

Test Case Worksheet for Emission Sources and Criteria
Test Case: Snohomish County Comprehensive Plan Update

General description: Snohomish County would estimate GHG emissions, as part of the 5-year update to the County Comprehensive Plan. Emission estimates would be divided into two categories: 1) the County’s own municipal operations; and 2) community emissions from the population living and working in the County.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions (Emitted by the Proponent)						
Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction?	Questionable. Some, but not all, of construction operations within the County might be included in individual proponents’ SEPA.	Favorable. There are existing tools to estimate construction emissions by land use type.	Favorable. The boundary would be anything within the County.	Questionable. Construction emissions are a small fraction of the Washington state GHG emissions.	Questionable. There are some, but not many, mitigation measures to reduce construction emissions. Perhaps use of bio-diesel?
On-Site Mobile Sources and Company-Owned VMT.	County-Owned Municipal Fleet. Mobile sources operating within the Proponent’s facility. Company-owned vehicles traveling off-site.	Questionable. The County’s own municipal fleet operation might have been covered in a separate EIS.	Favorable. There are existing tools to forecast County-owned VMT and GHG.	Favorable. The boundary would be anything within the County.	Favorable. VMT emissions are the main component of GHG emissions.	Favorable. The County could impose VMT reduction measures on its own fleet, and could impose County-wide trip reduction measures on the general public.
Stationary Sources and Direct Facility Emissions	Space Heating and industrial emissions. On-site combustion processes usually from company-owned equipment.	Unfavorable. Space heating emissions would not have been covered in previous EIS.	Favorable for space heating. Unfavorable for industrial emissions. There are existing tools to forecast County-side space heating emissions by land use type. However, there is no reliable way to forecast industrial emissions.	Favorable. The boundary would be anything within the County.	Favorable. Space heating and industrial combustion are major components of state-wide GHG.	Favorable. The County could impose new energy conservation measures.
Fugitive Emissions	Closed landfills, active landfills, cattle raising. GHG emitted from	Questionable. Fugitive emissions from closed	Favorable. There are existing tools to forecast	Favorable. The boundary would be	Favorable. Landfills and cattle raising are	Unfavorable. There are few feasible ways

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	points other than tailpipes, vents, stacks, or other locations that can be collected. E.g., landfill gas emissions, gas pipeline fugitive losses, enteric emissions from livestock.	landfills and cattle raising would probably not be covered in previous EIS/	methane emissions from closed landfills and active cattle raising.	anything within the County.	major components of state-wide GHG.	to reduce fugitive emissions from closed landfills and active cattle yards.
Direct Agricultural Emissions	Existing farms within County. Livestock methane, land clearing, fertilizer application, and on-site manure handling.	Unfavorable. Few farms would have been covered by previous EIS.	Favorable. There are existing tools to forecast GHG emissions from farms, and to estimate the benefits of farms as GHG sinks.	Favorable. The boundary would be anything within the County.	Favorable. Farms and agriculture are major components of state-wide GHG.	Unfavorable. There are few <u>cost-effective</u> means to reduce agricultural GHG emissions. One potential measure would be to encourage farm protection programs, to maintain existing farms as GHG sinks.
Forestry Conversion and other land or aquatic vegetation disturbance	Loss-of-Sink due to conversion of forest land or farm land to new development. One-time soil-carbon emissions during land clearing, and permanent annual loss of CO ₂ sink following removal of trees or vegetation.	Unfavorable. It is unlikely the huge number of future developments that would cause loss-of-sink would have been covered by previous EIS.	Favorable. If the County can forecast loss of land area, there are existing tools to calculate loss-of-sink.	Favorable. The boundary would be anything within the County.	Favorable. Forest land GHG sinks are a major component in Washington state.	Favorable. The County could impose measures to discourage loss-of-sink, or could require future developers to obtain GHG offsets.
Maintenance activities	Emissions from equipment, chemicals	Unfavorable. It is unlikely routine maintenance would have been covered by previous EIS.	Municipal = Favorable. The County can forecast its own maintenance programs. Community = Unfavorable. There is no reliable way to forecast future maintenance programs by the general public.	Favorable. The boundary would be anything within the County.	Questionable. Routine maintenance is probably a minor component of state-wide GHG emissions.	Unfavorable. There are few ways to reduce GHG emissions from routine maintenance. Perhaps the County could require some fraction of all diesel fuel sold in the County to include biodiesel?

