

# Report to the Climate Action Team

## 1. INTRODUCTION

In accordance with the CAT's charge, the SEPA Implementation Working Group (IWG) has developed products and recommendations in order to provide guidance for local and state agencies on how to incorporate climate change considerations into SEPA analyses (see Appendix A for the SEPA IWG Scope of Work as set forth by the CAT). Our work focused on the directive to "ensure that climate change considerations are fully incorporated into governmental decision-making, resource and development planning, permitting and approval." This addresses the broader recommendation to "analyze greenhouse gas emissions and mitigation options early in decision-making, planning processes, and development projects."

In other states and on a federal level, we have witnessed climate change policy under SEPA-like statutes being made on an ad hoc basis through piecemeal litigation or through piecemeal precedent set by individual environmental reviews negotiated between individual applicants and individual lead agencies. In neither case has there been consistency or predictability. Our aim is to diminish the potential for litigation (and to provide consistency and predictability) by giving state and local agencies the tools and framework they need to fully incorporate climate change considerations into their decision-making. Through these recommendations, we seek to provide assurance to government decision makers and project proponents that proposals will be assessed under a predictable climate change framework which will help us meet our state's greenhouse gas reduction requirements.

The SEPA IWG recognizes that only part of the future greenhouse gas reductions mandated by Washington State law is likely to be implemented through SEPA-related mitigation. Much of the eventual future reductions will likely result from multi-state, national or international "cap and trade" provisions, carbon taxes, or other Washington State laws that may not be tied directly to the SEPA process. Until these programs are adopted and implemented, SEPA may play an important role in filling the gaps in existing regulations and enabling Washington State and its political subdivisions to address the threats that greenhouse gas emissions and the climate changes they are causing pose to our people, our property, our economy, and our environment.

## 2. IWG PURPOSE, GOALS, PROCESS, AND REPORT OVERVIEW

### 2.1 Purpose and Goals of the SEPA IWG

There is currently no specific guidance in Washington State on how to address climate change under SEPA. Thus, a key task of the SEPA IWG was to develop recommendations to ensure that consideration of climate change is specifically included in the SEPA processes and documents. The products and recommendations that were developed clarify how state agencies, local governments, and the private sector should analyze, disclose, and mitigate greenhouse gas emissions and the effects of global warming on actions under SEPA.

The IWG also considered the ways in which SEPA can be leveraged to provide incentives for "climate-friendly" plans, policies, and projects. Our recommendations here focus on the most promising actions for encouraging climate-friendly development.

## 2.2 SEPA IWG Process

The SEPA IWG met numerous times between late May and September, including four all-day meetings and four telephone conference calls. Several IWG members and technical support staff worked on subgroups that focused on discrete issues between meetings. The subgroups compiled a wealth of existing information and formed preliminary recommendations for decision by the entire IWG membership. Almost all IWG members contributed to the work of at least one subgroup and many members contributed to multiple groups. The tremendous energy that individual members put into this effort enabled thoughtful and well-informed discussion at IWG meetings.

The IWG strove to find solutions that could be broadly supported by members. The IWG was not, however, a consensus body, and it had written procedures for making decisions through formal voting and getting a “sense of the group” through straw polls to gauge the level of support for particular options. A number of votes taken at the SEPA IWG’s September 30, 2008 meeting are reflected in this report. There are many issues that the SEPA IWG did not fully address or resolve because of the constraints of time, the complexity of the issues, and the many aspects of SEPA that are affected by considerations of climate change. For example, the SEPA IWG did not fully develop an approach for conducting SEPA threshold determinations and what the standard (or standards) of significance for projects and non-projects should be. The IWG did, however, focus this and other discussions on key sets of questions and options that provide direction for future work.

Nearly all members would have liked to have much more time to focus on the questions that we addressed, and some felt that the process was too rushed to fully consider all of the implications of our decisions. In a number of places throughout this document, including the recommendations section, the IWG identifies important areas for further work—mainly by Ecology and its stakeholders—as the effort to provide clarity on how to address climate change under SEPA continues.

The SEPA IWG recognizes the work undertaken by the other IWGs and related processes (Transportation, Land Use, Building Green, Beyond Waste, Forestry, and Agriculture) will overlap with the SEPA IWG’s work and that there may be areas of crossover that will need to be addressed as each group’s recommendations are put into action.

## 2.3 Overview of this Report

This report first describes the products that the IWG developed and how those products can be used by the private sector and government decision makers to help navigate through the SEPA process. The report then describes the recommendations that the IWG is presenting to the CAT for its consideration.

The next part of the report discusses four substantive focus areas:

### Measurement and Disclosure:

- Developing guidance and tools for measurement, disclosure, threshold determination, and EIS, if required, from project and non-project actions.
- Analyzing approaches for making SEPA threshold determinations for greenhouse gas emissions.

### Mitigation Strategies:

- Compiling information about possible approaches to mitigating impacts from greenhouse gas emissions and identifying knowledge gaps, including overall effectiveness and costs of the various potential means of mitigation.
- Determining which mitigation options are appropriate for which sources of emissions.

**Leveraging SEPA to Promote Climate-Friendly Development:**

- Identifying opportunities to promote climate-friendly development, rules, and regulations through SEPA-related incentives and disincentives and upfront planning.

**Assessment of Project Vulnerabilities to Climate Change:**

- Determining next steps for using the SEPA process to address adverse impacts of project and non-project actions resulting from the intersection of the proposed actions and changes in environmental conditions that are predicted to occur as a result of climate change.

In each of the areas, the report addresses what we learned, including our information gaps. Each area identifies key issues that generated discussion by the IWG but did not result in any recommendations made by the IWG either because of incomplete information, disagreement among members, or because of inadequate time to make a decision. Each area also includes comments made by IWG members when reviewing drafts of this report, which should be topics for further discussion by Ecology and its stakeholders.

The report concludes by describing the IWG's recommendations for future work.

### 3. PRODUCTS AND RECOMMENDATIONS OF THE IWG

Below is a list of key products and recommendations that the IWG developed through its process. The products listed are resources for further policy development by Ecology and its stakeholders. The actual products are included as Appendices C-l.

#### 3.1 Products

- Descriptive list of emissions sources: This descriptive tool lists 16 different categories of emissions sources and describes what types of emissions fall into which categories. The list contains both direct and indirect sources of emissions. As described later in this report, as a future task, Ecology should develop clear guidance to indicate which emission source categories should be carried through the SEPA process (i.e., disclosure, quantification, threshold determination, and mitigation) for representative types of SEPA proposed actions.
- Initial list of criteria for making “pragmatic” decisions about what to measure: This initial list includes criteria for guiding the selection of which sources it makes sense to measure for various types of projects and non-projects. Ecology can use these types of criteria to develop clear guidance to indicate which emission categories should be measured through the SEPA process for typical types of actions.
- Compilation table of measurement tools: This comprehensive list identifies many of the tools that currently exist for measuring greenhouse gas emissions and preliminarily assesses some strengths and weaknesses of each tool. The list also contains information about where each tool can be accessed for use by decision makers. This table can be used by local and state agencies as a reference guide for the existing measurement tools and general guidance on which tools may be appropriate for what purposes.
- Mitigation Options Matrix: This product identifies a variety of mitigation options and links these options to the different categories of emissions sources. The matrix can be used by project proponents and government agencies to determine appropriate mitigation for specific proposals.
- Measurement Case Studies/Examples: Using hypothetical case studies, this product analyzes how SEPA's analysis of climate change impacts can apply to different types of project and non-project actions. The example cases can assist project proponents and government agencies in working through “real world” examples.

- **Analysis of Threshold Determination Options:** This set of products describes and assesses options for statewide consistency in setting a significance standard, and different options for the types of standards that could be used. It includes descriptive, graphical, and case study materials. This information will be useful for further developing an approach to threshold determination, whether that is done at the state level for a statewide standard or by individual state and local lead agencies.
- **Incentives and Disincentives for Climate-Friendly Development:** This product lists and describes ideas for using SEPA-related incentives and disincentives to encourage climate-friendly development. This list might be utilized by elected officials and other policy makers as potential ideas to help Washington meet its greenhouse gas reduction requirements.

## 3.2 Recommendations

As a preamble to the SEPA IWG's recommendations, the IWG notes three key shared principles:

- The SEPA IWG generally supports the concept of upfront non-project SEPA review of climate change planning, based upon adequate standards, to reduce greenhouse gas emissions and to eliminate duplicative project-level SEPA review.
- The SEPA IWG does not intend for any of its recommendations or ideas to unintentionally impact existing categorical exemptions under SEPA. Any desired changes to categorical exemptions put forward by the group or any of its members will be made explicit in the text of this report. The IWG did not address categorical exemptions in depth or focus on whether they should be expanded, reduced, or remain the same.
- The SEPA IWG acknowledges that it is equally important to provide clarity and predictability for treatment of both project and non-project actions or proposals under SEPA.

The IWG presents the recommendations below for consideration by the Climate Action Team. Except where explicitly referenced in a recommendation, the IWG did not make a decision about whether policy and materials should be set forth as resources, guidance, rules, or statute.

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### RECOMMENDATION 1—CLEAR GUIDANCE AND REVISED CHECKLIST

Ecology should revise the environmental (SEPA) checklist and provide guidance to assist in the evaluation of greenhouse gas emissions from both project and non-project proposals. Guidance would include:

- Clear guidance on which of the 16 categories listed in Appendix D should be included for typical types of projects and non-projects. The guidance would give lead agencies the discretion to apply any combination of the 16 source categories for exceptionally complex proposed actions outside the range of "typical" SEPA actions.
- Clear guidance on how each of the 16 source categories should be handled at different stages of the SEPA process (e.g., determination of any applicable exemptions, disclosure, quantification, threshold determination, mitigation, and future monitoring/reporting) for representative types of projects and non-projects.
- Incorporation of external resources for determining which of the categories to measure and potentially mitigate for projects and non-projects (e.g., current activity in California and Massachusetts; IPCC guidance, etc.).

A draft outline of Ecology guidance is included in Section 8 of this report.

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### RECOMMENDATION 2—REGULARLY UPDATED MATERIALS AND COORDINATION

Ecology should regularly update and distribute the reference materials developed through the IWG related to emission sources, assessment tools, and mitigation options. This is particularly important in the case of new emerging tools, which could be useful for greenhouse gas emissions assessment under SEPA. In updating the tools reference materials, Ecology should coordinate with other state and local lead agencies, SEPA proponents, and the public that are looking at tools for similar purposes to help achieve statewide consistency in tools used. A future task includes the review by practitioners of the tools matrix developed by the SEPA IWG.

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### RECOMMENDATION 3—EMISSIONS TOOL DEVELOPMENT

Ecology should work with other state and local lead agencies, SEPA proponents, and the public to develop and/or identify basic tools for recommended use within the SEPA process to make assessments predictable and not overly burdensome. Any tools developed should be effective, easy to use, and be useful for “typical” SEPA applications. These tools should be regularly updated as the state of knowledge in the field changes. In particular, the IWG recommends that easy-to-use tools, both qualitative and quantitative, be identified and/or developed in the following areas:

- Vehicle miles travelled (VMT) forecasting and greenhouse gas tailpipe emission factors for on-road traffic for large and small projects and plans.
- Embodied emissions.
- Loss of sinks and greenhouse gas reductions through the use of sinks.
- Reduction in space heating and electricity use for residential, commercial, and industrial buildings.
- Mitigation effectiveness.

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### RECOMMENDATION 4—USE OF QUALITATIVE ANALYSIS

The SEPA IWG recognizes that easy to use tools are not currently available for estimating future emissions from all sources, and it may be some time before adequate tools are available. We also recognize that quantitative evaluation may not be practical or warranted for some types of proposals (e.g., small, routine projects). Therefore, the IWG recommends that applicants be able to conduct a qualitative analysis of greenhouse gas emissions in cases where (a) adequate tools do not exist, (b) criteria outlined in SEPA guidance requiring a quantitative evaluation are not met, or (c) there is an established alternative to quantification (e.g., a “green list”<sup>1</sup> or programmatic analysis of the proposed action). Qualitative tools may include check lists, decision trees, streamlined assessments, or screening tools where assumptions and approximations dictate that the results are qualitative in nature. Ecology should provide guidance on (1) qualitative standards, (2) when qualitative analysis is acceptable, and (3) what constitutes an acceptable qualitative description of emissions.

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### RECOMMENDATION 5—GUIDANCE REGARDING MITIGATION

Ecology should develop guidance on the effectiveness of mitigation options. The guidance should also develop criteria for assessing newly identified mitigation strategies. In addition to information on the effectiveness of strategies, (i.e., how many tons are mitigated), guidance would ideally include the following information:

- Cost and cost-savings from each strategy, and
- Criteria/approach for assessing “new” strategies not already in the guidance.

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<sup>1</sup> A “green list” could contain types of projects that are pre-determined not to have climate change impacts and may produce net benefits to climate. For projects contained on the list, project proponents may be relieved from some or all aspects of SEPA analysis for climate change or some or all mitigation requirements.

This guidance should be regularly updated.

## RECOMMENDATION 6—DEVELOP APPROACH TO THRESHOLD DETERMINATION

Ecology should develop an approach to threshold determination under SEPA that has the following characteristics:

- A requirement that all lead agencies establish a significance standard.
- The development of a statewide standard of significance that is available to lead agencies should they choose to use it.
- The option for lead agencies to develop their own standard, subject to “sideboards”<sup>2</sup> set by the state in guidance, rule, or statute.
- The development of approaches for applicants to qualitatively obtain a Determination of Non-Significance (DNS) for climate impacts (note the relationship to qualitative analysis described in Recommendation 4).
- A linkage between the significance standards and the statewide greenhouse gas reduction requirements.

The above components of an approach to SEPA threshold determination are based on a plurality or majority of votes cast by IWG members (the outcomes of these votes are included in Appendix B). Even though the characteristics described above were favored by a plurality or majority of members, IWG members still held a range of views on some key points that would benefit from further discussion by Ecology and its stakeholders. These are:

- The degree to which threshold determination provisions should be set in guidance, rule, or statute (the term “sideboards” was used to encompass all three possibilities). The IWG did not decide on this issue.
- The degree to which the state should provide sideboards to constrain lead agency discretion in setting a significance standard other than a statewide standard. Although it was not an option that achieved a plurality of votes, many members felt that the state should not constrain lead agencies’ efforts to set their own standards. Some felt that flexibility would allow lead agencies to innovate and experiment and inform a “learning by doing” approach statewide.
- Whether there should be a “phasing in” of state requirements and sideboards in threshold determination. The state could begin with a more flexible approach (possibly including no state requirement that lead agencies set a significance standard) and refining it into a more consistent statewide approach over time.
- The specific type of quantitative significance standard. The SEPA IWG analyzed a number of different types of quantitative significance standards, and the two types of standards that generated the most discussion were (1) a percentage below business as usual and (2) a strict volume approach (e.g., tons per unit). However, the majority of IWG members voted for something other than a strictly percentage-based or volume-based approach. Instead, the “sense of the group” was that a hybrid percentage-volume approach or a “menu” approach was promising.<sup>3</sup>
- How to link significance standards to statewide greenhouse gas requirements and whether to do this for both a statewide standard and as part of the sideboards for lead agencies that set their own standards. Although the SEPA IWG recommended a conceptual linkage between threshold determination and the state requirements, it did not address any questions about how to operationalize it. One key question is how much greenhouse gas reductions to expect from new development versus existing development.
- Similarities and differences in the approach to threshold determination for projects vs. non-projects.

## RECOMMENDATION 7—CONCEPTUAL IDEAS FOR LEVERAGING SEPA

<sup>2</sup> The SEPA IWG struggled with the right word to describe limits or constraints placed on lead agency discretion without implying that these would be in the form of state guidance, rule, or statute. The IWG used “sideboards” as a working term for this concept. Members suggested other terms as well, including “constraints,” “benchmarks,” “criteria,” and “parameters.”

<sup>3</sup> Under a menu approach, the state would develop a menu of possible standards and lead agencies could adopt the menu or use it as source for selecting one or more standards. It is described in more detail in Section 4.1.2.

The SEPA IWG recommends four conceptual ideas to the CAT as promising approaches for using SEPA-related incentives or disincentives (i.e., “leveraging SEPA”) to promote climate-friendly development. We also identify one additional idea to the CAT as an area for further analysis by Ecology and its stakeholders.

The IWG has not fully discussed or endorsed specific approaches for implementing the ideas presented in this recommendation—this is an area for future work. Some of the ideas may require legislation, but the IWG does not recommend legislation at this time. Rather, it asks the CAT to support these ideas in concept without asking the CAT to endorse any particular version of them.

The ideas are summarized below; more in-depth descriptions—along with additional comments from IWG members—are included in Appendix C. These ideas are put forth based on a majority vote of IWG members; the level of IWG member support for each is also summarized in Appendix C.

The IWG recommends the following four “leveraging SEPA” ideas:

- *Neighborhood, District-Level Exemptions.* SEPA would be amended to authorize jurisdictions to provide a “neighborhood, district-level exemption.” This would be for municipally designated areas within UGA’s, where property owners agree to comply with statutorily set minimum sustainable development standards. The standards could require compact, connected, walkable neighborhoods, with good jobs ratios, open space, a wide variety of uses, transit supportive residential densities, and high performance buildings and infrastructure. Any exemption should be clearly tied to achieving total greenhouse gas and VMT reductions to document or demonstrate effectiveness and ensure credibility. Also, the exemption language will need to be carefully drafted, and would include specific statutory criteria to address the full range of environmental impacts. This exemption could be a new statutory section, or RCW 43.21C.229 could be revised to incorporate this approach. Alternatively, RCW 43.21C.240 could be amended to accommodate this approach.
- *Upfront SEPA.* This idea would allow cities to elect to designate a subarea for more compact commercial, residential, mixed use or industrial development (“Subarea”). If the city: (1) designates the Subarea; (2) conducts thorough SEPA review (environmental impact statement (EIS)) of the Subarea which is a maximum build-out analysis that identifies mitigation steps to address significant environmental impacts (including climate change impacts); and (3) adopts as new Subarea development regulations that incorporate and require the climate change mitigation and any other mitigation identified in the Subarea SEPA review that is not already addressed in development regulations, then all subsequent development in the Subarea would be required to implement the climate change measures and would be exempt from any project-level SEPA or SEPA appeals. Ideally this approach would be an improved form of Planned Actions with an upfront funding mechanism. SEPA Planned Actions, RCW 43.21C.031, with an upfront funding mechanism, or RCW 43.21C.240 might be utilized to preclude project-level SEPA review.
- *Voluntary Mitigation List and “Green List” Projects.* This idea involves programs for greenhouse gas emission mitigation or mitigation measures which, if included in a project proposal, could provide certainty that greenhouse gas impacts are addressed, and thus fully or partially exempt the project from further greenhouse gas reduction requirements. For example, specific mitigation measure and programs could be included on a “Green List.” “Green List” mitigation measures (or mitigation types) would be considered a positive contribution to the state’s efforts to reduce greenhouse gas emissions, and as such would exempt projects from further mitigation measures. Additionally, aspects of projects or programs may have mitigating effects, and as such would be given a mitigation value that would reduce or eliminate the need to further address greenhouse gas emissions through mitigation.
- *Regional Planning.* This idea involves developing and adopting a regional or statewide Climate Change Plan (GHG Reduction Plan) that would identify the broad direction of the state’s or region’s approach to reducing emissions. As part of that plan process, a statewide EIS on greenhouse gas emissions, impacts, and mitigation would be prepared and could then be adopted into local plan-level EISs. The statewide EIS

would be prepared anticipating its use for regional and local planning SEPA analysis. The statewide/regional plan could identify regional targets and identify alternative ways that local agencies could translate the regional targets into local plan-level and project-level environmental analysis and significance thresholds.

The IWG recommends further analysis of the following “leveraging SEPA” idea:

- *Future Vulnerabilities/Adaption Measures in Environmental Impact Statements.* Over and above the SEPA IWG’s Recommendation 8 to incorporate considerations of vulnerabilities and adaptation in the SEPA checklist (see below), the IWG suggests further analysis of the idea of incorporating these considerations into other aspects of the SEPA process. Specifically, the ideas to be analyzed are:
  - Amending the SEPA rules to require an analysis of the adverse impacts of global warming on the proposed action as part of an EIS.
  - Amending the SEPA rules to require that EISs must include and analyze an alternative that would be minimally affected by the adverse impacts of global warming.
  - Requiring reopeners or contingent mitigation for uncertain, but high cost impacts.

## RECOMMENDATION 8—ANALYSIS OF FUTURE VULNERABILITIES IN CHECKLIST

Ecology should revise the environmental (SEPA) checklist to incorporate analysis of how predicted changes in the existing environment due to climate change, combined with proposed actions, may create additional impacts on the natural and built environment. Ecology should also provide accompanying guidance on how to conduct this analysis. The required analysis should be based on readily available tools and resources and not require applicants to conduct new studies. As components of this recommendation:

- The state and local governments should continue to fund and synthesize research into the anticipated regional effects of climate change.
- Ecology and other agencies should provide guidance on how to evaluate and mitigate the effects on the natural and built environment of predicted changes in the existing environment due to climate change, combined with proposed actions as part of SEPA review. Ecology and other agencies should clarify the responsibilities of lead agencies and applicants in this analysis.
- Ecology and other agencies should make tools and resources available to applicants to support the required analysis.
- Ecology should amend the SEPA checklist to require analysis of the vulnerability to climate changes of the proposed action, future adaptations that may be required to address those vulnerabilities, and the impacts of those adaptations. Key resources and sectors to be addressed are:<sup>4</sup>
  - Water Availability (changes in precipitation patterns)
  - Water Quality (particularly temperature)
  - Urban Infrastructure (including potential for increased stormwater runoff from increased flooding)
  - Energy Supply and Demand (due to decreased water supply and temperature rise)
  - Forests (health, productivity, fires, diversity)
  - Agriculture (particularly irrigated and dryland areas)
  - Air Quality (increased ozone, particulates, allergens)
  - Impacts due to Extreme Weather Events (flooding, windstorms, droughts, heat waves)
  - Coastlines (direct and indirect impacts from sea level rise)

<sup>4</sup> This list is drawn from Summary of Regional Impacts of 21st Century Climate Change (from February 2008 CAT Interim Report)

## RECOMMENDATION 9—TAKING INTO ACCOUNT LEAD AGENCY RESOURCES, CAPACITY, AND CONSTRAINTS

As the CAT and Ecology develop SEPA and climate policy, they should take into account the implementation resources, capacity, and constraints of the range of jurisdictions implementing SEPA. The IWG has identified several related items in the “Future Work” section of its report that should be further addressed by the CAT, Ecology, and/or stakeholders.

## RECOMMENDATION 10—TRAINING

The state should provide training and funding for training for lead agencies and applicants implementing SEPA and climate provisions. An estimated cost for training could be based on the cost of recent statewide stormwater training.

## RECOMMENDATION 11—ADVISORY COMMITTEE

Ecology should address future work described in the recommendations above and the highest priority issues described at the end of this report in the “Future Work” section with the assistance of an advisory group and invite members of the IWG to participate. This committee may have subcommittees or working groups that focus on particular sectors (e.g., transportation) or issue areas (e.g., threshold determination).

## 4. FOUR FOCUS AREAS

### 4.1 Focus Area 1: Measurement and Disclosure

This area of the IWG’s effort focused on SEPA’s traditional processes for identifying, measuring, and reporting environmental impacts and how these processes will apply to the climate change impacts of a proposal. Elements of SEPA that fell into this category (not all of which were fully discussed by the IWG) include: categorical exemptions, the environmental checklist, SEPA threshold determinations, and the content of EISs.

Through our focus in this area, the IWG was able to categorize emissions sources, identify numerous quantification/calculation tools, and discuss options for agencies on what constitutes “significance” (for the threshold determination) in the context of climate change.

#### 4.1.1 WHAT WE LEARNED

A. We expect that measuring and documenting climate change under SEPA will involve the following steps:

1. Identification of the proposals to be evaluated
  - The types of proposals subject to climate change analysis could be the existing realm of non-exempt proposals under SEPA, a smaller subset of this list, or a broader list that includes some otherwise exempt proposals. The SEPA IWG did not make a decision or provide a recommendation on which proposals should be subject to climate change analysis. It may depend in large part on what constitutes “significant” environmental impacts in the context of climate change.

## 2. Identification of the types and sources of greenhouse gas emissions

- Both project and non-project actions can affect greenhouse gas emissions. Therefore, effective use of SEPA to assess climate impacts may encompass both the “broad, enabling (top-down)” and the “sector-specific (bottom-up)” emission reduction strategies that the CAT finds equally necessary. Comprehensive planning is an example of a “top-down” approach whereas approval of an individual development project is an example of a “bottom-up” approach.
- The sources of emissions that are most relevant to measure and disclose under SEPA vary widely across proposed actions. As a result, the IWG considered, but decided not to develop, a short list of “essential” sources that would be measured for every action. Instead, the IWG proposed the list of 16 emissions sources (see Appendix D) and an initial list of criteria for making pragmatic decisions about what to measure (see Appendix E).
- Specific quantification of emissions may not always be necessary to consider the impacts of a specific source. For example, it is possible to know qualitatively that the production of certain building materials will result in greater emissions than production of other building materials (e.g., production of steel materials versus production of wood materials).

## 3. Quantification/consideration of emissions through use of calculation tools or assessment protocols

- Technical resources, including a variety of computerized modeling tools and published emission calculation methods, are available to assist SEPA applicants and lead agencies to quantify greenhouse gas emissions.
- However, the IWG recognizes that the required labor effort to calculate each of the 16 emission categories listed in Appendix D varies greatly, depending on the complexity of the proposed action. The IWG considered the level of effort that may be required to use existing tools and the potential burden on applicants and SEPA lead agencies. This concern is addressed in Recommendation 3, in which the IWG recommends that a new, simple set of greenhouse gas emissions tools should be developed to assist typical small-to-medium sized projects.
- New emissions models for particular types of projects are continually being developed and the state-of-the-art quantification models are rapidly changing.

## 4. Consideration of different degrees of measurement rigor at different stages of the SEPA process

- The IWG recognizes that measurement can occur at different stages in SEPA, such as at the point of determining eligibility for an exemption, during threshold determination, and during an EIS Study. The group discussed that each of these stages likely requires a different level of measurement rigor and that measurement at one stage may be carried forward to other stages. For example, if there is an extensive analysis of greenhouse gases emissions from a project conducted at an initial stage (e.g., threshold determination), then this analysis may not need to be repeated at a later stage (e.g., EIS).
- The group also discussed that simpler methods of evaluating greenhouse gas emissions could be appropriate at earlier stages in the SEPA process (e.g., determining exemption status), with increased rigor for threshold determination, and an EIS evaluation requiring the most detailed evaluation.

## B. What We Learned About Determining Significance of Environmental Impacts for Project and Non-Project Actions:

- A “threshold of significance” is a standard or set of criteria that represents the level at which a lead agency finds a particular environmental effect of a project to be significant. If the proposed action exceeds the significance threshold then the SEPA applicant has two general courses of action: (1) before the significance determination is made by the lead agency, offer voluntary mitigation to reduce emissions to below the threshold and thereby avoid the need for an EIS; or (2) prepare an EIS giving a detailed assessment of the impacts, after which the lead agency may use its SEPA substantive authority to require mitigation.
- Agencies in Washington are not currently required to adopt numeric thresholds of significance for specific environmental impacts nor does Ecology currently provide guidance on setting a standard numeric threshold. Having a consistent numeric significance standard for greenhouse gas emissions in the state would be ground-breaking.
- Although agencies in Washington are not currently required to adopt numeric thresholds, Washington State does have a common standard for significance set forth in WAC 197-11-794 that all agencies and jurisdictions use (and has been adopted by Washington courts):
  - “Significant” as used in SEPA means a reasonable likelihood of more than a moderate adverse impact on environmental quality.
  - Significance involves context and intensity (WAC 197-11-330) and does not lend itself to a formula or quantifiable test. The context may vary with the physical setting. Intensity depends on the magnitude and duration of an impact. The severity of an impact should be weighed along with the likelihood of its occurrence. An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact will be severe if it occurred.
  - WAC 197-11-330 specifies a process, including criteria and procedures, for determining whether a proposal is likely to have a significant adverse environmental impact.
  - In WAC 197-11-330(3), the Department of Ecology has laid out further requirements for determining whether a proposed impact will be significant or not. See also WAC 197-11-060(4) which identifies criteria for evaluating impacts.
- A majority vote of the SEPA IWG endorsed a linkage between a SEPA significance standard and the state greenhouse gas emissions reduction requirements in RCW 70.235.020. This means that these state requirements should be considered in determining whether a proposed action meets the threshold of significance.

#### 4.1.2 KEY DISCUSSION POINTS

*What types of proposals must be reviewed for climate change impacts?*

It was an operating assumption of the group (but not a decision) that all proposals that were not exempt under SEPA would be subject to review of climate change impacts.

Some IWG members expressed concern that a broad approach to climate analysis—that is, analyzing projects that would currently be exempt from SEPA analysis—would mean that current categorical exemptions and flexible thresholds would no longer apply. They advocated that proposals subject to climate change analysis should mirror those proposals subject to SEPA analysis for other environmental impacts. One member cautioned that a broader approach would not garner support from local government. Another noted that analyzing emissions from projects that would otherwise be exempt “could literally add hundreds of extra reviews a year” and that he did “not believe that the mitigation that would result from these reviews would outweigh the costs of implementation.”

Other IWG members felt that all emissions being significant, all proposals, even those exempt, should at a minimum quantify their greenhouse gas emissions and present a plan for meeting the required reductions.

*If there is a “green list” of projects that are not subject to the standard approach to SEPA measurement, what should be on the list?*

In Recommendation 6, the SEPA IWG recommends the development of approaches for applicants to qualitatively obtain a DNS by, for example, being on a “green list.” Some members raised concerns about this approach and others suggested projects that should qualify for the list.

One IWG member commented that a “green list” approach may inappropriately reward or penalize projects through the SEPA process. This member advocated that determination of what projects should be exempt should be completed through the normal process of determining statutory or regulatory exemptions.

Some members offered suggestions for green list items (e.g., long term forest management for lumber that is used for building houses), but the IWG did not generate a list of potential green list projects.

*What sources of emissions should be measured? What aspects/characteristics of projects and non-projects need to be quantified or otherwise assessed for climate change impacts?*

Sixteen direct and indirect sources of greenhouse gas emissions were identified and subsequently considered in a handful of “test cases” (see Appendices D and H). This exercise and subsequent discussion focused on the importance of considering the level of effort (cost, difficulty, etc.) of evaluating a specific type of emission from a specific proposal and comparing this to its contribution to climate change impacts.

The group discussed considerations and criteria for lead agencies to decide whether and how various sources of greenhouse gas emissions must be addressed for each proposal under review. The group also discussed that the list of emissions (for the purpose of SEPA review) may differ from those addressed for inventory and reporting requirements.

Some members of the IWG favored narrowing the list of emissions so that only certain emission sources need be considered for SEPA purposes (i.e., the “Scope 1” and “Scope 2” items under the WRI protocol). Other IWG members thought that the list should remain expansive but that not every project would require consideration of all sources on the list. The IWG was unable to reach consensus about how (or if) the list should be narrowed at some point in the future. As represented in Recommendation 1, as a future task Ecology will develop clear guidance about how each of the 16 emission categories should be considered at different phases of the SEPA process (i.e., disclosure, quantification, threshold determination, and mitigation) for representative types of SEPA proposed actions. This guidance would encourage the lead agency to use its discretion to select any of the categories for exceptional SEPA actions that are outside the range of typical projects.

