

# Appendix A

---

Notice of Preparation and  
Scoping Comments



**DEVELOPMENT SERVICES – PLANNING**

**8401 LAGUNA PALMS WAY • ELK GROVE, CALIFORNIA 95758**

**EL: 916.683.7111 • FAX: 916.691.3175 • www.elkgrovecity.org**

**NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT**

---

**DATE:** June 19, 2020

**TO:** Responsible and Trustee Agencies, Organizations, and Interested Parties

**LEAD AGENCY:** City of Elk Grove  
Contact: Christopher Jordan, Director of Strategic Planning and Innovation  
8401 Laguna Palms Way  
Elk Grove, CA 95758

**SUBJECT:** Environmental Impact Report for the City of Elk Grove 2021 Housing Element Update

---

In discharging its duties under Section 15021 of the California Environmental Quality Act (CEQA) Guidelines, the City of Elk Grove (as lead agency, hereinafter “City” or “Elk Grove”) intends to prepare an environmental impact report (EIR), consistent with Section 15161 of the State CEQA Guidelines (Title 14 of the California Code of Regulations, hereinafter the “CEQA Guidelines”), for the **2021 Housing Element Update** (the “Project,” described later in this document). In accordance with Section 15082 of the CEQA Guidelines, the City has prepared this notice of preparation (NOP) to provide the Office of Planning and Research, responsible and trustee agencies, and other interested parties with sufficient information describing the Project and its potential environmental effects.

The City made the determination to prepare an EIR following preliminary review of the Project. Pursuant to CEQA Guidelines Section 15063(a), because an EIR is needed, an initial study has not been prepared. Probable environmental effects of the Project are described in the attached Project summary.

As specified by the CEQA Guidelines, the NOP will be circulated for a 30-day review period. **The comment period runs from Monday, June 22, 2020, to Tuesday, July 22, 2020.** The City welcomes public input during the review period. If the City has not received either a response or a well-justified request for additional time by a responsible agency by the end of the review period, the City may presume that the responsible agency has no response (CEQA Guidelines Section 15082[b][2]).

CEQA provides for a Lead Agency to facilitate one or more Scoping Meetings, which provide opportunity for determining the scope and content of the EIR. Traditionally, the City hosts one Scoping Meeting for the general public during the NOP comment period. In accordance with State and local health orders limiting in-person public meetings, the City is providing an alternative method for the Scoping Meeting. A video presentation by staff, introducing the Project and outlining the CEQA process, is available for review at <http://www.elkgrovecity.org/housingelement>. The website also provides a method for directly providing comments. This video and comment opportunity will be available at the above link throughout the NOP comment period (June 22 to July 22).

Comments may also be submitted in writing during the review period and addressed to:

City of Elk Grove  
Office of Strategic Planning and Innovation  
c/o Christopher Jordan  
8401 Laguna Palms Way  
Elk Grove, CA 95758  
[cjordan@elkgrovecity.org](mailto:cjordan@elkgrovecity.org)

# PROJECT LOCATION AND SETTING

The City is located in Sacramento County and consists of approximately 42 square miles within its boundary (see Figure 1). Land uses are regulated under the City General Plan, which was comprehensively updated in 2019. The City General Plan established a Planning Area (approximately 31,238 acres) that includes lands outside the current City limits. Existing land uses in the City consist of residential at varying densities, commercial, office, industrial, park, and open space. The Planning Area primarily consists of agricultural lands and rural residential uses. Nearby natural open space and habitat areas include the Stone Lakes National Wildlife Refuge and the Sacramento River to the west, the Cosumnes River Preserve to the south, and the Regional County Sanitation District bufferlands to the northwest. Major roadway access to the City is provided by Interstate 5 and State Route 99.

# PROJECT DESCRIPTION

As identified above, the General Plan was comprehensively updated in 2019. The 2019 update incorporated the 2013–2021 Housing Element into General Plan Chapter 4, “Urban and Rural Development,” and its provisions of sufficient land, with appropriate use designations, for the construction of the housing units that the City must accommodate according to the Regional Housing Needs Allocation (RHNA) by 2021 (7,401 housing units). The purpose of the 2021 Housing Element Update is to establish parameters for future residential development and provide opportunities for purposeful expansion that are aligned with community desires, as well as regional growth objectives and State law. The proposed 2021 Housing Element Update will be compliant with Government Code Section 65583, which identifies the requirements for General Plan Housing Element sections. In summary, Government Code Section 65583 requires that the Housing Element identify and analyze existing and projected housing needs, as well as establish goals, policies, and actions to address these housing needs, including adequate provisioning of affordable and special-needs (e.g., agricultural workers, homeless people, seniors, single-parent households, large families, and persons with disabilities) housing.

The 2021 Housing Element Update will address any changes that have occurred since adoption of the current Housing Element. These changes include, among others, updated demographic information, housing needs data, and analysis of the availability of housing sites. The Housing Element map of available housing sites would be updated to identify sites that could accommodate the City’s RHNA for the 2021–2029 planning period. The City would also amend the General Plan land use designations and rezone sites in the City to accommodate the changes specified in the Project.

The RHNA quantifies the need for housing in each region statewide and is determined by the California Department of Housing and Community Development. The Sacramento Area Council of Governments (SACOG) is responsible for allocating the RHNA to each city and county in its region, which includes Elk Grove. The SACOG Regional Housing Needs Plan for the 2021–2029 planning period was adopted in March 2020 and will provide the RHNA methodology that applies to the Project. Elk Grove’s total RHNA for the 2021–2029 planning period is 8,263 units, allocated to specific income groups as shown in Table 1.

**Table 1. City of Elk Grove Regional Housing Needs Allocation**

	Income Level				Total RHNA
	Very Low	Low	Moderate	Above Moderate	
2021-2029 RHNA	2,661	1,604	1,186	2,812	8,263

Source: Sacramento Area Council of Governments Regional Housing Needs Plan 2021–2029, page ES-3

The City currently has an adequate number of zoned residential sites to meet RHNA requirements for the above moderate income group. It has identified 43 possible housing sites (18 existing sites and 25 new candidate sites) located within City limits that could accommodate housing to meet the RHNA very low, low, and moderate income groups (see Figure 2). Each site’s map ID, location, acreage, existing zoning, proposed zoning, and dwelling unit capacity potential are shown in Table 2. The 25 candidate sites, sites C-1 through C-25, would require rezoning.

**Table 2. Existing Sites and Candidate Sites for Very Low, Low, and Moderate Income Groups**

Map ID	General Location	Acreage	Existing Zoning	Proposed Zoning	Dwelling Unit Capacity Potential
E-1	M&H Site in Lent Ranch	12.8	RD-20	RD-20	230
E-2	Quail Run	4.88	RD-25	RD-25	102
E-3	Bruceville Road south of Poppy Ridge Road	15.48	RD-20	RD-20	279
E-4	NWC Bruceville Road and Big Horn Boulevard	6.5	RD-25	RD-25	137
E-5	SEPA, Clark Property	9	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	189
E-6	SEPA, Suyanaga Property	8.6	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	181
E-7	SEPA, Souza Lot 1096	7.1	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	149
E-8	SEPA, Souza Lot 1097	7.9	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	166
E-9	SEPA, Souza Lot 1098	6.5	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	137
E-10	SEPA, Souza Lot 1098	7.2	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	151
E-11	SEPA, Souza Lot 1105	9.3	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	195
E-12	SEPA, Bruceville Meadows	8.4	SEPA-HDR (15.1-30)	SEPA-HDR (15.1-30)	176
E-13	Backer Family, Big Horn Boulevard at Poppy Ridge Road	11.1	RD-25	RD-25	233
E-14	Elk Grove Florin Road at Brown Road	4.4	RD-25	RD-25	92
E-15	Harbour Point Drive and Maritime Drive	3.06	RD-25	RD-25	64
E-16	East Stockton Boulevard at Bow Street	2.9	RD-25	RD-25	61
E-17	Sheldon Farms North, Anthem	5.3	RD-25	RD-25	111
E-18	Sheldon Farms South, Arson	9	RD-25	RD-25	189
C-1	Sterling Meadows HDR Site	10.68	RD-20	RD-30	267
C-2	End of Dunisch Road	2.87	SC	RD-25	60
C-3	Laguna Boulevard and Bruceville Road (COBRA/Pacific Properties)	7.6	RD-15	RD-30	190
C-4	2804 Elk Grove Boulevard (Samos)	7.49	RD-15	RD-30	187
C-5	SEC Sheldon Road and East Stockton Boulevard	12.3	SC	RD-30	308
C-6	NEC Sheldon Road and Power Inn Road	8	GC	RD-30	200

Map ID	General Location	Acreage	Existing Zoning	Proposed Zoning	Dwelling Unit Capacity Potential
C-7	Waterman Road at Rancho Drive	3.5	RD-4	RD-25	74
C-8	8994 Calvine Road	2.32	RD-5	RD-25	49
C-9	8770 Calvine Road	3.5	RD-20	RD-25	74
C-10	Laguna Boulevard and Hausmann Street	6.96	LC	RD-30	174
C-11	Laguna Vaux	2.59	LC	RD-30	78
C-12	Laguna Boulevard and Gropius Street	5.85	MP	RD-30	146
C-13	9296 E Stockton Boulevard	3.81	RD-20	RD-30	95
C-14	9343 E Stockton Boulevard	1.96	BP	RD-30	49
C-15	NWC Bond Road and Waterman Road	4.6	GC	RD-25	97
C-16	Stathos Drive	3.19	RD-5	RD-30	80
C-17	Waterman 75 (Mosher Road and Grant Line Road)	5	RD-10	RD-30	125
C-18	Bow Street Northwest	10.3	RD-6	RD-25	258
C-19	Old Town 4 lots	2.1	OTSPA	RD-20	42
C-20	SEC Bond Road and Waterman Road	1.5	AR-2	RD-25	32
C-21	Bond Road and Stonebrook Drive	1.66	RD-15	RD-25	35
C-22	Calvine Road and Jordan Ranch Road	2.06	RD-4	RD-25	43
C-23	Calvine Road and Bradshaw Road	2.02	GC/AR-5	RD-25	42
C-24	SWC Lotz Parkway and Whitelock Parkway	5	RD-5	RD-25	105
C-25	Eden Gardens	5.17	AR-5	RD-25	109
<b>Total</b>	<b>261.5 acres with the capacity for 5,761 units</b>				

### Safety Element

The Project also includes an update to the General Plan Safety Element for consistency with AB 747 (Levine) and SB 99 (Nielsen). The revisions would incorporate emergency access route information and additional policies on community resiliency.

## REQUIRED APPROVALS

Actions to be taken by the City to adopt the Project include, but are not limited to:

- ▶ certification of the EIR prepared for the Project,
- ▶ adoption of General Plan amendments to update the Housing Element and to redesignate the land uses for certain selected housing sites,
- ▶ rezoning of selected housing sites; and
- ▶ adoption of General Plan Amendment to the Safety Element.

After adoption, the updated Housing Element will be submitted to the California Department of Housing and Community Development for certification.

## PROBABLE ENVIRONMENTAL EFFECTS

The EIR will evaluate whether implementing the proposed Project would potentially result in one or more significant environmental effects. The following issue areas will be addressed in the EIR:

- ▶ Aesthetics
- ▶ Air Quality
- ▶ Biological Resources
- ▶ Archaeological, Historical, and Tribal Cultural Resources
- ▶ Geology and Soils
- ▶ Energy
- ▶ Greenhouse Gases and Climate Change
- ▶ Hazards and Hazardous Materials
- ▶ Hydrology and Water Quality
- ▶ Land Use and Planning
- ▶ Noise and Vibration
- ▶ Population and Housing
- ▶ Public Services
- ▶ Recreation
- ▶ Transportation and Traffic
- ▶ Utilities and Service Systems

### Issues Scoped Out from Analysis in the EIR

The City anticipates that the Project would have less-than-significant or no impacts on the following environmental issue areas. These areas will not be discussed in the EIR for the reasons discussed below.

#### Agriculture and Forestry Resources

No forestry resources or timberlands are in the City or its Planning Area. The EIR certified for the City's 2019 General Plan Update evaluated the potential for impacts on agricultural resources in the City's Planning Area. Because this issue was evaluated in that document and no additional agricultural impacts would occur as a result of implementing the Housing Element Update, this issue will not be discussed in the EIR.

#### Mineral Resources

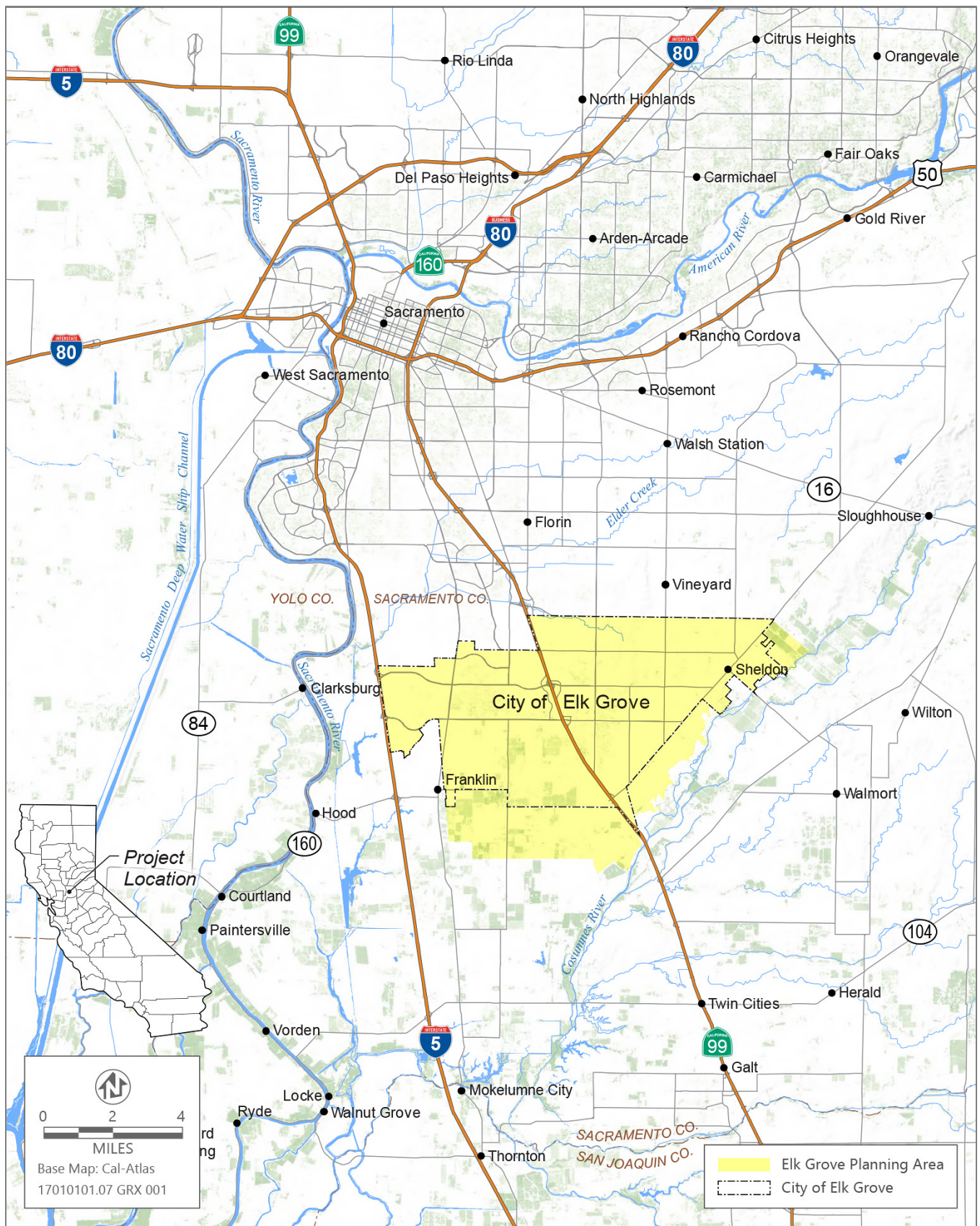
No significant mineral resources have been identified in the City. None of the candidate housing sites are used for mineral extraction, nor are any of the sites designated as an important mineral recovery site. Therefore, there would be no impact on mineral resources, and this impact will not be discussed in the EIR.

#### Seiche, Tsunami, and Mudflow

The City's location (inland, away from any water bodies) and topography (relatively flat) ensure that there would be no impact related to seiche, tsunami, or mudflow. Therefore, this impact will not be discussed in the EIR.

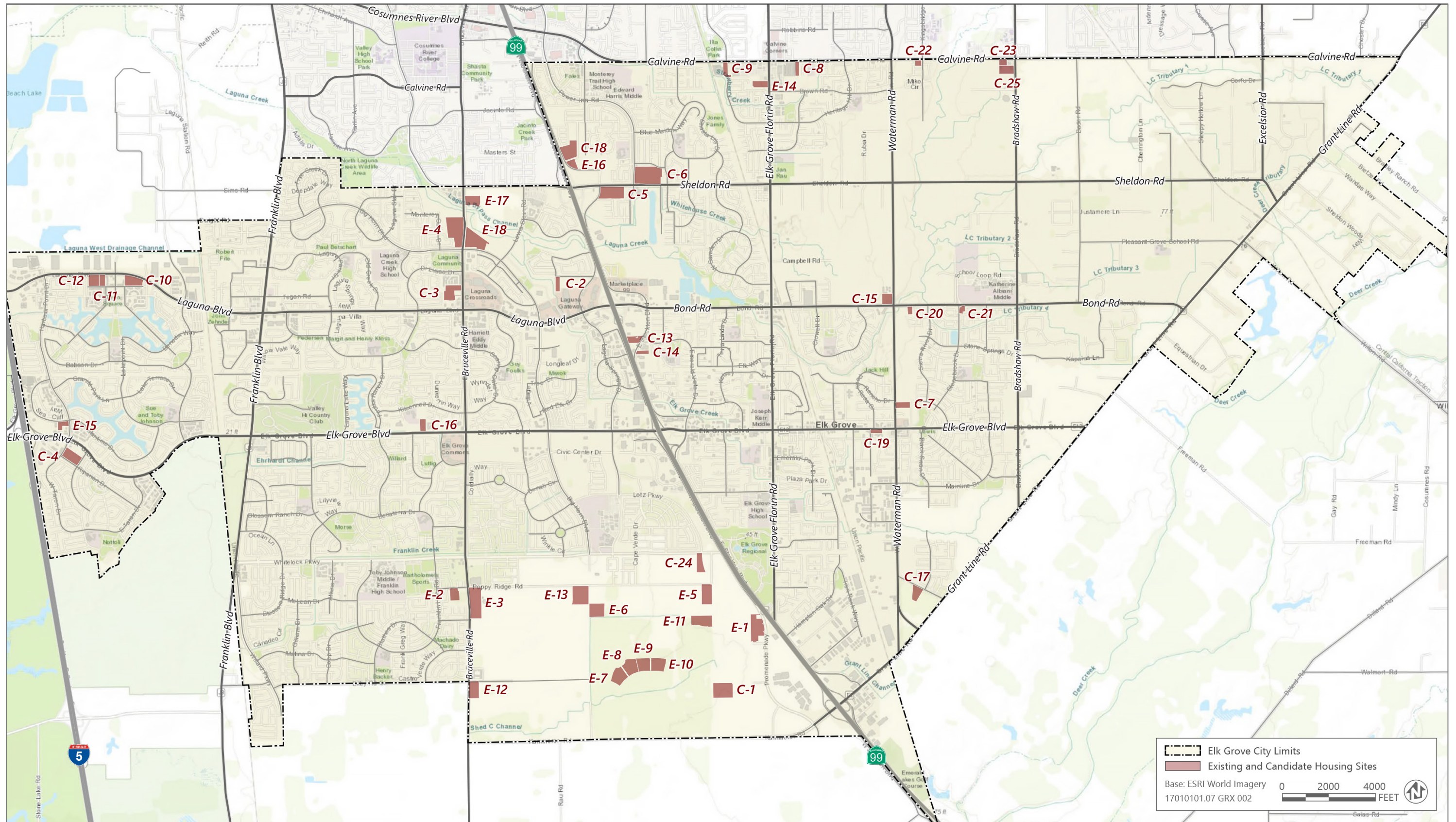
#### Wildfire

The City is not located in or near a Very High Fire Hazard Severity Zone. Therefore, there would not be a significant impact related to wildfire, and this issue will not be discussed in the EIR.



Source: Ascent Environmental 2019

Figure 1 Regional Location Map



Source: Housing data provided by the City of Elk Grove in 2020

Figure 2 Existing and Candidate Housing Sites





## NATIVE AMERICAN HERITAGE COMMISSION

June 23, 2020

Christopher Jordan  
City of Elk Grove  
8401 Laguna Palms Way  
Elk Grove, CA 95758

CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

SECRETARY  
**Merri Lopez-Kelfer**  
Luiseño

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

COMMISSIONER  
**Marshall McKay**  
Wintun

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Julie Tumamait-Stenslie**  
Chumash

COMMISSIONER  
[Vacant]

COMMISSIONER  
[Vacant]

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

**Re: 2020069032, 2021 Housing Element Update Project, Sacramento County**

Dear Mr. Jordan:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines § 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1))). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

**Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

## AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

**1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:**

Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- a. A brief description of the project.
- b. The lead agency contact information.
- c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

**2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:**

A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

**3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- a. Alternatives to the project.
- b. Recommended mitigation measures.
- c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

**4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:

- a. Type of environmental review necessary.
- b. Significance of the tribal cultural resources.
- c. Significance of the project's impacts on tribal cultural resources.
- d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

**5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

**6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
- b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
  - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- a. Avoidance and preservation of the resources in place, including, but not limited to:
    - i. Planning and construction to avoid the resources and protect the cultural and natural context.
    - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - i. Protecting the cultural character and integrity of the resource.
    - ii. Protecting the traditional use of the resource.
    - iii. Protecting the confidentiality of the resource.
  - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
  - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
  - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
  - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
  - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: [http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation\\_CalEPAPDF.pdf](http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf)

## SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_922.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf).

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
  - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

### NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://ohp.parks.ca.gov/?page\\_id=1068](http://ohp.parks.ca.gov/?page_id=1068)) for an archaeological records search. The records search will determine:
  - a. If part or all of the APE has been previously surveyed for cultural resources.
  - b. If any known cultural resources have already been recorded on or adjacent to the APE.
  - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
  - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
  - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
  
4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
  - a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
  - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
  - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subs. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: [Nancy.Gonzalez-Lopez@nahc.ca.gov](mailto:Nancy.Gonzalez-Lopez@nahc.ca.gov).

Sincerely,



Nancy Gonzalez-Lopez  
Cultural Resources Analyst

cc: State Clearinghouse



***Sent Via E-Mail***

July 20, 2020

Christopher Jordan  
Director of Strategic Planning and Innovation  
8401 Laguna Palms Way  
Elk Grove, CA 95758  
[cjordan@elkgrovecity.org](mailto:cjordan@elkgrovecity.org)

Subject: **2021 Housing Element Update / NOP / 2020069032**

Dear Mr. Jordan:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Notice of Preparation (NOP) for the 2021 Housing Element Update Project (Project, SCH 2020069032). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the project descriptions for the individual development projects undertaken as part of the plan will acknowledge any impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on [smud.org](http://smud.org) for more information regarding transmission encroachment:
  - <https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services>
  - <https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way>
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD, and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this NOP. If you have any questions regarding this letter, please do not hesitate to contact me at 916.732.6775, or by email at [Amy.Spitzer@smud.org](mailto:Amy.Spitzer@smud.org).

Sincerely,

A handwritten signature in blue ink, appearing to read "Amy Spitzer".

Amy Spitzer  
Environmental Services Specialist  
Sacramento Municipal Utility District  
6201 S Street  
Sacramento, CA 95817

cc: Entitlements

July 22, 2020

**SENT VIA EMAIL**

Mr. Christopher Jordan  
City of Elk Grove  
Office of Strategic Planning and Innovation  
8401 Laguna Palms Way  
Elk Grove, CA 95758  
[cjordan@elkgrovecity.org](mailto:cjordan@elkgrovecity.org)

**RE: Notice of Preparation of an Environmental Impact Report for the City of Elk Grove  
2021 Housing Element Update**

Dear Mr. Jordan,

Thank you for providing an opportunity for the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) to review and comment on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the City of Elk Grove 2021 Housing Element Update (HEU). As described in the NOP, the purpose of the 2021 Housing Element Update is to establish parameters for future residential development and provide opportunities for purposeful expansion that are aligned with community desires, as well as regional growth objectives and State law. The 2021 Housing Element Update will address any changes that have occurred since the adoption of the current Housing Element and will include a map of available housing sites that would be updated to identify sites that could accommodate the City's Regional Housing Needs Assessment (RHNA) for the 2021–2029 planning period. The City would also amend the General Plan land use designations and rezone sites in the City to accommodate the changes specified in the HEU. Sac Metro Air District staff comments on the HEU and the HEU NOP follow.

