Public Sector GHG Accounting Road Test – Questionnaire
Informing Section 9 Guidance with Agency Road Test Input

This document represents the primary deliverable of the Public Sector GHG Accounting Road Test. FEMP requests that each
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The questionnaire serves to inform the development of GHG accounting and reporting guidance, as required by Section 9 of EO 13514, with agency-specific experience from the both
the questionnaire to the best of your ability. P nt.

If a question was not applicable for your agency during the road test, but will be for the guidance, please answer the question to the best of your ability. For example, your agency may not have used RECs in your road test inventory.

Agency/Sub-agency: __USDA/Forest Service_____

Name: ___Julie Tucker (801-389-9874)_____

Inventory Design

1. What geographic boundary (US/international) did you use?
   ⇒ Ecosystem boundary –
   ecosystem (especially for mobile source emission estimates). Though, for some emission source categories, we had to include ac
2. What did you define as the reporting entity for the road test (agency-wide, installation, building, etc.)?
   ⇒ 6 National Forests
3. What facilities did you inventory? Did these changes from your initial road test enrollment? If so, why?
   ⇒ All facilities on the Forests. No.

4. What approach control, financial control)? Did that rule allow decisions in every case?

   ⇒ We used the operational control approach. Leases presented uncertainty, but wherever possible, we included activities from facilities leased by the Forests. buildings with leases that include the cost of utilities in the rent. It is most difficult to obtain the energy and electricity usage data

   Government employee hou
   energy they consume in their government-owned houses, yet the government has primary control over the selection and maintenance of the house's heating/cooling system, insulation, energy efficiency features, etc. We tried to be more inclusive by including these activities even though they do not fall solely under the agency's operational control. Our

5. How did you account for emissions from facilities where you are lessee/lessor? Which types of leases did you have to consider?

   ⇒ Whenever possible, we included activity data from leased facilities.

6. Do any of your emissions reported include emissions from sources shared by another entity (e.g. shared facilities, privatized housing)?

   ⇒ Yes, see response to question 4.

7. Did you have other special considerations when delineating your organizational boundary (e.g. outgrants, easements, permits, etc)? If so, how did you handle them?
   ⇒ No
8. What activities did you exclude? If any, please explain.
   ⇒ Wildfire suppression and prescribed fire.
   ⇒ Refrigerants in vehicles.
   ⇒ Fire extinguishers – extinguishers
   ⇒ Product transport
   ⇒ Off-site waste disposal
   ⇒
9. Did you apply a *de minimus*[1] standard? If so, for what types of emissions? How did you select the level?
   ⇒ Yes, under EPA Climate Leaders protocol, we did an initial assessment of those activities for which GHG emissions are estimated to be de minimus (<5% of total GHG emissions).
   ⇒ We determined that refrigerant emissions from A/C units are de minimus according to the EPA Climate Leaders tool largely because most of the A/C units use R-22 refrigerant.
10. Did you develop an alternative base year calculation (e.g. average emissions over multiple years), or do you foresee doing so for future inventories?

[1] Excluding small amounts is not recommended. It may be necessary to use less exact estimation procedures when the amounts are clearly small.

⇒ NO. I do not foresee the need for alternative base year calculations for our agency.

11. Do you report GHG emissions to any reporting bodies (e.g. The Climate Registry, RGGI)? Were any of these reported in the road test?

⇒ road test was developed as a pilot under the EPA Climate Leaders program.

12.

⇒ Scope 3 emissions associated with third parties, such as lessees, contractors, etc, could contain proprietary, confidential, or protected information.

13. Do you expect Are any of these included in your road test results?

⇒ We do not know of any facilities in our pilot inventory (6 National Forests) that must report under this rule because they are all small facilities and most are office-based buildings.

⇒ Our agency could have a few facilitie

14. Did you calculate emissions from land use change (sequestration)? If so, describe the accounting method used.

⇒ No.