There was disagreement among members on the adequacy of tools to measure certain sources of emissions described in Appendix D, including:

- Measuring construction emissions, at least with respect to linear transportation projects.
- Measuring loss of sinks.
- Measuring indirect and cumulative effects at the project level.

Members also raised questions about the value and feasibility of estimating embodied emissions. One member asked what the value of estimating these emissions is and said it would be better to develop a list of best management practices and energy conservation measures that can be implemented on projects to reduce emissions. Another member noted that the issue of disclosing and mitigating for embodied emissions will be very controversial. An additional member pointed out that embodied emissions for buildings are generally 13%-18% of the total embodied and operational carbon footprint.

IWG members strongly disagreed about whether it is appropriate to count indirect emissions for purposes of SEPA. Even among members that suggested counting indirect emissions, there was disagreement about which indirect emissions should be counted. One member raised the concern that VMT trips may be considered indirect and therefore not counted. She noted that, for some projects, VMT trips will be the largest source of greenhouse gas emissions. This member felt that any VMT trips created by a proposal should either: (1) not be considered an “indirect” impact, but a “direct” impact, or (2) no distinctions between considering direct or indirect impacts should be included in guidance or recommended by Ecology. An additional member noted that WAC 197-11-060(4)(d) requires consideration of direct and indirect impacts, thus indirect impacts of a proposal cannot be excluded under SEPA under current law. Another member noted that measuring indirect emissions from VMT is useful to measure at the regional scale, but is “not practical, useful (nor in some cases valid) at the project level.”

Other opinions expressed by individual IWG members on the “what to measure” question included:

- Advocating that SEPA only address emissions not addressed through another mechanism; in this view, emissions that are managed through another regulatory or market system should not be analyzed under SEPA nor should they be added to the total emissions calculated against a project when making a threshold determination.
- Including consideration when doing measurement of whether there are any offsetting benefits as a result of a proposal, such as avoided or displaced emissions.

*What criteria should be used to make “pragmatic” decisions about what to measure?*

The initial list of criteria meant to inform agencies about what sources of emissions to measure (see Appendix E) were:

- Has the source of the emission for this proposal been addressed (analyzed and mitigated) in another SEPA document, or local, regional, or state plan?
- Can the source be credibly measured or assessed (quantified or otherwise) with the tools/information currently available?
- Can the boundary (scope or scale) of the emission be determined?
- What is relative importance (regionally, nationally, or globally) of the contribution of this emission source to climate change impacts?
- Can the proposal be modified to avoid, minimize, or otherwise mitigate its contribution of this emission source?

Some IWG members advocated striking the fourth criterion from the list (“What is the relative importance (regionally, nationally or globally) of the contribution of this emission source to climate change impacts.”) One of these members said the criterion does not fit with how the term ‘significantly’ in SEPA has been defined.<sup>5</sup> The member said that if a showing of national or global impact was required, few EISs would be prepared. Other members thought that opposition to the criterion may come from confusion about what it means and said the criterion looks at the impact from the sources as a category rather than from emissions from an individual action. For example, if employee commute distances are a relatively large contributor to climate change impacts nationwide, then they may need to be measured as part of the SEPA process.

*To what extent is double-counting a concern?*

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<sup>5</sup> The member said this definition includes the examination of at least two relevant factors: (1) the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area, and (2) the absolute quantitative adverse environmental effects of the action itself, including the cumulative harm that results from its contribution to existing adverse conditions or uses in the affected area.

The SEPA IWG discussed the potential for double-counting on a number of occasions, but did not develop a specific approach for addressing it. The IWG discussed that some of the 16 emissions categories listed in Appendix D will cause “double counting,” because the emissions would be generated by a separate upstream or downstream entity that might be subject to its own emissions reporting and emissions reduction requirements.

There were a range of views about the extent to which double counting should be of concern for the measurement aspects of SEPA. One member said that double-counting is an issue that would confound many of the steps in the SEPA process for greenhouse gas reductions (disclosure, quantification, threshold determination, and mitigation). For example, should a SEPA applicant be required to include double-counted emissions from a separate entity in its SEPA emission inventory used to compare to a quantitative significance threshold? Similarly, should a SEPA applicant be required to mitigate double-counted emissions for which the separate upstream entity is already required to mitigate its own emissions through a non-SEPA requirement such as the WCI cap and trade program? (Another member noted that SEPA specifically prohibits double mitigation.)

Other members felt the concern over “double counting” of emissions was more relevant to mitigation considerations rather than consideration of significant impacts under SEPA. This is because the impacts of a specific proposal (i.e., the contribution of emissions from the proposal) can be measured, evaluated, and disclosed regardless of whether the emissions have been “reported” or partially mitigated for in another project or planning document.

*What technical resources—including calculation tools—can or should be used to assist lead agencies in quantifying greenhouse gas emissions?*

A comparative list of available calculation tools was developed by the group. Characteristics of the tools included in the matrix include:

- Useful for greenhouse gas inventories
- Useful for greenhouse gas prediction and forecasting
- Measures greenhouse gas reductions from mitigation activities
- Measures greenhouse gas sinks
- Applicable for project level review
- Applicable for non-projects

Many of the tools encompass more than one characteristic and, therefore, may be more suitable for SEPA purposes.

Members also discussed other desirable characteristics of a tool and/or information that would be useful to have about a tool:

- Accuracy/effectiveness
- Ease of use
- Cost to obtain/use the tool and appropriateness of the costs to the jurisdiction using the tool
- Breadth of the coverage
- Standardization (E.g., does it use standard methods? Are users able to consistently apply it?)
- Level of effort to adapt the tool to Washington State
- Consistency with other state tools/methods (e.g., state inventory)
- Predictive ability to estimate prospective emissions

There was a “sense of the group” that simple but effective calculation tools need to be developed for use by lead agencies and/or applicants. This is a key recommendation of the IWG.

One member cautioned, however, that measurement is a complicated issue that requires sophistication, and often times the simpler the tool the more crude and inaccurate the measurement can be. The member said that

legitimate concerns about inadequate resources in some jurisdictions for handling new climate change requirements should not drive the IWG towards a simplistic approach.

Others felt that simpler calculations or more generic assessment options (e.g., generic tables of typical greenhouse gas emissions) might apply when (1) it is too costly or complex to generate more accurate calculations for particular greenhouse gas sources, (2) for smaller SEPA lead agency jurisdictions, or (3) to provide an optional default or safe harbor.

*What is the role for qualitative (versus quantitative) analysis?*

As reflected in Recommendation 4, the SEPA IWG recognized that quantitative tools may not always be available or appropriate, and that qualitative analysis may be necessary as an approach for assessing emissions and making a threshold determination. As stated in the recommendation, the IWG feels that Ecology should provide guidance on qualitative approaches as well as quantitative approaches. This recommendation was approved by a vote of 19 to 1 at the IWG's September 30 meeting.

The IWG member that voted against Recommendation 4 said that emissions from a project can be quantitatively measured and that a default to a qualitative analysis undermined the rigors of SEPA analysis. Qualitative analysis invited, he said, a wide disparity of treatment of similar projects by different jurisdictions and invited litigation over the sufficiency of the qualitative analysis and resulting mitigation. He cautioned that attempting to impose a "qualitative" standard may undermine the fairness of the system and lead to rewarding favored projects and project proponents while punishing disfavored projects or proponents.

Part of the discussion about quantitative versus qualitative approaches dealt with the adequacy of measurement tools. Some members felt that currently available tools could be used to quantify greenhouse gas emissions reductions—and to quantify increases or decreases in sequestration sinks—resulting from project or non-project proposals for the vast majority of future projects and non-project actions typically subject to SEPA. And, these tools could do so with a level of accuracy adequate to define significance and develop mitigation measures. In this view, the accuracy of these tools for greenhouse gas emissions is likely the same as the accuracy of similar models that have long been used for conventional air pollutants like ozone precursors; the accuracy of any given greenhouse gas emissions model depends largely on the quality of the input data.

Other members felt that measurement tools were inadequate, and that approaches for qualitative analysis were therefore necessary. These members held the view that there currently exists no perfect tool or set of tools to assess greenhouse gas for SEPA purposes. Some members identified particular areas that were more appropriate for qualitative analysis, such as embodied emissions and carbon sinks.

*What level of statewide consistency for the threshold of significance can and should be established at the state level?*

After considerable analysis and discussion over multiple meetings, the IWG identified and voted on six options for addressing the issue of statewide consistency in setting a significance threshold (or thresholds) for climate change impacts:

1. Implement statewide standard.
2. Use State Standard or Adopt Local Standard WITH State Sideboards.
3. Use State Standard or Adopt Local Standard WITHOUT State Sideboards.
4. Adopt Local Standard WITH State Sideboards.
5. Adopt Local Standard WITHOUT State Sideboards.
6. No Required Local Standard (in discussion, those that preferred this option said they favored developing state guidance and potentially a recommended standard even though a local standard would not be required).

The resulting recommendation on statewide consistency in threshold determination is contained in Recommendation 6, the outcome of the voting is described in Appendix B, and materials describing the advantages, disadvantages, implications, and other aspects of choices regarding threshold determination are included in Appendix I. Below is a non-exhaustive list of some of the issues raised by individual IWG members regarding the approach to statewide consistency:

- Concern that a statewide standard, while it may make sense from the perspective of achieving statewide greenhouse gas requirements, would not recognize regional differences in geography, existing policies and regulations, built and natural environments, transportation systems, economic engines, supporting infrastructure, funding, and political climates.
- Concern about not fully understanding the implications of each alternative to statewide consistency.
- Concern that a stringent threshold may eliminate existing categorical exemptions.
- Concern that the adoption of an emissions “standard” within statute or rule would be a fundamental change to SEPA. The member offering this view recommended that, while appropriate and targeted regulatory laws or rules are developed elsewhere to address greenhouse gas emissions, the state provide guidance that favors a flexible approach that allows lead agencies to develop a range of actions that establish greenhouse gas reduction goals, identify specific actions and best management practices for greenhouse gas reduction, and allow for qualitative analysis within SEPA of climate change impacts.

*What type of significance standard (or standards) should be used?*

The IWG discussed numerous types of significance standards—including quantitative and qualitative approaches (see Appendix I). However, the IWG did not select a particular type of standard (see outcomes of voting in Appendix B). Many members favored examining a combination of approaches or investigating additional types of quantitative or qualitative standards.

One of the approaches that attracted interest at the September 30 meeting was a “menu” option that was not fully described at the meeting. The member who suggested this alternative said that characteristics of a menu approach would include:

- A menu of standards adopted at the state level (e.g., through rule or guidance).
- The availability of the menu to be adopted in its totality or as a source from which one or more standard could be adopted or used by the local agencies in threshold determinations.
- The opportunity for the addition of standards as they are developed or the deletion of standards as appropriate.
- The opportunity to match the type of standard that is most appropriate for a given location or type of project.

The menu could include, but not be limited to, the qualitative and quantitative types of significance standards already identified by the IWG.

Below is a non-exhaustive list of opinions expressed by individual IWG members regarding the approach to significance standards:

- Significance standards based on a percent reduced from business as usual (BAU) comparison or a volume standard (e.g., tons per unit) are not well suited for linear projects (e.g., replacing a bridge on existing road) or linear infrastructure improvements.
- Because precise volume determination of greenhouse gas emissions is difficult, percent reductions based on a consistent set of assumptions will be more actionable than defining a total volume amount for a project, for a significance threshold, or for mitigation.
- A percentage reduction from BAU may not be legally defensible as a significance threshold under SEPA because two different enterprises that emit the same amount of greenhouse gases cannot be treated

differently in terms of their significance—if significance means the significance of their impact on the environment.

- SEPA lead agencies should retain current flexibility and discretion in deciding when an action may have “more than a moderate impact to the quality of the environment.” The statewide guidance should encourage each lead agency to: (1) consider the context and intensity of the proposed action; (2) consider the wide range of proposed actions; (3) acknowledge areas of uncertainty in quantification of impacts and mitigation; and (4) respond to changes in regulation, science, and technology.
- The approach to significance standards could offer additional flexibility to go beyond a statewide minimum standard, targeting, for example Architecture 2030 or IPCC goals.
- The efficacy of incentives may be tied to the level of threshold. A very high threshold will not capture many projects and will not provide incentives to many opportunities to reduce.
- The approach to threshold determination and the recognition of categorical exemptions should be made by the Legislature and Governor through a specific change in the law, not left to agency guidance or rule.

*How would a linkage between SEPA threshold determination and statewide greenhouse gas reduction requirements be implemented?*

A majority of IWG members voted to link the threshold determination approach to state greenhouse gas emissions reduction requirements (see Recommendation 6). Many members advocated this approach as a way to tie SEPA closely to the state’s overall strategy for greenhouse gas reductions. However, members also acknowledged there are a number of issues to implement this linkage, including how reduction responsibilities will be allocated. For example, one member raised questions about how this linkage would translate into responsibilities for individual jurisdictions, noting that the first step must be deciding who is responsible for reducing what amount of emissions.

*What type of training should accompany new SEPA measurement and disclosure procedures?*

The IWG felt that training in new procedures was important, and the IWG unanimously approved Recommendation 10 regarding provision of training and funding for training.

One member suggested that changes to SEPA procedures and requirements should not become effective without state-committed resources for training. Another member said that such a requirement would be problematic because current law probably already requires consideration of climate change impacts under SEPA. Suggesting that new SEPA procedures and requirements could be set aside pending training could lead some agencies to wrongly conclude that they are not required to incorporate climate change into SEPA analyses at this time.

## 4.2 Focus Area 2: Mitigation

### 4.2.1 WHAT WE LEARNED

- State and local agencies with jurisdiction over a proposal are authorized, but not required, to mitigate adverse impacts. Mitigation is voluntary at the threshold determination stage in the sense that, when mitigation is proposed by the lead agency, the project proponent has the option of not incorporating mitigation measures and instead receiving a determination of significance and preparing an EIS. At the point of agency decisions on proposals, the agencies have authority to require mitigation but are not obligated to do so by SEPA.
- Several options that mitigate for climate change can also mitigate for other environmental impacts. For example, low impact development for stormwater protects water quality by decreasing the volume of stormwater runoff and also could decrease greenhouse gas emissions through energy conservation. Utilization of these types of strategies may offer the best potential for effective and cost-efficient mitigation of climate change impacts.

- There are a wide range of climate change strategies that are already being considered by other jurisdictions as possible mitigation for greenhouse gas emissions. Although a promising number of strategies exist, we currently have little information about the effectiveness of the individual strategies. We also have little information about the costs versus the cost savings of various strategies. These information gaps lead the IWG to recommend that Ecology publish the entire list of mitigation options without recommending specific options at this time. Ecology, along with the advisory committee, should assess effectiveness and address the cost-efficiency of various options with an eye toward developing more specific guidance at a later date.
- The CAT's recommended reduction strategies will be useful references for informing mitigation strategies.

#### 4.2.2 KEY DISCUSSION POINTS

##### *Should certain types of mitigation be preferred over other types of mitigation?*

The IWG discussed whether mitigation options should be sequenced, for example, to: (1) avoid greenhouse gas emissions when possible; (2) reduce emissions that cannot be avoided; and (3) compensate for emissions that can neither be avoided nor reduced (for example, through the purchase of offsets). WAC 197-11-768 creates a sequencing definition for mitigation. IWG members had varying opinions on whether sequencing is desirable, largely because of varying opinions on the effectiveness of offsets as a mitigation strategy. Because of the wide range of opinions and limited time to discuss the issue, the IWG did not make a decision on mitigation sequencing or the use of offsets.

##### *Who is responsible for enforcement and monitoring for effectiveness?*

The IWG also briefly discussed the question of who should be responsible for enforcing to ensure effectiveness of mitigation measures once they are implemented. Some members expressed concern that small jurisdictions may lack the resources and expertise for robust enforcement of mitigation required for climate change impacts.

One member questioned who will be responsible for the costs of litigation that result from climate change mitigation requirements and suggested resolution of this issue as an area for future work for the IWG. Another member emphasized that, as a matter of law, the agency that is challenged is responsible for defending against that challenge. It is possible (and perhaps likely) that Ecology will assist in the defense, said the member, but Ecology's decision to do so is not an appropriate topic of discussion for stakeholders—rather, it is a decision that Ecology will make on a case-by-case basis in consultation with it's the Attorney General's office.

##### *How does cap and trade fit in?*

A final discussion point involved the issue of whether capped sources within a cap and trade system should be exempt from providing additional mitigation for greenhouse gas emissions under SEPA. The IWG also recognized the possibility of confusion and/or double regulation under cap and trade and SEPA. IWG members identified these as important questions that cannot be answered now because of the uncertainty over the details of an eventual cap and trade system. However, agencies will likely need to grapple with these issues in the future, so this may be an appropriate area for future Ecology guidance.

A member raised, and the IWG discussed, the concern that mitigation measures taken as a result of SEPA would not allow entities to use the emissions reduced under those mitigation measures as offsets or credits in a future cap and trade program.

##### *Should it be possible to express the effectiveness of mitigation qualitatively?*

Some members felt that Recommendation 5 should include a reference to Ecology developing recommendations for a qualitative analysis of mitigation effectiveness when it is not possible to conduct a quantitative analysis. Other members felt that this should not be part of the recommendation.

### 4.3 Focus Area 3: Using SEPA to Encourage Climate-Friendly Development

This focus area looked at concepts that may represent important opportunities to alter the way SEPA is used in order to achieve the end goals of meeting greenhouse gas emission targets. This work focused on new incentives under SEPA rather than those that already exist. For example, the SEPA IWG acknowledged that the existing option to obtain a “Mitigated Determination of Non-significance” (MDNS) was already a powerful incentive within SEPA.

The SEPA IWG waited to address this topic until after initial work on SEPA measurement and disclosure. Consequently, the IWG spent less time on it and did not discuss or vet the ideas presented to the same degree as many of the measurement and disclosure issues described in earlier parts of this report. However, the IWG was intrigued by the general idea of using SEPA incentives and disincentives to “leverage climate-friendly development.”

#### 4.3.1 WHAT WE LEARNED

- A subgroup of the SEPA IWG identified an initial list of over 30 ideas for “leveraging SEPA” and then selected six ideas to put forward to the full IWG. The full IWG voted on whether and how to recommend these ideas to the CAT; this vote became the basis for Recommendation 7. Full descriptions of the recommended ideas, as well as a table of other ideas, are included in Appendix C.
- The 30-plus ideas that arose from this focus area fell into the following broad areas:
  - Upfront SEPA, which emphasizes SEPA review at the planning level rather than the project level.
  - Expanded exemptions with reliance on local planning, which emphasizes exemptions for climate-friendly development in defined areas.
  - Regional planning, which emphasizes greenhouse gas emissions analysis or planning at a regional level.
  - Funding for planning, which addresses how to fund the advance analysis in the “Upfront SEPA” and “Regional Analysis” categories above.
  - Pre-approved mitigation measures, which, if included in a project proposal, would provide certainty that greenhouse gas impacts are fully or partially exempted from further greenhouse gas reduction requirements.
  - Disincentives, which are potential “sticks” to discourage actions that generate large or avoidable quantities of greenhouse gases or that would result in the loss of carbon sinks.

#### 4.3.2 KEY DISCUSSION POINTS

*What is “climate-friendly” development?*

The IWG subgroup did not adopt a strict definition for climate-friendly development. Generally, development approaches that increased densities in already developed areas with good access to transportation options, jobs, and services were considered favorable. Members mentioned some points of reference for determining what is “climate-friendly” such as LEED green building standards. Others felt climate-friendly development should be clearly tied to VMT and greenhouse gas reductions.

*What are some of the concerns or considerations about “leveraging SEPA” ideas that should be taken into account when further developing these ideas?*

Individual IWG members expressed some specific concerns or considerations about “leveraging SEPA” ideas that they felt would need to be addressed as ideas were further developed. A non-exhaustive list of opinions put forward by members is below:

- Local governments must analyze potential adverse environmental impacts and have greenhouse gas standards adopted into law before project level SEPA review is not required. That is how RCW 43.21C.240 works, i.e., local jurisdictions have adopted substantive standards that may take the place of subsequent SEPA review because pre-existing regulations or plans already have identified impacts and required mitigation to address those impacts. It would be impermissible under current law to allow local jurisdictions to truncate SEPA review without first demonstrating that existing regulations or plans have already identified greenhouse gas impacts and required mitigation to address those impacts.
- Local jurisdictions need to have shown that existing regulations (not just policies) identify and mitigate greenhouse gas impacts at the project level before local jurisdictions can avoid or reduce SEPA review at the project level.
- For “Upfront SEPA” and “Regional Planning” to work effectively, standards are needed in the Growth Management Act (GMA) and other applicable state laws. The scientific uncertainty around the solutions to global warming and the need to address new environmental problems must also be addressed. There are several alternative methods for addressing these questions.
- Given the current uncertain state of what needs to be done to address global warming, the lack of comprehensive programs to address greenhouse gas emissions, and the lack of local planning, exempting development from SEPA may increase global warming more than it decreases it. Also, exempting actions from SEPA means that we will be unable to respond to the next major environmental threat. (Other members argued that the “Upfront SEPA” idea does not exempt actions from SEPA but rather moves the SEPA process to the planning level and would impose strict standards on development to reduce greenhouse gas emissions.)
- Effectively leveraging SEPA requires certainty in the incentives or disincentives provided. The more open-ended “leveraging SEPA” provisions are, the less of an incentive or disincentive they will be.

*What are advantages of emphasizing SEPA analysis at the plan level?*

Some IWG members noted advantages of emphasizing analysis at the plan level rather than the project level. A non-exhaustive list of opinions put forward by members is below:

- Analysis at the plan level is one way of providing a “safe harbor” for local governments and project sponsors. Moreover, it addresses the issue of multiple SEPA reviews for the same circumstances and is in keeping with RCW 36.70B which states that “[f]undamental land use planning choices made in adopted comprehensive plans and development regulations shall serve as the foundation for project review.” The Legislature went on to declare that the project review process “...should not reanalyze these land use planning decisions in making a permit decision.” Analysis up front is more in keeping with the intent of the Legislature and provides a comprehensive, bigger-picture of how we address climate change in each of our communities, statewide.
- If strategies are to be implemented, I believe they need to be looked at the Plan level coinciding with required GMA updates. For the purpose of this report ... I firmly believe that if these strategies are going to work they will have to be married with GMA requirements at the Plan level.
- Analyzing SEPA on a project by project basis places a burden on jurisdictions and developers to analyze development on a project by project basis without the expertise or necessary tools to do so.
- Regional plans may be most appropriate for VMT and transportation planning. Regional plans would be greatly facilitated by a statewide climate change greenhouse gas emission plan. Regional plans could then adopt the environmental analysis and goals from the statewide plan EIS.

- Doing the analysis at the planning level may allow the green list concept to incorporate certain categories of proposals (such as timber harvests within forests under long-term timber management commitments), or perhaps subarea plans where an EIS has already set the mitigation standards and directives that must be followed.
- “Upfront SEPA” is promising for transportation improvement projects. Because transportation projects are inherently connected with other roadways, evaluating the overall effects of an area’s transportation projects and transit programs on emissions could be the most accurate way to conduct useful analyses. For projects included in planning-level analysis, project level evaluation could be streamlined.
- One of the real benefits of Upfront SEPA is to move dramatically beyond what SEPA now does by ensuring that the climate change and other mitigation identified as significant will in fact be achieved by development – in contrast to SEPA today, where whether or not to impose identified mitigation is strictly discretionary.
- Ecology is required by RCW 70.235.020(1)(b) to develop a statewide greenhouse gas reduction plan describing those actions necessary to achieve 2020, 2035, and 2050 emission reductions. An EIS may be required as part of the plan process. Both the plan and EIS could facilitate credible regional planning and upfront SEPA by identifying measurable regional goals or boundaries for regional elements of the statewide plan.

*If there are incentives, should there also be disincentives?*

Some concepts that were considered included both positive and negative elements (carrots and sticks). Some members of the IWG felt that incentives were a much more powerful tool for encouraging climate-friendly development. At least one IWG member, however, said that the scientific environmental regulation literature indicates that incentives alone, without costs, may not affect behavior very much. Other group members proposed that disincentives may also be needed and may be the natural result of incentives. For example, if some proposals are allowed to move to the front of the permitting line due to their inclusion of climate-friendly elements, others proposals will have to wait longer.

*How would these proposals be funded?*

The IWG did not develop specific funding proposals. However, the group recognized that any work done at the planning level needs to be funded in order to be successful. Funding is a critical consideration should policy makers opt to move forward with any of the recommendations for incentivizing climate-friendly development.

## **4.4 Focus Area 4: Vulnerabilities to Climate Change**

### **4.4.1 WHAT WE LEARNED**

- The SEPA review process includes an opportunity to analyze impacts of proposals in the context of a future environment altered by climate change. Mitigation options provide an opportunity to make sure that impacts from climate change are being considered upfront, and avoided or minimized when possible.
- Consideration of vulnerabilities requires not only an assessment of what vulnerabilities the proposal has due to a changing climate, but also what environmental effects will be exacerbated as a result of those vulnerabilities. The purpose of this analysis is for lead agencies to improve their understanding of future impacts by incorporating an analysis of predicted climate changes. This will enable lead agencies to improve designs and prepare long-lasting mitigation strategies. Examples include protecting water from pollution even in areas prone to floods, creating wetlands that aren’t inundated by rising sea level, or designing bridge footings that resist scour due to rapid snow melt or more frequent rain-on-snow events.
- There are a variety of resources available that describe the latest predictions of how the climate may change in Washington (e.g., analysis by the University of Washington Climate Impacts Group). Because SEPA is a tool to assess vulnerability to climate change, applicable resources should be made easily

available to lead agencies and applicants. Particularly useful resources would be Geographic Information System layers showing predicted climate changes.

#### 4.4.2 KEY DISCUSSION POINTS

IWG discussion of this issue was largely limited to its final September 30 meeting. The main points of discussion are captured in Recommendation 8 regarding the SEPA checklist and Recommendation 7, regarding further study of the idea of incorporating vulnerability and adaptation into other aspects of SEPA. Some members expressed concern that the IWG did not have enough time to talk about this topic.

## 5. FUTURE WORK

The Recommendations section of this report contains a number of items that the IWG proposes as future work for Ecology and an advisory committee of stakeholders. In addition to the items listed above, the IWG identifies the following additional tasks as important areas of future work by Ecology and its stakeholders. The IWG recommends that the following questions be addressed:

- Development of a roll-up matrix by Ecology (for review by stakeholders). This matrix will combine information on (1) types of projects and non-project actions, (2) the likely emissions sources arising from the actions, (3) possible tools for measuring emissions, and (4) appropriate mitigation options. The matrix will also show the current gaps in knowledge or tools. Project proponents and government agencies will be able to use this tool as a reference guide for analyzing specific types of projects under SEPA.
- An analysis of whether additional approaches to minimizing burden on certain jurisdictions (e.g., small local jurisdictions) are needed beyond the existing categorical exemptions and other features currently in SEPA—and what those approaches would be (e.g., exemptions, an additional “safe harbor,” or more limited requirements for measurement or analysis used to make threshold determinations). This analysis may consider questions such as the following:
  - Should the state provide financial resources to local government to amend local SEPA procedures if that becomes necessary?
  - How will climate requirements under SEPA interact with existing requirements under the GMA?
- Should there be an approach to monitoring and evaluating the effectiveness of lead agencies’ implementation of SEPA and climate change procedures in helping to achieve greenhouse gas reduction standards? If so, what should this approach be?
- Treatment of “avoided emissions” and “net emissions” within the contexts of measurement, disclosure, and mitigation.
- Development of a training plan for lead agencies and applicants to address climate change impacts through SEPA.
- Based on progress within other workgroups, potential work on integrating SEPA with other recommendations on topics such as land use and transportation planning.
- Development of guidelines for the use of planning level SEPA (non-project) to inform project greenhouse gas evaluations, including how decisions under SEPA relate to the requirements of the GMA.
- Work to clarify the relationship between threshold determination and state greenhouse gas reduction requirements.

## 6. ADDITIONAL IWG MEMBER COMMENTS

Some IWG members provided comments on initial drafts of this report that were not incorporated into the text of the report but provide additional perspective on the IWG's work and outputs. Those comments are captured below.

- “How does the climate change effort fit in with existing laws? What is the context of these recommendations in combination with other state mandates and laws? The Growth Management Act applies to all counties and cities in the state. More than half of these are required to fully plan under the Act. These counties and cities, and the remaining counties and cities, also plan under enabling legislation including RCW 35.63, 35A.63 and 36.70. How does the climate change effort get coordinated with these laws?”
- “For project-level review, it is important to remember the context under which local governments process permits. RCW 36.70B provides two important statements of legislative intent applicable to the recommendations of the SEPA IWG. These are:
  - The increasing number of local and state land use permits and separate environmental review processes required by agencies has generated continuing potential for conflict, overlap, and duplication between the various permit and review processes.” RCW 36.70B.010(2).
  - This regulatory burden has significantly added to the cost and time needed to obtain local and state land use permits and has made it difficult for the public to know how and when to provide timely comments on land use proposals that require multiple permits and have separate environmental review processes.” RCW 36.70B.010(3).”
- “How do the recommendations of the IWG address requirements for expeditious permit processing? RCW 36.70B.080 requires local governments to establish timeframes for permit processing. Most local governments retained the 120-day requirement of the original legislation, and it is politically impractical to amend this. How does adding another review requirement help local government achieve processing timelines? How does adding another review requirement fit into our efforts to improve the affordable housing picture in our state? These are questions that local governments will need to grapple with should changes be made to SEPA procedural requirements.”
- “I remain uncertain as to the overall context of the state’s climate change initiative. It is not enough to state that we have a goal of ‘X’ without articulating what it is we want our communities to look like, how we envision them modifying past practices and how we anticipate that they will thrive as a result. Our task may have focused on the role of SEPA, yet, can the state let us know what they want this to look like?”
- “It is well past time that SEPA be given a major overhaul. Making tweaks to it does not improve its effectiveness as a disclosure, evaluation and decision-making tool. After the efforts of the several key commissions (Growth Strategies, Land Use Study, etc.), after the adoption of the Growth Management Act and even after the adoption of new shoreline master program rules, I honestly thought that we, as a state, could muster the energy to improve our environmental review process; to orient it more in line with newer laws, newer approaches and newer philosophies. Instead, we are stuck with the 1970’s attitude that somehow we can protect the environment one project at a time. I cannot identify anyone that benefits from this approach. SEPA is underutilized; and still at times it is used as a tool of obstruction. Both of these dilute the effectiveness of environmental review and the public’s respect for the environmental review process.”
- “The SEPA IWG has done an amazing job of identifying and narrowing issues and collecting data, but it has not had the time within the very aggressive schedule it was given to work through the recommendations. In other words, we are just getting to the most important work of the group. This initial draft report acknowledges that IWG members are seeing these recommendations for the first time. More time is needed to flesh out, refine, and decide upon specific recommendations ... We request that the report

include an additional recommendation in which the CAT extends the duration of the SEPA IWG so that it can adequately complete its tasks.” (Note: this comment was accompanied by further comments that the SEPA IWG, not Ecology, should (1) develop a draft revised SEPA checklist and measurement guidance, (2) guidance on the effectiveness of mitigation options, and (3) the treatment of avoided emissions and net emissions.)

