SUMMARY OF COMMENTS & RESPONSES
ON THE
DRAFT LOCAL GOVERNMENT OPERATIONS PROTOCOL

42 sets of comments were received during the Local Government Operations Protocol 30 day public comment period. Staff from the partner organizations - California Climate Action Registry (CCAR), California Air Resources Board (CARB), ICLEI - Local Governments for Sustainability (ICLEI) and The Climate Registry (TCR) worked jointly to respond to these comments.

In order keep this summary document to a reasonable size, comments were edited for length. The comment letters can be viewed in their entirety on CCAR's website at www.climateregistry.org/tools/protocols/protocols-in-progress/local-government-operations.html.

Comments received by:

1. American Public Transportation Association (APTA)
2. California Energy Choice, Inc. (CEChoice)
3. California Integrated Waste Management Board (CIWMB)
4. California Wastewater Climate Change Group (CWCCG)[1]
5. Carbon Disclosure Project (CDP)
6. CarbonVerify.com (CV)
7. City of Carlsbad, California (Carlsbad)
8. City of Edmonton, Alberta, Canada (Edmonton)
9. City of Lakewood, California (Lakewood)
10. City of Los Angeles, California (LA)
11. City of Morgan Hill, California (MH)
12. City of Oakland, California (Oakland)
13. City of Phoenix, Arizona (Phoenix)
14. City of Sacramento, California (Sacramento)
15. City of San Diego, Metropolitan Wastewater Department (SDMWD)
16. City of Seattle, Washington (Seattle)
17. Climate Mitigation Services (CMS)
18. Community Energy Association (CEA)
19. County of Alameda, California (Alameda)
20. County of Los Angeles, California (LA County)
21. County of Sonoma, California (Sonoma)
22. Covanta Energy Corporation (Covanta)
23. ENVIRON International (Environ)
24. Environmental Defense Fund (EDF)
25. Florida State University, Healthy Communities Program (FSU)
26. Hennepin County, Minnesota (Hennepin)
27. Los Angeles Department of Water and Power (LADWP)
28. Mestre Greve Associates (MGA)
29. Metropolitan Council, Minnesota (MC)
30. Orange County Sanitation District (OCSD)

[1] California Wastewater Climate Change Group (CWCCG) represents 40 wastewater agencies and three wastewater organizations operating in California.

31. Pacific Gas and Electric Company (PG&E)
32. Resource Systems Group, Inc. (RSG)
33. Salt Lake City, Utah (SLC)
34. San Bernardino County Solid Waste Management Division (SWMD)
35. Sanitation Districts of Los Angeles County (LACSD)
36. Solid Waste Industry for Climate Solutions (SWICS)[2]
37. Stratosphere, LLC (Stratosphere)
38. The Climate Trust (CT)
39. Utah Department of Environmental Quality (UT)
40. Waste Management (WM)
41. World Resources Institute (WRI)
42. Group comments from StopWaste.Org, San Francisco Department of the Environment, City of San Jose, County of Alameda General Services Agency, City of Santa Monica, City of Berkeley, Californians Against Waste (StopWaste et al.)

[2] Solid Waste Industry for Climate Solutions (SWICS) represents: Waste Management, NorCal Waste, Allied Waste, County Sanitation Districts of Los Angeles County, Regional Council of Rural Counties, and Waste Connections Inc.

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General Comments

1. The Protocol should acknowledge that local governments are fundamentally different from private corporations and other entities. Because of the type of services we provide, local government GHG emissions may increase as we provide additional and expanded services to our communities that are designed to result in overall reductions in GHG emissions. While this protocol only addresses the emissions resulting from actions within a local government's direct control, the protocol should acknowledge the special circumstances and responsibilities of local government that might result in emission increases from specific services provided. **(LA)**

RESPONSE: Agreed. We have added language to the Protocol to acknowledge the special circumstances and responsibilities of local governments.

2. Even though the Protocol recognizes the important role of the LGs, it does not address the critical role and benefits provided by LGs' community-wide development of ordinances, codes and standards, and through community outreach and education and in partnership with utilities. The County recommends that this be addressed either in the Scoping Plan or in other GHG reporting protocols. **(LA County)**

RESPONSE: The Proposed Scoping Plan will recognize the important role local governments play in reducing greenhouse gas emissions. The benefits provided by local governments that pass ordinances, codes and standards will be addressed.

3. Under the Protocol, LG programs which reduce GHG emissions are only to be described in a narrative. There is no methodology or standard for recognizing, certifying or quantifying these benefits, either in comparison to the emissions that occurred previously or that would have occurred but for the programs. Such a methodology and recognition should be developed either in this or another protocol. **(LA County)**

RESPONSE: We agree that local governments need to be able to quantify and be credited with emissions reductions. However, project specific protocols, which require attention to such elements as permanence and additionality, are beyond the scope of this Protocol. We have added a subtitle to help clarify the intent and purpose of this Protocol.

4. We commend your efforts assembling this ambitious, near comprehensive document with a very constrained deadline. We wonder, though, if the pressures to complete this task compelled you to make rushed choices. In the effort to speed things along, important representatives of local governments such as special districts were frozen out of the important early discussions. Their participation was limited to the far less frequent public workshops after many important decisions were already cast in stone. We hope that special districts can be afforded a seat at the table from the start in future revisions of the Protocol. **(LACSD)**

RESPONSE: The Protocol was developed over the last 6 months with extensive opportunity for stakeholder input. According to our attendance records, many special districts were represented at meetings and on conference calls throughout the process via the advisory group and the wastewater and solid waste subgroup. Special districts were not represented in the technical workgroup (which met 10 times over the course of the protocol development) - this was by design, as the Protocol was designed to focus primarily on the complexities and challenges confronted by local governments in creating a GHG inventory. As discussed throughout the development process, the guidance in this document may be utilized by special districts, but is not designed specifically for special districts - hence the more limited role of these organizations in the development process.

We would both expect and welcome special districts to participate as part of the technical workgroup when sector-specific protocols are being developed in the future around activities performed largely by special districts (e.g. solid waste, wastewater treatment).

5. The construction of the Draft Protocol ensures that only the most obvious approaches to affect emissions reductions will be revealed. It is difficult to use the Draft Protocol to reveal potential synergies between the operations of one local government with another that may, when combined, result in net emissions reductions. It is also difficult to develop best management practices (BMPs). Such opportunities include the use of reclaimed water, biosolids-based soil amendments and recycling measures to name a few. As a start, the Draft Protocol could suggest that reporters list those activities much like they do for water use, etc., as per section 13.1.2.3. The Draft Protocol could also suggest that local governments wishing to make a stronger statement highlighting their emission reduction actions or offset generation projects contract with CCAR to generate an ad hoc Project Protocol. Ultimately, the best solution is to allow for the numeric accounting in the Protocol. **(LACSD)**

RESPONSE: Noted. It is important to remember that the inventory created using this protocol - an inventory of GHG emissions from sources that a local government owns/operates - is one of many tools needed to comprehensively assess the benefits of climate action. An inventory of GHG sources is a first step - there is much work that remains to be done to develop additional tools and methodologies to enable local governments to assess and capture GHG benefits beyond sources of emissions they own and control. We hope some of these issues will be addressed in the forthcoming community guidance, and also look forward to CCAR developing project protocols that can be utilized by local governments.

6. The temptation may exist for local governments to cross-compare their emissions when promoting their green credentials. Comparisons should be made on an "apples to apples" basis. One of the best approaches to affect that kind of comparison would be to ask that core services be addressed in this Protocol. **(LACSD)**

RESPONSE: This issue was raised several times in working groups during the

protocol development. We have opted not to require accounting of core services. Local governments, both cities and counties, in different parts of the country provide a very different array of services. Example of services provided in by some, but not all, local governments include: provision of affordable housing, mass transit, primary and secondary education, city hospitals, water and waste water treatment and transport, ports and airports, landfill management and fire protection. Inclusion of some of these categories in the core services would mean that those local governments who don't provide the service would be required to collect and report on energy consumption at facilities that they don't own and may not have access to data regarding. Moreover, exclusion of any of these services from a list of core services would mean that those local governments that do provide those services would be disincentivized from taking action to reduce emissions from those sources. Ultimately we believe that it is preferable to discourage comparisons that may not be apples-to-apples and have included the checklist of services in the standard reporting format in order to make it clear in each report which services are included.

7. The Sanitation Districts firmly believe that early actions taken to reduce greenhouse gas emissions must be appropriately credited and protected from potential negative actions taken on the federal level. The Protocol should better explain how California's inventory and reporting protocols will blend into potential federal programs. **(LACSD)**

RESPONSE: We agree that early action reductions should be recognized by a future regulatory scheme, and California is at the forefront of setting up a framework to recognize early action through paths like the creation of the California Climate Action Registry and voluntary early action provisions in AB 32. At this time, we are unable to predict how a federal program may interact or recognize voluntary early actions, but hope developing standardized GHG accounting methodologies, like this Protocol, will support the credibility of these early actions.

8. Inclusion into the document (or published on the website) of a completed emission inventory would be extremely useful. I am sure that many cities will have similar problems and experiences in completing the emission inventory and reporting it. It will be very beneficial to see a real-world example of a completed inventory. **(MGA)**

RESPONSE: Noted. At this time no inventories have been completed using this protocol. However, the partners are committed to supporting its use for our members and constituents and others. We expect to provide a variety of resources including examples.

9. At the last webinar there were some suggestions regarding funding and grant opportunities that might be available to cities for preparing GHG inventories. Inclusion of potential sources of funding that you are aware of would be very beneficial to cities trying to prepare an inventory. **(MGA)**

RESPONSE: Inclusion of potential funding sources is not a standard element of reporting protocols and will not be included in the LGO Protocol. However, the Air Resources Board is soliciting comments within the Scoping Plan process on

the potential use of revenues generated through carbon fees. Local government incentives are one potential use of revenues under consideration. If you have any comments on whether or not local governments should receive incentives to develop GHG inventories, please submit comments through the official Draft Scoping Plan process. There is a category on AB 32 Program Design that would be applicable. www.arb.ca.gov/cc/scopingplan/spcomment.htm

10. Our primary concern with the protocol is that it should be as easy and as inexpensive as it can be. Reporting GHG emission should not be punitive for those cities who simply want to make a statement and do the right thing and have little interest in participating in a cap and trade program. The protocol seems geared toward quantifying emissions with the accuracy needed for a cap and trade program and thus may exclude cities that wish to report GHG emissions for the purpose of acting as an example to businesses in those cities to do the same. **(UT)**

RESPONSE: The protocol is not geared toward quantifying GHG emissions for use in a cap and trade program, but rather is designed to help local governments develop comprehensive GHG inventories. Additionally, the Draft Scoping Plan did not include local governments as a "capped" sector.