15. If you have biogenic emissions from on-

⇒ We were initially going to exclude wood burning activities for heat generation because we thought it would be de minimus. However, in the end, we collected the information and unearthed an interesting finding: "Wood represents 6 percent of the total heating value of all the fuels used by stationary sources on the six Forests, whereas the fossil fuels (natural gas, distillate fuel, propane, and LPG) represent 94 percent.[2] Despite the relatively small amount of wood used in the GYA for heating, wood contributes 87 percent of the methane emissions, 69 percent of the nitrous oxide emissions, and 19 percent of the

This illustrates that it can make a difference how you determine the basis for de minimus emissions.

⇒ We entered the wood consumption quantity in the EPA Climate Leaders Calculator tool (low emitters version) and it generated the emission estimates.

16. Did you include any renewable energy certificates or carbon offsets in your inventory?

⇒ No.

17. Is there a section of the provisional draft of the Public Sector Standard for GHG Accounting that did not align with your approach for conducting a GHG inventory?

[2] Heating value is the amount of energy in fuel.

⇒ ardless of whether they are negligi

⇒ The PSS is painfully quantify emissions from complicated interagency activities, such as wildland fire suppression.

18. What greenhouse gases did you include in your inventory?

⇒ CO2, N2O, CH4, and total CO2e.

19. Other comments or lessons learned?

⇒ See response to Question #27.

Data and Calculations:

20. What GHG inventory tool(s) and resources did you use (e.g. Climate Leaders technical guidance)? Did the tool(s) meet your organizations needs?

⇒ "EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8) and EPA Climate Leaders technical guidance.

⇒ Yes, though there were some c staff.

21. Briefly describe the calculation methodologies used for any scope 3 emissions calculated. If any issues were encountered regarding data availability and data quality, please describe.

⇒ Employee Commuting:

personal vehicles. The Forests provided an accurate number of full-time and seasonal employees working on their forest in 2007. Then, they gave a very rough estimate of the "typical" miles traveled daily by full-time and seasonal employees (round-trip from home to office). For all of the Forests, the inventory team assumed that full-time employees work 235 days per year and that seasonal employees work 100 days per year. It was assumed that seasonal employees did not take any time off. Also, it was assumed that all commuting took place in a passenger car, not a light-duty truck or motorcycle (we realized this was a crude assumption that did not accurately reflect reality).

for documentation and

crunched emission estimates

based on total passenger miles traveled annually and the type of commuting vehicle.

⇒ The employee commuting estimates could be better estimated with more time and resources. Data quality for this category is highly dependent on whether an accurate survey of employees can be taken.

22. Briefly describe the calculation methodologies used for any fugitive emissions calculated. If any issues were encountered regarding data availability and data quality, please describe.

⇒ Not applicable.

23. Did you discover that needed data were missing from data sets?

⇒ Nearly EVERY dataset had problems. Data gaps

inventory. I am confident that this will be a major agency-wide challenge to developing any GHG inventory.

24. How did you assess data quality? If so, what did you learn?

⇒ – this was one of

our most crucial steps to ensuring an accurate and complete inventory.

⇒ Thorough quality assurance and quality control measures were implemented to ensure the highest quality data. During data collection, the inventory team compared data between Forests to identify any information that seemed out of the expected range. Most importantly, analyses were performed during each major data processing step. Calculations were performed on the fleet data to ensure that mileage and fuel use was reasonable for each vehicle. For example, when calculating the mil

discovered problems with the mileage data (vehicle miles traveled) originally reported by GSA for the GSA fleet. After discussing this issue with the GSA represe

-estimated fuel economy for

each vehicle.

