

# SEPA ENVIRONMENTAL CHECKLIST

## ***Purpose of checklist:***

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

## ***Instructions for applicants:***

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use “not applicable” or “does not apply” only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

## ***Instructions for Lead Agencies:***

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

## ***Use of checklist for nonproject proposals:***

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words “project,” “applicant,” and “property or site” should be read as “proposal,” “proponent,” and “affected geographic area,” respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

## **A. Background** [\[HELP\]](#)

### **1. Name of proposed project, if applicable:**

The King County Building, Fire and Energy Code Update, which would amend King County Code (KCC) Title 16 Building and Construction Standards and KCC Title 17 Fire Code. This proposed regulation is referred to throughout this document as the “proposed ordinance.”

### **2. Name of applicant:**

The proposal was initiated by King County.

### **3. Address and phone number of applicant and contact person:**

Nicole Sanders, Green Building Principal Planner  
King County Permitting Division  
35030 SE Douglas Street, Suite 210  
Snoqualmie, WA 98065-9266  
206-263-3000

### **4. Date checklist prepared:**

May 10, 2022.

### **5. Agency requesting checklist:**

King County.

### **6. Proposed timing or schedule (including phasing, if applicable):**

The King County Council anticipates possible action on the proposed ordinance in July, 2022.

### **7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

There are no known plans to add to or expand the proposed ordinance. In 2023 a new ordinance will be proposed to adopt the building codes that will be in effect for Washington state in July 2023, namely the 2021 Washington state building codes. The ordinance reviewed in this SEPA checklist proposes to adopt the building codes currently in effect for Washington state, or the 2018 Washington state building codes. If adopted, King County anticipates permit applications for individual developments that will be subject to the proposed regulations.

### **8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

- This SEPA checklist for the proposed ordinance.
- [GHG Emissions in King County: 2017 Inventory](#)
- [2020 King County Strategic Climate Action Plan](#).

### **9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

The proposal is a nonproject action and applies to all of unincorporated King County. Permit applications for individual developments are pending for projects on properties within unincorporated King County, where the proposed ordinance would apply. King County maintains a list of pending applications online at <https://aca-prod.accela.com/kingco/Default.aspx>.

**10. List any government approvals or permits that will be needed for your proposal, if known.**

Approval by the King County Council is the only government approval required for adoption of the proposed ordinance. Individual development projects that would be subject to the proposed ordinance would also be subject to all applicable federal, state and local permitting and licensing requirements.

**11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

The proposed ordinance would amend the King County Code (KCC) regulations to achieve multiple objectives:

- Update the KCC to reflect the current building codes adopted by Washington state.
- Improve identification of, and access to, structures for fire responder personnel.
- Support King County entry into the Puget Sound Emergency Radio Network (PSERN) system with improved emergency radio reception within structures.
- Clarify plumbing review oversight, fee application and plan submittal requirements.
- Improve energy efficiency of, and reduce onsite fossil fuel combustion within, buildings to reduce building owner energy cost burden and reduce emission of air pollutants, specifically the release of climate-altering greenhouse gas emissions.

To accomplish these objectives, the proposed ordinance would do the following:

- Adopt the 2018 International Property Maintenance Code; Washington state's adopted 2018 versions of the International Building, Residential, Energy Conservation, Mechanical, Existing Building, and Fire codes; and Washington state's adopted 2018 version of the Uniform Plumbing Code. The proposed ordinance also includes amendments for clarity and technical corrections related to the current adopted state codes.
- Add that the following are not subject to the International Building Code (IBC), and instead that International Residential Code (IRC) provisions apply:
  - Live/work units located in townhouses and complying with the requirements of IBC 419.
  - Owner-occupied lodging houses with
    - one or two guestrooms.
    - three to five guestrooms if equipped with a specific type of fire sprinkler system.
- Amend the types of work exempt from requiring a building permit, namely:
  - Modify the types of detached residential accessory buildings that are exempt;
  - Increases the size of commercial agricultural and forestry accessory buildings that are exempt from 200 to 400 square feet in size; and
  - Add that some decks not over 30 inches above grade are also exempt.
- Extend the expiration period for permits issued by the building official from one to two years, though mechanical permits and building permits to correct code violations remain at one year.
- Move plumbing fixture oversight from Public Health – Seattle & King County to the Department of Local Services.
- Add a plan review fee for plumbing permits equal to the cost of performing the review; consolidates the gas piping fee schedule; clarifies that fees apply to medical gas installations; and

amends plumbing permit renewals, including a 50 percent permit cost or \$50 for renewals, an 18-month time period, and limiting the number of renewals to one.

- Modify fire access road standards to increase the weight load (25 tons to 37.5 tons), specify that driving surfaces include asphalt or concrete, and require new buildings or additions to be accessible by an approved fire access road.
- Remove fire requirements from the IBC and instead references the International Fire code (IFC) to remove duplicative language in the IBC.
- Amend state codes for emergency responder radio coverage, prescribing which buildings require systems; removing some exceptions; establishing a 99 percent floor area radio coverage requirement; and establishing signal strength and system activation requirements.
- Adopt the IRC Optional Appendix T [RE]: Solar-Ready Provisions for Detached One- and Two-Family Dwellings and Townhouses, which requires new townhouses and detached single-family houses with 600 square feet or more of roof area oriented between 90 degrees and 270 degrees of true north to provide an area ready to install solar photovoltaic (PV) solar panels.

The proposed ordinance includes the following amendments to the State-adopted International Energy Conservation Code (IECC), which applies to all commercial buildings and to multifamily buildings four stories or taller, and would:

- Increase insulation standards for some building materials and features, including heating, ventilation and air conditioning (HVAC) equipment, concrete slabs, windows, skylights and doors. Higher insulation improves energy efficiency by reducing heating and cooling loss from buildings.
- Increase HVAC and water heating efficiency requirements, including increased standards for demand control and energy recovery ventilation; minimum piping and tank insulation standards; prohibition of demand recirculation water systems; and requirements for heat pumps and heat pump water heaters.
- Require that commercial kitchen fryers, hot food holding cabinets, steam cookers and dishwashers meet U.S. Environmental Protection Agency's (EPA) Energy Star program energy and water efficiency criteria.
- Reduce the allowed maximum lighting power density (LPD) in building areas, or the amount of power providing illumination, necessitating the installation of more energy-efficient lighting.
- Require that natural gas appliances in dwelling units subject to the IECC have an electrical receptacle within one foot of the appliance, so that an electric version of the appliance can be more easily installed at that location at a future date.
- Prohibit new or whole-system replacements of HVAC systems that use fossil fuel or electric resistance-based heating, with several exceptions. Electric heat pumps are the main alternative to electric resistance and fossil fuel-based heating. Electric resistance HVAC equipment would still be allowed for most dwelling and sleeping units and in buildings with less than 2,500 square feet of conditioned space, and in some other limited spaces.
- Prohibit new or whole-system replacements of fossil fuel or electric resistance-based service hot water heating in buildings with central service water heating systems. This applies to buildings with a hot water or a combined water heating capacity greater than 15 kW under a single permit.
- Change the energy efficiency credit system to:
  - Increase the number of required credits for most projects from six to eight;
  - Increase the number of required credits for building additions under 1,000 square feet from three to four;
  - Disallow or modify use of credits that would become standard requirements if the proposed ordinance were adopted. For instance, because high-efficiency service water heating would be required, it could not be used to receive credits.
  - Remove potential incentives to install fossil fuel-based heating systems by stating that such systems are not eligible to receive credits.
- Require that multifamily construction subject to the IECC provide a solar-ready zone equal to 40 percent of the roof area or 20 percent of the electric service size, whichever results in the smaller area.
- Require each new building, and each addition larger than 5,000 square feet of gross conditioned floor area, to include a renewable energy generation system consisting of 0.25 watts rated peak photovoltaic (PV) energy production per square foot of conditioned space. Affordable housing projects are not

proposed to be required to install solar PV. The King County Permitting Division could allow all or part of the onsite solar PV system requirement to be waived, including if the applicant:

- Builds a solar PV system that is 50 percent of the required system size on an existing affordable housing project within unincorporated King County, or 75 percent of the required system size on a new construction affordable housing project within King County.
- Contributes to a Washington State agency solar energy fund in lieu of constructing all or part of the required solar PV system on-site. The payment would equal \$2.50 per watt of installed capacity, which is the estimated cost of installing commercial solar PV.
- Submits a project that qualifies for three additional energy credits beyond what is required. Two additional credits would reduce the required system size by 2/3 and one additional credit would reduce the required system size by 1/3.
- Submits a project that uses the total building performance compliance path allowed by the IECC, and a three percent reduction in the building performance factor is achieved. A reduction of two percent would reduce the required system size by 2/3 and a reduction of one percent would reduce the required system size by 1/3.
- Submits proof of an alternative method to meet the solar PV system requirement that is approved by the building official as providing an equal or greater solar performance than required.

King County is considering one amendment to not adopt International Residential Code (IRC) Appendix T [RE] Solar Ready Provision – Detached One- and Two-family Dwellings and Townhouses; the potential impacts of this amendment are reviewed in this SEPA checklist.

Compliance with existing federal, state, and local regulations is presumed for purposes of this SEPA checklist, including compliance with the regulations in the proposed ordinance itself, as well as others such as those related to drinking water, stormwater, wastewater treatment, septic systems, critical areas, and zoning requirements. Any noncompliant uses or structures would be subject to code enforcement and would not be considered an impact related to the proposed ordinance.

The King County Council could modify the proposed ordinance and still accomplish the proposal's objective. Depending on the modification, the likelihood, scale, or scope of potential impacts to various elements of the environment could be the same, greater, or less.

As would be the case for any nonproject or project action that undergoes changes after the publication of a SEPA threshold determination, the King County Executive branch, which pursuant to KCC 20.44.020 is the Lead Agency for SEPA for King County, would evaluate any modifications that are proposed to be made to the proposed ordinance and would update this environmental review in the case that changes would result in greater or different impacts than those identified in this checklist. The timing of additional environmental review process may vary depending on other variables, including future public processes.

**12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

The proposed ordinance is a nonproject action that would apply to all of unincorporated King County, which totals 1,095,680 acres.

In general, King County is located in western Washington and includes 39 incorporated cities, including Seattle, Federal Way, Kirkland, and Bellevue. Approximately three-quarters of the County is unincorporated and includes areas primarily to the east of the County urban growth area boundary and the

urban Puget Sound region, with the exception of Vashon-Maury Island located to the west and some isolated blocks of unincorporated area within the urban growth area.

Nearly 75 percent of unincorporated King County is zoned as Forest (F), particularly the eastern portion of the County. To the west, near the more urban incorporated areas of the County, the predominant zoning category is RA, with some areas zoned A, particularly in the area northeast of Sammamish Valley and the area northwest of Enumclaw. Smaller areas of residential, business, office, and industrial zoning are also located throughout unincorporated King County.

## **B. Environmental Elements** [\[HELP\]](#)

### **1. Earth** [\[help\]](#)

#### **a. General description of the site:**

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other \_\_\_\_\_

Although the proposed ordinance is a nonproject action with no identifiable “site,” the ordinance applies to all of unincorporated King County, which includes areas that are flat, rolling, hilly, and steep slope. King County landforms include saltwater coastline, river floodplains, plateaus, slopes, and mountains, punctuated with lakes and streams.