**1. General Resources:**

Sac Metro Air District provides the *Guide to Air Quality Assessment in Sacramento County* which includes thresholds of significance, calculation methodologies and recommended mitigation for California Environmental Quality Act (CEQA) analysis. The document is available on the Sac Metro Air District website.<sup>1</sup>

**2. Consistency with Existing Plans**

The HEU EIR should evaluate consistency with existing plans, especially those that reduce criteria air pollutants and greenhouse gases. Such plans include, but are not limited to, the Metropolitan Transportation Plan/Sustainable Communities Strategy

---

<sup>1</sup> <http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/CEQA-Guidance-Tools>, Sac Metro Air District, April 2020.



(MTP/SCS)<sup>2</sup>, Elk Grove's Comprehensive Operational Analysis (COA) service scenarios for e-tran, Elk Grove's Climate Action Plan, and Elk Grove's Bike, Pedestrian and Trails Master Plan.

### 3. Locating Sensitive Receptors Near Sources of Air Toxics

The HEU EIR should evaluate exposure reduction measures to reduce sensitive receptors to air pollution near major roadways and railways. In April 2017, the California Air Resources Board (CARB) released the technical advisory *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*<sup>3</sup> to supplement the 2005 *Air Quality and Land Use Handbook: A Community Health Perspective*<sup>4</sup> CARB's handbook and technical advisory, and the Sac Metro Air District's *Mobile Sources Air Toxics Protocol*<sup>5</sup> can be used to:

- a. disclose the potential cancer risk to receptors located near major roadways and;
- b. choose exposure reduction measures, such as MERV 13 filters in residential units and installing a vegetative barrier between major roadways and residences.

Additionally, the Sac Metro Air District, in cooperation with the Sacramento Tree Foundation developed the *Landscaping Guidance for Improving Air Quality near Roadways*<sup>6</sup> to provide local guidance and best practices for installing vegetative barriers between major roadways and sensitive receptors. The Sac Metro Air District recommends the HEU include requirements for vegetative barriers between new housing and major roadways.

### 4. Transit-Oriented Development

The HEU EIR should evaluate the impact of the plan on planned light rail or Bus Rapid Transit (BRT) along Bruceville Road and other major corridors within the City of Elk Grove. The HEU should identify in a narrative statement and on a map any sites where average residential density will be reduced (downzoned) from the current (2013-2021) plan. The HEU should also identify in a narrative statement and on a map any sites where affordable housing is being downzoned or removed. Sac Metro Air District staff encourages the City to maximize density near locations with existing or planned transit service, especially near the site of the future Valley Rail train station.

Sac Metro Air District staff also recommends that City of Elk Grove staff consider including recommendations from Sacramento Regional Transit's transit-oriented development guidance for local governments that align supportive land-use policies with current and future low carbon transportation investments.<sup>7</sup>

---

<sup>2</sup> <https://www.sacog.org/metropolitan-transportation-plansustainable-communities-strategy> Sacramento Area Council of Governments MTCP/SCS 2016

<sup>3</sup> [Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways](#), California Air Resources Board, April 2017

<sup>4</sup> [Air Quality and Land Use Handbook: A Community Health Perspective](#), California Air Resources Board, April 2005

<sup>5</sup> <http://www.airquality.org/businesses/ceqa-land-use-planning/mobile-sources-air-toxics-protocol>, Sacramento Metropolitan Air Quality Management District, April 2019

<sup>6</sup> [Landscaping Guidance for Improving Air Quality near Roadways](#), Sacramento Metropolitan Air Quality Management District, April 2017

<sup>7</sup> [A Guide to Transit Oriented Development \(TOD\)](#), Sacramento Regional Transit, April 2009

Thank you for your consideration of these comments. If you have any questions, please contact me at 916-874-2694 or [jhurley@airquality.org](mailto:jhurley@airquality.org).

Regards,

-JJ Hurley

Joseph J. Hurley  
Associate Air Quality Planner/Analyst

c: Paul Philley, Program Supervisor – CEQA & Land Use Section, Sac Metro Air District

ID	Start time	Completion time	Email	Name	Please enter your name.	Please enter your email address.	Please enter any additional contact information you would like to provide (e.g., mailing address).	Please enter your comments on the Notice of Preparation, or any other comments regarding the preparation of the EIR for the Housing Element Update.
3	6/22/20 14:34:01	6/22/20 14:37:33	anonymous		Roberta Larson	4rolarson@comcast.net	PN064-0080-860-0000	I own the above 16 acres and I have it up for sale! It is in the FLORIN VINEYARD GAP Planning area for Affordable Living - If you are interested or know anyone to BUY this property please email me and I will have my Agent contact you! Thanks
4	7/20/20 14:40:04	7/20/20 15:15:51	anonymous		Lynn Wheat	Wheat91@yahoo.com		<p>Thank you for the opportunity to submit comments on the NOP for the Housing Element Update.</p> <p>1) Page 4 has mislabeled the general location of site C-16.</p> <p>2) Site C-15: currently has an application with the City for a gas station and storage facility. This needs to be addressed in the document or the site needs to be removed from consideration.</p> <p>3) Site C-6: An application for low-density residential was received by the city. Please discuss or remove as a site to consider.</p> <p>Noise and Vibration: Please consider past projects in Elk Grove have poorly addressed noise and vibration by measuring sound with windows and doors closed. Elk Grove has the benefit of natural cooling in the Summer season with the Delta Breezes. Closed windows and doors should not be an appropriate mitigation measure allowed.</p> <p>Site C-3 will be surrounding a Quick Quack Car wash and along a busy roadway. Please assess noise and vibration with "windows" and "doors" open.</p> <p>Hydrology and Water Quality: Please include the groundwater sustainability plan in evaluating water availability.</p> <p>Safety element: Please include an evaluation of bicyclist and pedestrian accidents and roadway conditions. Please include access to public transportation and site development of the bus stop. Many bus stops in our city do not have turnouts, benches or covering.</p>

# Appendix B

---

Air Quality and Greenhouse Gas  
Modeling Data

**Construction Emissions Summary**

<b>Project Construction Emissions by Year (MTCO<sub>2</sub>e/year)</b>	
2021	788
2022	5438
2023	5280
2024	5187
2025	5036
2026	4917
2027	4811
2028	4699
2029	521
<b>Total</b>	<b>36,677</b>
<b>Amortized</b>	<b>916.93</b>

<b>Unmitigated Construction Emissions</b>				
NO <sub>x</sub> lb/day	PM <sub>10</sub> lb/day	PM <sub>10</sub> tpy	PM <sub>2.5</sub> lb/day	PM <sub>2.5</sub> tpy
88	37	2	12	1
82	36	5	11	1
71	36	5	10	1
69	36	5	10	1
66	36	5	10	1
65	36	5	10	1
64	36	5	10	1
63	36	5	10	1
61	36	<1	10	<1

<b>Mitigated Construction Emissions</b>				
NO <sub>x</sub> lb/day	PM <sub>10</sub> lb/day	PM <sub>10</sub> tpy	PM <sub>2.5</sub> lb/day	PM <sub>2.5</sub> tpy
79.2	17.02	0.92	5.52	0.46
73.8	16.56	2.3	5.06	0.46
63.9	16.56	2.3	4.6	0.46
62.1	16.56	2.3	4.6	0.46
59.4	16.56	2.3	4.6	0.46
58.5	16.56	2.3	4.6	0.46
57.6	16.56	2.3	4.6	0.46
56.7	16.56	2.3	4.6	0.46
54.9	16.56	#VALUE!	4.6	#VALUE!

CalEEMod Inputs (Construction Run)

Name: City of Elk Grove Housing Element  
 2021-2029  
 Project Number: 17010101.07  
 Project Location: Elk Grove  
 County/Air Basin: Sacramento, SVAB  
 Climate Zone: 2  
 Land Use Setting: Urban  
 Operational Year: 2029  
 Utility Company: SMUD/PG&E  
 Air Basin: SMUD/PG&E  
 Air District: SMAQMD

Project Site Acreage	261.5
Disturbed Site Acreage	261.5

Map ID	General Location	Acreage	Existing Zoning	Proposed Zoning	Dwelling Unit Capacity Potential
E-1	M&H Site in Lent Ranch	12.8	RD-20	RD-20	230
E-2	Quail Run	4.88	RD-25	RD-25	102
E-3	Bruceville Road south of Poppy Ridge Rd	15.48	RD-20	RD-20	279
E-4	NWC Bruceville Road and Big Horn Boul	6.5	RD-25	RD-25	137
E-5	SEPA, Clark Property	9	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	189
E-6	SEPA, Suyanaga Property	8.6	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	181
E-7	SEPA, Souza Lot 1096	7.1	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	149
E-8	SEPA, Souza Lot 1097	7.9	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	166
E-9	SEPA, Souza Lot 1098	6.5	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	137
E-10	SEPA, Souza Lot 1098	7.2	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	151
E-11	SEPA, Souza Lot 1105	9.3	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	195
E-12	SEPA, Bruceville Meadows	8.4	SEPA-HDR (15.1)	SEPA-HDR (15.1-30)	176
E-13	Backer Family, Big Horn Boulevard at Po	11.1	RD-25	RD-25	233
E-14	Elk Grove Florin Road at Brown Road	4.4	RD-25	RD-25	92
E-15	Harbour Point Drive and Maritime Drive	3.06	RD-25	RD-25	64
E-16	East Stockton Boulevard at Bow Street	2.9	RD-25	RD-25	61
E-17	Sheldon Farms North, Anthem	5.3	RD-25	RD-25	111
E-18	Sheldon Farms South, Arsone	9	RD-25	RD-25	189
C-1	Sterling Meadows HDR Site	10.68	RD-20	RD-30	267
C-2	End of Dunisch Road	2.87	SC	RD-25	60
C-3	Laguna Boulevard and Bruceville Road (G	7.6	RD-15	RD-30	190
C-4	2804 Elk Grove Boulevard (Samos)	7.49	RD-15	RD-30	187
C-5	SEC Sheldon Road and East Stockton Bo	12.3	SC	RD-30	308
C-6	NEC Sheldon Road and Power Inn Road	8	GC	RD-30	200
C-7	Waterman Road at Rancho Drive	3.5	RD-4	RD-25	74
C-8	8994 Calvine Road	2.32	RD-5	RD-25	49
C-9	8770 Calvine Road	3.5	RD-20	RD-25	74
C-10	Laguna Boulevard and Hausmann Street	6.96	LC	RD-30	174
C-11	Laguna Vaux	2.59	LC	RD-30	78
C-12	Laguna Boulevard and Gropius Street	5.85	MP	RD-30	146
C-13	9296 E Stockton Boulevard	3.81	RD-20	RD-30	95
C-14	9343 E Stockton Boulevard	1.96	BP	RD-30	49
C-15	NWC Bond Road and Waterman Road	4.6	GC	RD-25	97
C-16	Stathos Drive	3.19	RD-5	RD-30	80
C-17	Waterman 75 (Mosher Road and Grant Line Road)	5	RD-10	RD-30	125
C-18	Bow Street Northwest	10.3	RD-6	RD-25	258
C-19	Old Town 4 lots	2.1	OTSPA	RD-20	42
C-20	SEC Bond Road and Waterman Road	1.5	AR-2	RD-25	32
C-21	Bond Road and Stonebrook Drive	1.66	RD-15	RD-25	35
C-22	Calvine Road and Jordan Ranch Road	2.06	RD-4	RD-25	43
C-23	Calvine Road and Bradshaw Road	2.02	GC/AR-5	RD-25	42
C-24	SWC Lotz Parkway and Whitelock Parkway	5	RD-5	RD-25	105
C-25	Eden Gardens	5.17	AR-5	RD-25	109
Totals		261.45			5761

CalEEMod Land Uses	SQFT	Dwelling Units	Acres	
Apartments Medium Rise	3,243,000	1967	91.64	Rd-25
Apartments High Rise	1,967,000	3243	139.43	rd-30
Apartments Low Ride	551,000	551	30.38	rd-20
	<b>5,761,000</b>	<b>5,761.0</b>	<b>261.5</b>	

#### Architectural Coating

Interior Paint VOC content:	100
Exterior Paint VOC content:	100

#### Non-Residential Architectural Coating

Percentage of Buildings' Interior Painted:	100%
Percentage of Buildings' Exterior Painted:	100%

Structure Type	Land Use Square Feet	CalEEMod Application Factor	Total Paintable		
			Surface Area <sup>1</sup>	Paintable Interior Area <sup>2</sup>	Paintable Exterior Area <sup>2</sup>
<b>Non-Residential</b>					
Residential	5,761,000	2.0	11,522,000	8,641,500	2,880,500

<sup>1</sup> CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

<sup>2</sup> The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

### CalEEMod Construction Phase Inputs\*

5-Day Work Week/8 hours per day

#### Adjusted Phasing for 20-Year Construction Period (2021-2040)

	<u>Default</u>	<u>Adjusted</u>
Site Preparation	180	71
Grading	465	183
Building Construction	4650	1833
Paving	330	130
Arch Coating	330	130
Construction Start Date	1/1/2021	
Construction End Date	12/31/2029	
Total Work Days	2347	

#### CalEEMod Construction Schedule Inputs

<u>Phase Name</u>	<u>Phase Type</u>	<u>Start Date</u>	<u>End Date</u>	<u>CalEEMod Total Days</u>
Site Preparation	Site Preparation	3/31/2022	5/23/2022	71
Grading	Grading	5/24/2022	10/5/2022	183
Building Construction	Building Construction	10/6/2022	6/23/2026	1833
Paving	Paving	6/24/2026	9/24/2026	130
Architectural Coating	Architectural Coating	9/25/2026	12/30/2026	130
				<u>2347</u>

\*Based on overall construction schedule of 20 years provided by the Applicant, CalEEMod default phase lengths were normalized to meet this period



**Construction**

<u>Phase</u>	<u># of Days (CalEEMod default)</u>	<u>% of year</u>	<u>Adjusted # of Days</u>	<u>Off Model Adjustments</u>
Demolition				1469.683123 Adjusted Arch Coating Days
Site Preparation	180	3%	71	based on 2/3 building days plus paving and arch coating
Grading	465	8%	183	<b>416</b> Unmitigated ROG (2029)
Building Constr	4650	78%	1833	54105.14861 ROG X Arch Tech Days
Paving	330	6%	130	<b>36.81415929</b> Adjusted ROG (2029)
Arch Coating	330	6%	130	
	5955	100%	2347	
	Start Date	End Date		
	1/1/2021	12/31/2029		

**CalEEMod Inputs (Proposed Land Uses)**

Name: City of Elk Grove Housing  
 Project Number: Element 2021-2029  
 Project Location: 17010101.07  
 County/Air Basin: Elk Grove  
 Sacramento, SVAB  
 Climate Zone: 2  
 Land Use Setting: Urban  
 Operational Year: 2029  
 Utility Company: SMUD/PG&E  
 Air Basin: SMUD/PG&E  
 Air District: SMAQMD

Project Site Acreage <sup>1</sup>	261.45
Disturbed Site Acreage <sup>1</sup>	261.50

CalEEMod Land Uses	SQFT	Dwelling Units	Acres	Zoning Designation
Apartments Medium Rise	3,243,000	1967	92	Rd-25
Apartments High Rise	1,967,000	3243	139	rd-30
Apartments Low Rise	551,000	551	30	rd-20
<b>Total</b>	<b>5,761,000</b>	<b>5761</b>	<b>261</b>	

**Energy Detail**

Land Use Subtype	Title-24 Electricity (KWhr/size/year) Default	Adjusted Title 24 Electricity	Nontitle 24 Energy Intensity	Lighting Energy (KWhr/size/year)	Title-24 Natural Gas (KBTU/size/year)	Adjusted Title 24 NG	Non-Title 24 NG (KBTU/size/year)
Apartmentns High Rise	460.92	216.6324	3.6	3.17	7,061.10	3318.72	0.47
Apartments Low Rise	511.12	240.2264	1.4	2.34	9,411.72	4423.51	0.42
Apartments Mid Rise	460.92	216.6324	1.4	2.34	7,061.10	3318.72	0.42

**Trip Generation Traffic Study  
(Cumulative)**

	Daily VMT	Total Project Annual VMT
North Study Area	37,622	13,732,030
East Study Area	420,612	153,523,380
South Study Area	1,311,107	478,554,055
West Study Area	705,243	257,413,695
Fehr and Peers 2020	2,474,584.00	<b>903,223,160</b>

**Water Use**

Land Use Subtype	Indoor Water Use Default (GPY)
Apartments High Rise	211,294,505.09
Apartments Low Rise	35,899,868.12
Apartments Mid Rise	128,157,968.40

**Solid Waste**

Land Use Subtype	Solid Waste Gen (TPY)
Apartments High Rise	1,491.78
Apartments Low Rise	253.46
Apartments Mid Rise	904.82

## Operational Summary

### Unmitigated Annual Emissions Estimates

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	27.8767	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587
Energy	0.1899	1.6223	0.6904	0.0104		0.1312	0.1312		0.1312	0.1312			8,098.9792	0.3416	0.0977	8,136.6238
Mobile	5.5444	25.6253	63.5170	0.2630	28.7999	0.1740	28.9739	7.7127	0.1618	7.8745			24,303.3050	0.9475	0.0000	24,326.9926
Waste						0.0000	0.0000		0.0000	0.0000			537.9382	31.7912	0.0000	1,332.7192
Water						0.0000	0.0000		0.0000	0.0000			855.3385	0.4926	0.2961	955.9031
<b>Total</b>	<b>33.6109</b>	<b>27.9307</b>	<b>123.4616</b>	<b>0.2765</b>	<b>28.7999</b>	<b>0.6347</b>	<b>29.4346</b>	<b>7.7127</b>	<b>0.6225</b>	<b>8.3352</b>			<b>33,892.6081</b>	<b>33.6654</b>	<b>0.3938</b>	<b>34,851.5975</b>

### Unmitigated Daily Emissions Estimates

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	157.2165	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154	0.0000	876.1941
Energy	1.0403	8.8894	3.7827	0.0567		0.7187	0.7187		0.7187	0.7187			11,348.15	0.2175	0.2081	11,415.58
Mobile	42.9872	150.5167	434.8495	1.7159	180.2777	1.0507	181.3284	48.1417	0.9769	49.1186			174,531.04	6.4132		174,691.37
<b>Total</b>	<b>201.2439</b>	<b>164.8708</b>	<b>912.6660</b>	<b>1.7977</b>	<b>180.2777</b>	<b>4.4052</b>	<b>184.6829</b>	<b>48.1417</b>	<b>4.3314</b>	<b>52.4731</b>			<b>186,735.00</b>	<b>7.4460</b>	<b>0.2081</b>	<b>186,983.15</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**Elk Grove Housing Element Construction + Operation Emissions**  
**Sacramento County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments High Rise	3,243.00	Dwelling Unit	139.43	3,243,000.00	8659
Apartments Low Rise	551.00	Dwelling Unit	30.38	551,000.00	1471
Apartments Mid Rise	1,967.00	Dwelling Unit	91.64	1,967,000.00	5252

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	6			<b>Operational Year</b>	2030
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MW hr)</b>	590.31	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

Project Characteristics - Emissions estimates for Elk Grove Housing Element Update (2021-2029).

Land Use - 261 acres of disturbed land + 5,761 DUs

Construction Phase - Construction to occur from 2021-2029. CalEEMod default ratios utilized.

Off-road Equipment - CalEEMod Defaults Used

Trips and VMT - No project specific information available

Demolition - No project specific information available

Grading - No project specific information available

Architectural Coating - Consistent with SMAQMD's Rule 422

Vehicle Trips - Values adjusted to adhere to Traffic Study

Energy Use - Adjusted to reflect consistency with 2019 California Energy Code

Water And Wastewater - Defaults used

Solid Waste - Defaults Used

## Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,888,675.00	2,880,500.00
tblArchitecturalCoating	ConstArea_Residential_Interior	11,666,025.00	8,641,500.00
tblConstructionPhase	NumDays	330.00	129.00
tblConstructionPhase	NumDays	4,650.00	1,833.00
tblConstructionPhase	NumDays	465.00	183.00
tblConstructionPhase	NumDays	330.00	130.00
tblConstructionPhase	NumDays	180.00	71.00
tblEnergyUse	T24E	460.92	216.60
tblEnergyUse	T24E	511.12	240.22
tblEnergyUse	T24E	460.92	216.63
tblEnergyUse	T24NG	7,061.10	3,318.70
tblEnergyUse	T24NG	9,411.72	4,423.51
tblEnergyUse	T24NG	7,061.10	3,318.72
tblGrading	AcresOfGrading	457.50	1,162.50
tblLandUse	LotAcreage	52.31	139.43
tblLandUse	LotAcreage	34.44	30.38
tblLandUse	LotAcreage	51.76	91.64

## 2.0 Emissions Summary

---

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**2.1 Overall Construction**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5938	6.0032	4.1233	8.8300e-003	1.9462	0.2591	2.2052	0.7588	0.2384	0.9973			782.7993	0.2073	0.0000	787.9819
2022	2.2006	10.9054	16.6875	0.0590	4.4285	0.1520	4.5805	1.1886	0.1428	1.3314			5,431.9008	0.2565	0.0000	5,438.3133
2023	2.0226	9.4310	15.4158	0.0573	4.4285	0.1267	4.5552	1.1886	0.1189	1.3075			5,274.8547	0.2370	0.0000	5,280.7796
2024	1.9179	9.1582	14.5489	0.0562	4.4625	0.1153	4.5778	1.1977	0.1081	1.3058			5,181.5812	0.2302	0.0000	5,187.3358
2025	1.8040	8.7938	13.6041	0.0546	4.4454	0.1027	4.5481	1.1931	0.0963	1.2894			5,030.0956	0.2217	0.0000	5,035.6388
2026	1.7218	8.6093	12.8448	0.0533	4.4454	0.1015	4.5469	1.1931	0.0951	1.2883			4,912.0716	0.2155	0.0000	4,917.4583
2027	1.6420	8.4412	12.1617	0.0521	4.4453	0.0999	4.5453	1.1931	0.0936	1.2868			4,805.9757	0.2097	0.0000	4,811.2192
2028	1.5542	8.2640	11.5175	0.0508	4.4283	0.0976	4.5259	1.1885	0.0915	1.2800			4,694.0577	0.2039	0.0000	4,699.1541
2029	26.8937	0.7205	1.8656	4.7000e-003	0.4174	0.0329	0.4503	0.1111	0.0306	0.1416			420.6977	0.0479	0.0000	421.8940
<b>Maximum</b>	<b>26.8937</b>	<b>10.9054</b>	<b>16.6875</b>	<b>0.0590</b>	<b>4.4625</b>	<b>0.2591</b>	<b>4.5805</b>	<b>1.1977</b>	<b>0.2384</b>	<b>1.3314</b>			<b>5,431.9008</b>	<b>0.2565</b>	<b>0.0000</b>	<b>5,438.3133</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**2.1 Overall Construction**

