the growth anticipated by the proposed HEU in addition to existing commitments and drought-related conditions.

Potential impacts on water supply were discussed in Section 4.15, *Utilities and Service Systems*, of the Draft EIR. The thresholds used to determine the significance of impacts related to water supply were based on Appendix G of the *CEQA Guidelines*. Implementation of the HEU could have a significant impact on the environment related to water supply if there are not sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years (Draft EIR p. 4.15-15).

As discussed in the Draft EIR, implementation of the HEU would result in increased demand for potable water. The total number of dwelling units exceed the previously anticipated housing units studied in the City's 2020 Urban Water Management Plan (UWMP) by approximately 11,100 dwelling units. As such, a water supply assessment (WSA) was prepared for the HEU by Schaaf & Wheeler on behalf of the City of Mountain View (Draft EIR Appendix D). The total water demand projected for the HEU at build-out beyond what was included in the City's 2020 UWMP was estimated to be approximately 1.1 million gallons per day (mgd) or 1,244 acre-feet per year (AFY) and represents the estimated increase beyond the City's 2020 UWMP as a result of the HEU, including the water demands of the residential buildings and surrounding landscaping. These estimates are conservative as they do not account for existing water use credits for redevelopment sites, on-site water conservation efforts such as landscaping with low water use plants, the use of recycled water for irrigation, dual plumbing and low flow sanitary fixtures, and technologies associated with LEED construction (Draft EIR p. 4.15-19). As such the WSA presented a "worst-case scenario" with regard to the projected water demand anticipated as a result of the proposed HEU.

The Draft EIR concluded that the City of Mountain View water system has sufficient existing water supply to fully support development under the HEU above what was considered in the 2020 UWMP under normal, single dry, or multiple dry water years (Draft EIR p. 4.15-19). "Single and multiple dry year" conditions account for the "drought conditions" that were raised as an issue of concern during the EPC hearing. The WSA described that shortfalls of up to 20% are projected for single dry-years and for multiple dry-years. Under all conditions, the City may need to impose water conservation measures, per Mountain View Municipal Code, Section 35.28, to reduce

demand. Additionally, depending on the final outcome and implementation of the State Water Resources Control Board's *Bay Delta Water Quality Control Plan*, Mountain View's primary water supply from the San Francisco Public Utilities Commission may be reduced significantly during dry years. Although the status of the Bay Delta Plan is still undetermined, Mountain View plans to utilize local groundwater wells as needed during dry years in order to limit cutbacks to 20 percent, and implement the City's Water Shortage Contingency Plan to reduce water demand during droughts (Draft EIR p. 4.15-19).

It is also noted that the new construction anticipated as a result of the proposed HEU, would comparatively be more water efficient than existing construction in the City. As described in the Draft EIR, projects developed as a result of the HEU would be required to comply with the CALGreen Code, which requires that new construction use high-efficiency plumbing fixtures, such as high-efficiency toilets, urinals, showerheads, and faucet fixtures. For outdoor water use, the CALGreen Code requires that irrigation controllers be weather- or soil moisture–based and automatically account for rainfall, or be attached to a rainfall sensor. Additionally, the projects would be required to comply with Standard Condition of Approval (Landscaping) and the City of Mountain View Water Conservation in Landscaping Regulations and the Mountain View Green Building Code (MVGBC) which include water conservation requirements. Under the MVGBC, new buildings must use water-efficient plumbing fixtures or demonstrate a 20 percent reduction from a baseline water use. City Standard Conditions of Approval also require projects to install plants with low water requirements and include efficient irrigation systems in landscape design. Implementation of water conservation and efficiency measures would minimize the potable water demand generated (Draft EIR p. 4.15-20).

Additionally in response to comments regarding increasing the use of recycled water, projects developed within the North Bayshore Precise Plan area would be required to use recycled water for irrigation and projects developed within the East Whisman Precise Plan area would be required to construct recycled water compatible irrigation systems for connection to future extension of the recycled water system to the area, which would also reduce the potable water demand (Draft EIR p. 4.15-20). The City's *2022 Recycled Water Feasibility Study*, analyzed the feasibility of providing recycled water supply to areas not currently served by recycled water, including the East Whisman area and other areas of the City including the commercial areas of Castro Street, the San Antonio Precise Plan area, and Downtown. The study recommended near-term recycled water expansion throughout the North Bayshore area and a future expansion, via Middlefield Road, to serve the East Whisman area. Expansion to areas outside of North Bayshore and East Whisman is considered very long term and should not be considered until additional supply is procured, and the system is expanded to East Whisman.[7]

None of the comments that were submitted during the Draft EIR's circulation period related to water supply have raised any new environmental issues or presented any significant new information that has not already been adequately described and evaluated in the Draft EIR, or effectively supplemented and clarified in this response. Therefore, no further response is required.

[7] City of Mountain View, 2022. Recycled Water Feasibility Study, March 2022. Available at: https://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=37451.

All water supply-related comments and issues of concern, however, will be forwarded to the applicable decisionmakers as they consider whether or not to approve the HEU.

EPC Comment Response 2: Parks and Recreation

A number of comments expressed concern over the adequacy of existing and future parkland in the City to support the increase in population as a result of the HEU. Comments also expressed concern that a significant parks and recreation impact could occur due to the level of growth and the overestimation of parkland in the City due to the inclusion of Shoreline at Mountain View Regional Park in the calculations.

Potential impacts related to parks and recreation were discussed in Draft EIR Section 4.13, *Public Services and Recreation*. Potential direct impacts to parks were discussed relative to potential substantial adverse physical impacts associated with the provision of new or physically altered park facilities, or the need for new or physically altered park facilities, as directed by the Significance Thresholds defined in Appendix G of the *CEQA Guidelines*. Similarly, potential direct impacts to recreation are discussed related to the accelerated substantial physical deterioration of recreational facilities and the construction/expansion of recreational facilities.

Implementation of the HEU could have a significant impact on schools if: (1) it would require the construction of new or physically altered parks and recreation facilities in order to maintain acceptable levels of school services; and (2) the construction or alteration of such parks and recreation facilities would result in a substantial adverse physical impact on the environment (Draft EIR p. 4.13-12). CEQA regulations and applicable case law on this issue demonstrate the threshold concerns only the environmental effects associated with the provision of new or altered physical public service facilities.[8] While comments also questioned the feasibility of achieving the General Plan goal of 3 acres of parkland per 1,000 residents due to space limitations in the City. Parkland service goals and other performance objectives are relevant to the analysis only within the context of whether or not new or expanded facilities would be required to meet defined criteria related to those service objectives, and what the environmental effects would be of providing those facilities.

The Draft EIR disclosed information pertaining to the City's goal of 3.00 acres of open space per 1,000 residents with and without inclusion of the North Bayshore Planning Area open space (containing Shoreline at Mountain View Regional Park). The Draft EIR found that the HEU would worsen existing parkland deficiencies in the City when the North Bayshore Planning Area is excluded. As the residential population of Mountain View increases as a result of the HEU, the construction of new parks and recreation facilities in the City would occur and individual projects under the HEU would be subject to the City's Parkland Dedication Ordinance, which requires land dedication or payment of a fee in lieu thereof. The park projects developed as a result of the Park Land Dedication Ordinance would be required to undergo environmental review as they are identified. Appropriate measures would be identified and implemented as applicable to reduce any

[8] CEQA Guidelines Section 15382 restricts the effects that CEQA mitigation addresses to those "significant effects on the environment" which are defined to include "adverse change in any of the physical conditions within the area affected by the project" "An economic or social change by itself shall not be considered a significant effect on the environment." 14 Cal. Code Regs. §15382.

construction-related or operational effects of those facilities. As such parkland impacts were determined to be less than significant (Draft EIR p.4.13-18-19). As a matter of information, when the North Bayshore Planning Area containing the regional open space is included the City well exceeds its established goal.