⇒ The table below will give you a sense of how we assessed the quality of our data. See the letter grades assigned to each

In retrospect, I think that some of these data quality ratings, especially for <u>propane, fuel oil, wood, GSA fleet, other mobile sources, and employee commuting</u> should/would be down-

formal inventory for EO 13514. PLEASE SEE NEXT PAGE:

Source Category	Data Source	Data Quality Rating	Comments
Natural gas	National Finance Center	A	Data reflects actual usage.
	Forest Staff	A-	The data is accurate, but a few facilities might be unintentionally excluded.
Propane	National Finance Center and Forest Districts	A-	Usage estimated by NFC based on dollars charged and the average price per unit of propane in 2007.
	Forest Staff	A-	The data is accurate, but a few facilities might be unintentionally excluded.
Fuel oil	Forest Staff	B	The data is accurate, but a few facilities might be unintentionally excluded.

Source Category	Data Source	Data Quality Rating	Comments
Wood	Forest Staff	C-	Forests are only able to provide best guess estimates, coverage may not be complete
GSA Fleet	GSA	B-	This data is of limited quality. GSA has adequate confidence in the fuel usage reported but not the mileage traveled. Thus, the inventory team had to generate mileage estimates, some of which were based on incomplete vehicle information (vehicle type, model, weight, etc).
WCF Fleet	Regional Fleet Managers	A-	This data was of fairly good quality, though there were still some challenges with the validation process.
Other Mobile Sources (Non-GSA, non-WCF fleet. For example, ATVs, snowmobiles, lawnmowers)	Forest Staff	C	This data was mostly estimated by forest staff based on their rough estimate of average use.

Source Category	Data Source	Data Quality Rating	Comments
Electricity	National Finance Center	A	Data reflects actual usage.
	Forest Staff	A-	The data is accurate, but a few facilities might be unintentionally excluded.
Air Travel	Administrative Center for Excellence for R1, the Forest Engineer for R2, and from various budget offices for R4.	B+	High quality data, but more information is needed to confirm accuracy. Keeping business air travel records in a centralized, accessible location would be a good idea.
Employee Commuting	Forest Staff	C	All data is based on average distances and estimated number of seasonal and permanent employees.

25.

inventories?

⇒ Throughout the inventory process, we validated information internally and externally with independent information

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⇒ We developed a review checklist used by each Forest to evaluate the accuracy and completeness of the data. Minor

⇒ and report.

26. source and what would you change?

⇒ Employee commuting emissions. To be more accurate, I would try to conduct an anonymous electronic survey of each employee to more accurately pinpoint daily commuting miles. We could only do this if we had enough turn-around time, an extremely user-friendly survey tool, and authorization by Forest Service management to conduct such a survey.

27. Other comments or lessons learned?

⇒ One of our most significant lessons learned: t. Whenever possible, perform validation checks on data to determine its accuracy. For example, when we conducted a few sanity checks on the mobile data, we discovered that based on the miles and fuel usage reported by GSA, many vehicles were achieving impossible fuel efficiencies, such 80 miles per gallon. This initial discovery saved us tremendous processing time, enabled us to obtain better data, and helped us avoid using GSA's less reliable and largely inaccurate mileage data. In another example, em
numbers provided by Human Capital Management staff. We made a judgment to rely on the data provided by Forest staff.

⇒ , severe limitations. For example, for our inventory, nearly 60% of the
The bulk of this activity

was captured via Forest level data sources, which was very time-consuming to obtain. Improper use or interpretation of national agency data sources can inadvertently yield a widely inaccurate assessment of agency GHG activities.

⇒ Data provided by Forest staff (agency field level) can capture a substantial portion of the total emissions for some categories compared to data obtained more readily GSA, and EMIS). C we had to carefully consider whether or not to pursue the less centralized data. Keep in mind that when we estimated emissions using more national/centralized agency databases, we still had inventory process for clarification and validation, which is time consuming.

⇒ To conduct an annual agency-wide GHG inventory, our agency would and comprehensive emissions. Our agency

⇒ One of the primary agencies responsible for the PSS or EO 13514 requirements should work with FedTraveler so that their reporting system a needed to develop employee business "smart" reporting that can be accomplished in a centralized and efficient manner. It would be helpful to "test-drive" the FedTraveler modifications and, at some point in the process, obtain feedback from all federal agencies to ensure that the new changes will not create unintended consequences or difficulties.

