Environmental Checklist (SEPA)

Purpose of SEPA 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:

You will need to upload the PDF document to MyBuildingPermit.com along with your permit application to start the application process. Any additional documents you would like to include in the application process will need to be uploaded to MBP. A PDF will be emailed to you after you submit.

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 non-project 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

Name of proposed project, if applicable:

EvergreenHealth Master Plan

Name of applicant Required

Garett Buckingham, Director of Facilities and Construction. King County Public Hospital District No. 2, a Washington municipal corporation (DBA EvergreenHealth)

Phone # Required

(425) 899-1000

Applicant Address Required

EvergreenHealth Medical Center 12040 NE 128th Street

City

Kirkland

State (Select 1 option)

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi

- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

Zip

фулоп

Date checklist prepared

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Agency requesting checklist

City of Kirkland Planning Department

Proposed timing or schedule (including phasing, if applicable)

2023 to 2033 - See Attachment 1 for detail

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

No additions or expansions beyond the proposed Master Plan planned.

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

See Attachment 1 for list of environmental information prepared for the proposal.

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

No other applications for governmental approvals known.

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

See Attachment 1 for a list of known permits and approvals.

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 EvergreenHealth Master Plan is intended to provide a framework for phased development on the EvergreenHealth campus for the period of 2023 to 2033 - See Attachment 1 for detail.

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 EvergreenHealth Medical Center campus is located in northeast Kirkland, east of I-405 in the Totem Lake neighborhood. The approximately 36.7-acre campus is divided into the following subareas, consistent with City of Kirkland TL-3 and TL-1 zoning. See Attachment 1 for detail.

B. ENVIRONMENTAL ELEMENTS

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1. Earth

a. General description of the site (Select 1 or more options)

- [X] Flat
- [X] Rolling
- [ ] Hilly
- [ ] Steep slopes
- [ ] Mountainous

Other (general description):

The EvergreenHealth campus is generally flat, with a gradual east to west slope. The highest elevation on the campus is at the eastern edge (Subarea TL-3C) with an elevation of approximately 260 feet, with a lowest elevation of approximately 165 feet at the western edge of the campus (Subarea TL-3B).

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

As indicated above, for the most part the EvergreenHealth campus area slopes gradually from east to west with a grade of approximately 10 percent. See Attachment 1 for details.

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.

Geotechnical investigations indicate that surficial material consists of recessional outwash or fill material - See Attachment 1 for additional detail.

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

Portions of the EvergreenHealth campus are mapped as Landslide Critical Area (isolated portions of Subareas TL-3A, TL-3B, TL-3C and TL-3D) and Liquefaction Critical Area (portions of Subareas TL-3A, TL-3B, TL-3D, and TL-1B). The Geotechnical Recommendations Report prepared for the EvergreenHealth Master Plan (GeoEngineers, October 18, 2022) indicates that the potential for impacts associated with landslides and liquefaction associated with development under the proposed Master Plan is low. See Attachment 1.

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.

Earthwork would occur as part of excavation to add additional buildings, underground parking structure and underground stormwater detention vaults to the site. Minimal surface grading would be anticipated to occur and the existing surface grades would mostly be maintained. Any fill brought on the site would be suitable fill soil as determined by the geotechnical engineer - See Attachment 1 for quantities.

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

Erosion potential is increased for any construction project that results in exposed soils. In general, however, because of the relatively gentle slope of the sites of development projects under the proposed Master Plan, and implementation of temporary erosion control Best Management Practices consistent with City requirements, erosion impacts during construction is not anticipated. Once operational, no erosion associated with development under the proposed Master Plan is anticipated.

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

See Attachment 1 for detail on project impervious surfaces.

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

A temporary erosion control plan would be provided implementing Best Management Practices to include temporary construction accesses, silt fencing, inlet protection, wheel washes (if necessary), covering of soil stockpiles, stormwater sedimentation ponds/tanks, and other features consistent with City of Kirkland standards. See Attachment 1.

2. AIR

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.

Development under the proposed EvergreenHealth Master Plan could result in localized increases in air emissions (primarily carbon monoxide) due to construction activities and operation of the four development projects under the Master Plan. See Attachment 1.

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

Air emissions and odors associated with vehicles using area roadways and adjacent office/ residential uses are the primary source of emissions in the area and are not anticipated to affect development under the proposed Master Plan. See Attachment 1.

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

Although significant construction impacts are not anticipated, construction contractors would be required to comply with all relevant federal, state, regional (Puget Sound Clean Air Agency) and local (City of Kirkland) air quality laws, and would be required to prepare a plan for minimizing dust and odors. See Attachment 1 for details.

3. WATER

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (includingyear-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.

City of Kirkland Critical Areas mapping indicate an open stream (a portion of which is mapped as "Stream in a pipe") in Subareas TL-1B and TL-3D, and surface water features (constructed as stormwater detention facilities) in Subarea TL-3D. Totem Lake is located approximately 0.35 mile to the south. See Attachment 1.

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

Development under the EvergreenHealth Master Plan would not require any work over or in surface waters.

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

No fill or dredge material would be placed in or removed from surface waters or wetlands under the proposed EvergreenHealth Master Plan.

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

No surface water withdrawals or diversions would be required for development under the proposed EvergreenHealth Master Plan.

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

The proposed EvergreenHealth Master Plan does not lie within a 100-year floodplain.

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 development under the proposed EvergreenHealth Master Plan does not involve any discharges of waste materials into surface waters.

b. Ground Water:

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.

Temporary dewatering for development under the proposed EvergreenHealth Master Plan may be necessary in order to facilitate shoring installation and excavation until permanent drainage improvements are installed. See Attachment 1.

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 thefollowing chemicals. . . ; agricultural; etc.). Describe the general size of the system, thenumber 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.

No waste material would be discharged into the ground from septic tanks or other sources under the proposed EvergreenHealth Master Plan.

c. Water runoff (including stormwater):

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

Stormwater runoff from the site under the proposed Master Plan would be collected through a network of existing and proposed catchbasins and storm pipes. All onsite runoff would be detained and also treated for water quality using a WQ vault type product (Biopod, MWS, Filterra, etc) before being discharged into the City's public storm system which flows into Juanita Creek and then out to Lake Washington. See Attachment 1 for details.

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

Waste materials would not enter ground or surface waters. Best Management Procedures (BMPs) would be in place to limit the potential for waste entering ground or surface waters.

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

Under the proposed Master Plan, the site has been designed to match existing drainage paths and all runoff from Pollution Generating Surfaces would be treated for water quality consistent with applicable regulations prior to discharge.

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

Site development under the proposed EvergreenHealth Master Plan will be designed consistent with applicable stormwater regulations, designed to match existing drainage paths and will release runoff in rates and durations closely matching of the historic forested condition. No negative downstream impacts are anticipated.

4. PLANTS

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

(Select 1 or more options)

- [X] deciduous tree: alder, maple, aspen, other
- [X] evergreen tree: fir, cedar, pine, other
- [X] shrubs
- [X] 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

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

Development under the master plan is anticipated to result in the removal of approximately 118 trees. See Attachment 1 for details.

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

No listed threatened or endangered plant species are known to be located on the site.

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

New landscaping would be provided as part of each development project under the proposed master plan. See Attachment 1.

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

English ivy is considered an invasive species and has been found within the master plan area. See Attachment 1.

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5. ANIMALS

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.

Crows, pigeons, seagulls, squirrels and raccoons have been observed on or near the site.

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

No known threatened or endangered species are located on or proximate to the EvergreenHealth Master Plan area.

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

The site is not known to be part of a migration route.

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

No wildlife enhancement measures are specifically proposed; however, retained and proposed landscaped open space areas would contribute to urban wildlife habitat.

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

There are no known invasive animal species on or adjacent to the project site

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6. Energy and Natural Resources

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

Proposed development would require energy for lighting, heating, air conditioning, security systems, and medical equipment. Energy sources would be electricity and natural gas.

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

The development projects under the proposed Master Plan would not be anticipated to have a measurable effect on the use of solar energy by adjacent properties.

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 development under the proposed EvergreenHealth Master Plan would conform to applicable provisions of the State of Washington Energy Code and applicable City of Kirkland High Performance Building Standards.

7. Environmental Health

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

Building demolition associated with development under the proposed EvergreenHealth Master Plan would follow applicable local, state and federal requirements related to hazardous materials. Development under the proposed EvergreenHealth Master Plan would generate medical waste and other materials similar in kind to those that presently occur elsewhere on the EvergreenHealth campus. See Attachment 1.

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

Chemicals and other materials typical of a medical center and associated uses are currently utilized on the EvergreenHealth campus. Storage and handling of medical materials (including, but not limited to, sharps, regulated medical waste (RMW), chemo waste, RCRA pharma, and pathology waste) follow procedures established through the EvergreenHealth Hazardous Materials and Waste Management Plan. See Attachment 1.

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.

Existing medical center associated medical material conditions are not anticipated to affect project development or design under the proposed Master Plan.

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.

As indicated above (7.a.), development under the proposed EvergreenHealth Master Plan would generate medical waste and other materials similar in kind to those that presently occur elsewhere on the EvergreenHealth campus.

4) Describe special emergency services that might be required.

Emergency services required for medical center and related uses under the proposed Master Plan would include fire and security. Service for fire would be provided by the Kirkland Fire Department. Security services would provided by the Kirkland Police Department and EvergreenHealth Medical Center security personnel.

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

It is the policy of EvergreenHealth to comply with local and state waste management codes and regulations with the purpose of minimizing the risk of injury and exposure to hazardous materials. See Attachment 1 for details.

b. Noise

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

The predominant sources of ambient noise surrounding the EvergreenHealth campus is vehicular traffic along surrounding roadways, including I-405. Existing traffic noise is not anticipated to affect proposed development under the proposed Master Plan.

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)? Indi-cate what hours noise would come from the site.

Construction-related noise would occur as a result on on-campus demolition and construction of development under the proposed Master Plan. Once operational, development under the proposed EvergreenHealth Master Plan would not generate any significant long-term operational noise. See Attachment 1 for details.

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

Construction noise would be short-term and would be the most noticeable noise generated by development under the proposed Master Plan. Development under the proposed EvergreenHealth Master Plan will comply with applicable provisions of the City's Noise Ordinance, including construction hours.

8. Land and Shoreline Use

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 EvergreenHealth campus reflects a land use character of medical center and supporting uses, and consists of medical center related buildings, structured parking and associated roadways, driveways and landscaping. The EvergreenHealth campus and surrounding area are part of the Totem Lake Neighborhood which is identified as an Urban Center that is envisioned to provide an intensification of institutional, commercial, mixed-use and multifamily residential uses. The overall pattern of land use in the area includes medical office, multifamily residential, and mixed-use development. See Attachment 1 for details.

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?

It is possible that the site was used for agricultural purposes prior to becoming EvergreenHealth Medical Center. The site has been in medical center use for approximately 50 years; no agricultural use has occurred during this time.

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 EvergreenHealth Master Plan would not affect or be affected by farming or forestry activities.

c. Describe any structures on the site.

The EvergreenHealth campus contains a total of approximately 1,075,245 sq.ft. of building space. See Attachment 1 for details.

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

To accommodate construction of the proposed new North Inpatient Tower in Subarea TL-3A, approximately 56,000 sq.ft. of existing building space associated with the hospital building (Silver Building) would be demolished. See Attachment 1.

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

The zoning classification of the majority of the EvergreenHealth campus is Totem Lake 3 (TL-3). See Attachment 1 for details.

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

The portion of the EvergreenHealth campus zoned TL-3 is within the Industrial designation. The small portion zoned TL-1 is within the Office/Multi-family designation. See Attachment 1.

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

The EvergreenHealth campus is not located within the City of Kirkland's shoreline boundary.

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

A stream is located at the northern edge of Subarea TL-3D (and through Subarea TL-1B). An area of Moderate Landslide at the eastern edge of the EvergreenHealth Campus. See Attachment 1.

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

Preliminary estimates indicate that approximately 1,210 people could be expected to work in the new facilities associated with the proposed Master Plan. See Attachment 1.

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

The completed project is not expected to displace any existing employees. See Attachment 1.

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

No permanent displacement would occur and no measures are necessary.