#### **b. What is the steepest slope on the site (approximate percent slope)?**

Although the proposed ordinance is a nonproject action with no specific site or location, unincorporated King County includes 16,596 acres of steep slope critical areas. It is possible there may be steep slopes on properties to which the proposed ordinance would apply, however any such new development projects would be subject to existing regulations, including critical areas regulations, that would be addressed during permit review.

#### **c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.**

Although the proposed ordinance is a nonproject action with no specific site or location, soil in unincorporated King County generally reflects geologically recent glacial and alluvial (river and stream) activity, as well as human activity. River valleys are generally occupied by poorly drained, silty loams that commonly have a substantial organic content. Soils on upland areas between valleys typically are coarser-grained sandy and gravelly sandy loams, but soils with high organic content do occur locally in these upland areas and along water bodies. Some areas of unincorporated King County are classified as farmland of statewide importance, prime farmland, and prime farmland with conditions (which means that it is prime farmland if drained, irrigated, protected from flooding, or not frequently flooded).

King County’s Farmland Preservation Program restricts use on participating properties to agriculture or open space use and restricts activities that would impair the agricultural capability of the property. In accordance with the State Growth Management Act (RCW 36.70A.170 and 36.70A.050), King County designated “agricultural lands that are not already characterized by urban growth and that have long-term significance for the commercial production of food or other products.” The lands that meet these criteria are designated as an Agricultural Production District, of which there are five in King County (Enumclaw, Snoqualmie, Upper Green River, Lower Green River, and Sammamish).

Development projects within an Agricultural Production District that are subject to the proposed ordinance may result in the removal of some of these soils. Proposed ordinance section 13, modifying King County Code (K.C.C.) 16.02.240, would increase the size of commercial agricultural and forestry accessory buildings exempt from requiring a building permit from 200 square feet to 400 square feet. Proposed ordinance sections 170 and 171 may additionally affect volumes of soil removal for when fire access roads are proposed in areas with agricultural soils (for more on these ordinance sections, see checklist section B.1.e. on the next page). However, existing regulations regarding the soils, and other limitations on square footage and impervious surfaces, are unaltered by the proposed ordinance, and would limit resulting soil removal from development.

**d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

Although the proposed ordinance is a nonproject action with no specific site or location, geologically hazardous areas, including landslide and erosion-prone areas, some abandoned mining areas, and seismic risk areas, exist within unincorporated King County. Landslide and erosion-prone areas are associated primarily with steep slopes. Hazardous mining areas that may be subject to surface subsidence are associated primarily with past coal mining that occurred in the area from Newcastle through Renton south to Black Diamond. Any development subject to the proposed ordinance that is located on a parcel where landslide or erosion-prone areas exist would be subject to existing regulations and, for new uses, would be identified and addressed under existing regulations during permit review.

**e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.**

Although the proposed ordinance is a nonproject action that would not directly authorize any fill, excavation, or grading, individual projects subject to the proposed ordinance could include fill, excavation or grading. Some sections in the proposed ordinance may indirectly affect filling, grading and excavation to a minor extent. These include the following:

- Section 170, a new section, would require fire access roads in development projects to be at least 20 feet wide to accommodate modern fire suppression vehicles. Although fire access roads may currently be developed at this width, the proposed amendment would establish a new minimum width in development regulations. For some projects, this may result in additional, fill, grading or excavation to construct roadways of this minimum width.
- Section 171, modifying K.C.C. 17.04.380, would require fire access roads to be able to support 75,000 pounds (37.5 tons), whereas previous code required a minimum support of 25 tons. The increased vehicle weight support may result in additional required subsurface material depths for adequate durability, which may result in increased soil excavation and fill with suitable subgrade materials.
- Section 13, modifying K.C.C. 16.02.240, would increase the size of commercial agricultural and forestry accessory buildings exempt from requiring a building permit from 200 square feet to 400 square feet. This section is anticipated to only have minor impacts on filling, excavation and grading, however, as it is not increasing the allowed size for these building types, but only the threshold at which these buildings require a building permit.

However, all such development projects would continue to be subject to existing development regulations related to stormwater management, impervious surfaces, critical areas, clearing and grading, and/or landscaping. Unless exempt under state and county requirements, filling, excavation and grading is also subject to SEPA review.

**f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Although the proposed ordinance would not direct any development activities, potential erosion can result from clearing, construction or use of land for development that is subject to the proposed ordinance. The proposed ordinance would not amend existing regulations on clearing, grading, or construction that could cause erosion. For example, the King County Surface Water Design Manual and shorelines and critical areas regulations, would be unchanged by the proposed ordinance, and would continue to apply to development projects subject to the proposed ordinance.

**g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

Although the proposed ordinance is a nonproject action that would not directly result in any additional impervious surfaces, individual projects subject to the proposed ordinance could add impervious surfaces during project construction. There are also some sections in the proposed ordinance that may indirectly result in minor increases to impervious surface coverage. These include the following:

- Section 13, modifying K.C.C. 16.02.240, would increase the size of commercial agricultural and forestry accessory buildings exempt from requiring a building permit from 200 square feet to 400 square feet. Buildings of this square footage may already be constructed by obtaining a building permit. However, building permits sometimes increase project costs or add additional logistics that disincentivize applicants from pursuing buildings of such a size. In such cases, this change may technically result in larger buildings which in turn increases impervious surface coverage, though its overall impacts are projected to be minor. However, such developments would continue to be subject to existing development regulations related to impervious surface coverage.
- Section 170, a new section, would require fire access roads in development projects to be at least 20 feet wide to accommodate modern fire suppression vehicles. Although fire access roads may currently be developed at this width, the proposed amendment would establish a new minimum width in development regulations. The amendment would not bar development projects from using pervious hard-surface materials, such as pervious asphalt or pervious concrete, though these materials are not commonly used for fire access roads. As such, minor additional reductions in pervious surface areas may result from this amendment.

All development projects would continue to be subject to existing development regulations related to impervious surface coverage. Unless exempt under state and county requirements, projects proposing development that would add impervious surfaces would also be subject to SEPA review.

**h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Because the proposed ordinance is a nonproject action that would not have any direct impacts, no measures to control erosion or other impacts to the earth have been proposed. King County's existing regulations related to erosion and soils would apply to any development to which the proposed ordinance would apply.

**2. Air** [\[help\]](#)

**a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.**

The proposed ordinance is a nonproject action that would not result in any direct emissions to the air. Development projects subject to the proposed ordinance may experience slightly reduced air emissions from reduced onsite combustion of fossil fuels associated with building space and water heating, depending on the type of building being developed. Air emissions are discussed in more detail in Part D of this checklist.



**b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

The proposed ordinance is a nonproject action that would not be affected by off-site sources of emissions or odor, and no known off-site sources of emissions or odor are likely to impact implementation of the proposed ordinance.

**c. Proposed measures to reduce or control emissions or other impacts to air, if any:**

As noted above, development projects subject to the proposed ordinance may experience slightly reduced air emissions from reduced onsite combustion of fossil fuels associated with building space and water heating; these potential air emission reductions are discussed in Part D of this checklist.

The proposed ordinance is a nonproject action and would not have any direct impacts to air emissions, and the development projects to which it would apply would be subject to existing regulations regarding emissions and reporting requirements. Additional federal, state, and local codes may provide standards and controls for these types of emissions and would not be modified by the proposed ordinance. As a result, no measures to reduce or control emissions or other potential impacts to air are proposed.

**3. Water** [\[help\]](#)

**a. Surface Water:** [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

Although the proposed ordinance is a nonproject action with no specific site or location, numerous streams, lakes, ponds, and wetlands and the Puget Sound are located within unincorporated King County. King County maintains an inventory of water bodies within unincorporated King County, which would be considered during development review.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

The proposed ordinance is a nonproject action that would not directly require any work over, in, or adjacent to the described waters. State and local shoreline regulations would apply to any development subject to the proposed ordinance that is within 200 feet of waters within unincorporated King County's shoreline jurisdiction (60,451 acres in total countywide). Other development regulations, including critical areas regulations, concerning the protection of waterbodies may also apply depending on the proximity of any development to these waters.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

The proposed ordinance is a nonproject action that would not authorize filling or dredging from surface water or wetlands. Individual development projects subject to the proposed ordinance would also be subject to all state, local, and federal regulations, including mitigation requirements, concerning fill or dredge material placed in or removed from surface water or wetlands.

**4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

The proposed ordinance is a nonproject action that would not require any surface water withdrawals or diversions. However, proposed ordinance section 159, modifying K.C.C. 17.04.010, would adopt International Fire Code Appendix B that establishes fire flow requirements for buildings. While these water levels are important for fire suppression through serving fire hydrants and sprinkler systems, this may affect surface water withdrawal volumes depending on the source of water service when fire events occur. However, as these impacts are temporary and would only occur during a fire event, the impacts are projected to be minor. Regardless, individual development projects subject to the proposed ordinance would also be subject to existing regulations concerning surface water diversions and withdrawals, including those regarding in-stream flows, if applicable.

**5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

Although the proposed ordinance is a nonproject action with no specific site or location, several areas of unincorporated King County lie within a 100-year floodplain. Development projects subject to the proposed ordinance would also be subject to King County rules and limitations pertaining to floodplain development and fill.

**6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

The proposed ordinance is a nonproject action that would not directly involve any discharges of waste materials to surface waters. Development projects subject to the proposed ordinance would also be subject to existing state, local, and federal regulations concerning the protection of and discharge of waste materials to surface waters, including state regulations on water usage, wastewater disposal, and state antidegradation standards.

**b. Ground Water: [\[help\]](#)**

**1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

The proposed ordinance is a nonproject action and would not directly involve any withdrawals of groundwater or discharge to groundwater. Note that proposed ordinance section 159, modifying K.C.C. 17.04.010, would adopt International Fire Code Appendix B establishing increased fire flow requirements for buildings. This requirement may lead to minor increases in groundwater withdrawals for fire suppression if a fire event occurs. Regardless, development projects subject to the proposed ordinance that use groundwater or discharge to groundwater would be subject to all existing state, local, and federal regulations concerning groundwater removal and protection.

**2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

The proposed ordinance is a nonproject action that would not result in any discharge of waste material into the ground. Development projects subject to the proposed ordinance may discharge waste material

from septic tanks or other sources, and would be required to treat and dispose of any waste in a manner compatible with state and local regulations.

**c. Water runoff (including stormwater):**

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The proposed ordinance is a nonproject action that would not directly generate or affect water runoff flows, though it may improve runoff conditions in particular instances. Specifically, proposed ordinance section 199, a new section, would require that runoff from fire pump testing be treated, and that water from fire sprinklers and standpipes must drain to the sewer or be treated. This code provision ensures compliance with surface water pollution standards and may reduce additional pollution in stormwater runoff.