Regarding impacts to existing parks and recreational facilities, the Draft EIR found that the Project's impacts related to accelerated substantial physical deterioration of parks and recreational resources would be less than significant and no mitigation would be required (Draft EIR p. 4.13-17). While no specific development proposals are directly associated with the HEU, theoretical development would result in an increase in population and thus an increased use in existing neighborhood and regional parks, and recreational facilities; however, there is no evidence to suggest that the potential increase in recreational users would substantially increase or accelerate the physical deterioration or degradation of nearby recreational facilities, such that mitigation would be required for physical impacts related to the construction/expansion of existing recreational facilities.

Comments also expressed concern in general over the cumulative impact on parks. As discussed in the Draft EIR, the HEU, in combination with cumulative projects in the City would incrementally increase the demand for and use of existing parks and recreation facilities. Similar to the HEU, cumulative development would be subject to the City's standard conditions of approval and Park Land Dedication Ordinance that contribute to long-term parks and recreational facilities planning and capacity improvements. The park projects developed as a result of the Park Land Dedication Ordinance would be required to undergo environmental review as they are identified. The City would also be required to ensure compliance with General Plan Policies POS-1.1 and POS-1.2 related to the demand for parks and recreational facilities (Draft EIR p. 4.13-20).

Comments were also raised expressing concern over the joint-use agreements with local school districts to share the use of recreational resources. As discussed in the Draft EIR, school sites are an important part of the City's park system as many residents rely on nearby schools to provide neighborhood recreational resources (Draft EIR p. 4.13-4). Consistent with General Plan Policy POS-5.1, the City will continue cooperative arrangements with school districts to use open space and facilities at schools for public parks, playgrounds and recreation programs and establish new arrangements as conditions evolve in the City.

None of the comments that were submitted during the Draft EIR's circulation period related to parks and recreation have raised any new environmental issues or presented any significant new information that has not already been adequately described and evaluated in the Draft EIR, or effectively supplemented and clarified in this response. Therefore, no further response is required. All parks and recreation-related comments and issues of concern, however, will be forwarded to the applicable decisionmakers as they consider whether or not to approve the HEU.

EPC Comment Response 3: Cumulative Impacts

A number of comments also expressed general concern regarding cumulative impacts of the Project on public services, transportation, and utilities.

Public Services

Comments also included concern over the cumulative impacts on fire and police services, and whether the impacts of a new fire or police station should be studied. As also described in EPC Comment Response 2, CEQA regulations and applicable case law on public services impacts demonstrate the threshold concerns only the environmental effects associated with the provision of new or altered physical public service facilities. As discussed in Draft EIR Section 4.13, additional fire and police protection facilities are not expected to be required to serve the population as a result of the HEU. However, if and when the construction or expansion of facilities to accommodate additional personnel or equipment should become necessary, CEQA review, General Plan provisions, Municipal Code regulations, and payment of impact fees would all be required. It is noted that the Mountain View Police and Fire Departments are working on plans for a new headquarters building, which would likely replace the facility on the current site with a new two-story building. Fire stations in the City could also potentially require remodeling, expansion, or rebuilds in the future to serve cumulative demand. While the proposed HEU would contribute to the need for these facilities, potential impacts would remain less than significant. Consistent with the analysis in the Draft EIR, if and when the construction or expansion of facilities to accommodate additional personnel or equipment should become necessary, CEQA review, General Plan provisions, Municipal Code regulations, and payment of impact fees would all be required.

Specific concerns regarding cumulative impacts related to schools and specifically the high school district were also raised. See Responses to Comment Letter A-3 from MVLA with regard to impacts on schools and MVLA specifically.

Transportation

Concern regarding cumulative traffic impacts in general were also raised. Cumulative impacts related to transportation were discussed in Section 4.14, *Transportation*. The Draft EIR found that with implementation of the HEU, in combination with cumulative development, cumulative impacts related to conflicts with circulation-related plans, VMT, traffic safety hazards, and emergency access would all be less than significant (Draft EIR p. 4.14-25-26). It is also noted that traffic congestion or measures of vehicular delay are not an environmental impact under CEQA per State CEQA Guidelines Section 15064.3.b. However, as described in Response to Comment A-3-13 above, development projects proposed under the HEU that generate at least 20 net new peak-hour trips (or those within a Precise Plan area) would require completion of a Multi-modal Transportation Analysis (MTA) during the entitlement process. The MTA would ensure that the proposed development conforms with City policies (including traffic calming, neighborhood intrusion, and enhancing publicly accessible bicycle, pedestrian, and transit connections), that adequate multimodal site access and circulation are provided, appropriate fair-share fees are

identified, and that operational improvements support pedestrian, bicycle, and transit quality of service.

Utilities and Service Systems

General concern regarding cumulative impacts to the City's utility systems and payment of fair-share fees were also expressed. The Draft EIR found that with implementation of the HEU, in combination with cumulative development, cumulative impacts related to construction of utility infrastructure, water supply (see also EPC Comment Response 1), wastewater treatment capacity, and solid waste would be less than significant (Draft EIR p. 4.15-23-25).

As discussed in the Draft EIR, the scope of the City's utility master plans includes development anticipated as a result of the City's General Plan land use strategy, and recent certified Environmental Impact Reports and Precise Plans. This development includes General Plan growth estimates, plus growth affiliated with the North Bayshore, El Camino Real, East Whisman and San Antonio Precise Plans and approved recent Rezoning and General Plan Amendment projects, as these all have associated utility impact studies. As such, utility infrastructure and improvements as part of HEU for pipeline projects and opportunity sites that do not require rezoning would be included in the scope of the City's utility master plans. However, development potential at the housing sites identified in the HEU for rezoning were not included in these projections. The City is currently preparing utilities studies for the water, sewer, and stormwater drainage systems for the areas proposed for rezoning to identify needed improvements, provide cost estimates associated with the needed improvements, establish funding mechanism(s), and/or incorporate into the City's Capital Improvement Program (CIP). To ensure that subsequent development projects contribute their fair share toward CIPs identified by the City, based on the project's determined contribution, Mitigation Measure UTL-1, Fair-Share Contributions Toward Utility Improvements, was identified (Draft EIR p. 4.15-16). Additionally, the City is currently updating its Water and Sewer Master Plans, which will identify and prioritize utility needs in the City and will help determine the level of investment needed over the next 10 years.

However, it is important to clarify that the impact under CEQA for utilities infrastructure is if implementation of the HEU would require or result in the relocation or construction of new or expanded utility infrastructure, the construction or relocation of which could cause significant environmental effects. The Draft EIR found that overall, the potential improvements or extension of utility infrastructure to serve development as a result of the HEU would be installed primarily in existing roadways and utility rights-of-way. Aside from short-term construction disturbance, no unusual or further environmental impacts would be generated beyond those identified elsewhere in this Draft EIR for overall construction activity for the project. As such, the implementation of the HEU would not require or result in the relocation or construction of new or expanded utility infrastructure, such that significant environmental effects would occur. As such Program-level and cumulative impacts were found to be less than significant.