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

The proposed Master Plan is intended to meet goals and regulations contained in the City of Kirkland Comprehensive Plan and Land Use Code. See Attachment 1.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The project site is not located near agricultural or forest lands.

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9. Housing

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

The proposed project does not include housing.

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

No housing presently exists on the project site and no housing would be eliminated.

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

No housing impacts would occur and no mitigation would be necessary.

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10. Aesthetics

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

Under the proposed Master Plan, the North Inpatient Tower would be the tallest building at approximately 120 feet in height. See Attachment 1 for details.

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

Cross-campus views could be altered from areas proximate to the campus. The proposed Master Plan would not affect any public viewpoint or view corridor. See Attachment 1 for details.

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

The proposed Master Plan incorporates urban design goals of the Totem Lake Business District Plan to address design compatibility. See Attachment 1 for details.

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11. Light and Glare

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

The amount and character of light and glare is not expected to differ substantially from that which presently occurs on the campus. See Attachment 1 for details.

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

Light and glare associated with development under the proposed EvergreenHealth Master Plan is not expected to result in any safety hazards.

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

There are no off-campus sources of light that would affect development under the proposed Master Plan.

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

See Attachment 1 for details on measures to reduce or control light and glare.

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12. Recreation

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

Five parks are located in the vicinity of the EvergreenHealth campus. See Attachment 1 for details.

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

The project would not displace any recreational uses.

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

No impacts to recreation would occur and no mitigation measures are proposed.

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13. Historic and cultural preservation

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 located on or near the site? If so, specifically describe.

The EvergreenHealth campus does not contain any buildings or structures that have been listed or determined to be eligible for listing in national, state or local preservation registries.

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 Washington DAHP WISSAARD database indicates that the EvergreenHealth campus has a "low risk" and moderately low risk" of encountering cultural resources. See Attachment 1.

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.

Research conducted included review of the Washington Department of Archaeological and Historic Preservation (DAHP) WISSAARD database. See Attachment 1.

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.

See Attachment 1 for further details on measures to avoid, minimize, or compensate for loss, changes to and disturbance to resources.

14. Transportation

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 campus is served by several roadways in the area, including NE 132nd Street, Totem Lake Blvd, NE 124th Street, NE 128th Street and regional facilities such as I-405. See Attachment 1.

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 Totem Lake Transit Center is located on the south edge of the campus. See Attachment 1.

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

With the build-out of the campus master plan, the parking supply is anticipated to increase by approximately 1,000 stalls (approximately 4,000 total spaces). See Attachment 1.

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).

A Transportation Impact Analysis was prepared for the proposed Master Plan. No mitigation has been identified, however the City is underway with review of the plans. See Attachment 1.

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

No increase in air transportation (emergency helicopter transport) is anticipated under the proposed Master Plan and it would not affect water or rail 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?

With the Master Plan (2033), daily traffic volumes are expected to increase from 14,669 to 22,184 trips. See Attachment 1 for details.

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.

The proposed EvergreenHealth Master Plan would not affect or be affected by movement of agricultural or forestry products.

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

The proposed EvergreenHealth Master Plan will be subject to a Transportation Management Program as required by the City of Kirkland.

15. Public Services

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 Master Plan is intended to guide development of facilities to meet the healthcare needs of the growing communities served by King County Public Hospital District #2 through 2033.

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

The proposed EvergreenHealth Master Plan is intended to provide additional health care public service to the community and no mitigation is necessary.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

The EvergreenHealth campus is developed and all utilities are currently available.

b. 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.

See Attachment 1 for details on utilities for the proposed Master Plan.

Declaration: (Select 1 option) Required

X I certify and declare, under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

c. Signature: Required



Print/Type Name of Signature: Required

Richard Schipanski

Position and Agency/Organization Required

Senior Planner, EA Engineering, Science, and Technology, Inc. PBC

Email Address Required

rschipanski@eaest.com

Date: Required

1 1 1 8 2 0 2 2

City

Seattle

State (Select 1 option) Required

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire

- ( ) New Jersey
- ( ) New Mexico
- ( ) New York
- ( ) North Carolina
- ( ) North Dakota
- ( ) Ohio
- ( ) Oklahoma
- ( ) Oregon
- ( ) Pennsylvania
- ( ) Rhode Island
- ( ) South Carolina
- ( ) South Dakota
- ( ) Tennessee
- ( ) Texas
- ( ) Utah
- ( ) Vermont
- ( ) Virginia
- (X) Washington
- ( ) West Virginia
- ( ) Wisconsin
- ( ) Wyoming

Zip Required

98121

Country Required

USA

D. Supplemental information for nonproject actions.

It is not necessary to complete this section for project actions. You may upload additional documentation at the end of this online form. 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?

Proposed measures to avoid or reduce such increases are:

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

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

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

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

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?

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

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?

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

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

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

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

Note:
Once you complete this form, you will receive an email confirmation from our third-party provider, OpenForms, along with a PDF copy of the form you submitted. Keep it for your records. Be sure to check your spam/junk folder so you don't miss it!

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To request information from this document in (language), please contact the Title VI Coordinator at titlevicoordinator@kirklandwa.gov or 425-587-3831.

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Para pedir información sobre este documento en español, comuníquese con el coordinador del Título VI escribiendo a titlevicoordinator@kirklandwa.gov o llamando al 425-587-3831.

Para solicitar informações deste documento em português, entre em contato com o Coordenador do Título VI em titlevicoordinator@kirklandwa.gov ou 425-587-3831.

해당 (언어)로 이 서류의 정보를 요청하려면, 타이틀 VI 코디네이터(Title VI Coordinator)에게titlevicoordinator@kirklandwa.gov 또는 425-587-3831로 연락하십시오.

Để yêu cầu thông tin từ tài liệu này bằng (ngôn ngữ), vui lòng liên hệ với Điều Phối Viên Tiêu Đề VI theo địa chỉ titlevicoordinator@kirklandwa.gov hoặc theo số (425) 587-3831.

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To request an alternate format, file a complaint or for questions about Kirkland's Title VI Program, contact the Title VI Coordinator at 425-587-3831 (TTY Relay: 711) or TitleVICoordinator@kirklandwa.gov.

End of form

ATTACHMENT 1

ENVIRONMENTAL CHECKLIST

for the proposed

EvergreenHealth Master Plan Project

prepared for

City of Kirkland

November 18, 2022

EA Engineering, Science, and Technology, Inc., PBC

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A. BACKGROUND

1. Name of Proposed Project, if applicable:

EvergreenHealth Master Plan

2. Name of Applicant:

King County Public Hospital District No. 2, a Washington municipal corporation (DBA EvergreenHealth)

3. Address and Phone Number of Applicant and Contact Person:

Garett Buckingham, Director of Facilities and Construction
EvergreenHealth Medical Center
12040 NE 128th Street
Kirkland, WA 98034

4. Date Checklist Prepared

November 18, 2022

5. Agency Requesting Checklist

City of Kirkland

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

The proposed EvergreenHealth Master Plan is intended to provide a framework for phased development on the EvergreenHealth campus for the period of 2023 - 2033. Phasing of individual development projects under the proposed Master Plan are assumed for opening as follows: MOB/Surgery Center – 2024; Parking Garage Expansion – 2025; North Inpatient Tower – 2028; and, DeYoung Pavilion 2 – 2032.

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 additions or expansions planned beyond the projects identified under the proposed EvergreenHealth Master Plan.

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

Analyses that have been or are currently being prepared for the proposal include the following:

- *Geotechnical Recommendations Report – GeoEngineers, October 18, 2022.*

- *Greenhouse Gas Emissions – EA Engineering, Science and Technology, Inc., PBC., November 2022 (appended to this SEPA Checklist).*
- *Arborist Report – Tree Solutions Inc., November 7, 2022.*
- *Transportation Impact Analysis – Transpo Group, November 2022.*

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:

No other applications for governmental approvals that directly relate to the EvergreenHealth campus are known.

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

Permits and approvals associated with development under the proposed EvergreenHealth Master Plan include the following.

- ***City of Kirkland***
  - *Building Permits*
  - *Electrical Permits*
  - *Mechanical and Plumbing Permits*
  - *Land Surface Modification Permits*
  - *Shoring Permits*
  - *Certificates of Occupancy*

- ***Puget Sound Clean Air Agency***
  - *Demolition Permits*

- ***Washington State Department of Ecology***
  - *Construction General NPDES Permit*

11 Give a 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.

Introduction

EvergreenHealth has provided healthcare services to northeast King County since 1968. As Public Hospital District #2, EvergreenHealth is governed by a publicly elected Board of Commissioners, comprised of seven officials, each serving a six-year term. The public governance means that EvergreenHealth must tailor its services and facilities to meet the needs of the community it serves.

As the Eastside community continues to grow, expanded services and facilities are necessary to accommodate the increased demand for healthcare. EvergreenHealth has been conducting long-

term, strategic planning to determine what facilities are needed on the EvergreenHealth campus to meet the future healthcare needs of the community.

The proposed EvergreenHealth Master Plan is intended to provide a framework for phased development on the EvergreenHealth campus for the period of 2023 to 2033. The proposed EvergreenHealth Master Plan is also intended to meet applicable goals and regulations of the Kirkland Comprehensive Plan and Zoning Code.

The goals of the EvergreenHealth Master Plan are listed below:

- *Guide development of facilities to meet the healthcare needs of the growing communities served by King County Public Hospital District #2 through 2033.*
- *Establish (update) the framework to provide the opportunity for continued growth on campus beyond 2033.*
- *Promote an environment that supports a community, family-oriented approach to healthcare.*
- *Contribute to the strength and vitality of the Totem Lake Business District and the City of Kirkland.*
- *Provide a strong sense of identity within the community.*
- *Develop the campus in a manner compatible with neighboring uses and our environment.*

Existing Conditions

*The EvergreenHealth Medical Center campus (EvergreenHealth campus) consists of approximately 36.7 acres in the Totem Lake area of the city of Kirkland (see **Figure 1**). The EvergreenHealth campus consists of the following Subareas (See **Figure 2**):*

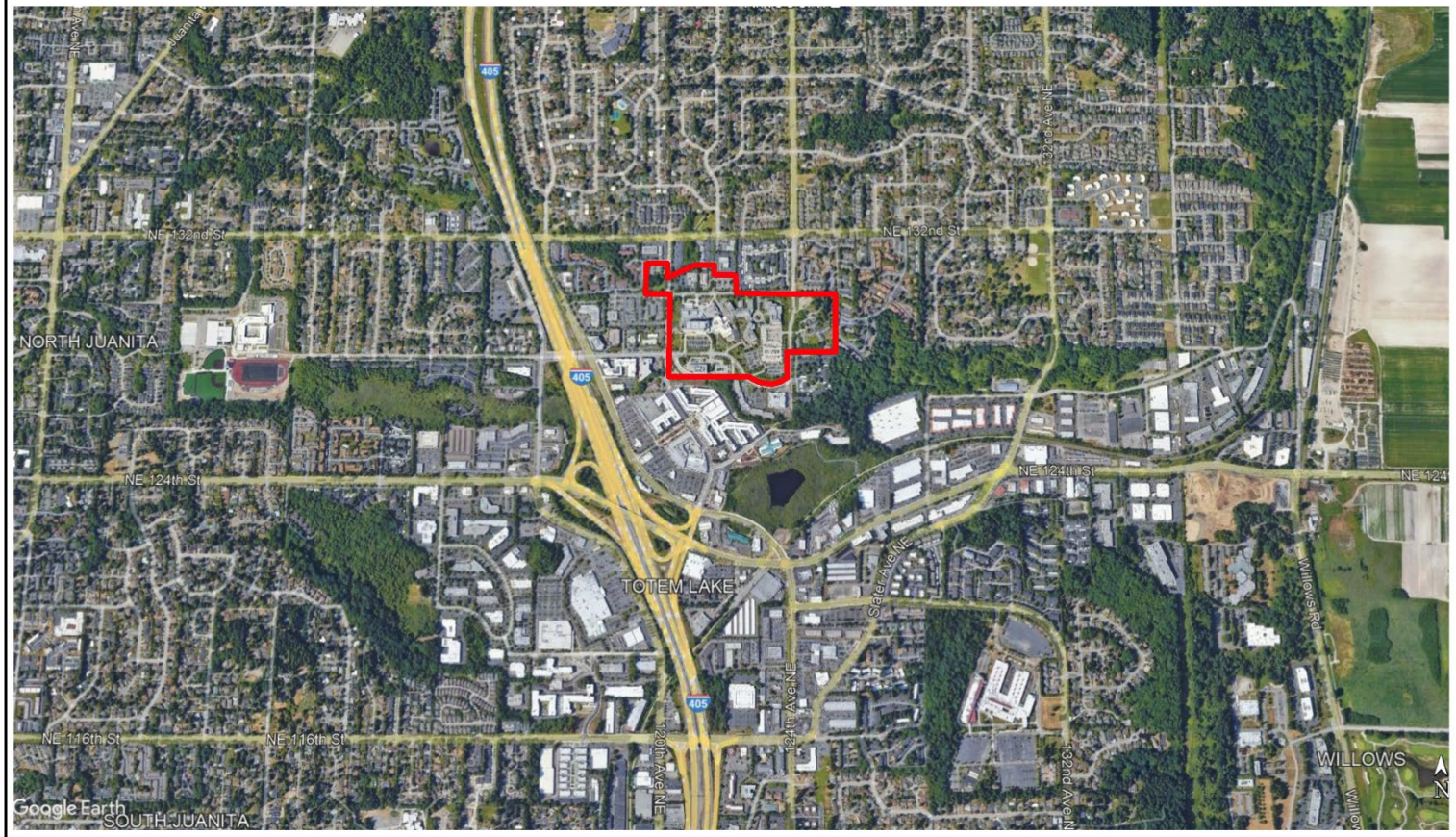
- *Subarea TL-3A – Main Campus (21.13 acres).*
- *Subarea TL-3B – South Campus (4.08 acres).*
- *Subarea TL-3C – East Campus (6.17 acres).*
- *Subarea TL-3D – North Campus (3.68 acres).*
- *Subarea TL-1B – Northwest Campus (1.66 acres)*