Additionally, individual development projects subject to the proposed ordinance may generate some water runoff. As with any development in unincorporated King County, on-site stormwater management would need to comply with the King County Surface Water Design Manual, including applicable Best Management Practices (BMPs) for treatment and flow prior to discharge, and existing maximum impervious surface regulations.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.**

The proposed ordinance is a nonproject action that would not directly result in any waste material entering ground or surface waters. Development projects subject to the proposed ordinance may result in waste matter that could enter ground or surface waters, but such projects would be subject to existing state, local, and federal regulations concerning the protection of surface and ground water.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

The proposed ordinance is a nonproject action with no specific site or location, and would not alter or otherwise affect drainage patterns. Proposed ordinance section 13, modifying K.C.C. 16.02.240 would increase the size of commercial agricultural and forestry accessory buildings exempt from requiring a building permit from 200 square feet to 400 square feet; this allowance for slightly larger buildings could theoretically affect the drainage patterns of individual sites. Additionally, proposed ordinance section 170, a new section, would require fire access roads in development projects to be at least 20 feet wide to accommodate modern fire suppression vehicles, which could also theoretically affect the individual site drainage patterns. However, development projects subject to the proposed ordinance would also be subject to existing drainage regulations, which are unchanged by the subject ordinance.

**d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:**

Proposed ordinance section 199, a new section, would require that runoff from fire pump testing be treated, and that water from fire sprinklers and standpipes must drain to the sewer or be treated. This code provision ensures compliance with surface water pollution standards, and may reduce additional pollution in stormwater runoff. Otherwise, the proposed ordinance is a nonproject action that would not have any direct impacts to surface or ground water, runoff water, or drainage patterns. Existing federal, state and local regulations related to surface water discharge and withdrawal, groundwater discharge and withdrawal, runoff water (stormwater), and drainage would apply to any development project that would be subject to the proposed ordinance. Individual development proposals may be required to provide

additional measures to reduce or control potential surface, ground, and runoff water and drainage pattern impacts.

#### **4. Plants** [\[help\]](#)

##### **a. Check the types of vegetation found on the site:**

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- Orchards, vineyards or other permanent crops.
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

Although the proposed ordinance is a nonproject action with no specific site or location, unincorporated King County includes a variety of vegetation types on the various lands that development projects subject to the proposed ordinance would apply to, including those listed above.

##### **b. What kind and amount of vegetation will be removed or altered?**

Although the proposed ordinance is a nonproject action that would not directly remove any vegetation, the development of individual development projects subject to the proposed ordinance could include the removal or alteration of vegetation (potentially of the types identified in question 4.a). Such development projects would be subject to existing state and local regulations that regulate vegetation removal or alteration, in the same manner as other uses.

##### **c. List threatened and endangered species known to be on or near the site.**

The proposed ordinance is a nonproject action with no specific site or location. There are no known federally listed threatened or endangered plant species in King County. However, there are several species in King County listed as threatened or endangered according to the Washington State Natural Heritage Program, including clubmoss mountain-heather, Kamchatka fritillary, Pacific peavine, white meconella, choriso bog-orchid, and little bluestem.

##### **d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

Although, the proposed ordinance is a nonproject action with no specific site or location, landscaping, use of native plants, or other measures to preserve or enhance vegetation could be proposed for individual developments. As with any development in unincorporated King County, development projects subject to the proposed ordinance would be subject to existing regulations governing landscaping, use of native plants, and vegetation preservation on their respective sites.

##### **e. List all noxious weeds and invasive species known to be on or near the site.**

The King County Noxious Weed Program regulates invasive plant species, and requires eradication or control, or recommends control, for over 150 plant species. Class A noxious weeds, adopted in accordance with RCW 17.10 and WAC 16-750, that are known to or have been located in King County, and require eradication by property owners, include Common Cordgrass, Dyers Woad, Eggleaf Spurge,

False Brome, Floating Primrose-Willow, French Broom, Garlic Mustard, Giant Hogweed, Goastrue, Hydrilla, Bighead Knotweed, Reed Sweetgrass, Ricefield Bulrush, Clary Sage, Small-Flowered Jewelweed, Spanish Broom, and Milk Thistle. Class B noxious weeds, that are known to have been located in King County, and require control by property owners, include Blueweed/Viper's Bugloss, Annual Bugloss, Common Bugloss, Common Reed, Dalmation Toadflax, Egeria/Brazilian Elodea, European Coltsfoot, Gorse, Hairy Willowherb, Hawkweeds/Non-native species and hybrids of meadow subgenus, European Hawkweed, Orange Hawkweed, Houndstongue, Brown Knapweed, Diffuse Knapweed, Meadow Knapweed, Spotted Knapweed, Kochia, Garden Loosestrife, Purple Loosestrife, Parrotfeather, Perennial Pepperweed, Poison-Hemlock, Policeman's Helmet, Rush Skeltonweed, Saltcedar, Shiny Geranium, Leafy Spurge, Yellow Starthistle, Sulfur Cinquefoil, Tansy Ragwort, Musk Thistle, Scotch Thistle, Velvetleaf, Water Primrose, Wild Chervil, Yellow Floatingheart, and Yellow Nutsedge.

Although the proposed ordinance is a nonproject action with no specific site or location, a variety of noxious weeds and invasive species exist in unincorporated King County. The proposed ordinance does not change any obligations to control noxious weeds identified by the King County Noxious Weed Control Board.

## 5. **Animals** [\[help\]](#)

### a. **List any birds and other animals which have been observed on or near the site or are known to be on or near the site.**

Examples include:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other \_\_\_\_\_

Although the proposed ordinance is a nonproject action with no specific site or location, a variety of birds, mammals, and fish have been observed in unincorporated King County. There are 221 bird species that are common, uncommon or usually seen on an annual basis in King County. Bird species include hawks, herons, eagles, owls, woodpeckers, songbirds, waterfowl, and shorebirds. There are 70 mammal species that can be found in King County, including shrews, bats, beavers, elk, deer, bears, rabbits, wolves, seals, and whales. There are 50 species of freshwater fish in King County, including 20 introduced species. More information on birds and animals found in King County can be found at <https://kingcounty.gov/services/environment/animals-and-plants/biodiversity/defining-biodiversity/species-of-interest.aspx>.

### b. **List any threatened and endangered species known to be on or near the site.**

Although the proposed ordinance is a nonproject action with no specific site or location, there are a number of federally threatened and endangered species in King County according to the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. These species include the Canada lynx, gray wolf, grizzly bear, North American wolverine, marbled murrelet, northern spotted owl, streaked horned lark, yellow-billed cuckoo, Oregon spotted frog, bull trout, Puget Sound Chinook salmon, Puget Sound steelhead, bocaccio rockfish, yelloweye rockfish, southern resident killer whale, and humpback whale.

In addition to the federally listed species above, the Washington Department of Fish and Wildlife maintains a list of priority species for which conservation measures should be taken. State threatened and endangered species not included with the federally listed species include the western pond turtle and the fisher.

As with any development in unincorporated King County, development projects subject to the proposed ordinance would have to comply with existing state, local, and federal regulations that protect these species.

**c. Is the site part of a migration route? If so, explain.**

Although the proposed ordinance is a nonproject action with no identifiable “site,” King County is within the Pacific Flyway migratory pathway for birds, and there are numerous streams and water bodies within the County that serve as migration routes for anadromous fish. These water bodies could potentially be near or cross through sites where development projects are proposed that could be subject to the proposed ordinance.

**d. Proposed measures to preserve or enhance wildlife, if any:**

The proposed ordinance is a nonproject action and would not have any direct impacts to wildlife, so no measures to preserve or enhance wildlife are necessary. Any development projects that would be subject to proposed ordinance would also be subject to existing federal, state, and local wildlife regulations.

**e. List any invasive animal species known to be on or near the site.**

The Washington Invasive Species Council, established by the Washington State Legislature, has identified 16 animal species and 13 insect species that are considered invasive in Washington State. King County is known or suspected to have the following invasive animal and insect species: Apple Maggot, Brown Marmorated Stink Bugs, European Chafer, Gypsy Moth, Scarlet Lily Beetles, Spotted Winged Drosophila, African Clawed Frog, Bullfrog, Invasive Crayfish, Invasive Copepods, New Zealand Mud Snail, Northern Pike, Nutria, Tunicate (*iona savignyi*, *styela clava*, and *didenmun*).

Although the proposed ordinance is a nonproject action with no specific site or location, numerous invasive animal species are known to exist in unincorporated King County. Invasive species may be located on a development project site that could be subject to the proposed ordinance.

**6. Energy and Natural Resources** [\[help\]](#)

**a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project’s energy needs? Describe whether it will be used for heating, manufacturing, etc.**

Although the proposed ordinance is a nonproject action that would not have direct energy needs, any development project subject to the proposed ordinance would likely require electricity for a wide range of structural uses; some may also use natural gas for heating or manufacturing.

The proposed ordinance includes provisions that would increase the use of solar photovoltaic (PV) renewable energy generation, and the readiness for future solar PV installations, through the following:

Solar Ready

Two code sections would require “solar-ready” areas for different building types. Solar-readiness prepares rooftops during construction or substantial improvement of a building to support a future solar PV installation, making such installations more cost-effective and feasible should future building owners choose to install solar PV.

- Section 2, which would amend K.C.C. 16.02.110, to adopt International Residential Code (IRC) appendix T [RE]: Solar-Ready Provisions for Detached One- and Two-Family Dwellings and Townhouses. This appendix would require new single-family homes and townhomes to provide an unshaded, unobstructed solar-ready area (300 and 150 sf, respectively). Adoption of the amendment

would reduce installation costs if owners of one of these building types decide to install a solar PV system in the future.

- One amendment that may be considered by the King County Council during the public hearing on this legislation would strike proposed ordinance language that adopts IRC Appendix T [RE]. Were such an amendment made, solar-readiness for these structures would not be required. This would continue the current regulatory approach for solar readiness with these structures, namely that this is an optional feature in structural design.
- Section 118, which would require solar-ready areas be provided on applicable multifamily buildings (those that are four stories or taller) with appropriate design support; sections 119 and 120 detail additional design requirements for this area. The state energy code has mandatory solar-ready requirements, but they currently apply only to nonresidential buildings. As with commercial buildings, this section would require applicable multifamily buildings to provide a solar-ready area equal to 40 percent of the roof area or 20 percent of the electric service size, whichever results in a smaller area.

### Solar PV Installation

Proposed ordinance section 121 would require the installation of 0.25 watts of solar energy production per square foot of a building's conditioned space for commercial buildings and multifamily buildings that are four stories or taller, with the exception of affordable housing developments. For a typical two-story building, this requirement is projected to occupy approximately four percent of the roof area.

### Space and Water Heating

Two other sections would affect the types of energy used to meet the needs of future development projects. Proposed ordinance sections 82 and 90 would apply to construction of commercial buildings and to multifamily buildings four stories or taller.

- Section 82 would prohibit new, or whole-system replacement of, HVAC systems that use fossil fuels or electric resistance heat as the primary heating component. The section provides for several exemptions; one exemption allows for the use of electric resistance heat in dwelling units with exterior-facing windows and an installed HVAC heating capacity of 750 watts or less.
- Section 90 would prohibit new, or whole-system replacement of, service water heating systems from using fossil fuels. Note that service water heating systems are typically found in multifamily buildings affected by the proposed ordinance (that are four stories or taller) or larger commercial buildings providing hot water to multiple rooms or fixtures. This type of hot water system is not typically needed for commercial structures with smaller building square footages.

These proposed ordinance sections are discussed in Part D of this checklist. Any future development projects would also be subject to other existing energy codes and regulations.

## **b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

The proposed ordinance is a nonproject action that would not have any direct impacts to the use of solar energy. Implementation of the proposed ordinance in individual development projects is unlikely to affect the potential use of solar energy by adjacent properties, though some impacts may occur from the required installation of solar PV detailed above, as solar PV installations can add some height to a building depending on installation location. However, such height additions are expected to be minor (three to four feet); setback requirements between properties typically mean this additional height would not adversely affect adjacent properties' solar potential.