11. We recommend that the LGO protocol developers narrow the scope of the protocol to address only new information not covered in the TCR General Reporting Protocol, or to clarify those elements pertinent to the particular reporting sector. **(WM)**

RESPONSE: It was our intent that this Protocol includes many of the same calculation methodologies as both TCR's and CCAR's General Reporting Protocols. This Protocol was designed to create a single resource where any local government, whether it be a member of TCR, ICLEI, CCAR or no specific program, could find comprehensive guidance on creating a GHG inventory. Therefore, it is necessary that the Protocol not refer local governments to other sources to find calculation methodologies for common local government GHG sources, but instead reproduce them here in a single document.

12. We recommend that all reporters, whether small or large, private or public, be required to report using the same set of rules with regard to scope of emissions and quality of information. **(WM)**

RESPONSE: GHG reporting (except for certain sectors in California and the Northeast) is currently a voluntary effort, and thus it is difficult to hold reporters, whether small or large, private or public, to any single standard. We have created this Protocol as a resource for local governments using widely accepted GHG quantification methods. Local governments are unique as they have activities that cover a large number of sectors. As more accurate methodologies are developed for specific sectors encompassed by local governments, we will work to update the Protocol so that it is consistent with sector reporting guidance outside of this Protocol.

13. The draft AB32 Scoping Plan includes 2 million metric tons of GHG emissions reductions from the Local Government and Land Use Sector. In order to measure emissions and reductions from the local government sector, ARB will need to adopt a

Local Government Sector reporting protocol. LADWP recommends that the draft LGO Protocol be tailored to focus on core local government operations, so that this protocol can be adopted by ARB to measure the Local Government sector's contribution to California's GHG emission reduction goals. **(LADWP)**

RESPONSE: This Protocol was developed as a tool for local governments to assess the emissions from all sources within their operations. During the development process, staff did suggest identifying "core services" within the local government that all local governments would report on. Feedback from the local governments said they prefer to have a tool to assess all of their emissions, instead of a subset of emissions. Also, because local governments across the country supply such a diverse range of services, it was determined that limiting reporting to a set of core operations would not be as valuable for local governments as a Protocol that addressed all sources.

The Draft Scoping Plan acknowledges the importance that local governments play in achieving California's greenhouse gas goals. However, the purpose of the protocol is to provide local governments the tools necessary to quantify their emissions and does not address broader concepts associated with statewide reduction measures and how those measures will be quantified and apportioned to various sectors. Comments on the Draft Scoping Plan, in terms of sectors or reduction measures, should be forwarded to the Draft Scoping Plan comments page: http://www.arb.ca.gov/cc/scopingplan/spcomment.htm.

Community Protocol

14. Local governments have as much control over the production of waste in the community (though franchises agreements with recycling provisions, mandatory recycling ordinances, etc.), arguably more, even, than they do with transportation and energy emissions. Therefore, the upcoming community protocol should also account for the emissions from the community's waste disposal and these emissions should be apportioned back to the community that generates the waste and not just to the local government operating the landfill. **(StopWaste et al.)**

RESPONSE: The development of the community protocol will include extensive opportunity for participation in workgroups and for public comment. We look forward to your participation in and help with that process. These comments will be taken into consideration once that process has begun.

15. How will the Local Government Protocol interface with the proposed community-scale protocol to follow? Specifically, how will the two protocols avoid double counting emissions? It seems inevitable that there will be reporting overlap since many local government activities will be included in the various community reports. **(LACSD)**

RESPONSE: We do not anticipate that double counting between the LGO and community inventories will be an issue as the nature of the inventories is quite different. The majority of emissions reported by a local government using the LGOP will appear as a subset of emissions in the community scale inventory, just

as those emissions will also be contained within in the state-wide emissions inventory and also in the US EPA's GHG inventory for the whole United States.

The development of the community protocol will include extensive opportunity for participation in workgroups and for public comment. We look forward to your participation in and help with the process of developing the community scale protocol. These comments will be taken into consideration once that process has begun.

16. The Protocol should anticipate an effective interface with the upcoming Community Protocol and establish opportunities for local government leadership across all sectors. Some reporting in all sectors of the LGOP should be encouraged, regardless of control, thereby establishing the connection and tradeoffs between the local government and community inventories. **(LA)**

RESPONSE: Among the central purposes of the protocol (both this protocol and the forthcoming community scale protocol) is to focus attention on those areas over which the local government has the greatest capacity to effect reductions. We do not believe that in cases where a particular service is not provided by a government that the emissions from the provision of that service are *necessarily* more policy relevant to that government than the emissions from any other private entity operating within the local government's jurisdiction. In cases where there is particular policy relevance, those emissions may be accounted for under this protocol as a scope 3 source. All emissions within the community boundary will be accounted for in the community protocol.

PART I Introduction

Purpose (pg. 9)

17. One of the stated purposes of this Protocol is to harmonize the different GHG inventories for multiple programs. This Protocol, however, only adds to an ever-increasing list of inventories and, more importantly, is not a harmonization effort. The guidance for this Protocol should better explain what is meant by harmonization and how that is to be achieved. Avoiding duplicative reporting would be a great boon for the users of this Protocol. **(LACSD)**

RESPONSE: This Protocol is a harmonization effort because it brings together three distinct voluntary GHG reporting programs and the State of California to create one guidance document that can be used by local government participants in all three programs, across the state of California, and serves as a guidance document for local governments throughout the US. Instead of ICLEI, CCAR and TCR all having their own sector-specific protocol for local governments, there will be one common protocol used by all programs.

18. Please expand on why a city would benefit from preparing a GHG for their operations. This comment derives from a conversation with City staff who felt that preparing an inventory was going to be a tough sell to his City Council. The more reasons that are stated in the Protocol, the easier it will make staff's job. And is

there any benefit in preparing an inventory now, as opposed to waiting 3 or 4 years? **(MGA)**

RESPONSE: Agreed. We have added language to the introduction stressing the urgency of climate protection.

19. The City of Seattle thinks a purpose statement is a very useful part of a protocol. However, the draft purpose statement seems to confuse the purposes of an Operations Protocol and a Community Protocol. To our mind, purpose of an Operations Protocol is help cities understand the carbon emissions impact of their corporate actions. We would recommend narrowing purpose statements like—"Promote understanding of the role of local governments in combating climate change"—to focus more on the cities corporate role rather than its policymaking role. **(Seattle)**

RESPONSE: Agreed. We have clarified the statement to read "Promote understanding of the role of local government operations in combating climate change"

Offsets

20. Is there specific guidance from the Climate Registry and others for local government offsets? Or should local government rely on the Climate Action Reserve for guidance on offsets? **(Environ)**

RESPONSE: As stated in the Protocol, it is not designed and does not include guidance for quantifying GHG reductions to be used as offsets. The Climate Registry has no short-term plans to develop protocols for the quantification of offsets. The Climate Action Reserve (a program of the California Climate Action Registry) does develop project protocols for the quantification of offsets. CCAR is working to adopt an urban forestry project protocol suitable for use by municipalities and will be developing a number of other project protocols in the near future. Visit www.climateregistry.org/offsets for more information.

21. Several local governments have signed up for the ClimateSmart program, whereby they offset the emissions associated with their government facilities' electricity and natural gas use. The LGOP should note that emission reductions from the ClimateSmart program are different from offsets from GHG mitigation projects that would need to be quantified through a separate project protocol. ClimateSmart emission reductions have already been quantified according to approved CCAR protocols, verified by a third-party, and registered in the Climate Action Reserve. Emission reductions from the ClimateSmart program can be accounted for through the calculation of indirect emissions from electricity consumption (pg. 41) and direct emissions from natural gas consumption by subtracting the number of kWh and/or therms that were offset through the ClimateSmart program from the total amount of kWh and/or therms that a facility used. **(PG&E)**

RESPONSE: The inventory created by using the Protocol is not meant to be a balance sheet that represents "net" emissions - it is meant to help local governments quantify and report the total physical emissions associated with their activities. While the offsets purchased to support the ClimateSmart program

represent real, verified reductions, the inventory should still represent the physical emissions of a local government's activities. Thus (similar to the way the Protocol treats RECs and green power programs), local governments do not make a line item adjustment to your Scope 1 or Scope 2 emissions based on participation in ClimateSmart. We do encourage local governments to disclose information about their offset purchases as an information item in Section 2 of the local government report.

22. Even if the Protocol is not intended to be used for quantifying the reductions from GHG mitigation projects that will be used or for calculating reductions to be used as offsets in a voluntary or mandatory GHG reduction system, the methodologies should be consistent. Given the difficulty that an LG may have with learning how to report under the Protocol, more LGs will be likely to participate in the Protocol and in mitigation projects if the methodologies are consistent. **(LA County)**

RESPONSE: Project-based reductions are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the project. Entity-wide reductions are calculated by comparing changes in a local government's actual emissions inventory over time relative to a base year. While the accounting frameworks for quantifying entity-wide GHG reductions (e.g. the LGO Protocol) and project-based GHG reductions (e.g. CCAR's Livestock Project Protocol) contain different elements, the quantification methodologies used should be quite similar. Preparing an entity-wide inventory will help local governments become familiar with the concepts and terminology of GHG accounting, and can support data collection and management practices that may make it easier to meet the requirements of an offset-generating project protocol.

Protocol Audience, p. 11

23. We do not believe that the Protocol in its current form might be applicable to Special Districts. Local Governments do not own and/or operate or otherwise exercise the control over the Sanitation Districts operations and therefore can't be responsible for emissions inventory and further reduction of GHG emissions from the large wastewater facilities. Only usually insignificant part of wastewater treatment operations under the local governments control as defined in Part II might be subjects to guidance of the Protocol. **(OCSD)**

RESPONSE: While the Protocol was not designed specifically for special districts, we believe the calculation methodologies throughout the Protocol are appropriate for special districts to use in order to assess their emissions. The Protocol contains widely-accepted methodologies for estimating GHG emissions, the majority of which are from TCR and CCAR General Reporting Protocols. This guidance has been successfully used across many sectors for GHG reporting. While most centralized wastewater operations in California are under the control of special districts and not local governments, this Protocol is designed for use across the US. As there are local governments in other states that operate centralized wastewater treatment facilities, this source of emissions needed to be included in the Protocol. We do encourage special districts to utilize the Protocol guidance in their GHG inventory efforts.

PART II Identifying Your Emissions

Chapter 2 Inventory Guidelines

GHG Accounting and Reporting Principles (1.1, pg. 13)
Completeness

24. Some utility providers, including those operated by local governments, require a level of obscurity for certain technical aspects of their operations in the interest of security against terrorism and domestic threats and therefore such information cannot and should not be disclosed. Clear guidelines must be provided on how to address this principle while maintaining necessary security. **(Lakewood)**

> **RESPONSE:** The principle of "completeness" refers to the completeness of the GHG report; that the report includes emissions from all sources and activities within the inventory boundary. There is no sensitive information disclosed via the Standard Inventory Report that would pose a security risk. Utilities have been publicly disclosing far more information than this Protocol requests through CCAR's Power/Utility Protocol Report, and the utilities are comfortable with the information made publicly available.