EPC Comment Response 4: Groundwater

Comments included concern over the treatment of groundwater as a resource for City water supply differing throughout the Draft EIR, specifically in Section 4.9, *Hydrology and Water Quality*, which was alleged to not include groundwater as a source of water supply for the City, and Section 4.15, *Utilities and Service Systems*, where the use of groundwater is acknowledged.

Contrary to the comment, Section 4.9 of the Draft EIR, contains information about the City's water supply that includes the usage of water from groundwater supply wells (see Draft EIR p. 4.9-2-3) and the discussion under Impact HYD-2 includes information that while the City of Mountain View does not rely primarily on groundwater for its water supply, groundwater is used as a source for dry year supply (Draft EIR p. 4.9-19-20).

EPC Comment Response 5: No Project Alternative

Comments also included a question about the implications of not approving the proposed HEU. Chapter 5, *Alternatives to the Project*, identifies the consequences of not adopting a housing element that is not compliant with State law. This alternative is analyzed consistent with Section 15126.6(e) of the CEQA Guidelines, which state that the No Project Alternative must include the assumption that conditions at the time the NOP of an EIR was circulated for public review would not be changed because the Project would not be implemented, as well as the events or actions that would reasonably be expected to occur in the foreseeable future if the Project were not approved.

The Draft EIR described that the No Project Alternative would also introduce a new significant and unavoidable impact related to land use and planning. The No Project Alternative would not meet any of the objectives of the HEU, nor is it legally feasible to implement. The No Project Alternative would not provide housing to fulfill the requirements of State law or meet the City's RHNA requirements, which result in a significant and unavoidable land use and planning impact, as compared to the less-than-significant impacts associated with the proposed HEU and the Reduced Sites Alternative (Draft EIR pp. 5-18 – 5-19).

EPC Comment Response 6: Electric Vehicle (EV) Charging

Comments also included questions about the amount of required EV charging spaces and the desire for additional EV charging in general beyond 10% of spaces. EV charging requirements were discussed in Draft EIR Section 4.7, *Greenhouse Gas Emissions*. As discussed in Section 4.7, the City's Reach Codes require multifamily residential buildings with more than three dwelling units to have at least 15% of the parking spaces to be installed with Level 2 EV chargers and a Level 3/DV Fast charger for every 100 spaces. The remaining parking spaces are required to be EV Ready.

EPC Comment Response 7: Project Description

A number of comments requested clarification for items in Draft EIR Chapter 3, *Project Description*.

A comment was made specific to the HEU program related to housing on religious sites and whether this program was included in the analysis as a "back-pocket" site or program and how these were all addressed in the Draft EIR. As discussed in Chapter 3, the "Project" analyzed in the Draft EIR includes adoption of a General Plan amendment to add or modify goals, objectives, policies, and implementation programs related to housing in the Housing Element of the City's General Plan. This includes potential impacts related to implementation of all HEU policies and programs, as well as housing sites included in the housing inventory. Draft EIR Chapter 5, explains that non-historic churches and other private non-profit institutions in residential (R) zoning districts were not included in the housing sites inventory. However, City staff has included a program in the Housing Plan (1.2 Community Sites for Housing) to evaluate changes to the City Code to allow for affordable residential uses on these sites to respond to Council interest in reviewing such sites.

Comments also requested clarification on the retail replacement provisions that would be applied in the updates to the zoning code as a result of the HEU. The following has been added to the Project Description in response to this comment on p. 3-14 of the Draft EIR (new text is underlined):

- Projects must provide ~~minimum~~ retail or similar neighborhood-serving uses, at a minimum, an amount to replace the existing commercial floor area or determined by an analysis of typical amounts of such uses in the underlying zone.

There was also a comment requesting to add specificity to the rezoning language in the Project Description related to parks. The following change was made in response to this comment in Chapter 3 of the Draft EIR on p. 3-14 (new text is underlined):

> At least one public gathering/open space/plaza shall be provided, with a minimum area to be determined based on site size. Provide potential exemptions to one or more standards to facilitate provision of open space to maintain residential density with the goal of addressing neighborhood open space needs.

CHAPTER 4
Errata to the Draft EIR

4.0 Introduction

This chapter describes changes made to the Draft EIR in response to comments received on the Draft EIR. The changes shown in this chapter update, refine, clarify, and amplify Project information and analyses presented in the Draft EIR.

4.1 Text Changes to the Draft EIR

This section summarizes text changes made to the Draft EIR either in response to a comment, initiated by City staff, or in response to a modification to the proposed HEU. New text is indicated in underline and text to be deleted is reflected by a ~~strike through~~. Text changes (including changes to tables and figures in the Draft EIR) are presented in the page order in which they appear in the Draft EIR.

As indicated in Chapter 1, *Introduction*, the entirety of the HEU Final EIR consists of the Draft EIR, together with this Response to Comments document, including all appendices. Therefore, the Draft EIR changes presented in this chapter are incorporated in and supersede corresponding original text in the Draft EIR.

4.2 Implication of Changes to the Draft EIR

Under CEQA, recirculation of all or part of an EIR is required if significant new information is added after public review and prior to certification. According to State CEQA Guidelines Section 15088.5(a), new information is not considered significant "unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." More specifically, as discussed in Chapter 1, *Introduction,* of this document, pursuant to CEQA Guidelines Section 15088.5(a), recirculation of a Draft EIR is required only if:

"1) a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;

2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;

3) a feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it; or

4) the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."

None of the changes to the Draft EIR identified in this document meet any of the above conditions. Therefore, recirculation of any part of the Draft EIR is not required. The information presented in the Draft EIR and this document support this determination by the City.

4.3 Changes to Chapter 3: Project Description

1. Based on updates to the Project (see Chapter 2 of this FEIR), the following text has been revised on p. 3-7 of the Draft EIR:

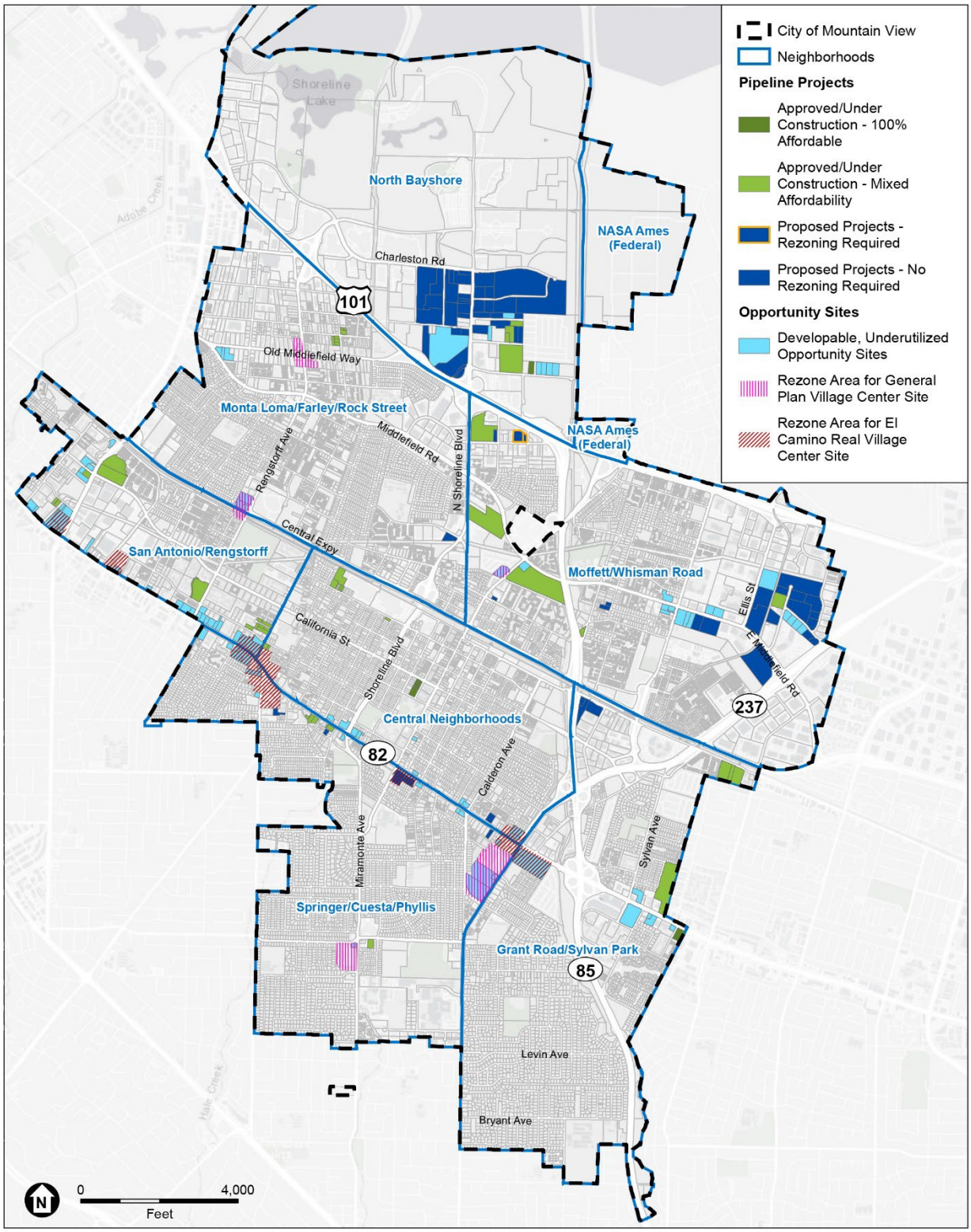
> The HEU is required to identify housing sites to meet the City's RHNA at specified levels of affordability. HCD recommends that jurisdictions plan for their RHNA *plus* a buffer of additional units equivalent to 15-30 percent. To be conservative, the City intends to identify a buffer of at least ~~20~~15 to 30 percent of units at all income levels and a total unit capacity of up to approximately ~~15,000~~18,000 units.

2. Based on updates to the Project (see Chapter 2 of this FEIR), the following text has been revised on p. 3-9 of the Draft EIR:

> ## Existing Zoning and General Plan Capacity
>
> Pipeline Projects. The City has approved a number of housing and mixed-use projects that are likely to result in production of multifamily housing during the housing element planning period. The City also has active applications on file for single family and multifamily housing and/or mixed use developments that may be approved, constructed, and occupied during the housing element planning period. These types of "pipeline projects" would count towards the City's RHNA, and could collectively total at least ~~8,600~~11,418 units by 2031, not including pipeline rezoning projects (described below).
>
> Accessory Dwelling Units. The City may assume that the development of accessory dwelling units (ADUs) during the planning period is equivalent to that in recent years. Based on information contained in the City's annual production reports to HCD, approximately 96 ADUs are assumed over the eight year planning period.

Existing Opportunity Sites. The City's existing precise plans, General Plan Land Use designations, and zoning permit a range of residential densities in different areas of the City that can accommodate development of multifamily housing without adjustment. A preliminary analysis estimates that there may be sufficient sites to accommodate approximately ~~4,700~~6,265 units. Most of these sites are within Precise Plan areas, including El Camino Real, San Antonio, North Bayshore, Grant-Phyllis, and East Whisman, although there are sites identified for inclusion in the inventory in other areas of the City as well. See Figure 3-2 for a map showing City neighborhoods and precise plan locations.

3. Draft EIR Figure 3-3 on p. 3-10 has been revised to reflect changes to the Housing Sites Inventory since publication of the Draft EIR:



SOURCE: ESRI, 2022

City of Mountain View Housing Element Update

ESA

Figure 3-3
Housing Site Locations Overview

4. Based on updates to the Project (see Chapter 2 of this FEIR), the following text has been revised on p. 3-11 of the Draft EIR:

General Plan, Zoning and Precise Plan Amendments

Pipeline Sites Requiring Rezoning and General Plan Amendment. There are a limited number of sites that could accommodate multifamily housing – and in some cases specifically affordable housing for lower income households – if rezoned to allow residential use at appropriate densities. These sites, which include development projects under review and under discussion are located at, 1265 Montecito Avenue, 1020 Terra Bella Avenue, 1010 Linda Vista Avenue and East Evelyn Avenue between Highway 85 and Pioneer Way, and could accommodate approximately 580 units.

Rezonings Adopted with the Housing Element. The City proposes to adopt Zoning and Precise Plan Amendments concurrent with this Housing Element Update, to clarify standards for allowed uses and densities at General Plan Village Centers and El Camino Real Village Centers. These amendments accommodate approximately ~~800~~664 units in the site inventory, but the total additional capacity of these areas is greater – approximately 2,500units[1].

Opportunity Sites Requiring Rezonings and/or General Plan Amendments ("Back-Pocket" Areas). In the event that the above opportunities are inadequate to accommodate the RHNA, either at the time of Housing Element adoption or over the course of the 6th Cycle due to the "no net loss" law, the proposed Housing Element will also include programs to adopt additional rezonings and General Plan amendments in targeted urban infill areas (areas on previously developed sites and/or completely surrounded by urban uses):

- Moffett Boulevard
- Other shopping areas, such as Leong Drive, Bailey Park shopping center, Monta Loma Plaza
- A Joint Development at the Mountain View Transit Center
- Other non-residential sites south of El Camino Real, such as 1949 Grant Road and offices near Blossom Valley Shopping Center

These rezoning opportunities could accommodate approximately 1,000 additional units, depending on the densities adopted.

Total Inventory. This EIR analyzes the impacts associated with the site inventory to 2031, an increase in approximately ~~15,000~~17,779 dwelling units, focused primarily along the commercial corridors and in areas that currently

[1] This number is less than the total amount of units that could be allowed across these sites, since it is unreasonable to assume replacement of all existing uses over the horizon of this study. The number does consider the sites most likely to be redeveloped.

accommodate commercial/industrial uses, mixed uses, and/or multifamily housing.[2] Of this, approximately ~~13,600~~16,530 units[~~3~~] are already allowed under the City's adopted General Plan, zoning, and Precise Plans and the remaining ~~1,400~~ 1,250 units would be created through rezonings and General Plan amendments. In addition, the EIR also analyzes a possible increase in housing production from rezonings and General Plan Amendments of approximately ~~2,700~~ 2,850 units beyond 2031 (described in detail above). More information is provided in Section 3.4.3 below.