## 7. ECOLOGY GUIDANCE OUTLINE (DRAFT)

### SEPA Guide to Addressing Climate Change *Technical Assistance for Lead Agencies, Applicants, and Reviewers*

1. **Forward**
2. **Purpose, Introduction, and Background**
  - a. Why use SEPA to address greenhouse gas emissions?
  - b. What are the impacts associated with Washington’s emissions?
  - c. What is the connection to other strategies addressing climate change?
    - i. Overview of how SEPA fills the regulatory gap (using graphic timeline)
    - ii. Climate Change legislation
    - iii. Climate Action Team strategies
    - iv. Western Climate Initiative
    - v. State and Regional Climate Change Plans
  - d. What types of climate change impacts are associated with projects and non-projects?
    - i. Impacts from proposal’s direct and indirect greenhouse gas emissions
    - ii. Additional “vulnerability” impacts from proposal from changing climate conditions
  - e. When should climate change impacts be addressed?
    - i. Non-Project (including phased review, rules, etc.)
    - ii. Project
3. **Brief Overview of SEPA Process (with links to handbook, rules, and statute)**
4. **Identifying Types of Proposals that Impact or are Vulnerable to Climate Change**
  - a. Project and Non-project
  - b. Non-exempt projects and non-exempt agency actions
  - c. Placeholder for phased review, exemption issues, “green list,” approaches in statewide plan, etc.
5. **Initial Screening and Evaluation of Emissions**
  - a. Sources of Emissions
  - b. Quantification and qualification of emissions
  - c. Calculation tools
  - d. Protocols for non-quantitative assessment
  - e. Use of a Climate Change Worksheet to accompany SEPA’s *Environmental Checklist*
6. **Considering Mitigation**
  - a. Non-project
  - b. Project

**7. Making the Threshold Determination**

- a. Recommended significance standard
- b. Alternative approaches for significance standard
- c. Mitigated Determination of Non-significance (MDNS)
- d. Determination of Non-significance (DNS)
- e. Determination of Significance (DS)

**8. Analyzing Alternatives in an EIS****9. Post-SEPA Agency Decision Making and Applying SEPA Supplemental Authority**

- a. Overview of SEPA supplemental authority process
- b. Applicable SEPA policies
- c. Agency responsibilities
- d. Using MDNS
- e. Using DNS
- f. Using EIS

**Appendices**

- A. Sample summary of climate change impacts for use in SEPA documents
- B. Roll-up matrix of sources of emissions, calculation tools and generic emission tables, and mitigation options
- C. SEPA Checklist Greenhouse Gas Emissions Worksheet
- D. Additional Information Links

## Appendix A: SEPA IWG Scope of Work

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### Goal

The purpose of the SEPA working group is to provide a forum for members of the Climate Advisory Team and other stakeholders and government representatives to develop recommendations to ensure that consideration of climate change is included in the State Environmental Policy Act processes and documents. The recommendations would clarify how, where, and when to best address climate change in the state and local government (referred to as agencies) SEPA processes.

While not completely certain, the Department of Ecology believes, and the co-chairs of this SEPA IWG concur, that SEPA already requires an assessment of a proposal's potential impact on climate change. This includes a description of the proposal's likely affect on emissions of greenhouse gases and how environmental change that has already occurred or is likely to occur in the future as a result of climate change might impact the proposal.

SEPA requires agencies to act "to the fullest extent possible" when assessing the environmental impact of a proposed action. The current SEPA rules include "climate" as an element of the environment that should be included in assessing a proposal's environmental impact. Yet, environmental review documents rarely, if ever, discuss climate change. In other states and nationally, litigation has been initiated challenging SEPA-like environmental review documents and, to our knowledge, every court that has reviewed the question has ruled that NEPA and state equivalents do, in fact, require an assessment of the climate change impacts and implications raised by the proposed project. This kind of litigation has now been initiated in Washington.

Rather than leave this issue to the Courts, the CAT has recommended that a committee of stakeholders be formed to prepare recommendations on changes to SEPA rules, guidance and/or environmental review documents (EISs; environmental checklist, DNS, MDNS, etc.) to provide clarity and predictability to project proponents and administering agencies regarding how climate change is to be addressed through the environmental review process.

### Tasks

There is currently no guidance on how to address climate change under SEPA. The SEPA working group should focus initially on the following questions:

1. What is needed, in terms of SEPA rule amendments, including possible changes to the environmental checklist, threshold determination and/or Environmental Impact Statements, policy statements of guidance to provide clarity and predictability in appropriately addressing climate change in the environmental review of project or non-project actions?
2. What information and/or guidance can be provided to help administering agencies quantify and analyze the impacts of greenhouse gas emissions from their actions, as well as the impact of climate change on their actions?
3. What guidance should be provided to agencies and project applicants to determine possible mitigation for the effects of the proposal on climate, as well as the impacts of climate change on the proposal?
4. What guidance should be provided to agencies and local governments to help determine when substantive SEPA authority might impact the approval or placement of conditions on projects?
5. Should the SEPA environmental review process itself be used as an incentive to promote climate friendly actions. For example, should residential development that is consistent with approved GMA comprehensive plans and development regulations and that promote density, infilling and avoid

sprawl and commute dependant communities be exempted from or otherwise expedited under SEPA?

The SEPA working group will produce:

- Recommended policy direction, new agency guidance, proposed revisions to SEPA forms, and other appropriate direction regarding how, where and when to identify, quantify, evaluate, and mitigate impacts of greenhouse gas emissions from actions and projects and impacts of climate change on proposed actions/projects.
- Recommended changes to the SEPA rules, and draft amendment language.
- Other policy recommendations crafted to better utilize SEPA itself and SEPA as it applies to land use and transportation decisions in particular to improve its use as a tool to reduce emissions of greenhouse gases.

Ecology currently intends to file the draft rule amendment with the state Code Reviser by January 2009, with adoption by May or June 2009

#### **Existing work that the IWG may draw from**

- With the passage of ESSB 6001 'Climate change – Mitigating Impacts', and E2SHB 2815 'Creating Framework for Reducing Greenhouse Gases Emissions in the Washington Economy' the Legislature acknowledged the environmental impacts of climate change and directed the state to reduce Washington's contribution to greenhouse gas emissions.
- The Climate Advisory Team (CAT) and the Technical Working Groups (TWGs) recommended that SEPA be used as a tool for identifying greenhouse gas emissions and mitigation options in decision making, planning processes, and development projects.
- The Preparation and Adaptation Working Groups (PAWGs) recommended that SEPA be used to analyze and address the impacts of climate change on governmental actions and public and private projects.
- Director Manning's Letter to lead agencies.
- Across the nation many states and local governments are developing environmental policies, regulations and guidance to address climate change through their SEPA-like statutes. Some of these actions arose from court challenges. Ecology has determined it is in everyone's best interests to act now to avoid a "policy by litigation" scenario in Washington State.

#### **Connectivity to other efforts/legislation**

- ESSB 6580 'Addressing the impacts of climate change through the Growth Management Act': Section 2 of ESSB 6580 directs the Department of Community Trade and Economic Development to work with the Washington State Department of Transportation to reduce VMT through land use modeling and planning strategies. This IWG will not work on those issues, but will keep track of ESSB 6580 activities and products.

#### **Co-Leads**

- Jim Lopez, King County
- Dick Settle, Foster Pepper
- Jeannie Summerhays, Ecology

## Appendix B: Threshold Determination Voting

Below are the outcomes of the September 30 IWG meeting votes on four threshold determination topics. This voting is reflected in Recommendation 6.

*A. In regards to statewide consistency in setting significance standards, what should the state require lead agencies to do?*

The IWG conducted two rounds of voting. In the first, members were asked to select their one favored choice. In the second round—after discussion of the outcomes of the first round—members were asked to identify both their first and second choices.

Response Option	First Round (20 members voting)	Second Round (37 votes cast for 1 <sup>st</sup> and 2 <sup>nd</sup> choices)		
		1 <sup>st</sup> choice	2 <sup>nd</sup> choice	Total of 1 <sup>st</sup> and 2 <sup>nd</sup> choices
1. Implement statewide standard	3	1	1	2
2. Use State Standard <u>or</u> Adopt Local Standard WITH State Sideboards	9	8	10	18
3. Use State Standard <u>or</u> Adopt Local Standard WITHOUT State Sideboards	2	6	3	9
4. Adopt Local Standard WITH State Sideboards	0	0	2	2
5. Adopt Local Standard WITHOUT State Sideboards	0	0	1	1
6. No Required Local Standard*	3	3	2	5
7. Don't know/Can't decide at this point	3	0	0	0

Note: Choices 1-5 would require lead agencies to set a significance standard.

\*During discussion, those voting for this choice said they preferred an approach where the state would play an active role in providing guidance about options for standards and possibly even a model standard—even though there would be no requirement that lead agencies set a standard.

*B. If there is some type of statewide standard (required or optional), what type of standard should it be?*

Response Option	Number of votes (21)
1. Percentage-based (e.g., % reduction from business as usual)	2
2. Volume-based (e.g., tons/unit, tons/year)	0
3. Hybrid of percentage and volume	7
4. Other type of standard/combined standard	10
5. Don't know/Can't decide at this point	2

Of those that picked option #4 (Other type of standard/combined standard), nine said they were attracted to the idea of a “menu” approach that would potentially combine a number of different types of standards.

When voting on options for the type of statewide standard, IWG members acknowledged that they had already voted to provide a complementary qualitative option for achieving a Determination of Non-significance (see Decision C below, which preceded the vote on Decision B).

C. *Should the IWG recommend that Ecology and its stakeholders develop approaches that allow proposals to qualitatively achieve a “Determination of non-significance” (e.g., a “green list,” conformance with a climate plan, etc.). (Note: specific approach would be determined later.)*

- Yes: **19 votes**
- No: 0 votes
- Don't know/Can't decide at this point: 1 vote

D. *Should the state link the significance standard (or standards) to the state's greenhouse gas emissions requirements in some way?*

- Yes: **14 votes**
- No: 6 votes
- Don't know/Can't decide at this point: 1 vote

## Appendix C: “Leveraging SEPA” Voting and Ideas

### C.1 Voting on “Leveraging SEPA” Ideas

At the IWG’s September 30 meeting, members voted on how to present a set of six “leveraging SEPA” ideas to the CAT. This voting is reflected in Recommendation 7. These six ideas were identified by individual participants in a subgroup of members and technical staff as the most promising ideas among a larger set identified by the subgroup. At the September 30 meeting, IWG members were asked to vote, for each idea, on whether the IWG should:

- Recommend it to the CAT as a promising idea
- Recommend it to the CAT as an idea that is potentially promising but needs further analysis, or
- Not recommend it to the CAT

The decision of whether and how to recommend the idea was based on a plurality of votes. Below is a summary of the outcomes of the vote.

“Leveraging SEPA” Idea	Recommend to CAT	Recommend for further analysis	Do not recommend	# of Members Voting
1. Neighborhood, District-level Exemptions	<b>13</b>	6	1	20
2. Upfront SEPA	<b>16</b>	3	0	19
3. Mitigation – Voluntary Mitigation List and “Green List” Projects	<b>13</b>	7	0	20
4. Leveraging Existing Categorical Exemptions	1	7	<b>12</b>	20
5. Future Vulnerabilities/Adaption Measures	1	<b>10</b>	9	20
6. Regional Planning	<b>11</b>	5	3	19

### C.2 Description of “Leveraging SEPA” Ideas Recommended to the CAT

This subsection contains written descriptions of each of the ideas put forward by the IWG in Recommendation 7. These descriptions were written by individual IWG members, with review and some discussion by other members of a subgroup working on approaches to “leveraging SEPA.” The descriptions provided here have not, however, been fully discussed or approved by the full IWG. Indeed, IWG members have raised a number of questions about each idea and specific aspects of the descriptions.

Specific disagreements with these write-ups or uncertainties about them that arose within the subgroup or full group discussions are identified in the subsection of each write-up titled “Areas of disagreement, uncertainty or ongoing discussion.” Other, more general disagreements and considerations raised by other IWG members are contained in the “Key Discussion” section 4.3.2 of the main body of this report and noted in the text below.

## Neighborhood, District-level Exemptions

**Description of idea:** Exemptions are a powerful tool for encouraging climate-friendly development. They reduce project risk and costs associated with both litigation and preparing SEPA documents. When carefully drafted, they can help achieve the objectives of local government, environmental interest groups, and developers.

To utilize this strategy, SEPA would be amended to authorize jurisdictions to provide a “neighborhood, district-level exemption.” This would be for municipally designated areas within UGA’s, where property owners agree to comply with statutorily set minimum sustainable development standards. The standards would require compact, connected, walkable neighborhoods, with good jobs ratios, open space, a wide variety of uses; transit supportive residential densities; and high performance buildings and infrastructure. To fully leverage the exemption, it would apply to both the government’s “neighborhood designation” decision and implementing development projects.

This exemption could be a new statutory section, or RCW 43.21C.229 (the infill exemption) could be revised to incorporate this approach. The revisions would establish sustainable development prerequisites and expand the uses the exemption applies to, but limit its applicability to municipally established “districts.” The language providing for a plan EIS would not apply, because more comprehensive criteria would be set for meeting the exemption.

**Areas of disagreement, uncertainty, or ongoing discussion:** Issues raised are: (1) ensuring jurisdictions can require adequate mitigation, in cases where they have traditionally relied on SEPA; and (2) ensuring that if new issues arise, the municipality has the ability to address them. Also, the exemption language will need to be carefully drafted, and would include specific statutory criteria to address the full range of environmental impacts.

Other specific issues raised by IWG members include:

- It would be inconsistent with both SEPA and GMA to allow jurisdictions to create neighborhood designations without SEPA review being done for the original designation. Exempting both the original neighborhood designation and the implementing development projects as proposed would mean that other government agencies and the public would never have an opportunity to raise any issues related to environmental impacts of the designation or a project at any point in time. There would also be no way to assure the exemption is being used properly.
- Any exemption should be clearly tied to achieving total greenhouse gas and VMT reductions to document or demonstrate effectiveness and ensure credibility.

**What this idea will accomplish:** The exemption: (1) makes SEPA’s approach to climate clear and predictable and reduces future litigation; and (2) is a powerful incentive SEPA has available for reducing greenhouse gas emissions and future impacts related to changing climate.

**Strengths and weaknesses of idea:** See description above, and questions to be addressed.

**How this idea could/would be implemented:** Local jurisdictions would implement this strategy, by designating the geographic area the exemption would apply to, in concert with property owners, and consistent with statutory criteria. Future development within the district would then be required to comply with the sustainable development standards.

**Description of necessary funding or changes to statute/rules:** Statutory amendment needed. No new funding necessary.

**Additional information or analysis needed:** Draft legislation needed to develop the details embodied in this general concept.

## Upfront SEPA

**Description of idea:** Allow cities to elect to designate a subarea for more compact commercial, residential, mixed use or industrial development (“Subarea”). If the city: (1) designates the Subarea; (2) conducts thorough SEPA review (EIS) of the Subarea which is a maximum build-out analysis that identifies mitigation steps to address significant environmental impacts (including climate change impacts); and (3) adopts as new Subarea development regulations that incorporate and require the climate change mitigation and any other mitigation identified in the Subarea SEPA review that is not already addressed in development regulations, then all subsequent development in the Subarea would be required to implement the climate change measures and would be exempt from any project-level SEPA or SEPA appeals. As with Planned Actions, a verification step would occur at the project stage (e.g., review an environmental checklist to verify the project meets the description and regulations and that no unanticipated significant adverse environmental impacts are associated with the project).

Developers would be required to pay their proportionate share of the Subarea SEPA review. Ideally this approach would be an improved form of Planned Actions with an upfront funding mechanism.

**Areas of disagreement, uncertainty, or ongoing discussion:** Planned actions are a very good idea in concept but have had some challenges in implementation. Any solution should be designed to address implementation challenges associated with Planned Actions.

Since proposals can have many impacts, not just impacts to climate, the planning phase analysis would need to address all environmental issues with subsequent development implementing those measures. Whether and how planned actions, or a similar proposal, can address unknown, but significant, future environmental impacts or scientific uncertainty over global warming and the necessary responses is a concern.

It is unclear whether this could fit in with Planned Action requirements and/or only require some minor modification.

**What this idea will accomplish:** This idea will encourage and support good, non-project environmental analysis, which is where we can best use SEPA to address the incremental/cumulative effects of greenhouse gas emissions. It will provide predictability to proponents and to the public. It provides more predictability about the quality of the environmental analysis because an EIS will be prepared that links implementation of mitigation between the non-project and project. Properly implemented, this idea will also help jurisdictions decide what appropriate development looks like for a particular area, given the environmental issues of that area, while non-project or project planning is in the design phase.

**Strengths and weaknesses of idea:** The Urban Land Institute Reality Check concluded that land use related greenhouse gas emissions could be reduced through density, compared to business as usual, as part of the movement to State 2050 requirements. The Center for Clean Air Policy has predicted that smart growth, Brownfield infill development, and transit oriented development can reduce VMT by as much as 3% to 50%. In areas where there is a market and a jurisdiction completes the steps, this will create a very powerful incentive for developers to step up and invest sooner than would otherwise be the case.

**How this idea could/would be implemented:** This idea would occur as part of a local agency’s planning and would focus on a subarea in the jurisdiction. This approach provides an alternative process from the standard SEPA process for project level environmental analysis and threshold determination. One IWG reviewer suggested that it would be linked with statewide greenhouse gas emission requirements and goals for total vehicle miles traveled in the analysis or as part of a larger plan’s analysis.

**Description of necessary funding or changes to statute/rules:** A key challenge will be to identify the upfront funds to enable interested jurisdictions to conduct the subarea SEPA review. These measures would require initial financing/loan to assist participating cities with the upfront cost of subarea SEPA review; this cost would be reimbursed over time by developers. Perhaps there could be some kind of revolving account that would be reimbursed as developers pay on the loan.

These measures may require amendments of SEPA provisions and rules.

**Additional information or analysis needed:** More work is needed to explore why current law and rule provisions allowing for SEPA at the planning stage haven't been implemented as fully as envisioned.

## Voluntary Mitigation List and "Green List" Projects

**Description of idea:** Mitigation measures that adequately address greenhouse gases up front are one way in which the state can create a clear path for project proponents to meet their obligations for greenhouse gas reductions. This type of mitigation strategy can reduce the administrative burden of the State while still allowing for goal attainment. By creating relatively clear and unambiguous options for compliance, the state would be incentivizing applicants to do their part to meet the state's greenhouse gas reduction requirements.

Programs for greenhouse gas emission mitigation or mitigation measures which, if included in a project proposal, could provide certainty that greenhouse gas impacts are addressed, and thus fully or partially exempted from further greenhouse gas reduction requirements. For example, specific mitigation measure and programs could be included on a "Green List." "Green List" projects (or project types) would be considered a positive contribution to the state's efforts to reduce greenhouse gas emissions, and as such would be exempted from further mitigation measures. Additionally, aspects of projects or programs may have recognized mitigation impact, and as such would be given a mitigation value that would reduce or eliminate the need to further address greenhouse gas (a mitigation alternative list). One potential mitigation category is as follows:

Project alternatives in design and/or construction: Includes voluntary alternatives such as LEED/Green Globe certification and strategies; construction-transportation techniques; use of recycled materials, waste reduction, local materials; urban in-fill, Brownfield development; and use of VMT-limiting elements such as high transit use and work-live space.

**Areas of disagreement, uncertainty, or ongoing discussion:** This idea may be subject to uncertainty relative to science and policy. First, rapidly changing scientific evaluative techniques may lead to instability in the valuation of mitigation alternatives. This weakness may over or under inflate the value of such an alternative. Second, the trade-offs inherent in potential inclusions (particularly "Green List" inclusions such as on-site energy production) will need to be debated in the public arena, and, as such, will be subject to evolving community values.

Mitigation/green list and mitigation effectiveness would need to be clearly linked with any statewide greenhouse gas and VMT reduction plan or requirements.

**What this idea will accomplish:** This idea will accomplish two primary objectives: First, it will make SEPA's approach to climate clear and predictable and reduce future litigation. By laying out a clear path for compliance through a "Green List" or a list of project/program aspect with mitigation value, the process will be simplified for applicants. This "user friendly" framework will encourage its use.

Second, by encouraging the use of a "Green List" approach, greenhouse gas production will be reduced in the present and we will likely see a net benefit into the future.

**Strengths and weaknesses of idea:** This idea has several strengths. First, it provides a very clear path in which a project proponent can comply. Second, to the extent that the mitigation measures are voluntary, it provides an incentive for participation. Third, this idea also provides a catalyst for important public policy debates regarding the priorities of the state or local jurisdiction. Fourth, the simplicity of using a “Green List” will reduce the administrative burden typically associated with new initiatives.

The weaknesses of idea are threefold. (1) As discussed above, there are questions as to the valuation of mitigation alternatives given the nature of the underlying science. (2) Also discussed above was the concern over policy considerations with specific potential “Green List” inclusions. (3) The question of at what level of government or with what guidelines the development of specific inclusions to the “Green List” or the mitigation alternative list would need to be settled.

**How this idea could/would be implemented:** The “Green List” and mitigation alternative list could be implemented through the checklist. That is, if a project was included on a “Green List” it would simply note that on the form. Additionally, a project proponent would denote the mitigation alternatives it was implementing along with the value of that alternative and that would satisfy the documentation requirement.

**Description of necessary funding or changes to statute/rules:** Could be implemented through SEPA or non-SEPA legislation.

**Additional information or analysis needed:** Critical to this concept is the mitigation value of the specific mitigation alternative or “Green List” inclusion. The lists would need to be developed and valued prior to implementation. Amendments to the underlying lists could be made on an ongoing basis.

## Regional Planning

**Description of idea:** Develop and adopt a regional or statewide Climate Change Plan (GHG Reduction Plan) that would identify the broad direction of the state/region. It can be incorporated into local planning and environmental analysis. As part of that Plan process, prepare a statewide EIS on greenhouse gas emissions, impacts, and mitigation that can be adopted into local plan-level EISs.

The statewide EIS would be prepared anticipating its use for local planning SEPA analysis. The statewide/regional plan could identify regional targets and identify alternative ways that local agencies could translate the regional targets into local plan and project level environmental analysis and significance thresholds. If the regional analysis is done separately, another product/effort would need to be implemented to ensure the regional piece is done and that it is consistent with the statewide effort.

**Areas of disagreement, uncertainty, or ongoing discussion:** There has not been a lot of discussion of this idea. This approach is a very good one in theory but can have challenges during implementation. For example, the products of regional planning could be flawed/incomplete and not provide the information that local jurisdictions need. Or local and state agencies could decide they disagree with the product and do very little or something completely different. Local/state agencies could use the information inappropriately to meet the basic requirements, without effectively accomplishing the purpose of addressing climate change. In those cases, there would be no efficiencies or effectiveness achieved.

The products of this idea could be “tested” to ensure their usability for agencies of varying size. The products would need to include good tools/direction on how to incorporate them into local planning and project analysis. This idea would benefit from some mandatory procedural “checks” to make sure they are appropriately implemented to achieve greenhouse gas reductions.

One commenter noted that he needed to give more thought to the plan consistency requirement. He had thought of this as more of a SEPA EIS product analyzing a range of climate change issues at the regional or state level, and as a product smaller jurisdictions could adopt this analysis by reference for whatever efforts they are undertaking. A consistency requirement, he felt, is a little more directive, and may engender opposition by local governments for a variety of reasons. It also could turn out to be a litigation opportunity. He felt this issue raised the larger question of what climate change specific standards, if any, will be proposed by CAT or others. Who will develop them? He said the larger SEPA IWG and CAT are or will zero in on these, and whatever outcome is reached will have to circle back to this regional planning piece.

**What this idea will accomplish:** This idea will: (1) assist local jurisdictions to address greenhouse gas emission and climate change issues, (2) help ensure that climate change is addressed at all levels of government, and (3) increase consistency and predictability for the public and applicants.

A state level plan and environmental analysis will save money by eliminating duplication. Other agencies can use the work rather than recreate it. It will reduce challenges, because once the state plan and analysis is completed and has passed any challenges that might arise, it will be a solid foundation for other jurisdictions to build on. Applicants will be happier, because approaches and requirements across the state will be more similar and predictable. Also, their proposals/permits will be more defensible and less likely to fail a challenge. The public will have more confidence in a smaller jurisdiction's adherence to SEPA if the smaller jurisdiction uses the statewide documents as their foundation.

Local consideration of greenhouse gas emissions/climate change will have a greater chance of getting done and getting done correctly by jurisdictions, if they have assistance in the form of cost savings and useful information/environmental analysis. A statewide plan and environmental analysis will help us make sure we have looked at all the issues together so when local work is done it will be part of a bigger plan that makes sense and has been thoughtfully prepared to be effective.

When this approach includes regional targets and alternatives for implementing those regional targets, it would provide the middle step that connects the high level planning with local level planning and projects.

**Strengths and weaknesses of idea:** This activity would require no changes in laws/rules but would require substantial funding for the statewide effort. However, this idea could be incorporated into any statewide plan that might be underway. Producing the document would take some time and would be less useful, the longer it takes. However, costs would increase if we tried to shorten the timeline for completing the plan.

Creation of statewide or regional plans supports SEPA's purpose to address gaps and would be flexible to accommodate new science and tools. If implemented as intended, it would increase appropriate analysis and good proposals. It would particularly help jurisdictions with funding or climate change/SEPA technical expertise challenges. Also, it would save agency time during planning.

Since the plan would include an EIS, some level of assurance that the plan itself has properly conducted SEPA might be inherent.

**How this idea could/would be implemented:** A specific agency would be assigned for developing the statewide/regional plan and preparing the programmatic EIS. (For example, Ecology is already developing a plan for the Legislature that describes reduction measures that can be taken using existing authority plus any additional authority granted by the Legislature.) The agency would coordinate heavily with current regulatory efforts to address climate change, as well as with all stakeholders. The effort would include SEPA templates/guidance for implementation (SEPA analysis) at the local level. The statewide analysis and plan would then be used during local and state planning (e.g., comprehensive planning, transportation planning, forest planning, etc.).

**Description of necessary funding or changes to statute/rules:** Funding would be a critical need for this effort. No statutory or rules changes would be required although they may be important to ensure the product is effective. Rule changes could include: a requirement for consistency with the plan.

**Additional information or analysis needed:** A well thought out plan, that considers how this statewide/regional plan and environmental analysis will translate down to the later planning and project levels, would be essential for ensuring this product is useful and used by state and local agencies.

“Region” needs to be better defined. Does it mean one county or does it mean a group of counties that could have similar situations or similar approaches for addressing climate change? Or, a region might be a group of counties working together to translate their regional amounts into jurisdictional emission amounts and formulas for local planning and permitting (regional transportation planning organizations or MPOs?).

### C.3 Description of “Leveraging SEPA” Idea Recommended to the CAT for Further Analysis

*Note: the ideas put forth for further analysis in Idea #5 are those not already covered by the SEPA IWG Recommendation 8.*

#### Future Vulnerabilities/Adaption Measures in Environmental Impact Statements

**Description of idea:** Studies show that Washington is already experiencing the adverse effects of global climate change. As global warming continues we will experience flooding due to sea level rise and more winter precipitation falling as rain rather than snow. Our water supplies will be reduced and we will experience many other impacts. SEPA can be used to assess and reduce the impacts of these existing and future vulnerabilities on proposed actions. This could be done by:

- Continuing to fund research into the probable effects of global warming.
- Continuing to synthesize research into the probable effects of global warming and providing information to decision makers.
- Providing guidance on how to anticipate and mitigate the adverse effects of global warming as part of SEPA review.
- Amending the SEPA rules to require an analysis of the adverse impacts of global warming on the proposed action as part of an EIS. This may already be required, but is not explicitly identified as a requirement.
- Amending the SEPA rules to require that EISs must include and analyze an alternative that would be minimally affected by the adverse impacts of global warming.
- Requiring reopeners or contingent mitigation for uncertain, but high cost impacts. Some impacts, such as what will be the future flood heights in or near our current flood plains, are unknown but will have significant adverse impacts on proposed actions. The SEPA rules could be amended to require reopeners or contingent mitigation that would require an analysis of this impact if an event occurs or when information becomes available. Or a reopener or contingent mitigation could be imposed as an MDNS or EIS mitigation requirement. For reopeners or contingent mitigation to work, monitoring would be required and a contingency plan prepared that includes identified, implementable, and effective mitigation. The contingency plan would have to be identified up front with the required monitoring.

These could be mitigation measures that if included in a project proposal would provide certainty that greenhouse gas impacts are fully or partially exempted from further greenhouse gas reduction requirements. Or they could be required mitigation that some or all non-project or project actions would have to implement. Some options, such

as funding research or the synthesis documents, could be information that is made available to action proponents and the proponent could choose to act based on the information or not.

**Areas of disagreement, uncertainty, or ongoing discussion:** Members did not agree on whether additional SEPA exemptions or requirements are desirable. These options could be voluntary, incentives for an exemption, or required. Other questions include whether the requirement for more analysis or another alternative should only be required for non-project EISs and whether reopeners should be applied to project actions or even any actions.

**What this idea will accomplish:** This proposal will reduce the adverse impacts of climate change on project and non-project actions. This will increase protection for people and property and reduce future costs for proponents and the public. For example, siting a building or highway outside an area likely to be inundated by sea level rise will save lives and reduce property damage.

**Strengths and weaknesses of idea:**

**Strengths:** Since regulations do not cover many greenhouse gas emissions, requiring an analysis of the impact of global warming on the proposal, a least impacted alternative, reopeners, or mitigation would further SEPA's umbrella and gap filling role. These measures would be linked to available scientific information and methods. No particular science or tool is required, which allows agencies to retain the flexibility to use better tools. These measures could apply statewide, achieving consistency and predictability. Litigation may be avoided, but there may be litigation over whether these requirements are being met. These ideas may increase SEPA compliance costs, but decrease operation and maintenance costs, and the need to relocate or replace a project. These ideas, if properly implemented, would better protect people and property. Reopeners increase uncertainty and may make some project actions infeasible.

**Weaknesses:** Some options would reduce agency discretion. Some of these options will be controversial.

**How this idea could/would be implemented:** See the description of the idea above.

**Description of necessary funding or changes to statute/rules:** Some options, such as funding research or preparing synthesis reports, would be information made available to action proponents. Guidance on how to determine future effects would be a guidance document. Others would require amendments to the SEPA rules. Additional research and synthesis reports, and the guidance would require additional funding. The SEPA rule amendments may or may not require additional funding.

**Additional information or analysis needed:** (1) What global warming impacts should trigger the reopeners or require contingent mitigation? (2.a) When would a reopener occur, after the proposal is implemented? (2.b) How would the new analysis be used? (2.c) Would the proponent have to shut down the project?

## C.4 Other “Leveraging SEPA” Ideas Identified by the SEPA IWG

The SEPA IWG generated over 30 ideas for “leveraging SEPA” through incentives and disincentives. These are described in the table below. Five of these ideas were further elaborated in the previous section of this Appendix. An additional “leveraging SEPA” idea was raised by a CAT member and discussed by the CAT at its October 14-15, 2008. This idea involved giving applicants the option of paying a greenhouse gas “mitigation fee”—possibly 1% of project costs—that would then release them from any further requirements under SEPA. This idea was not fully discussed or decided on by the IWG, but could be considered along with other leveraging SEPA ideas by Ecology and its stakeholders.