GHGs to be Assessed (Section 2.1, p. 15)

25. We recommend allowing local governments to optionally report other GHGs beyond the six Kyoto gases listed (e.g. CFCs, NF3, etc.). **(WRI)**

> **RESPONSE:** Agreed. We have added language that local governments can feel free to optionally report any additional GHGs beyond the six Kyoto gases.

Inventory Frequency and Base Year (2.2, pg. 15)

26. In various sections, the Protocol discusses whether to establish a baseline, and whether, when and how to adjust the baseline to reflect structural or other changes. However, the Protocol does not address how to establish a baseline. Given that the baseline will likely be the most difficult task for LGs in the Protocol reporting, the Protocol and/or CARB should provide substantially more assistance in this area. **(LA County)**

> **RESPONSE:** In Chapter 2, we address how a local government should choose a base year (also referred to as a baseline). In the program-specific chapters of the Protocol, each program may provide additional guidance that is related to their program and their rules for base years. For example, in CCAR's chapter, they talk about their program's requirements for updating and adjusting base years. It will be up to local governments to assess their data quality, emission reduction activities, etc. to determine the most appropriate base year. It is a choice for each local government to make based on their unique set of circumstances, and it is therefore difficult to give prescriptive guidance on how to make such a multi-variable decision.

27. I understand your approach and argument for utilizing a current year as the baseline rather than 1990. It is the only feasible approach for establishing an accurate baseline. However, the question that continues to come up is 'how do we measure

our progress with respect AB32 and the goal of achieving 1990 levels?' Can any guidance be developed that would allow us to extrapolate back to 1990 to give a city a rough idea of whether their emissions are on the decline or are increasing, and what level of reductions they should be considering if they want to get back to 1990 levels? **(MGA)**

RESPONSE: CARB does not necessarily expect any entity in California to be able to produce GHG inventories from 1990 onwards. The 1990 baseline is a state-wide baseline that will be met by the state as a whole. Future provisions under AB 32 will determine how entities, sectors, or regions will be expected to contribute to the reduction goal. The Protocol is not meant to produce past extrapolations or future predictions of emissions - it is designed to produce high quality, standardized inventories based on real data. It is one tool needed by local governments to fully assess past, present and future GHG emissions.

28. Please add an additional discussion of the importance of choosing an "average" base year. A cool year could cause a significant decrease in green house gas emissions from facilities (or vise versa for a warm year). Therefore, a local government is likely to develop a better understanding of their emissions by averaging consecutive years to create the base emissions level or conducting annual inventories to identify overall emission trends. **(Alameda)**

RESPONSE: We agree that the impact of temperature and other variables may cause significant year-to-year variations. This protocol is intended to serve as guidance for inventorying emissions in any given year, which may or may not serve as a base year. It is also difficult to define what constitutes an average year in a way that is both generic and useful to potential protocol users. In order to help ensure apples-to-apples comparisons from one year to anther we have added heating and cooling degree days as indicators in the standard report.

29. Consider revising the reporting requirements to providing the reporting agency a choice between choosing a fiscal year over a calendar year. It is unclear as to the benefit of having everyone using the calendar year. **(Carlsbad)**

RESPONSE: The issue of fiscal year vs. calendar year was discussed in the workgroup and with the advisory group. Consensus was reached that local governments should strive for calendar year reporting, as this is considered to be the standard internationally for GHG reporting. Beyond standardization and comparability, there are many practical reasons for calendar year reporting. For example, emission factor updates in subsequent versions of the Protocol will be tied to calendar years, and program participation and services offered by programs are often tied to a calendar year schedule.

Scope of Sources (2.3, pg. 16)

30. Please consider renaming this section since the term "scope" has a very specific definition in this protocol. **(Alameda, Oakland)**

RESPONSE: Agreed. We have renamed this section "Sources to be Assessed" to avoid confusion.

31. What is a biological stock of carbon and how does a local government determine whether or not they control it? The term biological stock does not appear in the Glossary of Terms. **(Lakewood)**

RESPONSE: We have added this term to the Glossary. This section refers to carbon stocks that are embodied in biological systems within the local government (e.g. urban forests). The Earth's carbon is held in a variety of different stocks. Natural stocks include oceans, fossil fuel deposits, the terrestrial system and the atmosphere. In addition, there are some non-natural stocks. For example, long-lived wood products and landfills constitute a separate human-created carbon stock. A stock that is taking-up carbon is called a "sink" and one that is releasing carbon is called a "source."[3] In general, the same organizational boundary guidelines for determining control presented in this Protocol could also be used for determining control of carbon stocks. However, determining control of specific carbon stocks is outside the scope of this Protocol - please see CCAR's Forest Protocols for more information about forest carbon stocks.

Chapter 3 Organizational Boundaries

32. There was considerable confusion on our part regarding organizational boundaries. We believe the goal as stated on page 18 is for a local government to report emissions from operations over which it has control. However, in the case of a large special sanitation district serving many cities for example, all of which contribute fees toward capital and maintenance upkeep but none of which have either direct financial or operational control. This ambiguity between financial and operational control leaves open the question of whether emissions should be reported or not. **(LACSD)**

RESPONSE: Agreed. We have added clarifying language regarding local governments' organizational boundaries in relation to special districts. Under the Protocol, a local government contributing fees for capital and maintenance to a sanitation district does not have operational or financial control over that district and would therefore not report the emissions associated with the activities of that district as Scope 1 or 2.

33. The LGOP appears to incentivize local governments to have a smaller appearing inventory by: reducing the quantity or quality of services (some of which, e.g. transit, might actually decrease overall GHG emissions), contracting out services, opting to report one control method versus another. **(LA)**

RESPONSE: The Protocol is a tool with which to accurately and comprehensively measure GHG emissions over time. It is one facet of a local government's climate action assessment and reduction plan, and cannot single-handedly capture the complexities of a local government's policy choices and decisionmaking. It is possible that a local government could "game the system" and make its GHG inventory appear smaller without actually reducing emissions (e.g. outsourcing of GHG-intensive activities), which is why it should not be looked at in a vacuum without using any other information. We hope that the

[3] Resources for the Future, Carbon Sinks in the Post-Kyoto World, October 1998.

Community guidance will work to disclose some of this additional important information. We have added clarifying language regarding updating your base year due to significant structural changes to your local government to help avoid this situation.

34. The City recommends continued consideration of whether the options of Operational versus Financial Control as borrowed from the Corporate Accounting and Reporting Standard, developed by the WBCSD/WRI best reflect local government scenarios. A combination approach, enhanced sector-based requirements, or other approach may prove to be more appropriate. In the interim, it would be valuable for the LGOP to include detailed examples on what operational control and financial control means in the local government context. **(LA)**

RESPONSE: Noted. We have based the Protocol's organizational boundary guidance on a well-established GHG accounting standard (WBCSD/WRI Corporate Accounting Protocol), which we feel provides a robust and tested framework for this complex issue. As the guidance in this Protocol is implemented by local governments, we do plan to add additional clarifications and examples, and will consider adjusting the guidance in ways that may be more appropriate to the unique structure of local governments.

35. Most local governments have attempted over the years to minimize the number of outside organizations they have to include under their financial umbrella. As a result, there are numerous organizations that operate as independent not for profit organizations and are funded almost exclusively by local governments. The protocol highly recommends the use of operational control as opposed to financial control in defining their organizational boundaries, and requires a choice between the two. In the real world, financial control *is* operational control. Adding environmental policy to funding contracts will allow operational control for this one aspect, whereas the funded organization may not meet any of the other criteria outlined in section 3.2 (i.e. owned/operated by the local government). Local governments should be given the opportunity to set their own environmental policy on organizations that they fund, within their geopolitical boundaries, through a financial contract, and still be able to use the operational control section of the protocol. **(CV)**

RESPONSE: Noted. As this Protocol is implemented, we will continue to examine how operational and financial control is being applied by local governments with respect to these local government-funded organizations, and will plan to add additional clarification on this subject as we learn more about this complex issue. And to clarify, only one of the conditions in Section 3.2 need to be met to prove operational control. Thus, if a local government has full authority to implement operational and health, safety and environmental policies, they can claim operational control of that facility without having financial control of the facility.

Control Approach Recommendation (3.1.1, pg. 18)

36. The Protocol should include acknowledgement that local governments will occasionally encounter situations in which complex relationships with special service providers not covered in the examples provided will make a control approach (operational/financial) difficult to determine. Local governments should be

encouraged to use their best judgments regarding how to define control in these situations and to strive for consistency in accounting over time to enable trend analysis. Additional clarifying examples of defining organizational boundaries in complex situations could be helpful. **(Oakland)**

RESPONSE: Noted. As this Protocol is implemented, we will continue to examine how operational and financial control is being applied by local governments with respect to special districts, and will plan to add additional clarification on this subject as we learn more about this complex issue.

Operational Control (3.2, pg. 18)

37. In our experience, "wholly owning" assets doesn't always mean the government has operational control. Perhaps owning an asset could be default proof of operational control but with an allowance for a government to document and exempt non-standard situations like the examples provided (see MC comments for examples). **(MC, Hennepin)**

RESPONSE: Agreed. Your description and examples are correct in their application of operational control. A local government can own an asset (e.g. transit fleet) and not maintain operational control of that asset (e.g. if the transit fleet's operation is contracted out). We have added clarifying language to this section.

38. For assets under multiple jurisdictions it is even more difficult to determine reporting responsibility and the protocol does not resolve the matter. Two examples are: a facility that exists within a public/nonprofit partnership for which the public entity has some operational control; and a public/public partnership for which operational control is shared. Shall emissions be reported based upon a percent of control of the facility? **(Hennepin)**

RESPONSE: Guidance on joint control is found in Section 3.4. In the examples detailed above, you would need to examine the contractual agreements to determine whether any one of the partners has authority to introduce and implement operating policies; that partner holds operational control and would report 100% of the facility's emissions, and the other partners would report no emissions.

Financial Control (3.3, pg. 19)

39. A brief clarification of how financial control applies in the local government sector would be helpful, as the concept of "economic benefit" or "economic gain" is a bit of a misnomer when applied to government operations since local governments do not (usually) generate revenue from the operation of any facility. **(Alameda)**

RESPONSE: Noted. We have updated this section and replaced references to "economic benefit" with "for the purpose of providing public service".