5. Based on updates to the Project (see Chapter 2 of this FEIR), the following text has been revised on p. 3-12 of the Draft EIR:[4]

> The HEU is planning for the period from January 31, 2023 through January 31, 2031, and is expected to plan for approximately ~~15,000~~18,000 new housing units within this period, although the actual pace of development will depend on market conditions, property owner interest, and other factors. Also, of the approximately ~~15,000~~18,000 new units, only a small percentage would result from changes in City policy, zoning, or Precise Plans, and the balance could theoretically occur with or without the Project because it is consistent with existing policy, zoning, and Precise Plans. However, development of these units may be accelerated compared to the theoretical No Project scenario, due to programs in the Housing Element that streamline, incentivize or remove constraints for housing.

6. Based on updates to the Project (see Chapter 2 of this FEIR), the Table 3-2 has been revised on p. 3-13 of the Draft EIR:

---

2 The actual site inventory in the current draft is ~~closer to~~ ~~14,800~~17,779. However, ~~15,000~~18,000 is a conservatively large round number ~~and small changes to the site inventory are expected up to adoption, based on newly submitted applications~~.

3 ~~Approximately 13,400 units in the current draft. See previous footnote.~~

4 Note that descriptions referencing 15,000 units in the technical topic sections of the Draft EIR have not been revised to reduce the volume of this chapter and FEIR, as they are typically for descriptive purposes only and revision would not meaningfully affect the analysis or conclusions of the Draft EIR.

TABLE 3-2
MOUNTAIN VIEW GROWTH PROJECTIONS FOR 2040

	Existing Baseline (2020)	~~Under Construction~~	Proposed HEU (2021-2031)[4]	2031 Conditions with Proposed HEU	Cumulative Growth no HEU	HEU Contribution to Cumulative Growth[3]	Cumulative Growth with HEU
Dwelling Units	37,820	~~1,847~~	~~15,000~~18,000	~~54,700~~56,000	~~63,000~~66,000	4,100	~~67,100~~70,100
Population[1]	82,826	~~3,740~~	~~30,000~~36,000	~~116,600~~119,000	~~134,000~~140,000	8,200	~~142,200~~148,200
Jobs	101,965	~~8,800~~	0[2]	120,000	133,000	0[2]	133,000

NOTES:

[1] Assumes an average of 2 persons per housing unit, based on the City's projections.

[2] Job growth is considered as background and is not part of the proposed HEU

[3] Includes the Project's contribution due to Rezoning and General Plan Amendments considered as part of the HEU.

[4] Many of the units under construction are included in the 18,000 unit count.

SOURCE: City of Mountain View, ~~March~~November 2022.

7. In response to verbal comments raised at the Environmental Planning Commission (EPC) public hearing on the Draft EIR, the following text has been added on p. 3-14 of the Draft EIR:

    - At least one public gathering/open space/plaza shall be provided, with a minimum area to be determined based on site size. Provide potential exemptions to one or more standards to facilitate provision of open space to maintain residential density with the goal of addressing neighborhood open space needs.

8. In response to verbal comments raised at the EPC public hearing on the Draft, the following text has been added on p. 3-14 of the Draft EIR:

    - Projects must provide ~~minimum~~ retail or similar neighborhood-serving uses, at a minimum, an amount to replace the existing commercial floor area or determined by an analysis of typical amounts of such uses in the underlying zone.

4.4 Changes to Section 4.4: Cultural and Tribal Cultural Resources

1. In order to update the intent of General Plan Action LUD 11.5.1 to the current data sources and procedures pertaining to cultural resources, Mitigation Measure CUL-2b has been revised to require a non-confidential records search from the NWIC. This search will document if there are previously recorded resources within or adjacent to the proposed project site and provide recommendations to the City as to whether a cultural resources study should be conducted to assess previously recorded resources and/or determine if there is archaeological sensitivity for unknown cultural resources in the proposed project area. The revisions to this mitigation measure do not affect or alter the analysis of impacts or conclusions identified in the Draft EIR.

   The following text has been revised on pp. 4.4-23 of the Draft EIR:

   > To address this potentially significant impact, **Mitigation Measure CUL-2a, Inadvertent Discovery of Cultural Resources** revises the Discovery of Archaeological Resources Standard Condition to require a stop-work boundary around cultural material finds and establish protocol for avoidance or preservation in place of significant cultural resources, and **Mitigation Measure CUL-2b, Cultural Resources Study Requirements** establishes a requirement for a cultural resource study for all multifamily housing projects that require ground disturbance ~~and are located within 0.25-mile of known cultural resources~~ based upon review of ~~the most recent and updated~~ a NWIC non-confidential records search of the proposed project site ~~list, consistent with General Plan Action LUD 11.5.1~~. These mitigation measures would address potential impacts to archaeological resources and reduce the potential of the HEU to impact archaeological resources to a less-than-significant level.

   In accordance with the changes noted above, the following text has been revised on pp. 4.4-24-25 of the Draft EIR:

   > **Mitigation Measure CUL-2b: Cultural Resources Study Requirements.**
   >
   > Prior to approval of development permits for multifamily projects that include ground-disturbing activities, ~~City staff~~individual project applicants shall ~~review the most recent and updated~~ request a non-confidential records search from the Northwest Information Center (NWIC) ~~list: Historic Property Directory for the County of Santa Clara,~~ to determine if ~~known archaeological sites underlie~~ the proposed project site has archaeological sensitivity. If the NWIC recommends that the proposed project site be reviewed by an archaeologist, ~~it is determined that known cultural resources are within 0.25-mile of the project site,~~ the City shall require a site-specific cultural resources study by an archaeologist meeting the U.S. Secretary of the Interior's Standards (SOIS) for Archeology. The study shall consist of a cultural report that includes the results of: a cultural resources records search performed at the NWIC of the California Historical Resources

Information System for the project area, a pedestrian survey of the project area, a historic context, an assessment of the sensitivity of the project area for buried precontact and historic-era resources, and identify if the project would potentially impact cultural resources. If the archaeologist determines that known cultural resources or potential archaeological sensitivity areas may be impacted by the project, additional research or treatment, potentially including subsurface testing, and/or a cultural resources awareness training may be required to identify, evaluate, and mitigate impacts to cultural resources, as recommended by the SOIS qualified archaeologist. If avoidance is not feasible, the City shall consult with appropriate Native American tribes (if the resource is pre-contact or indigenous), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3). The cultural report detailing the results of the research shall be prepared and submitted for review by the City and a final draft shall be submitted to the NWIC.

4.5 Changes to Section 4.8: Hazards and Hazardous Materials

1. In response to Comment A-3-3, the following text has been added on p. 4.8-6 of the Draft EIR:

Proximity to Schools

The following public schools are located in Mountain View:

- Stevenson Elementary School at 750 San Pierre Way
- Theuerkauf Elementary School at 1625 San Luis Avenue
- ~~Waldorf School of the Peninsula at 180 North Rengstorff Avenue~~
- Landels Elementary School at 115 West Dana Street
- Mariano Castro Elementary School at 500 Toft Street
- ~~St. Joseph Mountain View at 1120 Miramonte Avenue~~
- Monta Loma Elementary at 460 Thompson Avenue
- Springer Elementary School at 1120 Rose Avenue
- Benjamin Bubb Elementary School at 525 Hans Avenue

- Amy Imai Elementary School (previously Huff) at 253 Martens Avenue
- Mountain View High School at 3535 Truman Avenue
- Alta Vista High School at 1325 Bryant Avenue
- Vargas Elementary School at 220 N Whisman Road
- Mistral Elementary School at 505 Escuela Avenue
- Graham Middle School at 1175 Castro Street
- Crittenden Middle School at 1701 Rock Street

A number of private schools including Waldorf School of the Peninsula (180 North Rengstorff Avenue), St. Joseph Mountain View (1120 Miramonte Avenue), St. Francis High School (1885 Miramonte Avenue), German International School of Silicon Valley (310 Easy Street), Mountain View Academy (360 S Shoreline Blvd), St. Stephen Lutheran School (320 Moorpark Way), and Khan Lab School (1200 Villa Street) are also located in the City. There is also a proposed new school site for the Los Altos School District located at the corner of California Street and Showers Drive.