#	Concept	SEPA piece	Non-SEPA piece	Additional Info Needed, Next Steps
<b>Planning - Local Level</b>				
1	<b>Leverage Upfront SEPA to promote and accelerate compact sustainable development.</b> Allow cities to elect to designate a subarea for more compact commercial, residential, mixed use or industrial development ("Subarea"). If the city: 1) designates the Subarea; 2) conducts thorough SEPA review of the Subarea which is a maximum build-out analysis that identifies mitigation steps to address significant environmental impacts (including climate change impacts); and 3) adopts as new Subarea development regulations that incorporate and require the climate change mitigation and any other mitigation identified in the Subarea SEPA review that is not already addressed in development regulations, then all subsequent development in the Subarea would be required to implement the climate change measures and would be exempt from any project-level SEPA or SEPA appeals. Developers would be required to pay their proportionate share of the Subarea SEPA review.	Probable new provision of SEPA statute.	Possible GMA amendment	Upfront source for money to fund Subarea EIS needed to ensure this is used (see below). draft proposed SEPA GMA amendment
2	<b>Sustainable neighborhoods exemption</b> (compact, connected, walkable, good jobs-to-housing ratio, open space, wide variety of uses, transit supported residential densities, high performance buildings, infrastructure). Local jurisdiction designates a geographic area subject to those standards within a UGA, then, both the jurisdiction's designation decision and future development projects within the designated area would be exempt.	Incentives for both designation of sustainable neighborhood (non-project) and development within area (project). SEPA law changes needed.		How to define criteria for exemption. What issues are currently addressed (by cities) using SEPA? How would those issues be addressed without SEPA?
3	<b>Enhance Infill Exemption</b> in 43.21C.229 by defining "mixed use" and reducing local EIS requirement	Amend SEPA	Local ordinance required to implement	How has infill exemption been used?

#	Concept	SEPA piece	Non-SEPA piece	Additional Info Needed, Next Steps
4	<b>Clarify and make more attractive and user-friendly Section 240</b> of statute and provisions on Planned Actions and GMA-SEPA integration	Clarify reliance on SEPA done at planning level, to reduce SEPA at project level. Guidance needed, plus SEPA Rule and Law changes.		What issues are Lead Agencies using project-level SEPA to address? Are there other obstacles to use of planned actions?
5	<b>Establish new category of Climate Change Essential Public Facilities:</b> e.g. non-Carbon energy facilities, adaptation water supply facilities, transit			
<b>Planning - Regional Level</b>				
6	<b>Develop and adopt a regional or statewide Climate Change Plan</b>	For non-project, use existing question #5 in Part D of the environmental checklist to identify and address conflicts with the Climate Change Plan. Guidance needed.	The Plan itself, would be a non-SEPA product (although Plan would have SEPA conducted on it)	1. do we have sufficient science on climate change and GHG emissions to develop a plan? 2. funding 3. identify lead agency
7	<b>Divide state GHG goals into regional targets</b> , to help the SEPA analysis be calculated more easily for each region. These numbers could potentially be divided in each region by jurisdiction and type of use. Jurisdictions in each region would determine the formula and the proportions.	Utilize regional GHG goals in agency planning and SEPA analysis, as a consistency check, at a minimum. Using the info could be optional without a rule or law in place. guidance needed.	Use of goals could be mandated (in GMA)	1. is it feasible to develop regional goals and how would that happen? 2. how would an agency use the regional goal in their planning and in SEPA? 3. assess compatibility with current direction for addressing climate change; 4. assess compatibility with WCI, state law, etc
8	Prepare <b>general statewide EISs (or regional environmental study)</b> on certain GHG emissions (or climate change) that can be adopted into local plan-level EISs	State and local agencies: 1) Incorporate the study "by reference" for non-project SEPAs, OR 2) adopt and supplement a SEPA EIS on statewide climate change/GHG environmental issues for local analysis. Using the info would be optional. guidance important	Study could be recognized as Best Available Science and be mandated (in GMA)	1. how would we produce an adequate document? 2. how would we ensure appropriate use of the document in SEPA and planning? 3. funding

#	Concept	SEPA piece	Non-SEPA piece	Additional Info Needed, Next Steps
<b>Planning – Funding</b>				
9	<b>Funding should be provided to the Planning Environmental Review Fund (PERF)</b> , to help perform more detailed SEPA analysis on comp plans or subarea plans. Funding PERF to help cities and counties analyze impacts of increased mixed use development in selected subareas (including GHG impacts/savings) would enable them to use these same subareas as TDR receiving areas and achieve less stormwater impact to Puget Sound.			
10	<b>Other funding mechanisms for upfront SEPA</b> such as: 1. use of late-comer fees 2. use of any future carbon tax 3. revolving fund loans for local planning instead of grants			
11	<b>Establish GHG controls and non-Carbon energy as public purpose</b> to allow public funding-lending of credit			
<b>Project Level – Mitigation</b>				
12	<b>Project mitigation that fully or partially exempt developers from further GHG reduction requirements.</b> Informal Green list Concept. Incentive for proponent to include voluntary measures in proposal so that mitigation for GHG emissions would already be addressed. 1. Achievement of LEED/Green Globe certification 2. Development of a Brown-field sites (or any other site requiring soil remediation) 3. Development and Implementation of an alternate transportation plan 4. Use of lean construction techniques 5. Use of local materials 6. Use of recycled materials 7. Waste Diversion 8. Key strategies included in Green Globe/LEED checklist 9. Credit for urban in-fill development	Measures could also avoid DS/EIS. Guidance only, no rule or law changes needed.		What are the specific measures? How much do those measures mitigate GHG emissions?
13	<b>Incentive for sinks, wetland banks, conservation easements, TDRs, Ag-Forest water banking</b>			
14	<b>TDR program</b> targeting isolated (high VMT) property and banking/sink property			
15	<b>Include need for future adaptations (e.g. inundations) in TDR program</b>			
16	<b>Incentives for VMT-limiting development:</b> e.g. housing with transit aspects, work-live space development			

#	Concept	SEPA piece	Non-SEPA piece	Additional Info Needed, Next Steps
17	<b>Authorize impact fees for a greater range of capital facilities and for certain operations such as transit operations.</b> Impact fees are currently only authorized for public streets and roads, parks and recreation facilities, school facilities, and fire facilities for jurisdictions not part of a fire district. So many needed capital facilities cannot be funded with impact fees, including transit facilities that are not road based or transit operations. Expanding the capital facilities and services that can be funded by impact fees could help reduce GHGs by expanding transit and also make SEPA exemptions more realistic as SEPA would not be needed as much to raise the funds for counties and cities to use in paying for growth.	None.	Amend impact fees statutes, RCW 82.02.050 to 090,	None
<b>Project Level - Disincentives</b>				
18	<b>Better use existing flexible thresholds.</b> Thresholds for minor new construction categorical exemption could be used more advantageously to encourage development in more climate-friendly locations.	Incentive for building in appropriately zoned areas, disincentive for building in other areas, Local SEPA ordinances would need to be changed		How are flexible thresholds currently being used? Are there opportunities for improvements? Update Ecology database of local SEPA ordinances by adding more cities and make sure flexible thresholds data is updated
19	<b>Modify, reduce, or repeal certain categorical exemptions.</b> The existing categorical exemption for parking lots, for example, could be repealed, reduced from the maximum of 40 spaces to a smaller number of parking spaces, or limited so the exemption only applies in locations or for actions that will not generate large quantities of greenhouse gases, such as high density, mixed-use developments near transit routes. Or the exemptions could be qualified so that they only apply in jurisdictions that have plans to reduce GHG generation consistent with RCW 70.235.020(1)(a)'s GHG emission limits.	Amend the SEPA exemptions in Part Nine of Chapter 197-11 WAC. No amendment would be required to SEPA.	None	1. Which exempt actions are generating, individually or cumulatively, large quantities of GHGs?
20	<b>Qualify exemptions so they do not apply in certain locations or if a certain level of GHG emissions would occur.</b> This could apply like the "lands covered by water exception" to the minor land use decision exemptions in WAC 197-11-800(6) or the authority in WAC 197-11-908(1) for counties and cities to select SEPA exemptions that do not apply in critical areas.	An amendment to the regulations would be required, no amendment would be required to SEPA.	None	1. What circumstances lead, individually or cumulatively, to the generation of large quantities of GHGs?

#	Concept	SEPA piece	Non-SEPA piece	Additional Info Needed, Next Steps
21	<b>Require EISs for categories of actions that generate significant qualities of GHGs.</b> For example, conversions of forest land could be required to always do an EIS because of the loss of the carbon sink and the GHGs that will be generated by the subsequent development. Similarly, transportation projects that would provide for increased single-occupancy vehicle traffic could always be required to prepare an EIS.	Amend SEPA rules. No amendment would be required to SEPA.	None.	1. What actions are likely to generate large quantities of GHGs?
22	<b>Require a more exacting level of analysis, a wider range of alternatives, or more analysis of potential mitigation measures for actions that generate significant qualities of GHGs.</b> For example, under existing regulations if a private action is consistent with the local government's comprehensive plan, the EIS does not need to analyze offsite alternatives. This provision could be made inapplicable to large GHG generators and EISs for such actions would then have to consider offsite alternatives which may generate less GHGs.	Amend SEPA rules. No amendment would be required to SEPA.	None.	1. What actions are likely to generate large quantities of GHGs? 2. What actions would benefit from a wider range of alternatives? 3. What actions would benefit from more analysis of mitigation measures?
23	<b>Require mitigation for certain levels of emissions or certain actions.</b> The current view of SEPA is that it authorizes, but does not require mitigation. SEPA could be amended to require mitigation in certain circumstances or for certain levels of impact.	Would require an amendment to SEPA.	None.	1. What actions are likely to generate large quantities of GHGs? 2. What actions should be mitigated?
24	<b>Require that actions that would generate certain levels of GHG emissions go to the back of the line and allow actions that would generate fewer emissions to "cut in front" of these actions.</b>	Could be accomplished by changing agency procedures or processes.	Change to agency procedures and, potentially, state regulations and local ordinances or regulations.	1. What actions are likely to generate large quantities of GHGs?
25	<b>Create added disincentive for conversion of forest land to other use</b> such as residential development	Could require SEPA or rule change	Forest Practices	What are the GHG emission estimates for FP conversions? Coordinate with Forest Sector Workgroup
<b>Reducing Future Vulnerabilities</b>				
27	<b>Continue to fund research</b> into the probable effects of global warming.	None.	Continue to use state funds for research.	None.
28	<b>Continue to synthesize research</b> into the probable effects of global warming and provide to decision makers.	None.	Continue to use state funds and staff for synthesis and to make the research available.	None.

#	Concept	SEPA piece	Non-SEPA piece	Additional Info Needed, Next Steps
29	<b>Provide guidance on how to anticipate and mitigate the adverse effects of global warming as part of SEPA review.</b>	An Ecology guidance document or an addition to the SEPA Handbook.	None.	None.
30	<b>Amend the SEPA rules to require an analysis of the adverse impacts of global warming on the proposed action as part of an EIS.</b>	An amendment to the regulations would be required, no amendment would be required to SEPA.	None.	None.
31	<b>Amend the SEPA rules to require that EISs must include and analyze an alternative that would be minimally affected</b> by the adverse effects of global warming.	An amendment to the regulations would be required, no amendment would be required to SEPA.	None.	None.
32	<b>Require reopeners for certain uncertain, but high cost impacts.</b> Some impacts, such as what will be the future flood heights in or near our current flood plains, are unknown but will have significant adverse impacts on proposed actions. The SEPA rules could be amended to require reopeners that would require an analysis of this impact if certain event occur or when information becomes available.	An amendment to the regulations would be required, no amendment would be required to SEPA.	None.	1. What global warming impacts should trigger the reopeners?
33	<b>Require mitigation for certain adverse effects of global warming</b> , such as sea level rise that will flood a highway or development or a use that will not have any available water in ten years. The current view of SEPA is that it authorizes, but does not require mitigation. SEPA could be amended to require mitigation in certain circumstances or for certain levels of impact.	Would require an amendment to SEPA and probably the SEPA rules.	None.	1. What global warming impacts should trigger the mitigation requirement?

## Appendix D: Sources of Greenhouse Gas Emissions that SEPA can Address

The following table lists various sources of GHG emissions and compares how each is considered in related policy forums. These emissions sources can be evaluated quantitatively or qualitatively to address greenhouse gas reduction strategies. A “Yes” does not necessarily mean that the emissions category must be quantified or mitigated. A “?” indicates that the referenced document is silent on the emission source.

GHG Emissions  6 Kyoto Gases (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> ) *	Definition and Examples	CAPCOA Guidance “CEQA and Climate Change”  CEQA	King County Draft*  SEPA	MA  MEPA	The Climate Registry  Reporting	CAT Interim Report Feb. 2008  Addressed in Recommendations
D-1. Direct Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction	Yes	Yes	?	Yes	Yes
D-2. On-Site Mobile Sources and Company-Owned VMT.	Mobile sources operating within the Proponent’s facility. Company-owned vehicles traveling off-site.	Yes	Yes	Yes	Yes	Yes
D-3. Stationary Sources and Direct Facility Emissions	Space Heating and industrial emissions. On-site combustion processes from company-owned equipment.	Yes	Yes	Yes	Yes	Yes
D-4. Fugitive Emissions	GHG emitted from 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.	Yes	Yes	Yes	Yes	Yes
D-5. Direct Agricultural Emissions	Livestock methane, land clearing, planting, harvest, fertilizer application, and on-site manure handling.	Yes	Yes	?	No	Yes
D-6. Forestry Conversion and other land or Aquatic Vegetation Disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation.	?	Yes	?	No	Yes
D-7. Direct emissions from maintenance activities	Emissions from landscaping and maintenance equipment, chemicals	Yes	Yes	?	Yes	Yes

GHG Emissions  6 Kyoto Gases (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> ) *	Definition and Examples	CAPCOA Guidance “CEQA and Climate Change”  CEQA	King County Draft*  SEPA	MA  MEPA	The Climate Registry  Reporting	CAT Interim Report Feb. 2008  Addressed in Recommendations
I-1. Extraction of Purchased Materials	Off-site mining, timber mining/extraction, petroleum products (e.g. fuel and plastic products) for products and materials that are purchased by the proposal.	Yes	Yes	?	Optional	Yes
I-2. Processing of Purchased Materials	Off-site energy used and emissions from processing raw materials or end products purchased by a proponent (e.g. cement, metals, plastics, wood, fuel).	Yes	Yes	?	Optional	Yes
I-3. Transportation of purchased materials by Non-Company Owned Transport	Delivery of purchased raw materials to the proposed facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks, trains and ships.	Yes	Yes	?	Yes, some	Yes
I-4. Employee Commute VMT	Tailpipe emissions from employee commuting	Yes	Yes	?	?	Yes
I-5. Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Yes, but with limitations on study area	Yes	Maybe **	No	Yes
I-6. Purchased electricity	Off-site emissions from fossil-fuel power plants that provide electricity to the proponent.	Yes	Yes	Yes	Yes	Yes
I-7. Water Use and Wastewater Disposal.	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 CO <sub>2</sub> emitted from POTWs.	Yes	Yes	Possibly combined with Energy	Yes	Yes
I-8. Solid Waste	Off-site emissions from off-site solid waste disposal (construction, agriculture, general trash, food). Includes tailpipe emissions from trucks and trains	Yes	Yes	?	optional	Yes

GHG Emissions  6 Kyoto Gases (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> ) *	Definition and Examples	CAPCOA Guidance “CEQA and Climate Change”  CEQA	King County Draft*  SEPA	MA  MEPA	The Climate Registry  Reporting	CAT Interim Report Feb. 2008  Addressed in Recommendations
	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 CO <sub>2</sub> emissions from solid waste disposal facilities.					
I-9. 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.	Yes	Yes	No	optional	Yes

\* King County notes that greenhouse gas emissions from some sources for some projects may be too small to be relevant to the SEPA review.

Greenhouse gas - a gas that contributes to the greenhouse effect by absorbing infrared radiation

CFC, chlorofluorocarbon - a fluorocarbon with chlorine; formerly used as a refrigerant and as a propellant in aerosol cans; "the chlorine in CFCs causes depletion of atmospheric ozone"

Carbon dioxide, CO<sub>2</sub> - a heavy odorless colorless gas formed during respiration and by the decomposition of organic substances; absorbed from the air by plants in photosynthesis

N<sub>2</sub>O, nitrous oxide – naturally emitted by bacteria and also by agricultural practices, industrial processes and fossil fuel combustion

HFC, hydrofluorocarbon - a fluorocarbon emitted as a by-product of industrial manufacturing

Perfluorocarbon, PFC - a powerful greenhouse gas emitted during the production of aluminum

Sulfur hexafluoride, - a colorless gas that is soluble in alcohol and ether; a powerful greenhouse gas widely used in the electrical utility industry

“Direct” emissions generally means generated onsite

“Indirect” emissions are generally generated offsite and some are considered “embodied emissions”

Concept of “net emissions” (emissions minus offsets or creation of carbon dioxide sinks) is evaluated during consideration of mitigation options

\*\* Massachusetts policy acknowledges that some projects will have sources of emissions not explicitly covered by transportation, stationary sources and energy consumption. They may require additional modeling of emissions on a case-by-case basis.

## Appendix E: Initial List of Criteria When Considering What Emission Sources to Evaluate

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The following document was a working draft developed by a sub-group of the SEPA IWG and discussed by the full group. However, it was not fully vetted or agreed-upon by the full IWG and should not be considered a final IWG product.

Final Draft  
8/08/08

**Sub-bucket Group:** Karin Landsberg and Annie Szvetecz (revisions), Jim Wilder, Hilary Franz, Dan McGrady, Mark Kulaas, Fred Greef, Ann Farr, Patricia Betts

### Guiding Principle:

Does the level of effort (cost, difficulty, etc.) of calculating a specific type of emission from a specific proposal outweigh its contribution to climate change impacts? (“de minimus” issue)

### Criteria for Considering Sources of Emissions to be Measured (project and non-project):

1. Has the source of the emission for this proposal been addressed (analyzed and mitigated) in another SEPA document, or local, regional, or state plan?
2. Can the source be credibly measured or assessed (quantified or otherwise) with the tools/information currently available?
3. Can the boundary (scope or scale) of the emission be determined?
4. What is relative importance (regionally, nationally, or globally) of the contribution of this emission source to climate change impacts? (*E.g. indirect transportation emissions might be a relative minor part of a proposal’s emissions but cumulatively they are a major GHG source for Washington. Also, direct or fugitive emissions methane and nitrous oxide could be lower in total contribution of a proposal but they’re higher in greenhouse gas potency than Co<sub>2</sub>.*)
5. Can the proposal be modified to avoid, minimize, or otherwise mitigate its contribution of this emission source?

### Points to Consider in Determining What Gets Measured:

- a. What gets quantified or otherwise evaluated gets considered, managed, and potentially mitigated by agencies with jurisdiction.
- b. For project proposals, should the lead agency or the applicant be responsible for calculating a specific type of emission?
- c. Can Ecology or lead agency provide guidance to the applicant on how to do the analysis?
- d. The applicable mitigation could be broad, programmatic (such as requiring additional GHG emission reporting).
- e. The carbon sink part of mitigation (net emissions) is more complex, more speculative, with less definitive science, especially in the agricultural arena. This may require different metrics such as wetland acreage loss with 2:1 substitutions or transfer of development rights (TDR) on similar soil and climate types, or afforestation acreage to compensate deforestation on similar soil/climate type. Ecology statewide rollup may be the place to require net emissions calculations from GHG carbon sinks, with optional use of Ecology models for the SEPA checklist.

- f. Should we assume all GHG emissions are adverse impacts (not necessarily significant impacts) that must be disclosed. Then set some reasonable parameters such as readily available, credible and not speculative science.
- g. Can we allow flexibility for lead agency to go beyond a “minimum” GHG assessment that Ecology guidance or new Ecology exemption rules prescribe?
- h. Can the future content and format of the GHG measurement worksheet or checklist questions address the following?
  - Does this information facilitate the threshold determination by lead agency?
  - Does this information help fill the regulatory gaps and identify the regulatory overlaps?
  - Is it easy, fill-in the blank reporting?
  - Provide certainty and consistency for proponents?
  - Understandable, and do-able at the project or non-project stage?
  - Applies to variety of typical SEPA actions?
  - Allow for initial mandatory analysis to use best available and credible science but be flexible for future updates to model and source data. This may lower the tier and increase future reporting and analysis requirements?
  - Does it provide an accurate or “fair” picture of a project’s impacts?
  - Does this adequately address the “cumulative” nature of climate change impacts?
  - Will the scope of emissions enhance or reduce mitigation opportunities?
  - Prevents option of choosing less GHG rich material or preventing more GHG intense activity.
  - Will this assessment of emissions help agencies with jurisdiction reach state GHG reduction goal since the goals are based on total GHG emissions?

## Appendix F: Compilation Table of Measurement Tools

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Spreadsheet available at

[www.ecy.wa.gov/climatechange/2008CATdocs/IWG/sepa/092908\\_appendix\\_f\\_sepa\\_tools\\_matrix.xls](http://www.ecy.wa.gov/climatechange/2008CATdocs/IWG/sepa/092908_appendix_f_sepa_tools_matrix.xls).

## Appendix G: Possible SEPA Mitigation Strategies for Climate Change Impacts (Draft 10/24/08)

This document is a draft compilation of various existing strategies for greenhouse gas emission reductions gathered from other states and jurisdictions. This list does not represent an endorsement from the SEPA IWG or the Department of Ecology. Additional research and discussion related to mitigation will result in an updated version of this information. In further revising this table, we anticipate participating in parallel efforts by other jurisdictions (e.g., King County, City of Seattle) to review and assess available mitigation options.

### Possible SEPA Mitigation Strategies for Climate Change Impacts

Project Actions <i>Site Design</i>	Comments	Emissions Category			Possible Qualitative Assessment
		Direct <sup>6</sup>	Indirect <sup>7</sup>	Trans- portation <sup>8</sup>	
Encourage infill, redevelopment, and higher density development, whether in incorporated or unincorporated settings.	Minimizes sprawl and reduces <b>direct and indirect VMT</b> and encourages a pedestrian built environment and high density is more energy efficient per capita.	•	•	•	
Provide permanent protection and restoration for open space/natural areas on the project site.	Reduces ( <b>indirectly</b> ) <b>vegetation disturbance emissions</b> and maintains carbon sink, avoids future built environment projects and subsequent energy consumption patterns.		•		•
Plant trees and vegetation near structures to shade buildings.	Reduces <b>onsite fuel combustion emissions</b> and <b>purchased electricity</b> plus enhances carbon sinks.	•	•		•
Preserve or replace onsite vegetation (that is removed for construction) as a means of providing carbon storage.	Reduces direct carbon emissions and loss of carbon sink from <b>vegetation disturbance</b>	•			•
Minimize building footprint.	Reduces <b>onsite fuel combustion emissions</b> and <b>purchased electricity</b> consumption, <b>materials used, maintenance, land disturbance, and direct construction emissions.</b>	•	•		•

<sup>6</sup> Direct emissions include emissions generated onsite that the proponent of the action has direct control over. Examples include stationary combustion, physical and chemical processes other than fuel combustion, and fugitive sources of emissions (i.e., emissions that do not pass through a stack, chimney, exhaust pipe, or similar opening).

<sup>7</sup> Indirect emissions include those generated offsite and for which the proponent does not have direct control over. Examples include emissions associated with purchased or acquired electricity, embodied emissions, and emissions associated with extraction of materials and fuels.

<sup>8</sup> Transportation emissions can be either direct (i.e., within the control of the proponent) or indirect (i.e., outside of the proponent's direct control). Transportation emissions are called out as a separate category because they constitute a sizable proportion of Washington's overall GHG emissions and because the tools for measuring transportation emissions typically vary from the tools for measuring other kinds of emissions.

Project Actions <i>Site Design</i>	Comments	Emissions Category			Possible Qualitative Assessment
		Direct <sup>6</sup>	Indirect <sup>7</sup>	Trans- portation <sup>8</sup>	
Design project to support alternative transportation to site including transit, walking, and bicycling.	Reduces <b>VMT</b> and <b>direct and indirect emissions</b> from reduced parking facilities.		•	•	•
Use low impact development for stormwater design.	Improves hydrological functions and reduces <b>purchased energy</b> use for runoff management. Can reduce project footprint and minimize <b>vegetation disturbance</b> .	•	•		•
Design water efficient landscaping.	Minimizes <b>water consumption, purchased energy</b> , and upstream emissions from water management.		•		
Minimize energy use through building orientation.	Reduces <b>onsite fuel combustion emissions</b> and <b>purchased electricity</b> consumption	•	•		

Project Actions <i>Building Design and Operations</i>	Comments	Direct	Indirect	Trans- portation	Qualitative Assessment
Apply third-party certified green standards for design and operations. ( <i>note: could be detailed further</i> )	Reduces <b>onsite fuel combustion emissions</b> and off-site/indirect <b>purchased electricity, water use, waste disposal</b>	•	•		•
Purchase Energy Star equipment and appliances.	Reduces <b>onsite fuel combustion emissions</b> and <b>purchased electricity</b> consumption	•	•		•
Incorporate on-site renewable energy production, including installation of photovoltaic cells or other solar options.	Reduces <b>onsite fuel combustion emissions</b> and <b>purchased electricity</b> consumption.	•	•		•
Replace traffic lights, street lights, and other electrical uses to energy efficient bulbs and appliances.	Reduces <b>purchased electricity</b> .		•		
Construct "green roofs" and use high-albedo roofing materials.	Reduces <b>onsite fuel combustion emissions</b> and <b>purchased electricity</b> consumption	•	•		•
Install high-efficiency HVAC systems.	Minimizes <b>fuel combustion and purchased electricity</b> consumption.	•	•		•
Eliminate or reduce use of refrigerants in HVAC systems.	Reduces <b>fugitive emissions</b> . Compare refrigerant usage before / after to determine GHG reduction.	•			•
Reduce energy demand using peak shaving or load shifting strategies.	Reduces <b>purchased electricity</b> .		•		•

Project Actions <i>Building Design and Operations</i>	Comments	Direct	Indirect	Transportation	Qualitative Assessment
Maximize interior day lighting through floor plates, increased building perimeter and use of skylights, celestories and light wells.	Increases natural/day lighting initiatives and reduces <b>purchased electrical energy</b> consumption.		•		•
Incorporate energy efficiency technology such as: super insulation motion sensors for lighting and climate control efficient, directed exterior lighting on-site renewable energy sources into project including solar, wind, geothermal, low-impact hydro, biomass, and bio-gas strategies combined heat and power (CHP) technologies	Reduces <b>fuel combustion and purchased electricity</b> consumption.	•	•		
Use water conserving fixtures that exceed building code requirements.	Reduces <b>water consumption</b> .		•		
Re-use gray water and/or collect and re-use rainwater ( <i>note: currently there are some legal limitations on use of rainwater</i> ).	Reduces <b>water consumption</b> .		•		
Provide for storage and collection of recyclables (including food, paper, corrugated cardboard, glass, plastic, and metals) in building design.	Reduces <b>solid waste disposal</b> and promotes material re-use which reduces <b>extraction of purchased materials</b> and some <b>transportation of purchased materials</b> .		•	•	•
Use recycled building materials and products.	Reduces <b>extraction of purchased materials</b> , possibly <b>reduces transportation of materials</b> , encourages recycling and reduction of <b>solid waste disposal</b> .		•	•	•
Use salvaged and reclaimed building products	Reduces <b>extraction of purchased materials</b> , <b>reduces transportation of materials</b> , encourages recycling and reduction of <b>solid waste disposal</b> .		•	•	•
Use building materials that are extracted and/or manufactured within the region.	Reduces <b>transportation of purchased materials</b>			•	
Use rapidly renewable building materials.	Reduces emissions from <b>extraction of purchased materials</b>		•		•

<b>Project Actions <i>Building Design and Operations</i></b>	<b>Comments</b>	<b>Direct</b>	<b>Indirect</b>	<b>Transportation</b>	<b>Qualitative Assessment</b>
Use third-party certified wood products. ( <i>note: could be detailed further</i> )	Reduces emissions from <b>forest conversion, extraction of purchased materials and processing of purchased materials.</b>	•	•		•
Use low-VOC adhesives, sealants, paints, carpets, and wood.	Reduces <b>fugitive emissions</b> and indirect emissions from <b>extraction and processing of purchased materials, and from solid waste disposal.</b>	•	•		•
Conduct 3rd party building commissioning to ensure energy performance.	Reduces <b>fuel combustion and purchased electricity</b> consumption.	•	•		•
Track energy performance of building and develop strategy to maintain efficiency.	Reduces <b>fuel combustion and purchased electricity</b> consumption.	•	•		•
Provide construction and design guidelines to facilitate sustainable design for build-out by tenants.	Reduces <b>fuel combustion and purchased electricity</b> consumption. Reduces emissions from indirect sources such as <b>extraction of purchased materials, processing, transportation of materials, solid waste disposal, and water use</b>	•	•		•

<b>Project and Non-Project <i>Transportation</i></b>	<b>Comments</b>	<b>Direct</b>	<b>Indirect</b>	<b>Transportation</b>	<b>Qualitative Assessment</b>
Locate new buildings in or near areas designated for transit-oriented development (TOD) and, where possible, incorporate TOD principles in employee and customer activity patterns.	Reduces <b>direct and indirect VMT</b>			•	
Purchase low-carbon fuel and/or fuel efficient vehicles for fleet.	Reduces direct emissions from transportation sources			•	
Support the use of low/zero carbon fueled vehicles, such as the charging of electric vehicles from green electricity sources.	Reduces direct and indirect emissions from transportation sources		•	•	
Join or form a transportation management association.	Reduces direct and indirect <b>VMT.</b>			•	•

<b>Project and Non-Project Transportation</b>	<b>Comments</b>	<b>Direct</b>	<b>Indirect</b>	<b>Transportation</b>	<b>Qualitative Assessment</b>
Provide new transit service or support extension/expansion of existing transit (buses, trains, shuttles, water transportation).	Reduces direct and indirect <b>VMT</b>			•	•
Support expansion of parking at Park-n-Ride lots and/or transit stations.	Reduces direct and indirect <b>VMT</b>			•	•
Develop or support multi-use paths to and through site.	Reduces direct and indirect <b>VMT</b>			•	•
Size parking capacity to not exceed local parking requirements and, where possible, seek reductions in parking supply through special permits or waivers.	Reduced parking discourages auto dependent travel, encouraging alternative modes such as transit, walking, biking etc. Reduces direct and indirect <b>VMT</b>			•	•
Develop and implement a marketing/information program that includes posting and distribution of ridesharing/transit information.	Reduces direct and indirect <b>VMT</b>			•	•
Subsidize transit passes. Reduce employee trips during peak periods through alternative work schedules, telecommuting, and/or flex-time. Provide a guaranteed ride home program.	Reduces employee <b>VMT</b>			•	•
Provide on-site amenities such as banks, dry cleaning, food service, childcare.	Reduces direct and indirect <b>VMT</b>			•	•
Provide bicycle storage and showers/changing rooms.	Reduces employee <b>VMT</b>			•	

<b>Non-Project Actions Transportation and Energy Efficiency</b>	<b>Comments</b>	<b>Direct</b>	<b>Indirect</b>	<b>Transportation</b>	<b>Qualitative Assessment</b>
Traffic signalization and coordination to improve traffic flow and support pedestrian and bicycle safety.	Reduces transportation emissions and <b>VMT</b>	•		•	
Plan for cluster multimodal transportation oriented development and redevelopment to integrate high density housing, civic, and retail amenities (jobs, schools, parks, shopping opportunities) to help reduce <b>VMT</b> .	Reduces direct and indirect <b>VMT</b>			•	•

<b>Non-Project Actions <i>Transportation and Energy Efficiency</i></b>	<b>Comments</b>	<b>Direct</b>	<b>Indirect</b>	<b>Trans- portation</b>	<b>Qualitative Assessment</b>
Apply advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and services.	Reduces emissions from transportation by minimizing idling and maximizing transportation routes / systems for fuel efficiency.			•	
Implement street improvements that are designed to relieve pressure on a region's most congested roadways and intersections.	Congestion relief reduces fuel consumption which may be considered direct emissions or indirect option 3 if not under the control of the project.			•	•
Limit idling time for commercial vehicles, including delivery and construction vehicles.	Reduces transportation emissions			•	•
Develop shuttle systems around business district parking garages to reduce congestion and create shorter commutes.	Reduces idling fuel emissions and direct and indirect VMT			•	•
Create a business or community-based online ridesharing program.	Reduces direct and indirect <b>VMT</b>			•	•
Public leveraging/encouraging of large businesses to develop commute trip reduction plans.	Reduces direct <b>VMT</b>			•	•
Develop a <i>Safe Routes to School</i> program that allows and promotes bicycling and walking to school.	Minimizes diesel emissions, and school district's <b>VMT</b>			•	•
Recognize and promote energy saving measures beyond Title 24 requirements for residential and commercial projects	Reduces <b>fuel combustion and purchased electricity</b> consumption	•	•		
Educate the public, schools, other jurisdictions, professional associations, business, and industry about reducing GHG emissions.	Reduces direct and indirect emissions	•	•		•
Retrofit public buildings using an Energy Savings Performance Contract with a private entity to. This type of contract allows the private entity to fund all energy improvements in exchange for a share of the energy savings over a period of time.	Reduces <b>fuel combustion and purchased electricity</b> consumption	•	•		•
Retrofit municipal water and wastewater systems with energy efficient motors, pumps and other equipment, and recover wastewater treatment methane for energy production.	Reduces <b>fuel combustion and purchased electricity</b> consumption	•	•		
Convert landfill gas into energy sources for use in fueling vehicles, operating equipment, and heating buildings.	Reduces <b>fuel combustion and purchased electricity</b> consumption			•	•

<b>Non-Project Actions <i>Transportation and Energy Efficiency</i></b>	<b>Comments</b>	<b>Direct</b>	<b>Indirect</b>	<b>Trans- portation</b>	<b>Qualitative Assessment</b>
Purchase low-carbon fuel government vehicles and buses Promote the use of these vehicles in the general community.	Reduces emissions from transportation			•	•
Offer government incentives to private businesses for developing buildings with energy and water efficient features and recycled materials. The incentives can include expedited plan checks and reduced permit fees.	Reduces direct and indirect emissions	•	•		•
Offer rebates and low-interest loans to residents that make energy-saving improvements on their homes.	Reduces direct and indirect emissions	•	•		•
Create incentives to increase recycling and reduce generation of solid waste by residential users.	Reduces emissions from <b>solid waste disposal</b>			•	•
Implement a Construction and Demolition Waste Recycling Ordinance to reduce the solid waste created by new development.	Reduces direct and indirect emissions	•	•	•	•
Add residential/commercial food waste collection to existing greenwaste collection programs.	Reduces solid waste disposal		•		•
Offer government employees financial incentives to carpool, use public transportation, or use other modes of travel for daily commutes.	Reduces direct <b>VMT</b>			•	•

## Appendix H: Measurement Test Cases

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The measurement “test cases” in this appendix were developed by individual SEPA IWG members as an exercise to illustrate what emissions sources are appropriate for different kinds of projects and plans. The individual test cases were not discussed in detail by the full IWG and should not be considered as final products of the IWG. Rather, they are working documents that are presented here to help inform guidance development regarding what sources of greenhouse gases to measure for certain types of projects and plans.