Autonomous Departments, Municipal Utilities and Joint Powers Authorities (3.5, pg. 20)

40. This section states the conditions under which a municipal utility should report its emissions as part of its local government's GHG inventory. Since municipal utilities in

California are responsible for 25-30% of electric sector emissions in the state, they need to report in a way that allows independent observers the capability to compare their emissions with other power generators in California. Therefore, PG&E submits that municipal utilities should not be considered within the scope of the Local Government Protocol or within the organizational boundary of a local government, and that they should instead report their emissions in a separate inventory using other more relevant voluntary protocols such as the CCAR General Reporting and the CCAR Power/Utility Protocol (PUP). **(PG&E)**

RESPONSE: Following the organizational boundary standards laid out by WRI/WBCSD, municipal utilities clearly fall within the organizational boundary of a local government, as they are most often a department of the local government. As this Protocol and the partners who developed it strive for consistency with this internationally recognized GHG accounting standard, municipal utilities are to be reported as part of a local government's operations (although separately from other facilities). This issue was discussed at length with the workgroup, and the majority agreed that municipal utilities should be reported as part of a local government. While it is true that this Protocol does not demand the same level of detailed information that is required by CCAR's PUP, the methodologies are consistent and the emissions from the municipal utility are broken out from the rest of the local government for ease of comparison by independent observers.

41. The LGO Protocol should acknowledge the precedence set by California law and California Public Utilities Commission (CPUC) policy by including Community Choice Aggregators (CCA) in this section. Local governments throughout California are exploring CCA as a legitimate climate change strategy. With the opportunity to reduce indirect carbon emissions through CCAs, many believe this option will look more attractive to California communities. It is recommended that the final Protocol include CCAs and other public power authorities in this section and include a separate addendum that further specifies boundary issues for this sector. In the future, the Protocol should include recommended accounting and reporting methods for CCAs and other public power entities for their Scope 1 emissions and for their customers' Scope 2 emissions. **(CEChoice)**

RESPONSE: Noted. We have added language to this section regarding CCAs. We will also continue to gather information on CCAs as more are implemented by local governments and will consider adding additional guidance on this subject in the future.

42. The section on JPAs seems to lead JPAs and special districts down the path of reporting on their own. Simply stated, what guidance does the special districts and JPAs follow and where do they report? **(LACSD)**

RESPONSE: JPAs and special districts <u>should</u> report separately from a local government, as they are considered entities distinct from local governments, and do not fall under local government operations. As discussed throughout the development process, the guidance in this document may be utilized by special districts, but is not designed specifically for special districts. Special districts may use the guidance in this Protocol to create an inventory of GHGs that they could

share with the public via their website, their annual report, etc. or participate in a voluntary reporting program like TCR or CCAR.

43. The Protocol correctly identifies that local governmental structures vary greatly from jurisdiction to jurisdiction. As a power utility, LADWP will be mandated to report their emissions; not only under the provisions of AB32, but also under EPA's mandatory reporting requirements that are currently being developed. In both the state and federal mandatory reporting programs utilities will account for their emissions as part of the electricity sector. For these reasons, LADWP opposes the inclusion of municipal utility emissions in the local government operation protocol. **(LADWP)**

RESPONSE: The Protocol was developed as a tool for local governments to assess the emissions from all sources within their operations comprehensively. Because of this, it is not in a local government's best interests to exclude or ignore the emissions from a large source like a municipal utility. Even with a utility reporting its GHG emissions to the state and potentially the federal government, we do not see a conflict in having the same data appear in a number of different places to serve a number of different purposes. We include the emissions from municipal utilities in a local government's operations to be consistent with internationally recognized standards for defining organizational boundaries, and to help local governments be aware and assess all GHG sources within their operations.

44. The City has concerns about the required reporting under the LGOP of rare-occurring sectors such as municipal utility, port, and airport. This could lead to apples-to-oranges comparisons among local governments. With the power utility in particular, an outside protocol (PUP) and reporting process are already well established for that sector and provide a more ideal place for apples-to-apples comparisons. **(LA)**

RESPONSE: Following the organizational boundary standards laid out by WRI/WBCSD, municipal utilities, ports and airports fall within the organizational boundary of a local government, as they are most often a department of the local government. As this Protocol and the partners who developed it strive for consistency with this internationally recognized GHG accounting standard, these facilities are to be reported as part of a local government's operations (although separately from other facilities). While it is true that this Protocol does not demand the same level of detailed information that is required by CCAR's PUP, the methodologies are consistent and the emissions from the municipal utility are broken out from the rest of the local government for ease of comparison by independent observers.

To address comparability between local governments regarding these sources, we have revised the Standard Inventory Report to break out airports and ports from the general "facilities" section, as well. CCAR local government members who have municipal utilities under the operational control are still required to use the PUP and complete the PUP report. We have added clarifying guidance about this requirement to the Protocol, as well.

45. The LGOP should specifically state that port and airport operations shall be defined as and limited to municipal operations for which the local government has operational control. The emissions of port and airport tenants should not be included in the LGOP GHG emissions inventory. **(LA)**

RESPONSE: Agreed. We have added clarifying language to address this issue.

Leased Facilities/Vehicles and Landlord/Tenant Arrangements (3.6, p.21)

46. The protocol is not clear as to which scope emissions to report associated with leased facilities. The problem arises for leased facilities/vehicles of short or long duration. **(Hennepin)**

RESPONSE: Figures 3.1 and 3.2 summarize the appropriate categorization of emissions into scopes under a lessee's and lessor's perspective. We have also added additional guidance in Section 3.6 that should help alleviate issues surrounding short term vs. long term leases.

47. Requiring a lessor using the Financial Control consolidation method to report operating emissions of the leased facility may lead to double counting if the lessee is reporting emissions using the Operational Control consolidation method. **(UT)**

RESPONSE: Noted. We have added clarifying language to caution local governments regarding this possibility. Within programs (e.g. within CCAR members), staff strives to ensure that this kind of double counting does not occur. To help alleviate this issue, the Protocol has strongly recommended all local governments use operational control to avoid this situation between local governments. In mandatory reporting systems, the issue is handled by requiring a control approach (e.g. ARB requiring operational control under AB 32 reporting). But for this Protocol effort, we felt it was more appropriate to allow for flexibility in defining organizational boundaries.

Assessing Emissions for a Lessor (3.6.2, pg. 22)

48. Please include clarifications for situations where a local government owns and maintains a facility that they then lease out to fully or semi- autonomous agencies or organizations. Drawing these boundaries can be quite complex. **(Alameda)**

RESPONSE: The guidance in Section 3.6.2 explains how local governments should handle organizational boundaries as a lessor under both control situations. Who the lessee is does not affect boundary decisions for a lessor. We understand local governments may have more complex organizational arrangements than other entities, and will plan to add additional clarification on this subject as we learn more about this complex issue.

Chapter 4 Operational Boundaries

49. Under international maritime industry climate change initiatives, operational boundaries for seaports include transportation emissions between international ports, e.g. Los Angeles to Hong Kong. The Protocol should describe the limit to operational boundaries, particularly for large international industrial operations that have municipal control. **(CEChoice)**

RESPONSE: Large international maritime operations do not fall under the scope of this Protocol, as local governments do not own or operate such operations. For ports within a local government's organizational boundary, they should only include the emissions from city-owned operated equipment and facilities at the port, not tenant activities or the fuel used by tenants in between ports. Per our response to comment 45 above, we will add clarifying language to address this issue.

50. In the interest of understanding and accounting the full impact of local government operations, the protocol should require two parallel inventories, one for local government operations and one for emissions from all sectors of the community managed by that local government, using the forthcoming community scale guidance referenced in the proposed LGO Protocol. Local governments should be required to report Scope 3 emissions for key GHG-intensive contracted services such as solid waste management, public transportation, and water and wastewater treatment for both inventories. **(Covanta)**

RESPONSE: The concept of requiring Scope 3 emissions under this Protocol was discussed with the workgroup and advisory group - it was decided that it would be too difficult at this time due to a lack of data and estimation methodologies for these sources. This issue will be addressed under the community guidance to be developed starting this fall. Once the community guidance is complete, local governments will track two parallel inventories, with the LGO inventory as a subset of the community-level inventory.

GHG Emission Scopes (4.1, pg. 25)

51. TCR's general reporting protocol requires the inclusion of biogenic source emissions in scope 1 – albeit segregated from fossil fuels. This LGO protocol explicitly says biogenic emissions should be excluded from scope 1. Please explain the treatment expected. **(MC, Hennepin)**

RESPONSE: We have discussed this issue with TCR, and they will be updating their guidance to be consistent with the LGO Protocol's treatment of biogenic emissions from the combustion of biomass, which is consistent with WRI/WBCSD guidance on this issue.

52. Regarding the breakdown of carbon emissions into three "scopes", the interpretation of this Protocol is that Port Authorities will be responsible for reporting their emissions as Scope 3 emissions under the local government carbon report. **(CEChoice)**

RESPONSE: It would depend on which entity's inventory you are referencing. If a port authority is creating an inventory for its own emissions (but using the guidance embodied in the Protocol), it would report its direct emissions as scope 1. If a local government contracted out the operations of its port to an independent third-party port authority, then the emissions from activities at the port would be considered scope 3 in the local government's inventory. Double counting between scope 1 and scope 3 is expected between entities.

53. What is the definition of "upstream and downstream emissions?" These terms are not in the Glossary of Terms. **(Lakewood)**

RESPONSE: Noted. These terms have been added to the Glossary.

54. The definition of Scope 1 is inconsistent with the definition given on page 148. The p. 148 definition is more appropriate given the true nature of biogenic emissions. **(LACSD)**

RESPONSE: Agreed. We have changed the text to match the definition given in the Glossary.

55. The temptation for inexperienced users to collapse the various Scope 1 through Scope 3 emissions results to yield a simple, easy to understand, overarching emissions number may prevail over admonitions to keep those results separate. The Protocol should be physically structured to discourage such a possibility, i.e., more clearly separate out as different "books" (collections of chapters) within the Protocol methodologies for Scope 1, etc. **(LACSD)**

RESPONSE: We consulted with many stakeholders on the structure of this document, and the current structure was found to make the most sense and be the most user-friendly for local governments. There are references throughout the Protocol to keep the scopes separate and the Standard Inventory Report is structured to ensure the scopes remain separate.

56. The Protocol proposes that Scope 1 include all direct emissions including stationary combustion to produce electricity. LADWP reiterates their position that emissions from power generation should only be accounted for in one sector, the electric sector. If the Partners conclude that emissions associated with power generation need to be included in a voluntary protocol, LADWP strongly urges the inclusion of those emissions in the Community GHG emissions inventory. If LADWP is included in the proposed local government operation protocol, LADWP supports including its emissions associated with local governmental operations, including buildings, streetlights, water supply facilities, vehicle fleets and wastewater operations in [Scope 2]. **(LADWP)**

RESPONSE: Reporting emissions from a stationary combustion source within the organizational boundary of a local government as Scope 2 is a violation of the definition of the scopes, one of the most basic principles of GHG accounting. To allow local governments with municipal generation to still disclose information about the electricity consumed by its operations, we have included a line item in the Power Generation Facilities section of the Standard Inventory Report.