*The approximately 36.7-acre EvergreenHealth campus currently contains approximately 1,075,245 sq.ft. of building space, the majority of which is located in the Main Campus (Campus Area TL-3A); see **Figure 3** for existing conditions. **Tables 1 and 2** summarize existing characteristics of the EvergreenHealth campus.*

TABLE 1
Existing EvergreenHealth Campus Development Summary

	Area TL-3A Main Campus	Area TL-3B South Campus	Area TL-3C East Campus	Area TL-3D North Campus[1]	Area TL-1B Northwest Campus	Entire Campus
Building Space (sq.ft.)	942,625	76,228	20,500	35,892	--	1,075,245
Hospital Beds	318	--	--	--	--	318
Parking Spaces	1994	666	66	208	68	3,002
Population	2,974	236	42	288	--	3,540

Source: NBBJ

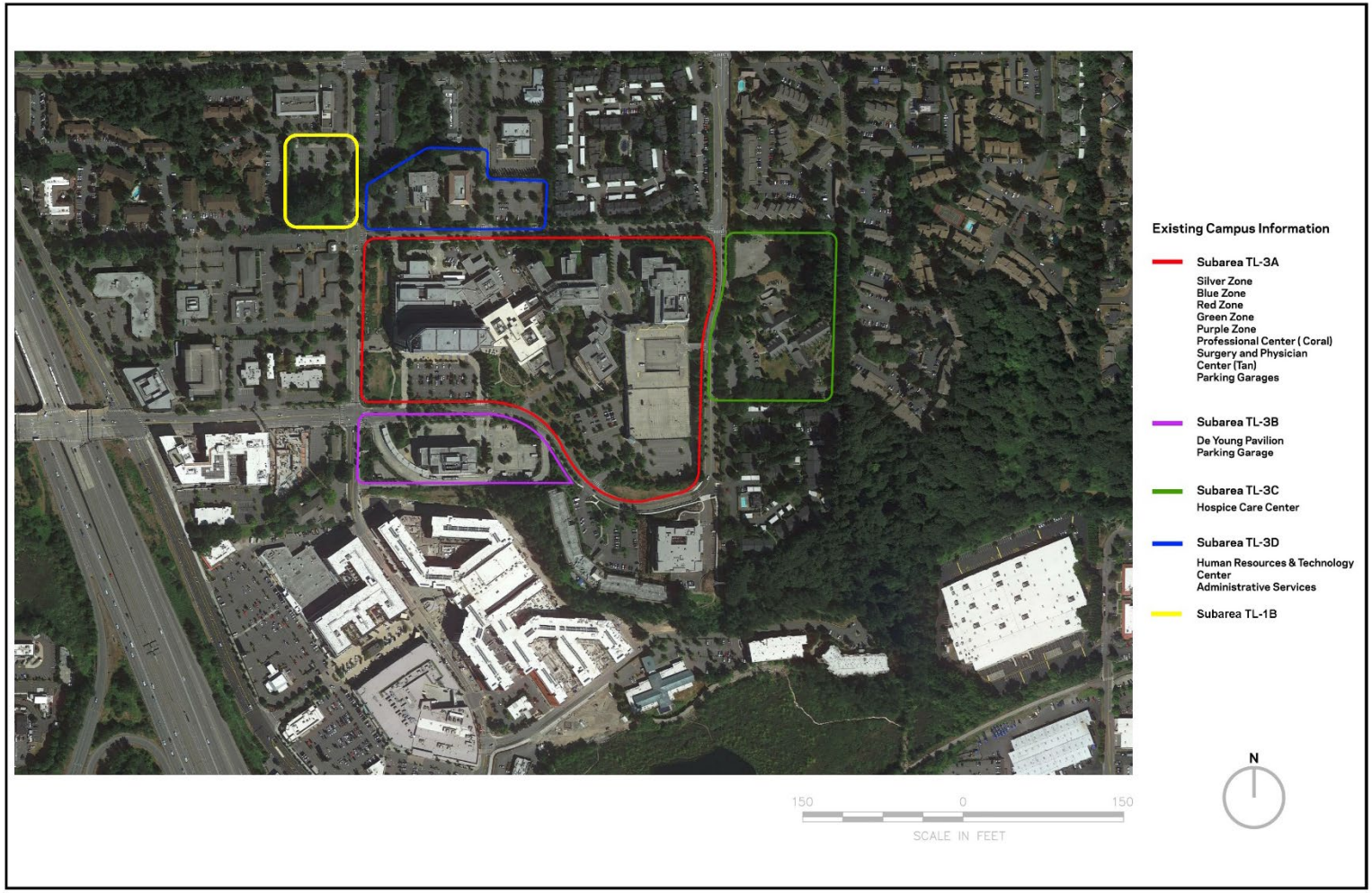


Source: Google Earth and EA Engineering, 2022.

EA Engineering, Science, and Technology, Inc., PBC

Figure 1

Vicinity Map

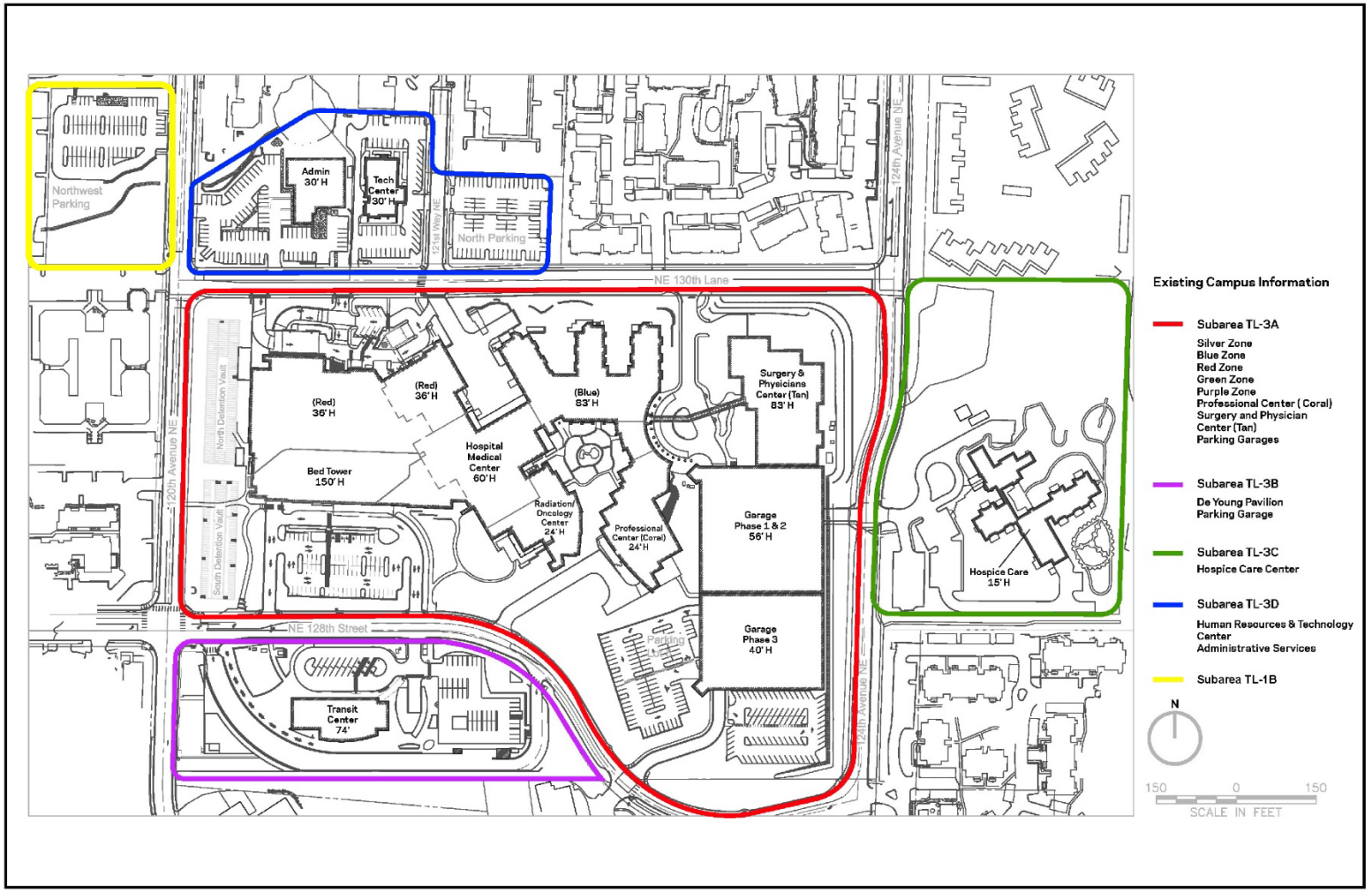


Source: NBBJ, 2022.

EA Engineering, Science, and Technology, Inc., PBC

Figure 2

Existing Aerial Map



Source: NBBJ, 2022.

EA Engineering, Science, and Technology, Inc., PBC

Figure 3

Existing Site Map

TABLE 2
Existing EvergreenHealth Campus Site Area Summary (Acres)

	Area TL-3A Main Campus	Area TL-3B South Campus	Area TL-3C East Campus	Area TL-3D North Campus	Area TL-1B Northwest Campus	Entire Campus
Acreage	*21.13*	*4.08*	*6.17*	*3.68*	*1.66*	*36.72*
Impervious Surface	*13.20*	*2.78*	*1.99*	*2.94*	*0.66*	*21.57*
Pervious Surface	*7.93*	*1.30*	*4.18*	*0.74*	*1.00*	*15.15*

Source: NBBJ

Proposal

The proposed EvergreenHealth Master Plan Project is intended to provide a framework for phased development to accommodate the increased demand for healthcare in the Eastside community. The majority of the existing facilities on the EvergreenHealth campus would be retained, with new facilities added to address increased healthcare demand. No expansion of the campus boundary is proposed under the EvergreenHealth Master Plan.