### H.1 Measurement Test Case: 75-acre Timber Sale

#### Background

Clearcut harvest proposal on 75 acres in a state forest that has a larger landscape forest plan and a still larger habitat conservation plan (70 year commitment to sustainable tree growth and habitat protection). Cable yarding, loaders, tracked ground-based shovels and other logging equipment will be used for removing and loading logs. Some road construction, maintenance, and abandonment will accompany the proposal. Road construction requires gravel. The rock pit may be new but would be on site or nearby on public land. There would be no commercial use of the rock pit. Some burning at landings would likely occur. Log trucks will haul logs to mills. This description does not include activities at a lumber mill or beyond.

Two EIS documents already cover the Sustainability of the harvest and the wildlife habitat protection commitment across all of western Washington. A forest land planning unit EIS covers 150,000 acres, including the proposal area. The proposal is also within the EIS analysis area for a 40,000 acre state forest plan.

Harvest methods have changed little in last ten years and the same number of log trucks will haul the same number of log loads to the same log mills. The milled wood products will still be used for home construction. Cable yarding equipment, loaders, tracked ground-based shovels and all logging equipment is much the same as 10 years ago. Fewer new roads are needed each year to access the timber than was historically the case (on forest-wide basis). Rock-pit expansion to build or rebuild roads is less than or typical of historical annual rock pit use. Older rock pits are reclaimed and planted back to timber.

#### CO<sub>2</sub> Calculation Assumptions

The calculations for log trucks are based on six miles per gallon of diesel fuel, 17 gallons per 100 mile round trip to sawmill, and 22.38 pounds of CO<sub>2</sub> per gallon of diesel. Similar assumptions can be used for the other heavy equipment, but may be based on hours of use per day, or gallons of diesel fuel actually used rather than miles per gallon. It should also be noted that the log hauling constitutes by far the largest share of all the emissions.

#### Notes

The Test Case Worksheet for the 75-acre timber sale is not that difficult to calculate and has been filled out as a test, regardless of whether there is no net increase in forest emissions since 1990 or possible decreases based on management practices for the larger forest area. Please see attached 75-acre project level analysis on the Test Case Worksheet.

At the 150,000 acre forest planning level assume we already know roughly 1,200,000 pounds of CO<sub>2</sub> are emitted per year from typical log truck trips. The Governor's Climate Change Framework Legislation (HB 2815) only requires reporting by 2010 for motor vehicle fleets exceeding 5,511,500 pounds of carbon per year. The EIS for the 150,000 acre sustainable forest planning unit might be the best place for these calculations.

Project-level timber harvests might become green-listed or exempt from the GHG calculation part of SEPA analysis if already addressed by a larger scale sustainable forest land plan. Forest carbon-sink sequestration calculations may not be needed where land is not converted out of forest use. Forest managers might want to calculate carbon sequestration to take credit for long term carbon storage gains via management practices such as commercial thinning and marketing of thinning products for house construction (another carbon sink). Old forests eventually cease to add carbon to their stockpile of stored carbon and release more carbon from decay than they store in growth. Harvesting large trees and storing the carbon in lumber in buildings to replant fast-growing trees can maintain or improve carbon storage. Conversions out of forest use destroy the sink.

## 75-Acre Timber Sale

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions						
Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction  <i>Rock hauling (loader, dump trucks), dozer, excavator and grader for road construction and rock pit extraction</i>	Yes, should be in larger forest planning area EIS	Yes, forest rd. construct. easy enough to measure	Yes, new rd. location and rock pit, as well as timber harvest area	No. Quite small; occurs once every 50-70 years. At larger forest level, no increase over 1990.	Not much. Newer, cleaner engines? Biodiesel? Abandon equal miles of road to achieve zero net increase?
Mobile Sources and Direct VMT	Directly related to project (company generated) or non-project (all commuting, and commercial transportation (includes distance and type of transport).  <i>Log trucks, yarders, shovels, skidders, loaders, employee transportation for timber harvest.</i>	Yes, should be in larger forest planning area EIS	Yes, log truck and crew truck VMT; logging equipment diesel quantity	Yes, mileage to work for the crew, to the mill for log trucks	No. Quite small; 500 log truck round trips 100 miles each = 190,000 pounds of CO <sub>2</sub> over 2 months. Occurs every 50 or 70 years. At larger forest level, no increase over 1990.	Not much. Logging crew carpool. Log trucks and all heavy equipment use biodiesel, or cleaner low-sulphur diesel.
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.	N/A		N/A mill is too far downstream	No increase in day to day average	

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Fugitive Emissions	Unintentional emissions, accidental releases such as leaks from industrial facilities, gas releases from drilling operations etc. GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected.	N/A				
Direct Agricultural Emissions	Livestock methane, land clearing, fertilizer application, and on-site manure handling.	N/A				
Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation.  <i>Temporary tree loss and landing clearing; potential permanent new road construction,</i>	<b>Not a conversion,</b> but: should be in larger forest planning area EIS	Yes, measure acres and site-class (tree growth rate potential) Only for conversions?	Yes	No	Maybe. Reforest within same forest or plant new forest elsewhere of equal or more acres and site class.
Maintenance activities	Emissions from equipment, chemicals  <i>Fertilizer, pesticides, or thinning</i>	Yes, could be in larger forest planning area EIS	Maybe, if fertilizer, pesticides, or thinning occur after replanting (downstream)	Yes, on site use only	No. At larger forest level, no increase over 1990; not much quantity, fertilizer rarely used, pesticides not used much, thinning may occur, but lesser impacts	Not much; more hand work instead of pesticides but not effective; would likely require gas operated equipment
<b>Indirect Emissions</b>						
Extraction of 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.  <i>Rock pit extracting, crushing, processing, and loading trucks</i>	Yes, should be in larger forest planning area EIS	Yes, see construct. row above	Yes, see construction row above	No, see construction row above	See construction row above

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
	<i>– also see construction row above; if rock pit is not in same forest, it would fit in this row.</i>					
Processing of materials	Energy used and emissions from processing raw materials or end products for a proposal (e.g. cement, metals, plastics, wood, fuel).	N/A, too far downstream				
Transportation of materials	Delivery of raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	N/A				
Employee Commute VMT	Tailpipe emissions from employee commuting	Possible. Could look at in upstream EIS	Yes, mileage to work for the crew	Yes, home to work site	No, at larger forest level, no increase over 1990. Not much project level impact either (two months and not many vehicles, one trip/day each)	Some. Crew could carpool in one or two crummies, or fewer vehicles.
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	N/A				
Energy Use	Usually purchased energy from off-site energy power plants.	N/A				
Water Use and 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.	N/A				
Solid Waste	Emissions from disposal (usually off-site) of all types of waste (construction, agriculture, general trash, food). Could	Yes, could be in larger forest	Yes/probably. Could crudely	Yes	No	Possibly less burning, or

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
	<p>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.</p> <p><i>Wood waste burning</i></p>	<p>planning area EIS, or in statewide forest burning plan SEPA review.</p>	<p>measure slash piles burning emissions if done following timber harvest</p>	<p>Boundary could be each project or any landscape scale up to statewide, but statewide may make more sense for this source.</p>	<p>At larger forest level, no increase over 1990 and probably decreasing; not much slash disposal burning any more (especially west side) and not large source.</p>	<p>collect for paper making or ethanol production; more diesel to collect.</p>
End-use emissions from product use	<p>Use and disposal of products by consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.</p> <p><b><i>Milling lumber, lumber transport and used in structures; additional wood waste handling</i></b></p> <p><b><i>Currently not considered part of the timber sale although some notes provided</i></b></p>	<p>(Yes, some analysis could be in larger forest planning area EIS although not typically done now)</p>	<p>(Maybe. Might be able to measure new structure's carbon storage (board feet of lumber into carbon stored); measure add'l wood waste and disposal?)</p>	<p>(Difficult Best measured at time of construction, not at time of the logging)</p>	<p>(Yes)</p>	<p>(Yes, but not considered as part of this analysis)</p>

## H.2 Measurement Test Case: Box Store (New Construction of Major Commercial Center)

### Details:

Proposed on undeveloped land in a County's Urban Growth Area, with wetlands, flood plain, near highway, new off-ramp, access road, parking lot, onsite wastewater treatment, new water supply, new power lines, 70 employees will travel 10-30 miles to work.

Example of this type of project analysis for GHG emissions:

*Yucca Valley Retail Specific Plan Environmental Impact Report*

(EIR), *State of California 2008 –for Wal-Mart Supercenter* –Final EIR Air Quality Section: [http://www.yucca-valley.org/pdf/eir/Sections/4.3\\_Air\\_Quality.pdf](http://www.yucca-valley.org/pdf/eir/Sections/4.3_Air_Quality.pdf)

### Box Store

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions						
Construction	Generators, equipment exhaust, this includes off-site haul trucks during construction  <b>Land-clearing, paving, construction of building</b>	Probably not	Yes	Yes	Medium?	Yes, alternative fuel, use local materials
Mobile Sources and Direct VMT	Company transportation of products  <b>Air, overseas shipping, rail, trucking of products for resale</b>	Maybe	Yes	Yes	High?	Yes, alternative fuels, use products from more local sources
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.  <b>Cooking facilities, space heating, back-up electrical generator CO<sub>2</sub>, NO</b>	Probably not	Yes	Yes	High?	Efficient appliances and space heating/cooling alternative fuels

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Fugitive Emissions	Unintentional emissions, accidental releases such as leaks from industrial facilities, gas releases from drilling operations etc. GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected.  <b>Hydrofluorocarbons from refrigerants during operation and disposal</b>	No	Yes	Yes	Medium?	Yes, more efficient appliances, better quality refrigerants, better disposal practices
Direct Agricultural Emissions	Livestock methane, land clearing, fertilizer application, and on-site manure handling.	n/a	n/a	n/a	n/a	n/a
Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation. <b>Land conversion of upland and aquatic vegetation</b>	Possibly	Yes?	Yes	Medium?	yes
Maintenance activities	Emissions from equipment, chemicals  <b>Landscaping, repaving, painting</b>	No	Yes	Yes	Medium?	Yes, alternative fuels, efficient equipment, low-maintenance landscaping
Indirect Emissions						
Extraction of 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.	Possibly some	possibly	Could be difficult to determine what materials and products to address	High?	Yes, use of recycled steel, plastic, sustainable timber
Processing of materials	Energy used and emissions from processing raw materials or end products for a proposal (e.g. cement, metals, plastics, wood, fuel).	Possibly some	Yes	Could be difficult	Medium?	Yes, see above

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Transportation of materials	Delivery of raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	Possibly by transportation plan, port plan etc.	Yes	Yes	High?	Yes, use of more local materials, choose carriers with efficient and/or alternative fuels
Employee Commute VMT	Tailpipe emissions from employee commuting	Possibly	Yes	Yes	High?	Yes, promote carpooling, mass transit, biking etc.
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)  <b>Highway off-ramp, new access road,</b>	Possibly	Yes	Yes –done for traffic studies	High?	Yes, see above
Energy Use	Usually purchased energy from off-site energy power plants.	Probably not	Yes	Yes	Medium?	Yes, efficient building, alternative energy (solar hot water, outdoor lighting) efficient appliances
Water Use and 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.	Possibly	Yes	Yes	Medium?	Yes, water conservation measures, low flow plumbing etc.
Solid Waste	Emissions from disposal (usually off-site) of all types of waste (construction, agriculture, general	Probably not	Yes	Yes	Medium?	Yes, aggressive recycling (motor oil,

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
	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.					vegy oil, on-time cameras, packaging material etc.), composting, minimize disposables,
End-use emissions from product use	Use and disposal of products by consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.	Possibly some	Possibly	challenging	Medium?	Yes, provide and promote "climate-friendly" alternative products

### H.3 Measurement Test Case: Relocation of Business

#### Relocation of Business

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions						
Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction?	No	Yes	Yes	Minimal	Yes
Mobile Sources and Direct VMT	Directly related to project (company generated) or non-project (all commuting, and commercial transportation (includes distance and type of transport).	No	Maybe	Yes for commuting; maybe for others	No, when proposal is a relocation of business	Yes
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.	No	Yes	Yes	Yes, depending on industrial process/product	Yes
Fugitive Emissions	Unintentional emissions, accidental releases such as leaks from industrial facilities, gas releases from drilling operations etc. GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected.	No	Yes	Yes	No	Yes
Direct Agricultural Emissions	Livestock methane, land clearing, fertilizer application, and on-site manure handling.	N/A				
Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation.	N/A				
Maintenance activities	Emissions from equipment, chemicals	No	Yes	Depends on	Possible	Yes

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
activity						
Indirect Emissions						
Extraction of 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.	Possibly in SEPA review for those activities	Difficult, depending on specific industrial process/product	Difficult	Unknown	Unknown
Processing of materials	Energy used and emissions from processing raw materials or end products for a proposal (e.g. cement, metals, plastics, wood, fuel).					
Transportation of materials	Delivery of raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	No	Yes	Probably	Possible	Yes, but not under proponent's control?
Employee Commute VMT	Tailpipe emissions from employee commuting	Yes, possibly in comp plan or transportation plan	Yes	Yes	Yes	Yes
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Same as above	Yes	Yes	Yes	Yes, but not under proponent's control
Energy Use	Usually purchased energy from off-site energy power plants.	Yes	Yes	Yes	Yes	Yes
Water Use and 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	Yes	Yes, for water use directly measurable & used for process	No	Yes	Only for water use under proponent's control

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Solid Waste	<p>include biogenic CO<sub>2</sub> emitted from POTWs.</p> <p>Emissions from disposal (usually off-site) 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 CO<sub>2</sub> emissions from solid waste disposal facilities.</p>	Yes	Yes, for solid waste generated by construction/operations	No	Yes	Only for wastes directly generated by construction/ops
End-use emissions from product use	Use and disposal of products by consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.	No	Difficult, depends on product/process	No	Yes?	

#### H.4 Measurement Test Case: County Comprehensive Plan (Snohomish County as example)

**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.

##### County Comprehensive Plan

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	Favorable. The boundary would be anything within the County.	Favorable. Space heating and industrial combustion are major components of statewide GHG.	Favorable. The County could impose new energy conservation measures.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
			space heating emissions by land use type. However, there is no reliable way to forecast industrial emissions.			
Fugitive Emissions	Closed landfills, active landfills, cattle raising. GHG emitted from 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.	Questionable. Fugitive emissions from closed landfills and cattle raising would probably not be covered in previous EIS/	Favorable. There are existing tools to forecast methane emissions from closed landfills and active cattle raising.	Favorable. The boundary would be anything within the County.	Favorable. Landfills and cattle raising are major components of statewide GHG.	Unfavorable. There are few <u>feasible</u> ways 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 statewide 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 <sub>2</sub> 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.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
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 statewide 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)						
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	Delivery of purchased raw materials to the facility by non-company-owned trucks,	Favorable. County-wide VMT would have been included in PSRC's regional	County Municipal = Questionable. It would be difficult for the	Questionable. On a County-side basis, it might be feasible to	Favorable. VMT emissions are major component of	Unfavorable. The County would have difficulty imposing

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Transport	and shipment of produced product from the facility by non-company-owned trucks.	plan.	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.	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	Washington state GHG emissions.	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 included in PSRC's regional plan.	County Municipal = Favorable. The County can forecast its own employees' commute emissions.  Community = Favorable. There are existing tools to forecast County-side employment, commute VMT, and GHG emissions.	Favorable. There are ways to forecast the travel radius and VMT generated by commuters within the County.	Favorable. VMT emissions are major component of Washington state GHG emissions.	Favorable. The County could impose 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.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
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 statewide 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.
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	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.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Off-Site End-use emissions from use of proponent's products sold to others	does NOT include biogenic CO2 emissions from solid waste disposal facilities. 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.

## H.5 Measurement Test Case: Port Expansion (Example of Port of Tacoma Master Plan for Marine Terminal Expansion)

**General description:** the Port would be its own lead agency for a SEPA EIS for its Master Plan to expand the Port. The Port would fund construction of the infrastructure for the new terminal. Future tenants (e.g., Hanjin Shipping) would then lease the terminal space and would operate the terminal. With the exception of initial construction emissions, the tenants would generate all of the future GHG emissions.

### Port Expansion

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?	Favorable. Usually the responsibility of the proponent.	Favorable. There are readily available tools to calculate construction and dredging emissions.	Favorable. Boundary is easy to define.	Favorable. Construction emissions can be very large from some types of SEPA proposals.	Favorable. Use of biofuels is feasible. The proponent can also pay GHG offset fees.
On-Site Mobile Sources and Direct Company-Owned VMT	Directly related to project (company generated) or non-project (all commuting, and commercial transportation (includes distance and type of transport) Mobile sources operating within the Proponent's facility. Company-owned vehicles traveling off-site.	Favorable. Usually the responsibility of the proponent.	Favorable. There are readily available tools to calculate	Favorable. Boundary is easy to define.	Favorable. Non-road emissions are an important part of statewide emissions	Favorable. Use of biofuels is feasible. The proponent can also pay GHG offset fees.
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.	Favorable. Usually the responsibility of the proponent. In this case the future tenants would generate the emissions, but the Port should be able to quantify the emissions as part of the Master Plan.	Favorable. Emissions would be generated by tenants, not by the SEPA proponent. There are readily available tools for stationary sources typically found at a marine terminal (space	Favorable. Boundary is easy to define for on-site facilities.	Favorable. Industrial process emissions are an important part of statewide emissions	Favorable. Space heating emissions can be reduced by conventional methods. The proponent can also pay GHG offset fees.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
			heating, power generation)			
Fugitive Emissions	Unintentional emissions, accidental releases such as leaks from industrial facilities, gas releases from drilling operations etc. GHG emitted from 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.	Not applicable. Few fugitive emissions at a typical marine terminal.				
Direct Agricultural Emissions	Livestock methane, land clearing, fertilizer application, and on-site manure handling.	N/A for a marine terminal				
Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation.	Favorable. Usually the responsibility of the proponent.	Favorable. If the Port graded existing native vegetation, then IPCC equations can forecast the loss-of-sink.	Favorable. Boundary easily defined.	Favorable. Probably a minor fraction of GHG emissions at a Port, but this is an important component of state-side emissions.	Favorable. If the Port can't avoid wetlands and upland plants, they would have to mitigate by off-site restoration. Then, they can purchase GHG offset credits.
Maintenance activities	Emissions from equipment, chemicals	Favorable. Usually the responsibility of the proponent.	Favorable. There are readily available tools	Favorable. Boundary easily defined	Favorable. Maintenance activity would be a small fraction of GHG emissions at a Port, but this category contributes to statewide emissions.	Favorable. The Port could use biofuels for maintenance equipment. The proponent can also pay GHG offset fees.
Indirect Emissions (Emitted by Parties Other Than SEPA Proponent)						

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
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. Marine terminal construction would require lumber, concrete, asphalt, concrete, and steel, which would be mined or logged from a wide variety of sources that are not subject to SEPA. Operation would require use of diesel fuel for marine vessels, locomotives and trucks, which originate from oil wells not subject to SEPA.	Unfavorable. The SEPA proponent would not be able to accurately calculate emissions from mining of limestone, iron ore, and aggregate needed to build the facility. The Port cannot forecast the source of the crude oil used to refine diesel oil used to power future tenants' ships, trains, and trucks.	Unfavorable. The Port would not be able to identify the mines and oil fields used to supply raw materials used to build the Port and to refine diesel oil.	Unfavorable. Mining (limestone and iron ore) and oil extraction are negligible contributors to Washington's GHG emissions.	Unfavorable. The SEPA proponent (the Port) would have little control over emissions from ore mining and oil production for materials purchased by future tenants. The only feasible mitigation measure would be GHG offset fees.
Off-site Processing of Purchased Materials	Energy used and emissions from processing raw materials or end products for a proposal purchased by a proponent (e.g. cement, metals, plastics, wood, fuel).	Unfavorable. Marine terminal construction would require lumber, concrete, asphalt, concrete, and steel, which would be purchased from a wide variety of industrial plants that are not subject to SEPA. The Port would use little fuel for future operation, but the tenants would use large amounts of fuel. Tenant operation would require use of diesel fuel for marine vessels, locomotives and trucks, which originate from oil refineries not subject to SEPA.	Unfavorable. The SEPA proponent (Port of Tacoma) would not be able to accurately calculate emissions from mining of limestone, iron ore, and aggregate needed to build the facility. Diesel fuel used to operate the marine terminal would be purchased by future tenants, not by the SEPA proponent (the Port). The Port cannot forecast the source of the crude oil used to refine diesel oil used to power future tenants' ships, trains, and trucks, so the SEPA	Unfavorable. Diesel oil used to operate marine vessels, trains, and trucks would be purchased by future tenants, not by the SEPA proponent (the Port). The SEPA proponent would not be able to define where the purchased materials would originate from.	Questionable. Cement plants, oil refineries, and steel mills are important GHG emission sources in Washington State. However, it is uncertain whether the steel and diesel fuel used by the future tenants would originate in Washington state.	Unfavorable. The SEPA proponent (the Port) would have little control over oil refining for diesel fuel used by future tenants. The only feasible mitigation measure would be GHG offset fees.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
			proponent could not accurately predict their emissions.			
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.	Unfavorable. Marine vessels, trains and trucks used to haul material into and out of the Port would be owned by companies not subject to SEPA. The shipping companies would contract to the Port's future tenants, not directly to the SEPA proponent (the Port).	Favorable. Diesel fuel usage and GHG emissions by future tenants can be predicted with reasonable accuracy.	Unfavorable. Marine vessels visiting the Port's tenants originate from worldwide sources, and trains departing the Port's tenants are heading for destinations throughout the U.S. The SEPA proponent (the Port) cannot accurately predict the origins and destinations for its tenants' shipments.	Favorable. Ships, trains and trucks are major contributors to Washington state GHG emissions.	Unfavorable. The SEPA proponent (the Port) would have little control over fuel usage and GHG emissions generated by shipping companies contracted to future tenants.
Employee Commute VMT	Tailpipe emissions from employee commuting	Questionable. Future employees would work for future tenants, not for the SEPA proponent (the Port).	Favorable. If the Port can predict its future tenant's employment figures, then the Port can predict VMT emissions from its tenants' commuters.	Favorable. Tenant commuter travel would be in the near vicinity to the Port.	Favorable. VMT emissions are a major contributor to Washington state GHG emissions.	Questionable. Can the SEPA proponent (the Port) control commuter travel by future tenants?
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Favorable. Other future developments that would affect traffic patterns around the Port will likely be subject to SEPA.	Favorable. The Port should be able to forecast future changes in traffic patterns and VMT indirectly caused by its tenants' new contribution to regional traffic.	Favorable. The Port's SEPA traffic impact analysis would be able to define the geographical boundary of the traffic study area.	Favorable. VMT emissions are a major contributor to Washington state GHG emissions.	Unfavorable. The SEPA proponent would have no control over travel patterns by outsiders. The only available mitigation would be purchase of GHG offset fees.
Energy	Off-site emissionsUsually	Unfavorable. Electricity	Favorable. GHG	Favorable. The	Favorable. GHG	Favorable. The

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
UsePurchased electricity	purchased energy from off-site energy power plants that provide electricity to the proponent.	would be purchased from power plants not subject to SEPA.	emissions from purchased electricity are easily calculated.	electricity providers are well defined.	emissions by out-of-state fossil fuel power plants are a major contributor to Washington state GHG emissions.	SEPA proponent (the Port) could impose energy conservation measures on future tenant improvements.
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.	Questionable. The local water utility and POTW will eventually be subject to SEPA for their long-range plans. However, it is unknown if those SEPA actions would be completed in time for consideration as part of the Port's SEPA EIS for the expansion project.	Unfavorable. The Port would have difficulty obtaining records from the water district and the POTW with enough detail to allow the Port calculate GHG emissions per million gallons of water purchase or POTW discharges.	Favorable. The local water utility and the local POTW are well defined.	Unfavorable. GHG emissions from electricity usage and POTW emissions contribute only a small fraction of statewide GHG emissions.	Unfavorable. Few mitigation options would be available, other than to buy GHG offsets.
Off-Site Solid Waste	EOff-site emissions from disposal (usually off-site) 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	Unfavorable. The regional MSW landfill will eventually be subject to SEPA for their long-range plans. However, it is unlikely the landfill's SEPA actions would be completed in time for consideration as part of the Port's SEPA EIS for the expansion project.	Unfavorable. The Port would have difficulty obtaining records from the regional landfill with enough detail to allow the Port calculate GHG emissions per ton of refuse shipped to offsite landfills.	Favorable. The location of the regional landfill and associated transfer facilities is easily defined.	Favorable. Landfill emissions are a contributor to statewide GHG emissions.	Unfavorable. Few mitigation options would be available, other than to buy GHG offsets.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Off-Site End-use emissions from use of proponent's products sold to others use	<p>from solid waste landfills. It does NOT include biogenic CO2 emissions from solid waste disposal facilities.</p> <p>Use and disposal of products sold by the proponent to by consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.</p>	Unfavorable. The Port would not be able to determine which of its tenants' customers have been subject to recent SEPA actions.	Unfavorable. The Port would not be able to predict how its tenants' exported materials are used and disposed of. Such emission calculations would be impossible.	Unfavorable. The Port would not be able to determine who will use its exported products over the life of the project.	Unfavorable. Many of the Port's tenants' products would likely be used by end-use customers outside of Washington.	Unfavorable. The Port and its tenants would be unable to forecast these emissions, and there would be no feasible way to mitigate the emissions.