Local Government Sectors (4.2, pg. 25)

57. Section 4.2 appropriately differentiates Power generation facilities from Buildings and other facilities among Local Government Sectors, where district heating is likely to produce energy for other entities to consume. Similarly we recommend a transit sector representing public transit operations (buses, LRT, etc…) with separate reporting status from routine fleet operations to achieve better organizational accounting and benchmarking against other reporters. **(Hennepin)**

RESPONSE: Agreed. We have made transit a separate sector within the standard report. We have also added language clarifying that the Buildings and Other facilities category should include all stationary and scope 2 sources which are not separately accounted for somewhere else. We have also included language clarifying that the sectors required in the standard report do not need to be the only way that the data is presented and understood. The reporting template is the minimum level of disaggregation, greater levels are certainly encouraged. We intend for local governments to examine their inventories from a variety of angles.

58. Transit, housing, airports, and liquor store operations should be sectors just like water and wastewater operations as they are often operationally distinct and run as enterprise funds. If not made a separate sector please clarify if they are expected to be reported in "Buildings and Other facilities." **(MC)**

RESPONSE: Agreed. We have made transit and airports a separate sector. We have also added language clarifying that the Buildings and Other facilities category should include all stationary and scope 2 sources which are not separately accounted for somewhere else. We have also included language clarifying that the sectors required in the standard report do not need to be the only way that the data is presented and understood. The reporting template is the minimum level of disaggregation, greater levels are certainly encouraged. We intend for local governments to examine their inventories from a variety of angles.

59. It is recommended for the final Protocol that municipal port authorities be included in this section as a Local Government Sector. [See Miscellaneous Comments for more information.] **(CEChoice)**

RESPONSE: Agreed. We have made ports a separate sector. We have also added language clarifying that the Buildings and Other facilities category should include all stationary and scope 2 sources which are not separately accounted for somewhere else. We have also included language clarifying that the sectors required in the standard report do not need to be the only way that the data is presented and understood. The reporting template is the minimum level of disaggregation, greater levels are certainly encouraged. We intend for local governments to examine their inventories from a variety of angles.

60. It is recommended that the final Protocol recognize airports as a unique and important local government sector. The Protocol should develop an emission accounting and reporting addendum specific to airport operations as part of the current Western Climate Initiative that is reflective of current local, state, federal, international and industry initiatives in air quality and climate change. The Protocol should also commit to the development of appropriate templates and other tools to facilitate the implementation of a verifiable accounting and reporting system. **(CEChoice)**

RESPONSE: Agreed. We have made airports a separate sector. We have also added language clarifying that the Buildings and Other facilities category should

include all stationary and scope 2 sources which are not separately accounted for somewhere else. We have also included language clarifying that the sectors required in the standard report do not need to be the only way that the data is presented and understood. The reporting template is the minimum level of disaggregation, greater levels are certainly encouraged. We intend for local governments to examine their inventories from a variety of angles. We have also added language referring users to the forthcoming airports reporting protocol currently under development by the US Department of Transportation, Department of Energy and the EPA.

61. It is recommended that campus facilities be broken out to reflect common ownership boundaries and energy management policies and practices. A separate addendum for this sector should encourage and identify opportunities for better green practices in facility operations. **(CEChoice)**

RESPONSE: We have included language clarifying that the sectors in the standard report do not need to be the only way that the data is presented and understood. The reporting template is the minimum level of disaggregation, greater levels are certainly encouraged. We intend for local governments to examine their inventories from a variety of angles.

Scope 2: Indirect Emissions (4.4, pg. 27)

62. The definition of scope 2 should be expanded to include waste generated and disposed of through a local government's operations. Waste generation/disposal emissions most closely resemble those of other scope 2 emissions. Excluding waste generation from the mandatory reporting required for scope 2 emissions has the impact of excluding a significant emissions source and negating the potential benefits that occur through waste reduction, recycling, prevention, and composting programs. **(Alameda, Oakland)**

RESPONSE: Noted. This Protocol is consistent with internationally recognized and implemented WRI/WBCSD guidance and therefore cannot re-define the term Scope 2. We understand the concerns of leaving waste-related emissions out of inventories where local governments do not own/operate a landfill, and will address this issue fully in the community level protocol. We have added language to Section 4.7 to highlight the importance of this indirect emission source and recommend its reporting.

63. The definition of Scope 2 emissions should be expanded to employee business travel by the entity being analyzed. The organization is consuming services where another entity has influence over the operational efficiency of the vehicles used. **(Oakland)**

RESPONSE: Noted. This Protocol is consistent with internationally recognized and implemented WRI/WBCSD guidance and therefore cannot re-define the term Scope 2. We understand the concerns of leaving out employee commuting and business travel, and will address this issue fully in the community level protocol. We have added language to Section 4.7 to highlight the importance of these indirect emission sources.

Scopes and Double Counting (4.5, pg. 27)

64. Include mention of Scope 3 emission sources in the discussion of the use of scopes to avoid double counting. This issue does not pertain exclusively to Scopes 1 and 2. Consider re-ordering the sections to facilitate this. **(Oakland)**

RESPONSE: Agreed. We have added additional language to address this issue.

65. The Protocol acknowledges that GHG accounting programs may result in direct emissions being reported as indirect emissions by another entity. However, there is no consideration given to emissions being doubly reported in multiple sectors. LADWP is concerned that inclusion of the same emission in multiple sectors inventories could easily be misinterpreted by the public. **(LADWP)**

RESPONSE: Even with a utility reporting its GHG emissions to the state and potentially the federal government, we do not see a conflict in having the same data appear in a number of different places to serve a number of different purposes. We include the emissions from municipal utilities in a local government's operations to be consistent with internationally recognized standards for defining organizational boundaries, and to help local governments be aware and assess all GHG sources within their operations. We have designed the Standard Inventory Report so the emissions from power generation as clearly separate from the rest of the local government and do not foresee issues with misrepresentation of data.

Biogenic Emissions (4.6, pg. 27)

66. Biogenic emissions also occur outside the realm of combustion. For example, carbon dioxide from the short-term cycle can be released during the aerobic process of sewage treatment or composting. **(LACSD)**

RESPONSE: Agreed. In this Protocol, we are focusing on the biogenic CO_2 emissions from biomass combustion only. We have added language about non-combustion biogenic emissions and to make it clearer that the Protocol concentrates on the biomass combustion subset of biogenic emissions.

67. We disagree that the biogenic emissions, in particular from combustion of digester gas, should be reported separately from Scope 1 emissions. CARB requires all combustion GHG emissions (e.g. from power generation with a capacity more than 1MW) to be quantified and reported. We do not believe in the separate and different kind of reporting of the same emissions using different protocols. **(OCSD)**

RESPONSE: Reporting biogenic emissions separately from scope 1 emissions is consistent with international practice and ARB's mandatory reporting rule. However, additional guidance is now provided in the California chapter to clarify that local government with facilities subject to mandatory reporting shall use the methods outlined in the GHG reporting regulation (but shall still report biogenic CO_2 separate from anthropogenic CO_2). We have also provided additional guidance in Section 4.1 to clarify the distinction between biogenic emissions and the scopes.

68. We recommend that the protocol not require reporting of biogenic emissions, but instead, make biogenic emissions reporting optional. **(SWICS, WM**)

RESPONSE: As the Protocol is program-neutral, it does not set any requirements. Thus, nothing in the Protocol is referred to as "required" (except in program-specific guidance, where requirements for participation are referenced). Instead, the Protocol provides guidelines for what should be included in a comprehensive GHG inventory report. Biogenic emissions from combustion should be included in a local government operations inventory.

69. The draft local government protocol states, "international consensus on the net climate impact from the combustion of these [biogenic] fuel sources has not yet been reached." We recommend that this statement be deleted, as it is incorrect. Both the international and national experts on GHG inventorying (IPCC and EPA) have clearly expressed their views on this topic *(see specific IPCC and EPA references in SWICS & WM complete comments)*. **(SWICS, WM)**

RESPONSE: Agreed. We have deleted this statement.

70. Requiring reporters to include CH_4 and N_20 but not CO_2 from combustion of biomass as Scope 1 emissions is going to cause confusion for reporters. Many reporters will find requirements such as this too complex and time consuming, which will discourage participation. **(UT)**

RESPONSE: As the Protocol is program-neutral, it does not set any requirements. Thus, nothing in the Protocol is referred to as "required" (except in program-specific chapters, where requirements for participation are referenced). Instead, the Protocol provides guidelines for what should be included in a comprehensive GHG inventory report per international standards. This includes Scope 1 CH_4 and N_2O emissions, as well as biogenic CO_2 emissions from combustion. Conducting a comprehensive GHG inventory is a learning process, and local governments should use it as an opportunity to train staff in the important and growing field of GHG inventorying and management.

71. Provide more clarity on which Scope biogenic sources fall into. The text suggests that biogenic emissions are distinct from Scope 1 emissions from other sources, but does not clearly say whether or not biogenic emissions are themselves also a type of Scope 1 emissions. **(Oakland)**

RESPONSE: Per our response to comment 51, biogenic emissions do not fall into any scope and should be reported separately from all scopes. We will add clarifying language to make this clear.

72. If a consensus has not been reached on the net climate impact from the combustion of biogenic emissions, then how will local governments be able to determine the efficiency of their emission reduction plans? What was the level of such emissions in 1990 at the jurisdictional level? **(Lakewood)**

RESPONSE: Emission reduction plans to date focus on Scope 1, 2 and 3 emissions. Biogenic emissions from combustion are not assessed in the state's

1990 baseline and will not be assigned at the jurisdictional level.

Box 4.1, p. 28

73. This box should reference the Low Carbon Fuel Standard Calculation methodologies, which will show that many alternative fuels are not as greenhouse gas friendly as once thought. **(LACSD)**

RESPONSE: Agreed. We have added a reference regarding the work being done on assessing the GHG impact of biofuels through the Low Carbon Fuel Standard.

Scope 3 Emissions (4.7, p.28)

74. The Protocol suggests LGs report Scope 3 emissions. Given the complexity involved with Scope 1 and Scope 2 reporting, the County believes that very few LGs will attempt to report Scope 3 emissions with any degree of accuracy. However, there could be increased reporting if an LG had an incentive available for reducing Scope 3 emissions. This points to the need for coordination between the Protocol and other CARB initiatives. **(LA County)**

RESPONSE: Noted. We also plan to focus more resources on developing standardized methods to estimate Scope 3 GHGs under the Community Protocol, which should make reporting these emission sources easier for local governments.

PART III Quantifying Your Emissions

Chapter 5 Choosing the Appropriate Calculation Methodology

Recommended vs. Alternate Activity Data and Emission Factors (5.1.3, pg. 30)

75. Please specifically clarify that “tonne” means a metric ton. This is often a source of great confusion. **(CA)**

RESPONSE: Agreed. We have added a note to highlight that a metric ton (also called a “tonne”) is the standard international unit for measuring GHG emissions, and is different than a U.S. short ton (also called a “ton”).