New development under the EvergreenHealth Master Plan would include four development projects as describe below, in the order of anticipated development. See ***Figure 4*** *for an illustration of development proposed under the Master Plan and* ***Figure 5*** *for an illustration of existing and proposed building heights.*

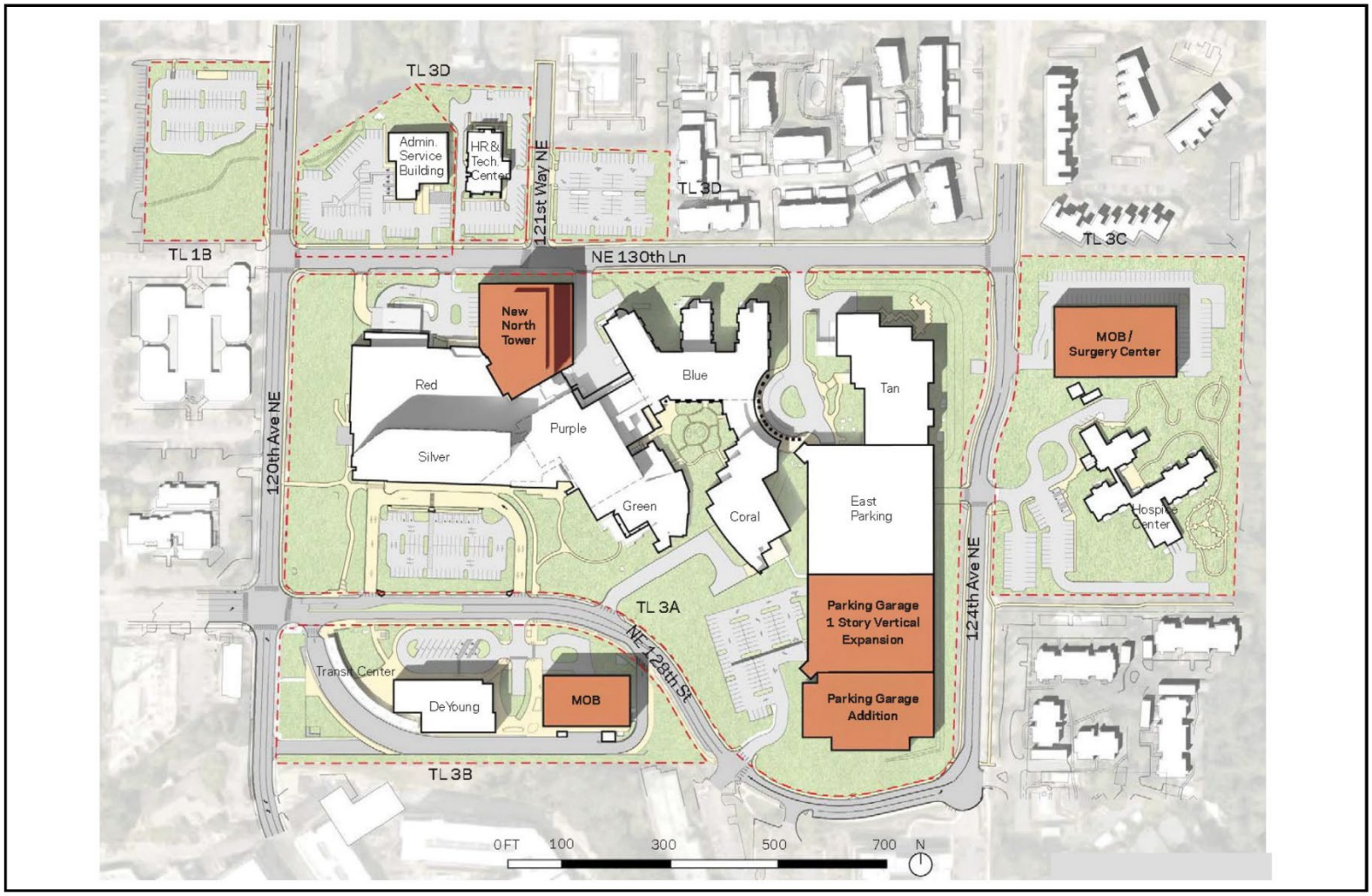
- *Medical Office Building (MOB)/Surgery Center – Proposed for Subarea TL-3C and immediately north of the Hospice center, this four-story approximately 144,000 sq.ft. building would provide space for clinical care and would include surface/underground parking. This building is anticipated to open in 2024.*

- *Parking Garage Expansion – Proposed for Subarea TL-3A, this project would include an additional floor on the south half of the existing central garage and an extension of the structure to the south (replacing existing surface parking lot). Anticipated for opening in 2025, this project would add approximately 474 net new stalls to the campus.*

- *North Inpatient Tower – Proposed for Subarea TL-3A, this project includes demolition of a portion of the existing structure (Red) and provision of a new eight-story approximately 316,000 sq.ft additions to the north side of the Medical Center; considering the demolition of approximately 32,000 sq.ft. of existing building space, there would be a net increase of approximately 288,000 sq.ft. of building space. This project includes expansion of the underground parking below the new building footprint, providing 755 new spaces. The North Inpatient Tower is anticipated to open in 2028.*

- *DeYoung Pavilion 2[1] – Proposed for Subarea TL-3B, the DeYoung Pavilion 2 project would provide a five-story approximately 78,000 sq.ft. medical office building adjacent to the existing DeYoung Pavilion building. Parking for this new building would be provided by the existing underground parking structure originally sized to support the two DeYoung Pavilion buildings. The DeYoung Pavilion 2 is anticipated to open in 2032.*

[1] *The DeYoung Pavilion 2 project was included in the 2017 Master Plan Update and is now considered an element of the proposed EvergreenHealth Master Plan.*

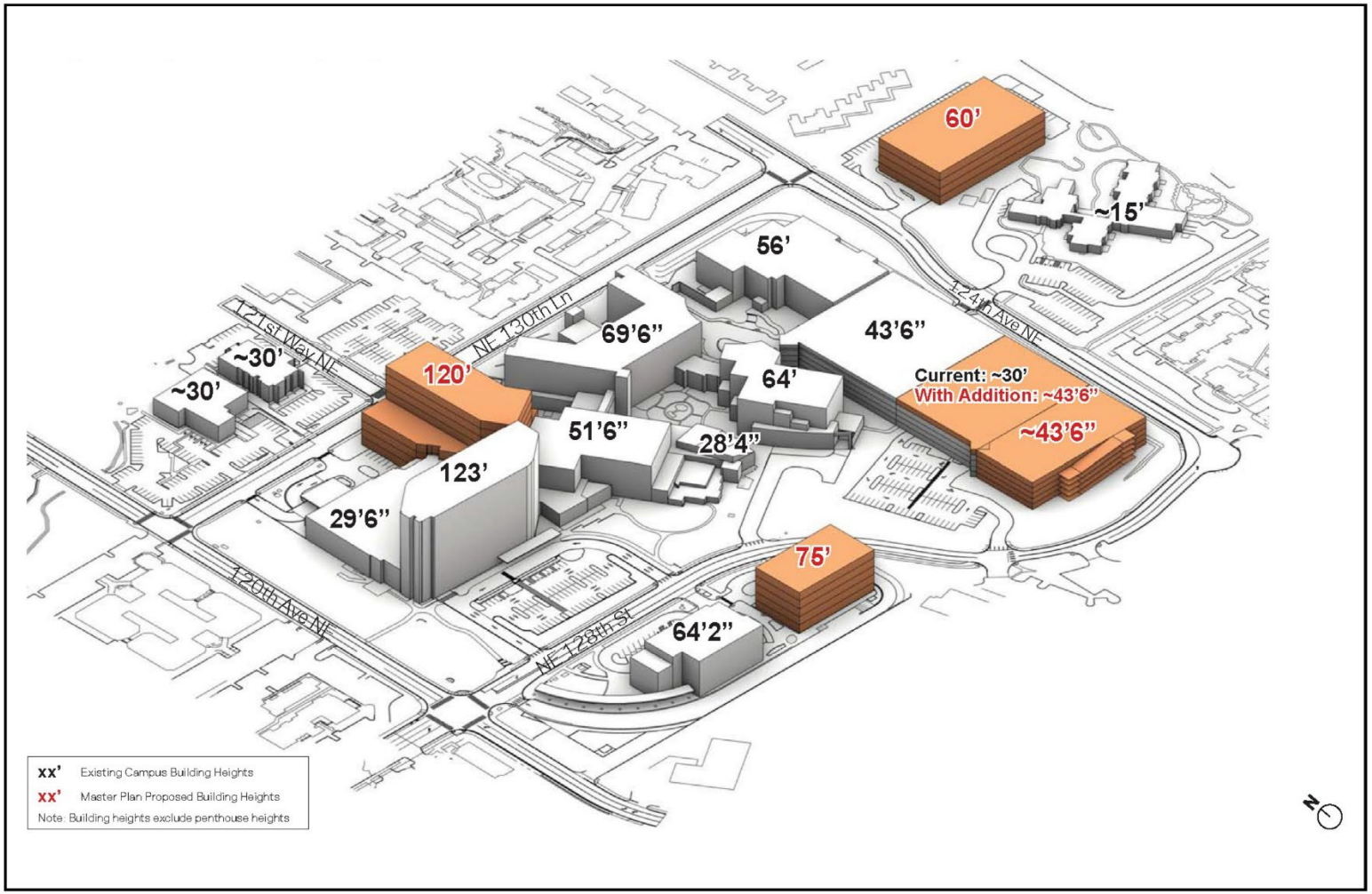


Source: NBBJ, 2022.

EA Engineering, Science, and Technology, Inc., PBC

Figure 4

Proposed Master Plan



Source: NBBJ, 2022.

EA Engineering, Science, and Technology, Inc., PBC

Figure 5

Proposed & Existing Building Heights

The campus development proposed under the EvergreenHealth Master Plan is summarized in ***Tables 3 and 4****, with a comparison of the existing/proposed provided in* ***Table 5****.*

TABLE 3
Proposed EvergreenHealth Master Plan Development Summary

	Area TL-3A Main Campus	Area TL-3B South Campus	Area TL-3C East Campus	Area TL-3D North Campus	Area TL-1B Northwest Campus	Entire Campus
Building Demo (sq.ft)	*-32,000*	*--*	*--*	*--*	*--*	*-32,000*
Retained Building (sq.ft)	*910,625*	*76,228*	*20,500*	*35,892*	*--*	*1,043,245*
New Building (sq.ft)	*316,000*	*78,000*	*144,000*	*--*	*--*	*538,000*
Total Building Space	***1,226,625***	***154,228***	***164,500***	***35,892***	***--***	***1,581,245***
Existing Beds	*318*	*--*	*--*	*--*	*--*	*318*
New Beds	*150*	*--*	*--*	*--*	*--*	*150*
Total Beds	***468***	***--***	***--***	***--***	***--***	***468***
Parking Spaces Demo	*133*	*40*	*0*	*0*	*0*	*173*
Retained Parking Spaces	*1,861*	*626*	*66*	*208*	*68*	*2,829*
New Parking Spaces	*755*	*0*	*429*	*0*		*1,184*
Total Parking Spaces	***2,616***	***626***	***495***	***208***	***68***	***4,013***
New Population	*550*	*240*	*420*	*--*	*--*	*1,210*
Total Population	***3,524***	***476***	***462***	***288***	***--***	***4,750***

Source: NBBJ

TABLE 4
Proposed EvergreenHealth Campus Site Area Summary (Acres)

	Area TL-3A Main Campus	Area TL-3B South Campus	Area TL-3C East Campus	Area TL-3D North Campus	Area TL-1B Northwest Campus	Entire Campus
Acreage	*21.13*	*4.08*	*6.17*	*3.68*	*1.66*	*36.72*
Impervious Surface	*13.29*	*2.78*	*3.18*	*2.94*	*0.66*	*22.85*
Pervious Surface	*7.84*	*1.30*	*2.99*	*0.74*	*1.00*	*13.87*

Source: NBBJ

Table 5 *provides a comparison of existing EvergreenHealth campus characteristics with campus characteristics under the proposed Evergreen Health Master Plan.*

TABLE 5
Existing/Proposed EvergreenHealth Campus Characteristics Summary

	Existing Campus Conditions	Proposed Campus Conditions
Acreage	*36.72*	*36.72*
Building Space	*1,075,245*	*1,581,245*
Hospital Beds	*318*	*468*
Parking Spaces	*3,002*	*4,013*
Population	*3,540*	
Impervious Surface	*21.57*	*22.85*
Pervious Surface	*15.15*	*13.87*