## H.6 Measurement Test Case: Regional Transportation Plan

Emissions Source	Examples	How source related to test case?	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions							
Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction?	Construction of transportation projects developed as a result of plan	Addressed in project level document	Can be estimated	Yes	Modest in comparison to overall use of transportation system	NA
Mobile Sources and Direct VMT	Directly related to project (company generated) or non-project (all commuting, and commercial transportation (includes distance and type of transport).	All mobile source emissions are indirect, see below	NA	NA	NA	NA	NA
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.	NA	NA	NA	NA	NA	NA
Fugitive Emissions	Unintentional emissions, accidental releases such as leaks from industrial facilities, gas releases from drilling operations etc. GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected.	NA	NA	NA	NA	NA	NA
Direct Agricultural Emissions	Livestock methane, land clearing, fertilizer application, and on-site manure handling.	NA	NA	NA	NA	NA	NA
Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation.	Forestry conversion could be an issue if land converted for roadways.	Would also be addressed at project level	NA	NA	NA	NA

Maintenance activities	Emissions from equipment, chemicals	Roadway maintenance not considered at plan level	NA	NA	NA	NA	NA
Indirect Emissions							
Extraction of 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.	Materials extracted to construct transportation projects resulting from plan	Could be addressed by extractor. May be discussed at project level	No. Materials for specific projects undefined at the plan level.	No		No
Processing of materials	Energy used and emissions from processing raw materials or end products for a proposal (e.g. cement, metals, plastics, wood, fuel).	Materials processed to construct transportation projects resulting from plan	Could be addressed by processor. May be discussed at project level	No. Materials needed for specific projects undefined at the plan level.	No		No
Transportation of materials	Delivery of raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	Materials transported to construct transportation projects resulting from plan.	Because all transportation in region is included, transportation of construction materials within region is included in plan. Materials transport to the region is not included, but would be covered in appropriate region's plans.	Unable to differentiate emissions attributable to transportation of materials for projects resulting from plan. The supplier for specific projects is not chosen at a plan level; delivery distances can't be projected. Regional estimates might be relevant.	No	Transport of materials for transportation infrastructure construction minimal compared to overall transportation emissions.	No
Employee Commute VMT	Tailpipe emissions from employee commuting	Included in indirect VMT	NA	NA	NA	NA	NA
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency	Mobile source emissions are the focus of transportation plan	Mobile sources could be addressed in plans at multiple levels	Regional Travel Demand Models examine population growth and VMT. Mobile source	Yes	This is the level to make decision on the nature of transp system	Yes, consider alternate projects/ programs for transportation

response)		emissions most reliably assessed at plan level				developed, types of projects that are pursued, and evaluate GHG effects.		system.
Energy Use	Usually purchased energy from off-site energy power plants.	Electricity for transport only an issue if evaluating increase in electric vehicles.	NA	NA	NA	NA	NA	NA
Water Use and 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.	NA	NA	NA	NA	NA	NA	NA
Solid Waste	Emissions from disposal (usually off-site) 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.	NA	NA	NA	NA	NA	NA	NA

End-use emissions from product use	Use and disposal of products by consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.	Use of transportation system part of indirect mobile emissions	NA	NA	NA	NA	NA
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## H.7 Measurement Test Case: Road Widening (Example of widening county road from 2 to 4 lanes and

### Road Widening (Note: Project is due to regional population growth)

Emissions Source	Examples	How source related to test case?	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions							
Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction?	Construction of new lanes	No	Energy use is estimated based on construction costs	Direct emissions emitted from fuel used	Modest compared to use of roadway	Alternative fuels, improve fuel efficiency of equipment, how equipment is used
Mobile Sources and Direct VMT	Directly related to project (company generated) or non-project (all commuting, and commercial transportation (includes distance and type of transport)).	Vehicles traveling on this section of roadway, changes in travel patterns on connecting road network – really an indirect source.	Yes, planning level document	No, difficult to discern effects of single project on roadway network	Difficult to discern boundaries of effects of single project on roadway network	Important source to reduce. Choices about transportation system best made at plan level.	Difficult to mitigate single transportation project. Decisions made at planning level determine nature of roadway network.
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.	NA	NA	NA	NA	NA	NA
Fugitive Emissions	Unintentional emissions, accidental releases such as leaks from industrial facilities, gas releases from drilling operations etc. GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected.	NA	NA	NA	NA	NA	NA
Direct Agricultural Emissions	Livestock methane, land clearing, fertilizer application, and on-site manure handling.	NA	NA	NA	NA	NA	NA

Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO <sub>2</sub> sink following removal of trees or vegetation.	Filling in wetland removes sink	No	Estimated based on size and quality of wetland lost	Yes		Wetland losses are already mitigated.
Maintenance activities	Emissions from equipment, chemicals	Maintenance of roadway and roadside	No	No	Difficult to determine maintenance for small section of roadway	Minimal.	Direct emissions from roadway maintenance reported in WSDOT emissions inventory.
Indirect Emissions							
Extraction of 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.	Materials used to construct new lanes, e.g., asphalt, concrete	Extraction emissions may be captured in extractor's environmental documents.	Difficult to determine emissions from extraction that could occur at many places.	What emissions are included as part of extraction? Difficult to know where to stop.		Use alternate materials, alternate vendor with lower emissions. Extractor emissions may be regulated under cap and trade system.
Processing of materials	Energy used and emissions from processing raw materials or end products for a proposal (e.g. cement, metals, plastics, wood, fuel).	Materials used to construct new lanes, e.g., asphalt, concrete	Processing emissions may be captured in processor's environmental documents.	Difficult to determine emissions from processing that could occur at many places.	What emissions are included as part of extraction? Difficult to know where to stop.		Use alternate materials, alternate vendor with lower emissions. Processing emissions may be regulated under cap and trade system.
Transportation of materials	Delivery of raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	Fuel used to deliver materials to construction site	All transportation emissions would be captured in transportation plan	Difficult to determine emissions specifically related to materials transported for	Difficult to determine boundary. Where do you stop?		Use locally extracted, processed, manufactured materials, if available.

				single project. What about transportation of parts prior to assembly?				
Employee Commute VMT	Tailpipe emissions from employee commuting	Commute to construction site	All transportation emissions would be captured in transportation plan				Minimal	Encourage alternative transportation modes: carpooling, transit, shuttle bus, work schedules
Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Adding new road could encourage yet more development in area. Induced growth	Likely addressed in planning documents: transportation plan, comp plan, etc.	Unable to measure at project level	Difficult to determine boundary.			Planning level most effective place to make transportation and land use choices.
Energy Use	Usually purchased energy from off-site energy power plants.	NA	NA	NA	NA	NA	NA	NA
Water Use and 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.	NA	NA	NA	NA	NA	NA	NA
Solid Waste	Emissions from disposal (usually off-site) of all types of waste (construction, agriculture, general trash, food). Could include tailpipe	NA	NA	NA	NA	NA	NA	NA

	<p>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.</p>						
<p>End-use emissions from product use</p>	<p>Use and disposal of products by consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.</p>	<p>Emissions from use of roadway</p>	<p>See Mobile Sources above.</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>

# Appendix I: Analysis of Threshold Determination Options

The documents in this appendix were used by the SEPA IWG to analyze options for threshold determination. These were working documents that should not be considered final products of the SEPA IWG.

## I.1 Options for Significance Standard (Authors: Hilary Franz and Patricia Betts)

This Appendix discusses six options for setting a standard significance thresholds for greenhouse gas emissions under SEPA. This Appendix explores each option and discusses the advantages and disadvantages of each.

### I. DEGREE OF REQUIREMENT

- A. Set in rule, required to be used for determining significance (and possibly used for determining mitigation)
- B. Presented in guidance, directing agencies to use it for determining significance, but with no “teeth” nor directive for agencies to adopt it.
- C. Set in law, required to be used for determining significance.
- D. Set in law, required to be used for determining significance and determining mitigation.

### II. QUESTIONS

- A. Does establishing a significance threshold of zero (or other level) affect the use of categorical exemptions?

*Possible strategies: If regulatory approach is pursued, 197-11 could provide caveats (exceptions) for exemptions. These caveats or exceptions could mention BMPs for climate impacts as a means to remain exempt or could require analysis and limit it to climate change. If the procedural approach is pursued, agencies could create their own exceptions to the exemptions as with critical areas (197-11-908).*

- A. How could the scaling of GHG reduction plans remain consistent with the Emissions Reduction Law?
- B. What is the relationship between non-project (plans) and project emissions inventories?
- C. Would the purchase of emissions “credits” through a regional Cap & Trade system be allowed for the purpose of mitigating project and non-project actions? If so, would certification of emission inventories be necessary?
- D. Does the approach make it easier to minimize project-level SEPA review and emphasize review at the sub-area or planning level?

### III. STATEWIDE STANDARD

- A. Zero Significance Threshold

#### 1. SINGLE OPTION

- (i) **Description:** This approach sets the GHG emission threshold at zero increase in tons/year. Under this approach any increase in emissions would be significant.
- 1) Projects that result in a reduction of GHG emissions compared to baseline emissions would be less than significant. Projects that result in a net increase of GHG emissions would be required to mitigate their emissions to zero or exceed the threshold.
  - 2) This threshold approach is based on the belief that 1) all GHG emissions contribute to global climate change and could be considered significant, and 2) not controlling emissions from smaller sources would be neglecting a major portion of the GHG inventory.
  - 3) Project Steps:
    - i. Inventory of GHG emissions generated by project,
    - ii. Inventory of energy needs of project, and
    - iii. Provide onsite and offsite mitigation to reduce GHG emissions to net zero or exceed the threshold.
  - 4) Non-Project Steps:
    - i. provide an inventory of GHG emissions generated within the planning area,
    - ii. provide an inventory of energy needs of the planning area, and
    - iii. develop a GHG Reduction Plan for the planning area that implements the GHG Emission Reduction to zero or exceed the threshold.
- b) **Advantages:**
- 1) Addresses the cumulative impact of many small GHG sources. While individually many GHG sources are too small to make any noticeable difference to climate change, it is also true that the countless small sources around the globe combine to produce a very substantial portion of total GHG emissions.
  - 2) Under this option, all projects subject to SEPA would be required to quantify and mitigate their GHG emissions. All would fall under the SEPA microscope.
  - 3) Potentially greater degree of certainty for project proponents
  - 4) Possible to establish GHG Best Practices for smaller projects to achieve compliance without forcing extensive analysis for them
- c) **Disadvantages:**
- 1) Increased administrative costs and pressure on environmental review system capacity given that some projects that previously would have qualified for an exemption could require substantial analysis.
  - 2) May be that the increased volume of projects requiring review reduces the quality of consideration given to review worst projects
  - 3) Should consider whether meaningful mitigation can be achieved from smaller projects

B. Non-zero Significance Threshold

*Note: There are ways that some of the following thresholds could be a zero threshold, but it is not assumed or assured as it is with the zero threshold.*

1. **OPTION 1: Set x tons/unit threshold, x tons/year threshold, or x tons/person threshold**

a) **Description:** Set a bright line numerical threshold.

- 1) **Project:** If the threshold was set at xx tons per year then each project that exceeds that threshold would be considered to have a significant impact (e.g., residential development threshold = 900 tpy, an industrial project could not exceed 25,000 tpy). A project could then use mitigation to bring itself below the threshold.

Steps are:

- i. Inventory of GHG emissions generated by project,
  - ii. Inventory of energy needs of project, and
  - iii. If above XX tpy threshold then provide onsite and offsite mitigation to reduce GHG emissions to below threshold.
- 2) **Non-project:**
    - i. Provide an inventory of GHG emissions generated within the planning area,
    - ii. Provide an inventory of energy needs of the planning area, and
    - iii. If action exceeds numerical threshold, develop a GHG Reduction Plan for the planning area that implements the GHG Emission Reduction to below the numerical threshold or adopt feasible reduction measures to reach GHG reduction target and come below numerical threshold.

b) **Advantages:**

- 1) Excludes small projects that have a relatively small contribution to state GHG inventory. If limit set at tons per unit, then small projects could be captured.
- 2) Single threshold easier to apply to projects and more easily understood by the public, applicants and lead agencies.

Question: Would a single threshold be applied to all project types? If done on a unit basis, this would not work, would need to be different for each type of project.

c) **Disadvantages**

- 1) If set too low may discourage mitigation and if set too high may not capture enough projects to meet state requirements of GHG reduction targets
- 2) Larger projects shoulder greater burden of reductions to compensate for smaller projects not requiring mitigation, in order to reach reduction targets statewide.
- 3) Projects designed to be just under the limit to avoid dealing with the threshold.
- 4) It is not clear that a threshold that allows for unmitigated GHG emissions will meet the emission reduction requirements in RCW 70.235.020(1)(a). If all actions are allowed 900 metric tons per year of GHG emissions, for example, without some sort of required future reduction it is unlikely the required emission reductions could be met.

- 5) Per capita thresholds would not likely meet the emission reduction requirements in RCW 70.235.020(1)(a) since they call for an absolute reduction in emissions whereas per capita thresholds with a growing population will likely allow continued emissions growth.

## 2. **OPTION 2: Meeting WA State GHG Reduction Requirements**

- a) **Description:** In 2008, the Washington State Legislature set requirements for reducing statewide GHG emissions to 50 % below 1990 levels by 2050. RCW 70.235.020(1)(a). RCW 70.235.020(1)(b) specifically authorizes actions to achieve these reductions under existing statutory authority, which would include SEPA. Since one of the SEPA considerations for when an EIS is required is whether an action is inconsistent with state law, the adoption of limits is significant for SEPA review.

Reducing GHG emission levels 50 % below 1990 levels will require both reductions in existing GHG emissions and new emissions.

Question: What about emission reductions in response to cap and trade?

This threshold option would require a project/non-project to show that they will meet the required reductions in order to be considered less than significant.

Question: How would percent reduction be chosen in relation to increase state reduction goal? Would the project reduction goal change over time to meet changing state goal?

Emissions could be allocated to sectors or geographic areas. The allocation could take into account the feasibility of reductions from a particular sector or use and the most cost effective ways to reduce greenhouse gas emissions. Because the allowed emissions are reduced over time the needed reductions could also be phased as new technologies become available.

Question: Once a project is included in a complying plan, would the project need it's own emissions analysis?

### 1) Project:

- i. This threshold approach would require a project to show that they will meet the required reductions based on the average reductions needed from the 1990 emission levels from all GHG sources. The required reductions could be determined on a case-by-case basis by comparing projected future emissions against estimated 1990 emissions and then determining a fair share reduction needed to achieve the necessary reductions.
- ii. Alternatively, a state agency or local government could allocate the required reductions in the same manner as emissions are allocated for non-project actions.

### 2) Non-project:

- i. A local jurisdiction or state agency determines 1990 emissions, current emissions, and projected emissions.
- ii. Jurisdiction then calculates the necessary reductions/net emissions to meet 50% below 1990 target requirements.
- iii. Any proposal that does not meet the reduction (net emissions) state levels, would be considered to have significant impacts on climate, and all the climate change associated indirect effects.

### 3. **OPTION 3: Uniform Percentage-Based Reduction**

#### a) **Description:**

State would adopt a percentage reduction below business as usual necessary to reach set level overall as end strategy (could be part of achieving the state GHG reduction requirements or another number based on science). (Note: This approach assumes a percentage less than 100 percent.)

This approach is not that different from Option 2 except that it presents a different percentage. This different percentage could be applied to different project types.

- 1) **Project:** A project would be required to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources to be considered less than significant. (E.g., the threshold could be 15 tpy per residential unit (25% below BAU) and 50 tpy per 1000 sq. ft. retail (25% below BAU)).
- 2) **Non-Project:** Including in Comprehensive planning documents measures necessary to reach percentage reduction in GHG. Such measures could include mitigation in the area of energy efficiency and conservation, recycling and waste management, transportation, water, and land use and design.

#### b) **Advantages of Options 2-3 Percentage Based Approach:**

- 1) Using a percentage/time based requirement as the basis for a significance threshold may be more appropriate to address the long term adverse impacts associated with climate change
- 2) If this goal is connected to the statewide requirements then it presents more likelihood of actually achieving statewide requirements.

#### c) **Disadvantages of Options 2-3 Percentage Based Approach:**

- 1) Difficult to allow for changes in the baseline and future emission inventories estimates Need to provide clarification on role of emission inventories needed.
- 2) Projecting future inventories over the next 15 to 50 years involves uncertainty.
- 3) It is not clear that a reduction over business as usual can achieve the reductions required by state law. RCW 70.235.020(1)(a) requires reductions first to the 1990 level and then to 25 or 75 percent below the 1990 levels. A reduction from business as usual implies that emissions will be allowed to grow, although at a slower rate.

### 4. **OPTION 4: Standard Threshold By Type of Project**

#### a) **Approach 1: Quantitative Threshold Based on Market Capture**

##### 1) **Project**

- a. Residential: Review data from at least 20 diverse cities and counties on pending applications for development.

- b. Determine the unit threshold that would capture approximately 90 percent of the residential units in the pending application lists. (E.g., in CA based on data of 90%, thresholds selected would be 50 residential units. GHG emissions associated with 50 single-family residential units is 900 metric tons/yr. So single threshold is 900 metric tons for residential projects.)
- c. Office: Similar approach for residential with threshold being 30,000 square feet. So single threshold of 900 metric tons.
- d. Industrial: Less amenable to a unit-based approach given diversity of projects within sector. Option would be to adopt a quantitative GHG emissions threshold for industrial projects equivalent to that for the residential/commercial thresholds.

2. **Non-project:**

- a. Option would be to adopt a quantitative GHG emissions threshold for non-projects equivalent to that for the residential/commercial thresholds.

3) ***Advantages***

- i. Proposed threshold would exclude the smallest proposed developments from potentially burdensome requirements to quantify and mitigate GHG emissions
- ii. Captures 90 percent of each market to show that cumulative reductions are being achieved
- iii. Requires vast majority of new dev't emission sources to quantify GHG Would require all proponents to quantify to determine if under/over threshold.

4) ***Disadvantages***

- i. Requires extensive information on jurisdictional applications for each economic sector.
- ii. Data changes over time
- iii. Necessary data and resources not likely available presently.
- iv. Larger projects shoulder greater burden of reductions to compensate for smaller projects not requiring mitigation, in order to reach reduction targets statewide.
- v. Under this proposal, ten percent of all development would be exempt from review. This may not achieve the reductions required by state law. RCW 70.235.020(1)(a) requires reductions first to the 1990 level and then to 25 or 75 percent below the 1990 levels.
- vi. Could encourage development of projects just under threshold.
- vii. Dynamic changes in the market by year and by region.

***b) Approach 2: Uniform %-Based Reduction by Economic Sector/ by Region (This threshold option would use a tons/year GHG threshold specific to the economic sector associated with a project.)***

1) **Project**

- i. There would be specific threshold for each economic sector (residential, commercial, and industrial). E.g., For residential could set at xx tpy which would be set based on percent of projects trying to capture or be set so the existing categorical exemptions would remain exempt.

**2) Non-Project**

- i. This uniform percentage based reduction could also be applied to a geographic region for purposes of non-project action. The threshold standard could specify a percentage level for regions of the state. The areas within each region required to plan must then demonstrate that through their plans they are in compliance with the percent reduction goal.

**3) *Advantages***

- i. Allows selection of the best regulatory goal for each sector taking into account available technology and costs.
- ii. Avoids over-regulating projects (i.e., requiring emissions to be controlled in excess of existing technology) or under-regulating projects (i.e., discouraging the use of available technology to control emissions in excess of regulations)

**4) *Disadvantages***

- i. Requires extensive information on the emission inventories and best available control technology for each economic sector.
- ii. More viable option in the long term but necessary data and resources not likely available presently.
- iii. Larger projects shoulder greater burden of reductions to compensate for smaller projects not requiring mitigation, in order to reach reduction targets statewide.

**c) *Approach 3: A flexible range based on amount of GHG emissions*****1) *Local jurisdictions are required to choose a threshold within a designated range.***

- *e.g. choose between 500 and 5,000 MTCO<sub>2e</sub>*
- *e.g. choose between a number of units (5- 20 residential units)*
- *e.g. choose another GHG emissions reporting requirement ( 2,500 for mobile sources and 10,000 MTCO<sub>2e</sub> for stationary sources)*

**2) *Advantages***

- i. Could capture a certain % of development related emissions or be set so that the existing categorical exemptions remain exempt.
- ii. Could be defined to capture most emissions but exclude small projects
- iii. Could lower burden on small developments
- iv. Could lower burden on SEPA lead agencies

**3) *Disadvantages***

- i. Requires knowledge of the type of projects and their GHG emissions that are likely to go through each SEPA lead agency
- ii. Larger projects shoulder greater burden of reductions to compensate for smaller projects not requiring mitigation, in order to reach reduction targets statewide.
- iii. Depending on the threshold, this alternative may not achieve the reductions required by state law. RCW 70.235.020(1)(a) requires reductions first to the 1990 level and then to 25 or 75 percent below the 1990 levels.

d) **Approach 4: Identify certain types of projects (e.g., industrial projects, mining projects, road projects, small projects) as significant without mitigation and prescribe feasible mitigation measures based on project size and type**

- 1) This would need to be used in conjunction with another approach for other types of projects that are not automatically considered significant.

e) **Approach 5: Standard Threshold by Size of Project**

a) **Description**

- i. Projects of a certain size would qualify as exceeding the threshold. E.g., proposed residential dev't of more than x dwelling units, proposed shopping center or business employing more than x number of people or encompassing more than x square feet of floor space, proposed hotel of more than x rooms.

The question with this approach is what is the threshold number the project must mitigate under – does it mitigate to point of reducing GHG emissions to level of project size below threshold. So if the threshold were set at a 40 unit housing development, a 50 unit development would need to mitigate to the same emissions as a 40 unit development, Or a 200 unit mitigate to a 40 unit development

- 2) **Project:** e.g., If the threshold was set at 15 residential units/10,000 sq.ft commercial space, each project that exceeds that size would be considered to have a significant impact. A project could then use mitigation to bring itself below the emissions level of 15 residential units/ 10,000 sq. ft. The thresholds could be set so the categorical exemption would continue to be exempt.
- 3) **Non-project:** Under this category, a threshold standard could be set for cities and counties based on the size/scale of the local jurisdiction for Comprehensive Plans. The County would then have to show its CP meets the threshold in order to be considered less than significant.

4) **Advantages/Disadvantages**

- i. Same advantages and disadvantages as Option 1 under the Non-Zero Threshold.
- ii. Rigid option with potential for litigation
- iii. Could require detailed list of thresholds by project type.

5. **OPTION 5: Tiered Approach/Decision Tree Approach**

a) **Description**

The goal of this approach is to maximize reduction predictability while minimizing administrative burden and costs. This would be accomplished by prescribing feasible mitigation measures and reserving the detailed review of an EIS for those projects of greater size and complexity.

This approach would “bin” projects based on established characteristics, with increasing requirements for each bin, or tier

1) Tier 1: Less than Significant:

Emissions associated with a project/plan are assumed to have a significant impact unless one can arrive at a less-than-significant finding by at least one of the following methodologies:

- a. For Non Project and Project Action, Demonstrate that a planning document is in compliance with State's goal or other stated standard threshold (zero-threshold, uniform % reduction threshold, etc.).

(e.g., A comp plan fully document 1990 and 2020/50GHG emission inventories. If its 2020/50 mitigated emissions are 25% and 50%, respectively, less than 1990 emissions it is considered less than significant.

(e.g., if the threshold is zero then a project does not have significant impacts if it meets zero net GHG emissions, or if threshold set at Quantitative (tons/year) or Qualitative (unit based on market capture) then project not significant impact if comes below Quantitative or Qualitative threshold due to other legal authority.)

- b. For Project Action, Demonstrate the Project is Exempt

(e.g., for CA projects funded under its Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act and Disaster Preparedness and Flood Prevention Bond Act may be exempt)

*Question:* How is exemption determined? Need to be careful if exemption is based on funding titles, as definitions of 'safety' and other terms can be squishy and change over time.

**OR**

- c. For Project Action, Demonstrate that the project is on the "Green List".

The Green List would consist of a list of projects and project types that are deemed a positive contribution to state efforts to reduce GHG emissions. (Ex. A wind farm that had negligible construction emissions; Small hydroelectric at existing facilities that generate 5 mw or less; increase in bus service along an existing bus line; Dev't of bicycle, pedestrian, or zero emission transportation infrastructure to serve existing regions; Extension of public transportation services to currently developed but underserved communities; Recycled water projects that reduce energy consumption related to water supplies, etc.)

**OR**

- d. For Non- project or Project Action, Demonstrate that project is consistent with local and regional jurisdictions' GHG Reduction Plan. Ecology could also do a GHG reduction plan and a project that copies with it could be non-significant.

Where a project can demonstrate it is consistent with an appropriate planning document's or state agency's GHG Reduction Plan (CGRP), the project can be declared less than significant. Comprehensive and other long-range planning processes would analyze GHG emissions, significance, mitigation, etc. and

develop a Greenhouse Gas Reduction Plan (GGRP). A project would start with analysis done at non-project stage and verify that the project was consistent with the plan and that appropriate non-project analysis for GHG emissions was conducted. Requires thorough GHG analysis at non-project level and additional guidance or rule.

#### If Not Then

2) Tier 2: Exceeds Threshold but Mitigated to Less than Significant:

In Tier 2, those projects that did not meet the threshold analysis would be required to implement a comprehensive set of Level 1 mitigation to bring themselves below the threshold. Quantitative and Qualitative inventories would be required.

- a. If applying a zero threshold: A project results in a net increase of GHG emissions, but is mitigated to zero through direct mitigation or offsets. An approach similar to mitigation sequencing could be applied to put mitigation before offsets in priority
- b. If applying a Quantitative threshold (tons/year) : A project would implement a comprehensive set of Level 1 mitigation strategies to bring it below the threshold (ex. Parking reduction beyond code, solar roofs, LEED Silver or Gold Certification, TDM measures, intelligent transportation systems, etc.)
- c. If applying a Qualitative threshold (unit-based market capture- # of dwu, sq ft space or per capita ratio): Projects with emissions above the standard threshold would be required to implement a comprehensive set of Level 1 mitigation. Projects below Tier 1 threshold would not be required to quantify emissions or reductions.

3) Tier 3: Significant and Unavoidable Impacts or Mitigated to Less than Significant:

If impacts still exceed the Tier 1 threshold an even more aggressive set of Level 2 mitigation measures would be required to reduce emissions below the Tier 1 threshold. In Tier 3 for those projects that did not meet threshold after Tier 2 mitigation and analysis, the project would be required to reduce net emissions using Level 2 reductions, in addition to Level 1 mitigation strategies. This tier would distinguish the larger projects from the smaller ones.

- a. Projects may remain significant and unavoidable where mitigation infeasible to reduce emissions to zero (e.g., cost to offsets infeasible for project or offsets not available)
- b. For Quantitative approach, more aggressive set of Level 3 mitigation measures would be required (could include such measures as on-site renewable energy system, LEED Platinum certification, required recycled water use for irrigation, etc. that would mitigate to less than significant.)
- c. For Qualitative approach, apply Level 3 mitigation and require offsets for remainder (when feasible) in the amount of 90 percent of net emissions after application of Level 1, 2 and 3 mitigation. A variant could be to require mandatory Level 3 mitigation without quantification and offsets

Questions: If emissions are qualitatively discussed, not quantitatively discussed, how can 90 percent of emissions be offset. Especially when entering the carbon market for offsets, emissions will need to be carefully calculated.

4) Tier 4: EIS

For projects that are cannot mitigate or offset to below the threshold, an EIS would be necessary

**b) Advantages**

- 1) Allows flexibility by establishing multiple thresholds to cover a wide range of projects
- 2) Tiers could be set at different levels depending on GHG emissions, size and characteristics of projects
- 3) Could design to support WA state GHG reduction goals

**c) Disadvantages**

- 1) Similar disadvantages as explained in approaches above.
- 2) Approach is relatively complex although complexity could be reduced through a well designated flow chart.

**Table 1: Option 6 Tiering Approach**

	<b>Zero Threshold Standard</b>	<b>Quantitative Threshold Standard</b>	<b>Qualitative Threshold Standard</b>
Tier 1	Project results in a net reduction of GHG emissions below zero  <i>= Less than Significant Impacts</i>	Project in compliance with state law req't, a Comp. Plan CGRP, on Green List, or below Tier 2 threshold  Implement Level 1 Reductions (Reductions like Energy Star roofs and appliances, water use efficiency, etc.)  <i>= Less than Significant if Level 1 Reductions applied</i>	Project in compliance with state law req't, a Comp. Plan CGRP, on Green List, or below Tier 2 threshold  Implement Level 1 Reductions (same as measures under 2B)  <i>= Less than Significant if Level 1 Reductions applied</i>
Tier 2	Project results in net GHG increase  Mitigate to zero (through direct or offsets)  <i>= Mitigated to Less than Significant Impacts</i>	Emissions above Tier 2 threshold  Level 2 Mitigation (Mitigation such as parking reductions beyond code, solar roofs, LEED standards)  <i>= Less than Significant if Level 1 and 2 mitigations applied</i>	Project meets Tier 2 criteria  Level 2 Mitigation Reductions necessary (see measures under 2B)  <i>= Less than Significant if Level 1 and 2 mitigations applied</i>
Tier 3	Net GHG increase Mitigation infeasible to reduce emissions to zero (e.g., cost of offsets infeasible for project or offsets not available)  <i>Significant and Unavoidable Impacts</i>	Emissions above Tier 2 threshold with Level 1 and 2 Mitigation  Level 3 Mitigation (On-site renewable energy systems, LEED Platinum certification, zero waste/high recycling requirements, offsets/carbon impact fees, etc.)  <i>= Mitigated to Less than Significant with Level 1, 2 and 3 mitigation</i>	Above Tier 3 thresholds  Quantify Emissions, Level 3 Mitigation (see measures under 2B) and offsets for 90% of remainder  <i>= Significant and Unavoidable Impacts</i>

#### 6. OPTION 6: Decision Tree - Alternative

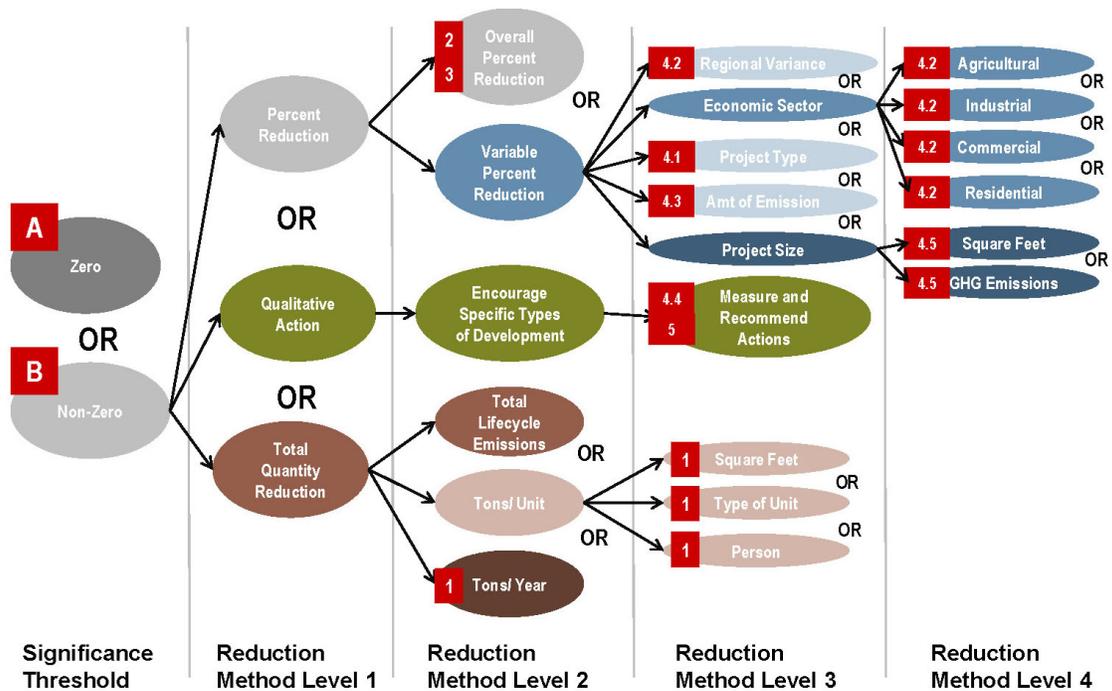
- a) **Tier 1:** Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?
- i) If YES, then no SEPA analysis required.
  - ii) If NO, then:
    - i. Those GHG emissions not addressed by a regulatory structure or a Comprehensive GHG Reduction Plan would undergo SEPA analysis. Do those additional emissions exceed the standard threshold?
    - ii. If the development regulations do not account for all the emissions associated with the project, you then calculate the remaining emissions. If the remaining emissions do not exceed the threshold determination a DNS would be issued for the project.
- b) **Tier 2:** If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) Assuming

the SEPA analysis determines mitigation is required the project would then be required to mitigate down to the threshold determination level. At this point the project proponent would be able to select from a pre-identified list of mitigation options to satisfy the required mitigation. (Note: refer to work done by Mitigation Subgroup)

- c) **Tier 3:** If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to project/non-project to reach MDNS
- d) **Tier 4:** For projects unable to meet threshold after mitigation and offset, then EIS.