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5938	6.0032	4.1233	8.8300e-003	1.9462	0.2591	2.2052	0.7588	0.2384	0.9973			782.7985	0.2073	0.0000	787.9812
2022	2.2006	10.9054	16.6875	0.0590	4.4285	0.1520	4.5805	1.1886	0.1428	1.3314			5,431.9004	0.2565	0.0000	5,438.3129
2023	2.0226	9.4310	15.4158	0.0573	4.4285	0.1267	4.5552	1.1886	0.1189	1.3075			5,274.8543	0.2370	0.0000	5,280.7792
2024	1.9179	9.1582	14.5489	0.0562	4.4625	0.1153	4.5778	1.1977	0.1081	1.3058			5,181.5809	0.2302	0.0000	5,187.3354
2025	1.8040	8.7938	13.6041	0.0546	4.4454	0.1027	4.5481	1.1931	0.0963	1.2894			5,030.0952	0.2217	0.0000	5,035.6384
2026	1.7218	8.6093	12.8448	0.0533	4.4454	0.1015	4.5469	1.1931	0.0951	1.2883			4,912.0713	0.2155	0.0000	4,917.4579
2027	1.6420	8.4412	12.1617	0.0521	4.4453	0.0999	4.5453	1.1931	0.0936	1.2868			4,805.9754	0.2097	0.0000	4,811.2188
2028	1.5542	8.2640	11.5175	0.0508	4.4283	0.0976	4.5259	1.1885	0.0915	1.2800			4,694.0573	0.2039	0.0000	4,699.1538
2029	26.8937	0.7205	1.8656	4.7000e-003	0.4174	0.0329	0.4503	0.1111	0.0306	0.1416			420.6975	0.0479	0.0000	421.8939
<b>Maximum</b>	<b>26.8937</b>	<b>10.9054</b>	<b>16.6875</b>	<b>0.0590</b>	<b>4.4625</b>	<b>0.2591</b>	<b>4.5805</b>	<b>1.1977</b>	<b>0.2384</b>	<b>1.3314</b>			<b>5,431.9004</b>	<b>0.2565</b>	<b>0.0000</b>	<b>5,438.3129</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2021	3-31-2021	1.4303	1.4303



## Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

2	4-1-2021	6-30-2021	1.6282	1.6282
3	7-1-2021	9-30-2021	1.6663	1.6663
4	10-1-2021	12-31-2021	1.8571	1.8571
5	1-1-2022	3-31-2022	3.2993	3.2993
6	4-1-2022	6-30-2022	3.2852	3.2852
7	7-1-2022	9-30-2022	3.3213	3.3213
8	10-1-2022	12-31-2022	3.3726	3.3726
9	1-1-2023	3-31-2023	2.8850	2.8850
10	4-1-2023	6-30-2023	2.8809	2.8809
11	7-1-2023	9-30-2023	2.9126	2.9126
12	10-1-2023	12-31-2023	2.9491	2.9491
13	1-1-2024	3-31-2024	2.7975	2.7975
14	4-1-2024	6-30-2024	2.7643	2.7643
15	7-1-2024	9-30-2024	2.7947	2.7947
16	10-1-2024	12-31-2024	2.8282	2.8282
17	1-1-2025	3-31-2025	2.6560	2.6560
18	4-1-2025	6-30-2025	2.6548	2.6548
19	7-1-2025	9-30-2025	2.6840	2.6840
20	10-1-2025	12-31-2025	2.7150	2.7150
21	1-1-2026	3-31-2026	2.5876	2.5876
22	4-1-2026	6-30-2026	2.5875	2.5875
23	7-1-2026	9-30-2026	2.6159	2.6159
24	10-1-2026	12-31-2026	2.6451	2.6451
25	1-1-2027	3-31-2027	2.5239	2.5239
26	4-1-2027	6-30-2027	2.5248	2.5248
27	7-1-2027	9-30-2027	2.5525	2.5525
28	10-1-2027	12-31-2027	2.5800	2.5800

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

29	1-1-2028	3-31-2028	2.4927	2.4927
30	4-1-2028	6-30-2028	2.4670	2.4670
31	7-1-2028	9-30-2028	2.4941	2.4941
32	10-1-2028	12-31-2028	2.5201	2.5201
33	1-1-2029	3-31-2029	0.3268	0.3268
34	4-1-2029	6-30-2029	0.3103	0.3103
35	7-1-2029	9-30-2029	13.3003	13.3003
		Highest	13.3003	13.3003

**2.2 Overall Operational**  
**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	27.8767	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587
Energy	0.1899	1.6223	0.6904	0.0104		0.1312	0.1312		0.1312	0.1312			8,098.9792	0.3416	0.0977	8,136.6238
Mobile	5.5444	25.6253	63.5170	0.2630	28.7999	0.1740	28.9739	7.7127	0.1618	7.8745			24,303.3050	0.9475	0.0000	24,326.9926
Waste						0.0000	0.0000		0.0000	0.0000			537.9382	31.7912	0.0000	1,332.7192
Water						0.0000	0.0000		0.0000	0.0000			855.3385	0.4926	0.2961	955.9031
<b>Total</b>	<b>33.6109</b>	<b>27.9307</b>	<b>123.4616</b>	<b>0.2765</b>	<b>28.7999</b>	<b>0.6347</b>	<b>29.4346</b>	<b>7.7127</b>	<b>0.6225</b>	<b>8.3352</b>			<b>33,892.6081</b>	<b>33.6654</b>	<b>0.3938</b>	<b>34,851.5975</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	27.8767	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587
Energy	0.1899	1.6223	0.6904	0.0104		0.1312	0.1312		0.1312	0.1312			8,098.9792	0.3416	0.0977	8,136.6238
Mobile	5.5444	25.6253	63.5170	0.2630	28.7999	0.1740	28.9739	7.7127	0.1618	7.8745			24,303.3050	0.9475	0.0000	24,326.9926
Waste						0.0000	0.0000		0.0000	0.0000			537.9382	31.7912	0.0000	1,332.7192
Water						0.0000	0.0000		0.0000	0.0000			855.3385	0.4926	0.2961	955.9031
<b>Total</b>	<b>33.6109</b>	<b>27.9307</b>	<b>123.4616</b>	<b>0.2765</b>	<b>28.7999</b>	<b>0.6347</b>	<b>29.4346</b>	<b>7.7127</b>	<b>0.6225</b>	<b>8.3352</b>			<b>33,892.6081</b>	<b>33.6654</b>	<b>0.3938</b>	<b>34,851.5975</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2021	4/9/2021	5	71	
2	Grading	Grading	4/10/2021	12/22/2021	5	183	
3	Building Construction	Building Construction	12/23/2021	1/1/2029	5	1833	
4	Paving	Paving	1/3/2029	7/3/2029	5	130	
5	Architectural Coating	Architectural Coating	7/4/2029	12/31/2029	5	129	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 1162.5**

**Acres of Paving: 0**

**Residential Indoor: 8,641,500; Residential Outdoor: 2,880,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	4,148.00	616.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	830.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6414	0.0000	0.6414	0.3525	0.0000	0.3525			0.0000	0.0000	0.0000	0.0000
Off-Road	0.1380	1.4377	0.7510	1.3500e-003		0.0726	0.0726		0.0668	0.0668			118.6968	0.0384	0.0000	119.6565
<b>Total</b>	<b>0.1380</b>	<b>1.4377</b>	<b>0.7510</b>	<b>1.3500e-003</b>	<b>0.6414</b>	<b>0.0726</b>	<b>0.7139</b>	<b>0.3525</b>	<b>0.0668</b>	<b>0.4193</b>			<b>118.6968</b>	<b>0.0384</b>	<b>0.0000</b>	<b>119.6565</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	1.4500e-003	0.0162	4.0000e-005	4.6900e-003	3.0000e-005	4.7300e-003	1.2500e-003	3.0000e-005	1.2800e-003			4.0166	1.1000e-004	0.0000	4.0193
<b>Total</b>	<b>2.2100e-003</b>	<b>1.4500e-003</b>	<b>0.0162</b>	<b>4.0000e-005</b>	<b>4.6900e-003</b>	<b>3.0000e-005</b>	<b>4.7300e-003</b>	<b>1.2500e-003</b>	<b>3.0000e-005</b>	<b>1.2800e-003</b>			<b>4.0166</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>4.0193</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.2 Site Preparation - 2021**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6414	0.0000	0.6414	0.3525	0.0000	0.3525			0.0000	0.0000	0.0000	0.0000
Off-Road	0.1380	1.4377	0.7510	1.3500e-003		0.0726	0.0726		0.0668	0.0668			118.6967	0.0384	0.0000	119.6564
<b>Total</b>	<b>0.1380</b>	<b>1.4377</b>	<b>0.7510</b>	<b>1.3500e-003</b>	<b>0.6414</b>	<b>0.0726</b>	<b>0.7139</b>	<b>0.3525</b>	<b>0.0668</b>	<b>0.4193</b>			<b>118.6967</b>	<b>0.0384</b>	<b>0.0000</b>	<b>119.6564</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	1.4500e-003	0.0162	4.0000e-005	4.6900e-003	3.0000e-005	4.7300e-003	1.2500e-003	3.0000e-005	1.2800e-003			4.0166	1.1000e-004	0.0000	4.0193
<b>Total</b>	<b>2.2100e-003</b>	<b>1.4500e-003</b>	<b>0.0162</b>	<b>4.0000e-005</b>	<b>4.6900e-003</b>	<b>3.0000e-005</b>	<b>4.7300e-003</b>	<b>1.2500e-003</b>	<b>3.0000e-005</b>	<b>1.2800e-003</b>			<b>4.0166</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>4.0193</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.3 Grading - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1674	0.0000	1.1674	0.3694	0.0000	0.3694			0.0000	0.0000	0.0000	0.0000
Off-Road	0.3835	4.2456	2.8254	5.6700e-003		0.1817	0.1817		0.1671	0.1671			498.6291	0.1613	0.0000	502.6608
<b>Total</b>	<b>0.3835</b>	<b>4.2456</b>	<b>2.8254</b>	<b>5.6700e-003</b>	<b>1.1674</b>	<b>0.1817</b>	<b>1.3491</b>	<b>0.3694</b>	<b>0.1671</b>	<b>0.5366</b>			<b>498.6291</b>	<b>0.1613</b>	<b>0.0000</b>	<b>502.6608</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	6.3400e-003	4.1400e-003	0.0463	1.3000e-004	0.0134	9.0000e-005	0.0135	3.5700e-003	9.0000e-005	3.6600e-003			11.5030	3.0000e-004	0.0000	11.5105
<b>Total</b>	<b>6.3400e-003</b>	<b>4.1400e-003</b>	<b>0.0463</b>	<b>1.3000e-004</b>	<b>0.0134</b>	<b>9.0000e-005</b>	<b>0.0135</b>	<b>3.5700e-003</b>	<b>9.0000e-005</b>	<b>3.6600e-003</b>			<b>11.5030</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>11.5105</b>



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.3 Grading - 2021**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1674	0.0000	1.1674	0.3694	0.0000	0.3694			0.0000	0.0000	0.0000	0.0000
Off-Road	0.3835	4.2456	2.8254	5.6700e-003		0.1817	0.1817		0.1671	0.1671			498.6285	0.1613	0.0000	502.6602
<b>Total</b>	<b>0.3835</b>	<b>4.2456</b>	<b>2.8254</b>	<b>5.6700e-003</b>	<b>1.1674</b>	<b>0.1817</b>	<b>1.3491</b>	<b>0.3694</b>	<b>0.1671</b>	<b>0.5366</b>			<b>498.6285</b>	<b>0.1613</b>	<b>0.0000</b>	<b>502.6602</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	6.3400e-003	4.1400e-003	0.0463	1.3000e-004	0.0134	9.0000e-005	0.0135	3.5700e-003	9.0000e-005	3.6600e-003			11.5030	3.0000e-004	0.0000	11.5105
<b>Total</b>	<b>6.3400e-003</b>	<b>4.1400e-003</b>	<b>0.0463</b>	<b>1.3000e-004</b>	<b>0.0134</b>	<b>9.0000e-005</b>	<b>0.0135</b>	<b>3.5700e-003</b>	<b>9.0000e-005</b>	<b>3.6600e-003</b>			<b>11.5030</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>11.5105</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.6500e-003	0.0610	0.0580	9.0000e-005		3.3600e-003	3.3600e-003		3.1500e-003	3.1500e-003			8.1073	1.9600e-003	0.0000	8.1562
<b>Total</b>	<b>6.6500e-003</b>	<b>0.0610</b>	<b>0.0580</b>	<b>9.0000e-005</b>		<b>3.3600e-003</b>	<b>3.3600e-003</b>		<b>3.1500e-003</b>	<b>3.1500e-003</b>			<b>8.1073</b>	<b>1.9600e-003</b>	<b>0.0000</b>	<b>8.1562</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	6.7800e-003	0.2206	0.0590	5.3000e-004	0.0126	6.1000e-004	0.0132	3.6400e-003	5.8000e-004	4.2300e-003			50.5894	2.8900e-003	0.0000	50.6617
Worker	0.0503	0.0329	0.3675	1.0100e-003	0.1066	7.5000e-004	0.1074	0.0284	6.9000e-004	0.0291			91.2571	2.4000e-003	0.0000	91.3170
<b>Total</b>	<b>0.0571</b>	<b>0.2534</b>	<b>0.4264</b>	<b>1.5400e-003</b>	<b>0.1192</b>	<b>1.3600e-003</b>	<b>0.1206</b>	<b>0.0320</b>	<b>1.2700e-003</b>	<b>0.0333</b>			<b>141.8465</b>	<b>5.2900e-003</b>	<b>0.0000</b>	<b>141.9787</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2021**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.6500e-003	0.0610	0.0580	9.0000e-005		3.3600e-003	3.3600e-003		3.1500e-003	3.1500e-003			8.1073	1.9600e-003	0.0000	8.1562
<b>Total</b>	<b>6.6500e-003</b>	<b>0.0610</b>	<b>0.0580</b>	<b>9.0000e-005</b>		<b>3.3600e-003</b>	<b>3.3600e-003</b>		<b>3.1500e-003</b>	<b>3.1500e-003</b>			<b>8.1073</b>	<b>1.9600e-003</b>	<b>0.0000</b>	<b>8.1562</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	6.7800e-003	0.2206	0.0590	5.3000e-004	0.0126	6.1000e-004	0.0132	3.6400e-003	5.8000e-004	4.2300e-003			50.5894	2.8900e-003	0.0000	50.6617
Worker	0.0503	0.0329	0.3675	1.0100e-003	0.1066	7.5000e-004	0.1074	0.0284	6.9000e-004	0.0291			91.2571	2.4000e-003	0.0000	91.3170
<b>Total</b>	<b>0.0571</b>	<b>0.2534</b>	<b>0.4264</b>	<b>1.5400e-003</b>	<b>0.1192</b>	<b>1.3600e-003</b>	<b>0.1206</b>	<b>0.0320</b>	<b>1.2700e-003</b>	<b>0.0333</b>			<b>141.8465</b>	<b>5.2900e-003</b>	<b>0.0000</b>	<b>141.9787</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990			301.2428	0.0722	0.0000	303.0471
<b>Total</b>	<b>0.2218</b>	<b>2.0300</b>	<b>2.1272</b>	<b>3.5000e-003</b>		<b>0.1052</b>	<b>0.1052</b>		<b>0.0990</b>	<b>0.0990</b>			<b>301.2428</b>	<b>0.0722</b>	<b>0.0000</b>	<b>303.0471</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.2337	7.7782	2.0188	0.0194	0.4681	0.0199	0.4880	0.1353	0.0190	0.1543			1,862.5170	0.1044	0.0000	1,865.1263
Worker	1.7450	1.0971	12.5415	0.0362	3.9604	0.0270	3.9874	1.0533	0.0248	1.0782			3,268.1409	0.0800	0.0000	3,270.1399
<b>Total</b>	<b>1.9788</b>	<b>8.8753</b>	<b>14.5602</b>	<b>0.0555</b>	<b>4.4285</b>	<b>0.0468</b>	<b>4.4753</b>	<b>1.1886</b>	<b>0.0438</b>	<b>1.2325</b>			<b>5,130.6580</b>	<b>0.1843</b>	<b>0.0000</b>	<b>5,135.2662</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990			301.2425	0.0722	0.0000	303.0467
<b>Total</b>	<b>0.2218</b>	<b>2.0300</b>	<b>2.1272</b>	<b>3.5000e-003</b>		<b>0.1052</b>	<b>0.1052</b>		<b>0.0990</b>	<b>0.0990</b>			<b>301.2425</b>	<b>0.0722</b>	<b>0.0000</b>	<b>303.0467</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.2337	7.7782	2.0188	0.0194	0.4681	0.0199	0.4880	0.1353	0.0190	0.1543			1,862.5170	0.1044	0.0000	1,865.1263
Worker	1.7450	1.0971	12.5415	0.0362	3.9604	0.0270	3.9874	1.0533	0.0248	1.0782			3,268.1409	0.0800	0.0000	3,270.1399
<b>Total</b>	<b>1.9788</b>	<b>8.8753</b>	<b>14.5602</b>	<b>0.0555</b>	<b>4.4285</b>	<b>0.0468</b>	<b>4.4753</b>	<b>1.1886</b>	<b>0.0438</b>	<b>1.2325</b>			<b>5,130.6580</b>	<b>0.1843</b>	<b>0.0000</b>	<b>5,135.2662</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856			301.3462	0.0717	0.0000	303.1383
<b>Total</b>	<b>0.2045</b>	<b>1.8700</b>	<b>2.1117</b>	<b>3.5000e-003</b>		<b>0.0910</b>	<b>0.0910</b>		<b>0.0856</b>	<b>0.0856</b>			<b>301.3462</b>	<b>0.0717</b>	<b>0.0000</b>	<b>303.1383</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1848	6.5739	1.7860	0.0190	0.4681	9.4500e-003	0.4775	0.1353	9.0300e-003	0.1443			1,828.0913	0.0936	0.0000	1,830.4319
Worker	1.6334	0.9871	11.5181	0.0348	3.9604	0.0263	3.9867	1.0533	0.0242	1.0776			3,145.4172	0.0717	0.0000	3,147.2094
<b>Total</b>	<b>1.8181</b>	<b>7.5610</b>	<b>13.3041</b>	<b>0.0538</b>	<b>4.4285</b>	<b>0.0358</b>	<b>4.4642</b>	<b>1.1886</b>	<b>0.0333</b>	<b>1.2219</b>			<b>4,973.5085</b>	<b>0.1653</b>	<b>0.0000</b>	<b>4,977.6413</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2023**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856			301.3458	0.0717	0.0000	303.1380
<b>Total</b>	<b>0.2045</b>	<b>1.8700</b>	<b>2.1117</b>	<b>3.5000e-003</b>		<b>0.0910</b>	<b>0.0910</b>		<b>0.0856</b>	<b>0.0856</b>			<b>301.3458</b>	<b>0.0717</b>	<b>0.0000</b>	<b>303.1380</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1848	6.5739	1.7860	0.0190	0.4681	9.4500e-003	0.4775	0.1353	9.0300e-003	0.1443			1,828.0913	0.0936	0.0000	1,830.4319
Worker	1.6334	0.9871	11.5181	0.0348	3.9604	0.0263	3.9867	1.0533	0.0242	1.0776			3,145.4172	0.0717	0.0000	3,147.2094
<b>Total</b>	<b>1.8181</b>	<b>7.5610</b>	<b>13.3041</b>	<b>0.0538</b>	<b>4.4285</b>	<b>0.0358</b>	<b>4.4642</b>	<b>1.1886</b>	<b>0.0333</b>	<b>1.2219</b>			<b>4,973.5085</b>	<b>0.1653</b>	<b>0.0000</b>	<b>4,977.6413</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2024**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756			303.7223	0.0718	0.0000	305.5179
<b>Total</b>	<b>0.1928</b>	<b>1.7611</b>	<b>2.1179</b>	<b>3.5300e-003</b>		<b>0.0803</b>	<b>0.0803</b>		<b>0.0756</b>	<b>0.0756</b>			<b>303.7223</b>	<b>0.0718</b>	<b>0.0000</b>	<b>305.5179</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1774	6.4980	1.6825	0.0190	0.4716	9.0400e-003	0.4807	0.1363	8.6400e-003	0.1449			1,831.4592	0.0932	0.0000	1,833.7891
Worker	1.5477	0.8991	10.7486	0.0337	3.9909	0.0259	4.0168	1.0614	0.0239	1.0853			3,046.3998	0.0652	0.0000	3,048.0288
<b>Total</b>	<b>1.7251</b>	<b>7.3971</b>	<b>12.4311</b>	<b>0.0527</b>	<b>4.4625</b>	<b>0.0350</b>	<b>4.4975</b>	<b>1.1977</b>	<b>0.0325</b>	<b>1.2302</b>			<b>4,877.8589</b>	<b>0.1584</b>	<b>0.0000</b>	<b>4,881.8179</b>



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2024**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756			303.7220	0.0718	0.0000	305.5175
<b>Total</b>	<b>0.1928</b>	<b>1.7611</b>	<b>2.1179</b>	<b>3.5300e-003</b>		<b>0.0803</b>	<b>0.0803</b>		<b>0.0756</b>	<b>0.0756</b>			<b>303.7220</b>	<b>0.0718</b>	<b>0.0000</b>	<b>305.5175</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1774	6.4980	1.6825	0.0190	0.4716	9.0400e-003	0.4807	0.1363	8.6400e-003	0.1449			1,831.4592	0.0932	0.0000	1,833.7891
Worker	1.5477	0.8991	10.7486	0.0337	3.9909	0.0259	4.0168	1.0614	0.0239	1.0853			3,046.3998	0.0652	0.0000	3,048.0288
<b>Total</b>	<b>1.7251</b>	<b>7.3971</b>	<b>12.4311</b>	<b>0.0527</b>	<b>4.4625</b>	<b>0.0350</b>	<b>4.4975</b>	<b>1.1977</b>	<b>0.0325</b>	<b>1.2302</b>			<b>4,877.8589</b>	<b>0.1584</b>	<b>0.0000</b>	<b>4,881.8179</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648			302.6549	0.0711	0.0000	304.4335
<b>Total</b>	<b>0.1785</b>	<b>1.6273</b>	<b>2.0991</b>	<b>3.5200e-003</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0648</b>	<b>0.0648</b>			<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1695	6.3532	1.5869	0.0188	0.4698	8.5400e-003	0.4783	0.1358	8.1600e-003	0.1439			1,814.1704	0.0918	0.0000	1,816.4642
Worker	1.4560	0.8133	9.9182	0.0322	3.9756	0.0254	4.0010	1.0574	0.0233	1.0807			2,913.2702	0.0588	0.0000	2,914.7411
<b>Total</b>	<b>1.6256</b>	<b>7.1665</b>	<b>11.5051</b>	<b>0.0510</b>	<b>4.4454</b>	<b>0.0339</b>	<b>4.4793</b>	<b>1.1931</b>	<b>0.0315</b>	<b>1.2246</b>			<b>4,727.4407</b>	<b>0.1506</b>	<b>0.0000</b>	<b>4,731.2053</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2025**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648			302.6545	0.0711	0.0000	304.4331
<b>Total</b>	<b>0.1784</b>	<b>1.6273</b>	<b>2.0991</b>	<b>3.5200e-003</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0648</b>	<b>0.0648</b>			<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1695	6.3532	1.5869	0.0188	0.4698	8.5400e-003	0.4783	0.1358	8.1600e-003	0.1439			1,814.1704	0.0918	0.0000	1,816.4642
Worker	1.4560	0.8133	9.9182	0.0322	3.9756	0.0254	4.0010	1.0574	0.0233	1.0807			2,913.2702	0.0588	0.0000	2,914.7411
<b>Total</b>	<b>1.6256</b>	<b>7.1665</b>	<b>11.5051</b>	<b>0.0510</b>	<b>4.4454</b>	<b>0.0339</b>	<b>4.4793</b>	<b>1.1931</b>	<b>0.0315</b>	<b>1.2246</b>			<b>4,727.4407</b>	<b>0.1506</b>	<b>0.0000</b>	<b>4,731.2053</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2026**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648			302.6549	0.0711	0.0000	304.4335
<b>Total</b>	<b>0.1785</b>	<b>1.6273</b>	<b>2.0991</b>	<b>3.5200e-003</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0648</b>	<b>0.0648</b>			<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1632	6.2391	1.5144	0.0187	0.4698	8.0700e-003	0.4778	0.1357	7.7200e-003	0.1435			1,804.3863	0.0908	0.0000	1,806.6553
Worker	1.3802	0.7430	9.2314	0.0310	3.9756	0.0246	4.0002	1.0574	0.0227	1.0800			2,805.0305	0.0536	0.0000	2,806.3694
<b>Total</b>	<b>1.5434</b>	<b>6.9820</b>	<b>10.7457</b>	<b>0.0497</b>	<b>4.4454</b>	<b>0.0327</b>	<b>4.4781</b>	<b>1.1931</b>	<b>0.0304</b>	<b>1.2235</b>			<b>4,609.4167</b>	<b>0.1443</b>	<b>0.0000</b>	<b>4,613.0247</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2026**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648			302.6545	0.0711	0.0000	304.4331
<b>Total</b>	<b>0.1784</b>	<b>1.6273</b>	<b>2.0991</b>	<b>3.5200e-003</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0648</b>	<b>0.0648</b>			<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1632	6.2391	1.5144	0.0187	0.4698	8.0700e-003	0.4778	0.1357	7.7200e-003	0.1435			1,804.3863	0.0908	0.0000	1,806.6553
Worker	1.3802	0.7430	9.2314	0.0310	3.9756	0.0246	4.0002	1.0574	0.0227	1.0800			2,805.0305	0.0536	0.0000	2,806.3694
<b>Total</b>	<b>1.5434</b>	<b>6.9820</b>	<b>10.7457</b>	<b>0.0497</b>	<b>4.4454</b>	<b>0.0327</b>	<b>4.4781</b>	<b>1.1931</b>	<b>0.0304</b>	<b>1.2235</b>			<b>4,609.4167</b>	<b>0.1443</b>	<b>0.0000</b>	<b>4,613.0247</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2027**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648			302.6549	0.0711	0.0000	304.4335
<b>Total</b>	<b>0.1785</b>	<b>1.6273</b>	<b>2.0991</b>	<b>3.5200e-003</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0648</b>	<b>0.0648</b>			<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1576	6.1341	1.4513	0.0186	0.4697	7.6800e-003	0.4774	0.1357	7.3400e-003	0.1431			1,795.1853	0.0898	0.0000	1,797.4302
Worker	1.3060	0.6798	8.6114	0.0299	3.9756	0.0234	3.9990	1.0574	0.0215	1.0789			2,708.1356	0.0488	0.0000	2,709.3555
<b>Total</b>	<b>1.4636</b>	<b>6.8139</b>	<b>10.0626</b>	<b>0.0486</b>	<b>4.4453</b>	<b>0.0311</b>	<b>4.4764</b>	<b>1.1931</b>	<b>0.0289</b>	<b>1.2220</b>			<b>4,503.3209</b>	<b>0.1386</b>	<b>0.0000</b>	<b>4,506.7857</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2027**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648			302.6545	0.0711	0.0000	304.4331
<b>Total</b>	<b>0.1784</b>	<b>1.6273</b>	<b>2.0991</b>	<b>3.5200e-003</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0648</b>	<b>0.0648</b>			<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1576	6.1341	1.4513	0.0186	0.4697	7.6800e-003	0.4774	0.1357	7.3400e-003	0.1431			1,795.1853	0.0898	0.0000	1,797.4302
Worker	1.3060	0.6798	8.6114	0.0299	3.9756	0.0234	3.9990	1.0574	0.0215	1.0789			2,708.1356	0.0488	0.0000	2,709.3555
<b>Total</b>	<b>1.4636</b>	<b>6.8139</b>	<b>10.0626</b>	<b>0.0486</b>	<b>4.4453</b>	<b>0.0311</b>	<b>4.4764</b>	<b>1.1931</b>	<b>0.0289</b>	<b>1.2220</b>			<b>4,503.3209</b>	<b>0.1386</b>	<b>0.0000</b>	<b>4,506.7857</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2028**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645			301.4953	0.0709	0.0000	303.2671
<b>Total</b>	<b>0.1778</b>	<b>1.6211</b>	<b>2.0910</b>	<b>3.5000e-003</b>		<b>0.0686</b>	<b>0.0686</b>		<b>0.0645</b>	<b>0.0645</b>			<b>301.4953</b>	<b>0.0709</b>	<b>0.0000</b>	<b>303.2671</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1521	6.0216	1.3926	0.0185	0.4679	7.3100e-003	0.4752	0.1352	6.9900e-003	0.1422			1,780.4880	0.0885	0.0000	1,782.6999
Worker	1.2243	0.6214	8.0339	0.0289	3.9604	0.0218	3.9821	1.0533	0.0200	1.0734			2,612.0743	0.0445	0.0000	2,613.1871
<b>Total</b>	<b>1.3764</b>	<b>6.6430</b>	<b>9.4265</b>	<b>0.0473</b>	<b>4.4283</b>	<b>0.0291</b>	<b>4.4573</b>	<b>1.1885</b>	<b>0.0270</b>	<b>1.2155</b>			<b>4,392.5624</b>	<b>0.1330</b>	<b>0.0000</b>	<b>4,395.8870</b>