Source: NBBJ

To provide the flexibility to respond to future healthcare and market conditions, the EvergreenHealth Master Plan includes an optional development site where the proposed Medical Office (MOB)/Surgery Center identified for Subarea TL-3C is transferred to Subarea TL-3D. This

option may be considered should future outpatient clinic needs for the MOB require close proximity to the Emergency Department. Under this option, underground parking would be provided along with driveway access from `121st Way NE. Under this optional development site, there would be no expansion of the existing campus boundary and the overall amount of proposed new building development associated with the MOB/Surgery Center would remain at approximately 144,000 sq.ft. See ***Table 6*** *for a summary of building development and* ***Figure 6*** *for an illustration of the optional development site.*

TABLE 6
Optional Development Site Summary

	Area TL-3A Main Campus	***Area TL-3B South Campus***	***Area TL-3C East Campus***	***Area TL-3D North Campus***	***Area TL-1B Northwest Campus***	***Entire Campus***
Building Demo (sq.ft)	*-32,000*	*--*	*--*	*--*	*--*	*-32,000*
Retained Building (sq.ft)	*910,625*	*76,228*	*20,500*	*35,892*	*--*	*1,043,245*
New Building (sq.ft)	*316,000*	*78,000*	*--*	*144,000*	*--*	*538,000*
Total Building Space	***1,226,625***	***154,228***	***20,500***	***179,892***	***0***	***1,581,245***

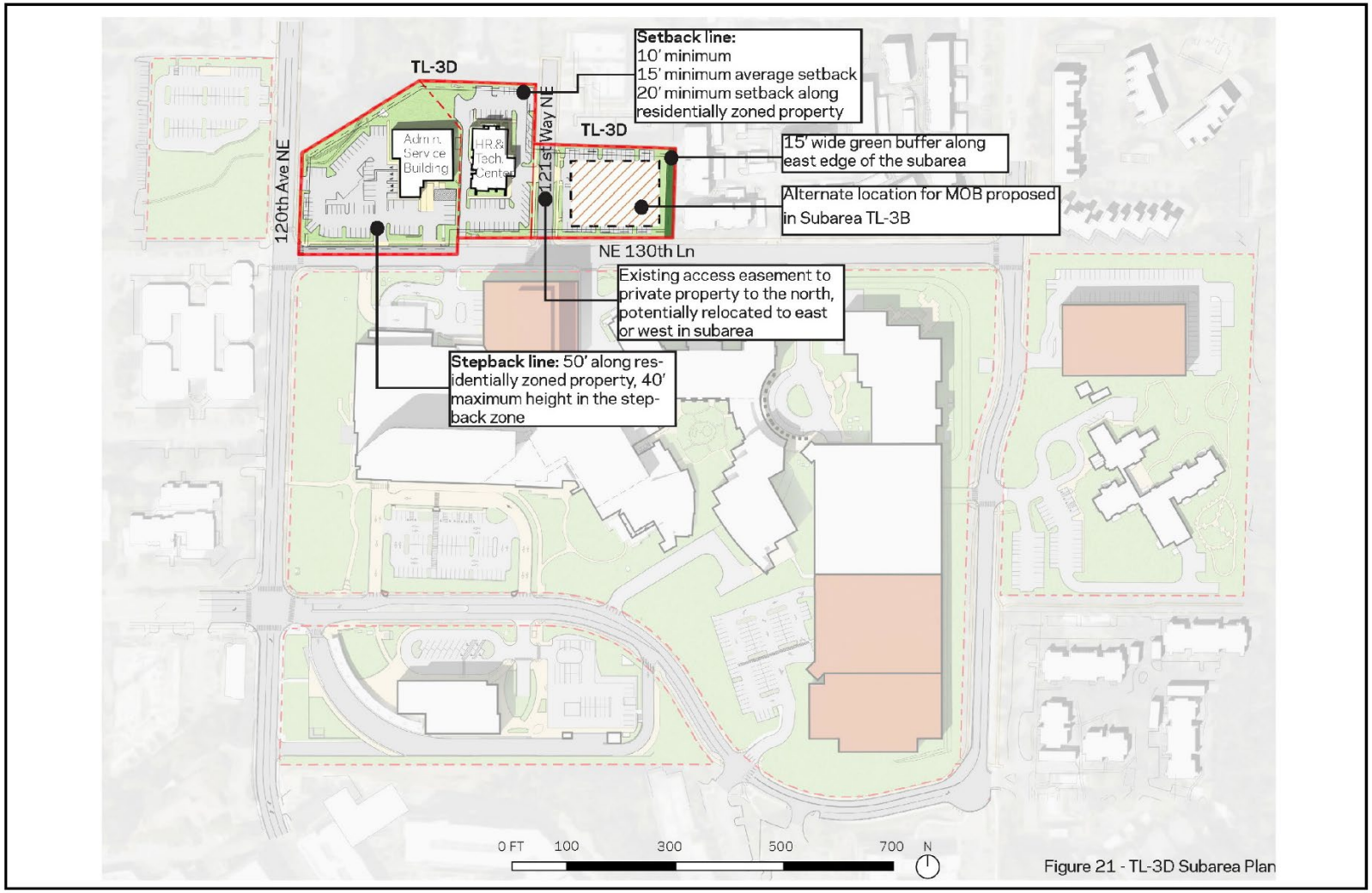
Source: NBBJ

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 S with any permit applications related to this checklist.

The EvergreenHealth Medical Center campus is located in northeast Kirkland, east of I-405 in the Totem Lake neighborhood. The approximately 36.7-acre campus is divided into the following subareas, consistent with City of Kirkland TL-3 and TL-1 zoning:

- *Subarea TL-3A – (Main Campus) bounded by NE 130th Lane, 124th Avenue NE, NE 128th Street, and 120th Avenue NE;*
- *Subarea TL-3B (South Campus) south of NE 128th Street;*
- *Subarea TL-3C (East Campus) east of 124th Avenue NE;*
- *Subarea TL-3D (North Campus) north of NE 130th Lane; and.*
- *Subarea TL-1B (Northwest Campus) west of 120th Avenue NE.*

The legal descriptions of the campus subareas are included in the EvergreenHealth Master Plan application package.



Source: NBBJ, 2022.

EA Engineering, Science, and Technology, Inc., PBC

Figure 6

Optional Development Site

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one):
Flat, rolling, hilly, steep slopes, mountainous,
other:_____

The EvergreenHealth campus is generally flat, with a gradual east to west slope. The highest elevation on the campus is at the eastern edge (Subarea TL-3C) with an elevation of approximately 260 feet, with a lowest elevation of approximately 165 feet at the western edge of the campus (Subarea TL-3B).

b. What is the steepest slope on the site (approximate percent slope)? Describe location and areas of different topography.

As indicated for 1.a above, for the most part the EvergreenHealth campus area slopes gradually from east to west with a grade of approximately 10 percent. An isolated slope of approximately 15 percent is located in the eastern portion of Subarea TL-3A.

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.

Geotechnical investigations performed at the EvergreenHealth campus indicate that surficial material consists of recessional outwash or fill material. Underlying this material is medium dense to dense sand with varying silt and gravel identified as Olympia interglacial deposits (mixture of sand, gravelly sand) with silt and peat.

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

Portions of the EvergreenHealth campus are mapped as Landslide Critical Area (isolated portions of Subareas TL-3A, TL-3B, TL-3C and TL-3D) and Liquefaction Critical Area (portions of Subareas TL-3A, TL-3B, TL-3D, and TL-1B). The Geotechnical Recommendations Report prepared for the EvergreenHealth Master Plan (GeoEngineers, October 18, 2022) indicates that the potential for impacts associated with landslides and liquefaction associated with development under the proposed Master Plan is low.

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

Earthwork would occur as part of excavation to add additional buildings, underground parking structure and underground stormwater detention vaults to the site. Minimal surface grading would be anticipated to occur and the existing surface grades would mostly be maintained. Any fill brought on the site would be suitable fill soil as determined by the geotechnical engineer.

Expected earthwork quantities in cubic yards (cy) for each campus Subarea under the proposed EvergreenHealth Master Plan is listed below

***TL-3A:** 37,000 cy Cut, 0 cy fill (Total 37,000 cy Export)*
***TL-3B:** 550 cy Cut, 0 cy fill (Total 550 cy Export)*
***TL-3C:** 83,200 cy Cut, 0 cy fill (Total 83,200 cy Export)*
Total: 120,750 cy Export

***TL-3D** (Optional Development Site): 23,000 cy Cut, 0 cy fill (23,000 cy Export)*

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

Erosion potential is increased for any construction project that results in exposed soils. In general, however, because of the relatively gentle slope of the sites of development projects under the proposed Master Plan, and implementation of temporary erosion control Best Management Practices consistent with City requirements, erosion impacts during construction is not anticipated. Once operational, no erosion associated with development under the proposed Master Plan is anticipated.

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

Under existing conditions, approximately 59 percent of the EvergreenHealth campus is in impervious surface, including approximately 62.4 percent of Subarea TL-3A, 68 percent of Subarea TL-3B, 32.2 percent of TL-3C, 80 percent of Subarea TL-3D, and 39.7 percent of Subarea TL-1B.

Under the EvergreenHealth Master Plan, approximately 61.6 percent of the EvergreenHealth campus would be in impervious surfaces (compared to 58.2 percent of the EvergreenHealth campus under existing conditions) including approximately 62.9 percent of Subarea

TL-3A, 68 percent of Subarea TL-3B, 51.6 percent of Subarea TL-3C, 80 percent of Subarea TL-3D, and 39.7 percent of Subarea TL-1B.

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

A temporary erosion control plan would be provided implementing Best Management Practices to include temporary construction accesses, silt fencing, inlet protection, wheel washes (if necessary), covering of soil stockpiles, stormwater sedimentation ponds/tanks, and other features consistent with City of Kirkland standards.

2. Air

a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Development under the proposed EvergreenHealth Master Plan could result in localized increases in air emissions (primarily carbon monoxide) due to construction activities and operation of the four development projects under the Master Plan. Phased construction activities could result in temporary minor, localized impacts to air quality due to emissions from construction-related sources and activities. Some activities (e.g., asphalt paving) could also generate odors detectable to some people. Construction contractors would have to comply with PSCAA regulations that require that all reasonable precautions be taken to minimize fugitive dust emissions and emissions from diesel equipment to reduce potential health risks.

With the operation of the development projects under the proposed EvergreenHealth Master Plan, it is anticipated that CO concentrations could increase slightly in 2033 (full buildout of development under the proposed Master Plan) but would remain well below the respective 1-hour and 8-hour ambient air quality standards. The proposed Master Plan development would conform with applicable air quality conformity requirements under state and federal air quality laws and no new violations of air quality standards would be anticipated. It is not anticipated that operation of development under the proposed Master Plan would qualify as a "major source of air pollution" and would not require an Air Operating Permit from Puget Sound Clean Air Agency.

Regarding Greenhouse Gas Emissions, the scale of global climate change is so large that a project's impacts can only be evaluated on a cumulative scale and it is not anticipated that development projects under the proposed EvergreenHealth Master Plan would cause an individually discernible impact on global climate change.

In order to evaluate the climate change impacts of the proposed project, Master Plan on a gross-level basis. The emissions estimate is based on the combined emissions from the following sources:

- *Embodied Emissions – extraction, processing, transportation, construction and disposal of materials and landscape disturbance;*
- *Energy-related Emissions – energy demands created by the development after it is completed; and,*
- *Transportation-related Emissions – transportation demands created by the development after it is completed.*

The Worksheet estimates are based on building use and size. In total, the estimated lifespan emissions estimate for the project is approximately 1,107,450 $MTCO_2e$[2]. Based on an average building lifespan of 62.5 years as identified in the Worksheet, it is anticipated that the average annual emissions for the project would be approximately 17,719 $MTCO_2e$. For reference, the Washington State Department of Ecology threshold for potential significant GHG emissions is 25,000 $MTCO_2e$ annually. Therefore, the proposed project would not be anticipated to generate a significant amount of GHG emissions. The Greenhouse Gas Emissions Worksheets used to estimate the project emissions are contained in the Greenhouse Emissions Worksheets (included as ***Appendix A*** *to this SEPA Checklist).*

Air quality and Greenhouse Gas Emissions conditions under the Optional Development Site would be similar to that described for the proposed Master Plan.