2. Also in response to Comment A-3-3, the following text has been revised on p. 4.8-22 of the Draft EIR:

> As discussed in Section 4.8.2, *Environmental Setting, Proximity to Schools,* there are ~~ten~~14 public schools and a number of private schools located within Mountain View. The accidental release or spill of hazardous materials transported through the vicinity near schools could expose school children and staff to hazardous materials.

4.6 Changes to Section 4.13: Public Services and Recreation

1. The following information has been corrected on page 4.13-1 of the Draft EIR based on input from the Mountain View Fire Department. These editorial changes do not affect or alter the analysis of impacts or conclusions identified in the Draft EIR.

Mountain View Fire Department

The Mountain View Fire Department (MVFD) exists to save lives and property, protect the environment, and minimize the risk of fire and natural disaster. The MVFD has a fire prevention division and environmental division which aim to ~~precent~~ prevent fires and injuries and limit the effects of fires and accidents. The Environmental Safety Section of the Fire Department implements State mandated water pollution control programs to minimize pollutant discharges into Mountain View creeks and the Bay. The MVFD has a multi-family inspection program to ensure proper maintenance of multi-family housing. MVFD firefighters are often the first responders and provide valuable services to the City including fire

suppression, emergency medical treatment, technical rescue services, and response to hazardous materials releases (City of Mountain View, 2022a).

MVFD currently maintains 5 fire stations throughout the City. The MVFD fleet includes ~~seven~~ five type 1 engines (two additional type engines are reserve units), one rescue, one Haz Mat vehicle, and one aerial ladder truck (one additional aerial ladder truck as a reserve unit shared with the City of Palo Alto Fire Department) (City of Mountain View, 2022a). Station 1, located at 251 South Shoreline Boulevard, has an engine company, aerial ladder truck company, rescue company, and a battalion chief. Station 2, located at 160 Cuesta Drive, has ~~two~~ one engine company ~~ies~~ and a second 4x4 unit type 6 engine stored. Station 3, located at 301 North Rengstorff Avenue, has ~~two~~ one engine company ~~ies,~~. A second engine is stored ~~one of~~ which is a California Office of Emergency Services (Cal OES) company. Station 4, located at 229 North Whisman Road, has ~~three~~ one type 1 engine 11ompanies (two additional engines are stored here as ~~of which are~~ reserves units), one reserve battalion chief, and one utility ~~company~~ pickup truck stored. Station 5, located at 2195 North Shoreline Boulevard, has an engine company, hazmat ~~company~~ unit stored, an aerial ladder truck company (reserve stored), and a utility terrain vehicle stored. All the stations have 3 members staff per shift, except for Station 1 which has 9 staff per shift (MVFD, 2021).

In 2021-2022, the MVFD had a total of 10,406 unit responses, which included 489 unit responses for fire-related call and 7,288 unit responses for rescue and EMS-related calls (MVFD, 2022). The MVFD ~~regularly~~ frequently achieves its goal of responding to each emergency call within ~~six~~ four minutes of dispatched time (City of Mountain View, 2021).

2. The following setting information on page 4.13-2 of the Draft EIR has been corrected based on input from the Mountain View Police Department. This editorial change does not affect or alter the analysis of impacts or conclusions identified in the Draft EIR.

Mountain View Police Department

The Mountain View Police Department (MVPD) provides police services in the City of Mountain View. Services include crime suppression, investigation, traffic enforcement, youth services, community education, neighborhood and event services, and a K-9 patrol. In 2020, the MVFD employed 181 full (143 full-time), regular, and limited period positions to serve the City population of 82,739. The ~~MVFD~~MVPD has 1 police chief ~~and 1 deputy police chief~~; the rest of the staffing falls into the categories of administration, field operations, special operations, or public safety support services. In 2020, the MVPD had 3 K9 teams (MVPD, 2020). There is one police station in the City, located at 1000 Villa Street (City of Mountain View, 2022b).

3. The following information has been added to the setting section on page 4.13-3 of the Draft EIR related to public schools and parks. This editorial change does not affect or alter the analysis of impacts or conclusions identified in the Draft EIR.

Los Altos School District

The LASD operates nine schools serving the communities of Los Altos, Mountain View, Palo Alto, Los Altos Hills and unincorporated areas. There are seven elementary (K to 6th Grade) and two intermediate schools (grades 7 to 8). District-wide enrollment during the 2021 to 2022 school year was 3,576 students (CDE, 2022c). The only LASD school located in Mountain View is Springer Elementary. Total enrollment at Springer Elementary during the 2021 to 2022 school year was 346 students in grades K-6 (CDE, 2022d). Additionally, there is also a proposed new school site for the LASD located in the City at the corner of California Street and Showers Drive, with a City park adjacent.

4. The following changes have been made on page 4.13-13 of the Draft EIR based on input from the Mountain View Fire Department. These editorial changes do not affect or alter the analysis of impacts or conclusions identified in the Draft EIR.

Implementation of the HEU would provide for the development of additional housing units and would result in an increase in the City's population. While no specific development proposals are directly associated with the HEU, theoretical development would result in an increase in population and thus an increase in demand for fire protection and emergency medical response services from the MVFD. As discussed in Section 4.13.2, the MVFD ~~regularly~~ frequently (FY 21-22 the goal of arriving in 4 minutes was met 42% of the time) achieves its goal of responding to each emergency call within ~~6~~4 minutes of being dispatched. The MVFD target response time of ~~6~~4 minutes is more stringent than the NFPA 1710 Standard, which stipulates that the first fire engine should arrive to 90 percent of emergency calls within a range of 6:15 and 6:45 minutes. It is likely that the increase in population as a result of HEU will affect current response times. Travel time performance by region is variable and influenced by factors such as individual response unit workload, the size of the station, and the street system serving it.

4.7 Changes to Section 4.14: Transportation

1. In response to Comment A-1-6, the following footnote has been added to the bottom of p. 4.14-24 of the Draft EIR:

[1] Some of the measures may primarily apply to employment projects or have studies supporting the VMT reductions that only provide evidence for employment projects. These measures are included for consideration for mixed-use residential projects.

APPENDIX A
Mitigation Monitoring and Reporting Program

Purpose of this Document

This chapter contains the Mitigation Monitoring and Reporting Program (MMRP) prepared in compliance with Public Resources Code Section 21081.6(a). The MMRP will be considered for adoption by the Environmental Planning Commission (EPC) and/or the City Council and will aid the City in its implementation and monitoring of measures included in the EIR and adopted by the EPC and/or City Council.

