MEPA GHG Policy and Protocol

Policy Summary: The Massachusetts Environmental Policy Act (MEPA) requires that all major projects proposed in the Commonwealth that have state involvement (in the form of state permits, land transfers, or financial assistance, for example) undertake an assessment of project impacts and alternatives in an effort to avoid, minimize, and mitigate damage to the environment to the maximum extent feasible. Building on this general requirement, the MEPA GHG Policy requires that certain projects undergoing review by the MEPA office quantify their GHG emissions and identify measures to avoid, minimize, and mitigate such emissions. In addition to quantifying project-related GHG emissions, the MEPA GHG Policy also requires proponents to evaluate project alternatives that may result in lower GHG emissions, and to quantify the impact of proposed mitigation in terms of emissions and energy savings. The MEPA GHG Policy is primarily applied to commercial and residential real estate development projects, but also applies to industrial and energy generation projects.

Clean Energy Economy Impacts: By requiring project proponents to evaluate all feasible measures to reduce their GHG emissions, such as energy efficiency upgrades, fuel switching, incorporation of renewable energy measures, and reduction of vehicle miles traveled, the MEPA GHG Policy supports the development of industries and jobs to supply these technologies. In addition, the avoided fuel and electricity use, due to enhanced efficiency of projects, reduce long-term operational costs of the projects.

Rationale: The principal purpose of the MEPA GHG Policy is to require project proponents to undertake a thorough analysis of a project's primary sources of GHG emissions at an early stage of project planning, and to examine all feasible alternatives that may have lower GHG emissions potential. By conducting this early-stage impacts and alternatives analysis, project proponents can integrate directly into project planning sustainable design considerations that will allow the project to achieve GHG emissions reductions in the most economical manner.

Policy Design and Issues: For the majority of projects subject to the MEPA GHG Policy, the Policy requires comparison of emissions associated with the proposed project design to the emissions that would result from construction of an identical building code-compliant project. In this way, the MEPA GHG Policy is closely related to issues surrounding the adoption of *Advanced Building Energy Codes* and other energy efficiency improvements for buildings. Similarly, where the MEPA GHG Policy encourages adoption of renewable energy components, it is closely related to issues involved in the implementation of incentives for generating renewable energy (see the *Developing a Mature Market for Renewable Thermal Technologies* policy). The MEPA GHG Policy also aims to reduce vehicle miles traveled in coordination with other state policies.

GHG Impact: To date, more than 200 projects have initiated review in accordance with the MEPA GHG Policy, and more than 100 projects have completed MEPA review with a finding that their completed GHG analysis was consistent with the MEPA GHG Policy. Projects that had completed review have achieved an average reduction of 19 percent in stationary-source GHGs below an equivalent code-compliant project and an average reduction of 5%

percent in mobile sources. In total, the MEPA GHG Policy has resulted in commitments to reduce GHG emissions by over 190,000 metric tons of CO_2e per year. However, reductions associated with the MEPA GHG Policy may be duplicative of the reductions achieved by other state policies designed to increase efficiency, encourage renewable energy generation, and reduce vehicle miles traveled.

Costs: The upfront costs of incorporating GHG reduction measures will vary widely depending upon the project, and many costs will be offset through energy savings. Because the MEPA GHG Policy does not mandate a specified level of reductions, but rather asks project proponents to adopt "feasible" measures, measures that are considered infeasible from a cost perspective may be eliminated from consideration.

Experience in Other States: The MEPA GHG Policy is a nation-leading policy. Other states, including California and New York, have adopted similar policies, and the White House Council on Environmental Quality, which oversees implementation of the National Environmental Policy Act (NEPA) by federal agencies, has also released a draft policy concerning consideration of GHG emissions as part of the NEPA review of individual projects.

Legal Authority: The Global Warming Solutions Act specifically amended the MEPA statute to provide that:

In considering and issuing permits, licenses, and other administrative approvals and decisions, the respective agency, department, board, commission, or authority shall also consider reasonably foreseeable climate change impacts, including additional GHG emissions, and effects, such as predicted sea level rise. See M.G.L. c. 30, §61.

The MEPA GHG Policy was introduced and is being applied through MEPA review to address the Commonwealth's obligations under the GWSA.

Implementation Issues: The MEPA GHG Policy has become a routine part of the environmental impact review process. For real estate development projects, the assessment and review of a project's GHG analysis has become generally accepted by the regulated industry and the public.

MEPA GREENHOUSE GAS EMISSIONS POLICY AND PROTOCOL

GOALS AND OBJECTIVES

The Executive Office of Energy and Environmental Affairs (EEA) has determined that the phrase "damage to the environment" as used in the Massachusetts Environmental Policy Act (MEPA) includes the emission of greenhouse gases caused by Projects subject to MEPA review. EEA now issues the following Greenhouse Gas Emissions Policy to fulfill the statutory obligation to take all feasible measures to avoid, minimize, or mitigate damage to the environment.

The Policy requires that certain Projects undergoing review by the MEPA Office quantify the Project's greenhouse gas (GHG) emissions and identify measures to avoid, minimize, or mitigate such emissions. In addition to quantifying Project-related GHG emissions, the Policy also requires proponents to quantify the impact of proposed mitigation in terms of emissions and energy savings. EEA recognizes that this Policy will not itself avert climate change. However, this Policy is part of a larger effort to focus attention on the causes of climate change and harness creative thought and technology to implement long-term solutions.

EEA also recognizes that the GHG quantification required by this Policy will not result in absolutely accurate projections. The intent is not one hundred percent certainty as to the amount of GHG emissions; rather, it is a reasonably accurate quantitative analysis of emissions and potential mitigation that will allow the Project proponent and reviewers to assess the overall impact of the Project as proposed and the reduction in emissions if various techniques are used.

It should also be noted that this Policy is not intended to create a numerical GHG emission limit or a numerical GHG emission reduction target. Rather, in keeping with MEPA's overall purpose to evaluate alternatives that avoid, minimize and mitigate environmental impacts, the Policy is intended to ensure that Project proponents and reviewers have carefully considered the GHG impact of their Projects and taken all feasible means and measures to reduce those impacts.

APPLICABILITY

This Policy applies to new projects that file an Environmental Notification Form for MEPA review after the effective date of the Policy. The MEPA Office will review Notices of Project Change (NPC) for projects that filed an Environmental Impact Report (EIR) prior to the effective date of the Policy on an individual basis to determine whether the project will be required to comply with the Policy.

A Project[1] is subject to this Policy if an EIR is required for the Project, and if it falls into one or more of the following three categories:

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[1] Defined at 301 CMR 11.02.

1. Where MEPA has full scope jurisdiction as defined at 301 CMR 11.01(2)(a)(2) or equivalent full scope jurisdiction over the project as defined at 11.01(2)(a)(3)[2];
2. The Project is privately funded, but requires an Air Quality Permit from the Department of Environmental Protection;
3. The Project is privately funded, but requires a Vehicular Access Permit from the Massachusetts Highway Department.[3]

The Policy does not create new MEPA review thresholds or new subject matter jurisdiction where it does not already exist.

EEA/MEPA Greenhouse Gas Initiative Technical Advisory Committee

In April of 2007, the Secretary of Energy and Environmental Affairs convened a technical advisory committee (TAC) of agency officials, private air quality consultants, and other stakeholders to develop a standardized protocol for the EIR emissions analysis. The TAC reviewed existing emissions quantification protocols, evaluated energy modeling software and developed solutions for potential real-world challenges that the implementation of the Policy and Protocol might present for proponents. Staff from EEA and MEPA also met with other stakeholders from the real estate, construction and environmental community to gather input on the Policy and Protocol. EEA thanks the TAC for its work and is grateful for the insight and expertise of its members.

Emissions Quantification Protocol

General Guidance

For a Project subject to the GHG Policy, the Secretary's Certificate on the ENF will include a scope item for the quantification of Project-related GHG emissions. The proponent is then required to quantify the potential annual GHG emissions from the proposed Project according to the GHG Quantification Protocol (the Protocol) outlined below (or other protocols that are accepted on a case-by-case basis), and report in the EIR on the results of the analysis. Emissions should be expressed in short tons (2,000 lbs) per year (tpy). The intent of this Policy is to provide general guidance in the development of qualitative and quantitative GHG analysis. The proponent is encouraged to consult with the MEPA Office early in the design process regarding the scope and methodology for the analysis.

In the EIR, the proponent should also outline and commit to a series of mitigation measures that will help to reduce GHG emissions from the proposed Project. To demonstrate the efficacy of the mitigation, the proponent should measure emissions reductions and energy savings from the proposed measures according to the Protocol and discuss the impact of

[2] Note that subject matter jurisdiction may be functionally equivalent to full scope jurisdiction in the case of a Project requiring a Chapter 91 License or involving a Land Transfer of the entire Project site.
[3] Note that some projects that fit within one or more of these categories will have little or no greenhouse gas emissions, and this Policy shall not be applied to such projects. EEA will identify in the scoping certificate whether a project falls within this *de minimis* exception.

proposed mitigation in the EIR. The MEPA Office will review the proponent's response to the GHG Policy requirements with technical review assistance from the Department of Environmental Protection (MassDEP) and the Executive Office of Transportation (EOT).

For Projects subject to this Policy where the proponent is seeking a Single EIR or a Waiver, the proponent should quantify emissions, analyze proposed mitigation, and submit this information in an Expanded Environmental Notification Form (EENF) in accordance with 301 11.05(7). The MEPA Office will make determinations on Single EIR and Waiver requests based in part on the adequacy of the GHG analysis.

At the current time, the analysis will focus primarily on the primary greenhouse gas, carbon dioxide (CO_2). While there are other GHGs, CO_2 is the predominant contributor to global warming, and emissions can be calculated for CO_2 with readily accessible data. The analysis of other GHGs may be required for certain Projects, such as methane emissions from landfills and wastewater treatment plants, emissions of hydrofluorocarbons and perfluorocarbons from the manufacturing, servicing and disposal of refrigeration and air conditioning equipment, and other GHGs emitted through various chemical and manufacturing processes. In these instances, the MEPA Office and EEA will provide guidance on quantification and analysis. In addition, EEA will continue to evaluate quantification models for the other major greenhouse gases and the degree to which projects reviewed under MEPA emit these other gases in significant quantities, and may amend this Policy accordingly. In the meantime, proponents whose operations can be expected to cause significant emissions of GHGs other than CO_2 should identify in the ENF the nature of those emissions and whether there are readily available protocols for calculating them. If not, the proponent may still be expected to perform a qualitative analysis and identify reduction or mitigation measures. In many instances, the same strategies that will reduce CO_2 emissions will also reduce other GHGs, although this may not be the case in every instance.

EEA will require analysis of both "direct" GHG emissions (*e.g.*, stack emissions from the proposed operation) and "indirect" emissions (*e.g.*, emissions from vehicles driven by employees and generating plants supplying electricity to the proposed operation). For a more detailed discussion of direct and indirection emissions, please visit the World Resources Institute/World Business Council for Sustainable Development's Greenhouse Gas Protocol Initiative website at www.ghgprotocol.org. This website provides a comprehensive discussion of direct vs. indirect emissions and a set of tools for quantifying GHG emissions.

Establishing a Project Baseline

The proponent should establish a project baseline condition that includes emissions from energy usage and transportation. The baseline for energy usage should be developed by calculating GHG emissions derived from electricity, heating or cooling from offsite suppliers and on-site fuel based on code-compliant buildings (780 CMR). The baseline condition for transportation-related emissions (discussed in more detail below) should be modeled on the Build Without Mitigation condition developed using the standard methodology outlined in the EEA/EOT Guidelines for EIR/EIS Traffic Impact Assessment.

EEA recognizes that some Project proponents may not be at an advanced level of project design planning at the time of filing an EIR, and therefore may have to make numerous assumptions about energy usage. However, the Protocol allows for the quantification of emissions even when a proposed building is at a relatively conceptual level of design. In addition, EEA understands that many Project proponents are attempting to model energy consumption fairly early in the process, as it is a key driver of various design decisions. For those that are not, EEA believes that this Policy will require more up-front thinking about the energy consumption of a Project, and that this advances public Policy. In addition, it is likely that the time and financial resources devoted up front to reducing energy consumption will have a beneficial long-term payback.

Calculating Projected Energy Consumption

The proponent should use energy modeling software to quantify projected energy usage from stationary sources and energy consumption. Energy modeling uses computer-based tools to simulate the energy use of a building throughout a year of operation. The TAC has reviewed the following energy modeling software for ease of use and usefulness of results for MEPA review: EQUEST, Energy-10, Visual DOE, and DOE2. All of these modeling tools are appropriate for the intended use. However, EEA does not require the use of a specific model; proponents may use other comparable energy modeling software to achieve the required results. The model should estimate both fuel and electricity usage.

No model will predict the energy usage of a building with one hundred percent accuracy, as there are many uncontrollable variables. For example, the building may not be built exactly as drawn; the occupants of the building may use the building differently than predicted; or the climate may vary from that which was modeled. The value of the model is its ability to compare alternative mitigation strategies and show the resulting differences in energy use.

The EIR should state which energy modeling tool was used for the analysis and present the data that were used to model energy use in the proposed building. A typical set of modeling inputs might include the following: Project size and configuration; type of heating, ventilation and cooling systems; amount of glazing; and potential types of usage and hours of operation.

Direct Emissions from Stationary Sources

"Direct Emissions" means the emissions from on-site stationary sources of the facility itself. Stationary sources typically emit GHGs by burning fossil fuels for heat, hot water, steam, on-site electricity generation, and other processes. Stationary sources include, but are not limited to, boilers, heaters, furnaces, incinerators, ovens, internal combustion engines (including emergency generators), combustion turbines, and any other equipment or machinery that combusts carbon bearing fuels or waste streams. See "Calculation Tool for Direct Emissions from Stationary Combustion Sources" available at the www.ghgprotocol.org website for more information on direct emissions from stationary sources.

In order to quantify direct emissions, the proponent should reasonably estimate fuel usage from the Project's stationary sources. For buildings, energy modeling software discussed above

should be used to estimate fuel usage. These should be counted and reported as direct emissions. Once fuel usage is estimated, the proponent can derive the approximate CO_2 emissions by using a reliable data source that contains emission factors for CO_2 based on fuel type. For most fuel types, the Energy Information Administration Documentation for Emissions of GHGs in the United States 2003 (May 2005) provides the appropriate factors. This document can be found at http://www.eia.doe.gov/oiaf/1605/coefficients.html. For fuel types not covered in this document, the proponent should use another reliable data source in consultation with the MEPA Office.

Indirect Emissions from Energy Consumption

A Project also indirectly causes GHG emissions when it consumes energy generated off-site through the combustion of fossil fuels. Therefore, the proponent should quantify the GHG emissions derived from the purchase and consumption of electricity, heat (steam, hot water, etc.) or cooling provided from off-site sources such as the electrical utility or district heating or cooling systems. Typically, energy will be consumed for operating appliances or equipment and for heating and cooling a building.

The proponent should then multiply total purchased electricity usage by an emissions factor that calculates the CO_2 emitted through the generation of electricity. The proponent should use the ISO-New England Marginal Emissions Report, which provides CO_2 emission factors expressed as pounds of CO_2 per megawatt hour for a variety of stationary combustion sources. The ISO-NE Marginal Emissions Report for 2005 is available at: http://www.iso-ne.com/genrtion_resrcs/reports/emission/2005_mea_report.pdf.[4] Similar factors for district heating, cooling or cogeneration plants should be gathered from the plant operator.[5]

Indirect Emissions from Transportation

Projects also generate GHG emissions indirectly through traffic generation and associated fuel combustion. Therefore, the Policy requires proponents to model the indirect emissions from transportation, including travel by employees, vendors, customers, and others.

The following steps should be taken to calculate a baseline for transportation-related emissions from proposed Projects:

1. Estimate projected net new trips within the study area identified for the project traffic study or the "mesoscale" analysis (the analysis which is required to identify Project-related increases in volatile organic compounds (VOCs) and nitrogen oxides (NO_x) and used to demonstrate the consistency of the Project with the Massachusetts State Implementation Plan (SIP)). Net new trips should be expressed in daily vehicle miles of travel (VMT) for weekday and weekend conditions. This estimate should be consistent with the trip generation analysis included in the Project's traffic study. The analysis should provide a breakdown of customer, employee and truck trips.

[4] The ISO New England Report provides emissions factors for "average" and "marginal" emissions. The proponent should use the emissions factors for average emissions.

[5] Proponents should identify the sources for these emission factors when outlining their total emission.

2. Calculate annual VMT for the Project's net new trips. Calculate VMT for employee, customer and truck trips separately.

   (260 x weekday VMT) + (105 x weekend-day VMT) = annual VMT

3. Multiply annual VMT (miles/year) by the appropriate EPA MOBILE 6.2 CO_2 emission factor[6] (grams/mile) and divide by 907,185 grams/ton to obtain annual CO_2 emissions (tons/year).

Other Sources of GHG Emissions

For most projects, modeling GHG emissions from stationary sources, energy consumption, and transportation will encompass the relevant sources of emissions. However, some projects will have sources of emissions not explicitly covered by these three categories (*e.g.*, a landfill that emits methane). On a case-by-case basis, EEA may require modeling of GHG emissions from sources other than the three categories covered by this Policy. EEA will advise the proponent of this requirement in the Certificate on the Environmental Notification Form (ENF) or Expanded ENF (EENF).

Total GHG Emissions & Mitigation

The proponent should calculate and compare GHG emissions associated with:1) a code-compliant baseline (the sum of direct emissions from stationary sources and indirect emissions from energy consumption and transportation); 2) the preferred alternative (the sum of direct emissions from stationary sources, indirect emissions from energy consumption, and transportation for the project as proposed); and 3) project alternatives with greater GHG emissions-related mitigation than the preferred alternative. The Appendix to this Policy contains a partial, non-exhaustive list of measures to reduce GHG emissions.

Most energy modeling software will allow the proponent to "rank" energy efficiency strategies based on annual energy savings in MBtu (Million British thermal units). The exercise will help the proponent evaluate design strategies that will have the greatest effect on energy use. The software should be used to measure the impact of mitigation measures on direct and indirect emissions from buildings and energy use.

To evaluate the impact of transportation mitigation, recent research indicates that an accurate range of trip reductions associated with Transportation Demand Management (TDM) measures can be identified. Two models are recommended for generating reasonable estimates of trip reductions associated with TDM programs. These include the US Environmental Protection Agency (EPA) COMMUTER model and the Work Trip Reduction Model. In addition, Congestion Mitigation and Air Quality (CMAQ) worksheets, available from EOT, can

[6] MOBILE6.2 provides emission factors by vehicle type, ranging from 368.5 grams/mile for light-duty gasoline vehicles up to 1,633.1 grams/mile for the heaviest diesel trucks. These emission factors can be used for generating detailed trip by vehicle type data. If calculating total vehicle trips for a typical Project, the analysis should use the MOBILE6.2 average emission rate of 550.4 grams/mile, which is based on the most recent fleet mix by type for Massachusetts identified by MassDEP.

be used to calculate the benefits of specific transit measures, multi-use (bicycle/pedestrian) paths, and commuter parking facilities.

When comparing the preferred alternative to other alternatives with greater GHG reduction, the proponent should explain which alternatives were rejected, and the reasons for rejecting them. The alternatives analysis should clearly demonstrate consistency with the objectives of MEPA review, one of which is to document the means by which the proponent plans to avoid, minimize or mitigate damage to the environment to the maximum extent feasible. The proponent should fully explain any trade-offs inherent in the evaluation of GHG reduction measures, such as increased impacts on some resources to avoid impacts to other resources.[7]

As with any other environmental impact that the MEPA Office considers, if the Project changes after the issuance of a Certificate on a Final EIR such that there is a significant increase in GHG emissions, the proponent may be required to file a Notice of Project Change pursuant to 301 CMR 11.10.

OFFSETS

EEA recognizes that under certain circumstances, it may not be feasible to implement all of the alternatives described in the EIR. While it is the MEPA Office's policy to encourage proponents to avoid or minimize GHG emissions on-site, EEA will also be receptive to proposals to mitigate such emissions through off-site measures when avoidance or minimization strategies are not feasible. However, direct mitigation should be prioritized over off-site measures. And, if offsets are proposed, the proponent should endeavor to select offsets that have local or regional benefits. EEA will seek the assistance of other agencies to determine whether such offsets are real, additional, verifiable, permanent, and enforceable in accordance with state law and Policy. If a proponent proposes offsets consisting of monetary contributions, the proponent will be required to verify that the funds are directly responsible for GHG emissions reductions.

OPT-OUT PROVISION

EEA will consider, on a case-by-case basis, allowing proponents that commit in advance to exceptional measures to opt out of the quantification analysis. The rationale for the opt-out provision is that if a proponent commits to such extraordinary measures, there is less reason for quantification and exploration of alternatives. A proponent seeking to opt out should present the request in the ENF and the MEPA Office will respond to the request in the Certificate on the ENF or Expanded ENF.

[7] On a case by case basis, EEA may allow Projects that incorporate exceptional mitigation measures to avoid modeling of alternative mitigation measures.

SECTION 61 FINDINGS

As appropriate, commitments to avoid, minimize, and mitigate greenhouse gas emissions will be set forth in a Record of Decision or EIR and shall be enforceable through Section 61 Findings. The Section 61 Findings shall be incorporated into state agency land transfers, financial assistance documents, and/or permits as appropriate for the Project in question.

EFFECTIVE DATE

EEA will include GHG quantification and mitigation pursuant to this Policy in the ENF and EENF Certificates for all Projects that are subject to the Policy for which ENFs and EENFs are submitted after October 15, 2007. EEA will periodically revisit and review the Policy as necessary.

Siting and Site Design

- Develop Project consistent with Commonwealth of Massachusetts Sustainable Development Principles to integrate transportation and land use (http://www.mass.gov/Agov3/docs/smart_growth/patrick-principles.pdf)
- Provide permanent protection for open space on the Project site
- Conserve and restore natural areas on-site
- Minimize building footprint
- Design Project to support alternative transportation to site including transit, walking and bicycling
- Use Low Impact Development for Stormwater Design
- Design water efficient landscaping
- Minimize energy use through building orientation

Building Design and Operation

- Construct green roofs
- Use high-albedo roofing materials
- Install high-efficiency HVAC systems
- Eliminate or reduce use of refrigerants in HVAC systems
- Reduce energy demand using peak shaving or load shifting strategies
- Maximize interior daylighting through floor plates, increased building perimeter and use of skylights, celestories and light wells
- Incorporate window glazing to balance and optimize daylighting, heat loss and solar heat gain performance
- Incorporate super insulation to minimize heat loss
- Incorporate motion sensors and lighting and climate control
- Use efficient, directed exterior lighting
- Incorporate on-site renewable energy sources into project including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies
- Incorporate combined heat and power (CHP) technologies
- Use water conserving fixtures that exceed building code requirements
- Re-use gray water and/or collect and re-use rainwater
- Provide for storage and collection of recyclables (including paper, corrugated cardboard, glass, plastic and metals) in building design
- Re-use building materials and products
- Use building materials with recycled content
- Use building materials that are extracted and/or manufactured within the region
- Use rapidly renewable building materials
- Use wood that is certified in accordance with the Forestry Stewardship Council's Principles and Criteria
- Use low-VOC adhesives, sealants, paints, carpets and wood
- Conduct 3rd party building commissioning to ensure energy performance
- Track energy performance of building and develop strategy to maintain efficiency

- Provide construction and design guidelines to facilitate sustainable design for build-out by tenants
- Purchase Energy Star-rated appliances that are the lowest energy rating.

Transportation

- 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
- Purchase alternative fuel and/or fuel efficient vehicles for fleet
- Join or form a Transportation Management Association
- Provide new transit service or support extension/expansion of existing transit (buses, trains, shuttles, water transportation)
- Support expansion of parking at Park-n-Ride Lots and/or transit stations
- Develop or support multi-use paths to and through site
- Size parking capacity to meet, but not exceed, local parking requirements and, where possible, seek reductions in parking supply through special permits or waivers
- Pursue opportunities to minimize parking supply through shared parking or banked parking
- Develop a parking management program to minimize parking requirements such as parking cash-out, parking charges, preferential carpool or vanpool parking, limiting parking available to employees
- Develop and implement a Marketing/Information Program that includes posting and distribution of ridesharing/transit information
- Subsidize transit passes
- Use of pre-tax dollars for non-single occupancy vehicle (sov) commuting costs
- Reduce employee trips during peak periods through alternative work schedules, telecommuting and/or flex-time
- Provide a guaranteed ride home program
- Provide on-site amenities such as banks, dry cleaning, food service, childcare
- Provide bicycle storage and showers/changing rooms
- Roadway Improvements to improve traffic flow
- Traffic Signalization and coordination to improve traffic flow and support pedestrian and bicycle safety
- Make on- and off-site improvements to reduce VMT including sidewalks, paths, traffic signals, lighting and landscaping.
- Provide no-idling truck zones at loading/off-loading and queuing areas.