The proposed development projects under the EvergreenHealth Master Plan would be designed to conform to the applicable regulations and standards of agencies regulating air quality in the Puget Sound Region. These include the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (DOE), and the Puget Sound Clean Air Agency (PSCAA).

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

Vehicular traffic on immediately adjacent roadways (NE 130th Lane, NE 128th Street, 120th Avenue NE, and 124th Avenue NE), I-405 farther to the west, and vehicles assessing the adjacent office and residential uses currently generate emissions and odor.

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[2] $MTCO_2e$ is defined as Metric Ton Carbon Dioxide Equivalent: it equates to 2204.62 pounds of CO^2. This is a standard measure of amount of CO^2 emissions reduced or sequestered. Carbon is not the same as Carbon Dioxide. Sequestering 3.67 tons of CO^2 is equivalent to sequester one ton of carbon.

Air emissions and odors associated with vehicles using area roadways and adjacent office/residential uses are not anticipated to affect development under the proposed Master Plan, including the Optional Development Site.

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

The following measures would be implemented to control emissions and/or dust associated with the proposed projects under the EvergreenHealth Master Plan:

- *Although significant construction impacts are not anticipated, construction contractors would be required to comply with all relevant federal, state, regional (Puget Sound Clean Air Agency) and local (City of Kirkland) air quality laws, and would be required to prepare a plan for minimizing dust and odors.*

- *No significant adverse air quality impacts are anticipated to occur due to traffic and no operational impact mitigation measures are warranted or proposed.*

3. Water

a. Surface:

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. Provide a sketch if not shown on site plans.

City of Kirkland Critical Areas mapping indicate an open stream (a portion of which is mapped as "Stream in a pipe") in Subareas TL-1B and TL-3D, and surface water features (constructed as stormwater detention facilities) in Subarea TL-3D. Totem Lake is located approximately 0.35 mile to the south.

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. Note approximate distance between surface waters and any construction, fill, etc.

Development under the EvergreenHealth Master Plan would not require any work over or in surface waters. Development under the optional development site would not include any work within 200 feet of the stream in Subareas TL-1B and TL-3D, or ponds in Subarea TL-3D.

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.**

No fill or dredge material would be placed in or removed from surface waters or wetlands under the proposed EvergreenHealth Master Plan.

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

No surface water withdrawals or diversions would be required for development under the proposed EvergreenHealth Master Plan.

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

The proposed EvergreenHealth Master Plan does not lie within a 100-year floodplain.

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 development under the proposed EvergreenHealth Master Plan does not involve any discharges of waste materials into surface waters.

b. **Ground:**

1) **Will ground water be withdrawn, or will water be discharged to ground water? 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.**

Temporary dewatering for development under the proposed EvergreenHealth Master Plan may be necessary in order to facilitate shoring installation and excavation until permanent drainage improvements are installed. A detailed plan for temporary dewatering and permanent drainage improvements, consistent with applicable regulations, will be provided with permit applications for each development project under the proposed Master Plan.

2) **Describe waste material that will be discharged into the ground from septic tanks or other sources; 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.**

No waste material would be discharged into the ground from septic tanks or other sources under the proposed EvergreenHealth Master Plan. Sanitary sewage waste material would be discharged directly into the City's existing sewer system.

c. Water Runoff (including storm water):

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.**

Stormwater runoff from the site under the proposed Master Plan would be collected through a network of existing and proposed catchbasins and storm pipes. Runoff from Subarea TL-3A would be directed to a new, large detention vault located along the 120th Ave NE frontage that will replace the existing two detention vaults currently residing in that area to provide even more detention volume for the site. Subareas TL-3B and TL-3C would have their own detention vaults individually to provide flow control. Subarea TL-3D would either provide an onsite detention vault, or would flow to the TL-3A Subarea as it does in the existing condition and additional detention volume would be added to that TL-3A vault. All onsite runoff would be detained and also treated for water quality using a WQ vault type product (Biopod, MWS, Filterra, etc) before being discharged into the City's public storm system which flows into Juanita Creek and then out to Lake Washington.

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

Waste materials would not enter ground or surface waters. Best Management Procedures (BMPs) would be in place to limit the potential for waste entering ground or surface waters.

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

Under the proposed Master Plan, the site has been designed to match existing drainage paths and all runoff from Pollution Generating Surfaces would be treated for water quality consistent with applicable regulations prior to discharge.

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

Site development under the proposed EvergreenHealth Master Plan will be designed consistent with applicable stormwater regulations, designed to match existing drainage paths and will release runoff in rates and durations closely matching of the historic forested condition. No negative downstream impacts are anticipated.

4. Plants

a. Check or circle types of vegetation found on the site:

_X_deciduous tree: alder, big-leaf **maple, vine maple**, aspen, other:
_X_evergreen tree: **western red cedar**, **Douglas fir**, pine, other
_X_shrubs:
_X_grass
__pasture
__crop or grain
__wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__water plants: water lily, eelgrass, milfoil, other
___other types of vegetation (please list);

A Tree Inventory and Arborist Report was prepared for the project by Tree Solutions Inc. (November 7, 2022). 215 trees were inventoried and assessed with the master plan area; an additional 54 trees with canopies that overhang the site were also assessed. A variety of trees are located on the site with four species exceeding 10 percent of the total population – Red maple, Leyland cypress, Douglas fir, and Western red cedar. Of the 215 trees onsite, 200 were estimated to be of high retention value (HVR) according to the Kirkland Zoning Code (KZC 95.10.7.h). 18 trees on the site are also considered landmark trees according to KZC 95.10.7.d. All existing landmark trees are located within the northeast corner of the master plan area (see the Arborist Report included with the application for further details on existing trees on the site).

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

As indicated in the Arborist Report, development under the master plan is anticipated to result in the removal of approximately 118 trees. The proposed MOB/Surgery Pavilion site contains the largest concentration of existing trees and as such would require the greatest amount of tree removal. Approximately 72 trees would be removed as part of construction of the MOB/Surgery Pavilion. Development of the Parking Garage Expansion would require the removal of approximately 21 trees to accommodate the building and road realignment. Construction of the DeYoung Pavilion 2 would require the removal of five trees. Construction of the North Inpatient Tower would require the removal of approximately 20 trees; three street trees would also require removal to accommodate the proposed access driveway. See the Arborist Report included with the application for further details on tree removal.

Development under the Optional Development Site would shift development of the MOB/Surgery Pavilion from Subarea TL-3C (East Campus) to Subarea TL-3D (North Campus), which is anticipated to result the removal of fewer trees.

c. Provide the number of significant and landmark trees located on the site and estimate the number proposed to be removed and saved in the table below.

As part of the Arborist Report, a tree inventory table was prepared to document the existing trees within the proposed development areas identified in the master plan. The table identifies tree species, size, condition, grove status, retention value, proposed action and other considerations (see Arborist Report included with the application). As noted above in Section B.4.a, 200 trees were estimated to be of high retention value (HVR) according to the Kirkland Zoning Code (KZC 95.10.7.h). 18 trees on the site are also considered landmark trees according to KZC 95.10.7.d. All landmark trees are located with the proposed development area for the MOB/Surgery Center and development of that building is anticipated to require the removal of approximately 12 landmark trees (see the Arborist Report included with the application for the tree inventory table of the master plan area and details on proposed tree removal).

Development under the Optional Development Site would shift development of the MOB/Surgery Pavilion from Subarea TL-3C (East Campus) to Subarea TL-3D (North Campus), which is anticipated to result the removal of fewer landmark trees.

d. List threatened or endangered species known to be on or near the site.

No listed threatened or endangered plant species are known to be located on the site.

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

New landscaping would be provided as part of each development project under the proposed master plan. Development of the MOB/Surgery Center would retain existing landscaped open space to the south of the proposed building and provide proposed landscape improvements to the north, east and west of the proposed building and parking areas to create a buffer between the site and adjacent residential development. Development of the North Inpatient Tower would provide landscape improvements along the north edge of the proposed building and preserve the existing landscape street edge of NE 130th Lane to create a buffer between pedestrian areas and the North Inpatient Tower. Development of the DeYoung Pavilion 2 would retain many of the existing landscaped street edges surrounding the development area. New landscaped open space would be provided to

the north of the proposed building to enhance the vehicular circulation and public entrance area. It is anticipated that proposed landscaping associated with development under the master plan would include a mix of native vegetation (shrubs, trees, etc.).

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

English ivy is considered an invasive species and has been found within the master plan area, particularly within the proposed development area for the MOB/Surgery Pavilion (Subarea TL-3C).

5. Animals

a. Circle (underlined) any birds and animals that have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other: *crows, pigeons, seagulls*.
mammals: deer, bear, elk, beaver, other: *squirrel, racoon.*
fish: bass, salmon, trout, herring, shellfish

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

No known threatened or endangered species are located on or proximate to the EvergreenHealth Master Plan area

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

The site is not known to be part of a migration route.

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

No wildlife enhancement measures are specifically proposed; however, retained and proposed landscaped open space areas would contribute to urban wildlife habitat.

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

There are no known invasive animal species on or adjacent to the project site; however, invasive species known to be located in King County include European starling, house sparrow and eastern gray squirrel.

6. Energy and Natural Resources

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.

Proposed development under the proposed EvergreenHealth Master Plan would require energy for lighting, heating, air conditioning, security systems, and medical equipment. Energy sources would be electricity

and natural gas. As for existing medical center uses, proposed uses under the Master Plan would include emergency (backup) generator for use during electrical outage; the emergency generator(s) would use oil or diesel.

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

The development projects under the proposed Master Plan would not be anticipated to have a measurable effect on the use of solar energy by adjacent properties.

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 development under the proposed EvergreenHealth Master Plan would conform to applicable provisions of the State of Washington Energy Code and applicable City of Kirkland High Performance Building Standards. Development under the Master Plan would also pursue environmental sustainability and low environmentally impactful building products.

7. Environmental Health

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 yes, describe.

Development under the proposed EvergreenHealth Master Plan would generate medical waste and other materials similar in kind to those that presently occur elsewhere on the EvergreenHealth campus in conjunction with provision of medical services (i.e. chemicals, syringes, hospital waste, etc.).

For building demolition associated with development under the proposed EvergreenHealth Master Plan (primarily in Subarea TL-3A), applicable local, state and federal requirements related to hazardous materials (including asbestos and lead paint) would be followed.

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

Chemicals and other materials typical of a medical center and associated uses are currently utilized on the EvergreenHealth campus. Storage and handling of medical materials (including, but not limited to, sharps, regulated medical waste (RMW), chemo waste, RCRA pharma, and pathology waste) follow procedures

established through the EvergreenHealth Hazardous Materials and Waste Management Plan to ensure that local/state waste management regulations are followed, and that medical waste is properly managed/disposed.

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.

Existing medical center associated medical material conditions are not anticipated to affect project development or design under the proposed Master Plan.

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.

As indicated above (7.a.), d*evelopment under the proposed EvergreenHealth Master Plan would generate medical waste and other materials similar in kind to those that presently occur elsewhere on the EvergreenHealth campus in conjunction with provision of medical services (i.e. chemicals, syringes, hospital waste, etc.).*

4) Describe special emergency services that might be required.

Emergency services required for medical center and related uses under the proposed Master Plan would include fire and security. Service for fire would be provided by the Kirkland Fire Department. Security services would provided by the Kirkland Police Department and EvergreenHealth Medical Center security personnel.

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

It is the policy of EvergreenHealth to comply with local and state waste management codes and regulations with the purpose of minimizing the risk of injury and exposure to hazardous materials through the proper handling, storage, and disposal of dangerous waste including, but not limited to, sharps, regulated medical waste (RMW), chemo waste, RCRA pharma, pathology waste, and hazardous materials.

The Hazardous Materials and Waste Management Plan (LuciDoc EOC 300) applies to all employees and departments in the hospital and other sites owned or leased by the hospital, and will apply to all

operations under the proposed Master Plan. Primary goals of the Hazardous Materials and Waste Management Plan include.