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2028**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645			301.4949	0.0709	0.0000	303.2667
<b>Total</b>	<b>0.1778</b>	<b>1.6211</b>	<b>2.0910</b>	<b>3.5000e-003</b>		<b>0.0686</b>	<b>0.0686</b>		<b>0.0645</b>	<b>0.0645</b>			<b>301.4949</b>	<b>0.0709</b>	<b>0.0000</b>	<b>303.2667</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.1521	6.0216	1.3926	0.0185	0.4679	7.3100e-003	0.4752	0.1352	6.9900e-003	0.1422			1,780.4880	0.0885	0.0000	1,782.6999
Worker	1.2243	0.6214	8.0339	0.0289	3.9604	0.0218	3.9821	1.0533	0.0200	1.0734			2,612.0743	0.0445	0.0000	2,613.1871
<b>Total</b>	<b>1.3764</b>	<b>6.6430</b>	<b>9.4265</b>	<b>0.0473</b>	<b>4.4283</b>	<b>0.0291</b>	<b>4.4573</b>	<b>1.1885</b>	<b>0.0270</b>	<b>1.2155</b>			<b>4,392.5624</b>	<b>0.1330</b>	<b>0.0000</b>	<b>4,395.8870</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2029**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8000e-004	6.2300e-003	8.0400e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.5000e-004	2.5000e-004			1.1596	2.7000e-004	0.0000	1.1664
<b>Total</b>	<b>6.8000e-004</b>	<b>6.2300e-003</b>	<b>8.0400e-003</b>	<b>1.0000e-005</b>		<b>2.6000e-004</b>	<b>2.6000e-004</b>		<b>2.5000e-004</b>	<b>2.5000e-004</b>			<b>1.1596</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.1664</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	5.7000e-004	0.0228	5.1900e-003	7.0000e-005	1.8000e-003	3.0000e-005	1.8300e-003	5.2000e-004	3.0000e-005	5.5000e-004			6.8207	3.4000e-004	0.0000	6.8291
Worker	4.3900e-003	2.1900e-003	0.0289	1.1000e-004	0.0152	8.0000e-005	0.0153	4.0500e-003	7.0000e-005	4.1200e-003			9.7544	1.6000e-004	0.0000	9.7583
<b>Total</b>	<b>4.9600e-003</b>	<b>0.0250</b>	<b>0.0341</b>	<b>1.8000e-004</b>	<b>0.0170</b>	<b>1.1000e-004</b>	<b>0.0171</b>	<b>4.5700e-003</b>	<b>1.0000e-004</b>	<b>4.6700e-003</b>			<b>16.5750</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>16.5873</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.4 Building Construction - 2029**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8000e-004	6.2300e-003	8.0400e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.5000e-004	2.5000e-004			1.1596	2.7000e-004	0.0000	1.1664
<b>Total</b>	<b>6.8000e-004</b>	<b>6.2300e-003</b>	<b>8.0400e-003</b>	<b>1.0000e-005</b>		<b>2.6000e-004</b>	<b>2.6000e-004</b>		<b>2.5000e-004</b>	<b>2.5000e-004</b>			<b>1.1596</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.1664</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	5.7000e-004	0.0228	5.1900e-003	7.0000e-005	1.8000e-003	3.0000e-005	1.8300e-003	5.2000e-004	3.0000e-005	5.5000e-004			6.8207	3.4000e-004	0.0000	6.8291
Worker	4.3900e-003	2.1900e-003	0.0289	1.1000e-004	0.0152	8.0000e-005	0.0153	4.0500e-003	7.0000e-005	4.1200e-003			9.7544	1.6000e-004	0.0000	9.7583
<b>Total</b>	<b>4.9600e-003</b>	<b>0.0250</b>	<b>0.0341</b>	<b>1.8000e-004</b>	<b>0.0170</b>	<b>1.1000e-004</b>	<b>0.0171</b>	<b>4.5700e-003</b>	<b>1.0000e-004</b>	<b>4.6700e-003</b>			<b>16.5750</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>16.5873</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.5 Paving - 2029**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0595	0.5578	0.9476	1.4800e-003		0.0272	0.0272		0.0250	0.0250			130.1252	0.0421	0.0000	131.1773
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0595</b>	<b>0.5578</b>	<b>0.9476</b>	<b>1.4800e-003</b>		<b>0.0272</b>	<b>0.0272</b>		<b>0.0250</b>	<b>0.0250</b>			<b>130.1252</b>	<b>0.0421</b>	<b>0.0000</b>	<b>131.1773</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.0600e-003	1.0300e-003	0.0136	5.0000e-005	7.1600e-003	4.0000e-005	7.2000e-003	1.9000e-003	3.0000e-005	1.9400e-003			4.5856	7.0000e-005	0.0000	4.5874
<b>Total</b>	<b>2.0600e-003</b>	<b>1.0300e-003</b>	<b>0.0136</b>	<b>5.0000e-005</b>	<b>7.1600e-003</b>	<b>4.0000e-005</b>	<b>7.2000e-003</b>	<b>1.9000e-003</b>	<b>3.0000e-005</b>	<b>1.9400e-003</b>			<b>4.5856</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>4.5874</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.5 Paving - 2029**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0595	0.5578	0.9476	1.4800e-003		0.0272	0.0272		0.0250	0.0250			130.1250	0.0421	0.0000	131.1771
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0595</b>	<b>0.5578</b>	<b>0.9476</b>	<b>1.4800e-003</b>		<b>0.0272</b>	<b>0.0272</b>		<b>0.0250</b>	<b>0.0250</b>			<b>130.1250</b>	<b>0.0421</b>	<b>0.0000</b>	<b>131.1771</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.0600e-003	1.0300e-003	0.0136	5.0000e-005	7.1600e-003	4.0000e-005	7.2000e-003	1.9000e-003	3.0000e-005	1.9400e-003			4.5856	7.0000e-005	0.0000	4.5874
<b>Total</b>	<b>2.0600e-003</b>	<b>1.0300e-003</b>	<b>0.0136</b>	<b>5.0000e-005</b>	<b>7.1600e-003</b>	<b>4.0000e-005</b>	<b>7.2000e-003</b>	<b>1.9000e-003</b>	<b>3.0000e-005</b>	<b>1.9400e-003</b>			<b>4.5856</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>4.5874</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.6 Architectural Coating - 2029**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	26.7022					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0739	0.1167	1.9000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003			16.4685	9.0000e-004	0.0000	16.4910
<b>Total</b>	<b>26.7133</b>	<b>0.0739</b>	<b>0.1167</b>	<b>1.9000e-004</b>		<b>3.3200e-003</b>	<b>3.3200e-003</b>		<b>3.3200e-003</b>	<b>3.3200e-003</b>			<b>16.4685</b>	<b>9.0000e-004</b>	<b>0.0000</b>	<b>16.4910</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.1133	0.0565	0.7457	2.7800e-003	0.3932	2.0100e-003	0.3952	0.1046	1.8500e-003	0.1064			251.7838	4.0300e-003	0.0000	251.8846
<b>Total</b>	<b>0.1133</b>	<b>0.0565</b>	<b>0.7457</b>	<b>2.7800e-003</b>	<b>0.3932</b>	<b>2.0100e-003</b>	<b>0.3952</b>	<b>0.1046</b>	<b>1.8500e-003</b>	<b>0.1064</b>			<b>251.7838</b>	<b>4.0300e-003</b>	<b>0.0000</b>	<b>251.8846</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**3.6 Architectural Coating - 2029**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	26.7022					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0739	0.1167	1.9000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003			16.4685	9.0000e-004	0.0000	16.4909
<b>Total</b>	<b>26.7133</b>	<b>0.0739</b>	<b>0.1167</b>	<b>1.9000e-004</b>		<b>3.3200e-003</b>	<b>3.3200e-003</b>		<b>3.3200e-003</b>	<b>3.3200e-003</b>			<b>16.4685</b>	<b>9.0000e-004</b>	<b>0.0000</b>	<b>16.4909</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	0.1133	0.0565	0.7457	2.7800e-003	0.3932	2.0100e-003	0.3952	0.1046	1.8500e-003	0.1064			251.7838	4.0300e-003	0.0000	251.8846
<b>Total</b>	<b>0.1133</b>	<b>0.0565</b>	<b>0.7457</b>	<b>2.7800e-003</b>	<b>0.3932</b>	<b>2.0100e-003</b>	<b>0.3952</b>	<b>0.1046</b>	<b>1.8500e-003</b>	<b>0.1064</b>			<b>251.7838</b>	<b>4.0300e-003</b>	<b>0.0000</b>	<b>251.8846</b>

**4.0 Operational Detail - Mobile**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.5444	25.6253	63.5170	0.2630	28.7999	0.1740	28.9739	7.7127	0.1618	7.8745			24,303.30 50	0.9475	0.0000	24,326.99 26
Unmitigated	5.5444	25.6253	63.5170	0.2630	28.7999	0.1740	28.9739	7.7127	0.1618	7.8745			24,303.30 50	0.9475	0.0000	24,326.99 26

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	13,620.60	16,150.14	11836.95	35,225,378	35,225,378
Apartments Low Rise	3,631.09	3,945.16	3344.57	9,327,872	9,327,872
Apartments Mid Rise	13,080.55	12,569.13	11526.62	32,808,987	32,808,987
Total	30,332.24	32,664.43	26,708.14	77,362,237	77,362,237

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.576778	0.034729	0.211659	0.106131	0.012287	0.004450	0.018380	0.025480	0.001877	0.001519	0.005480	0.000610	0.000618
Apartments Low Rise	0.576778	0.034729	0.211659	0.106131	0.012287	0.004450	0.018380	0.025480	0.001877	0.001519	0.005480	0.000610	0.000618
Apartments Mid Rise	0.576778	0.034729	0.211659	0.106131	0.012287	0.004450	0.018380	0.025480	0.001877	0.001519	0.005480	0.000610	0.000618

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000			6,220.1661	0.3056	0.0632	6,246.6459
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000			6,220.1661	0.3056	0.0632	6,246.6459
NaturalGas Mitigated	0.1899	1.6223	0.6904	0.0104		0.1312	0.1312		0.1312	0.1312			1,878.8131	0.0360	0.0344	1,889.9779
NaturalGas Unmitigated	0.1899	1.6223	0.6904	0.0104		0.1312	0.1312		0.1312	0.1312			1,878.8131	0.0360	0.0344	1,889.9779

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	1.94765e+007	0.1050	0.8975	0.3819	5.7300e-003		0.0726	0.0726		0.0726	0.0726			1,039.3394	0.0199	0.0191	1,045.5157
Apartments Low Rise	3.91789e+006	0.0211	0.1805	0.0768	1.1500e-003		0.0146	0.0146		0.0146	0.0146			209.0736	4.0100e-003	3.8300e-003	210.3160
Apartments Mid Rise	1.18133e+007	0.0637	0.5443	0.2316	3.4700e-003		0.0440	0.0440		0.0440	0.0440			630.4001	0.0121	0.0116	634.1462
<b>Total</b>		<b>0.1899</b>	<b>1.6223</b>	<b>0.6903</b>	<b>0.0104</b>		<b>0.1312</b>	<b>0.1312</b>		<b>0.1312</b>	<b>0.1312</b>			<b>1,878.8131</b>	<b>0.0360</b>	<b>0.0344</b>	<b>1,889.9779</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	1.94765e+007	0.1050	0.8975	0.3819	5.7300e-003		0.0726	0.0726		0.0726	0.0726			1,039.3394	0.0199	0.0191	1,045.5157
Apartments Low Rise	3.91789e+006	0.0211	0.1805	0.0768	1.1500e-003		0.0146	0.0146		0.0146	0.0146			209.0736	4.0100e-003	3.8300e-003	210.3160
Apartments Mid Rise	1.18133e+007	0.0637	0.5443	0.2316	3.4700e-003		0.0440	0.0440		0.0440	0.0440			630.4001	0.0121	0.0116	634.1462
<b>Total</b>		<b>0.1899</b>	<b>1.6223</b>	<b>0.6903</b>	<b>0.0104</b>		<b>0.1312</b>	<b>0.1312</b>		<b>0.1312</b>	<b>0.1312</b>			<b>1,878.8131</b>	<b>0.0360</b>	<b>0.0344</b>	<b>1,889.9779</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.30114e+007	3,483.9259	0.1712	0.0354	3,498.7573
Apartments Low Rise	2.32706e+006	623.0939	0.0306	6.3300e-003	625.7465
Apartments Mid Rise	7.89194e+006	2,113.1463	0.1038	0.0215	2,122.1422
<b>Total</b>		<b>6,220.1661</b>	<b>0.3056</b>	<b>0.0632</b>	<b>6,246.6459</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.30114e+007	3,483.9259	0.1712	0.0354	3,498.7573
Apartments Low Rise	2.32706e+006	623.0939	0.0306	6.3300e-003	625.7465
Apartments Mid Rise	7.89194e+006	2,113.1463	0.1038	0.0215	2,122.1422
<b>Total</b>		<b>6,220.1661</b>	<b>0.3056</b>	<b>0.0632</b>	<b>6,246.6459</b>

**6.0 Area Detail**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	27.8767	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587
Unmitigated	27.8767	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6048					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	22.4996					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	1.7723	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587
<b>Total</b>	<b>27.8767</b>	<b>0.6831</b>	<b>59.2542</b>	<b>3.1400e-003</b>		<b>0.3295</b>	<b>0.3295</b>		<b>0.3295</b>	<b>0.3295</b>			<b>97.0472</b>	<b>0.0925</b>	<b>0.0000</b>	<b>99.3587</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6048					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	22.4996					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	1.7723	0.6831	59.2542	3.1400e-003		0.3295	0.3295		0.3295	0.3295			97.0472	0.0925	0.0000	99.3587
<b>Total</b>	<b>27.8767</b>	<b>0.6831</b>	<b>59.2542</b>	<b>3.1400e-003</b>		<b>0.3295</b>	<b>0.3295</b>		<b>0.3295</b>	<b>0.3295</b>			<b>97.0472</b>	<b>0.0925</b>	<b>0.0000</b>	<b>99.3587</b>

**7.0 Water Detail**

---

**7.1 Mitigation Measures Water**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	855.3385	0.4926	0.2961	955.9031
Unmitigated	855.3385	0.4926	0.2961	955.9031

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	211.295 / 133.207	481.4898	0.2773	0.1667	538.0999
Apartments Low Rise	35.8999 / 22.6325	81.8072	0.0471	0.0283	91.4256
Apartments Mid Rise	128.158 / 80.7952	292.0415	0.1682	0.1011	326.3776
<b>Total</b>		<b>855.3385</b>	<b>0.4926</b>	<b>0.2961</b>	<b>955.9031</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	211.295 / 133.207	481.4898	0.2773	0.1667	538.0999
Apartments Low Rise	35.8999 / 22.6325	81.8072	0.0471	0.0283	91.4256
Apartments Mid Rise	128.158 / 80.7952	292.0415	0.1682	0.1011	326.3776
<b>Total</b>		<b>855.3385</b>	<b>0.4926</b>	<b>0.2961</b>	<b>955.9031</b>

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste**



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	537.9382	31.7912	0.0000	1,332.719 2
Unmitigated	537.9382	31.7912	0.0000	1,332.719 2

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	1491.78	302.8179	17.8960	0.0000	750.2184
Apartments Low Rise	253.46	51.4501	3.0406	0.0000	127.4654
Apartments Mid Rise	904.82	183.6703	10.8546	0.0000	455.0354
<b>Total</b>		<b>537.9382</b>	<b>31.7912</b>	<b>0.0000</b>	<b>1,332.719 2</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**8.2 Waste by Land Use**

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	1491.78	302.8179	17.8960	0.0000	750.2184
Apartments Low Rise	253.46	51.4501	3.0406	0.0000	127.4654
Apartments Mid Rise	904.82	183.6703	10.8546	0.0000	455.0354
<b>Total</b>		<b>537.9382</b>	<b>31.7912</b>	<b>0.0000</b>	<b>1,332.7192</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

**User Defined Equipment**

Equipment Type	Number
----------------	--------

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Annual

**11.0 Vegetation**

---

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**Elk Grove Housing Element Construction + Operation Emissions**  
**Sacramento County, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments High Rise	3,243.00	Dwelling Unit	139.43	3,243,000.00	8659
Apartments Low Rise	551.00	Dwelling Unit	30.38	551,000.00	1471
Apartments Mid Rise	1,967.00	Dwelling Unit	91.64	1,967,000.00	5252

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	6			<b>Operational Year</b>	2030
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MW hr)</b>	590.31	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

Project Characteristics - Emissions estimates for Elk Grove Housing Element Update (2021-2029).

Land Use - 261 acres of disturbed land + 5,761 DUs

Construction Phase - Construction to occur from 2021-2029. CalEEMod default ratios utilized.

Off-road Equipment - CalEEMod Defaults Used

Trips and VMT - No project specific information available

Demolition - No project specific information available

Grading - No project specific information available

Architectural Coating - Consistent with SMAQMD's Rule 422

Vehicle Trips - Values adjusted to adhere to Traffic Study

Energy Use - Adjusted to reflect consistency with 2019 California Energy Code

Water And Wastewater - Defaults used

Solid Waste - Defaults Used

## Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,888,675.00	2,880,500.00
tblArchitecturalCoating	ConstArea_Residential_Interior	11,666,025.00	8,641,500.00
tblConstructionPhase	NumDays	330.00	129.00
tblConstructionPhase	NumDays	4,650.00	1,833.00
tblConstructionPhase	NumDays	465.00	183.00
tblConstructionPhase	NumDays	330.00	130.00
tblConstructionPhase	NumDays	180.00	71.00
tblEnergyUse	T24E	460.92	216.60
tblEnergyUse	T24E	511.12	240.22
tblEnergyUse	T24E	460.92	216.63
tblEnergyUse	T24NG	7,061.10	3,318.70
tblEnergyUse	T24NG	9,411.72	4,423.51
tblEnergyUse	T24NG	7,061.10	3,318.72
tblGrading	AcresOfGrading	457.50	1,162.50
tblLandUse	LotAcreage	52.31	139.43
tblLandUse	LotAcreage	34.44	30.38
tblLandUse	LotAcreage	51.76	91.64

## 2.0 Emissions Summary

---

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	20.4294	87.8136	156.4632	0.4983	35.2605	2.0454	36.6017	9.9670	1.8818	11.8488			50,453.95 33	2.3423	0.0000	50,512.51 19
2022	18.9904	82.0917	145.1970	0.4853	35.2600	1.1651	36.4251	9.4364	1.0944	10.5308			49,174.22 59	2.2273	0.0000	49,229.90 90
2023	17.4728	71.1700	134.3432	0.4708	35.2596	0.9722	36.2318	9.4362	0.9119	10.3481			47,727.09 47	2.0574	0.0000	47,778.52 90
2024	16.4216	68.6334	125.8139	0.4583	35.2592	0.8779	36.1372	9.4361	0.8229	10.2590			46,487.66 50	1.9777	0.0000	46,537.10 81
2025	15.4920	66.1953	118.0193	0.4459	35.2589	0.7852	36.0441	9.4360	0.7357	10.1717			45,263.12 50	1.9080	0.0000	45,310.82 41
2026	14.7576	64.8578	111.3558	0.4348	35.2586	0.7762	36.0348	9.4359	0.7273	10.1631			44,167.15 02	1.8501	0.0000	44,213.40 31
2027	14.0458	63.6392	105.3616	0.4249	35.2583	0.7641	36.0224	9.4358	0.7160	10.1518			43,183.47 90	1.7973	0.0000	43,228.41 24
2028	13.3260	62.5825	100.0941	0.4162	35.2581	0.7497	36.0078	9.4357	0.7026	10.1383			42,313.55 39	1.7507	0.0000	42,357.32 20
2029	416.1738	61.5842	95.0968	0.4084	35.2579	0.7357	35.9936	9.4356	0.6897	10.1253			41,541.83 83	1.7060	0.0000	41,584.48 82
<b>Maximum</b>	<b>416.1738</b>	<b>87.8136</b>	<b>156.4632</b>	<b>0.4983</b>	<b>35.2605</b>	<b>2.0454</b>	<b>36.6017</b>	<b>9.9670</b>	<b>1.8818</b>	<b>11.8488</b>			<b>50,453.95 33</b>	<b>2.3423</b>	<b>0.0000</b>	<b>50,512.51 19</b>





Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	157.2165	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154	0.0000	876.1941
Energy	1.0403	8.8894	3.7827	0.0567		0.7187	0.7187		0.7187	0.7187			11,348.1474	0.2175	0.2081	11,415.5838
Mobile	42.9872	150.5167	434.8495	1.7159	180.2777	1.0507	181.3284	48.1417	0.9769	49.1186			174,531.0408	6.4132		174,691.3698
<b>Total</b>	<b>201.2439</b>	<b>164.8708</b>	<b>912.6660</b>	<b>1.7977</b>	<b>180.2777</b>	<b>4.4052</b>	<b>184.6829</b>	<b>48.1417</b>	<b>4.3314</b>	<b>52.4731</b>			<b>186,734.9980</b>	<b>7.4460</b>	<b>0.2081</b>	<b>186,983.1477</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	157.2165	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154	0.0000	876.1941
Energy	1.0403	8.8894	3.7827	0.0567		0.7187	0.7187		0.7187	0.7187			11,348.1474	0.2175	0.2081	11,415.5838
Mobile	42.9872	150.5167	434.8495	1.7159	180.2777	1.0507	181.3284	48.1417	0.9769	49.1186			174,531.0408	6.4132		174,691.3698
<b>Total</b>	<b>201.2439</b>	<b>164.8708</b>	<b>912.6660</b>	<b>1.7977</b>	<b>180.2777</b>	<b>4.4052</b>	<b>184.6829</b>	<b>48.1417</b>	<b>4.3314</b>	<b>52.4731</b>			<b>186,734.9980</b>	<b>7.4460</b>	<b>0.2081</b>	<b>186,983.1477</b>

## Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

---

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2021	4/9/2021	5	71	
2	Grading	Grading	4/10/2021	12/22/2021	5	183	
3	Building Construction	Building Construction	12/23/2021	1/1/2029	5	1833	
4	Paving	Paving	1/3/2029	7/3/2029	5	130	
5	Architectural Coating	Architectural Coating	7/4/2029	12/31/2029	5	129	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1162.5

Acres of Paving: 0

Residential Indoor: 8,641,500; Residential Outdoor: 2,880,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	4,148.00	616.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	830.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809			3,685.6569	1.1920		3,715.4573
<b>Total</b>	<b>3.8882</b>	<b>40.4971</b>	<b>21.1543</b>	<b>0.0380</b>	<b>18.0663</b>	<b>2.0445</b>	<b>20.1107</b>	<b>9.9307</b>	<b>1.8809</b>	<b>11.8116</b>			<b>3,685.6569</b>	<b>1.1920</b>		<b>3,715.4573</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0721	0.0369	0.5385	1.3900e-003	0.1369	9.2000e-004	0.1379	0.0363	8.5000e-004	0.0372			137.9662	3.6700e-003		138.0580
<b>Total</b>	<b>0.0721</b>	<b>0.0369</b>	<b>0.5385</b>	<b>1.3900e-003</b>	<b>0.1369</b>	<b>9.2000e-004</b>	<b>0.1379</b>	<b>0.0363</b>	<b>8.5000e-004</b>	<b>0.0372</b>			<b>137.9662</b>	<b>3.6700e-003</b>		<b>138.0580</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.2 Site Preparation - 2021**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809			3,685.6569	1.1920		3,715.4573
<b>Total</b>	<b>3.8882</b>	<b>40.4971</b>	<b>21.1543</b>	<b>0.0380</b>	<b>18.0663</b>	<b>2.0445</b>	<b>20.1107</b>	<b>9.9307</b>	<b>1.8809</b>	<b>11.8116</b>			<b>3,685.6569</b>	<b>1.1920</b>		<b>3,715.4573</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0721	0.0369	0.5385	1.3900e-003	0.1369	9.2000e-004	0.1379	0.0363	8.5000e-004	0.0372			137.9662	3.6700e-003		138.0580
<b>Total</b>	<b>0.0721</b>	<b>0.0369</b>	<b>0.5385</b>	<b>1.3900e-003</b>	<b>0.1369</b>	<b>9.2000e-004</b>	<b>0.1379</b>	<b>0.0363</b>	<b>8.5000e-004</b>	<b>0.0372</b>			<b>137.9662</b>	<b>3.6700e-003</b>		<b>138.0580</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.3 Grading - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.7589	0.0000	12.7589	4.0376	0.0000	4.0376			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265			6,007.0434	1.9428		6,055.6134
<b>Total</b>	<b>4.1912</b>	<b>46.3998</b>	<b>30.8785</b>	<b>0.0620</b>	<b>12.7589</b>	<b>1.9853</b>	<b>14.7442</b>	<b>4.0376</b>	<b>1.8265</b>	<b>5.8642</b>			<b>6,007.0434</b>	<b>1.9428</b>		<b>6,055.6134</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0802	0.0410	0.5983	1.5400e-003	0.1521	1.0300e-003	0.1532	0.0404	9.5000e-004	0.0413			153.2958	4.0800e-003		153.3978
<b>Total</b>	<b>0.0802</b>	<b>0.0410</b>	<b>0.5983</b>	<b>1.5400e-003</b>	<b>0.1521</b>	<b>1.0300e-003</b>	<b>0.1532</b>	<b>0.0404</b>	<b>9.5000e-004</b>	<b>0.0413</b>			<b>153.2958</b>	<b>4.0800e-003</b>		<b>153.3978</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.3 Grading - 2021**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.7589	0.0000	12.7589	4.0376	0.0000	4.0376			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265			6,007.0434	1.9428		6,055.6134
<b>Total</b>	<b>4.1912</b>	<b>46.3998</b>	<b>30.8785</b>	<b>0.0620</b>	<b>12.7589</b>	<b>1.9853</b>	<b>14.7442</b>	<b>4.0376</b>	<b>1.8265</b>	<b>5.8642</b>			<b>6,007.0434</b>	<b>1.9428</b>		<b>6,055.6134</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0802	0.0410	0.5983	1.5400e-003	0.1521	1.0300e-003	0.1532	0.0404	9.5000e-004	0.0413			153.2958	4.0800e-003		153.3978
<b>Total</b>	<b>0.0802</b>	<b>0.0410</b>	<b>0.5983</b>	<b>1.5400e-003</b>	<b>0.1521</b>	<b>1.0300e-003</b>	<b>0.1532</b>	<b>0.0404</b>	<b>9.5000e-004</b>	<b>0.0413</b>			<b>153.2958</b>	<b>4.0800e-003</b>		<b>153.3978</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013			2,553.3639	0.6160		2,568.7643
<b>Total</b>	<b>1.9009</b>	<b>17.4321</b>	<b>16.5752</b>	<b>0.0269</b>		<b>0.9586</b>	<b>0.9586</b>		<b>0.9013</b>	<b>0.9013</b>			<b>2,553.3639</b>	<b>0.6160</b>		<b>2,568.7643</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.9036	61.8713	15.7988	0.1520	3.7066	0.1697	3.8763	1.0666	0.1623	1.2289			16,107.0390	0.8803		16,129.0468
Worker	16.6249	8.5102	124.0891	0.3194	31.5538	0.2130	31.7668	8.3699	0.1963	8.5662			31,793.5504	0.8460		31,814.7008
<b>Total</b>	<b>18.5285</b>	<b>70.3815</b>	<b>139.8880</b>	<b>0.4714</b>	<b>35.2605</b>	<b>0.3827</b>	<b>35.6431</b>	<b>9.4366</b>	<b>0.3586</b>	<b>9.7951</b>			<b>47,900.5894</b>	<b>1.7263</b>		<b>47,943.7476</b>



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2021**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013			2,553.3639	0.6160		2,568.7643
<b>Total</b>	<b>1.9009</b>	<b>17.4321</b>	<b>16.5752</b>	<b>0.0269</b>		<b>0.9586</b>	<b>0.9586</b>		<b>0.9013</b>	<b>0.9013</b>			<b>2,553.3639</b>	<b>0.6160</b>		<b>2,568.7643</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.9036	61.8713	15.7988	0.1520	3.7066	0.1697	3.8763	1.0666	0.1623	1.2289			16,107.0390	0.8803		16,129.0468
Worker	16.6249	8.5102	124.0891	0.3194	31.5538	0.2130	31.7668	8.3699	0.1963	8.5662			31,793.5504	0.8460		31,814.7008
<b>Total</b>	<b>18.5285</b>	<b>70.3815</b>	<b>139.8880</b>	<b>0.4714</b>	<b>35.2605</b>	<b>0.3827</b>	<b>35.6431</b>	<b>9.4366</b>	<b>0.3586</b>	<b>9.7951</b>			<b>47,900.5894</b>	<b>1.7263</b>		<b>47,943.7476</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612			2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>			<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.7663	58.8220	14.5566	0.1506	3.7062	0.1486	3.8548	1.0664	0.1422	1.2086			15,966.5359	0.8549		15,987.9089
Worker	15.5178	7.6540	114.2770	0.3078	31.5538	0.2074	31.7612	8.3699	0.1911	8.5611			30,653.3564	0.7605		30,672.3679
<b>Total</b>	<b>17.2841</b>	<b>66.4760</b>	<b>128.8336</b>	<b>0.4584</b>	<b>35.2600</b>	<b>0.3561</b>	<b>35.6161</b>	<b>9.4364</b>	<b>0.3333</b>	<b>9.7697</b>			<b>46,619.8923</b>	<b>1.6154</b>		<b>46,660.2768</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612			2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>			<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.7663	58.8220	14.5566	0.1506	3.7062	0.1486	3.8548	1.0664	0.1422	1.2086			15,966.5359	0.8549		15,987.9089
Worker	15.5178	7.6540	114.2770	0.3078	31.5538	0.2074	31.7612	8.3699	0.1911	8.5611			30,653.3564	0.7605		30,672.3679
<b>Total</b>	<b>17.2841</b>	<b>66.4760</b>	<b>128.8336</b>	<b>0.4584</b>	<b>35.2600</b>	<b>0.3561</b>	<b>35.6161</b>	<b>9.4364</b>	<b>0.3333</b>	<b>9.7697</b>			<b>46,619.8923</b>	<b>1.6154</b>		<b>46,660.2768</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584			2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.5728</b>	<b>14.3849</b>	<b>16.2440</b>	<b>0.0269</b>		<b>0.6997</b>	<b>0.6997</b>		<b>0.6584</b>	<b>0.6584</b>			<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.3958	49.8954	12.9128	0.1477	3.7058	0.0701	3.7759	1.0663	0.0670	1.1333			15,670.9680	0.7679		15,690.1642
Worker	14.5043	6.8897	105.1865	0.2962	31.5538	0.2024	31.7562	8.3699	0.1864	8.5564			29,500.9169	0.6817		29,517.9588
<b>Total</b>	<b>15.9001</b>	<b>56.7851</b>	<b>118.0992</b>	<b>0.4439</b>	<b>35.2596</b>	<b>0.2725</b>	<b>35.5321</b>	<b>9.4362</b>	<b>0.2535</b>	<b>9.6897</b>			<b>45,171.8848</b>	<b>1.4495</b>		<b>45,208.1229</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2023**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584			2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.5728</b>	<b>14.3849</b>	<b>16.2440</b>	<b>0.0269</b>		<b>0.6997</b>	<b>0.6997</b>		<b>0.6584</b>	<b>0.6584</b>			<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.3958	49.8954	12.9128	0.1477	3.7058	0.0701	3.7759	1.0663	0.0670	1.1333			15,670.9680	0.7679		15,690.1642
Worker	14.5043	6.8897	105.1865	0.2962	31.5538	0.2024	31.7562	8.3699	0.1864	8.5564			29,500.9169	0.6817		29,517.9588
<b>Total</b>	<b>15.9001</b>	<b>56.7851</b>	<b>118.0992</b>	<b>0.4439</b>	<b>35.2596</b>	<b>0.2725</b>	<b>35.5321</b>	<b>9.4362</b>	<b>0.2535</b>	<b>9.6897</b>			<b>45,171.8848</b>	<b>1.4495</b>		<b>45,208.1229</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2024**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769			2,555.6989	0.6044		2,570.8077
<b>Total</b>	<b>1.4716</b>	<b>13.4438</b>	<b>16.1668</b>	<b>0.0270</b>		<b>0.6133</b>	<b>0.6133</b>		<b>0.5769</b>	<b>0.5769</b>			<b>2,555.6989</b>	<b>0.6044</b>		<b>2,570.8077</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.3300	48.9604	12.0695	0.1468	3.7054	0.0667	3.7721	1.0662	0.0638	1.1299			15,579.3482	0.7584		15,598.3089
Worker	13.6200	6.2292	97.5775	0.2846	31.5538	0.1979	31.7517	8.3699	0.1823	8.5522			28,352.6179	0.6149		28,367.9915
<b>Total</b>	<b>14.9500</b>	<b>55.1896</b>	<b>109.6470</b>	<b>0.4313</b>	<b>35.2592</b>	<b>0.2646</b>	<b>35.5238</b>	<b>9.4361</b>	<b>0.2460</b>	<b>9.6821</b>			<b>43,931.9661</b>	<b>1.3734</b>		<b>43,966.3004</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2024**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769			2,555.6989	0.6044		2,570.8077
<b>Total</b>	<b>1.4716</b>	<b>13.4438</b>	<b>16.1668</b>	<b>0.0270</b>		<b>0.6133</b>	<b>0.6133</b>		<b>0.5769</b>	<b>0.5769</b>			<b>2,555.6989</b>	<b>0.6044</b>		<b>2,570.8077</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.3300	48.9604	12.0695	0.1468	3.7054	0.0667	3.7721	1.0662	0.0638	1.1299			15,579.3482	0.7584		15,598.3089
Worker	13.6200	6.2292	97.5775	0.2846	31.5538	0.1979	31.7517	8.3699	0.1823	8.5522			28,352.6179	0.6149		28,367.9915
<b>Total</b>	<b>14.9500</b>	<b>55.1896</b>	<b>109.6470</b>	<b>0.4313</b>	<b>35.2592</b>	<b>0.2646</b>	<b>35.5238</b>	<b>9.4361</b>	<b>0.2460</b>	<b>9.6821</b>			<b>43,931.9661</b>	<b>1.3734</b>		<b>43,966.3004</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.2756	48.0676	11.4283	0.1459	3.7051	0.0634	3.7685	1.0660	0.0606	1.1266			15,490.66 24	0.7495		15,509.40 02
Worker	12.8491	5.6580	90.5064	0.2731	31.5538	0.1943	31.7481	8.3699	0.1789	8.5488			27,215.98 82	0.5575		27,229.92 58
<b>Total</b>	<b>14.1246</b>	<b>53.7256</b>	<b>101.9347</b>	<b>0.4189</b>	<b>35.2589</b>	<b>0.2576</b>	<b>35.5165</b>	<b>9.4360</b>	<b>0.2395</b>	<b>9.6754</b>			<b>42,706.65 07</b>	<b>1.3070</b>		<b>42,739.32 61</b>



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2025**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.2756	48.0676	11.4283	0.1459	3.7051	0.0634	3.7685	1.0660	0.0606	1.1266			15,490.66 24	0.7495		15,509.40 02
Worker	12.8491	5.6580	90.5064	0.2731	31.5538	0.1943	31.7481	8.3699	0.1789	8.5488			27,215.98 82	0.5575		27,229.92 58
<b>Total</b>	<b>14.1246</b>	<b>53.7256</b>	<b>101.9347</b>	<b>0.4189</b>	<b>35.2589</b>	<b>0.2576</b>	<b>35.5165</b>	<b>9.4360</b>	<b>0.2395</b>	<b>9.6754</b>			<b>42,706.65 07</b>	<b>1.3070</b>		<b>42,739.32 61</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2026**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.2276	47.2181	10.9082	0.1450	3.7048	0.0601	3.7649	1.0659	0.0574	1.1234			15,406.33 27	0.7414		15,424.86 82
Worker	12.1627	5.1701	84.3629	0.2629	31.5538	0.1886	31.7424	8.3699	0.1736	8.5435			26,204.34 31	0.5078		26,217.03 68
<b>Total</b>	<b>13.3902</b>	<b>52.3881</b>	<b>95.2711</b>	<b>0.4079</b>	<b>35.2586</b>	<b>0.2486</b>	<b>35.5072</b>	<b>9.4359</b>	<b>0.2310</b>	<b>9.6669</b>			<b>41,610.67 58</b>	<b>1.2492</b>		<b>41,641.90 51</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2026**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.2276	47.2181	10.9082	0.1450	3.7048	0.0601	3.7649	1.0659	0.0574	1.1234			15,406.33 27	0.7414		15,424.86 82
Worker	12.1627	5.1701	84.3629	0.2629	31.5538	0.1886	31.7424	8.3699	0.1736	8.5435			26,204.34 31	0.5078		26,217.03 68
<b>Total</b>	<b>13.3902</b>	<b>52.3881</b>	<b>95.2711</b>	<b>0.4079</b>	<b>35.2586</b>	<b>0.2486</b>	<b>35.5072</b>	<b>9.4359</b>	<b>0.2310</b>	<b>9.6669</b>			<b>41,610.67 58</b>	<b>1.2492</b>		<b>41,641.90 51</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2027**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.1853	46.4375	10.4561	0.1442	3.7045	0.0573	3.7618	1.0658	0.0548	1.1206			15,327.06 10	0.7335		15,345.39 94
Worker	11.4931	4.7320	78.8208	0.2538	31.5538	0.1793	31.7331	8.3699	0.1650	8.5350			25,299.94 36	0.4629		25,311.51 49
<b>Total</b>	<b>12.6784</b>	<b>51.1695</b>	<b>89.2770</b>	<b>0.3980</b>	<b>35.2583</b>	<b>0.2365</b>	<b>35.4949</b>	<b>9.4358</b>	<b>0.2198</b>	<b>9.6555</b>			<b>40,627.00 46</b>	<b>1.1964</b>		<b>40,656.91 43</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2027**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.1853	46.4375	10.4561	0.1442	3.7045	0.0573	3.7618	1.0658	0.0548	1.1206			15,327.06 10	0.7335		15,345.39 94
Worker	11.4931	4.7320	78.8208	0.2538	31.5538	0.1793	31.7331	8.3699	0.1650	8.5350			25,299.94 36	0.4629		25,311.51 49
<b>Total</b>	<b>12.6784</b>	<b>51.1695</b>	<b>89.2770</b>	<b>0.3980</b>	<b>35.2583</b>	<b>0.2365</b>	<b>35.4949</b>	<b>9.4358</b>	<b>0.2198</b>	<b>9.6555</b>			<b>40,627.00 46</b>	<b>1.1964</b>		<b>40,656.91 43</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2028**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.1481	45.7696	10.0756	0.1435	3.7043	0.0548	3.7591	1.0658	0.0524	1.1182			15,259.23 86	0.7256		15,277.37 79
Worker	10.8105	4.3432	73.9339	0.2457	31.5538	0.1673	31.7211	8.3699	0.1540	8.5239			24,497.84 09	0.4242		24,508.44 60
<b>Total</b>	<b>11.9586</b>	<b>50.1128</b>	<b>84.0094</b>	<b>0.3892</b>	<b>35.2581</b>	<b>0.2221</b>	<b>35.4803</b>	<b>9.4357</b>	<b>0.2064</b>	<b>9.6421</b>			<b>39,757.07 96</b>	<b>1.1498</b>		<b>39,785.82 40</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2028**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.1481	45.7696	10.0756	0.1435	3.7043	0.0548	3.7591	1.0658	0.0524	1.1182			15,259.23 86	0.7256		15,277.37 79
Worker	10.8105	4.3432	73.9339	0.2457	31.5538	0.1673	31.7211	8.3699	0.1540	8.5239			24,497.84 09	0.4242		24,508.44 60
<b>Total</b>	<b>11.9586</b>	<b>50.1128</b>	<b>84.0094</b>	<b>0.3892</b>	<b>35.2581</b>	<b>0.2221</b>	<b>35.4803</b>	<b>9.4357</b>	<b>0.2064</b>	<b>9.6421</b>			<b>39,757.07 96</b>	<b>1.1498</b>		<b>39,785.82 40</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2029**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.1145	45.1334	9.7583	0.1429	3.7041	0.0523	3.7564	1.0657	0.0500	1.1157			15,197.51 26	0.7176		15,215.45 36
Worker	10.0693	3.9811	69.2538	0.2385	31.5538	0.1559	31.7097	8.3699	0.1434	8.5134			23,787.85 14	0.3874		23,797.53 66
<b>Total</b>	<b>11.1838</b>	<b>49.1145</b>	<b>79.0121</b>	<b>0.3814</b>	<b>35.2579</b>	<b>0.2081</b>	<b>35.4661</b>	<b>9.4356</b>	<b>0.1934</b>	<b>9.6290</b>			<b>38,985.36 39</b>	<b>1.1051</b>		<b>39,012.99 01</b>



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.4 Building Construction - 2029**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963			2,556.474 4	0.6010		2,571.498 1
<b>Total</b>	<b>1.3674</b>	<b>12.4697</b>	<b>16.0847</b>	<b>0.0270</b>		<b>0.5276</b>	<b>0.5276</b>		<b>0.4963</b>	<b>0.4963</b>			<b>2,556.474 4</b>	<b>0.6010</b>		<b>2,571.498 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	1.1145	45.1334	9.7583	0.1429	3.7041	0.0523	3.7564	1.0657	0.0500	1.1157			15,197.51 26	0.7176		15,215.45 36
Worker	10.0693	3.9811	69.2538	0.2385	31.5538	0.1559	31.7097	8.3699	0.1434	8.5134			23,787.85 14	0.3874		23,797.53 66
<b>Total</b>	<b>11.1838</b>	<b>49.1145</b>	<b>79.0121</b>	<b>0.3814</b>	<b>35.2579</b>	<b>0.2081</b>	<b>35.4661</b>	<b>9.4356</b>	<b>0.1934</b>	<b>9.6290</b>			<b>38,985.36 39</b>	<b>1.1051</b>		<b>39,012.99 01</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.5 Paving - 2029**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850			2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9152</b>	<b>8.5816</b>	<b>14.5780</b>	<b>0.0228</b>		<b>0.4185</b>	<b>0.4185</b>		<b>0.3850</b>	<b>0.3850</b>			<b>2,206.7452</b>	<b>0.7137</b>		<b>2,224.5878</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0364	0.0144	0.2504	8.6000e-004	0.1141	5.6000e-004	0.1147	0.0303	5.2000e-004	0.0308			86.0216	1.4000e-003		86.0567
<b>Total</b>	<b>0.0364</b>	<b>0.0144</b>	<b>0.2504</b>	<b>8.6000e-004</b>	<b>0.1141</b>	<b>5.6000e-004</b>	<b>0.1147</b>	<b>0.0303</b>	<b>5.2000e-004</b>	<b>0.0308</b>			<b>86.0216</b>	<b>1.4000e-003</b>		<b>86.0567</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.5 Paving - 2029**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850			2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9152</b>	<b>8.5816</b>	<b>14.5780</b>	<b>0.0228</b>		<b>0.4185</b>	<b>0.4185</b>		<b>0.3850</b>	<b>0.3850</b>			<b>2,206.7452</b>	<b>0.7137</b>		<b>2,224.5878</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0364	0.0144	0.2504	8.6000e-004	0.1141	5.6000e-004	0.1147	0.0303	5.2000e-004	0.0308			86.0216	1.4000e-003		86.0567
<b>Total</b>	<b>0.0364</b>	<b>0.0144</b>	<b>0.2504</b>	<b>8.6000e-004</b>	<b>0.1141</b>	<b>5.6000e-004</b>	<b>0.1147</b>	<b>0.0303</b>	<b>5.2000e-004</b>	<b>0.0308</b>			<b>86.0216</b>	<b>1.4000e-003</b>		<b>86.0567</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.6 Architectural Coating - 2029**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	413.9881					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515			281.4481	0.0154		281.8319
<b>Total</b>	<b>414.1590</b>	<b>1.1455</b>	<b>1.8091</b>	<b>2.9700e-003</b>		<b>0.0515</b>	<b>0.0515</b>		<b>0.0515</b>	<b>0.0515</b>			<b>281.4481</b>	<b>0.0154</b>		<b>281.8319</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	2.0148	0.7966	13.8574	0.0477	6.3138	0.0312	6.3450	1.6748	0.0287	1.7035			4,759.8642	0.0775		4,761.8022
<b>Total</b>	<b>2.0148</b>	<b>0.7966</b>	<b>13.8574</b>	<b>0.0477</b>	<b>6.3138</b>	<b>0.0312</b>	<b>6.3450</b>	<b>1.6748</b>	<b>0.0287</b>	<b>1.7035</b>			<b>4,759.8642</b>	<b>0.0775</b>		<b>4,761.8022</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**3.6 Architectural Coating - 2029**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	413.9881					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515			281.4481	0.0154		281.8319
<b>Total</b>	<b>414.1590</b>	<b>1.1455</b>	<b>1.8091</b>	<b>2.9700e-003</b>		<b>0.0515</b>	<b>0.0515</b>		<b>0.0515</b>	<b>0.0515</b>			<b>281.4481</b>	<b>0.0154</b>		<b>281.8319</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	2.0148	0.7966	13.8574	0.0477	6.3138	0.0312	6.3450	1.6748	0.0287	1.7035			4,759.8642	0.0775		4,761.8022
<b>Total</b>	<b>2.0148</b>	<b>0.7966</b>	<b>13.8574</b>	<b>0.0477</b>	<b>6.3138</b>	<b>0.0312</b>	<b>6.3450</b>	<b>1.6748</b>	<b>0.0287</b>	<b>1.7035</b>			<b>4,759.8642</b>	<b>0.0775</b>		<b>4,761.8022</b>