## **c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

The proposed ordinance a nonproject action that would not have any direct impacts related to a particular development project, though there are ordinance sections that would affect conservation features of some structures in future development projects; these are discussed in Part D of this checklist. Development projects subject to the proposed ordinance could also include additional energy conservation features or other measures to reduce energy impacts beyond those that would be affected by the proposed ordinance.

## **7. Environmental Health** [\[help\]](#)

### **a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

Although the proposed ordinance is a nonproject action that would not directly cause any environmental health hazards, it is possible that development projects subject to the proposed ordinance could result in exposure to toxic chemicals, risk of fire and explosion, spills, or hazardous waste. To the extent any such development created such exposure or risk, those hazards would be regulated by existing state and local regulations.

#### **1) Describe any known or possible contamination at the site from present or past uses.**

The proposed ordinance is a nonproject action with no specific site or location. Sites with contamination exist within unincorporated King County where development projects could be proposed that are subject to the proposed ordinance. These sites would be required to meet any remediation requirements prior to grading.

#### **2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

The proposed ordinance is a nonproject action with no specific site or location. Sites with hazardous chemicals/conditions exist within unincorporated King County and development could be proposed on them that is subject to the proposed ordinance. Such development would be subject to existing federal, state, and local regulations regarding chemical hazards and liquid and gas transmission pipelines.

#### **3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

Although the proposed ordinance is a nonproject action that would not include the storage, use, or production of any toxic or hazardous chemicals, development projects subject to the proposed ordinance could require the use of toxic or hazardous chemicals, such as gasoline or diesel fuel, to operate construction equipment. Individual development projects would be required to store, use, and produce any toxic or hazardous chemicals, such as cleaning supplies, in accordance with applicable laws and regulations.

#### **4) Describe special emergency services that might be required.**

The proposed ordinance is a nonproject action that would not have any direct impacts, and implementation of the proposed ordinance is not anticipated to generate any additional special emergency services for the development projects to which it would apply.

#### **5) Proposed measures to reduce or control environmental health hazards, if any:**



The proposed ordinance is a nonproject action that would not have any direct impact on nor create environmental health hazards. No measures to reduce or control environmental health hazards are proposed.

**b. Noise**

**1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

The proposed ordinance is a nonproject action with no specific site or location that can be evaluated for existing noise levels. Various types of noise exist in the areas where the proposed ordinance could apply, including noise from traffic, operation of equipment, and more. These noise sources are not anticipated to affect implementation of the proposed ordinance.

**2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

The proposed ordinance is a nonproject action that would not have any direct noise impacts, but some indirect noise impacts are possible from the space- and water-heating equipment selected in development projects. Specifically proposed ordinance sections 82 and 90, which are both new code sections, may lead to increased installation of heat pumps for space heating, and increased installation of heat pump hot water heaters. This equipment may have noise impacts, which are discussed in more detail in Part D of this checklist.

Lastly, under proposed ordinance section 214 a series of codes are repealed that set design requirements for a 25 decibel noise level reduction (NLR) area near Sea-Tac Airport (subsections 210.X – 210.DD). The Port of Seattle's new Noise Remedy area no longer contains the area to which the 25 decibel requirements were applied, and as such, any noise impacts would have arisen from the Port of Seattle's previous changes to the Noise Remedy area, and would not arise from the proposed ordinance.

**3) Proposed measures to reduce or control noise impacts, if any:**

The proposed ordinance is a nonproject action that would not have any direct noise impacts. However, some proposed ordinance sections provide indirect noise reduction benefits; these measures are discussed in more detail in Part D of this checklist.

**8. Land and Shoreline Use** [\[help\]](#)

**a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

The proposed ordinance is a nonproject action with no specific site or location and would not have any direct impacts on the current land uses on nearby or adjacent properties. As a whole, unincorporated King County is predominantly forestland to the east and predominantly rural to the west, adjacent to more urban incorporated areas of the county, with agricultural areas between. The proposed ordinance would not change or impact current land use designations or zoning classifications in unincorporated King County. The proposed ordinance does not change the uses allowed on properties in the King County Code land use tables.

**b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance**

**will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

The proposed ordinance is a nonproject action with no specific site or location and would not have any direct impacts to working farmlands or forestlands. Some sites where a development project is proposed that would be subject to the proposed ordinance could have been or may currently be used as working farmland or forestlands. However, existing regulatory limitations on properties enrolled in the Farmland Preservation Program, within the Agricultural Production District or Forest Production District, or in Agricultural (A) or Forestry (F) zones would continue apply to development projects that would be subject to the proposed ordinance.

**1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:**

The proposed ordinance is a nonproject action that would not directly affect or be affected by the normal business operations of working farmland or forestland.

**c. Describe any structures on the site.**

Although the proposed ordinance is a nonproject action with no specific site or location, various structures are located on parcels within unincorporated King County, where the proposed ordinance would apply.

**d. Will any structures be demolished? If so, what?**

Although the proposed ordinance is a nonproject action that would not directly result in any demolition, existing structures could be demolished as part of a development project that would be subject to the proposed ordinance. The nature of and extent to which those structures could be demolished is unknown at this time and would be subject to all existing applicable regulations.

**e. What is the current zoning classification of the site?**

The proposed ordinance is a nonproject action with no specific site or location; development projects subject to the proposed ordinance could occur in any zoning classification that allows the construction of buildings.

**f. What is the current comprehensive plan designation of the site?**

The proposed ordinance is a nonproject action with no specific site or location; development projects subject to the proposed ordinance would occur in any land use designation that allows the construction of buildings.

**g. If applicable, what is the current shoreline master program designation of the site?**

Although the proposed ordinance is a nonproject action with no specific site or location, unincorporated King County includes a variety of shoreline master program designations. Individual development projects subject to the proposed ordinance that occurs within or proximate to the County's shoreline jurisdiction would need to comply with the County's shoreline master program.

**h. Has any part of the site been classified as a critical area by the city or county? If so, specify.**

Although the proposed ordinance is a nonproject action with no specific site or location, portions of unincorporated King County are classified as critical areas where a development project could be proposed that would be subject to the proposed ordinance. Specifically, King County Code designates the following as critical areas: coal mine hazard areas, erosion hazard areas, flood hazard areas, coastal high hazard areas, channel migration zones, landslide hazard areas, seismic hazard areas, volcanic hazard areas, steep slope hazard areas, critical aquifer recharge areas, wetlands and wetland buffers, aquatic areas, and wildlife habitat networks and conservation areas.

**i. Approximately how many people would reside or work in the completed project?**

The proposed ordinance is a nonproject action that would not directly result in a completed project where people would reside or work. Individual development projects that are subject to the proposed ordinance would have employees or residents, or both. The number of persons living or working in the subject buildings would depend on the individual land uses, square footages, and regulations affecting those individual development projects.

**j. Approximately how many people would the completed project displace?**

Although the proposed ordinance is a nonproject action and would not directly result in any displacement, it is possible that development projects subject to the proposed ordinance could result in displacement. However, implementation of the proposed ordinance is not anticipated to affect the likelihood of displacement under current King County Code.

**k. Proposed measures to avoid or reduce displacement impacts, if any:**

Because the proposal is not anticipated to affect the likelihood of displacement under KCC, no measures to avoid or reduce displacement impacts are proposed.

**l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

The proposed ordinance was drafted to be compatible with existing and projected land uses and plans.

**m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:**

The proposed ordinance is a nonproject action and would not directly impact agricultural and forest lands of long-term commercial significance; as such, no measures to reduce or control impacts to such lands are proposed.

**9. Housing** [\[help\]](#)

**a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

Although the proposed ordinance is a nonproject action that will not have direct impacts to housing, the development of a project that would be subject to the proposed ordinance would not result in any additional units of housing above what might occur under existing code.

**b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

Neither the proposed ordinance itself or the development allowed under the ordinance would result in any greater elimination of housing than what might occur if the ordinance were not adopted.

**c. Proposed measures to reduce or control housing impacts, if any:**

Although no significant adverse impacts are anticipated, the proposed ordinance would include provisions that provide some flexibility for multifamily buildings affected by the proposed ordinance (multifamily buildings that are four stories or taller), including the following new code sections:

- Section 82 would prohibit HVAC systems that use fossil fuels or electric resistance heat as the primary heating component. However, an exemption allows for the use of electric resistance heat in dwelling units with exterior-facing windows and an installed HVAC heating capacity of 750 watts or less, reducing probable higher costs to install heat pump space heating systems for those units.
- Section 121, which would require the installation of 0.25 watts of solar energy production per square foot of a building's conditioned space, both:
  - Exempts affordable housing projects from installing solar, reducing the cost of implementing the new regulations for new affordable housing developments; and
  - Allows developers of projects not meeting the affordable housing definition to meet the solar power installation requirements for their project by installing solar panels on affordable housing projects instead. If pursued by developers, this would increase the amount of solar energy on existing and new affordable housing projects, reducing their operational electricity costs and improving the fiscal sustainability of maintaining affordable housing.

**10. Aesthetics** [\[help\]](#)

**a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The proposed ordinance is a nonproject action that does not directly involve the construction of any structures, and does not regulate or change the height requirements of any structures or principal exterior building materials. The height and any exterior building material of any development project subject to the proposed ordinance will be subject to existing regulations.

**b. What views in the immediate vicinity would be altered or obstructed?**

The proposed ordinance is a nonproject action that would not have any direct impacts to views. As noted in checklist section 6.a, proposed ordinance section 121 would require the installation of solar photovoltaic (PV) panels for some buildings; this requirement is projected to occupy approximately four percent of the roof area for a typical two-story building. The height additions from solar PV are also expected to be minor (three to four feet). Both of these impacts are associated with already-possible solar installation options for existing building types affected. As such, any development projects subject to the proposed ordinance would not result in the alteration or obstruction of any views to a greater degree than any other development allowed under existing regulations.

**c. Proposed measures to reduce or control aesthetic impacts, if any:**

The proposed ordinance is a nonproject action that would not have any direct impacts to views or aesthetics, and as such, no measures are proposed to reduce or control aesthetic impacts.

**11. Light and Glare** [\[help\]](#)

**a. What type of light or glare will the proposal produce? What time of day would it mainly occur?**

The proposed ordinance is a nonproject action that would not directly cause any light or glare. Proposed ordinance section 121 requires the installation of 0.25 watts of solar energy production per square foot of a building's conditioned space for commercial buildings and multifamily buildings that are four stories or taller. The installation of solar PV sometimes raises concerns about the generation of glare. However, most solar panels are designed with antireflective (AR)-coated glass such that only two percent of incoming light is typically reflected.<sup>1</sup> Even without AR coating, the reflection of PV front glass is considered less intense than the glare from a body of water or windows.<sup>2</sup> Additionally, solar installations on new development are anticipated to be relatively small for most buildings, typically occupying roughly four percent of the roof area for a two-story building; the smaller installation size would additionally reduce potential impacts associated with glare. Finally, these impacts are associated with already-possible solar installation options for existing building types affected. As such, any development projects subject to the proposed ordinance would not result in an increase in light or glare to a greater degree than any other development allowed under existing regulations.