76. We recommend also noting whether a particular method is approved by the Climate Registry (in addition to the California Registry), as the Climate Registry will be most relevant for local government reporting in the future. If possible, the tier of the method from the Climate Registry General Reporting Protocol should be noted. **(WRI)**

RESPONSE: This information will be added to the Protocol when The Climate Registry Board adopts the Protocol for use by its members. The Climate Registry will have its own chapter in this version of the Protocol that will address this process.

Chapter 6 Facilities

Stationary Combustion (6.1, pg. 33)

77. We question the need for resources to be used for comparing one local government to another. Comparisons should only be made within a single agency over a period of time to determine the effectiveness of a given jurisdiction's programs designed to reduce GHG. Factors such as the age of facilities, type of construction, make and model of equipment, frequency of use of equipment and facilities, levels of maintenance, and even usage by different personnel will make comparisons among local governments an exercise in futility. **(Lakewood)**

> **RESPONSE:** This Protocol was developed at the request of many local governments as a tool, first and foremost, to provide a standardized set of guidelines to assist local governments in quantifying and reporting GHG emissions and tracking their own progress over time. A Protocol is necessary for local governments to create consistent, comprehensive and high quality inventories.

Recommended Approach (6.1.1, pg. 34)

78. Most local governments do not have the resources or staff necessary to determine the emission factor based on specific properties of fuels listed in Appendix C. Additional time is needed prior to the adoption of this Operations Protocol to allow cities to identify and inventory the fuels they use so that such fuels may be included in Appendix C. **(Lakewood)**

> **RESPONSE:** Local governments do not need to calculate their own emission factors. Appendix C contains default emission factors, but also supplies the specific fuel properties (such as carbon content and heat content) that were used to calculate those defaults as background information, which you may have mistaken as information each local government needs to identify to calculate their own emission factor. This is not the case.

Fuel Use Estimates - Proxy Year Data (6.1.2.1, p. 36)

79. We question the inclusion of this alternate calculation approach and suggest removing it as an option. The benefit of comparing emissions over time is lost when a city uses a previous year as a proxy for the current year. Adjusting for HDD/CDD is not likely to resolve this problem. Additionally, cities should have access to purchase receipts for each billing cycle, so the recommended approach should be sufficient. You could clarify that this approach should only be used to estimate minor sources of emissions, such as sources that would be eligible for using a "simplified estimation method" in the Climate Registry. **(WRI)**

> **RESPONSE:** To clarify, this alternate calculation is not considered third party verifiable under CCAR. This means that, this method could only be used to estimate emissions that are less than the threshold of significance (such as CCAR's de minimis threshold). We believe that it is important to offer this alternative for cases where complete data sets are not available. We have added additional language to section 5.1.3 to help clarify this point.

Fuel Use Estimates - Comparable Facilities and Square Footage (6.1.2.2, p. 37)

80. If it is necessary to include this alternate methodology, the protocol should clearly state that it should only be used to estimate minor sources of emissions, such as sources that would be eligible for using a "simplified estimation method" in the Climate Registry (i.e., falling below a specified threshold). The problem with this methodology is that it does not yield a trend over time. Each year, presumably the estimated emissions will remain static because the building type and floor space remain static. Therefore any reduction activities (e.g. energy efficiency/conservation) will not appear as a reduction in the emissions inventory. **(WRI)**

RESPONSE: To clarify, this alternate calculation is not considered third party verifiable under CCAR. This means that, this method could only be used to estimate emissions that are less than the threshold of significance (such as CCAR's de minimis threshold). We believe that it is important offer this alternative for cases where complete data sets are not available. We have added additional language to section 5.1.3 to help clarify this point.

Electricity Use (6.2, pg. 39)

81. We disagree that scope 2 emissions should be reported only for the three listed sectors. The electricity for our light rail transit facilities is substantial and should be included separately. **(MC)**

RESPONSE: Agreed. We have added "Transit Fleet" as an additional sector to the Standard Inventory Report, so Scope 2 emissions from all transit should be reported separately as part of that subsector. We have also added clarifying language in Chapter 13 that local governments should feel empowered to break their emissions out to whatever level of detail they wish, as long as it is consistent with the guidelines of the Protocol.

82. Data is only provided up to the year 2004 for the California Grid Average Electricity Emission Factors in Appendix C. For local governments to meaningfully monitor their GHG, more current data is required. **(Lakewood)**

RESPONSE: CARB is developing a 2005-2007 inventory for the Electric Power sector and will provide grid EFs for those years as they become available.

83. We recommend that a *total* Scope 2 figure be calculated and reported, with sub-categories for street lights and other relevant sources provided as sub-totals. **(WRI**)

RESPONSE: Agreed. We have provided a space for a total scope 1, total scope 2 and a total scope 3 in the standard reporting form and have included this requirement in the text of chapter 13.

84. I believe "waste and waste water treatment" should read "water and waste water treatment". **(Sacramento)**

RESPONSE: Agreed. Correction made. (p 39, middle of the page, under the numbered point 2).

Recommended Approach (6.2.1, pg. 39)

85. The Protocol describes how to select and use utility-specific emission factors. However, the Protocol notes that "it is not yet standard practice for utilities to calculate and verify company-specific electricity GHG emission factors." It does not make any sense that the State's utilities will not be reporting this data to CARB prior to the date when LGs will report their own emissions. The State's utilities should be able to easily provide this emissions information upon an LG's request, especially on a sector basis (e.g., street lighting, buildings, wastewater treatment). The County recommends that CARB work closely with the utilities to make this information available in an easy to use format. **(LA County)**

RESPONSE: Several utilities have been participating in the California Climate Action Registry's (CCAR) reporting program. For local governments that would like to report indirect emissions from electricity consumption using a utility-specific emission factor, they can use the third-party verified emission factor provided by CCAR. It is not anticipated that the State's utilities would report this data to the California Air Resources Board (CARB). However, as State utilities begin to report GHG emissions through the AB 32 mandatory reporting program, CARB will work to ensure utility-specific emission factors are available for use by local governments.

86. Please add a short description of how a utility specific emissions factor can be "third party verified to an existing reporting standard." The inclusion of a paragraph discussing CCAR verification without mentioning how other third party standards could be applicable leaves the reader with the impression that they must use e-grid if their utility does not participate in CCAR. – This is addressed (in part) later in section 6.2.3. Please merge these two sections into one section on choosing an appropriate emission factor. Splitting them will likely cause the reader to overlook this important information. **(Alameda)**

RESPONSE: Agreed. We have added clarifying language to these sections to make this clearer.

87. The Protocol instructs California local governments to use the California Grid Average Electricity Emission Factors instead of eGRID. Won't this make it more difficult to do comparative reporting with non-CA local governments if the entire rest of the country is being told to use eGRID? Why is this guidance provided here instead of under the Program-Specific Reporting Requirements for CA? It might be wise to at least also summarize it in the latter section if this is intended to be a summary of all advice that is special to CA local governments. **(Oakland)**

RESPONSE: The issue of comparability vs. accuracy with electricity emission factors was discussed at length with the workgroup, and the consensus was local governments would rather their inventories be more accurate than more comparable to one another. California has a state-specific factor because the state has done more work on this issue than other states and feels the state-specific factor is more appropriate than the regional eGRID factors. We have added language to the CARB chapter regarding the use of this factor by California local governments.

88. The option of using a utility-specific emission factor that has been verified by a third party could be problematic in that the Electricity Emission Factors found in Appendix C only go up to 2006 and the text in the Operations Protocol states that previous year figures should be used. If the Operations Protocol is not adopted until 2009, then 2008 factors will be required. **(Lakewood)**

RESPONSE: Agreed. We have changed the Protocol language to state that the most recent factor available should be used to account for the delay in availability of utility-specific emission factors. We will also include a weblink to a webpage that contains a continuously updated version of Table C.5.

89. There is a problem with the use of the EPA eGRID sub-region emission rates recommended in Table C.5. These are system average emission rates and do not represent the actual emissions that occur as the result of specific power purchase made by a specific consumer. All other things being equal reporting in subsequent years would show a reduction in emissions based on the system average emission rate, whereas the actual emission reductions from a renewable energy purchase should be based on time-matched marginal emission rates. **(RSG)**

RESPONSE: Noted. However, eGRID emission factors represent the best available information for nationwide default electricity emission factors. As more work is done on this issue, we will re-visit if eGRID is the most appropriate source of emission factors.

90. The eGRID data is seriously out of date by the time it is used and the sub-regions do not always coincide with actual power market dispatch areas. A reporter may have difficulty in being consistent from one year to the next when using the eGRID emission rates because these emission rates may not be representative of the specific reporting year. **(RSG)**

RESPONSE: Noted. However, eGRID emission factors represent the best available information for nationwide default electricity emission factors. eGRID emission factors are supposed to be updated on an annual basis. Perhaps their increased use via this Protocol will help spur EPA to update this resource according to schedule. Regardless, we will update the Protocol as updated emission factors become available.

91. The result of using eGRID emission rates as recommended will make if difficult to meet the Climate Registry Verification Protocol requirement, of plus or minus 5% material difference, when reporting emissions. Guidance on how third party verifiers should deal with this is needed. **(RSG)**

RESPONSE: The comment misrepresents The Climate Registry's requirements as the eGRID emission factors are, in fact, the only emission factors currently accepted by The Climate Registry. There is inherent uncertainty associated with GHG accounting, and The Climate Registry (along with the other partner organizations) understands and accepts the inherent uncertainty associated with the eGRID emission factors.

92. We recommend that the recommended emission factor for calculating scope 2 emissions be the eGRID subregion default emission factor only; the recommended emission factor should not also include a utility-specific emission factor. While eGRID is not completely accurate due to data limitations, we understand that the eGRID regional emission factors better represent the amount of GHGs emitted per unit of electricity consumed than utility-specific emission factors. Utility-specific factors represent a utility's particular mix of purchased or generated power, but do not necessarily reflect the mix of power being consumed by the end user, which is drawn from the grid as a whole, including power purchased or generated by other utilities. This will also allow maximum consistency and comparability of scope 2 emissions data across local governments, since all have access to the same data source and will use the same methodology, while selectively using utility-specific emission factors would introduce inconsistency and incomparability for this important category of emissions. **(WRI)**

RESPONSE: Noted. Electricity emission factors were discussed at length with the workgroup, and the consensus was local governments would rather their inventories reflect their local situation (i.e. use utility-specific EFs) than allow for maximum comparability (i.e. use default regional EFs). The utility specific emission factors are third party verified against the CCAR PUP standard, and are used by the majority of CCAR members. We understand that The Climate Registry will be working to build off and improve the PUP in its Electric Generation Protocol this winter/spring, and will consider updating this section if and when better utility-specific emission factors become available.