**4.0 Operational Detail - Mobile**

---

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	42.9872	150.5167	434.8495	1.7159	180.2777	1.0507	181.3284	48.1417	0.9769	49.1186			174,531.0408	6.4132		174,691.3698
Unmitigated	42.9872	150.5167	434.8495	1.7159	180.2777	1.0507	181.3284	48.1417	0.9769	49.1186			174,531.0408	6.4132		174,691.3698

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	13,620.60	16,150.14	11836.95	35,225,378	35,225,378
Apartments Low Rise	3,631.09	3,945.16	3344.57	9,327,872	9,327,872
Apartments Mid Rise	13,080.55	12,569.13	11526.62	32,808,987	32,808,987
Total	30,332.24	32,664.43	26,708.14	77,362,237	77,362,237

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.576778	0.034729	0.211659	0.106131	0.012287	0.004450	0.018380	0.025480	0.001877	0.001519	0.005480	0.000610	0.000618
Apartments Low Rise	0.576778	0.034729	0.211659	0.106131	0.012287	0.004450	0.018380	0.025480	0.001877	0.001519	0.005480	0.000610	0.000618
Apartments Mid Rise	0.576778	0.034729	0.211659	0.106131	0.012287	0.004450	0.018380	0.025480	0.001877	0.001519	0.005480	0.000610	0.000618

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.0403	8.8894	3.7827	0.0567		0.7187	0.7187		0.7187	0.7187			11,348.1474	0.2175	0.2081	11,415.5838
NaturalGas Unmitigated	1.0403	8.8894	3.7827	0.0567		0.7187	0.7187		0.7187	0.7187			11,348.1474	0.2175	0.2081	11,415.5838

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	53360.2	0.5755	4.9175	2.0926	0.0314		0.3976	0.3976		0.3976	0.3976			6,277.6745	0.1203	0.1151	6,314.9796
Apartments Low Rise	10733.9	0.1158	0.9892	0.4209	6.3100e-003		0.0800	0.0800		0.0800	0.0800			1,262.8174	0.0242	0.0232	1,270.3217
Apartments Mid Rise	32365.1	0.3490	2.9827	1.2692	0.0190		0.2412	0.2412		0.2412	0.2412			3,807.6555	0.0730	0.0698	3,830.2825
<b>Total</b>		<b>1.0403</b>	<b>8.8894</b>	<b>3.7827</b>	<b>0.0567</b>		<b>0.7187</b>	<b>0.7187</b>		<b>0.7187</b>	<b>0.7187</b>			<b>11,348.1474</b>	<b>0.2175</b>	<b>0.2081</b>	<b>11,415.5838</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	53.3602	0.5755	4.9175	2.0926	0.0314		0.3976	0.3976		0.3976	0.3976			6,277.6745	0.1203	0.1151	6,314.9796
Apartments Low Rise	10.7339	0.1158	0.9892	0.4209	6.3100e-003		0.0800	0.0800		0.0800	0.0800			1,262.8174	0.0242	0.0232	1,270.3217
Apartments Mid Rise	32.3651	0.3490	2.9827	1.2692	0.0190		0.2412	0.2412		0.2412	0.2412			3,807.6555	0.0730	0.0698	3,830.2825
<b>Total</b>		<b>1.0403</b>	<b>8.8894</b>	<b>3.7827</b>	<b>0.0567</b>		<b>0.7187</b>	<b>0.7187</b>		<b>0.7187</b>	<b>0.7187</b>			<b>11,348.1474</b>	<b>0.2175</b>	<b>0.2081</b>	<b>11,415.5838</b>

**6.0 Area Detail**



Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	157.2165	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154	0.0000	876.1941
Unmitigated	157.2165	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154	0.0000	876.1941

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.7523					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	123.2854					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	14.1787	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154		876.1941
<b>Total</b>	<b>157.2165</b>	<b>5.4647</b>	<b>474.0338</b>	<b>0.0251</b>		<b>2.6358</b>	<b>2.6358</b>		<b>2.6358</b>	<b>2.6358</b>			<b>855.8098</b>	<b>0.8154</b>	<b>0.0000</b>	<b>876.1941</b>

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.7523					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	123.2854					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	14.1787	5.4647	474.0338	0.0251		2.6358	2.6358		2.6358	2.6358			855.8098	0.8154		876.1941
<b>Total</b>	<b>157.2165</b>	<b>5.4647</b>	<b>474.0338</b>	<b>0.0251</b>		<b>2.6358</b>	<b>2.6358</b>		<b>2.6358</b>	<b>2.6358</b>			<b>855.8098</b>	<b>0.8154</b>	<b>0.0000</b>	<b>876.1941</b>

**7.0 Water Detail**

---

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

---

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

**10.0 Stationary Equipment**

---

Elk Grove Housing Element Construction + Operation Emissions - Sacramento County, Summer

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

---



## Strategic Area Project Health Effects Tool

Strategic Area Location	IV. South Sacramento	<-- Step 1: Input the area
NOx Emissions	140	<-- Step 2: Input NOx emissions in lbs./day
ROG Emissions	171	<-- Step 3: Input ROG emissions in lbs./day
PM25 Emissions	15	<-- Step 4: Input PM2.5 emissions in lbs./day

PM2.5 Health Endpoint	Age Range <sup>1</sup>	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year) <sup>2,5</sup>	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year) <sup>2</sup>	Percent of Background Health Incidences Across the 5-Air-District Region <sup>3</sup>	Total Number of Health Incidences Across the 5-Air-District Region (per year) <sup>4</sup>
		(Mean)	(Mean)		
<b>Respiratory</b>					
Emergency Room Visits, Asthma	0 - 99	3.5	3.3	0.018%	18419
Hospital Admissions, Asthma	0 - 64	0.23	0.22	0.012%	1846
Hospital Admissions, All Respiratory	65 - 99	1.1	0.99	0.0050%	19644
<b>Cardiovascular</b>					
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	0.61	0.58	0.0024%	24037
Acute Myocardial Infarction, Nonfatal	18 - 24	0.00032	0.00030	0.0079%	4
Acute Myocardial Infarction, Nonfatal	25 - 44	0.025	0.024	0.0078%	308
Acute Myocardial Infarction, Nonfatal	45 - 54	0.063	0.060	0.0081%	741
Acute Myocardial Infarction, Nonfatal	55 - 64	0.10	0.10	0.0081%	1239
Acute Myocardial Infarction, Nonfatal	65 - 99	0.39	0.37	0.0074%	5052
<b>Mortality</b>					
Mortality, All Cause	30 - 99	7.0	6.6	0.015%	44766
<b>Ozone Health Endpoint</b>					
Ozone Health Endpoint	Age Range <sup>1</sup>	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year) <sup>2,5</sup>	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year) <sup>2</sup>	Percent of Background Health Incidences Across the 5-Air-District Region <sup>3</sup>	Total Number of Health Incidences Across the 5-Air-District Region (per year) <sup>4</sup>
		(Mean)	(Mean)		
<b>Respiratory</b>					
Hospital Admissions, All Respiratory	65 - 99	0.17	0.14	0.00070%	19644
Emergency Room Visits, Asthma	0 - 17	0.92	0.80	0.014%	5859
Emergency Room Visits, Asthma	18 - 99	1.4	1.2	0.0097%	12560
<b>Mortality</b>					
Mortality, Non-Accidental	0 - 99	0.11	0.090	0.00029%	30386

1. Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the USEPA in their health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.
  2. Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2035 base year health effect incidences, or "background health incidence") values. Health effects are shown for the Reduced Sacramento 4-km Modeling Domain and the 5-Air-District Region.
  3. The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people that are affected by the health endpoint in a given population over a given period of time. In this case, the background incidence rates cover the 5-Air-District Region (estimated 2035 population of 3,271,451 persons). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP.
  4. The total number of health incidences across the 5-Air-District Region is calculated based on the modeling data. The information is presented to assist in providing overall health context.
  5. The technical specifications and map for the Reduced Sacramento 4-km Modeling Domain are included in Appendix A, Table A-1 and Appendix B, Figure B-2 of the *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District*.
- Sac Metro Air District Strategic Area Project Health Effects Tool, version 2, published September 2020**

# Appendix C

---

Energy Data

**Energy Calculations Summary RIVER PARK**

**Operational Fuel Use Summary (SEIR Land Uses)**

Vehicle Class	Diesel Gallons	Gasoline Gallons
Passenger	8,468	1,162,163
Truck	436,320	979,995
Bus	15,266	33,107
Other	1,218	5,677
<b>Total</b>	<b>461,273</b>	<b>2,180,942</b>

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from CalEEMod output file.

**Operational Energy Consumption Summary**

Land Use	Electricity (kWW/year)	Natural Gas (kBTU/year)	Electricity (MWW/year)	Natural Gas (therm/year)
Apt High Rise	7,891,940	19,476,500	78,919	194,765
Apt Low Rise	232,760	3,917,890	2,328	39,179
Apt Mid Rise	13,011,400	11,813,300	130,114	118,133
<b>Total</b>	<b>21,136,100</b>	<b>35,207,690</b>	<b>35,208</b>	<b>352,077</b>

therm/kbtu

100.000000

Region: Sacramento

Calendar Year: 2030

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Class	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/day)		CO2_RUNEX (tons/day)		% of vehicle class EMFAC	% vehicle class CalEEMod	% vehicle class project	VMT by project		
										Fuel (gal/day)	mi/gal	CO2 (lb/day)	vehicle class (mi/yr)				Gallons of fuel		
SACRAMENTO	2030	HHD1	Truck	Aggregated	Aggregated	GAS	4.378608	596.9609148	87.60718867	0.116302636	116.3026356	5.132823617	1.097982155	2,196	0.000612919	0.026318	1.61308E-05	1247.914084	243.1242873
SACRAMENTO	2030	HHD1	Truck	Aggregated	Aggregated	DSL	12327.54	973367.5061	94768.87368	129.6945068	129.6945068	7.505078897	1350.418492	2,700.837	0.999387081	0.026318	0.026301869	2034771.439	271119.2603
SACRAMENTO	2030	LDA	Passenger	Aggregated	Aggregated	GAS	709747.4	23397085.97	3311414.94	608.382746	608.382746	38.45879225	5397.649815	11,195.300	0.988425293	0.578893	0.572192483	4426690.49	1151000.538
SACRAMENTO	2030	LDA	Passenger	Aggregated	Aggregated	DSL	7960.516	27392.7439	37685.52964	4.478018597	4476.018597	61.21348543	50.22291741	100.446	0.011574707	0.578893	0.005700517	518366.9708	8468.181192
SACRAMENTO	2030	LDT1	Truck	Aggregated	Aggregated	GAS	73141.68	2276860.904	334156.2042	69.81400205	69.81400205	32.61324143	641.430016	1,282.860	0.999522094	0.033999	0.033882752	2628981.688	80610.86762
SACRAMENTO	2030	LDT1	Truck	Aggregated	Aggregated	DSL	74.26615	1088.646825	259.3937738	0.046358215	46.35821455	23.48336397	0.520159765	1.040	0.000477906	0.033999	1.62483E-05	1257.008086	53.52759885
SACRAMENTO	2030	LDT2	Truck	Aggregated	Aggregated	GAS	234188.8	7403480.864	1078221.547	232.7198983	232719.8983	31.8128399	2136.968233	4,273.936	0.990840132	0.21284	0.210890414	16314954.16	512841.8026
SACRAMENTO	2030	LDT2	Truck	Aggregated	Aggregated	DSL	1974.815	68441.82837	9419.154557	1.510829851	1510.829851	45.30081818	16.95218221	33.904	0.009159868	0.21284	0.001949586	150824.364	3329.396025
SACRAMENTO	2030	LHDT1	Truck	Aggregated	Aggregated	GAS	14437.5	453287.803	215097.1904	49.01806071	49018.06071	9.247363041	458.3492613	916.699	0.507511626	0.010628	0.005339834	417279.0302	45124.11034
SACRAMENTO	2030	LHDT1	Truck	Aggregated	Aggregated	DSL	13641.03	439869.6734	171587.0304	21.69106687	21691.06687	20.27883995	241.5069727	483.014	0.492488374	0.010628	0.005234166	404926.8246	19967.94815
SACRAMENTO	2030	LHDT2	Truck	Aggregated	Aggregated	GAS	2115.309	67182.91556	31514.95647	8.283818563	8283.818563	8.110138465	77.48022967	154.960	0.28942461	0.004325	0.001251761	96839.06503	11940.49466
SACRAMENTO	2030	LHDT2	Truck	Aggregated	Aggregated	DSL	5132.585	164942.8721	64561.46025	9.114967988	9114.967988	18.09582572	101.1490402	202.298	0.71057539	0.004325	0.003073239	237752.61	13138.53337
SACRAMENTO	2030	MCY	Passenger	Aggregated	Aggregated	GAS	32922.54	203129.869	65845.07191	5.435646511	5435.646511	37.36995564	47.09670077	94.193	1	0.005392	0.005392	417137.1819	11162.3676
SACRAMENTO	2030	MDV	Truck	Aggregated	Aggregated	GAS	153104.3	4597116.377	695429.0639	177.3298379	177329.8379	25.92409958	1625.725507	3,251.451	0.968229166	0.104491	0.101171234	7826832.968	301913.3969
SACRAMENTO	2030	MDV	Truck	Aggregated	Aggregated	DSL	4521.458	150846.7471	21362.06044	4.38454241	4384.54241	34.40421668	49.19651394	98.393	0.031770834	0.104491	0.003319766	256824.5388	7464.914583
SACRAMENTO	2030	MH	Other	Aggregated	Aggregated	GAS	2401.982	21378.13403	240.2943232	3.95833112	3958.33112	5.400794776	37.49461087	74.989	0.700215779	0.000566	0.000396322	30660.3666	5677.010121
SACRAMENTO	2030	MH	Other	Aggregated	Aggregated	DSL	1110.852	9152.64617	111.0851542	0.849584707	849.5847067	10.77308254	9.53271789	19.065	0.299784221	0.000566	0.000169678	13126.65954	1218.468297
SACRAMENTO	2030	MHDT	Truck	Aggregated	Aggregated	GAS	1838.756	83408.90894	36789.82699	15.57943559	15579.43559	5.353782456	145.1709809	290.342	0.100916333	0.018736	0.001890768	146274.0747	27321.63212
SACRAMENTO	2030	MHDT	Truck	Aggregated	Aggregated	DSL	16026.9	743106.5441	126453.2941	69.13769356	69137.69356	10.74821137	753.1099195	1,506.220	0.899083667	0.018736	0.016845232	1303184.798	121246.6663
SACRAMENTO	2030	OBUS	Bus	Aggregated	Aggregated	GAS	482.1242	18484.29623	9646.341825	3.485006576	3485.006576	5.303948737	32.55998485	65.120	0.331182329	0.001852	0.00061335	47450.1028	8946.184277
SACRAMENTO	2030	OBUS	Bus	Aggregated	Aggregated	DSL	592.9203	37328.75479	5806.739202	4.321349286	4321.349286	8.638217445	46.77310286	93.546	0.668817671	0.001852	0.00123865	95824.76012	11093.11739
SACRAMENTO	2030	SBUS	Bus	Aggregated	Aggregated	GAS	191.6287	8653.610812	766.5148402	0.83769334	837.6933402	10.33028484	7.40595715	14.812	0.22833001	0.000598	0.000136541	10563.14397	1022.541405
SACRAMENTO	2030	SBUS	Bus	Aggregated	Aggregated	DSL	937.9608	29245.96626	10823.9378	3.418732001	3418.732001	8.554623834	34.66268585	69.325	0.77166999	0.000598	0.000461459	35699.47376	4173.120227
SACRAMENTO	2030	UBUS	Bus	Aggregated	Aggregated	GAS	276.605	20883.4518	1106.419843	4.585864075	4585.864075	4.533875007	43.34166769	86.683	1	0.001362	0.001362	105367.3668	23137.95759
SACRAMENTO	2030	UBUS	Bus	Aggregated	Aggregated	DSL	0	0	0	0	0	0	0	0	0	0.001362	0	0	0

Project VMT (mi/yr)	77,362,237	From CalEEMod output
Project Mobile Emissions (MT/yr)	24,326	From CalEEMod output
Gas (gal)	1,162,163	8,468
Passenger	979,995	436,320
Truck	33,107	15,266
Bus	5,677	1,218
Other	2,180,942	461,273
Total		

gasoline Sum	2,180,942
Diesel Sum	461,273



**Energy Calculations Summary**

**Construction Fuel Usage Summary**

	<b>Diesel</b>	<b>Gasoline</b>	<b>Diesel</b>	<b>Diesel</b>
<b>Construction Phase</b>	<b>Off-road Equipment (gallons)</b>	<b>On-road (gallons)</b>	<b>On-road (gallons)</b>	<b>Total</b>
2021	65,983	12,214	3,899	69,882
2022	30,065	377,166	140,328	170,393
2023	30,065	366,588	133,049	163,114
2024	30,296	358,805	132,332	162,628
2025	30,181	346,902	129,918	160,099
2026	30,181	337,199	127,878	158,059
2027	30,181	328,263	125,504	155,685
2028	30,065	318,954	122,588	152,653
2029	15,264	268,810	84,476	99,739
<b>TOTAL</b>	292,280	2,714,901	999,972	1,292,252
<b>Total Gasoline</b>	<b>2,714,901</b>	<b>gallons</b>		
<b>Total Diesel</b>	<b>1,292,252</b>	<b>gallons</b>		

**2021 Construction Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Prep	Tractors/Loaders/Backhoes	4	8	97	0.37	71	4,077
Site Prep	Rubber Tired Dozers	3	8	247	0.40	71	8,418
Grading	Excavators	2	8	158	0.38	183	8,790
Grading	Rubber Tired Dozers	1	8	247	0.40	183	7,232
Grading	Graders	1	8	187	0.41	183	5,612
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	183	5,254
Grading	Scrapers	2	8	367	0.48	183	25,790
Building Construction	Cranes	1	7	231	0.29	7	164
Building Construction	Forklifts	3	8	89	0.20	7	150
Building Construction	Generator Sets	1	8	84	0.74	7	174
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	7	264
Building Construction	Welders	1	8	46	0.45	7	58
						<b>TOTAL</b>	<b>65,983</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Site Preparation	18	0	0	71	1278	0	-	10.00	6.50	20.00	12780	0	-	459	0
Grading	20	0	0	183	3660	0	-	10.00	6.50	20.00	36600	0	-	1,316	0
Building Construction	4148	616	0	7	29036	4312	-	10.00	6.50	20.00	290360	28028	-	10,439	3,899
													<b>TOTAL</b>	<b>12,214</b>	<b>3,899</b>

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

**Site Preparation**

Construction Start Date 1/1/2021  
 Construction End Date 4/9/2021  
 Total Work Days 71

**Grading**

Construction Start Date 4/10/2021  
 Construction End Date 12/22/2021  
 Total Work Days 183

**Building Construction**

Construction Start Date 12/23/2021  
 Construction End Date 12/31/2021  
 Total Work Days 7

**2022 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	260	6,096
Building Construction	Forklifts	3	8	89	0.20	260	5,554
Building Construction	Generator Sets	1	8	84	0.74	260	6,465
Building Construction	Tractors/Loaders /Backhoes	3	7	97	0.37	260	9,798
Building Construction	Welders	1	8	46	0.45	260	2,153
<b>TOTAL</b>							<b>30,065</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	260	1078480	160160	-	10.00	6.50	20.00	10784800	1041040	-	377,166	140,328
<b>TOTAL</b>													<b>377,166</b>	<b>140,328</b>	

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

**Building Construction**

Construction Start Date 1/1/2022  
 Construction End Date 12/31/2022  
 Total Work Days 260

**2025 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	260	6,096
Building Construction	Forklifts	3	8	89	0.20	260	5,554
Building Construction	Generator Sets	1	8	84	0.74	260	6,465
Building Construction	Tractors/Loaders/Back hoes	3	7	97	0.37	260	9,798
Building Construction	Welders	1	8	46	0.45	260	2,153
<b>TOTAL</b>							<b>30,065</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	260	1078480	160160	-	10.00	6.50	20.00	10784800	1041040	-	366,588	133,049
<b>TOTAL</b>													<b>366,588</b>	<b>133,049</b>	

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

**Building Construction**

Construction Sta	1/1/2023
Construction Enc	12/31/2023
Total Work Days	260

**2024 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	262	6,143
Building Construction	Forklifts	3	8	89	0.20	262	5,596
Building Construction	Generator Sets	1	8	84	0.74	262	6,514
Building Construction	Tractors/Loaders/Balckhoes	3	7	97	0.37	262	9,873
Building Construction	Welders	1	8	46	0.45	262	2,169
<b>TOTAL</b>							<b>30,296</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	262	1086776	161392	-	10.00	6.50	20.00	10867760	1049048	-	358,805	132,332
<b>TOTAL</b>													<b>358,805</b>	<b>132,332</b>	

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

**Building Construction**

**2025 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	261	6,120
Building Construction	Forklifts	3	8	89	0.20	261	5,575
Building Construction	Generator Sets	1	8	84	0.74	261	6,490
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	261	9,836
Building Construction	Welders	1	8	46	0.45	261	2,161
						<b>TOTAL</b>	<b>30,181</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	261	1082628	160776	-	10.00	6.50	20.00	10826280	1045044	-	346,902	129,918
													<b>TOTAL</b>	<b>346,902</b>	<b>129,918</b>

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Number of Days Adjusted as demolition would occur over 2 years, but not at same degree year round

**Building Construction**

Constructic	1/1/2025
Constructic	12/31/2025
Total Work	261

**2026 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	261	6,120
Building Construction	Forklifts	3	8	89	0.20	261	5,575
Building Construction	Generator Sets	1	8	84	0.74	261	6,490
Building Construction	Tractors/Loaders /Backhoes	3	7	97	0.37	261	9,836
Building Construction	Welders	1	8	46	0.45	261	2,161
						<b>TOTAL</b>	<b>30,181</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	261	1082628	160776	-	10.00	6.50	20.00	10826280	1045044	-	337,199	127,878
													<b>TOTAL</b>	<b>337,199</b>	<b>127,878</b>

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Number of Days Adjusted as demolition would occur over 2 years, but not at same degree year round

**Building Construction**

Constructic	1/1/2026
Constructic	12/31/2026
Total Work	261

**2027 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	261	6,120
Building Construction	Forklifts	3	8	89	0.20	261	5,575
Building Construction	Generator Sets	1	8	84	0.74	261	6,490
Building Construction	Tractors/Loaders/Back hoes	3	7	97	0.37	261	9,836
Building Construction	Welders	1	8	46	0.45	261	2,161
<b>TOTAL</b>							<b>30,181</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	261	1082628	160776	-	10.00	6.50	20.00	10826280	1045044	-	328,263	125,504
<b>TOTAL</b>													<b>328,263</b>	<b>125,504</b>	

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Number of Days Adjusted as demolition would occur over 2 years, but not at same degree year round

**Building Construction**

Constructic	1/1/2027
Constructic	12/31/2027
Total Work	261



**2028 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	260	6,096
Building Construction	Forklifts	3	8	89	0.20	260	5,554
Building Construction	Generator Sets	1	8	84	0.74	260	6,465
Building Construction	Tractors/Loaders /Backhoes	3	7	97	0.37	260	9,798
Building Construction	Welders	1	8	46	0.45	260	2,153
						<b>TOTAL</b>	<b>30,065</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	260	1078480	160160	-	10.00	6.50	20.00	10784800	1041040	-	318,954	122,588
													<b>TOTAL</b>	<b>318,954</b>	<b>122,588</b>