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM

	Implemented By	When Implemented	Monitored By	Verified By
Air Quality				
Mitigation Measure AIR-1: Emission Reduction Measures for Projects Exceeding the Significance Thresholds for Criteria Pollutants. Project applicants proposing projects that exceed BAAQMD screening levels shall prepare a project-level criteria air pollutant assessment of construction and operational emissions at the time the project is proposed. The project-level assessment shall either include a comparison of the project with other similar projects where a quantitative analysis has been conducted, or shall provide a project-specific criteria air pollutant analysis to determine whether the project exceeds the BAAQMD's criteria air pollutant thresholds. In the event that a project-specific analysis finds that the project could result in criteria air pollutant emissions that exceed BAAQMD significance thresholds, the project applicant shall implement the following emission reduction measures to the degree necessary to reduce the impact to less than the significance thresholds, and shall implement additional feasible measures if necessary to reduce the impact to less than the significance thresholds. Clean Construction Equipment. 1. The project applicant shall use electric construction equipment when feasible. 2. The project applicant shall ensure that all diesel off-road equipment shall have engines that meet the Tier 4 Final off-road emission standards, as certified by CARB, except as provided for in this section. This requirement shall be verified through submittal of an equipment inventory that includes the following information: (1) Type of Equipment, (2) Engine Year and Age, (3) Number of Years Since Rebuild of Engine (if applicable), (4) Type of Fuel Used, (5) Engine HP, (6) Verified Diesel Emission Control Strategy (VDECS) information if applicable and other related equipment data. A Certification Statement is also required to be made by the Contractor for documentation of compliance and for future review by the BAAQMD as necessary. The Certification Statement must state that the Contractor agrees to compliance and acknowledges that a violation of this requirement shall constitute a material breach of contract. The City may waive the requirement for Tier 4 Final equipment only under the following unusual circumstances: if a particular piece of off-road equipment with Tier 4 Final standards is technically not feasible or not commercially available; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or there is a compelling emergency need to use other alternate off-road equipment. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines similar to the availability for other large-scale construction projects in the region occurring at the same time and taking into consideration factors such as (i) potential significant delays to critical-path timing of construction for the project and (ii) geographic proximity to the project site of Tier 4 Final equipment. 3. The project applicant shall require the idling time for off-road and on-road equipment be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.	Project applicant	During construction	Community Development Department	Community Development Department

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM (CONTINUED)

	Implemented By	When Implemented	Monitored By	Verified By
Operational Emission Reductions 1. Projects shall be constructed without natural gas infrastructure and shall be "all electric." 2. As required by Mitigation Measure GHG-1, projects shall provide EV charging infrastructure consistent with the applicable Tier 2 CALGreen standards in effect at the time. 3. Project applicants that do not screen out from VMT impact analysis shall implement VMT reduction measures as required by Mitigation Measure TRA-1.				
Mitigation Measure AIR-2: Emission Reduction Measures for Subsequent Projects Exceeding the Significance Thresholds for Health Risks from Construction. Project applicants within the HEU area proposing projects within 1,000 feet of existing or approved sensitive receptors shall prepare a project-level HRA of construction impacts at the time the project is proposed. The HRA shall be based on project-specific construction schedule, equipment and activity data and shall be conducted using methods and models approved by the BAAQMD, CARB, OEHHA and U.S. EPA. Estimated project-level health risks shall be compared to the BAAQMD's health risk significance thresholds for projects. In the event that a project-specific HRA finds that the project could result in significant construction health risks that exceed BAAQMD significance thresholds, the project applicant shall implement Mitigation Measure AIR-1's requirement for the use of all Tier 4 Final construction equipment to reduce project-level health risks to a less-than-significant level. In addition, all tower cranes, forklifts, man- and material- lifts shall be electric powered.	Project applicant	Prior to construction	Community Development Department	Community Development Department
Biological Resources				
Mitigation Measure BIO-1: Special-Status Bat Protection Measures. In coordination with the City, a preconstruction survey for special-status bats shall be conducted by a qualified biologist in advance of tree and structure removal within the subsequent project sites to characterize potential bat habitat and identify active roost sites. Should potential roosting habitat or active bat roosts be found in trees and/or structures to be removed under the project, the following measures shall be implemented: • Removal of trees shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15; outside of bat maternity roosting season (approximately April 16 – August 14) and outside the months of winter torpor (approximately October 16 – February 28), to the extent feasible. • If removal of trees during the periods when bats are active is not feasible and active bat roosts being used for maternity or hibernation purposes are found on or in the immediate vicinity of the project site where tree and building removal is planned, a no-disturbance buffer of 100 feet shall be established around these roost sites until they are determined to be no longer active by a qualified biologist. A 100-foot no-disturbance buffer is a typical protective buffer distance; however, this may be modified by the qualified biologist depending on existing screening around the roost site (such as dense vegetation) as well as the type of construction activity which would occur around the roost site. • The qualified biologist shall be present during tree removal if potential bat roosting habitat or active bat roosts are present. Trees with active roosts shall only be removed when no rain is occurring or is forecast to occur for 3 days and when daytime temperatures are at least 50°F.	Qualified project staff biologist	Prior to construction	Community Development Department	Community Development Department

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM (CONTINUED)

	Implemented By	When Implemented	Monitored By	Verified By
• Removal of trees with potential bat roosting habitat or active bat roost sites shall follow a two-step removal process: - On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using chainsaws. - On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or other equipment (e.g., excavator or backhoe).				
Cultural Resources and Tribal Cultural Resources				
Mitigation Measure CUL 1a: Historic Resource Evaluation. Prior to issuance of a demolition permit for any previously unevaluated building 45-years of age or older on a site included in the housing sites inventory, the City shall require an evaluation of historical significance that includes consideration of the criteria for listing in the National Register of Historic Places, the California Register of Historical Resources, and the Mountain View Register of Historic Resources. This evaluation shall be completed by a professional who meets the Secretary of the Interior's Professional Qualifications for History, Architecture, Architectural History, or Historic Architecture. In accordance with Section 5024.1, if the building has been previously evaluated for eligibility as a historic resource under CEQA and that evaluation or survey is more than five-years old, the findings of that evaluation should be confirmed by a professional who meets the Secretary of the Interior's Professional Qualifications as stated above.	Qualified project staff professional	Prior to demolition permit issuance	Community Development Department	Community Development Department
Mitigation Measure CUL 1b: Historic Resource Avoidance. If, after implementation of Mitigation Measure CUL 1a, the subject property is found to qualify as a historic resource and the proposed project includes demolition of the historic resource, the project shall be redesigned to remove or avoid demolition. Any redesign that includes significant alteration of the historic resource, as defined by Section 36.54.55(e) of the City of Mountain View Zoning Code, shall be required to comply with City Standard Condition of Approval (Secretary of the Interior Standards).	Qualified project staff professional	Prior to demolition permit issuance	Community Development Department	Community Development Department

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM (CONTINUED)

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Mitigation Measure CUL 2a: Inadvertent Discovery of Cultural Resources. If pre-contact or historic-era archaeological resources are encountered during project construction and implementation, all construction activities within 100 feet shall halt and the City shall be notified. Pre-contact archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. An archaeologist meeting the U.S. Secretary of the Interior's Standards (SOIS) for Archeology shall inspect the findings within 24 hours of discovery. If the City determines that the resource qualifies as a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines) and that the project has potential to damage or destroy the resource, mitigation shall be implemented in accordance with PRC Section 21083.2 and CEQA Guidelines Section 15126.4, with a preference for preservation in place. If preservation in place is feasible, this may be accomplished through one of the following means: (1) siting improvements to completely avoid the archaeological resource; (2) incorporating the resource into a park or dedicated open space, by deeding the resource into a permanent conservation easement; (3) capping and covering the resource before building the project on the resource site after the resource has been thoroughly studied by a SOIS qualified archaeologist and a report written on the findings. If avoidance is not feasible, the City shall consult with appropriate Native American tribes (if the resource is pre-contact or indigenous), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).	Construction contractors, City staff, Qualified archaeologist	During project construction	Community Development Department	Community Development Department