The table below is meant to capture y

source

of data; quality of data (accuracy, missing values, etc.); limitations on data use; estimate of effort to get data into useable form. Please fill out to the table below t

Emissions Source	*Data Source(s)*	*Emission Factors Source*	*Data notes*
Scope 1 - Direct			
a. Stationary combustion			
Solid fuels, natural gas, fuel oils, propane, etc	National Finance Center, Forest Staff.	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	It is difficult to know the extent of the data gaps in our agency's national databases. It is clear that bulk fuel supplies/purchases, such as propane national tracking/database systems and that the only way to get this information is to contact Forest/District staff employees, which is extremely time consuming. For our inventory, nearly 60% of the propane use would not have been captured if we relied solely on National Finance Center data.
*Other- **Wood***	Forest staff.	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	These estimates were based on rough guesstimates of cord and pellet wood use in residential-sized stoves and/or fireplaces.
b. Mobile combustion			

Emissions Source	*Data Source(s)*	*Emission Factors Source*	*Data notes*
Gasoline, fuel oils, aviation and marine fuels, kerosene, methanol, gasohol, compressed natural gas	GSA, Regional Fleet Managers, and Forest Staff	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	GSA's mileage data for each GSA vehicle is entirely unreliable and cannot be used. Data for Working Capital Fleet appeared to be comprehensive and very reliable.
Other – Off-road vehicles and hand-held machines	Forest Staff	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	Activity data for this category is very limited. We had to rely on Forest staff to guesstimate typical annual miles traveled, hours operated, or fuel consumed for each vehicle/machine.
c. Fugitive emissions			
Refrigerants	Forest Staff	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	Determined that the majority of A/C units, if not all, on the 6 Forests use only R-22 refrigerant which is not required to be reported under EPA Climate Leaders. Under federal law, this refrigerant will soon be phased out and replaced with a refrigerant with a much greater GHG impact (but, smaller ozone depleting impact). this emission source category in coming years, especially for office A/C units.
SF6	N/A		
On-site wastewater treatment	Did not estimate or evaluate.		

Emissions Source	*Data Source(s)*	*Emission Factors Source*	*Data notes*
Other (e.g. Ozone Depleting Substances, landfills, etc)	Did not estimate or evaluate.		
d. Other (e.g. physical or			
Other	Did not estimate or evaluate.		
Scope 2 – Indirect			
Purchased electric	National Finance Center, Forest Staff.	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	This data appeared to be reliable, accurate, and fairly comprehensive.
Purchased steam	N/A		
Purchased Hot Water and Chilled Water	N/A		
Scope 3 – Other Indirect			
Business travel – **BY AIR**	**Administrative Center for Excellence for R1, the Forest Engineer for R2, and from various budget offices for R4.**	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	Only tackled employee business AIR travel. Did not evaluate land travel by employees.
Employee (commuter) travel	Forest Staff.	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	Emission estimates for employee commuting can be greatly improved, especially with an employee commuting habits survey.
Contractor emissions	Did not estimate or evaluate.		
Leased assets (not incl. in scope 1 or 2)	N/A		
Contracted solid waste disposal	Did not estimate or evaluate.		
Other			
Biogenic			

Emissions Source	*Data Source(s)*	*Emission Factors Source*	*Data notes*
Mobile biomass (biofuels)	GSA, Regional Fleet Managers, and Forest Staff	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	No vehicles operate solely on a dedicated biofuel in part because of limited biofuel availability in the geographic area and inability to purchase available biofuel supply with government charge cards (not all vendors take the government charge card).
Stationary biomass	Forest Staff.	EPA Climate Leaders Inventory Calculator for Low Emitters" (Version 2.8)	Wood consumption estimates were very rough.
Land Use/Land Use Change (LULUC)	Did not estimate or evaluate.		