- *Establish, support, and maintain a Hazardous Materials and Waste Management Program to reduce risks posed by a variety of substances to employees, patients, physicians, contractors, vendors, and visitors.*

- *Ensure compliance with applicable codes and regulations.*

b. Noise

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

The predominant sources of ambient noise surrounding the EvergreenHealth campus is vehicular traffic along surrounding roadways, including I-405. Existing traffic noise is not anticipated to affect proposed development under the proposed Master Plan.

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 site.

Construction-related noise would occur as a result on on-campus demolition and construction of development under the proposed Master Plan. Noise from these sources, while the most intense, would be consistent with the City's Noise Code (including construction hours) and would be temporary in nature.

Once operational, development under the proposed EvergreenHealth Master Plan would not generate any significant long-term operational noise. The proposed uses would comply with applicable provisions of the City's Noise Code. Indirectly, traffic noise associated with development under the proposed Master Plan would be similar to current conditions. Also, emergency vehicle movements, including vehicles which operating sirens, are not expected to differ substantially from current conditions at the EvergreenHealth campus.

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

Construction noise would be short-term and would be the most noticeable noise generated by development under the proposed Master Plan. This includes construction activity on the campus, together with construction-related traffic. Development under the proposed EvergreenHealth Master Plan will comply with applicable provisions of the City's Noise Ordinance, including construction hours.

8. Land and Shoreline Use

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 EvergreenHealth campus reflects a land use character of medical center and supporting uses, and consists of medical center related buildings, structured parking and associated roadways, driveways and landscaping. A total of approximately 1,075,245 sq.ft. of buildings space is currently on the EvergreenHealth campus, with approximately 59 percent of the campus in impervious surface (building footprint, internal roadways, drives, surface parking and sidewalks).

The existing uses in each of the EvergreenHealth campus subareas are as follows:

- *Campus Subarea TL-3A (Main Campus) – The main hospital building tower and all of EvergreenHealth's licensed beds are located in this 21.13-acre subarea, along with campus support uses such as cafeteria, gift shop and administrative offices. A structured parking garage and surface parking lots are located in this area.*

  Campus Subarea TL-3A also provides open space and landscaped areas, including lawn and plantings along 120th Avenue NE.

- *Campus Subarea TL-3B (South Campus) – This 4.1-acre area contains the DeYoung Pavilion building and Transit Center. A surface parking lot, driveways and landscape areas are also present; an underground parking facility is located beneath a portion of this subarea.*

- *Campus Subarea TL-3C – This 6.17-acre subarea contains a hospice center, several small surface parking lots, and areas of mature trees in the southern portion of this subarea. The northern portion of this subarea is undeveloped, with cleared gravel area and mature trees; the cleared gravel area has occasionally been utilized for construction staging.*

- *Campus Subarea TL-3D – This 3.6-acre subarea is primarily in office building (Administrative Services and Human Responses buildings), surface parking lot, and driveway use, with landscaping along the perimeter.*

- *Campus Subarea TL-1B – This 1.66-acre subarea is primarily in surface parking lot and natural vegetation area.*

The EvergreenHealth campus and surrounding area are part of the Totem Lake Neighborhood. The City of Kirkland Comprehensive Plan identifies this area as an Urban Center that is envisioned to provide an intensification of institutional, commercial, mixed-use and multifamily residential uses. The overall pattern of land use within approximately one-quarter mile of the campus includes medical office, multifamily residential, and mixed-use development. Existing uses adjacent to the EvergreenHealth campus include:

- ***North*** *– The northern edge of the EvergreenHealth campus is comprised of Campus Subareas TL-3A, TL-3C, TL-3D, with a range of adjacent uses, including: medical office and multifamily residential adjacent to Subarea TL-3D; medical office adjacent to Subarea TL-1B; NE 130th Lane and multifamily residential adjacent to Subarea TL-3A; and, multifamily residential uses adjacent to Subarea TL-3C.*

- ***East*** *– The eastern edge of the EvergreenHealth campus is comprised of Subarea TL-3A and TL-3C, with multifamily residential use adjacent to the campus to the east.*

- ***South*** *– The southern edge of the EvergreenHealth campus is comprised of Subareas TL-3A and TL-3B, with mixed-use (residential/commercial) use associated with the Totem Lake Village to the south of Subarea TL-3B and assisted/skilled nursing care facility use to the south of Subarea TL-3A.*

- ***West*** *– The western edge of the EvergreenHealth campus is comprised of Subareas TL-3A, TL-3B, TL-3D and TL-1B. To the west of these subareas, across 120th Avenue NE, is a mix of uses including multifamily residential and professional office. I-405 is located farther to the west.*

b. Has the 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?

It is possible that the site was used for agricultural purposes prior to becoming EvergreenHealth Medical Center. The site has been in medical center use for approximately 50 years; no agricultural use has occurred during this time.

1) Will the proposal affect or be affected 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 EvergreenHealth Master Plan would not affect or be affected by farming or forestry activities.

c. Describe any structures on the site.

As indicated in response to question 8. a., the EvergreenHealth campus contains a total of approximately 1,075,245 sq.ft. of building space including: main hospital building and structured parking garage in Subarea TL-3A; DeYoung Pavilion building and Transit Center in Subarea TL-3B; EvergreenHealth Hospice Center in Subarea TL-3C; and, Administrative Services and Human Resources buildings in in Subarea TL-3D.

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

To accommodate construction of the proposed new North Inpatient Tower in Subarea TL-3A, approximately 56,000 sq.ft. of existing building space associated with the hospital building (Silver Building) would be demolished.

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

The zoning classification of the majority of the EvergreenHealth campus is Totem Lake 3 (TL-3), consisting of TL-3A, TL-3B, TL-3C and TL-3D; the extreme northwest portion of the EvergreenHealth campus is zoned TL-1B. The TL zoning includes Master Plan requirements for the EvergreenHealth campus together with general and special regulations for the campus.

The zoning designations of the surrounding area is generally office and high density residential, including TL-1, TL-2, RM 1.8 and PR 1.8.

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

The portion of the EvergreenHealth campus zoned TL-3 (Subareas TL-3A, TL-3B, TL-3C and TL-3D) is within the Industrial designation. The small portion of the EvergreenHealth campus zoned TL-1 is within the Office/Multi-family designation.

City of Kirkland Comprehensive Plan Policies related to the EvergreenHealth Medical Center include:

- *Policy TL-29.1 – Support the continued vitality of the EvergreenHealth Medical Center.*

- *Policy TL-29.2 – Implement design principals for the EvergreenHealth Medical Center.*

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

The EvergreenHealth campus is not located within the City of Kirkland's shoreline boundary.

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

The City of Kirkland Sensitive Areas Map indicates a stream is located at the northern edge of Subarea TL-3D (and through Subarea TL-1B). The City of Kirkland Landslide Sensitivity Map indicates an area of Moderate Landslide at the eastern edge of the EvergreenHealth Campus (eastern edge of Subarea TL-3C).

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

Currently, the EvergreenHealth campus contains a population of approximately 3,540, the majority of which is associated with the main campus (Subarea TL-3A).

Preliminary estimates indicate that approximately 1,210 people could be expected to work in the new facilities associated with the proposed Master Plan. The new population associated with the proposed Master Plan would primarily be associated with the new North Impatient Tower in Subarea TL-3A (Main Campus), the Medical Office Building/Surgery Center in Subarea TL-3C, and the DeYoung Pavilion in Subarea TL-3B.

During construction, approximately 100 construction employees may be on-site at the height of construction activity.

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

The completed project is not expected to displace any existing employees. Proposed demolition of existing building space to accommodate construction of the new North Inpatient Tower is anticipated to temporarily displace some existing employees. Any employees displaced would be relocated to other building space on the EvergreenHealth campus.

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

No permanent displacement would occur and no measures are necessary.

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

The proposed Master Plan is intended to meet goals and regulations contained in the City of Kirkland Comprehensive Plan and Land Use Code, including Comprehensive Plan Policy TL-29.1 (Support the continued vitality of the EvergreenHealth Medical Center and supporting uses) and Policy TL-29.2 (Implement design principles for the EvergreenHealth Medical Center). All development on the EvergreenHealth campus would be designed consistent with the adopted EvergreenHealth Master Plan (current proposal) and additional measures are not identified.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The project site is not located near agricultural or forest lands.

9. Housing

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

The proposed project does not include housing.

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

No housing presently exists on the project site and no housing would be eliminated.

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

No housing impacts would occur and no mitigation would be necessary.

10. Aesthetics

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

Building heights of the existing buildings on the EvergreenHealth campus vary by subarea, and range from up to approximately 123 feet for the existing Medical Center tower in Subarea TL-3A, approximately 65 feet for the existing DeYoung Pavilion in Subarea TL-3B, approximately 15 feet for the existing Hospice Center in Subarea TL-3C, and approximately 30 feet for the existing Administrative Services and Human Resources buildings in Subarea TL-3D. There are no existing structures in Subarea TL-1B.

Similar to current conditions, the maximum allowed height of structures under the proposed Master Plan varies by subarea, ranging from 150 feet to 30 feet as described below (See Figure 5 for an illustration of existing and proposed building heights).

- *Subarea TL-3A (Main Campus) – Maximum building height of 150 feet, with a height limit reduction to 75 feet in the southeastern corner. The proposed North Inpatient Tower is proposed to be approximately 120 feet in height (similar in height to the existing 123-foot existing tower) with the parking structure addition proposed to be approximately 44 feet in height (similar to the 44 foot existing parking structure).*

- *Subarea TL-3B (South Campus) – Maximum building height of 150 feet is proposed. The proposed DeYoung Pavilion 2 building would be approximately 75 feet in height (similar to the existing 65 feet DeYoung Pavilion building).*

- *Subarea TL-3C (East Campus) – Consistent with underlying zoning standards, the maximum building height under the Master Plan would be 60 feet; in those portions of this subarea located within 100 feet from residentially zoned property, the maximum building height would be 30 feet. The proposed MOB/Surgery Center would be approximately 60 feet in height; no portion of this proposed building would be located within 100 feet of residentially zoned property.*

- *Subarea TL-3D (North Campus) – Maximum building height of 65 feet, with building height step back to 40 feet on the easterly 50 feet of this subarea (adjacent to residentially zoned area). No new building area is currently proposed for this subarea. Under the Optional Development Site, the MOB/Surgery Center proposed for Subarea TL-3C would be relocated to TL-3D and would be consistent with the maximum building height limit.*

- *Subarea TL-1B (Northwest Campus) – Maximum building height of 45 feet, with the provision of at least 1,500 to 2,000 sq,ft. of publically accessible outdoor space in development totaling more than 25,000 sq.ft. No building development in Subarea TL-1B is proposed.*

The building materials uses for proposed building under the proposed Master Plan are intended to respond to the physical environment by utilizing materials that reinforce the visual coherence of the campus. As possible, the upper portions of building would provide visual interest and variety to the skyline. Blank facades would be avoided where buildings are located at the campus perimeter.

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

As under existing conditions, the EvergreenHealth campus would be a visually prominent feature in the Totem Lake neighborhood. The taller building development would continue to be located toward the center of the campus and designed to provide a visual transition to off-campus areas.

Cross-campus views could be altered as viewed from areas proximate to the campus, including from I-405 to the west. Development under the proposed Master Plan would not affect any designated public viewpoint or view corridor.

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

The proposed Master Plan incorporates urban design goals of the Totem Lake Business District Plan to address design compatibility, including:

- *TL-21: Ensure that public and private development contributes to a coherent and attractive entity for the Business District*
- *TL-22: Develop gateway features that strengthen the character and identity of the Business District*
- *TL-24: Provide interconnected streetscape improvements throughout the Business District that contribute to a sense of neighborhood identity and enhance visual quality*
- *TL-25: Provide effective transitions between the light industrial, commercial and higher density multi-family uses in the Business District and single-family residential areas surrounding the district.*

The proposed Master Plan includes the following Design Principles that apply to institutional development in a campus environment:

- *Respond to Physical Environment: New buildings should be attractive as well as functional additions to the campus.*

- *Enhance the Skyline: The upper portion of the buildings should be designed to promote visual interest and variety on the skyline, except where building function dictates uninterrupted vertical mass.*

- *Avoid blank facades in buildings located on the perimeter of the campus.*

- *Use materials and forms that reinforce the visual coherence of the campus.*

- *Provide inviting and usable open space.*

- *Enhance the campus with landscaping.*

11. Light and Glare

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

Development under the proposed EvergreenHealth Master Plan would increase light and glare from both stationary and mobile sources. The amount and character of light and glare is not expected to differ substantially from that which presently occurs on the campus.