Indirect Emissions (Emitted by Parties Other Than SEPA Proponent)

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Off-Site Extraction of Purchased Materials	Off-site mining, timber mining/extraction, petroleum products (e.g. fuel and plastic products) for products and materials that are used by the proposal.	Unfavorable. Limestone, steel and petroleum used to construct facilities in the County likely come from mines not subject to previous SEPA.	Questionable. The County could derive some factors to roughly estimate emissions from mining of raw materials and from crude oil extraction, for materials used within the County.	Unfavorable. Limestone, steel, wood, and crude oil could originate from a wide variety of sources, few of which would be under County jurisdiction.	Unfavorable. Most of the emissions from mining, timber, and crude oil extraction likely are generated outside Washington state.	Unfavorable. The County would have few options to impose mitigation on out-of-state mines and oil fields.
Off-site Processing of Purchased Materials	Energy used and emissions from processing raw materials or end products purchased by a proponent (e.g. cement, metals, plastics, wood, fuel).	Unfavorable. Manufacturing of goods used by County residents probably is done at factories not subject to previous SEPA.	Unfavorable. There is no way to estimate emissions by factories used to manufacture goods used within the County.	Unfavorable. Factories used to manufacture goods used in the County come from a wide variety of sources, few of which would be under County jurisdiction.	Unfavorable. Most of the emissions from factories manufacturing goods used by County residents likely are generated outside Washington state.	Unfavorable. The County would have few options to impose mitigation on out-of-factories.
Transportation of materials by Non-Company Owned Transport	Delivery of purchased raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	Favorable. County-wide VMT would have been included in PSRC's regional plan.	County Municipal = Questionable. It would be difficult for the County to forecast VMT by non-county trucks delivering purchased goods to County facilities. Community = Favorable. The PSRC model includes a category "Trucks", which could be interpreted to mean VMT by trucks delivering purchased goods to County residents.	Questionable. On a County-side basis, it might be feasible to forecast the travel radius of trucks delivering purchased goods to County residents. Community = Favorable. PSRC's VMT forecasts for the "Truck" category have well defined boundaries	Favorable. VMT emissions are major component of Washington state GHG emissions.	Unfavorable. The County would have difficulty imposing VMT reduction measures on commercial trucking companies delivering goods to County residents.
Employee Commute VMT	Tailpipe emissions from employee commuting	Favorable. County-side VMT would have been	County Municipal = Favorable. The County	Favorable. There are ways to forecast the	Favorable. VMT emissions are major	Favorable. The County could impose

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		included in PSRC's regional plan.	can forecast its own employees' commute emissions. Community = Favorable. There are existing tools to forecast County-side employment, commute VMT, and GHG emissions.	travel radius and VMT generated by commuters within the County.	component of Washington state GHG emissions.	tighter employee commute trip reduction measures for all companies within the County.
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Favorable. County-side VMT would have been included in PSRC's regional plan.	Favorable. County-side VMT is forecast by PSRC.	Favorable. PSRC's VMT forecasts have well defined boundaries.	Favorable. VMT emissions are major component of Washington state GHG emissions.	Favorable. The County could impose stringent trip reduction measures for all new development.
Purchased electricity	Off-site emissions from energy power plants that provide electricity to the proponent.	Favorable. Most regional power plants have been subject to previous SEPA review.	Favorable. There are existing tools to forecast GHG emissions from out-of-County power plants.	Favorable. The locations of out-of-County power plants are well defined.	Favorable. GHG emissions by fossil-fuel power plants are a major component of Washington state GHG emissions.	Favorable. The County could impose stringent energy conservation measures on all new development within the county.
Water Use and Off-Site Wastewater Disposal	Quantity used during construction, operation and closure, -energy used to provide water and dispose of polluted water. GHG emitted from off-site pump stations and water treatment plants for water used by proposal. GHG emitted from off-site sewage lift stations and POTWs used to convey and treat wastewater from the proposed SEPA facility. This includes fugitive methane from POTWs. It does not include biogenic CO2 emitted from POTWs.	Favorable. Water supply systems and POTWs are usually subject to SEPA review.	Favorable. On a County-wide basis, the County could develop GHG emission factors for GHG emissions per million gallons of water purchase and GHG per million gallons of wastewater conveyance and treatment.	Favorable. The locations of regional water supply systems and POTWs are well defined.	Favorable. Electricity usage is an important component of state-wide GHG emissions.	Unfavorable. The County could impose new water usage restrictions on new development, but the resulting GHG emission reductions would be small. The County would have few options to impose restriction on wastewater discharges from new development.

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Off-Site Solid Waste	Off-site emissions from disposal of all types of waste (construction, agriculture, general trash, food). Could include tailpipe emissions from trucks and trains used to collect refuse and haul it to the disposal site and off-site emissions from pre-processing of solid waste (e.g., transfer stations), and fugitive methane emissions from solid waste landfills. It does NOT include biogenic CO2 emissions from solid waste disposal facilities.	Favorable. MSW landfills that accept refuse from the County are generally subject to SEPA.	Favorable on a County-Wide basis. The County could develop factors for GHG emissions per ton of MSW collected and shipped to the regional landfills.	Favorable. The locations of regional MSW landfills are well defined.	Favorable. Landfills are an important component of State-side GHG emissions.	Favorable. The County could impose stringent new MSW reduction programs and recycling requirements on new development.
Off-Site End-use emissions from use of proponent's products sold to others	Use and disposal of products sold by the proponent to consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.	Unfavorable. End users of products manufactured in the County would not be subject to SEPA.	Unfavorable. There are no tools to forecast how consumers use and dispose of the wide variety of products sold within the County.	Unfavorable. There are few ways to predict where the wide variety of products manufactured within the County are used by consumers.	Unfavorable. Many of the products manufactured within the County are used by out of state consumers.	Unfavorable. The County could not impose standards on consumers of products manufactured within the County.