## I.2 Options for Significance Standards (Graphics)

The following slides were used by the SEPA IWG to illustrate options for significance standards described above in Appendix Section I.1.

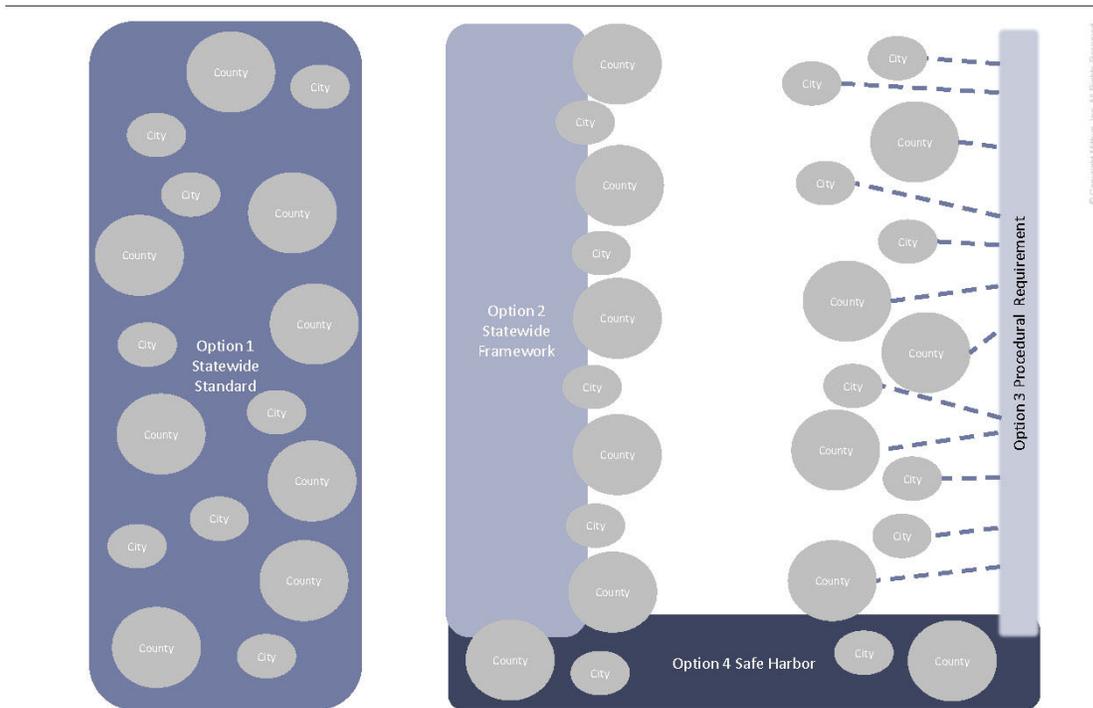


### Significance Threshold Approaches

Seen as a series of sequential decisions related to possible variables

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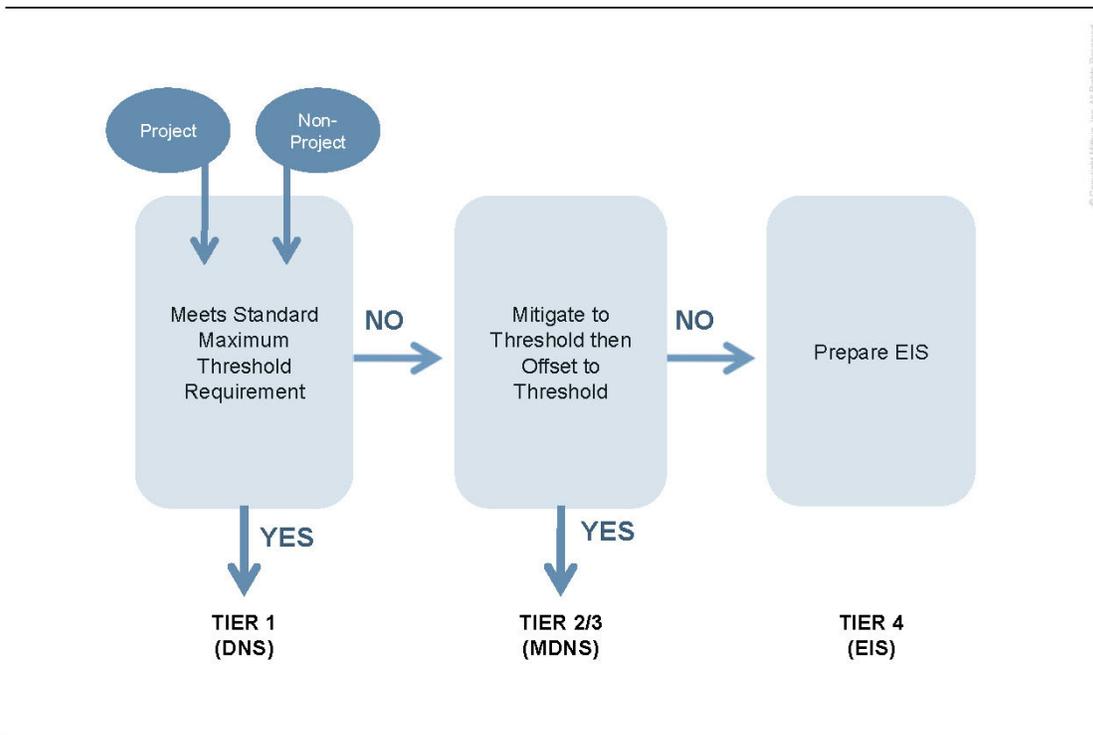




Significance Threshold Approaches  
Options for Statewide Consistency

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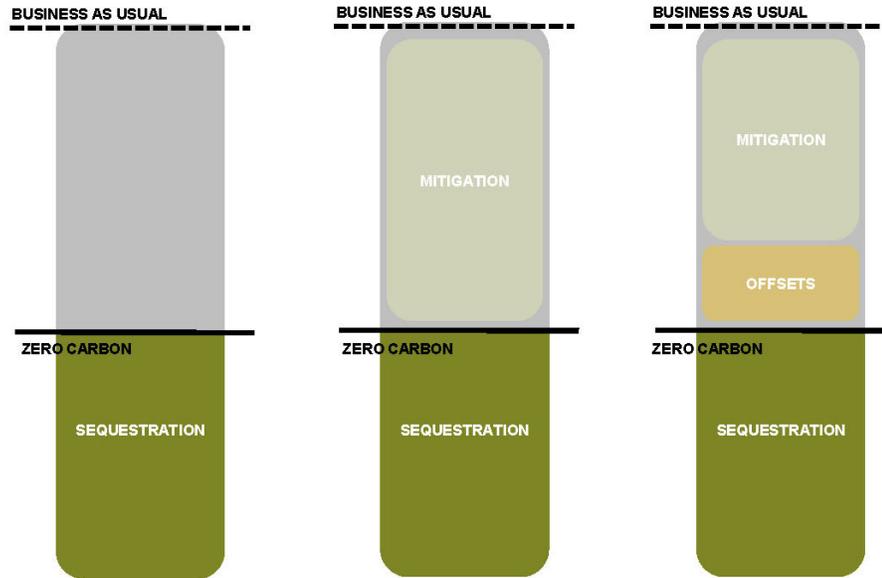
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Significance Threshold Approaches  
Standard SEPA process for all applications

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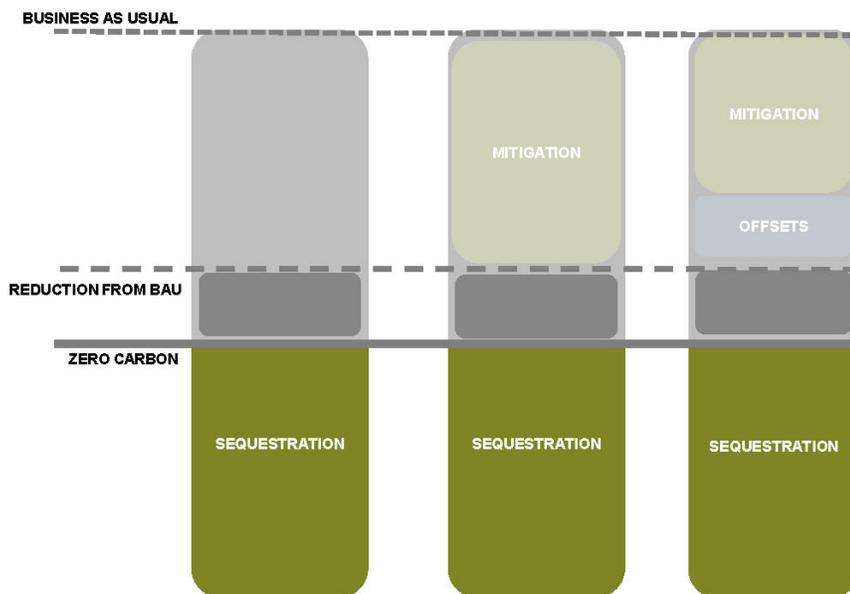


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Significance Threshold Approaches  
 1) Zero Significance Threshold

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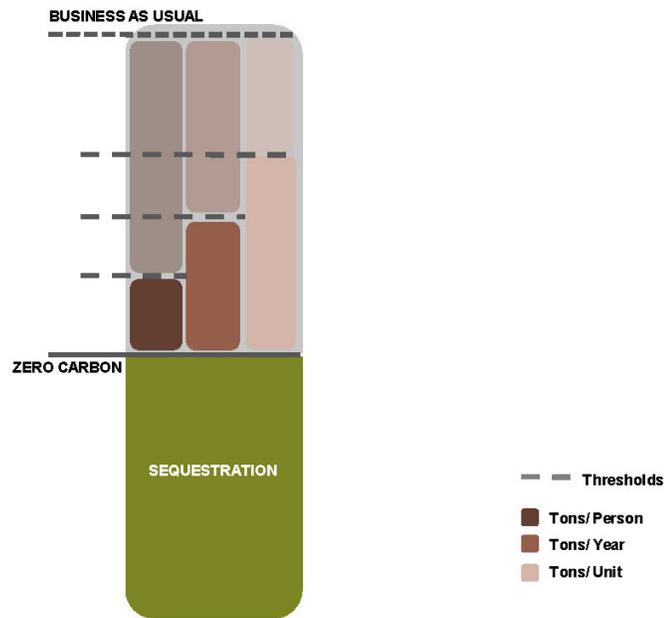


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Significance Threshold Approaches  
 2) Non Zero Significance Threshold – All Options

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2) Non Zero Significance Threshold – Option 1: set x tons/ unit, x tons/ year or x tons/ person threshold

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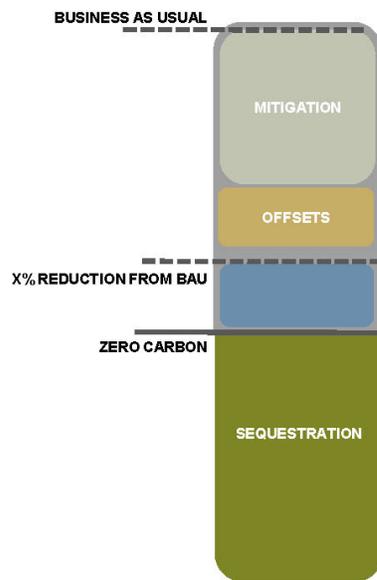
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2) Non Zero Significance Threshold – Option 2: Meeting WA State GHG Reduction Requirements

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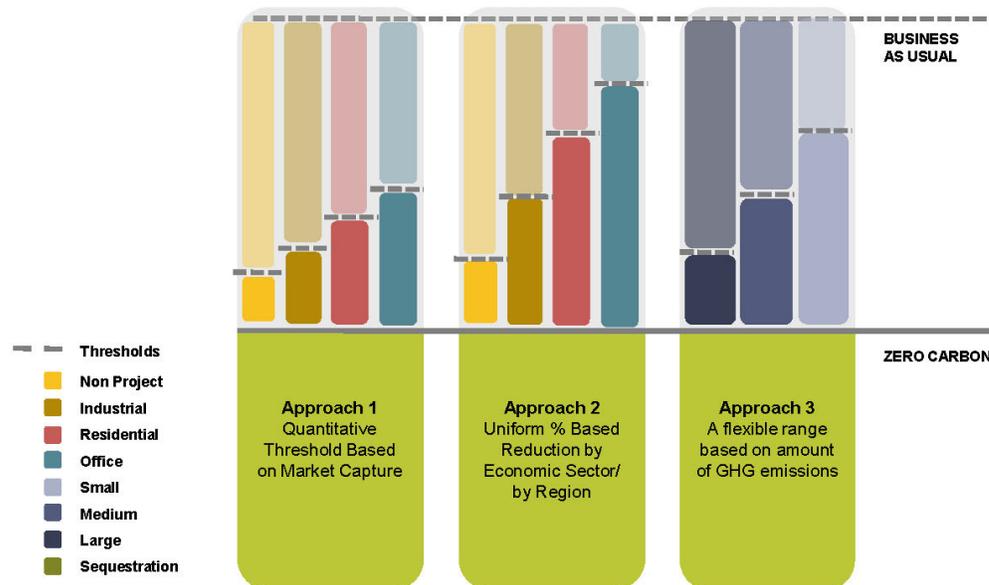
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2) Non Zero Significance Threshold – Option 3: Uniform Percentage Based Reduction

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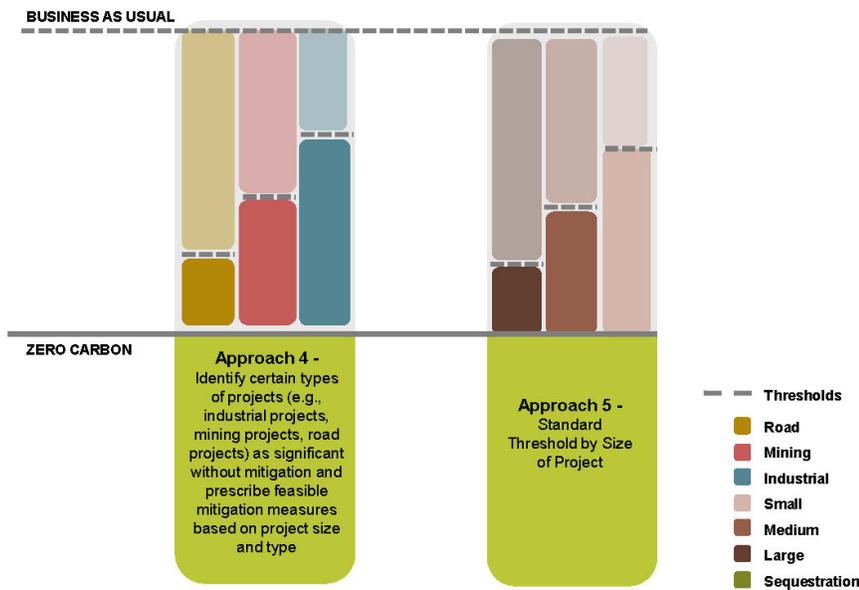
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2) Non Zero Significance Threshold – Option 4: Standard Threshold by Type of Project

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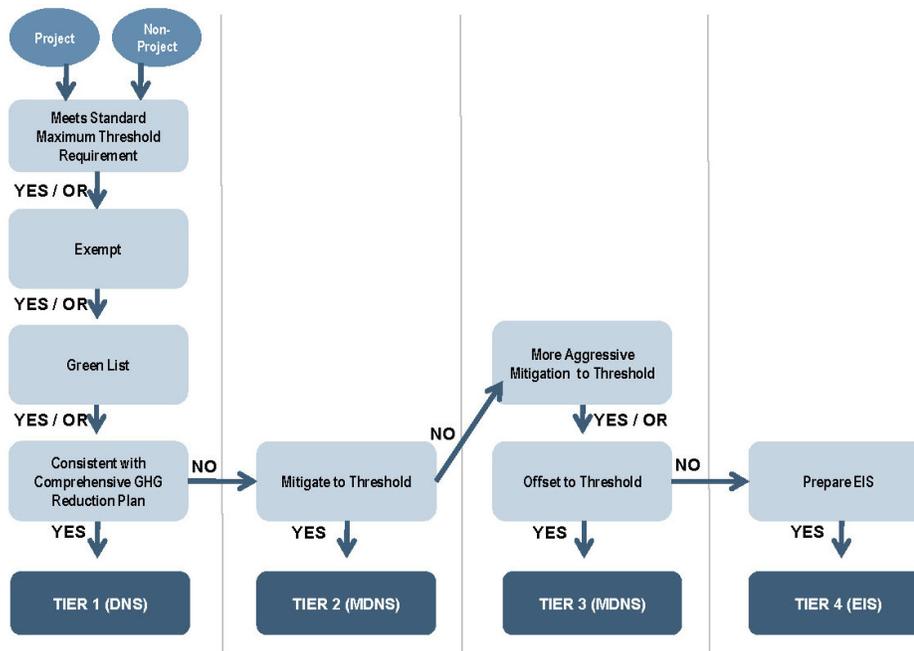
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Significance Threshold Approaches

2) Non Zero Significance Threshold – Option 4: Standard Threshold by Type of Project

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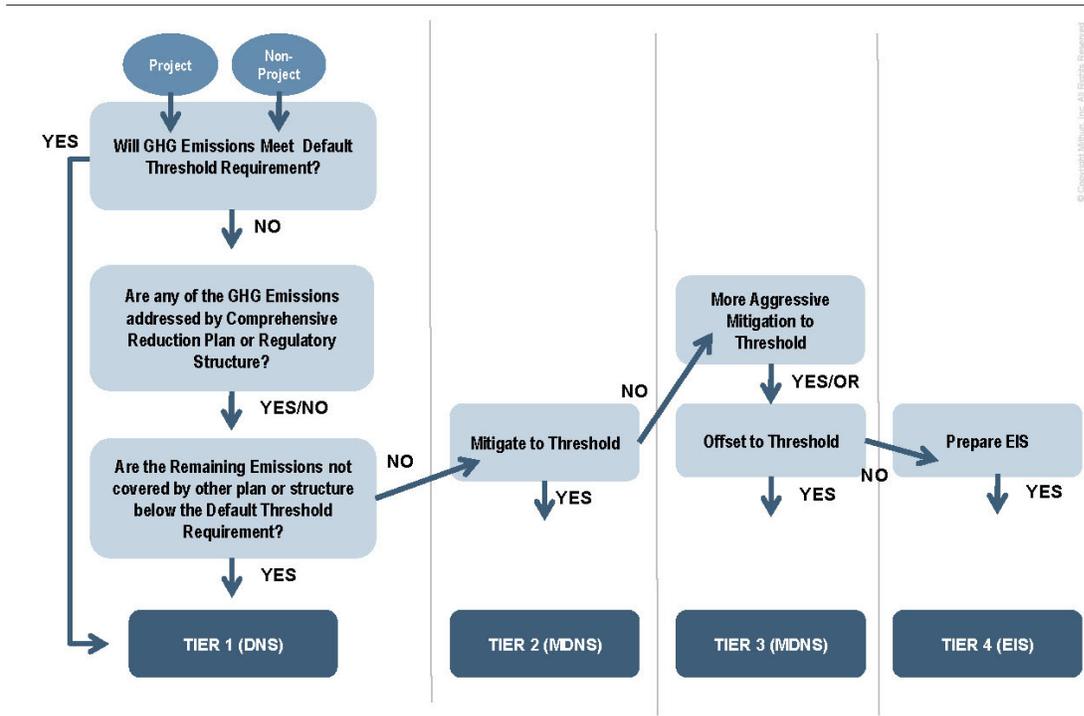
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Significance Threshold Approaches

2) Non Zero Significance Threshold – Option 5: Decision Tree/ Tiered Approach

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2) Non Zero Significance Threshold – Option 6: Safe Harbor/ Tiered Approach

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**I.3 Test case worksheet for types for threshold options:**

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
Zero Threshold	<p>Does the CP result in increased GHG emissions? Likely YES, so County must:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated within the planning area,</li> <li>2) provide an inventory of energy needs of the planning area, and</li> <li>3) develop a GHG Reduction Plan for the planning area that implements the GHG Emission Reduction and offsets to zero <u>or</u></li> <li>4) it exceeds the threshold.</li> </ol>	<p>Does the rezone result in increased GHG emissions?  Likely YES, so local jurisdiction must:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated by the rezone,</li> <li>2) provide an inventory of energy needs of the rezone and</li> <li>3) incorporate mitigation and offsets to get down to zero <u>or</u></li> <li>4) it exceeds the threshold.</li> </ol> <p>Questions:</p> <ol style="list-style-type: none"> <li>1. GHG emissions being counted isn't there a potential of counting at project stage – how is double</li> </ol>	<p>Does the Mixed Use Residential Project result in increased GHG emissions?  If YES, the project could then use mitigation and offsets to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated by the project,</li> <li>2) provide an inventory of energy needs of the project and</li> <li>3) incorporate mitigation and offsets to get down to zero <u>or</u></li> <li>4) it exceeds the threshold.</li> </ol>	<p>Does the Small Suburban Subdivision Project result in increased GHG emissions?  Likely YES, the project could then use mitigation and offsets to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated by the project</li> <li>2) provide an inventory of energy needs of the project and</li> <li>3) incorporate mitigation and offsets to get down to zero <u>or</u></li> <li>4) it exceeds the threshold.</li> </ol>	<p>Does the 75- Acre DNR Timber Sale Project result in increased GHG emissions?  Likely YES, the project could then use mitigation and offsets to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated within the project,</li> <li>2) provide an inventory of energy needs of the project and</li> <li>3) incorporate mitigation and offsets to get down to zero <u>or</u></li> <li>4) it exceeds the threshold.</li> </ol>	<p>Does the Port Expansion Project result in increased GHG emissions?  Likely YES, the project could then use mitigation and offsets to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated within the project,</li> <li>2) provide an inventory of energy needs of the project and</li> <li>3) incorporate mitigation and offsets to get down to zero <u>or</u></li> </ol>	<p>Does the Boxed Store Project result in increased GHG emissions?  Likely YES, the project could then use mitigation and offsets to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated within the project,</li> <li>2) provide an inventory of energy needs of the project,</li> </ol>

	<p>counting avoided?</p> <p>2. Are GHG emissions more concrete at the project stage?</p>	<p>4) it exceeds the threshold.</p> <p>3) incorporate mitigation and offsets to get down to zero</p> <p><u>or</u></p> <p>4) it exceeds the threshold.</p>
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Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
Non-Zero Threshold							
<p><u>Option 1</u></p> <p>Exceeding X-tons/unit or X tons/yr GHG emissions</p>	<p>Does the CP result in GHG emissions above the numerical threshold set for local jurisdiction?</p> <p>If YES, County must:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated within the planning area,</li> <li>2) provide an inventory of energy needs of the planning area, and</li> <li>3) develop a GHG Reduction Plan for the planning area that implements the GHG Emission Reduction to below the numerical threshold or adopt feasible reduction</li> </ol>	<p>Does the rezone result in GHG emissions above the x-tons/unit or x tons/yr threshold set for local jurisdiction?</p> <p>If YES, local jurisdiction must:</p> <ol style="list-style-type: none"> <li>1) provide an inventory of GHG emissions generated within the rezone area,</li> <li>2) provide an inventory of energy needs of the rezone area,</li> </ol>	<p>Does the mixed use residential project exceed threshold of 900 tpy?</p> <p>If YES, the project could then use mitigation to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) inventory GHG emissions generated by project,</li> <li>2) inventory energy needs of project, and</li> </ol>	<p>Does the small suburban subdivision project exceed threshold of 900 tpy?</p> <p>If YES, the project could then use mitigation to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) inventory GHG emissions generated by project,</li> <li>2) inventory energy needs of project,</li> </ol>	<p>Does the timber sale exceed threshold of xxx tpy?</p> <p>If YES, the project could then use mitigation to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) inventory GHG emissions generated by project,</li> <li>2) inventory energy needs</li> </ol>	<p>Does the Port Expansion Project exceed threshold of xxx tpy?</p> <p>If YES, the project could then use mitigation to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) inventory GHG emissions generated by</li> </ol>	<p>Does the Boxed Store Project exceed threshold of xxx tpy?</p> <p>If YES, the project could then use mitigation to bring itself below the threshold.</p> <p>Steps:</p> <ol style="list-style-type: none"> <li>1) inventory GHG emissions generated by project,</li> <li>2) inventory</li> </ol>

	<p>measures to reach GHG reduction target and come below numerical threshold.</p> <p>Questions:</p> <p>1. Given the difference in each local jurisdiction as to economics, population, resource lands, etc. would any numerical threshold would likely need to be set by jurisdiction or region?</p>	<p>and</p> <p>3) develop a GHG Reduction Plan for the planning area that implements the GHG Emission Reduction to below the numerical threshold or adopt feasible reduction measures to reach GHG reduction target and come below numerical threshold.</p> <p>Notes:</p> <p>Difficult to establish appropriate emission threshold per ton for each type of non-project – any generic threshold could be challenged as not being based on actual impact..</p>	<p>3) if above 900 tpy threshold then provide onsite and offsite mitigation to reduce GHG emissions to below threshold.</p>	<p>and</p> <p>3) if above 900 tpy threshold then provide onsite and offsite mitigation to reduce GHG emissions to below threshold.</p>	<p>of project, and</p> <p>3) if above xxx tpy threshold then provide onsite and offsite mitigation to reduce GHG emissions to below threshold.</p> <p>Notes:</p> <p>This example shows the difficulty of establishing appropriate emission threshold per ton for each type of project – any generic threshold could be challenged as not being based on actual impact. Also not certain determining a threshold for every type of project is feasible or viable</p>	<p>project,</p> <p>2) inventory energy needs of project, and</p> <p>3) if above xxx tpy threshold then provide onsite and offsite mitigation to reduce GHG emissions to below threshold.</p>	<p>energy needs of project, and</p> <p>3) if above xxx tpy threshold then provide onsite and offsite mitigation to reduce GHG emissions to below threshold.</p>
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Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
<b>Option 2</b> State GHG Reduction Requirements	<p>The County would have to show its CP meets the state required reductions in order to be considered less than significant.</p> <p>The County must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions,</li> <li>its current emissions, and</li> <li>its projected emissions reasonably attributable to county's land use decisions and internal government operations.</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target by 2050 requirement.</li> <li>Develop mitigation measures to meet target emissions level</li> </ol> <p>Any proposal that does not meet the reduction (net emissions) state levels,</p>	<p>The local jurisdiction would have to show the rezone meets the state required reductions in order to be considered less than significant.</p> <p>The jurisdiction must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions,</li> <li>its current zoning emissions, and</li> <li>its projected emissions reasonably attributable to rezone</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target by 2050 requirement.</li> <li>Develop mitigation measures to meet target</li> </ol>	<p>The Project would have to show that it will meet the required reductions based on the average reductions needed from the 1990 emission levels from all GHG sources.</p> <p>The Project must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions – this could be 1990 emissions for that sector,</li> <li>its projected future emissions.</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target by 2050 requirement.</li> <li>Develop mitigation measures to meet target emissions level, or</li> <li>Exceed threshold</li> </ol>	<p>The Project would have to show that it will meet the required reductions based on the average reductions needed from the 1990 emission levels from all GHG sources.</p> <p>The Project must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions – this would likely be 1990 emissions for that sector,</li> <li>its projected future emissions.</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target by 2050 requirement.</li> <li>Develop mitigation measures to meet target emissions level, or</li> <li>Exceed threshold</li> </ol>	<p>The Project would have to show that it will meet the required reductions based on the average reductions needed from the 1990 emission levels from all GHG sources.</p> <p>The Project must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions</li> <li>its projected future emissions</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target by 2050 requirement.</li> <li>Develop mitigation measures to meet target emissions level , or</li> <li>Exceed</li> </ol>	<p>The Project would have to show that it will meet the required reductions based on the average reductions needed from the 1990 emission levels from all GHG sources.</p> <p>The Project must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions</li> <li>its projected future emissions</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target by 2050 requirement.</li> <li>Develop mitigation measures to meet target</li> </ol>	<p>The Project would have to show that it will meet the required reductions based on the average reductions needed from the 1990 emission levels from all GHG sources.</p> <p>The Project must:</p> <ol style="list-style-type: none"> <li>determine 1990 emissions</li> <li>its projected future emissions</li> <li>It then calculates the necessary reductions/net emissions to meet 50% below 1990 target</li> </ol>

	would be considered to have significant impacts on climate.	emissions level		threshold	emissions level, or	by 2050 requirement.
		<p>Note:</p> <p>This issue may be better/easier addressed within the local jurisdiction's GHG Reduction Plan – e.g., if the rezone is part of an approved GHG Reduction Plan it would not have a significant impact – and let specific GHG impacts of project be evaluated at the project level</p>	<p>The required reductions could be determined on a case-by-case basis as stated above.</p> <p>Alternatively, a state agency or local government could allocate the required reductions by project type.</p>	<p>The required reductions could be determined on a case-by-case basis as stated above.</p> <p>Alternatively, a state agency or local government could allocate the required reductions by project type.</p>	<p>The required reductions could be determined on a case-by-case basis as stated above.</p> <p>Alternatively, a state agency or local government could allocate the required reductions by project type</p> <p>Question: Does the Project measure emissions for entire operations or just emissions resulting from expansion</p>	<p>5) Exceed threshold</p> <p>The required reductions could be determined on a case-by-case basis as stated above.</p> <p>Alternatively, a state agency or local government could allocate the required reductions by project type</p> <p>4. Develop mitigation measures to meet target emissions level, or</p> <p>5. Exceed threshold</p> <p>The required reductions could be determined on a case-by-case basis as stated above.</p> <p>Alternatively, a state agency or local government could allocate the required reductions by project type.</p>

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
Option 3 Uniform % Based Reduction	The County would follow the same steps as option 2 except that the % threshold would be different than that set in state's recent legislation	The local jurisdiction would follow the same steps as option 2 except that the % threshold would be different than that set in state's recent legislation	<p>The project would be required to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources to be considered less than significant. (E.g., the threshold could be 15 tpy per residential unit (25% below BAU) and 50 tpy per 1000 sq. ft. retail (25% below BAU)).</p> <p>It would follow the same steps as option 2 except that the % threshold may be different than that set in state's recent legislation or it may be the same except not applied on a case by case basis but a standard for that project type</p>	<p>The project would be required to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources to be considered less than significant. (E.g., the threshold could be 15 tpy per residential unit (25% below BAU))</p> <p>It would follow the same steps as option 2 except that the % threshold may be different than that set in state's recent legislation or it may be the same except not applied on a case by case basis but a standard for that project type</p>	<p>The project would be required to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources to be considered less than significant.</p> <p>It would follow the same steps as option 2 except that the % threshold may be different than that set in state's recent legislation or it may be the same except not applied on a case by case basis but a standard for that project type</p>	<p>The project would be required to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources to be considered less than significant. (E.g., the threshold could be xxx tpy per xxx sq ft industrial (25% below BAU))</p> <p>It would follow the same steps as option 2 except that the % threshold may be different than that set in state's recent legislation or it may be the same except not applied on a case by case basis but a standard for</p>	<p>The project would be required to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources to be considered less than significant. (E.g., the threshold could be XXX tpy per sq. ft. commercial (25% below BAU))</p> <p>It would follow the same steps as option 2</p>

			that project type except that the % threshold may be different than that set in state's recent legislation or it may be the same except not applied on a case by case basis but a standard for that project type.
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Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
<p><u>Option 4</u> Standard Threshold By Project Type/ By Economic Sector or by Region</p>	<p>Under this category, a threshold standard could be set for cities and counties based on the size/scale of the local jurisdiction. The County would then have to show its CP meets the threshold in order to be considered less than significant.</p> <p>The County must:</p> <ol style="list-style-type: none"> <li>determine County emissions,</li> <li>and its projected emissions reasonably attributable to county's land use decisions and internal government operations.</li> <li>It then calculates the necessary reductions/net emissions to meet threshold requirement.</li> <li>Develop mitigation measures to meet target emissions level</li> </ol> <p>Any proposal that does not</p>	<p>Under this category, a threshold standard could be set for type of the rezone. The local jurisdiction would then have to show rezone meets the threshold in order to be considered less than significant.</p> <p>The local jurisdiction must:</p> <ol style="list-style-type: none"> <li>determine projected emissions reasonably attributable to rezone</li> <li>It then calculates the necessary reductions/net emissions to meet threshold requirement.</li> <li>Develop mitigation measures to meet target</li> </ol>	<p>Threshold would set the unit threshold based on number that would capture approximately 90 percent of the residential units and 90 percent of the office/commercial. (E.g., threshold set at 50 residential units; 30,000 sq ft office/commercial).</p> <p>Then if GHG emissions associated with 50 single-family residential units is 900 metric tons/yr, the residential threshold is 900 metric tons</p> <p>Similar approach for office/commercial with threshold being 30,000 square feet and GHG emissions associated with 30,000 sq ft</p> <p>If the project exceeds that size it would be considered to have a</p>	<p>Threshold would set the unit threshold based on number that would capture approximately 90 percent of the residential units. (E.g., threshold set at 50 residential units. )</p> <p>Then if GHG emissions associated with 50 single-family residential units is xxx metric tons</p> <p>If the project exceeds that size it would be considered to have a significant impact. The project could then use mitigation to bring itself below the emissions level of xxx tons for 50 residential units/ xxx tons for 30,000 sq. ft. office/commercial</p>	<p>Threshold would set the unit threshold based on number that would capture approximately 90 percent of the industry/forest sales. (E.g., threshold set at 70 acres )</p> <p>Then if GHG emissions associated with forest sale of 70 acres is xxx metric tons/yr, the threshold is xxx metric tons</p> <p>If the forest sale project exceeds that size it would be considered to have a significant impact. The project could then use mitigation to bring itself below the emissions level of xxx tons for forest sale</p>	<p>Threshold would set the unit threshold based on number that would capture approximately 90 percent of the industry</p> <p>If the project exceeds that Threshold standard it would be considered to have a significant impact. The project could then use mitigation to bring itself below the emissions level set for industry</p>	<p>Threshold would set the sq. ft. threshold based on number that would capture approximately 90 percent of the commercial. (E.g., threshold set at 30,000 sq ft commercial.)</p> <p>If the project exceeds that size it would be considered to have a significant impact. The project could then use mitigation to bring itself below the emissions level of 30,000 sq. ft. commercial</p>

	meet the threshold (net emissions) would be considered to have significant impacts on climate.	emissions level  Any proposal that does not meet the threshold would be considered to have significant impacts on climate.	significant impact. The project could then use mitigation to bring itself below the emissions level of 50 residential units/ 30,000 sq. ft. office/commercial
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Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
<u>Option 5</u> Decision Tree	<p>Emissions associated with a Comprehensive plan are assumed to have a significant impact unless one can arrive at a less-than-significant finding by:</p> <p>a. Demonstrating that a planning document is in compliance with State’s goal or other accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</p> <p>If meets threshold then less than significant,</p> <p>If not meet threshold</p>	<p>Emissions associated with a rezone are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <ul style="list-style-type: none"> <li>• That the rezone is exempt</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the rezone is on a Green List</li> </ul> <p><b>OR</b></p>	<p>Emissions associated with a mixed use residential project are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <ul style="list-style-type: none"> <li>• That the project is exempt</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project is on a Green List</li> </ul> <p><b>OR</b></p>	<p>Emissions associated with a subdivision project are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <ul style="list-style-type: none"> <li>• That the project is exempt</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project is on a Green List</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project</li> </ul>	<p>Emissions associated with a timber sale project are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <ul style="list-style-type: none"> <li>• That the project is exempt</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project is on a Green List</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project</li> </ul>	<p>Emissions associated with a Port project are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <ul style="list-style-type: none"> <li>• That the project is exempt</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project is on a Green List</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project</li> </ul>	<p>Emissions associated with project are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <ul style="list-style-type: none"> <li>• That the project is exempt</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project is on a Green List</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• That the project is consistent with</li> </ul>

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
	<p>then, County must mitigate/offset to below threshold -- Tier 2- MDNS</p> <p>If Tier 2 mitigation does not meet threshold then reach 3<sup>rd</sup> Tier mitigation measures.</p> <p>Third Tier involves more aggressive mitigation measures as well as offset purchases to meet threshold.</p> <p>If not mitigate/offset to threshold after the 3<sup>rd</sup> Tier, then EIS is needed.</p>	<ul style="list-style-type: none"> <li>That rezone is consistent with local and regional jurisdictions' GHG Reduction Plan</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>That it meets accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>That the project is consistent with local and regional jurisdictions' GHG Reduction Plan</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>That the project meets accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</li> </ul>	<p>is consistent with local and regional jurisdictions' GHG Reduction Plan</p> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>That the project meets accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</li> </ul>	<p>is consistent with local and regional jurisdictions' GHG Reduction Plan</p> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>That the project meets accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</li> </ul>	<p>is consistent with local and regional jurisdictions' GHG Reduction Plan</p> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>That the project meets accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</li> </ul>	<p>local and regional jurisdictions' GHG Reduction Plan</p> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>That the project meets accepted standard threshold (zero-threshold, uniform % reduction threshold, etc.).</li> </ul> <p>If meets threshold then less than significant,</p> <p>If not meet threshold then, County must mitigate/offset to below threshold -- Tier 2- MDNS</p> <p>If Tier 2 mitigation does not meet threshold then reach 3<sup>rd</sup> Tier mitigation measures.</p> <p>Third Tier</p>

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
		threshold then reach 3 <sup>rd</sup> Tier mitigation measures.	threshold then reach 3 <sup>rd</sup> Tier mitigation measures.	reach 3 <sup>rd</sup> Tier mitigation measures.	mitigation measures.	mitigation measures.	involves more aggressive mitigation measures as well as offset purchases to meet threshold.
		Third Tier involves more aggressive mitigation measures as well as offset purchases to meet threshold.	Third Tier involves more aggressive mitigation measures as well as offset purchases to meet threshold.	Third Tier involves more aggressive mitigation measures as well as offset purchases to meet threshold.	Third Tier involves more aggressive mitigation measures as well as offset purchases to meet threshold.	Third Tier involves more aggressive mitigation measures as well as offset purchases to meet threshold.	involves more aggressive mitigation measures as well as offset purchases to meet threshold.
		If not mitigate/offset to threshold after the 3 <sup>rd</sup> Tier, then EIS is needed.	If not mitigate/offset to threshold after the 3 <sup>rd</sup> Tier, then EIS is needed.	If not mitigate/offset to threshold after the 3 <sup>rd</sup> Tier, then EIS is needed.	If not mitigate/offset to threshold after the 3 <sup>rd</sup> Tier, then EIS is needed.	If not mitigate/offset to threshold after the 3 <sup>rd</sup> Tier, then EIS is needed.	If not mitigate/offset to threshold after the 3 <sup>rd</sup> Tier, then EIS is needed.

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
Option 6 Alternative Decision Tree Approach	<p>Emissions associated with a Comprehensive Plan are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed in other regulatory requirement?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then: Those GHG emissions not addressed by a regulatory structure would undergo SEPA analysis.</p> <p>The County must: 1 determine County's remaining unaddressed emissions, and 2 its projected emissions reasonably attributable to county's land use decisions and</p>	<p>Emissions associated with a rezone are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then: Those GHG emissions not addressed by a</p>	<p>Emissions associated with a mixed use residential are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then: Those GHG emissions not addressed by a regulatory structure or a Comprehensive GHG Reduction Plan would undergo</p>	<p>Emissions associated with a suburban subdivision are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then: Those GHG emissions not addressed by a regulatory structure or a Comprehensive GHG Reduction Plan would undergo</p>	<p>Emissions associated with a 75 acre timber sale are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then: Those GHG</p>	<p>Emissions associated with a Port Expansion are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then:</p>	<p>Emissions associated with a boxed store are assumed to have a significant impact unless one can arrive at a less-than-significant finding by demonstrating:</p> <p>Tier 1: 1) Are all GHG emissions addressed by a Comprehensive GHG Reduction Plan or a regulatory structure (local, state, and federal requirements requiring reduction in emissions)?</p> <p>If YES, then no SEPA analysis of emissions required.</p> <p>If NO, then:</p>

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
	<p>internal government operations.</p> <p>3 It then calculates the necessary reductions/net emissions to meet threshold requirement.</p> <p>4 Develop mitigation measures to meet target emissions level</p> <p>If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>	<p>regulatory structure or a Comprehensive Plan would undergo SEPA analysis.</p> <p>2) Calculate the remaining emissions. If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>	<p>SEPA analysis.</p> <p>2) Calculate the remaining emissions. If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>	<p>SEPA analysis.</p> <p>2) Calculate the remaining emissions. If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>	<p>emissions not addressed by a regulatory structure or a Comprehensive Plan would undergo SEPA analysis.</p> <p>2) Calculate the remaining emissions. If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>	<p>Those GHG emissions not addressed by a regulatory structure or a Comprehensive Plan would undergo SEPA analysis.</p> <p>2) Calculate the remaining emissions. If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>	<p>Those GHG emissions not addressed by a regulatory structure or a Comprehensive Plan would undergo SEPA analysis.</p> <p>2) Calculate the remaining emissions. If the remaining emissions do not exceed the standard threshold determination a DNS would be issued for the project.</p> <p>If they do, go to Tier 2 MDNS</p> <p>Tier 2: 1) If remaining emissions exceed the threshold determination, then mitigate the remaining emissions to bring below the selected standard threshold. (MDNS) 2) If cannot reduce below the selected standard threshold, then to Tier 3</p>

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
	<p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>	<p>standard threshold. (MDNS)</p> <p>2) If cannot reduce below the selected standard threshold, then to Tier 3</p> <p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>	<p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>	<p>then to Tier 3</p> <p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>	<p>threshold. (MDNS)</p> <p>2)If cannot reduce below the selected standard threshold, then to Tier 3</p> <p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>	<p>threshold. (MDNS)</p> <p>2)If cannot reduce below the selected standard threshold, then to Tier 3</p> <p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>	<p>bring below the selected standard threshold. (MDNS)</p> <p>2)If cannot reduce below the selected standard threshold, then to Tier 3</p> <p>Tier 3: If need further aggressive mitigation or offsets to bring GHG emissions below the threshold, then apply to to reach MDNS</p> <p>Tier 4: For projects unable to meet threshold after mitigation and offset, then EIS.</p>
<b>Possible Mitigation</b>	<p>Examples of Comprehensive Plan mitigation to reduce below threshold:</p> <ul style="list-style-type: none"> <li>High-density developments that reduce VMT</li> </ul>	<p>Elements of rezone mitigation to reduce below threshold:</p> <p>Mitigation from</p>	<p>Elements of mixed use residential mitigation to reduce below threshold:</p> <p>Mitigation from</p>	<p>Elements of subdivision mitigation to reduce below threshold:</p> <p>Mitigation from</p>	<p>Elements of rezone Timber Sale to reduce below threshold:</p> <p>Mitigation from</p>	<p>Elements of Port Expansion mitigation to reduce below threshold:</p>	<p>Elements of Boxed Store mitigation to reduce below threshold:</p>

Significance Threshold	Non-Project: County Comprehensive Plan	Rezone	Major Mixed Use Residential	Small Suburban Subdivision	75-acre DNR Timber Sale (not conversion)	Port Expansion	Boxed Store
	<ul style="list-style-type: none"> <li>• Increase opportunities for public transit</li> <li>• Parking spaces for high-occupancy vehicles and car-share programs</li> <li>• Limits on parking</li> <li>• Transportation impact fees on developments to fund public transit service</li> <li>• Regional transportation centers where various types of public transportation meet</li> <li>• Energy efficient design for buildings, appliances, lighting, and office equipment</li> <li>• Solar panels, water reuse systems, and on-site renewable energy production</li> <li>• Methane recovery in landfills and wastewater treatment plants to generate electricity</li> <li>• Carbon emissions credit purchases that fund alternative energy projects</li> <li>• Preservation of open space/forest/carbon sink areas</li> </ul>	Mitigation Group	Mitigation Group	Mitigation Group	Mitigation Group	Mitigation from Mitigation Group	Mitigation from Mitigation Group

**I.4 (Draft) Sub-options for Addressing Significance in Statewide Standard, Framework, Safe Harbor, and Procedural Option**

<b>Significance threshold sub-options<sup>9</sup></b>	<b>Which projects would be significant?</b>	<b>As a Statewide Standard?</b> all decisions in law, Ecology rule or guidance  <b>Decisions<sup>10</sup></b>	<b>As a Framework?</b> some decisions set by Ecology, some by agencies <sup>11</sup>  <b>Example</b>	<b>As a Safe Harbor?</b> <u>Law or rule</u> Agencies required to set a threshold <b>Example</b>
<b>Zero</b>				
<b>Zero</b>	Any non exempt proposal with emissions	D.1 nonexempt proposals with listed emission sources is "significant". D.2 emission sources D.3 methodology/formula for emissions and mitigation	<u>Ecology rule or guidance</u> D.1 <u>Decisions available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>D.2 or select portions of list, may incorporate Green list</li> <li>D.3 or choose from a list</li> </ul>	<u>Agencies set:</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.3, for agencies that do not set a threshold
<b>Non-zero</b>				
<b>Opt 1. Exceeding 'x' GHG emission amount</b>	All non exempt proposals exceeding one set number	D.1 threshold number D.2 emission sources D.3 methodology/formula for emissions and mitigation	<u>Ecology rule or guidance:</u> D.1 <u>Decisions available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>D.2 or select portions of list, may incorporate Green list</li> <li>D.3 or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.3, for agencies that do not set a threshold
<b>Opt 2. Meet State GHG requirement</b>	All non exempt proposals exceeding state GHG requirement using - a case-by-case fair share or - the county's allocated	D.1 GHG requirements determines the significance threshold for any non exempt proposal D.2 methodology/formula for translating the State GHG requirement for a specific proposal D.3 emission sources D.4 formula for calculating	<u>Ecology rule or guidance:</u> D.1 <u>Decisions available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>D.2 or choose from a list</li> <li>D.3 or choose from a list</li> <li>D.4 or select portions of list, may incorporate Green list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.4, for agencies that do not set a threshold

<sup>9</sup> All sub-options listed above could be in statute/rule or in guidance

Sub-options at the beginning of the matrix are less complex and less suitable for a framework approach. Later suboptions are more suitable for a framework approach.

<sup>10</sup> Mitigation and MDNS mitigation levels would likely be another decision covered.

<sup>11</sup> For those decisions listed as available to agencies or set by Ecology, Ecology would decide who makes those decisions →Ecology or other agencies.

Significance threshold sub-options <sup>9</sup>	Which projects would be significant?	As a Statewide Standard? all decisions in law, Ecology rule or guidance  <b>Decisions<sup>10</sup></b>	As a Framework? some decisions set by Ecology, some by agencies <sup>11</sup>  <b>Example</b>	As a Safe Harbor? <u>Law or rule</u> Agencies required to set a threshold <b>Example</b>
	share	emissions and calculating mitigation		
<b>Opt 3. Uniform Percentage-Based Reduction</b>	Any project not achieving an “x” percentage reduction below business as usual	D.1 determine threshold using percentage based reduction approach D.2 percentage reduction amount D.3 formula/process for calculating a proposal’s reduction percentage D.4 emission sources D.5 methodology/formula for emissions and mitigation	<u>Ecology rule or guidance:</u> D.1 <u>Decisions available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>• D.2 or choose from a list of choices</li> <li>• D.3 or choose from a list</li> <li>• D.4 or select portions of list, may incorporate Green list</li> <li>• D.5 or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.5, for agencies that do not set a threshold
<b>Opt 4. Standard threshold by project type</b>	Proposals exceeding the (>0) number set for their project type. <u>Approach 1:</u> based on market capture <u>Approach 2:</u> % based	D.1 project types D.2 determine threshold for each project type (residential, office, industrial) D.3 emission sources D.4 methodology/formula for emissions and mitigation by project type	<u>Ecology rule or guidance:</u> D.1 <u>Decisions available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>• D.2 or choose within range set by Ecology</li> <li>• D.3 or select portions of list, may incorporate Green list</li> <li>• D.4 or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.4, for agencies that do not set a threshold
	<u>Approach 3:</u> Proposals exceeding GHG emission amount adopted by local  <i>(one variation of Approach 1 or 2)</i>		<u>Ecology rule or guidance</u> <ul style="list-style-type: none"> <li>• D.1 set range for each project type (residential, office, industrial)</li> </ul> <u>Decisions available to agencies</u> <ul style="list-style-type: none"> <li>• D.2 choose threshold for each project type within range set by Ecology</li> </ul> <u>Decisions available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>• D.3. select list or portions of list, may incorporate Green list</li> <li>• D.4 methodology/formula for calculating emissions and mitigation by project type or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.5, for agencies that do not set a threshold

Significance threshold sub-options <sup>9</sup>	Which projects would be significant?	As a Statewide Standard? all decisions in law, Ecology rule or guidance  <b>Decisions</b> <sup>10</sup>	As a Framework? some decisions set by Ecology, some by agencies <sup>11</sup>  <b>Example</b>	As a Safe Harbor? <u>Law or rule</u> Agencies required to set a threshold <b>Example</b>
	<u>Approach 4:</u> Proposals on the significant project-type list	D.1 project types exceeding emission threshold D.2 emission sources D.3 methodology/formula for emissions D.4 mitigation by project type	<u>Ecology rule or guidance:</u> D.1 may designate a range to choose from <u>Options available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>• D.2 or select portions of list, may incorporate Green list</li> <li>• D.3 or choose from a list</li> <li>• D.4 or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.4, for agencies that do not set a threshold
	<u>Approach 5:</u> Proposals exceeding a set size (rather than calculated GHG number)	D.1 size threshold by project type D.2 emission sources D.3 methodology for emissions and mitigation by project type	<u>In rule or guidance:</u> D.1 <u>Options available to agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>• D.2 or select portions of list, may incorporate Green list</li> <li>• D.3 or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.3, for agencies that do not set a threshold
<b>Opt 5. Tiered approach with Decision tree</b>	Proposals which exceed the threshold by all paths made available	D.1 paths which may be used D.2 process for applying paths D.3 thresholds for each path D.4 emission sources D.5 formula/methodology for emissions and mitigation for each path	<u>In rule or guidance:</u> D.1 D.2 <u>Options available tor agencies or set by Ecology:</u> <ul style="list-style-type: none"> <li>• D.3 or choose from a range/list</li> <li>• D.4 or select portions of list, may incorporate Green list</li> <li>• D.5 or choose from a list</li> </ul>	<u>Agencies set</u> Any decision acceptable  <u>Set by Ecology</u> D.1 through D.5, for agencies that do not set a threshold

### I.5 Analysis of Implications of Approaches for Statewide Consistency (Draft 9/26/08):

If there is a statewide standard, should it be established in statute, regulation or guidance?

<b>Statewide Standard Implications</b>	<b>Statutory Requirement</b>	<b>Regulatory (SEPA WAC)</b>	<b>Ecology Guidance</b>
<b>Level of statewide consistency and applicant predictability</b>	Fairly high – depending on level of guidance and implementation flexibility	Fairly high, could also depend/ change depending on additional requirements in SEPA rules	Medium – depending on ease of implementation, effectiveness of guidance and training
<b>Level of flexibility for implementation and modification of standard</b>	Low	Low	Medium-High
<b>Risk of litigation</b>	Depends on the actual standard, but would likely be litigated at state level with possible challenges to agencies at implementation stage when following the standard for specific SEPA proposals	Challenge would likely be focused on rulemaking, but could also include litigation with agencies at implementation stage.	Challenges would likely be directed at each agency when standards are set or specific proposals evaluated under SEPA
<b>Risk of nullifying categorical exemptions</b>	Statute might be able include a provision to address undermining “significance” issue for categorical exemptions in 197-11-800	Rules could possibly include a provision (need to double check on this) to address undermining exemptions in rule	Unknown, but some risk given GHG emissions have not been considered when setting exemption levels
<b>Level of burden for agencies to implement standard</b>	Depends on standard and available tools, guidance and training, but lower burden than setting own standard	Same as statutory	Depends on if agency follows the recommended standard
<b>Level of guidance needed</b>	High	High	High – perhaps higher in order to justify specific standard that would otherwise be justified in rulemaking or legislation.

**If there is flexibility to set a local standard, should it be established in statute, regulation or guidance?**

<b>Flexible Local Standard Implications</b>	<b>Statutory Requirement</b>	<b>Regulatory (SEPA WAC)</b>	<b>Ecology Guidance</b>
<b>Level of statewide consistency and applicant predictability</b>	Medium – depending on degree of flexibility and ease of implementation, effectiveness of guidance and training	Medium – depending on degree of flexibility and ease of implementation, effectiveness of guidance and training	Medium – depending on degree of flexibility and ease of implementation, effectiveness of guidance and training
<b>Level of flexibility for implementation and modification of standard</b>	Medium-low	Medium-low	High
<b>Risk of litigation</b>	Depends on the actual standard, but would likely be litigated at state level with possible challenges to agencies setting their specific standard	Challenge would likely be focused on rulemaking, but could also include litigation with agencies on setting their specific standards.	Challenges would likely be directed at each agency when standards are set or specific proposals evaluated under SEPA
<b>Risk of nullifying categorical exemptions</b>	Statute could possibly include a provision to address undermining “significance” issue for categorical exemptions in 197-11-800	Rules could possibly include a provision (need to double check on this) to address undermining exemptions in rule	Unknown, but some risk given GHG emissions have not been considered when setting exemption levels
<b>Level of burden for agencies to implement standard</b>	Depends on range of standards and available tools, guidance and training	Same	Same
<b>Level of guidance needed</b>	High	High	High – perhaps more in order to justify specific range of standards, this would otherwise be justified in rulemaking or legislation.

## I.6 Project Emissions Thresholds Comparison

Name of Project	Description of Project	Estimated Project Emissions (MTCO <sub>2e</sub> /yr)	Allowable Emissions after a 15% Reduction	Allowable Emissions after a 30% Reduction	Allowable Emissions after a 50% Reduction	Allowable Emissions after a 80% Reduction	Allowable Emissions after a 90% Reduction	If set bright line of based on market capture of 90% (assuming CAPCOA #s here)**	Methodology of Estimate
California - Gateway Community Development Project D E   R	810 new residential units, approx. 25,950 sq. ft. of commercial space, and approx. 160,000 sq. ft. of open space	9,895	8,411	6,927	4,948	1,979	990	900	GHG emissions associated with the proposed project were calculated using the URBEMIS 2007 Version 9.2.0 model of the California Air Resources Board and trip generation data from the project traffic analysis. Most emissions come from heating and cooling water and from transportation. Also included are significant emissions from solid waste.
California - San Rafael Rock Quarry Amended Quarry Permit Draft E   R	Crush, sort, and stockpile earth and rock quarried from the site, dock and load barges with earth, sand, and rock quarried from the site, operate an asphalt batch plant, and load and weigh commercial trucks that export and transport material over Point San Pedro Road	36,871	31,340	25,810	18,435	7,374	3,687	900	(Mostly from offsite trucks and tugboats). Based on current emissions.
California - Keiser Park Draft E   R	Construct a recreation center, an aquatic center (with two swimming pools), three ball fields (two with soccer field overlays and one with lighting), restroom facilities, and two children's play areas	1,599	1,359	1,119	800	320	160	900	Master Plan CO <sub>2</sub> emissions estimates were made using URBEMIS 2007 v.9.2.2 with trip generation data from the traffic report and other information from the project description
California - El Segundo Refinery -	Chevron is proposing modifications to an installation of new equipment at the El Segundo Refinery. Proposed	281,150	238,978	196,805	140,575	56,230	28,115	900	Most emissions in unmitigated scenario were for purchased electricity, a new boiler, and a tail gas unit incinerator.

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Product Reliability and Optimization Project Draft EIR	modifications will occur in the No. 2 Crude Unit, No. 2 Residuum Stripper Unit, Minalk/Merox Unit, Waste Gas Compressors, Fluidized Catalytic Cracking Unit, Alkylation Unit, Vacuum Residuum Desulfurization Unit, ISOMAX Unit, Cogeneration Facilities, Railcar Loading/Unloading Rack, and improvements to electricity and water service systems. New process units include sulfur processing facilities (i.e., Sour Water Stripper, Sulfur Recovery Unit, and Tail Gas Unit), Vapor Recovery and Flare System, Water Treatment Facilities (i.e., reverse osmosis units and oxygen units and oxygen removal units), additional storage capacity, a new cooling tower, and hydrogen compression and transfer facilities. Before proposed mitigation:								Most emissions in the mitigated scenario are from a new cogeneration facility.
	After proposed mitigation:	193,910	164,824	135,737	96,955	38,782	19,391		
Hospital	King County - Average Sized In Patient Health Care Facility (241,000 square feet)	9,875	8,394	6,913	4,938	1,975	100		King County Worksheet. Very rough estimate only includes transportation of employees.
Lodge	King County - Average Sized Lodge (36,000 square feet)	534	454	374	267	107	53		King County Worksheet. Very rough estimate only includes transportation of employees.
Reading Woods	Demolish six buildings within an office and warehouse park in order to construct 202 housing units, 160 units of senior housing and assisted living	44,624	37,930	31,237	22,312	8,925	4,462	900	Included a GHG analysis, using the EQUEST model to compute direct and indirect CO <sub>2</sub> emissions from stationary sources and the USEPA's COMMUTER

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	facilities, 16 townhouses, and 160,000 square feet of office space, and parking for 1,061 vehicles on a 24.8 acre site								model Version 2 to estimate changes in CO <sub>2</sub> emissions due to roadway mitigation and traffic demand management measures.
Shoppe at Harrington Farms	Two phased development of approximately 113,000 sq ft supermarket, retail and a restaurant, in three separate buildings on a 24.8 in total utilizing approximately 113,000 square feet in suburban area. It will generate approximately 7,281 new avg daily trips	7,504	6,394	5,253	3,752	1,501	750	900	Direct and indirect carbon dioxide (CO <sub>2</sub> ) emissions from the proposed direct and indirect building sources were calculated using the Tech Environmental Energy Model. CO <sub>2</sub> emissions produced by the project-generated vehicle trips were analyzed using the EPA MOBILE 6.2 Source Emission Factor Model.
Lowe's Home Centers, Inc.	The project involves the redevelopment of a 16.3-acre parcel of commercial and industrial property to include a 151,000 sf Lowe's home improvement retail store with attached garden center. The project site is located across from the MBTA Quincy Adams Red Line station in Quincy.	6,418	5,455	4,493	3,209	1,284	642	900	In the analysis, the Proponent calculated GHG emissions from both mobile and stationary sources. The GHG emissions analysis evaluated the change in carbon dioxide (CO <sub>2</sub> ) emissions from project-related traffic and proposed building sources. Direct and indirect CO <sub>2</sub> emissions from the proposed building sources were calculated using the Tech Environmental Energy Model.
Westinghouse Redev't	The project involves 40 acres of mostly developed land. The site currently contains approximately 916,000 sf of development in the form of multiple warehouses, manufacturing buildings and surface parking for approximately 900 vehicles. The project includes the complete redevelopment of the project site with approximately 470,000 sf of retail and restaurant uses	9,526	8,097	6,668	4,763	1,905	953	900	Direct and indirect carbon dioxide (CO <sub>2</sub> ) emissions from the proposed building sources were calculated using the EQUEST model. The Proponent evaluated the change in CO <sub>2</sub> emissions from project-related traffic and proposed building energy consumption sources for the 2007 Existing, the 2012 No-Build, the 2012 Build and the 2012 Build with Improvements Conditions.

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	(a net reduction of 446,000 sf) and 2,059 parking spaces								

\*\* Under CAPCO, the quantitative threshold based on Market Capture (90% of projects/ 900 tpy) would capture residential dev't > 50 dwu; office space > 36,000 sq. ft.; retail space > 11,000 sq. ft.; supermarket > 6,300 sq. ft.; and small, medium, and large industrial.

**Sources and Notes for Project Emissions Thresholds Comparison**

Name of Project	Source	Notes:
California - Gateway Community Development Project DEIR	<a href="http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1269">http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1269</a>	KC Worksheet estimates 11,985 MTCO <sub>2</sub> e/year for this project using multi-family units in a large building, including embodied emissions and not including the "open space".
California - San Rafael Rock Quarry Amended Quarry Permit Draft EIR	<a href="http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1751">http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1751</a>	
California - Keiser Park Draft EIR	<a href="http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1765">http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1765</a>	
California - El Segundo Refinery - Product Reliability and Optimization Project Draft EIR	<a href="http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1786">http://www.ceqamap.com/search_ghg.php?mode=view&amp;action=view&amp;id=1786</a>	
Hospital	<a href="http://www.metrokc.gov/ddes/forms/SEPA-GHG-EmissionsWorksheet-Bulletin26.xls">http://www.metrokc.gov/ddes/forms/SEPA-GHG-EmissionsWorksheet-Bulletin26.xls</a>	
Lodge	<a href="http://www.metrokc.gov/ddes/forms/SEPA-GHG-EmissionsWorksheet-Bulletin26.xls">http://www.metrokc.gov/ddes/forms/SEPA-GHG-EmissionsWorksheet-Bulletin26.xls</a>	
Reading Woods		
Shoppe at Harrington Farms	<a href="http://www.mass.gov/envir/mepa/pdffiles/certificates/051608/14222eef.pdf">http://www.mass.gov/envir/mepa/pdffiles/certificates/051608/14222eef.pdf</a>	
Lowe's Home Centers, Inc.	<a href="http://www.mass.gov/envir/mepa/pdffiles/certificates/051608/14222eef.pdf">http://www.mass.gov/envir/mepa/pdffiles/certificates/051608/14222eef.pdf</a>	The existing project site contains approximately 8 separate commercial and industrial buildings (approximately 159,000 sf total), approximately 377 surface parking, a 1,050 linear foot. The redevelopment project will involve the demolition of the approximately eight existing buildings and structures (15 1,000 sf total) and the construction of a new 124,216 sf Lowe's Home Improvement Store with a 29,926 sf garden center, 435 surface parking spaces, and new stormwater management infrastructure.
Westinghouse Redev't	<a href="http://www.mass.gov/envir/mepa/pdffiles/certificates/041808/14205eef.pdf">http://www.mass.gov/envir/mepa/pdffiles/certificates/041808/14205eef.pdf</a>	