Alternate Activity Data (6.2.2, page 42)

93. We question the inclusion of these alternate methods because they introduce considerable inaccuracies and thereby compromise effective GHG management. If it is necessary to include them, we recommend stating that they should only be used to estimate minor sources of emissions, such as sources that would be eligible for using a "simplified estimation method" in the Climate Registry (i.e., falling below a specified threshold). This comment does not pertain to estimating scope 2 emissions from leased building space where sub-metering is not available. **(WRI)**

RESPONSE: To clarify, this alternate calculation is not considered third party verifiable under CCAR. This means that this method could only be used to estimate emissions that are less than the threshold of significance (such as CCAR's de minimis threshold). We believe that it is important offer this alternative for cases where complete data sets are not available. We have added additional language to section 5.1.3 to help clarify this point.

Estimated Electricity use for Leased Space (6.2.2.1, pg. 42)

94. The section for estimating electrical use for leased space introduces occupancy rate into the equation, which may result in skewed results with respect to electrical consumption. Some property owners include electrical, heating, and cooling in the cost of a lease while other property owners do not. Local governments leasing facilities typically have no control over the energy usage in other tenant spaces whether occupied or not. **(Lakewood)**

RESPONSE: Occupancy rate allows for the methodology to take into consideration the total occupancy of the building, so that square footage that is not occupied (and therefore not consuming electricity) is factored in. Whether or not the property owner includes utilities in the cost of the lease makes no difference. Also, keep in mind this is an alternate methodology - it is understood that it is less accurate than the recommended methodology, and should only be used when actual electricity consumption data for your space is unavailable.

Alternate Emission Factors (6.2.3, p. 45)

95. I support the concept of permitting the use of unverified utility specific emission rates but the protocol should provide clear guidance on how such emission rates should be derived. Reference should be made to the WRI Guidelines for Quantifying GHG Reductions from Grid Connected Electricity Projects. **(RSG)**

RESPONSE: There is currently no widely-accepted standard that a local government could use to derive a utility-specific emission factor based on the limited information available to them as a customer. The WRI document referenced is for project accounting - it is a set of guidelines that explain how to quantify the GHG reductions resulting from projects that either generate or reduce the consumption of electricity transmitted over power grids. The guidelines are not appropriate as methodological guidance on deriving a utility-specific emission factor, as project accounting and entity accounting guidelines are not interchangeable.

Green Power and Renewable Energy Certificate Purchases (6.2.4, pg. 45)

96. The Protocol would not provide any credit for renewable energy credits ("RECs"). Instead of encouraging LGs to reduce Scope 2 emissions, this inaccurate methodology will effectively discourage the use of renewable resources and RECs. The purchase of green power or RECs must be appropriately considered a reduction in indirect emissions. The Protocol should allow for the deduction of Green Power and Renewable Energy Certificates from Scope 2 emissions to reflect the commitment of those communities in promoting those efforts, often at considerable expense over more conventional, fossil-fuel based alternatives. Purchase of green power is one way that cities can support renewable energy through corporate operations. **(LA County, LACSD, Seattle, Alameda, Lakewood, MC)**

RESPONSE: The inventory created by using the Protocol is not meant to be a balance sheet that represents "net" emissions - it is meant to help local governments quantify and report the total physical emissions associated with their activities. While RECS and green power purchases are important strategies for local governments to support renewable energy and "green up" their power supply, their GHG inventory should still represent the physical emissions of a local government's activities. Thus (similar to the way the Protocol treats offsets), local governments do not make a line item adjustment to their Scope 2 emissions based on purchasing RECs or participating in a green power program. We encourage local governments to disclose information about these activities as an information item in Section 2 of the local government report.

97. A protocol on incorporating Renewable Energy Certificate purchases is needed. **(RSG)**

RESPONSE: Noted. The Climate Registry plans to devote significant time to this issue in the development of their Electric Generation Protocol, which should be completed in Spring 2009. We will plan to review the outcome of this process and updating this section appropriately.

98. This section notes that REC purchases may not be deducted from a local government's Scope 2 emissions. However, the CCAR GRP (v.3, pg. 35) allows for a line-item adjustment of indirect emissions from electricity consumption to reflect the impact of renewable energy purchases, and notes that this approach is consistent with EPA's current draft guidance for reporting purchases of green power and renewable energy certificates. Therefore, REC purchases should be able to be deducted from Scope 2 emissions. **(PG&E, Edmonton)**

RESPONSE: CCAR's GRP does <u>not</u> allow for a line item adjustment to the required scope 2 reporting, but rather what you reference is guidance on how to report a line item adjustment in the *optional* (and thus unverified) section of the CCAR standard report.

99. Purchasers of "green power" should have the right to use Chapter 8 (Power Generation Facilities) for the green power they purchase that meets the Chapter 8 requirements and where the data required for these calculations is available. **(SDMWD)**

RESPONSE: The methodologies in Chapter 8 are for calculating Scope 1 emissions from power generation based on fuel consumption data. These methodologies are not appropriate for calculating Scope 2 emissions from purchased electricity.

100. This section would benefit from explicitly stating the emissions factor that should be used to calculate emissions associated with electricity taken from the grid. *(See CDP comments for details on suggested guidance for reporting renewable energy)* **(CDP)**

RESPONSE: This information is explicitly stated in Sections 6.2.1 and 6.2.3.

101. What emission factors should a local government use if they own an electricity generation facility that is producing a portion of the power they use? Please add specific guidance to address this issue as well as renewable energy (green power) generation and using an emission factor of zero when reporting green electricity use. **(Alameda, Oakland)**

RESPONSE: Agreed. We have added clarifying guidance on both issues. If a local government generates power and consumes some of the power it generates, it should report the Scope 1 emissions from generating that power and use emission factors based on the fuel you are combusting to generate the power, but should not also report the Scope 2 from consuming that power - that would be double counting between the scopes within an entity, which is not appropriate. Instead the local government should report information about how

much self-generated power it consumed in the "Power Generation" section of the Standard Inventory Report as an indicator.

102. Having to comply with the reporting conditions of section 6.2.4 would negate the hitherto presumed effectiveness of many municipalities' green power purchase strategies. The tone of finality of Section 6.2.4 appears to also have the potential to reduce the incentive toward tapping into the green power purchase opportunity, and could simply lead to the rejection of a municipality to accept the reporting protocol proposal in the first place. We would suggest that the wording of item 6.2.4 (and associated wording for Part IV) incorporate exemptions in the following suggested format: *(See Edmonton comments for suggested text)*. **(Edmonton)**

RESPONSE: Noted. We strongly support the development of renewable energy resources and recognize its importance in the fight against climate change. We have added language that this section may change as accounting systems and the state of the science and technology on tracking green power through the grid improves. But at this time, our guidance is consistent with existing GHG accounting standards such that RECs or green power purchases cannot be deducted from Scope 2.

Accounting for Transmission and Distribution Losses (6.2.5, pg. 46)

103. Should we report loss of power where we own the electrical sub stations or for lines within our facilities? **(MC)**

RESPONSE: The loss at substations and internal lines are negligible compared with total T&D losses from transmission and distribution lines. You would only be responsible to report Scope 2 emissions from T&D losses if you own the lines leading to or from the substations.

104. Transmission and distribution (t&d) losses associated with consumption of electricity and steam should be treated the same way, but the Protocol seems to indicate that t&d losses associated with consumed electricity should be ignored from the end-user perspective while t&d losses associated with consumed steam should be accounted for. Given that t&d losses are part of the system of delivering the electricity or steam in either case, these losses should be treated as part of the Scope 2 emissions responsibility of the end-user in each case. Section 6.2.5 should be adjusted and emission factors provided that include t&d losses for electricity. **(Oakland)**

RESPONSE: Scope 2 emissions from T&D losses are the responsibility of the T&D line owner, not the end user of electricity or steam. This guidance is consistent with international practice (WRI/WBCSD Corporate Accounting Standard). However, end users are free to report the indirect emissions associated with T&D losses optionally as a Scope 3 emission.

105. The City of Seattle believes that T&D losses should be reported by the generator rather than the owner of the transmission lines. As owner of transmission lines, Seattle City Light cannot prohibit other generators from using the lines for transmission if space exists. However, City Light has no control over emissions portfolio of the electricity distributed on its lines by a 3rd party generator. **(Seattle)**

RESPONSE: This guidance is consistent with WRI/WBCSD on the ownership of T&D losses. While the city has no control over the emissions portfolio of a portion of the electricity transported via their lines, the city does have control to improve the efficiency of the line, while the end user does not.

Steam and District Heating Purchases (6.3, p. 46)

106. As recognized in the draft Scoping Plan, a combined heat and power ("CHP" or cogeneration) plant reduces overall emissions, whether direct or indirect, when compared to the alternative of separate electrical and steam supplies. The Protocol stipulates that if an LG installs a CHP plant, the LG's indirect emissions (through less electricity use) will be reduced but its reportable direct emissions will increase (through stationary combustion at the LG site). Yet, under the Protocol, the LG will only be able to report the benefit of the overall emissions reduction in the report narrative, which will not be quantified and thus, will be difficult to calculate and ascertain. The Protocol should include a mechanism that allows the overall emissions reductions to be easily quantified and identified. **(LA County)**

RESPONSE: Local governments are free to track and report their emission inventory at a level of detail greater than that set by the Standard Inventory Report. The Standard Inventory Report is meant to be a summary of a local government's GHG profile, not the only tool used to track this information.

107. The County further notes that the draft Scoping Plan would set up a perverse disincentive for the construction of CHP units, as the resident utilities would receive credit for reductions in Scope 1 emissions, while the owner of the facility would receive no credit, and (under the Protocol) have to report an increase in its Scope 1 emissions. If CARB truly believes that CHP should be more broadly deployed, CARB should address these twin disincentives in a coordinated manner. **(LA County)**

RESPONSE: The Draft Scoping Plan encourages the installation of CHP units. Please see page 23, Measure E2, which encourages an increase in combined heat and power usage. Accounting for the emissions reductions from CHP units is also an area where ARB is soliciting comments. www.arb.ca.gov/cc/scopingplan/spcomment.htm

Heat and Power Purchases from a Combined Heat & Power Facility (6.4, pg. 49)

108. The section focuses on discussing and calculating heat produced in the form of steam. CHP systems frequently produce hot water as well as hot air and hot oil, etc. Occasionally the text says the words "(or heat)" or "heat (or steam)". The protocol needs to cover all forms of heat recovery in a generic way. **(SDMWD)**

RESPONSE: Agreed. We have updated multiple references to "heat (or steam)" in this section to read "steam (or heat)" in order to address all forms of heat recovery in a more generic way.

109. The effort to properly attribute emissions from CHP facility heat and power generation may be too complicated a task for local government staffers to calculate on their own. They will likely need consulting expertise; increasing the cost burden to

submit their inventories and further complicating the verification process. The Protocol should be constructed so that expensive experts need not be hired to complete it nor so complicated as to significantly increase the burdens of verification. **(LACSD)**

RESPONSE: Agreed. Agreed. We have added alternate methodologies to this section that necessitate less data and resources to implement. The original methodology remains as the recommended methodology.