**b. Could light or glare from the finished project be a safety hazard or interfere with views?**

The proposed ordinance is a nonproject action that would not have any direct impacts. As noted in the section above, development projects subject to the proposed ordinance would not result in a greater increase in light or glare than any other development allowed under existing regulations. Any development projects subject to the proposed ordinance would have to comply with existing development regulations, including any related to light and glare.

**c. What existing off-site sources of light or glare may affect your proposal?**

The proposed ordinance is a nonproject action with no specific site or location. Various off-site sources of light or glare exist throughout unincorporated King County. It is unlikely that any development projects subject to the proposed ordinance would be impacted by any off-site sources.

**d. Proposed measures to reduce or control light and glare impacts, if any:**

The proposed ordinance is a nonproject action that would not have any direct light and glare impacts. No additional measures to reduce or control light and glare impacts are proposed beyond existing development regulations.

**12. Recreation** [\[help\]](#)

**a. What designated and informal recreational opportunities are in the immediate vicinity?**

The proposed ordinance is a nonproject action with no specific site or location. A variety of designated and informal recreational opportunities exist in unincorporated King County where the proposed ordinance would apply.

**d. Would the proposed project displace any existing recreational uses? If so, describe.**

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<sup>1</sup> Day, Megan and Benjamin Mow, "Research and Analysis Demonstrate the Lack of Impacts of Glare from Photovoltaic Modules," National Renewable Energy Laboratory (NREL), July 31, 2018. [\[LINK\]](#). Accessed 4/20/2022.

<sup>2</sup> Day, Megan and Benjamin Mow, "Research and Analysis...", NREL, *ibid.* [\[LINK\]](#). Accessed 4/20/2022.

The proposed ordinance is a nonproject action that would not directly displace any existing recreational uses. The ordinance would not result in a greater displacement of recreational uses than what may otherwise occur under current code.

**c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

The proposed ordinance is a nonproject action that would not have any direct impacts to recreation; no measures to reduce or control impacts on recreation are proposed.

**13. Historic and cultural preservation** [\[help\]](#)

**a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.**

The proposed ordinance is a nonproject action with no specific site or location. A variety of buildings, structures and sites within unincorporated King County are listed or eligible for listing in national, state, or local preservation registers, and are potentially on sites where development projects could be proposed that are subject to the proposed ordinance. Such developments would be required to comply with all federal, state, and local regulations related to historic and cultural resources.

**b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

The proposed ordinance is a nonproject action with no specific site or location. However, landmarks, features, and other evidence of Indian or historic use or occupation exist throughout unincorporated King County, and potentially on sites where development projects could be proposed that are subject to the proposed ordinance. Such projects would continue to be required to comply with federal, state, and local rules related to historic and cultural resources.

**c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

The proposed ordinance is a nonproject action that will not have any direct impacts to historic and cultural resources. King County's existing regulations related to cultural and historic resources would apply to any proposed development projects subject to the proposed ordinance. Such requirements could include consultation with tribes and associated agencies as well as use of archaeological surveys, GIS data, and historic maps to assess potential impacts to cultural and historic resources if needed. The tribes are regularly notified during the County's SEPA process for proposed development projects.

**d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The proposed ordinance is a nonproject action that will not have any direct impacts to cultural or historic resources. However, King County's existing regulations related to avoidance, minimization of, or

compensation for loss, changes to, and disturbances to cultural and historic resources would apply to any individual development proposals subject to the proposed ordinance.

#### **14. Transportation** [\[help\]](#)

**a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.**

The proposed ordinance is a nonproject action with no specific site or location. The proposed ordinance would apply to development project sites that are served by a variety of public streets and highways.

**b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

The proposed ordinance is a nonproject action with no specific site or location. However, unincorporated King County is generally served by public transit. It is unknown how far the nearest transit stop would be for any future development proposals subject to the proposed ordinance.

**c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

The proposed ordinance is a nonproject action with no specific site or location. Implementation of the proposed ordinance would not affect the number of parking spaces provided by development projects subject to the proposed ordinance.

**d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).**

The proposed ordinance is a nonproject action that would not directly construct or install any roadway, bicycle, or pedestrian improvements. The proposed ordinance would include several changes that impact road or street improvements, including:

- Section 169, a new section that would clarify that fire apparatus access roads must be provided if not already present not only when new structures are constructed, but also when new additions are constructed.
- Section 170, a new section that would require fire access roads to be at least 20 feet wide and allow for a minimum unobstructed vehicle height of 13 feet 6 inches.
- Section 171, modifying K.C.C. 17.04.380, which would increase the weight capacity that fire access roads must support, increasing the weight load from 25 tons to 37.5 tons.
- Section 172, modifying K.C.C. 17.04.420, which would change design details of fire lanes.
- Section 173, a new section that would bar security gates or fire access roads obstructions unless approved, with some additional design requirements to support emergency responder access.

Aside from changes associated with the above sections, the proposed ordinance is not anticipated to affect any required or proposed improvements to existing roads, streets, or pedestrian or bicycle transportation facilities.

**e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

The proposed ordinance a nonproject action that would not have any direct impacts to transportation facilities. However, individual development projects subject to the proposed ordinance may use or occur proximal to water, rail and air transportation.

**f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?**

The proposed ordinance is a nonproject action that would not directly generate any vehicular trips. Development projects subject to the proposed ordinance would likely generate vehicular trips, though the volume of those vehicle trips is unlikely to be greater as a result of implementing the proposed ordinance.

**g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

Although the proposed ordinance would not have any direct impact on the movement of agricultural and forest products on roads or streets on the area, individual development projects allowed under the ordinance could generate some additional traffic that could interfere with, affect, or be affected by the movement of agricultural and forest products.

**h. Proposed measures to reduce or control transportation impacts, if any:**

The proposed ordinance is a nonproject action that would not have any direct impacts to transportation volumes. No additional measures to reduce or control transportation impacts are proposed. Development projects subject to the proposed ordinance will be subject to existing zoning and development regulations, including, to the extent required, transportation analysis and mitigation.

**15. Public Services** [\[help\]](#)

**a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.**

The proposed ordinance is a nonproject action that would not directly result in an increased need for public services. Development projects subject to the proposed ordinance would need public services to be available at a similar level to what is currently required in the affected zones.

**b. Proposed measures to reduce or control direct impacts on public services, if any.**

The proposed ordinance is a nonproject action that would not have any direct impacts to public services. However, there are several ordinance sections that support emergency response:

- Section 124 would modify K.C.C. section 16.08.050 to require specific lettering sizes based on the distance of the building from the right of way, improving address legibility and helping responders find locations quickly during emergency situations.
- Section 169, a new section, would clarify that fire apparatus access roads must be provided if not already present not only when new structures are constructed, but also when new additions are constructed, which would help improve vehicle access networks to structures
- Section 170, a new section, that would require fire access roads to be at least 20 feet wide and allow for a specific minimum vehicle height, which would better support the current variety of fire responder vehicles and heights used by multiple responder agencies within unincorporated King County.



- Section 172 would modify K.C.C. 17.04.420 to change design details of fire lanes to better match regional design norms and may help reduce illegal parking due to increased awareness of fire lane designations, in turn potentially reducing emergency vehicle access obstructions.
- Section 173, a new section, would bar security gates or other obstructions on fire access roads unless approved, and with a means of emergency operation and other design features to support emergency responder access.
- Section 175, a new section, would require enclosed interior courtyards in new buildings to be directly accessible from the outside, with design features permitting a ladder to be brought into the courtyard to support fire response.
- Section 177, a new section, would require underground piping that provides water supplies for fire protection to have two forms of joint restraint, providing a backup piping feature in case the first feature fails, and ensuring continued water to provide fire suppression during potential emergency events.
- Sections 178 through 191 would add new sections to the building code to support and improve emergency radio network system performance in buildings required to provide radio connections, which would improve radio communications between responders during an emergency.

## 16. Utilities [\[help\]](#)

### a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other \_\_\_\_\_

The proposed ordinance is a nonproject action with no specific site or location. A variety of utilities are generally available in unincorporated King County depending on the service area of specific utility providers. Municipal sanitary sewer is not likely to be available in most rural and agricultural areas in unincorporated King County, with notable exceptions for the Vashon and Snoqualmie Pass Rural Towns, which do have sanitary sewer service.

### i. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The proposed ordinance is a nonproject action that would not have any direct connection to utilities, and is not directly connected to a development site on which general construction activities would occur. Generally, development projects subject to the proposed ordinance would install electricity, water, refuse service, telephone, sanitary sewer or a septic; some projects may also connect to natural gas. If developments connected to the electrical grid, the probable utilities providing electrical service would be either Puget Sound Energy (PSE) or Seattle City Light; the natural gas provider would be PSE.

## C. Signature [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:           *Nicole Sanders*          

Name of signee           Nicole Sanders          

Position and Agency/Organization           Green Building Principal Planner, King County          

Date Submitted:           5/10/2022

## **D. Supplemental sheet for nonproject actions** [\[HELP\]](#)

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

### **1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?**

The proposed ordinance is unlikely to increase the production, storage, or release of toxic or hazardous substances, or to increase discharges to water. Potential impacts to air emissions and noise impacts are discussed below. This section first provides context as to the potential source of these impacts, and thereafter reviews potential air emission and noise impacts separately.

Two sections would likely lead to equipment selection changes for development projects involving structural construction of commercial buildings, and multifamily buildings four stories or taller, namely sections 82 and 90.

- Section 82 prohibits new, or whole-system replacement of, HVAC systems that use fossil fuels (i.e., natural gas, heating oil or propane), or electric resistance heat as the primary heating component. The section provides for several exemptions; one exemption allows for the use of electric resistance heat in dwelling units with exterior-facing windows and an installed HVAC heating capacity of 750 watts or less.
  - The exemption allowing the use of electric resistance heat in dwelling units under 750 watts of HVAC heating capacity would likely result in many multifamily developments installing electric resistance heating. In such cases, it is probable that other improvements would be pursued to achieve the 750-watt limit, such as installing windows with more efficient heat loss ratings, and increasing insulation if needed.
  - Otherwise, the likely impact of this proposed ordinance section is an increased use of either mini-split heat pumps (MSHPs) or variable refrigerant flow (VRF) heat pumps in multifamily buildings affected by the proposed ordinance (that are four stories or taller), and in commercial buildings.
- Section 90 prohibits new, or whole-system replacement of, service water heating systems from using fossil fuels (i.e., natural gas, heating oil or propane). Note that service water heating systems are typically found in multifamily buildings affected by the proposed ordinance (that are four stories or taller) or larger commercial buildings providing hot water to multiple rooms or fixtures. This type of hot water system is not typically needed for commercial structures with smaller building square footages.
  - The likely impact of this proposed ordinance section is an increased use of heat pump hot water heaters (HPWHs) in affected building types.

The above-listed prohibitions of fossil-fuel heating equipment, and in some cases the specific systems of MSHPs, VRFs and HPWHs, may have impacts on air emissions and noise levels. These impacts are discussed below.