Stationary sources of light include interior building lighting, building entrance lighting, parking area lighting, pedestrian-level façade lighting, and security lighting. Lighting would be designed to limit the amount of fugitive light via shielding and other design features.

As noted in Section B.14 (Transportation), development under the proposed Master Plan would generate an increased number of vehicles entering and exiting the campus, which could result in localized increases in light and glare from vehicle would be similar to current conditions in the area, and is not expected to result in light and glare impacts

At times during the construction process, area lighting of the job sites (safety requirements) would be provided, which may be noticeable proximate to the respective job site.

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

No. Light and glare associated with development under the proposed EvergreenHealth Master Plan is not expected to result in any safety

hazards. Depending on the angle of the sun, glare from new buildings during certain times of the day (sunset) could interfere with views to an extent greater than presently occurs, although the impact is anticipated to me minor

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

There are no off-campus sources of light that would affect development under the proposed Master Plan.

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

- *Parking area and security lighting fixtures will use full cutoff to minimize off-campus light spillage.*
- *Low bollard lighting will be utilized for pedestrian access.*
- *The use of building materials with relatively low-reflectivity, as possible, will minimize reflective solar glare.*
- *Proposed landscaping (trees) internal to the campus will reduce off-campus light and glare spillage during certain times of the year.*

12. Recreation

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

Recreation uses in the immediate vicinity of the EvergreenHealth campus include:

- *132nd Square Park – 0.5-mile to the east.*
- *Upland Green Community Park – 1-mile to the northeast.*
- *Totem Lake Park – 0.35-mile to the south.*
- *Josten Park – 0.35 mile to the west (across I-405).*
- *Hazen Hills Park – 0.35-mile to the north.*

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

The project would not displace any recreational uses.

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

No impacts to recreation would occur and no mitigation measures are proposed.

13. Historic and Cultural Preservation

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 located on or near the site? If so, specifically describe.

The EvergreenHealth campus does not contain any buildings or structures that have been listed or determined to be eligible for listing in national, state or local preservation registries. There are known listed/eligible buildings or structures proximate to the EvergreenHealth campus.

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 Washington Department of Archaeological and Historic Preservation (DAHP) WISSAARD database indicates that the EvergreenHealth campus and surrounding area has a "low risk" and moderately low risk" of encountering cultural resources. There is no record of surficial evidence indicating that any historic or archaeologically significant resources exist on-campus and would be disturbed by development under the proposed EvergreenHealth Master Plan. Therefore, no significant adverse environmental impacts to archaeological resources are anticipated.

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.

Archival research conducted included review of the Washington Department of Archaeological and Historic Preservation (DAHP) WISSAARD database.

e. 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.

- *In the event that archaeological deposits are inadvertently discovered during construction in any portion of the campus, ground-disturbing activities should be halted immediately, and EvergreenHealth should be notified. EvergreenHealth would then contact DAHP and the interested Tribes, as appropriate.*

- *Any human remains that are discovered during project-related excavation would be treated with dignity and respect. In the event that human remains are discovered, procedures consistent with RCW 68.50 Human Remains, RCW 68.60: Abandoned and Historic Cemeteries and Historic Graves, and RCW 27.44: Indian Graves and Records, would be implemented.*

14. Transportation

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

The campus is served by several arterial and collector roadways in the area. These include notable streets such as NE 132nd Street, Totem Lake Blvd, NE 124th Street, NE 128th Street and regional facilities such as I-405.

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

The Totem Lake Transit Center is located on the south edge of the campus. King County Metro operates 5 routes of the center. In addition, Sound Transit serves stops located at the I-405 direct access ramps located approximately 1.25 miles from the campus.

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

The campus currently includes approximately 3,000 parking spaces. With the build-out of the campus master plan the parking supply is anticipated to increase to approximately 4,000 spaces, representing an approximately 1,000 stall increase.

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).

A Transportation Impact Analysis was prepared assessing the impacts of the proposed EvergreenHealth Master Plan. No mitigation has been identified at this time, however the City's is underway with review of the plans. The project will be required to pay transportation impact fees intended to fund future transportation improvements identified to support future growth in the City.

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

No increase in air transportation (emergency helicopter transport) is anticipated under the EvergreenHealth Master Plan. The proposed master Plan would not affect water or rail 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. How many of these trips occur in the a.m. peak hours? How many of these trips occur in the p.m. peak hours? What percentage of the volume would be trucks (commercial and non-passenger vehicles)? What data or transportation models were used to make these estimates?

Existing trip rates were calculated based on traffic counts collected at the campus driveways. These rates were used to forecast the future trip generation associated with the proposed EvergreenHealth Master Plan. With the Master Plan (2033), daily traffic volumes are expected to increase from 14,669 to 22,184 trips. During the AM peak hour, the trip generation is expected to increase from 1,269 to 1,926. During the PM peak hour, the trip generation is expected to increase from 1,046 to 1,586. Truck volumes on adjacent streets serving the campus range from 2 percent to 3 percent depending on the time period. See the Transportation Impact Analysis included with the application for detail.

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.

The proposed EvergreenHealth Master Plan would not affect or be affected by movement of agricultural or forestry products.

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

The proposed EvergreenHealth Master Plan will be subject to a Transportation Management Program as required by the City of Kirkland. The elements of this program will be established in consultation with City of Kirkland staff.

15. Public Services

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

The proposed EvergreenHealth Master Plan is intended, among other things, to guide development of facilities to meet the healthcare needs of the growing communities served by King County Public Hospital District #2 through 2033. Thus, the proposal would provide additional health care public services and would result in impacts to public services.

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

The proposed EvergreenHealth Master Plan is intended to provide additional health care public service to the community and no mitigation is necessary.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

All utilities are currently available at the EvergreenHealth campus.

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

New water and sewer services would be required for each new building, excluding the Parking Garage addition in Subarea TL-3A. Northshore Utility District has confirmed that there is capacity in the existing nearby mains to serve the proposed developments without the need to upsize any main lines. Power and gas would be provided by Puget Sound Energy and communications would be provided by Ziply and/or Comcast. Dry utility infrastructure currently exists along the site frontages and service would be taken off existing infrastructure. Construction activities associated with the utilities would consist of trenching into the Public ROW to connect services.

C. SIGNATURES

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

Applicant Signature:



Name of Signee:
Richard Schipanski

Position and Agency/Organization
EA Engineering, Science, and Technology, Inc. PBC

Relationship of Signer to Project:
SEPA Consultant

Date submitted:
November 18, 2022

APPENDIX A

Greenhouse Gas Emissions Forms

City of Seattle Department of Planning and Development
SEPA GHG Emissions Worksheet
Version 1.7 12/26/07

Introduction

The Washington State Environmental Policy Act (SEPA) requires environmental review of development proposals that may have a significant adverse impact on the environment. If a proposed development is subject to SEPA, the project proponent is required to complete the SEPA Checklist. The Checklist includes questions relating to the development's air emissions. The emissions that have traditionally been considered cover smoke, dust, and industrial and automobile emissions. With our understanding of the climate change impacts of GHG emissions, the City of Seattle requires the applicant to also estimate these emissions.

Emissions created by Development

GHG emissions associated with development come from multiple sources:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (Embodied Emissions)
- Energy demands created by the development after it is completed (Energy Emissions)
- Transportation demands created by the development after it is completed (Transportation Emissions)

GHG Emissions Worksheet

This GHG Emissions Worksheet has been developed to assist applicants in answering the SEPA Checklist question relating to GHG emissions. The worksheet was originally developed by King County, but the City of Seattle and King County are working together on future updates to maintain consistency of methodologies across jurisdictions.

The SEPA GHG Emissions worksheet estimates all GHG emissions that will be created over the life span of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

Using the Worksheet

1. Descriptions of the different residential and commercial building types can be found on the second tabbed worksheet ("Definition of Building Types"). If a development proposal consists of multiple projects, e.g. both single family and multi-family residential structures or a commercial development that consists of more than on type of commercial activity, the appropriate information should be estimated for each type of building or activity.

2. For paving, estimate the total amount of paving (in thousands of square feet) of the project.

3. The Worksheet will calculate the amount of GHG emissions associated with the project and display the amount in the "Total Emissions" column on the worksheet. The applicant should use this information when completing the SEPA checklist.

4. The last three worksheets in the Excel file provide the background information that is used to calculate the total GHG emissions.

5. The methodology of creating the estimates is transparent; if there is reason to believe that a better estimate can be obtained by changing specific values, this can and should be done. Changes to the values should be documented with an explanation of why and the sources relied upon.

6. Print out the “Total Emissions” worksheet and attach it to the SEPA checklist. If the applicant has made changes to the calculations or the values, the documentation supporting those changes should also be attached to the SEPA checklist.

Evergreen Health Master Plan Project - DeYoung Pavilion 2

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		78.0	39	737	571	**105030**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **105030**

Evergreen Health Master Plan Project - Medical Office Building/Surgery Center

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			**Lifespan Emissions (MTCO2e)**
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		144.0	39	737	571	**193902**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **193902**

Evergreen Health Master Plan Project - North Inpatient Tower

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		316.0	39	1,938	582	**808518**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **808518**

Version 1.7 12/26/07

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	Description
Single-Family Home.....	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home.....	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall).....	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources: .....

Residential 2001 Residential Energy Consumption Survey
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Commercial Commercial Buildings Energy Consumption Survey (CBECS),
Description of CBECS Building Types
http://www.eia.doe.gov/emeu/cbecs/pba99/bldgtypes.html

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall)	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement

All Types of Pavement			50

	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs		
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0	88.0	38.7

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit
2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Floorspace per building
EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building
Athena EcoCalculator
Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
Assembly Average GWP (kg) per square meter
http://www.athenasmi.ca/tools/ecoCalculator/index.html
Lbs per kg 2.20
Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home
Buildings Energy Data Book: 7.3 Typical/Average Household
Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size
Energy Information Administration/Housing Characteristics 1993
Appendix B, Quality of the Data. Pg. 5.
ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf

Pavement Emissions Factors
MTCO2e/thousand square feet of asphalt
or concrete pavement

50 (see below)

Embodied GHG Emissions…….Worksheet Background Information

Buildings
Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement
Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO2e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO2e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO2e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO2e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO2e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: http://www.ivl.se/rapporter/pdf/B1210E.pdf

Treloar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall)	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings

2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
http://buildingsdatabook.eren.doe.gov/
Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings and Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings

Buildings Energy Data Book (National average, 2005)
Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

average lief span of buildings,
estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings	
New Housing Construction, 2001	1,273,000	329,000	1,602,000	
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000	
Replacement time:	57.9	80.5	62.5	(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.
Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.
Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction, 2001
Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)
http://www.census.gov/const/quarterly_starts_completions_cust.xls
See also: http://www.census.gov/const/www/newresconstindex.html

Existing Housing Stock, 2001
Residential Energy Consumption Survey (RECS) 2001
Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall)	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit — Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
Washington State Office of Financial Management
Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
http://www.ofm.wa.gov/researchbriefs/brief047.pdf
Note: This analysis combines Multi Unit Structures in both large and small units into one category; the average is used in this case although there is likely a difference

Residential floorspace per unit — 2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

employees/thousand square feet — Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.
In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000	2006 Annual WA State Vehicle Miles Traveled Data was daily VMT. Annual VMT was 365*daily VMT. http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm
6,395,798	2006 WA state population http://quickfacts.census.gov/qfd/states/53000.html
8839	vehicle miles per person per year
0.0506	gallon gasoline/mile This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term “miles/per gallon” (which is 19.75 for these cars and light trucks). Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks. http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles. http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls
24.3	lbs CO2e/gallon gasoline The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion. Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield. Available: http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel,
2205	with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.
4.93	lbs/metric tonne
	vehicle related GHG emissions (metric tonnes CO2e per person per year)

average lief span of buildings, estimated by replacement time method — See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit — EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls