Budget Note Response Form - Greenhouse Gas Emissions Data

Summary of Budget Note

The budget note directs staff to propose a greenhouse gas (GHG) emissions data program to enable the calculation of regional sector- and consumption-based emissions inventories.

Resources currently allocated

Systems-based inventory

Developed by Metro with consultant support in 2010, this inventory estimated GHG emissions associated with the Metro jurisdictional boundary for 2006 in response to Resolution 08-3971.[1] Relying on evolving U.S. Environmental Protection Agency (EPA) data and analysis methods, this hybrid inventory was considered provisional and experimental because it did not reflect a fully vetted protocol for GHG accounting at the regional level. However, it significantly expanded the typical scope of GHG inventories and provided timely information that supported Metro's early climate mitigation communications internally as well as externally with local, regional, and state partners.

This effort relied on technical assistance and guidance from a consultant at a cost of $8,500 and approximately 0.3 FTE of staff time. There are no plans to update this inventory in its current form.

Consumption-based emissions inventory

GHG emissions associated with the products and services consumed in the Metro region is one of the key indicators in Metro's 2030 Regional Waste Plan, adopted by the Metro Council in March 2019. In order to estimate life cycle GHG emissions for the purposes of the Regional Waste Plan, the Oregon Department of Environmental Quality (DEQ) developed a consumption-based emissions inventory in 2018 for the tri-county area using the same methodology it uses for the state as a whole. This inventory estimated the emissions generated locally, nationally and internationally as a result of the goods and services consumed by the region in 2015.

DEQ contributed staff time and expertise outside of any formal agreement in recognition of a valued partnership. On the part of Metro, this effort required a $3,000 purchase of economic data from a private vendor and approximately 0.1 FTE of staff time. At present, it is expected that a similar effort will be conducted with each Regional Waste Plan reporting period every 1-3 years.

Transportation emissions estimation program

The Research Center's established on-road mobile source emissions modeling program, which supports efforts related to the RTP and the Climate Smart Strategy, amounts to an estimated average annual 0.08 FTE. This estimate includes technical work associated with estimating emissions of several dozen pollutants rather than GHGs alone, and it accounts for the highly intermittent nature of the demand for this work.

Staff Proposal – Narrative

Climate change is clearly one of the most important challenges facing the global community today. Metropolitan regions are well situated to take meaningful action to respond to this challenge and, in

[1] Metro Resolution 08-3971, "For the Purpose of Designating a Council Project and Lead Councilor for the Climate Change Action Plan," adopted on August 21, 2008.

recognition of this, the Metro Council adopted leadership on climate change among the six desired outcomes for the region in 2008.[2] In establishing a robust, ongoing regional GHG emissions inventory data program, the Metro Council would take an important step toward assuming a leadership role in the region. Furthermore, in choosing to conduct this work internally and build the associated staff expertise, Council would be signaling a long-term commitment to a rigorous approach to action on climate change.

Inventory types

Sector- and consumption-based GHG emissions inventories constitute two distinctly different approaches to estimating the GHG emissions associated with a particular geographic area, in this case a metropolitan region.

- A **sector-based inventory** is the more traditional of the two and accounts for emissions produced within the region; examples include heating/cooling buildings, driving cars, and cooking food.
- A **consumption-based inventory,** by contrast, accounts for emissions produced around the world due to the consumption of energy, goods, and services by residents and businesses in the region; examples include the manufacturing and transport of foreign goods.

When considered in tandem, the two inventory types provide a broader understanding of the region's impact on climate change and a more nuanced means for identifying opportunities to reduce regional GHG emissions.

Protocols

Established protocols provide clear direction on GHG emissions inventory data sources, calculation, and reporting methodologies. Chief among these are the "U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions" (US Community Protocol) and the "Global Protocol for Community-Scale Greenhouse Gas Emission Inventories" (GPC). While differences exist between the two protocols, they are not significant enough to impact the resource estimates included in this proposal. Therefore, staff recommends that the selection of the most appropriate protocol be deferred until an actual work program is in place.

Proposed GHG emissions inventory data program ("Expanded Option")

Staff recommends the establishment of a program to enable the calculation and periodic update of two complementary regional GHG emissions inventories as follows:

1. Sector-based inventory: Establish a data acquisition and maintenance program housed within the Research Center to put the necessary data and tools in place to calculate and annually update a sector-based GHG emissions inventory for the tri-county area. This program will be structured such that data sources and calculation methods align to the maximum extent possible with the annual sector-based inventory produced by DEQ as well as being compliant with one of the two main protocols referenced above. This inventory would support GHG

[2] Metro Resolution 08-3940, "For the Purpose of Affirming a Definition of a "Successful Region" and Committing Metro to Work with Regional Partners to Identify Performance Indicators and Targets and to Develop a Decision-Making Process to Create Successful Communities," adopted on June 26, 2008.

monitoring and reporting needs in advance of scheduled updates to the Regional Transportation Plan (currently every five years).

2. Consumption-based inventory: Continue collaboration with DEQ to produce periodic updates to the consumption-based emissions inventory for the tri-county area referenced above. This will be done according to an update schedule that satisfies the reporting needs of the Regional Waste Plan, estimated here to be every three years. In recognition of the critical role of DEQ staff, it is recommended that this relationship be formalized by way of a memorandum of understanding (MOU) or an intergovernmental agreement (IGA).

Proposal assumptions

- The inventories would be calculated using estimated emissions, as the nature of GHGs is such that community-wide emissions are typically estimated rather than being directly measured. Staff acknowledges the emergence of technological platforms potentially enabling more widespread direct measurement than has historically been feasible and is in the process of seeking more detailed information from vendors.
- The inventories would be calculated according to the following parameters:
    - Geography: tri-county area
    - Time period: calendar year
    - Pollutants: all covered in chosen protocol
    - Emitting sources: all covered in chosen protocol
    - Reporting units: metric tons CO2 Equivalent
- The recommended data program would be integrated with the proposal being developed concurrently in the response to Budget Note #2 (Regional Climate Change Mitigation Strategy).
- The recommended data program does not explicitly account for producing any historical inventories that may be needed to establish baseline conditions associated with targets established by an eventual regional climate action plan. It is assumed that these activities would be included in the estimates for ongoing resources, but this carries a degree of uncertainty.
- The recommended data program includes technical support to both internal departments as well as local partners.
- The recommended data program includes coordination with and technical review by appropriate state agencies, including DEQ and DOE, during development of both inventories.
- The inventory data would be shared on one or both of the By the Numbers and RLIS data hosting platforms.
- The proposal does not include internal coordination and communications support that would be needed from other Metro departments, including Communications, Planning, and Property and Environmental Services.
- The recommended data program does not cover GHG emissions associated with Metro's business operations. These emissions are addressed by a separate inventory at a different scale.

Additional considerations

This proposal represents the preferred alternative among three that staff developed for consideration in response to this budget note. Another alternative (the "Basic Option") would accomplish much of what is included in this proposal, with the notable differences being (1) the exclusion of an apparatus for providing technical support to local partners, and (2) continued reliance on DEQ assistance in the

absence of a formalized agreement. The third alternative (the "Consultant-led Option") would rely on a consultant for the majority of the technical work while retaining the same internal and external support mechanisms as the preferred alternative outlined in this document.

Staff Proposal – Resources

Resource estimates for all three proposal alternatives are included in the table below, with the preferred alternative designated in bold. All activities associated with this proposal are assumed to reside within the Research Center.

	One-time FTE	Ongoing FTE	One-time M&S	Ongoing M&S	FY 20-21 cost	Ongoing cost
Basic	1.0	0.5	$22,500	$2,500	$207,500	$95,000
Expanded	**1.5**	**0.75**	**$22,500**	**$2,500**	**$300,000**	**$150,000**
Consultant-led	1.0	0.75	$35,000	$25,000	$220,000	$163,750

It should be noted that this budget note represents one of multiple data requests to the Research Center that will collectively be presented to Council in a holistic manner during a department-level briefing.

Risk Analysis

Political risks

Several jurisdictions within the Metro region either already have climate plans and associated GHG emissions inventory programs in place or are actively working towards establishing them. The calculation methods and data sources used in producing these inventories can be expected to vary according to technical assumptions, political considerations, and geographic scale. Therefore, the potential exists for conflicting numbers in the form of either (1) two inventories calculated for the same jurisdiction by different parties, or (2) the sum of constituent inventories being compared to a regional inventory.

Financial risks

While the resource estimates included in this proposal are the result of a thorough research and outreach effort internally and externally with relevant state agencies, the recommended GHG emissions inventory data program amounts to work that has not been done before at Metro in a comprehensive and continuous manner. Therefore, it is important to acknowledge that the resource estimates include a degree of uncertainty. The availability of data and the level of effort associated with gathering data for several work elements are difficult to accurately estimate in advance of the actual work. For this reason, the estimates included in the proposal reflect an assumed 25% contingency.

Another financial risk to consider relates to staff turnover. This proposal recommends that Metro staff, as opposed to an outside consultant, conduct the majority of the work associated with establishing and maintaining the regional GHG emissions inventory data program. Therefore, to the degree that most of the institutional knowledge and technical expertise developed in establishing the program would reside in one or several members of Metro staff, there is a risk of periodically needing to repeat previous orientation and knowledge building efforts in the event of staff departures.

Policy risks

Metro's policy framework on climate change stems mainly from several resolutions passed in 2008 in which the Metro Council gave clear direction for the agency to demonstrate leadership on climate change and for staff to collaborate with regional partners in creating a regional Climate Action Plan to meet state-mandated GHG emissions reduction targets.[3][4] A regional GHG emissions inventory program was central to this policy direction. In addition, current Council priorities including the Regional Solid Waste Plan and Regional Transportation Plan (a key tool for implementing the adopted Climate Smart Strategy) rely on GHG emissions inventory data as indicators of success. Therefore, in light of these key policy dependencies, it could be perceived as a failure to follow through if Metro simply leaves GHG data assessment to the state instead of establishing its own durable regional inventory program.

[3] Metro Resolution 08-3971, "For the Purpose of Designating a Council Project and Lead Councilor for the Climate Change Action Plan," adopted on August 21, 2008.

[4] Metro Resolution 08-3940, "For the Purpose of Affirming a Definition of a "Successful Region" and Committing Metro to Work with Regional Partners to Identify Performance Indicators and Targets and to Develop a Decision-Making Process to Create Successful Communities," adopted on June 26, 2008.