#### *Air Emissions*

Overall, the above proposed ordinance sections are projected to reduce installation of systems using onsite combustion of fossil fuels for affected building types, which in turn is projected to reduce air emissions from this combustion process. Typical building systems using onsite combustion of fossil fuels include water-and space heating systems that rely on burning natural gas. Combustion of natural gas emits multiple air pollutants, including nitrogen oxides (NOx),<sup>3</sup> nitrous oxide (N2O), carbon monoxide (CO), carbon dioxide (CO2), methane (CH4), volatile organic compounds (VOCs), trace amounts of sulfur dioxide (SO2), and particulate matter (PM).<sup>4</sup> Several of these are also classified as greenhouse gases (GHGs), including carbon dioxide, methane and nitrous oxide,<sup>5</sup> contributing to environmental impacts that result from climate change.

These proposed ordinance sections are projected to advance GHG emission reductions in King County over time. The King County 2017 GHG emissions inventory found that in the built environment, natural gas consumption is responsible for:

- 34 percent of GHG emissions overall, and for
- 13 percent of GHG emissions of commercial buildings specifically.<sup>6</sup>

Although the building codes would not affect existing buildings immediately, it would significantly decrease GHG emissions from new development of multifamily buildings four stories or taller, and from new commercial buildings. Over time, this impact would grow as the existing building stock undergoes substantial renovations that would trigger application of the proposed ordinance, or when buildings are demolished and new structures are built. This impact will expand as state legislation comes into effect. The Washington State Clean Energy Transformation Act (CETA) requires that electricity supplied by utilities in Washington State be:

- Coal-free by 2025;
- GHG-neutral by 2030, meaning their emissions must be offset by other actions; and
- Non-emitting for GHGs by 2045.<sup>7</sup>

Once electricity becomes GHG-neutral in 2030 due to CETA, the primary (and potentially sole) GHG emissions from building operations will be from on-site fossil fuel combustion, which primarily is used for space- and water-heating. By prohibiting fossil fuel combustion for water-heating in larger buildings, and for space heating for all commercial buildings and applicable multifamily buildings, the proposed ordinance would potentially yield some building operations that are GHG-free starting in 2030 for all commercial buildings, and multifamily buildings four stories or taller, constructed under the proposed ordinance.

Air pollutants from the combustion of natural gas emits have other impacts beyond contributing to climate change and its consequent environmental impacts. This includes various environmental and human health impacts associated with nitrogen dioxide, particulate matter, and VOCs, and impacts from potential onsite fossil fuel leaks.

The U.S. EPA notes the following impacts from nitrogen dioxide pollution:

*Breathing air with a high concentration of NO2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty*

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<sup>3</sup> Note that NOx stands for multiple types of oxides of nitrogen, including both nitrogen oxide and nitrogen dioxide. Source: EPA, "Basic Information about NO2," last updated June 7, 2021. [\[LINK\]](#). Accessed 1/10/2022.

<sup>4</sup> United States (U.S.) Environmental Protection Agency (EPA), "AP 42, Fifth Edition, Volume I Chapter 1: External Combustion Sources," 1998. [\[LINK\]](#). Accessed 9/10/2021. Section 1.4 Natural Gas Combustion, page 2.

<sup>5</sup> U.S. Energy Information Administration (EIA), "Energy and the environment explained," last updated July 15, 2021. [\[LINK\]](#). Accessed 3/7/2022.

<sup>6</sup> ICLEI USA, "GHG Emissions in King County: 2017 Inventory Update," King County, July 2019. [\[LINK\]](#). Accessed 3/10/2022. Page 8.

<sup>7</sup> Washington State Department of Commerce (Commerce), "Overview: Clean Energy Transformation Act (CETA)." [\[LINK\]](#). Accessed 3/11/2022.

*breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO<sub>2</sub> may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO<sub>2</sub>.*

*NO<sub>2</sub> along with other NO<sub>x</sub> reacts with other chemicals in the air to form both particulate matter and ozone. Both of these are also harmful when inhaled due to effects on the respiratory system... NO<sub>2</sub> and other NO<sub>x</sub> interact with water, oxygen and other chemicals in the atmosphere to form acid rain. Acid rain harms sensitive ecosystems such as lakes and forests... [Additionally,] NO<sub>x</sub> in the atmosphere contributes to nutrient pollution in coastal waters...<sup>8</sup>*

In Washington state, the Department of Ecology estimates that there are 77,400 metric tons of atmospheric nitrogen emitted annually across all counties within Puget Sound. Of these, 77 percent of emissions stem from transportation, nine percent is from agriculture and seven percent is from point sources of pollution, and 13 percent stem (10,000 metric tons) are emitted from buildings.<sup>9</sup>

The U.S. EPA notes the following impacts from particulate matter pollution:

*The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream.*

*Exposure to such particles can affect both your lungs and your heart. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:*

- *premature death in people with heart or lung disease*
- *nonfatal heart attacks*
- *irregular heartbeat*
- *aggravated asthma*
- *decreased lung function*
- *increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.*

*People with heart or lung diseases, children, and older adults are the most likely to be affected by particle pollution exposure...*

*Particles can [also] be carried over long distances by wind and then settle on ground or water. Depending on their chemical composition, the effects of this settling may include: making lakes and streams acidic*

- *changing the nutrient balance in coastal waters and large river basins*
- *depleting the nutrients in soil*
- *damaging sensitive forests and farm crops*
- *affecting the diversity of ecosystems*
- *contributing to acid rain effects...<sup>10</sup>*

The impact of releases of VOCs varies depending on whether it is being released indoors through off-gassing, or is being released or created in an outdoor environment.<sup>11</sup> Onsite combustion of fossil fuels for water or space heating vent emissions outdoors; the primary concern of outdoor VOC releases is chemical reactions that lead to the creation of ground-level ozone; it should be noted that NO<sub>x</sub> releases

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<sup>8</sup> U.S. EPA, "Basic Information about NO<sub>2</sub>," last updated June 7, 2021. [\[LINK\]](#). Accessed 1/4/2022.

<sup>9</sup> Washington State Department of Ecology (ECY), "story Map of Nitrogen in Puget Sound: Nitrogen Sources & Pathways, Atmosphere." [\[LINK\]](#). Accessed 1/4/2022.

<sup>10</sup> U.S. EPA, "Health and Environmental Effects of Particulate Matter (PM)," last updated May 26, 2021. [\[LINK\]](#). Accessed 4/20/2022.

<sup>11</sup> U.S. EPA, "Technical Overview of Volatile Organic Compounds," last updated March 28, 2021. [\[LINK\]](#). Accessed 4/20/2022.

also lead to the generation of ground-level ozone.<sup>12</sup> While high-altitude (stratospheric) ozone provides a protection from harmful ultraviolet rays, ground-level or tropospheric ozone negatively impacts human health and can negatively affect sensitive vegetation and ecosystems.<sup>13</sup>

*Breathing in ground level ozone can reduce lung function by 20 percent and can trigger health reactions by those most particularly sensitive to poor air quality – children, older adults, those with respiratory or pulmonary conditions, athletes, and those most often outdoors – in addition to our ecosystem. Reactions may look like shortness of breath, coughing, wheezing, fatigue, headaches, nausea, chest pain, and eye and throat irritation. The EPA estimates that 5 to 20 percent of the total U.S. population is especially susceptible to the harmful effects of ozone.*<sup>14</sup>

Ground-level ozone can also negatively affect vegetation, namely black cherry, quaking aspen, tulip poplar, white pine, ponderosa pine, and red alder.<sup>15</sup>

The above discussion indicates that the proposed ordinance would reduce air emission impacts, including releases of GHG emissions and other resulting environmental effects, from the reduction of onsite fossil fuel combustion.

### Toxic or Hazardous Substances

Proposed ordinance sections that would reduce installation of combustion of fossil fuel combustion systems may also result in reduced leaks of fossil fuels, connected with potential issues of carbon monoxide releases and gas accumulation to a combustible or explosive concentration.

If natural gas does not undergo complete combustion it releases carbon monoxide, a colorless, odorless and toxic gas.

*...small amounts of carbon monoxide can dramatically reduce hemoglobin's ability to transport oxygen. Common symptoms of carbon monoxide exposure are headache, nausea, rapid breathing, weakness, exhaustion, dizziness, and confusion. Hypoxia (severe oxygen deficiency) due to acute carbon monoxide poisoning may result in reversible neurological effects, or it may result in long-term (and possibly delayed) irreversible neurological (brain damage) or cardiological (heart damage) effects.*<sup>16</sup>

It is estimated that the U.S. oil and gas system leaks about 2.3% of all the gas it produces.<sup>17</sup>

Natural gas leaks can be dangerous as an indoor air pollutant and, if the leak persists such that gas accumulates, it can result in fires and explosion incidents. Research conducted in development of this checklist did not find data on the amount of gas leaks associated with building types that would be affected by the proposed ordinance namely commercial buildings, and multifamily buildings four stories or taller. However, the 2018 National Fire Protection Association report estimates that 4,200 home fires start with natural gas ignition per year, causing an average of 40 deaths annually, and that local fire departments respond to 340 gas or LP-Gas leaks per day with no ignition.<sup>18</sup> Research conducted in development of this checklist did not find similar information on explosions associated with building leaks. However some explosions have occurred in the region in the last decade that help illustrate the potential range of impacts that can occur from an explosion associated with a natural gas leak from a commercial building. This includes the following:

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<sup>12</sup> U.S. EPA, "Technical Overview of Volatile..." [ibid.](#) [LINK]. Accessed 4/20/2022.

<sup>13</sup> U.S. EPA, "Ground-level Ozone Basics," last updated May 5, 2021. [LINK]. Accessed 4/20/2022.

<sup>14</sup> Clean Air Partners (CAP), "Air Quality Resources - Ozone & Particle Pollution." [LINK]. Accessed 4/20/2022.

<sup>15</sup> U.S. EPA, "Ecosystem Effects of Ozone Pollution," last updated March 8, 2022. [LINK]. Accessed 4/20/2022.

<sup>16</sup> Centers for Disease Control and Prevention (CDC), "Carbon Monoxide," National Institute for Occupational Safety and Health (NIOSH), last reviewed July 9, 2018. [LINK]. Accessed 5/10/2022.

<sup>17</sup> Storrow, Benjamin, "Methane Leaks Erase Some of the Climate Benefits of Natural Gas," Scientific American E & E News, May 5, 2020. [LINK]. Accessed 5/10/2022.

<sup>18</sup> National Fire Protection Association (NFPA), "Natural Gas and Propane Fires, Explosions and Leaks Estimates and Incident Descriptions," 2018. [LINK]. Accessed 10/6/2021. Page 1.

- 2014 explosion in North Bend destroyed three buildings and caused additional property damage to other buildings, including windows, doors and roofs; one city park building roof was temporarily lifted off its foundation. Nearby, five apartments were “red-tagged” as unlivable until repairs could be made and 24 residents of an assisted living facility had to be temporarily relocated due to glass shards and furniture damage; 55 properties were damaged by the blast.<sup>19</sup>
- 2016 explosion in Seattle’s Greenwood neighborhood, that destroyed three businesses and windows of dozens of nearby businesses and apartment buildings; sent nine firefighters to the hospital; and caused \$3 million in damages.<sup>20</sup>

The above review indicates that the proposed ordinance could reduce impacts associated with natural gas distribution systems, namely the hazards associated with carbon monoxide releases and with natural gas accumulation associated with the potential for fire starts and explosion incidents.

### Production of Noise

This section reviews the potential noise impacts of MSHPs, VRFs and HPWHs that could be determined from research conducted in development of this checklist.