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM (CONTINUED)

	Implemented By	When Implemented	Monitored By	Verified By
Mitigation Measure CUL 2b: Cultural Resources Study Requirements. Prior to approval of development permits for multifamily projects that include ground-disturbing activities, individual project applicants shall request a non-confidential records search from the Northwest Information Center (NWIC) to determine if the proposed project site has archaeological sensitivity. If the NWIC recommends that the proposed project site be reviewed by an archaeologist, the City shall require a site-specific cultural resources study by an archaeologist meeting the U.S. Secretary of the Interior's Standards (SOIS) for Archeology. The study shall consist of a cultural report that includes the results of: a cultural resources records search performed at the NWIC of the California Historical Resources Information System for the project area, a pedestrian survey of the project area, a historic context, an assessment of the sensitivity of the project area for buried precontact and historic-era resources, and identify if the project would potentially impact cultural resources. If the archaeologist determines that known cultural resources or potential archaeological sensitivity areas may be impacted by the project, additional research or treatment, potentially including subsurface testing, and/or a cultural resources awareness training may be required to identify, evaluate, and mitigate impacts to cultural resources, as recommended by the SOIS qualified archaeologist. If avoidance is not feasible, the City shall consult with appropriate Native American tribes (if the resource is pre-contact or indigenous), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3). The cultural report detailing the results of the research shall be prepared and submitted for review by the City and a final draft shall be submitted to the NWIC.	City staff, Qualified archaeologist	Prior to approval of development permits for multifamily projects that include ground-disturbing activities	Community Development Department	Community Development Department
Greenhouse Gas Emissions				
Mitigation Measure GHG-1: Require Compliance with EV Requirements in CALGreen Tier 2. Subsequent development projects proposed as part of the HEU shall comply with EV requirements in the most recently adopted version of CALGreen Tier 2 at the time that a building permit application is filed.	Project sponsor	When building permit application is filed	Community Development Department	Community Development Department

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM (CONTINUED)

	Implemented By	When Implemented	Monitored By	Verified By
Hazards and Hazardous Materials				
Mitigation Measure HAZ-1: Phase I Environmental Site Assessment. Prior to the initiation of any construction requiring ground-disturbing activities on listed active hazardous materials cleanup sites, the project applicant shall complete a Phase I environmental site assessment for that property in accordance with American Society for Testing and Materials Standard E1527 for those active hazardous materials sites to ascertain their current status. Any recommended follow up sampling (i.e., Phase II activities) set forth in the Phase I assessment shall be implemented prior to construction. The results of Phase II studies, if necessary, shall be submitted to the local overseeing agency and any required remediation or further delineation of identified contamination shall be completed prior to commencement of construction. Prior to final project design of any individual project that includes any earth-disturbing activities, the project applicant shall conduct a Phase I Environmental Site Assessment (Phase I assessment). The Phase I assessment shall be prepared in general accordance with ASTM Standard E1527-21, Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process (or most current edition that is in force at the time of final project design), which is the current industry standard. The Phase I assessment shall include a records review of appropriate federal, State, and local databases within ASTM-listed search distances regarding hazardous materials use, storage, or disposal at the given site, a review of historical topographic maps and aerial photographs, a site reconnaissance, interviews with persons knowledgeable about the sites historical uses, and review of other relevant existing information that could identify the potential existence of Recognized Environmental Conditions, including hazardous materials, or contaminated soil or groundwater. If no Recognized Environmental Conditions are identified, then no further action would be required. If Recognized Environmental Conditions are identified and the Phase I assessment recommends further action, the project applicant shall conduct the appropriate follow-up actions, which may include further records review, sampling of potentially hazardous materials, and possibly site cleanup. In the event that site cleanup is required, the project shall not proceed until the site has been cleaned up to the satisfaction of the appropriate regulatory agency (e.g., DTSC, RWQCB, or SCCEHD) such that the regulatory agency issues a No Further Action letter or equivalent.	Project applicant	Prior to final project design and initiation of any construction requiring ground-disturbing activities	Oversight by the City's Community Development Department, DTSC, RWQCB, and/or SCCEHD	Community Development Department

CITY OF MOUNTAIN VIEW HOUSING ELEMENT UPDATE
MITIGATION MONITORING AND REPORTING PROGRAM (CONTINUED)

	Implemented By	When Implemented	Monitored By	Verified By
Transportation				
Mitigation Measure TRA-1: Implement Vehicle Miles Traveled (VMT) Reduction Measures. Individual multifamily housing development proposals that do not screen out from VMT impact analysis shall provide a quantitative VMT analysis using the methods outlined by the City's most recent VMT guidelines. Projects that result in a significant impact shall include travel demand management measures and/or physical measures (i.e. improving multimodal transportation network, improving street connectivity) to reduce VMT. The City's VMT guidelines identify four tiers of mitigation measures, all of which can be quantified within the Santa Clara Valley Transportation Authority (VTA) VMT tool: • Tier 1— Project Characteristics. Although it may be difficult to revise a project during environmental review, Tier 1 strategies allow the user to increase the project density, diversity of land uses, and add affordable and/or below-market-rate housing to the residential and employment projects to reduce VMT. • Tier 2—Multi-Modal Network Improvements. These improvements include implementing bicycle lanes, improving the pedestrian network, implementing traffic calming, increasing transit accessibility, and improving network connectivity. These improvements require coordination with Mountain View staff and additional studies (signal warrant studies, traffic calming studies, etc.) to determine feasibility. Consultants should prioritize public improvements included in the City's approved plans which contain various transportation improvements to bicycle, pedestrian, and roadway facilities as VMT mitigation. (See above for list of adopted plans and policies.) • Tier 3—Parking. Parking strategies shown to effectively reduce VMT include reduced parking, increased bike parking or end-of-trip bike facilities. In order to be most effective, the areas surrounding the projects with reduced parking should have parking permit programs. • Tier 4—Travel Demand Management (TDM) There are a multitude of TDM measures to reduce VMT. The VMT Tool includes all allowable TDM measures and their relative effectiveness. Based on the percentage of participation selected by the user, the VMT Tool calculates the resulting VMT reduction. The various TDM measures in the VMT Tool include school carpool programs, bike-sharing programs, car-sharing programs, trip reduction marketing/educational campaigns, parking cash-out, subsidized transit, telecommuting, alternative work schedules, shuttles, pay to park, ride-sharing, unbundled parking, and subsidized vanpools.	Consultants and City Staff	During environmental review	Community Development Department and Public Works Department	Community Development Department and Public Works Department
Utilities and Service Systems				
Mitigation Measure UTL-1: Fair-Share Contributions Toward Utility Improvements. Subsequent development projects shall contribute the fair share amount identified by the City of Mountain View Public Works Department to fund capital improvements to the water, sanitary sewer, and stormwater drainage systems prior to issuance of a building permit.	Project applicant	Prior to building permit issuance	Community Development Department and Public Works Department	Community Development Department and Public Works Department