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Number of Days Adjusted as demolition would occur over 2 years, but not at same degree year round

**Building Construction**

Constructic 1/1/2028

Constructic 12/31/2028

Total Work 260

**2025 Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	7	231	0.29	132	3,095
Building Construction	Forklifts	3	8	89	0.20	132	2,820
Building Construction	Generator Sets	1	8	84	0.74	132	3,282
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	132	4,974
Building Construction	Welders	1	8	46	0.45	132	1,093
Paving	Pavers	2	8	130	0.42	130	5,678
Paving	Rollers	2	8	80	0.38	130	3,162
Paving	Paving Equipment	2	8	132	0.36	130	4,942
Architectural Coating	Air Compressors	1	6	78	0.48	129	1,449
						<b>TOTAL</b>	<b>15,264</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Total Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	4148	616	0	132	547536	81312	-	15.00	9.00	20.00	8213040	731808	-	237,371	84,476
Paving	280	0	0	130	36400	0	-	15.00	9.00	20.00	546000	0	-	15,780	0
Architectural Coating	280	0	0	129	36120	0	-	15.00	9.00	20.00	541800	0	-	15,659	0
													<b>TOTAL</b>	<b>268,810</b>	<b>84,476</b>

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

**Building Construction**

Construction Start Date 1/1/2029  
 Construction End Date 7/3/2029  
 Total Work Days 132

**Paving**

Construction Start Date 1/3/2029  
 Construction End Date 7/3/2029  
 Total Work Days 130

**Architectural Coating**

Construction Start Date 7/4/2029  
 Construction End Date 12/31/2029  
 Total Work Days 129

EMFAC MPG

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: Sacramento

Year Range: 2021-2029

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
Sacramento	2021	LDA	Aggregated	Aggregated	GAS	576916.86	20787699.97	2693628.523	680.3867171	0.00	30.55	27.82	7.19
Sacramento	2021	LDT1	Aggregated	Aggregated	GAS	63439.28	2114017.763	287695.6243	80.67265944	0.00	26.20		
Sacramento	2021	LDT2	Aggregated	Aggregated	GAS	203602.05	7045516.111	940182.7893	294.1321023	0.00	23.95		
Sacramento	2021	T7 tractor	Aggregated	Aggregated	DSL	820.91937	111864.8033	10425.67597	0.00	15.56244981	7.19		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2022	LDA	Aggregated	Aggregated	GAS	591545.26	21127372.04	2764927.853	673.142382	0.00	31.39	28.59	7.42
Sacramento	2022	LDT1	Aggregated	Aggregated	GAS	64366.141	2129386.502	292380.935	79.27891431	0.00	26.86		
Sacramento	2022	LDT2	Aggregated	Aggregated	GAS	206880.89	7073751.275	955128.7989	285.8595601	0.00	24.75		
Sacramento	2022	T7 tractor	Aggregated	Aggregated	DSL	836.83148	113851.5548	10627.75974	0.00	15.34673242	7.42		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2023	LDA	Aggregated	Aggregated	GAS	606308.32	21470907.57	2835871.384	665.4181032	0.00	32.27	29.42	7.82
Sacramento	2023	LDT1	Aggregated	Aggregated	GAS	65368.825	2148247.633	297348.0731	77.95506082	0.00	27.56		
Sacramento	2023	LDT2	Aggregated	Aggregated	GAS	210187.04	7110545.533	970164.8507	277.9033637	0.00	25.59		
Sacramento	2023	T7 tractor	Aggregated	Aggregated	DSL	843.52756	115843.1119	10712.79998	0.00	14.80517215	7.82		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2024	LDA	Aggregated	Aggregated	GAS	621184.54	21791121.19	2906212.223	656.5160125	0.00	33.19	30.29	7.93
Sacramento	2024	LDT1	Aggregated	Aggregated	GAS	66406.622	2167045.803	302428.5847	76.58153967	0.00	28.30		
Sacramento	2024	LDT2	Aggregated	Aggregated	GAS	213508.83	7147811.653	985234.2998	269.9971475	0.00	26.47		
Sacramento	2024	T7 tractor	Aggregated	Aggregated	DSL	893.57481	117962.8427	11348.40011	0.00	14.88039404	7.93		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2025	LDA	Aggregated	Aggregated	GAS	635993.87	22083309.1	2975296.709	646.2925243	0.00	34.17	31.21	8.04
Sacramento	2025	LDT1	Aggregated	Aggregated	GAS	67470.712	2184625.242	307534.2504	75.11737391	0.00	29.08		
Sacramento	2025	LDT2	Aggregated	Aggregated	GAS	216827.92	7183351.656	1000201.342	262.0448109	0.00	27.41		
Sacramento	2025	T7 tractor	Aggregated	Aggregated	DSL	940.90359	119815.9531	11949.47558	0.00	14.89529384	8.04		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2026	LDA	Aggregated	Aggregated	GAS	650890.56	22324683.48	3044173.045	635.6845866	0.00	35.12	32.11	8.17
Sacramento	2026	LDT1	Aggregated	Aggregated	GAS	68561.706	2198584.977	312731.9546	73.66224469	0.00	29.85		
Sacramento	2026	LDT2	Aggregated	Aggregated	GAS	220207.04	7209553.922	1015428.352	254.3874455	0.00	28.34		
Sacramento	2026	T7 tractor	Aggregated	Aggregated	DSL	983.60764	121654.5714	12491.81697	0.00	14.8864067	8.17		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2027	LDA	Aggregated	Aggregated	GAS	665732.21	22606022.92	3112130.849	627.315091	0.00	36.04	32.98	8.33
Sacramento	2027	LDT1	Aggregated	Aggregated	GAS	69667.754	2217549.142	317955.7587	72.48993299	0.00	30.59		
Sacramento	2027	LDT2	Aggregated	Aggregated	GAS	223593.32	7253504.725	1030657.367	247.9098294	0.00	29.26		
Sacramento	2027	T7 tractor	Aggregated	Aggregated	DSL	1021.5428	123795.7684	12973.59362	0.00	14.86721035	8.33		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2028	LDA	Aggregated	Aggregated	GAS	680629.01	22875971.57	3179760.737	619.9168101	0.00	36.90	33.81	8.49
Sacramento	2028	LDT1	Aggregated	Aggregated	GAS	70827.557	2236933.386	323356.3407	71.46442989	0.00	31.30		
Sacramento	2028	LDT2	Aggregated	Aggregated	GAS	227090.43	7300334.168	1046352.217	242.1556308	0.00	30.15		
Sacramento	2028	T7 tractor	Aggregated	Aggregated	DSL	1050.1639	125264.7557	13337.08145	0.00	14.7505817	8.49		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per	Diesel miles per gallon
Sacramento	2029	LDA	Aggregated	Aggregated	GAS	695364.21	23139220.76	3246325.843	613.5995278	0.00	37.71	34.60	8.66
Sacramento	2029	LDT1	Aggregated	Aggregated	GAS	71973.339	2256537.449	328717.0129	70.56567199	0.00	31.98		
Sacramento	2029	LDT2	Aggregated	Aggregated	GAS	230626.6	7350505.665	1062230.802	237.1043058	0.00	31.00		
Sacramento	2029	T7 tractor	Aggregated	Aggregated	DSL	1073.892	126733.755	13638.42838	0.00	14.6293958	8.66		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

# Appendix D

---

Fehr & Peers VMT Memo

## MEMORANDUM

Date: January 15, 2021  
 To: Cori Resha, Ascent  
 From: David B. Robinson, Fehr & Peers  
**Subject: Elk Grove Housing Element Update VMT Analysis**

RS20-3929

Fehr & Peers completed a vehicle miles of travel (VMT) analysis to support the update to the City of Elk Grove Housing Element. The update to the Housing Element is necessary to demonstrate that the City can accommodate its Regional Housing Needs Allocation (RHNA). Specifically, the City must identify locations where 4,265 Low and Very Low-Income housing units can be built and the policies and strategies necessary to meet the City’s housing needs.

This memorandum describes the City’s RHNA, existing and candidate locations, the analysis methodology, the evaluation criteria, and presents the analysis results.

### RHNA and Candidate Locations

**Table 1** compares the City of Elk Grove RHNA to the SACOG region. As shown, the City’s total RHNA is 8,263 dwellings with 51.6% in the Low and Very Low-Income categories, which is the bases of the analysis. Analysis of the Moderate and Above-moderate income categories is not required. The City of Elk Grove’s total allocation represents 5.4 % of the SACOG region and 6.8% of the lower income units. **Figure 1** shows existing and candidate locations that can accommodate the lower income units.

**Table 1: Land Use Comparison**

Jurisdiction	Lower Income Units				Higher Income Units		Total RHNA
	Very Low	Low	Very Low + Low	% of Total RHNA	Moderate	Above Moderate	
Elk Grove	2,661	1,604	4,265	51.6%	1,186	2,812	8,263
SACOG Region	38,999	23,503	62,502	40.7%	26,993	64,017	153,512
Elk Grove’s Share of SACOG Region	6.8%	6.8%	6.8%	-	4.4%	4.4%	5.4%

Source: SACOG Regional Housing Needs Plan, Cycle 6 (2021-2029), Adopted March 2020.

## Analysis Methodology

We developed origin-destination/tour-based transportation analysis VMT forecasts, using the modified version of SACOG's SACSIM regional travel demand forecasting model, developed for the City of Elk Grove General Plan Update and subsequently updated for clarity. Due to uncertainty on the exact location of where development will occur, we tested four scenarios that varied the amount and location of RHNA dwelling units allocated to the existing and candidate sites shown on **Figure 1**. This approach was applied to identify a worst case VMT scenario for analysis. **Tables 2 through 5** summarizes the allocation assumptions for the four analyzed scenarios, which are briefly described below:

- Scenario 1 – Applies existing zoning on the existing sites and rezones all candidate sites.
- Scenario 2 – Applies up-zoning on some existing sites and rezones all of the candidate sites.
- Scenario 3 – Applies existing zoning on the existing sites, rezones/includes sites furthest out from the core.
- Scenario 4 – Applies up-zoning on some existing sites and rezones on some candidate sites.

**Table 2: Analysis Scenario 1**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
<b>Existing Sites</b>			
E-1	RD-20	189	225
E-2	RD-25	181	215
E-3	RD-20	149	178
E-4	RD-25	166	198
E-5	SEPA-HDR (15.1-30)	137	163
E-6	SEPA-HDR (15.1-30)	151	180
E-7	SEPA-HDR (15.1-30)	195	233
E-8	SEPA-HDR (15.1-30)	176	210
E-9	SEPA-HDR (15.1-30)	278	300
E-10	SEPA-HDR (15.1-30)	92	110
E-11	SEPA-HDR (15.1-30)	64	77
E-12	SEPA-HDR (15.1-30)	61	73
E-13	RD-25	111	133
E-14	RD-25	189	225
E-15	RD-25	189	225

**Table 2: Analysis Scenario 1**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
E-16	RD-25	181	215
E-17	RD-25	149	178
E-18	RD-25	166	198
Total (Existing Sites)	-	2,887	3,610
<b>Candidate Sites</b>			
C-1	RD-30	267	289
C-2	RD-25	60	72
C-3	RD-30	190	205
C-4	RD-30	184	202
C-5	RD-30	308	332
C-6	RD-30	200	216
C-7	RD-25	74	88
C-8	RD-25	49	58
C-9	RD-25	74	88
C-10	RD-30	174	198
C-11	RD-30	78	70
C-12	RD-30	146	158
C-13	RD-30	95	103
C-14	RD-30	49	53
C-15	RD-25	97	115
C-16	RD-30	80	86
C-17	RD-30	125	135
C-18	RD-25	258	258
C-19	RD-25	42	53
C-20	RD-25	32	38
C-21	RD-25	35	42
C-22	RD-25	43	52
C-23	RD-25	42	21
C-24	RD-25	105	125
C-25	RD-25	109	129
Total (Candidate Sites)	-	2,916	3,186

**Table 2: Analysis Scenario 1**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
<b>Total</b>	-	<b>5,803</b>	<b>6,796</b>

Source: Fehr & Peers, 2020



**Table 3: Analysis Scenario 2**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
<b>Existing Sites</b>			
E-1	RD-20	230	230
E-2	RD-25	102	387
E-3	RD-30	387	418
E-4	RD-30	163	178
E-5	SEPA-HDR (15.1-30)	225	243
E-6	SEPA-HDR (15.1-30)	215	233
E-7	SEPA-HDR (15.1-30)	149	192
E-8	SEPA-HDR (15.1-30)	166	198
E-9	SEPA-HDR (15.1-30)	137	163
E-10	SEPA-HDR (15.1-30)	151	180
E-11	SEPA-HDR (15.1-30)	195	233
E-12	SEPA-HDR (15.1-30)	210	227
E-13	RD-25	278	300
E-14	RD-30	110	119
E-15	RD-30	77	83
E-16	RD-30	73	78
E-17	RD-30	133	143
E-18	RD-30	225	243
Total (Existing Sites)	-	3,226	3,848
<b>Candidate Sites</b>			
C-1	RD-30	267	289
C-2	RD-25	60	72
C-3	RD-30	190	205
C-4	RD-30	184	202
C-5	RD-30	308	332
C-6	RD-30	200	216
C-7	RD-25	74	88
C-8	RD-25	49	58
C-9	RD-25	74	88
C-10	RD-30	174	198

**Table 3: Analysis Scenario 2**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
C-11	RD-30	78	70
C-12	RD-30	146	158
C-13	RD-30	95	103
C-14	RD-30	49	53
C-15	RD-25	97	115
C-16	RD-30	80	86
C-17	RD-30	125	135
C-18	RD-25	258	258
C-19	RD-25	42	53
C-20	RD-25	32	38
C-21	RD-25	35	42
C-22	RD-25	43	52
C-23	RD-25	42	21
C-24	RD-25	105	125
C-25	RD-25	109	129
Total (Candidate Sites)	-	2,916	3,186
<b>Total</b>	-	<b>6,142</b>	<b>7,034</b>

Source: Fehr & Peers, 2020

**Table 4: Analysis Scenario 3**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
<b>Existing Sites</b>			
E-1	RD-20	230	230
E-2	RD-25	102	387
E-3	RD-20	279	310
E-4	RD-25	137	163
E-5	SEPA-HDR (15.1-30)	189	225

**Table 4: Analysis Scenario 3**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
E-6	SEPA-HDR (15.1-30)	181	215
E-7	SEPA-HDR (15.1-30)	149	178
E-8	SEPA-HDR (15.1-30)	166	198
E-9	SEPA-HDR (15.1-30)	137	163
E-10	SEPA-HDR (15.1-30)	151	180
E-11	SEPA-HDR (15.1-30)	195	233
E-12	SEPA-HDR (15.1-30)	176	210
E-13	RD-25	278	300
E-14	RD-25	92	110
E-15	RD-25	64	77
E-16	RD-25	61	73
E-17	RD-25	111	133
E-18	RD-25	189	225
Total (Existing Sites)	-	2,887	3,610

**Candidate Sites**

C-1	RD-30	267	289
C-2	SC		
C-3	RD-15		
C-4	RD-30	184	202
C-5	SC		
C-6	GC		
C-7	RD-25	74	88
C-8	RD-25	49	58
C-9	RD-25	74	88
C-10	RD-30	174	198
C-11	RD-30	78	70
C-12	RD-30	146	158
C-13	RD-20		
C-14	BP		
C-15	GC		
C-16	RD-5		

**Table 4: Analysis Scenario 3**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
C-17	RD-30	125	135
C-18	RD-6		
C-19	RD-25	42	53
C-20	RD-25	32	38
C-21	RD-25	35	42
C-22	RD-25	43	52
C-23	RD-25	42	21
C-24	RD-5		
C-25	RD-25	109	129
Total (Candidate Sites)	-	1,474	1,621
<b>Total</b>	-	<b>4,361</b>	<b>5,231</b>

Source: Fehr & Peers, 2020

**Table 5: Analysis Scenario 4**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
<b>Existing Sites</b>			
E-1	RD-20	230	230
E-2	RD-25	102	387
E-3	RD-30	387	418
E-4	RD-25	137	163
E-5	SEPA-HDR (15.1-30)	189	225
E-6	SEPA-HDR (15.1-30)	181	215
E-7	SEPA-HDR (15.1-30)	149	178
E-8	SEPA-HDR (15.1-30)	166	198
E-9	SEPA-HDR (15.1-30)	137	163
E-10	SEPA-HDR (15.1-30)	151	180
E-11	SEPA-HDR (15.1-30)	195	233

**Table 5: Analysis Scenario 4**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
E-12	SEPA-HDR (15.1-30)	176	210
E-13	RD-25	278	300
E-14	RD-30	110	119
E-15	RD-30	77	83
E-16	RD-25	61	73
E-17	RD-30	133	143
E-18	RD-25	189	225
Total (Existing Sites)	-	3,048	3,743
<b>Candidate Sites</b>			
C-1	RD-30	267	289
C-2	RD-25	60	72
C-3	RD-30	190	205
C-4	RD-30	184	202
C-5	SC		
C-6	GC		
C-7	RD-25	74	88
C-8	RD-25	49	58
C-9	RD-25	74	88
C-10	RD-30	174	198
C-11	LC		
C-12	RD-30	146	158
C-13	RD-20		
C-14	BP		
C-15	GC		
C-16	RD-5		
C-17	RD-30	125	135
C-18	RD-6		
C-19	RD-25	42	53
C-20	AR-2		
C-21	RD-15		
C-22	RD-4		

**Table 5: Analysis Scenario 4**

Site ID (See Figure 1)	Assumptions		
	Zoning	RHNA Allocation	DU Potential
C-23	RD-25	42	21
C-24	RD-25	105	125
C-25	RD-25	109	129
Total (Candidate Sites)	-	1,641	1,821
<b>Total</b>	-	<b>4,689</b>	<b>5,564</b>

Source: Fehr & Peers, 2020

**Tables 6** compares the percent of the RHNA allocation achieved for each scenario presented above to the RHNA allocation for the Low and Very Low-Income categories. As shown, Scenario 2 includes the most RHNA dwelling units (i.e., 6,142) of the four analysis scenarios, which would provide a 44 percent buffer beyond the RHNA allocation for the Low and Very Low category.

**Table 6: RHNA Allocation for Low and Very Low-Income Categories by Analysis Scenario**

	Analysis Scenario				
	1	2	3	4	
Existing Site	2,887	3,226	2,887	3,048	
Candidate Site	2,916	2,916	1,474	1,641	
Total	5,803	6,142	4,361	4,689	
RHNA Allocation (Low/Very Low-Income Category)	4,265				
Buffer Achieved	Dwelling Units	1,538	1,877	96	424
	Percent of RHNA	136%	144%	102%	110%

Source: SACOG Regional Housing Needs Plan, Cycle 6 (2021-2029), Adopted March 2020.

The City uses total daily VMT and VMT per service population as the basis for VMT analysis. The following describes these two VMT metrics and their intended use:

- VMT per Service Population – Includes the sum of all vehicle miles of travel produced by individual land uses in a project, divide by the sum of total residents living in the project. The VMT per service population metric is used to assess a project against specific land use VMT limits. The Project includes multi-family residential land use. Therefore, the Project is compared to the high density residential VMT limit.
- Total Daily VMT – Includes the sum of all daily vehicle miles of travel produced by all uses within the City of applicable Study Area. Since the Project is located in the City limits, the Citywide cumulative VMT limit that is outlined in Policy MOB-1-1(a)(ii) is used to assess the Project.

The VMT estimates include all trips that have one end in a project location and includes the following:

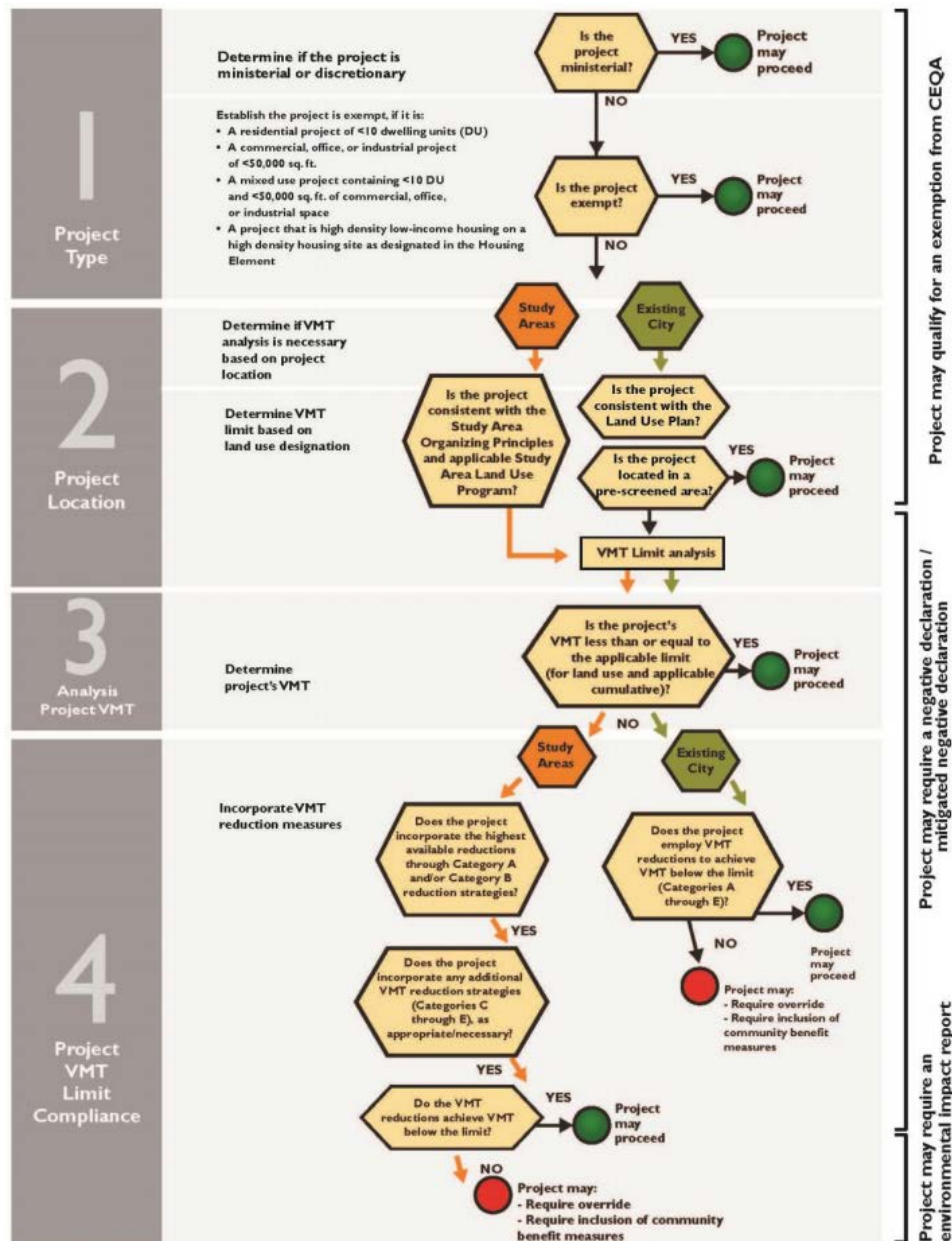
- Trip Types – Includes internal-to-internal (II), internal-to-external (IX), and external-to-internal (XI) trips. External-to-external (XX) trips are excluded.
- Trip Length – Fully accounts for entire length of each trip.
- Trip Tours – Includes trip tours without an origin or destination at the home.

Details of the VMT calculation process are included in Appendix E of the City of Elk Grove Transportation Analysis Guidelines.

### **Analysis Evaluation Criteria**

The following evaluation criteria was used to determine if the addition of the proposed Project would result in an impact in the City of Elk Grove.

The City desires to achieve a reduction in VMT. Reductions in VMT can be accomplished through a combination of land use and mobility actions. To reduce VMT, the City has established the following metrics and limits depicted in the following graphic.