The manufacturer-reported range of MSHP operational noise is 20 to 60 decibels (dBs).<sup>21</sup> For comparison 50 dB is the equivalent of a quiet conversation at home, and 60 dB is closer to the volume of a conversation at a restaurant,<sup>22</sup> or a normal conversation.<sup>23</sup> This maximum MSHP sound level rating is not unlike the sound of other appliances with which persons are already familiar. For instance, washing machines and dishwashers tend to operate around 70 dB, and air conditioners operate around 60 dB.<sup>24</sup>

A similar, comprehensive noise assessment for VRFs could not be found in research conducted in development of this checklist, though some sources indicate that a VRF system may be quieter than a MSHP system.<sup>25</sup> One VRF unit cited operational noise of 23 to 31 dB(A);<sup>26</sup> note that dB(A) stands for weighted sound levels that discriminate against low frequencies similar to the human ear.<sup>27</sup> Typically systems that use ductwork will be a few decibels louder.<sup>28</sup>

Overall, for heat pumps used for space heating, some unit functions will cause decibel emissions closer to the louder end of the range for short period of times. For instance, heat pumps may be louder or sound different when a heat pump unit starts up or shuts down, enters a defrost mode or when the fan is in operation.<sup>29</sup> Design decisions may help mitigate equipment noise; for instance, one research product noted

<sup>19</sup> Ladwig, Carol, “North Bend’s huge explosion ruled accidental, clean-up can begin,” Snoqualmie Valley Record, July 9, 2014. [\[LINK\]](#). Accessed 5/10/2022.

<sup>20</sup> Bartick, Alex, “Flashback Friday: Natural gas explosion levels buildings in Seattle neighborhood,” Komo News, March 12, 2021. [\[LINK\]](#). Accessed 5/10/2022.

<sup>21</sup> Dentz, Jordan, David Podorson, and Kapil Varshney, “Mini-Split Heat Pumps Multifamily Retrofit Feasibility Study,” U.S. Department of Energy (DOE) National Renewable Energy Laboratory (NREL), Advanced Residential Integrated Energy Solutions (ARIES) Collaborative, May, 2014. [\[LINK\]](#). Accessed 3/10/2022. Page 3 (pdf page 12).

<sup>22</sup> Modernize Home Services, “How To Find A Quiet HVAC System For Your Home,” April 5, 2021. [\[LINK\]](#). Accessed 3/10/2022.

<sup>23</sup> CDC, “Loud Noise Can Cause Hearing Loss,” page last reviewed October 7, 2019. [\[LINK\]](#). Accessed 3/10/2022.

<sup>24</sup> CDC, “Loud noise...,” *ibid.* [\[LINK\]](#). Accessed 3/10/2022.

<sup>25</sup> A. Bahtia, “HVAC Variable Refrigerant Flow Systems,” Continuing Education and Development Course No. M03-014. [\[LINK\]](#). Accessed 3/10/2022. Page 24.

<sup>26</sup> Life’s Good (LG), “VRF Systems LG Air Conditioning Technologies.” [\[LINK\]](#). Accessed 3/10/2022. Page 2.

<sup>27</sup> Engineering ToolBox, “Decibel A, B and C,” 2003. [\[LINK\]](#), and Vernier, “What is the difference between “A weighting” and “C weighting?”” February 24, 2020. [\[LINK\]](#). Accessed 3/10/2022.

<sup>28</sup> A. Bahtia, “HVAC Variable...,” *ibid.* [\[LINK\]](#). Accessed 3/10/2022. Page 24.

<sup>29</sup> PickHVAC, “Why Is My Heat Pump Making Humming and Other Loud Noises?” [\[LINK\]](#); also, Parker & Sons, “Is It Normal to Have a Noisy Heat Pump?” November 4, 2019. [\[LINK\]](#); and Hannabery HVAC, “Commonly Reported HVAC Problems: Outdoor unit makes strange or loud noises.” [\[LINK\]](#). Accessed 3/10/2022.

that rooftop placement of VRFs may reduce noise impacts, though some installations may also distribute the units in mechanical rooms throughout a building.<sup>30</sup>

A comprehensive assessment of operating noise from HPWHs for larger commercial systems could not be found in research conducted in development of this checklist. HPWHs designed for single family homes tend to emit noise levels similar to that of a dehumidifier;<sup>31</sup> it is unknown if large commercial and multifamily HPWHs emit more noise on average. The Northwest Energy Efficiency Alliance (NEEA) has provided extensive ratings of multiple HPWH models according to operating tiers,<sup>32</sup> with tier three units indicating higher efficiency and quieter operation.<sup>33</sup> When such units are installed in multifamily applications, they typically operate at less than 55dBA;<sup>34</sup> one HPWH unit cited typical operational noise of 37 dB.<sup>35</sup>

Given the range of equipment and design options available to mitigate noise, and that estimated impacts do not exceed noise levels that may be emitted today through the installation of other common household appliances, no adverse levels of noise production are anticipated to result from the proposed ordinance.

### **Proposed measures to avoid or reduce such increases are:**

Existing regulations that aim to avoid or reduce increased discharges to water, emissions to air and the production, storage, or release of toxic or hazardous substances, and to limit noise would also apply to development projects subject to the proposed ordinance and are not changed by the proposed ordinance.

Proposed ordinance sections limiting onsite fossil-fuel combustion are projected to have positive impacts on air emissions originating from some new developments compared to current development regulations; these impacts are reviewed under section D.1 of this checklist.

There are also some proposed ordinance sections, all of which are new to the code, that may provide indirect noise reduction benefits. For instance:

- Provisions that result in increased thermal insulation compared to the state code for spaces, or for specific building components, could improve buffering of outside noise. It should be noted that the noise-reduction benefits of insulation are not uniform; different types of insulation may achieve different Sound Transmission Class (STC) ratings,<sup>36</sup> or achieve different Noise Reduction Coefficients (NRCs),<sup>37</sup> while still providing the same degree of thermal insulation. Generally, higher thermal insulation values also increase STC/NRC ratings,<sup>38</sup> though not as much as would be achieved by targeting STC/NRC values alone. However, several ordinance provisions do increase insulation requirements that could provide some noise reduction benefits, including:
  - Section 72, which would improve the coverage required for continuous insulation.
  - Section 74, which would increase insulation requirements for metal building roofs, some walls, wood joists in floors, and insulation around through-wall mechanical equipment.
  - Section 76, which would improve insulation features for concrete slab features.
  - Sections 77, 78 and 79 which would require continuous insulation and additional insulation features around windows.

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<sup>30</sup> Steven Winter Associates, "Heat Pump Retrofit Strategies for Multifamily Buildings," Prepared for the Natural Resources Defense Council (NRDC), April 2049. [\[LINK\]](#). Accessed 3/10/2022. Page 29.

<sup>31</sup> EnergySTAR, "Considerations – Heat Pump Water Heaters (HPWHs)." [\[LINK\]](#). Accessed 3/10/2022.

<sup>32</sup> Northwest Energy Efficiency Alliance (NEEA), "Advanced Water Heater Specification Qualified Products List for Heat Pump Water Heaters," last updated February 2, 2022. [\[LINK\]](#). Accessed 3/10/2022.

<sup>33</sup> Silicon Vallery Clean Energy, "Heat Pump Water Heater Buyers Guide," [\[LINK\]](#). Accessed 3/10/2022. Page 8 (pdf page 6)

<sup>34</sup> NEEA, "Heat Pump Water Heater Technical Guide," Better Bricks. [\[LINK\]](#). Accessed 3/10/2022. Page 17.

<sup>35</sup> Eco2, "Sanco2." [\[LINK\]](#). Accessed 3/10/2022.

<sup>36</sup> North American Insulation Manufacturers Association (NAIMA), "Comparing Insulation Types." [\[LINK\]](#). Accessed 3/9/2022.

<sup>37</sup> Fast, Doug, "Reduce Noise With Sound-Proofing Insulation," Insulation Outlook, January 1, 2016. [\[LINK\]](#). Accessed 3/9/2022.

<sup>38</sup> Sanchez, Ramiro, "Best Blown-In Insulation Types For Soundproofing," HVAC Seer, October 19, 2021. [\[LINK\]](#). Accessed 3/9/2022.

- These sections also require higher heat retention values for windows themselves. These requirements may sometimes trigger the installation of triple-pane windows, which can have noise reduction benefits. One article found that single pane windows typically hover around a 21 STC rating; dual panes are closer to a 26 STC rating; whereas some triple pane windows may achieve a 31 STC rating.<sup>39</sup> However, some industry specialists have noted that when three panes are spaced within one inch in total, for instance, the air cavities between panes may be insufficient to improve acoustical buffering.<sup>40</sup> As such, noise reduction benefits again may depend more on material selection than on absolute benefits that can be associated with the energy efficiency requirements themselves.
- Section 102 also would require that natural gas appliances in multifamily buildings four stories or taller have an electrical outlet equipped within one foot to serve a future electric appliance in the same location. Although this would not reduce current installation and use of natural-gas appliances of buildings developed under the proposed ordinance, it would reduce the cost and helps support the installation of electrically-powered appliances in the future. This would support future air emission reductions (see section D.1 of this checklist for air emission impacts related to natural gas combustion).

## 2. How would the proposal be likely to affect plants, animals, fish, or marine life?

There are numerous plants, animals, fish, and marine life within unincorporated King County, but the proposed ordinance is unlikely to result in activities that would cause a greater impact to these resources than might otherwise occur under the current code because the regulations protecting those resources are not changed by the proposed ordinance.

### **Proposed measures to protect or conserve plants, animals, fish, or marine life are:**

Existing regulations that protect and conserve plants, animals, fish, and marine life would apply to development projects subject to the proposed ordinance and are not changed by the proposed ordinance, including the County’s Shoreline and Critical Areas Code. No additional measures to avoid or reduce such impacts are proposed.

## 3. How would the proposal be likely to deplete energy or natural resources?

The proposed ordinance would alter the energy source of some building systems. Proposed ordinance sections 82 and 90 disallow fossil fuel use combustion for new, or whole-system replacement of, HVAC and service water heating systems in all commercial buildings, and multifamily buildings four stories or taller. These proposals would reduce energy consumption associated with the onsite combustion of fossil fuels. Alternative HVAC and service water heating systems would typically rely on electricity for energy, and hence would increase the consumption of electricity. Estimating how much electricity consumption would increase as a result of the proposed ordinance would be challenging to predict, as zoning and allowable uses in unincorporated King County allow for development of a variety of building sizes, heights and types. Such buildings, in turn, can have varying needs and energy demands for space and water heating depending on occupant activity. However, the types of space and water heating that would be allowed under the proposed ordinance are all space and water heating options that could be installed without passage of the proposed ordinance. As such, the proposed ordinance would not affect the potential maximum electrical load associated with new building construction.

### **Proposed measures to protect or conserve energy and natural resources are:**

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<sup>39</sup> Kalaher, Ed, “6 Shocking Sounds You’ll Snooze Right Through With Triple Pane Windows,” Window Depot USA, July 22, 2014. [\[LINK\]](#). Accessed 3/9/2022.

<sup>40</sup> Fullerton, Jeff, “Listen Up: Consider How Acoustics Can Complement Green Designs,” FacilitiesNet. [\[LINK\]](#). Accessed 3/9/2022.