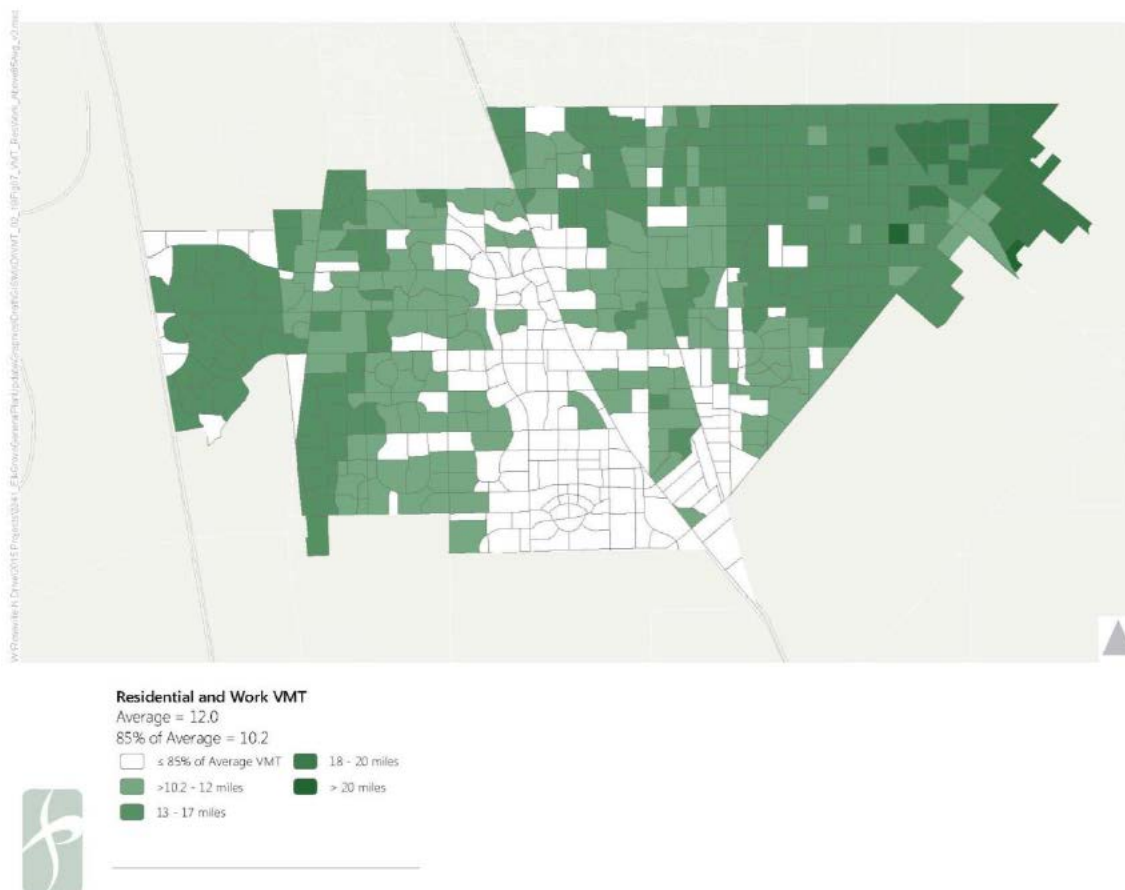


The VMT analysis process for land use projects outlined above includes the following four steps:

- Step 1 (Project Type) – Determine if the project is ministerial or discretionary or if the project is exempt from VMT analysis.
- Step 2 (Project Location) – Determine if VMT analysis is necessary based on project location and determine the Project’s VMT limit by land use designation.
- Step 3 (Analyze Project VMT) – Determine the Project’s VMT and compare to the VMT limit by land use designation (from Step 2) to determine if VMT mitigation is necessary.
- Step 4 (Project VMT Limit Compliance) – Identify VMT reduction mitigation measures and significance of VMT impacts with mitigation.



The following VMT Screening Map identifies areas in the City that are exempt from VMT analysis. These include sites that have been pre-screened through Citywide VMT analysis. Pre-screened areas are shown in white and have been determined to result in 15 percent or below the average service population VMT established for that land use designation if built to the specifications of the Land Use Plan. With an average VMT per service population of 12.0, the City's target VMT per service population threshold is 10.2.



For projects that have not been pre-screened and that do not achieve the limits outlined below shall be subject to all feasible mitigation measures necessary to reduce the VMT for, or induced by, the Project to the applicable limits. If the VMT for or induced by the Project cannot be reduced consistent with the performance metrics outlined below, the City may consider approval of the Project, subject to a finding of overriding consideration and mitigation of transportation impacts to the extent feasible, provided some other form of community benefit is achieved by the Project.

- **New Development** – Any new land use plans, amendments to such plans, and other discretionary development proposals (referred to as “development projects”) are required to demonstrate a 15 percent reduction in VMT from existing (2015) conditions. To demonstrate this reduction, conformance with following land use and cumulative VMT limits is required:
  1. **Land Use** – Development projects shall demonstrate that the VMT produced by the project at buildout is equal to or less than the VMT limit of the project’s General Plan land use

designation, as shown in the following table, which incorporates the 15 percent reduction from 2015 conditions:

**Vehicle Miles Traveled Limits by Land Use Designation**

<b>Land Use Designation</b>	<b>VMT Limit (daily per service population)</b>
<b>Commercial and Employment Land Use Designations</b>	
Community Commercial	41.6
Regional Commercial	44.3
Employment Center	47.1
Light Industrial/Flex	24.5
Light Industrial	24.5
Heavy Industrial	39.5
<b>Mixed Use Land Use Designations</b>	
Village Center Mixed Use	41.6
Residential Mixed Use	21.2
<b>Public/Quasi Public and Open Space Land Use Designations</b>	
Parks and Open Space <sup>1</sup>	0.0
Resource Management and Conservation <sup>1</sup>	0.0
Public Services	53.1
<b>Residential Land Use Designations</b>	
Rural Residential	34.7
Estate Residential	49.2
Low Density Residential	21.2
Medium Density Residential	20.9
High Density Residential	20.6
<b>Other Land Use Designations</b>	
Agriculture	34.7

*Notes:*

1. *These land use designations are not anticipated to produce substantial VMT, as they have no residents and few to no employees. These land use designations therefore have no limit and are exempt from analysis.*

2. Cumulative for Development Projects within the Existing City – Development projects located within the existing (2017) City limits shall demonstrate that cumulative VMT within the City including the project would be equal to or less than the established Citywide limit of 6,367,833 VMT (total daily VMT).
3. Cumulative for Development Projects within Growth Areas – Development projects located in Study Areas shall demonstrate that cumulative VMT within the applicable Study Area would be equal to or less than the established limit shown in the following table.

**Study Area Total Vehicle Miles Traveled Limits**

Study Area	VMT Limit (total VMT at buildout)
North Study Area	37,622
East Study Area	420,612
South Study Area	1,311,107
West Study Area	705,243

The Project is located within the City limits. The Project and remainder of the City will meet the buildout VMT Limit 6,367,833.

**Analysis Results**

The Project VMT analysis under cumulative conditions, relative to the threshold of significance presented above, is discussed below. The VMT analysis includes all the roadway improvements included as part of the General Plan VMT analysis.

VMT Screening

The VMT Screening Map identifies areas in the City that are exempt from VMT analysis. These include sites that have been pre-screened through Citywide VMT analysis. Pre-screened areas have been determined to result in 15 percent or below the average service population VMT established for the land use designations for the study area if built to the specifications of the Land Use Plan.

The Project would be implemented on sites throughout the City that fall within and outside of the pre-screened areas. In addition, the Project would require a general plan amendment to change some land use designations. Therefore, the Project is not eligible for pre-screening.

**Impact**

General Plan Impact 5.13.2 identified that implementation of the General Plan would result in increased VMT that would be significant and unavoidable. Project-generated VMT per service population associated with housing sites under the Housing Element Update would not result in an exceedance of the City's VMT per service population threshold for the High Density Residential land use designation (i.e., 20.6 VMT). However, the addition of Project-generated total daily VMT within the City could result in an exceedance of the established Citywide limit of 6,367,833 VMT, depending on the amount and location of development sites selected by the Council. The Council could select sites that would result in the exceedance of the established Citywide limit that would require additional mitigation measures to reduce total daily VMT to a less than significant level. Therefore, implementation of the Project would result in a **significant and unavoidable** impact to VMT.

VMT Limits by Land Use Designation

As outlined above, the Project must demonstrate that the VMT produced by the Project at buildout is equal to or less than the VMT limit of the underlying land use designation. The Project will have a General Plan

land use designation of High Density Residential after the required general plan amendment outlined above. **Tables 7 through 10** summarize the VMT per service population for Scenarios 1 through 4, respectively, by potential development site and the average for each analysis scenario.

**Table 7: VMT Performance – Scenario 1**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
E-1	RD-20	230	575	11,129	19.35
E-2	RD-25	102	255	4,270	16.75
E-3	RD-20	279	698	13,045	18.70
E-4	RD-25	137	343	6,182	18.05
E-5	SEPA-HDR (15.1-30)	189	473	9,556	20.22
E-6	SEPA-HDR (15.1-30)	181	453	9,348	20.66
E-7	SEPA-HDR (15.1-30)	149	373	7,938	21.31
E-8	SEPA-HDR (15.1-30)	166	415	8,844	21.31
E-9	SEPA-HDR (15.1-30)	137	343	7,299	21.31
E-10	SEPA-HDR (15.1-30)	151	378	7,963	21.09
E-11	SEPA-HDR (15.1-30)	195	488	9,965	20.44
E-12	SEPA-HDR (15.1-30)	176	440	9,760	22.18
E-13	RD-25	278	695	12,847	18.48
E-14	RD-25	92	230	4,001	17.40
E-15	RD-25	64	160	3,514	21.96
E-16	RD-25	61	153	2,819	18.48
E-17	RD-25	111	278	4,767	17.18
E-18	RD-25	189	473	7,912	16.75
C-1	RD-30	267	668	13,790	20.66
C-2	RD-25	60	150	2,740	18.27
C-3	RD-30	190	475	7,644	16.09
C-4	RD-30	184	460	9,803	21.31
C-5	RD-30	308	770	13,396	17.40
C-6	RD-30	200	500	9,025	18.05
C-7	RD-25	74	185	3,420	18.48
C-8	RD-25	49	123	2,291	18.70
C-9	RD-25	74	185	3,259	17.61
C-10	RD-30	174	435	8,325	19.14
C-11	RD-30	78	195	3,986	20.44
C-12	RD-30	146	365	7,461	20.44

**Table 7: VMT Performance – Scenario 1**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
C-13	RD-30	95	238	3,925	16.53
C-14	RD-30	49	123	2,051	16.75
C-15	RD-25	97	243	4,904	20.22
C-16	RD-30	80	200	3,262	16.31
C-17	RD-30	125	313	6,864	21.96
C-18	RD-25	258	645	12,063	18.70
C-19	RD-25	42	105	1,804	17.18
C-20	RD-25	32	80	1,427	17.83
C-21	RD-25	35	88	1,579	18.05
C-22	RD-25	43	108	2,291	21.31
C-23	RD-25	42	105	2,306	21.96
C-24	RD-25	105	263	5,195	19.79
C-25	RD-25	109	273	5,985	21.96
<b>Total</b>		<b>5,803</b>	<b>14,508</b>	<b>279,955</b>	<b>19.30</b>

Source: Fehr &amp; Peers, 2020.

**Table 8: VMT Performance – Scenario 2**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
E-1	RD-20	230	575	11,137	19.37
E-2	RD-25	102	255	4,273	16.76
E-3	RD-30	387	968	18,108	18.72
E-4	RD-30	163	408	7,361	18.06
E-5	SEPA-HDR (15.1-30)	225	563	11,384	20.24
E-6	SEPA-HDR (15.1-30)	215	538	11,112	20.67
E-7	SEPA-HDR (15.1-30)	149	373	7,944	21.33
E-8	SEPA-HDR (15.1-30)	166	415	8,851	21.33
E-9	SEPA-HDR (15.1-30)	137	343	7,304	21.33
E-10	SEPA-HDR (15.1-30)	151	378	7,969	21.11
E-11	SEPA-HDR (15.1-30)	195	488	9,973	20.46
E-12	SEPA-HDR (15.1-30)	210	525	11,654	22.20

**Table 8: VMT Performance – Scenario 2**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
E-13	RD-25	278	695	12,856	18.50
E-14	RD-30	110	275	4,788	17.41
E-15	RD-30	77	193	4,231	21.98
E-16	RD-30	73	183	3,376	18.50
E-17	RD-30	133	333	5,717	17.19
E-18	RD-30	225	563	9,426	16.76
C-1	RD-30	267	668	13,800	20.67
C-2	RD-25	60	150	2,742	18.28
C-3	RD-30	190	475	7,650	16.10
C-4	RD-30	184	460	9,810	21.33
C-5	RD-30	308	770	13,406	17.41
C-6	RD-30	200	500	9,031	18.06
C-7	RD-25	74	185	3,422	18.50
C-8	RD-25	49	123	2,293	18.72
C-9	RD-25	74	185	3,261	17.63
C-10	RD-30	174	435	8,331	19.15
C-11	RD-30	78	195	3,989	20.46
C-12	RD-30	146	365	7,467	20.46
C-13	RD-30	95	238	3,928	16.54
C-14	RD-30	49	123	2,053	16.76
C-15	RD-25	97	243	4,908	20.24
C-16	RD-30	80	200	3,264	16.32
C-17	RD-30	125	313	6,869	21.98
C-18	RD-25	258	645	12,072	18.72
C-19	RD-25	42	105	1,805	17.19
C-20	RD-25	32	80	1,428	17.85
C-21	RD-25	35	88	1,581	18.06
C-22	RD-25	43	108	2,293	21.33
C-23	RD-25	42	105	2,308	21.98
C-24	RD-25	105	263	5,198	19.80
C-25	RD-25	109	273	5,989	21.98
<b>Total</b>		<b>6,142</b>	<b>15,355</b>	<b>296,361</b>	<b>19.30</b>

Source: Fehr &amp; Peers, 2020.

**Table 9: VMT Performance – Scenario 3**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
E-1	RD-20	230	575	11,135	19.37
E-2	RD-25	102	255	4,272	16.75
E-3	RD-20	279	698	13,052	18.71
E-4	RD-25	137	343	6,185	18.06
E-5	SEPA-HDR (15.1-30)	189	473	9,561	20.24
E-6	SEPA-HDR (15.1-30)	181	453	9,353	20.67
E-7	SEPA-HDR (15.1-30)	149	373	7,943	21.32
E-8	SEPA-HDR (15.1-30)	166	415	8,849	21.32
E-9	SEPA-HDR (15.1-30)	137	343	7,303	21.32
E-10	SEPA-HDR (15.1-30)	151	378	7,967	21.11
E-11	SEPA-HDR (15.1-30)	195	488	9,971	20.45
E-12	SEPA-HDR (15.1-30)	176	440	9,765	22.19
E-13	RD-25	278	695	12,854	18.49
E-14	RD-25	92	230	4,004	17.41
E-15	RD-25	64	160	3,516	21.98
E-16	RD-25	61	153	2,820	18.49
E-17	RD-25	111	278	4,770	17.19
E-18	RD-25	189	473	7,916	16.75
C-1	RD-30	267	668	13,797	20.67
C-2	SC	-	-	-	-
C-3	RD-15	-	-	-	-
C-4	RD-30	184	460	9,809	21.32
C-5	SC	-	-	-	-
C-6	GC	-	-	-	-
C-7	RD-25	74	185	3,422	18.49
C-8	RD-25	49	123	2,292	18.71
C-9	RD-25	74	185	3,261	17.62
C-10	RD-30	174	435	8,329	19.15
C-11	RD-30	78	195	3,988	20.45
C-12	RD-30	146	365	7,465	20.45
C-13	RD-20	-	-	-	-
C-14	BP	-	-	-	-
C-15	GC	-	-	-	-
C-16	RD-5	-	-	-	-

**Table 9: VMT Performance – Scenario 3**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
C-17	RD-30	125	313	6,867	21.98
C-18	RD-6	-	-	-	-
C-19	RD-25	42	105	1,805	17.19
C-20	RD-25	32	80	1,427	17.84
C-21	RD-25	35	88	1,580	18.06
C-22	RD-25	43	108	2,292	21.32
C-23	RD-25	42	105	2,307	21.98
C-24	RD-5	-	-	-	-
C-25	RD-25	109	273	5,988	21.98
<b>Total</b>		<b>4,361</b>	<b>10,903</b>	<b>215,869</b>	<b>19.80</b>

Source: Fehr &amp; Peers, 2020.

**Table 10: VMT Performance – Scenario 4**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
E-1	RD-20	230	575	11,119	19.3
E-2	RD-25	102	255	4,266	16.7
E-3	RD-30	387	968	18,078	18.7
E-4	RD-25	137	343	6,176	18.0
E-5	SEPA-HDR (15.1-30)	189	473	9,547	20.2
E-6	SEPA-HDR (15.1-30)	181	453	9,340	20.6
E-7	SEPA-HDR (15.1-30)	149	373	7,931	21.3
E-8	SEPA-HDR (15.1-30)	166	415	8,836	21.3
E-9	SEPA-HDR (15.1-30)	137	343	7,292	21.3
E-10	SEPA-HDR (15.1-30)	151	378	7,956	21.1
E-11	SEPA-HDR (15.1-30)	195	488	9,956	20.4
E-12	SEPA-HDR (15.1-30)	176	440	9,751	22.2
E-13	RD-25	278	695	12,835	18.5
E-14	RD-30	110	275	4,780	17.4
E-15	RD-30	77	193	4,224	21.9
E-16	RD-25	61	153	2,816	18.5



**Table 10: VMT Performance – Scenario 4**

Site	Zoning	Dwelling Units	Service Population	Daily VMT	VMT Per Service Population
E-17	RD-30	133	333	5,707	17.2
E-18	RD-25	189	473	7,905	16.7
C-1	RD-30	267	668	13,777	20.6
C-2	RD-25	60	150	2,738	18.3
C-3	RD-30	190	475	7,637	16.1
C-4	RD-30	184	460	9,794	21.3
C-5	SC	-	-	-	-
C-6	GC	-	-	-	-
C-7	RD-25	74	185	3,417	18.5
C-8	RD-25	49	123	2,289	18.7
C-9	RD-25	74	185	3,256	17.6
C-10	RD-30	174	435	8,317	19.1
C-11	LC	-	-	-	-
C-12	RD-30	146	365	7,454	20.4
C-13	RD-20	-	-	-	-
C-14	BP	-	-	-	-
C-15	GC	-	-	-	-
C-16	RD-5	-	-	-	-
C-17	RD-30	125	313	6,857	21.9
C-18	RD-6	-	-	-	-
C-19	RD-25	42	105	1,802	17.2
C-20	AR-2	-	-	-	-
C-21	RD-15	-	-	-	-
C-22	RD-4	-	-	-	-
C-23	RD-25	42	105	2,304	21.9
C-24	RD-25	105	263	5,190	19.8
C-25	RD-25	109	273	5,980	21.9
<b>Total</b>		<b>4,689</b>	<b>11,723</b>	<b>229,326</b>	<b>19.56</b>

Source: Fehr &amp; Peers, 2020.

**Table 11: VMT by Land Use Designation Limits – Project Buildout Conditions by Analysis Scenario**

Land Use Designation	Scenario	VMT Per Service Population		Limit Exceeded?
		Scenario Buildout	Limit	
High Density Residential	1	19.3	20.6	No
	2	19.3		No
	3	19.8		No
	4	19.6		No

Source: Fehr & Peers, 2020.

**Table 11** compares the Project’s VMT per service population (i.e., residents) to the City’s VMT limit for High Density Residential land use (which incorporates a 15% reduction in total VMT from the 2015 baseline). The average VMT per service population for all potential development sites, for all four analysis scenarios, will perform better than the City’s VMT limit for the High Density Residential land use designation. However, as shown in **Tables 7 through 10**, some of the potential sites that make up the four development scenarios would perform worse than the City’s VMT per service population limit.

Citywide VMT Limits

As outlined above, land use development projects located with the existing (2019) City limits shall demonstrate that cumulative VMT within the City, including the Project, would be equal to or less than the City’s established total VMT limit. This VMT limit incorporates a 15% reduction in total VMT from the 2015 baseline. **Table 12** compares the citywide total VMT limit to the City’s total VMT limit with buildout of the four analysis scenarios. As shown in **Table 12**, the addition of the Project would increase cumulative VMT and would exceed the established citywide limit with most of the analysis scenarios except Scenario 3. Scenario 3 accommodates the RHNA allocation of Low and Very Low-Income units, but with the smallest buffer (only 2%).

**Table 12: Citywide VMT Limit – Project Buildout Conditions by Analysis Scenario**

Analysis Scenario	Total VMT		Limit Exceeded?
	Scenario Buildout	Limit	
1	6,430,455	6,367,833	Yes
2	6,446,861		Yes
3	6,366,369		No
4	6,379,826		Yes

Source: Fehr & Peers, 2020.

### Citywide VMT Limits

As detailed above, Project-generated VMT per service population would not result in an exceedance of the VMT per service population threshold for the High Density Residential land use designation (i.e., 20.6 VMT). However, the increase of total daily VMT within the City resulting from implementation of the Project as a whole could result in an exceedance of the established Citywide limit of 6,367,833 VMT, depending on the sites selected by the Council. Therefore, implementation of the Project may result in substantially more severe VMT impacts than identified in the General Plan EIR.

### **Mitigation**

**Table 13** summarizes VMT reduction strategies to achieve daily values below the established limits, which are documented in the City of Elk Grove Transportation Analysis Guidelines<sup>1</sup>. The VMT reduction strategies are grouped into the following five categories:

- Category A – Land Use and Location
- Category B – Site Enhancement
- Category C – Transit System Improvements
- Category D – Commute Trip Reduction
- Category E – In-Lieu Fee

The range of potential VMT reduction is identified for each category, along with the cross-category maximum that is applicable when multiple strategies are applied in combination. Since the final list of sites is not known at this time, the application of Category E (In-Lieu Fee) is not feasible because a fee cannot be calculated.

Implementation of one of the following options would reduce total average daily VMT within the City:

- Option A: - Implement Category A strategies (see **Table 13**). The City Council shall develop a modified scenario that provides the RHNA allocation to Low and Very Low-Income categories of 4,265 dwelling units and achieves an average daily VMT within the City that is less than the Citywide limit of 6,367,833 VMT.

OR

- Option B: - Implement Category B through D strategies (see **Table 13**). Prior to design review, the project applicant shall prepare and submit a VMT Reduction Strategy Technical Memorandum to the satisfaction of the Public Works Director (i.e., or their designee) documenting Category B through D strategies to reduce the project's proportional share of average daily VMT within the City. The proportional share of VMT shall be calculated based on the final list of project sites selected by the City Council and be directly proportional to the relative VMT efficiency (i.e.,

---

<sup>1</sup> *Transportation Analysis Guidelines*, City of Elk Grove, Adopted February, and Updated December 2019.

measured by VMT per service population) of the proposed project site and the average VMT efficiency of all selected sites.

**Table 13: VMT Reduction Strategies**

Strategy Category		Description	Range of Potential VMT Reduction <sup>2</sup>	
			Category	Cross-Category
A	Land Use/ Location	Land use-related components such as project density, location, and efficiency related to other housing and jobs; and diversity of uses within the project. Also includes access and proximity to destinations, transit stations, and active transportation infrastructure.	Up to 21.3%	15% Maximum
B	Site Enhancement	Establishing or connecting to a pedestrian/bike network; traffic calming within and in proximity to the project; car sharing programs; shuttle programs.	Up to 5.7%	
C	Transit System Improvements <sup>1</sup>	Improvements to the transit system including reach expansion, service frequency, types of transit, access to stations, station safety and quality, parking (park-and-ride) and bike access (to transit itself and parking), last-mile connections.	Up to 10.5%	
D	Commute Trip Reduction <sup>1</sup>	<u>For Residential Sites:</u> transit fare subsidies, education/training of alternatives, rideshare programs, shuttle programs, bike share programs. <u>For Employment Sites:</u> transit fare subsidies, parking cash-outs, paid parking, alternative work schedules/telecommute, education/training of alternatives, rideshare programs, shuttle programs, bike share programs, end of trip facilities.	Up to 30.0%	
E	In-Lieu fee	A fee is levied that is used to provide non-vehicular transportation services that connect project residents to areas of employment or vice versa. This service may be provided by the project applicant in corporation with major employers.	Up to 10.5%	

<sup>1</sup>Can be achieved through TDM program measures.

<sup>2</sup>

Source: Fehr & Peers, 2020.

Implementation of this mitigation would reduce total daily VMT. However, because the Council has not selected the final list of development sites and because an individual site may not be able to achieve its required reduction in total daily VMT within the City, the impact would remain **significant and unavoidable**.

Figure 1 – Existing and Candidate Low and Very Low-Income Housing Sites