The proposed ordinance includes multiple measures that would conserve energy, and some additional measures that may help conserve natural resources. One example is proposed ordinance section 2, which amends K.C.C. 16.02.110, to adopt International Residential Code (IRC) appendix T [RE]: Solar-Ready Provisions for Detached One- and Two-Family Dwellings and Townhouses. This appendix requires new single-family homes and townhomes to provide an unshaded, unobstructed area (300 and 150 sf, respectively) solar-ready area. Adoption of the amendment would reduce installation costs if an owner of one of these building types decides to install a solar PV system in the future.

- Note that one amendment that may be considered as part of this ordinance would strike proposed ordinance language that adopts IRC Appendix T [RE]. Were such an amendment to be made, solar-readiness for these structures would not be required. This would continue the current regulatory approach for solar readiness with these structures, namely that this is an optional feature in structural design.

The remaining measures that would conserve energy, and some that may help conserve natural resources, include the following new K.C.C code sections under the proposed ordinance. These proposed ordinance measures propose to modify the Washington State commercial energy code application for unincorporated King County for commercial buildings and multifamily buildings four stories or taller.

#### HVAC Efficiency

Several sections would improve the energy efficiency of heating, ventilation and air conditioning (HVAC) mechanical systems.

- Sections 73, 74 and 75 all would improve energy efficiency around through-wall mechanical equipment, or the heating efficiency losses for specific, low-efficiency HVAC systems.
- Section 81, which would require HVAC systems serving medical offices and some multifamily buildings to meet the Total System Performance Ratio efficiency evaluation. This evaluation is already required for other building types in state code; the proposed code extends this efficiency evaluation to other types of buildings.
- Sections 82, 84, 88 and 122 would improve the efficiency of HVAC space heating systems through multiple means, namely:
  - Prohibiting the use of electric resistance for HVAC systems. There are multiple exceptions, including for building dwelling units with rooms under a certain HVAC capacity wattage; this exception has the potential to drive additional efficiency improvements in insulation or reduced window heat loss in eligible buildings to qualify for this exception.
  - Limiting the use of internal electric resistance systems within heat pumps to achieve improve electrical efficiency.
  - Improving insulation of refrigerant piping for HVAC systems.
  - Section 82 would also prohibit HVAC systems that use fossil fuels (i.e., natural gas, heating oil or propane). Although this feature conserves the consumption of fossil fuels, it could increase the consumption of electricity for HVAC systems overall. However, other features of the proposed ordinance drive energy efficiency improvements and require renewable electricity consumption as detailed in this subsection that may counterbalance these effects. Additionally, this feature would result in improved air emissions related to building construction; for more on this topic, please see section D.1 of this checklist.
  - Section 122 states that buildings undergoing substantial improvements, or that expand or replace a central HVAC heating system, must also comply with the above requirements.
- Sections 83, 85 and 86 would specifically improve ventilation system efficiencies by requiring:
  - Dedicated outdoor air systems (DOAS) to provide energy recovery for auditoriums, classrooms and similar spaces larger than 650 square feet (sf.).
  - Demand control ventilation (DCV) for spaces with an average occupant load of 15 people per 1,000 sf. or more (versus the state threshold of 25 people per 1,000 sf.).
  - Increased operational efficiency of ventilation energy recovery systems.

#### Service Water Heating Efficiency

Sections 92 and 93 both would improve efficiencies for service water heating systems by limiting efficiency-reducing features such as supplemental electric resistance water heating equipment, and by requiring a minimum insulation levels for unfired tanks storing service hot water at temperatures of over 130 degrees Fahrenheit.

It should be noted that section 90 would prohibit new, or whole-system replacement of, service water heating systems from using fossil fuels (i.e., natural gas, heating oil or propane); section 91 stipulates design requirements for these systems. Although this feature conserves the consumption of fossil fuels, it could increase the consumption of electricity for service water heating systems overall. However, other features of the proposed ordinance drive energy efficiency improvements and require renewable electricity consumption as detailed in this subsection that may counterbalance these effects. Additionally, this feature would result in improved air emissions related to building construction; for more on this topic, please see section D.1 of this checklist.

### Water Circulation System Efficiency

Several sections would improve energy efficiency for water circulation systems, including:

- Section 94, which would require improves both the water- and energy-efficiency of hot water circulation systems by requiring valves that direct hot water to the floors where it is needed. Without such amendments, water is pushed through a large circulation loop that increases the volume of cold water that must be displaced, and increases heat loss through the large pipe system.
- Section 96, which would increase piping insulation for heated water circulation systems.
- Section 97, which would prohibit demand recirculation water systems, which in turn require applicants to install a dedicated hot water return pipe that would draw on partially heated (rather than cold) water for hot water service.

### Lighting System Efficiency

Several sections that would improve lighting system energy efficiency. For instance:

- Section 98 would require enhanced lighting controls that allow for increased dimming, sectional lighting operation and the option of occupant-sensitive lighting.
- Sections 99 and 100 would reduce the amount of power that may be used for lighting, which typically results in higher-efficiency equipment or increased use of natural lighting.
- Section 101, which would clarify that parking garage lighting should not be counted in exterior lighting calculations, which would reduce its overall efficiency, but instead be evaluated against the interior lighting power allowance articulated in the code.
- Section 102, which would require that natural gas appliances in qualifying multifamily residential buildings have an electrical outlet equipped within one foot of those appliances to serve a future electric appliance in the same location. Although this feature would not reduce the consumption of natural gas by itself, it supports the potential conversion of natural gas appliances to those using electricity, supporting a potential reduction of natural gas consumption in the future.
- Section 103 through section 114 would modify the required efficiency package of the code to require higher levels of energy efficiency through:
  - Direct increases in the number of energy efficiency credits for compliance;
  - Modifying specific credits to either align credit requirements with other restrictions stipulated elsewhere in the proposed ordinance; and
  - Removing options that would either be met through the baseline code, are disallowed elsewhere in the proposed ordinance, or that provide low-efficiency options for credit compliance.

### Alternative Code Compliance Options

Some sections would modify an alternative energy code compliance pathway known as performance-based compliance. For instance:

- Section 115 would align the building performance methodology to conform with amendments this ordinance proposes to the prescriptive energy code, and improves the accurate evaluation of proposed projects, in turn improving energy efficiency overall.
- Section 116 would reduce the allowed efficiency loss for building envelopes in energy modeling to 10 percent, compared to the state code that allows a 20 percent efficiency. The building envelope are features that contain heated indoor air within a structure (walls, ceiling floors). The increased heat loss allowance is often offset initially with features such as mechanical equipment. However, building envelopes are rarely upgraded, in contrast to mechanical systems which are replaced more often. This amendment ensures that some of a building’s most permanent features achieve higher energy-efficiency.
- Section 117 would increase the required energy efficiency level of each building area for structures using the performance compliance pathway rather than prescriptive code.

#### Solar Ready and Solar PV Installations

- Section 118 would require a “solar-ready” area be provided on qualifying multifamily buildings with appropriate design support, whereas the state solar-ready requirements only apply to nonresidential buildings; sections 119 and 120 detail additional design requirements for this area. Solar readiness prepares rooftops to support a future renewable solar energy installation, including protected routing for future wiring and preparation of the electrical system for a future connection from a renewable energy system. Although solar-readiness would not reduce consumption of utility-supplied electricity by itself, extending these requirements to multifamily buildings makes adding solar rooftop energy systems more cost-effective and feasible at a later date.
- Section 121 would require the installation of 0.25 watts of solar energy production per square foot of a building’s conditioned space, which would increase renewable energy generation for new development structures subject to the proposed ordinance. This would reduce energy requirements from the utility energy grid. Puget Sound Energy (PSE)-provided electricity includes coal- and natural-gas derived electricity generation; as such the proposed ordinance may help reduce the consumption of coal and natural gas.

#### Other Natural Conservation Features

- Section 72, which would provide minor energy efficiency improvements for some building features compared to state code, such as for continuous insulation, conditioned spaces and mass transfer deck slabs.
- Section 74, which would improve energy efficiency by increasing insulation requirements for metal building roofs, some walls (depending on material type) and wood joists in floors compared to the state energy code; it also provides related insulation improvements around through-wall mechanical equipment (see the related bullet in this section on heating, ventilation and air conditioning).
- Section 76, which would improve efficiency requirements for concrete slab features, such as used in decks and balconies, by requiring to be installed with insulation features to reduce heat loss.
- Sections 77, 78 and 79 would improve heat retention by requiring continuous insulation and additional insulation features around windows, while requiring higher heat retention values for windows themselves.
- Section 89, which would require some commercial food service equipment to meet energy- and water-efficiency criteria of the federal Energy Star label.
- Section 123 states that when an existing structure is changed to become a commercial bakery, kitchen or laundry, the structural changes do not have to meet the energy code when:
  - The design uses only all-electric Energy Star-rated equipment and all-electric HVAC systems, and
  - Fossil-fueled equipment is not installed and will not be used.

These combined requirements help ensure the reduced consumption of natural gas, and the increased energy efficiency of equipment for structures converting land uses in this fashion.

Beyond the above, there are additional federal, state and local regulations that protect and conserve energy and natural resources that would also apply to development projects subject to the proposed ordinance.

**4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?**

The proposed ordinance is unlikely to result in activities that would cause a greater impact to environmentally sensitive areas or areas designated as eligible or under study for governmental protection than might otherwise occur under the existing code. As noted previously, proposed ordinance section 13, modifying K.C.C. 16.02.240, would increase the size of commercial agricultural and forestry accessory buildings exempt from requiring a building permit from 200 square feet to 400 square feet. However, existing regulations regarding the soils and other limitations on square footage are unaltered by the proposed ordinance, and would limit resulting soil removal from development. Any development project that would be subject to the proposed ordinance would be subject to the same development restrictions concerning environmentally sensitive areas that are currently in place.

**Proposed measures to protect such resources or to avoid or reduce impacts are:**

Existing regulations that protect such resources would apply to development projects subject to the proposed ordinance, and are not changed by the proposed ordinance. No additional measures to avoid or reduce such impacts are proposed.

**5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?**

The proposed ordinance does not alter, and is not anticipated to affect, currently allowed land uses or shoreline uses in King County.

**Proposed measures to avoid or reduce shoreline and land use impacts are:**

As the proposed ordinance does not alter, and is not anticipated to affect, currently allowed land uses or shoreline uses in King County, no measures to avoid or reduce impacts are proposed.

**6. How would the proposal be likely to increase demands on transportation or public services and utilities?**

The proposed ordinance is not anticipated to increase demand on public transportation or government-provided services in the unincorporated area. However, some demands related to utility-supplied electricity and natural gas may shift. These potential impacts are addressed in the energy and natural resources section under Checklist section D.3.

**Proposed measures to reduce or respond to such demand(s) are:**

Proposed measures to address demands on utilities related to electricity and natural gas supply are addressed in the energy and natural resources section under Checklist section D.3.

**7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.**

The proposed ordinance is consistent with local, state, and federal law requirements for the protection of the environment. Existing regulations related to the protection of the environment, including the County's

Critical Areas Code, Shoreline Master Program, King County Code (particularly development regulations such as Title 9 Surface Water Management, Title 10 Solid Waste, Title 13 Water and Sewer Systems, Title 21A Zoning, and Title 23 Code Compliance), the Clean Air Act, the Clean Water Act, and others, are not amended by the proposed ordinance. These regulations would still apply to development projects subject to the proposed ordinance in unincorporated King County.