Fugitive Emissions from Refrigerants and Fire Suppression Equipment (6.6, pg. 54)

110. Clarification is necessary if hand-held fire extinguishers are included in this analysis. **(Lakewood)**

RESPONSE: Hand-held fire extinguishers are included in the Fire Suppression Equipment analysis. We have added clarifying language to make clearer.

Chapter 7 Vehicle Fleet

(pg. 62)

111. The protocol does not fully measure the greenhouse gas reduction benefits afforded through public transportation service. The main issue is that public transportation is an essential strategy in reducing the growth of GHG emissions from the land-use and transportation sector. Public transportation, by necessity, must initially increase its own GHG emissions in order to reduce regional GHG emissions (by providing options to driving alone). It is an inconsistent accounting practice to include the emissions source (the bus fleet) in the government inventory, but the benefits it provides (through VMT reductions) in the community inventory. At the very least, some guidance should be provided on this issue (additional text box, etc.), and we recommend classifying transit fleets as scope 3 (if not as a community emission). **(FSU, Alameda, APTA)**

RESPONSE: Noted. If the local government owns and operates transit vehicles then those emissions should be reported in their operations inventory. We understand that these emissions will initially increase but since the inventory is a snapshot of GHG emissions that should be one tool of many used to comprehensively assess climate action, and does not separately account for emission reduction projects, they will need to be included in an inventory report. We will separate the transit vehicle emissions from other vehicle fleet emissions in the reporting template which will highlight that emissions are increasing from transit only. Disclosure of reduction projects as an additional information item at the end of the inventory may also help clarify the increase in transit emissions.

The local government operations inventory will be a subset of the community-wide inventory to be developed at a later time. Within the community inventory it may be easier to see transit emissions increase as personal vehicle emissions decrease.

112. The APTA Climate Change Working Group has made enormous progress in developing a displacement protocol/standard (draft by July 2008) that we would like to be considered for inclusion in the Local Government Operations Protocol. This

amendment would show how to quantify the emissions reduced by public transportation services (based on size of transit agency and other metrics) to get to a net emissions value. We would like to work with the DRAFT Local Government Operations Protocol to resolve the public transportation GHG displacement issue. In addition, we would like the transit operations component universally applied to other Protocols and future local protocols. **(FSU, APTA)**

RESPONSE: The local government operations inventory is not designed to account for displaced emissions from emission reduction projects. The APTA displacement protocol/standard would be best used as an additional resource for local governments and for the community-wide inventory to be developed in the next phases. We will be happy to review this standard for inclusion in the community level guidance.

Once the community protocol is complete, perhaps a reference for the APTA protocol/standard could be included in a later version of the operations protocol as a tool for local governments and the community to use when determining the benefits and emission reduction potential of transit development.

113. Given the wide varieties of institutional transit models, comparison between local governments would not be well-served by aggregating transit in with other local government vehicle fleets, as implied in Box 7.1 (page 62) and by the breakdown of sectors given on page 25. It would be impossible to quantify emissions from transit within a given region under the approach in the draft protocol. We therefore urge you to require that local governments disaggregate emissions from transit – or at least, mobile source emissions from transit – in their emission reports. **(APTA)**

RESPONSE: Agreed. We have separated transit fleet emissions from other vehicle fleet emissions in the local government operations Vehicle Fleet sector. This has been changed in the reporting template of the protocol and language added within the protocol.

114. Due to the significance of light and heavy commuter rail transportation infrastructure in climate change goals and capital investment, it is assumed that this sector will be covered under a separate protocol. It is recommended that this be specified in the final Protocol. It is also recommended that a bus and ferry transportation sector be identified in the final LGO Protocol and that a separate protocol be developed for this sector. **(CEChoice)**

RESPONSE: Currently, there are no separate protocols planned to be developed in conjunction with this protocol for light and heavy commuter rail or bus and ferry transportation, as unique calculation methodologies are not needed to quantify the emissions from these sources. Within the Local Government Operations protocol, emissions from light and heavy commuter rail would be included in the new Transit subsector (see response to comment 115) as scope 2 emissions from purchased electricity or scope 1 emissions from mobile combustion of fuels such as diesel. Bus and ferry emissions would also be included in the Transit subsector as either scope 1 from mobile combustion or scope 2 if either source uses purchased electricity. Emissions from these sources would only be included in the local government operations inventory if they are owned and operated by

the local government; this excludes independent transit agencies or districts that would need to develop their own inventory.

Detailed Annual Mileage and Fuel Efficiency (7.1.1.2.1, pg. 64)

115. Consider how the protocol should address the use of private vehicles for government business. Step 2 refers only to reimbursement amounts for trips made in local government fleet vehicles. **(Carlsbad)**

RESPONSE: The intent in this section is to describe a method for accounting for trips made in vehicles that are owned or operated by the local government. Trips taken on government business by employees in their own vehicles could be included in an inventory as a scope 3 source.

Fuel Estimates Based on Dollars Spent (7.1.1.2.2, p. 65)

116. Fuel prices vary widely within a given year. Gasoline prices have risen on the order of 100% since one year ago. Therefore this method will lead to results with very high levels of uncertainty. Local governments should be encouraged to track fuel consumption in addition to fuel costs, even if they have not done so in the past. Therefore we recommend excluding this method. If it is necessary to include this method, we recommend stating that it should only be used to estimate minor sources of emissions, such as sources that would be eligible for using a "simplified estimation method" in the Climate Registry (i.e., falling below a specified threshold). **(WRI)**

RESPONSE: To clarify, this alternate calculation is not considered third party verifiable under CCAR's program. This means that this method could only be used to estimate emissions that are less than the threshold of significance (such as CCAR's de minimis threshold). We believe that it is important offer this alternative for cases where complete data sets are not available. We have added additional language to section 5.1.3 to help clarify this point.

Proxy Year Fuel Use Data (7.1.1.2.3, p. 66)

117. There is no guidance provided on how to adjust "proxy year fuel consumption based on estimated changes in fleet size and composition." The only accurate way to track CO_2 performance from a vehicle fleet is to track fuel use. Due to the high expected uncertainty, we recommend excluding this method—particularly given the other alternative methods already suggested. **(WRI)**

RESPONSE: To clarify, this alternate calculation is not considered third party verifiable under CCAR's program. This means that this method could only be used to estimate emissions that are less than the threshold of significance (such as CCAR's de minimis threshold). We believe that it is important offer this alternative for cases where complete data sets are not available. We have added additional language to section 5.1.3 to help clarify this point.

CO_2 Emissions from Vehicles Combusting Biofuels (7.1.2, p. 66)

118. Are there any specific calculation methods for transportation fuels generated from biomass? If so, please note in the text. **(LA)**

RESPONSE: Noted. Except for the biodiesel blend methodology presented in this section, biofuels do not necessitate a unique calculation methodology, but

rather just unique emission factors. We do supply default emission factors for biofuels and have added clarifying guidance in this section about these sources and that points to the biofuel emission factors in Table C.9.

Mobile Combustion CH_4 and N_2O Emissions (7.1.3, p. 67)

119. We would recommend providing a user friendly table that cities can use to put together requested data in a consistent format. **(Sacramento)**

RESPONSE: Noted. The partners are committed to supporting its use for our members and constituents and others. Due to different reporting guidelines in different programs and the alternate methodologies, a single table would be difficult to construct. Once the protocol is complete we expect to provide a variety of resources including data collection forms.

Recommended Approach (7.1.3.1, pg. 68)

120. Please provide guidance on accounting for the fuel usage of non-highway vehicles that are not typically individually tracked (i.e. "forklifts and scissor lifts or grounds keeping equipment"). Can a government participate even if they do not monitor fuel usage in every lawnmower and leaf blower? Additionally, many construction projects have a fuel tank the job site but fuel use is not monitored on each individual piece of equipment at that site. **(Alameda)**

RESPONSE: Agreed. We have added language clarifying the alternate methodologies available for use with non-highway vehicles.

Emissions from Alternative Fuel Vehicles/Electric Vehicles (7.2, p. 70)

121. Many municipal and private fleet operators are using liquefied natural gas (LNG) to power their vehicles. LNG is a cryogenic fuel and will stay at near constant, low temperature if the pressure is kept constant. Accordingly, venting of "boil-off" is needed. Unless the LNG storage facilities are equipped to capture this boil off, the methane released to the atmosphere via this source should be taken into consideration. How should this venting be addressed within the LGOP? **(LA)**

RESPONSE: Noted. There is currently no standardized methodology for capturing this source of fugitive CH_4 emissions. We have added clarifying language about the potential for this source, and that it should be quantified by local governments with LNG storage facilities.

Table 7.2 Default Emission Factors for Mobile Refrigeration / Air Conditioning Equipment (pg. 74)

122. If I am reading the Protocol correctly, the default emission factors are meant for de minimis calculations and should not be used for actual emissions estimation in cases where service records are not available (which I suspect is often the case). It should be made clear that Table 7.2's emission factors should not be used in estimating actual emissions from refrigerant leakage. **(CMS)**

RESPONSE: Agreed. Use of these emission factors is for estimation purposes only, as is not suitable for verification under the CCAR standard. We have added additional clarifying language to highlight this issue.

Chapter 8 Power Generation Facilities

(pg. 75)

123. We own a cogeneration facility (3-4 MW) that is powered by burning wastewater sludge, but the steam and electricity are used entirely within the wastewater facility. Such facilities should be explicitly included in the wastewater sector. Solid waste operations (refuse derived fuel and mass burn technologies are in use in the metropolitan Minnesota region) also sometimes generate power for their own use. **(MC)**

RESPONSE: Agreed. All activities occurring at a wastewater facility (except for the emissions from fleet vehicles) should be reported as part of the Wastewater section. The same goes for solid waste. We have added clarifying language to chapters 8, 9, and 10 to highlight this issue.

124. Clarify if emergency generators are part of [Chapter 8]. **(Sacramento)**

RESPONSE: Emergency generators are more appropriately classified as a stationary combustion source under the “Buildings & Other Facilities” sector, unless they are on-site at a power generation facility, in which case they should be reported in the “Power Generation Facilities” sector. We have added clarifying language to chapters 6 and 8 to highlight this issue.

125. The Protocol does not provide guidance as to how to estimate emissions associated with residues. **(Hennepin)**

RESPONSE: Noted. The residues you reference come from processing of municipal solid waste at refuse-derived fuel (RDF) facilities. Refuse derived fuel consists largely of the organic components of municipal, commercial and non-hazardous industrial solid waste. The RDF also contains inorganic *residues* that remain after removing the recyclable materials such as aluminum, glass, tin, and iron based materials. As the RDF residues mostly inorganic materials, we do not believe there is much potential for them to produce GHG emissions. We will look into this issue for future versions of the Protocol.

126. Specific guidance is provided in the power generation section as to how AB32 overlays the LGOP. Similar guidance was promised for users of the PUP and should be provided. **(LA)**

RESPONSE: Agreed. We have added clarifying language to chapters 8 and 15 to highlight this issue.

127. We recommend you change the term “direct” to “scope 1” to avoid any confusion. **(WRI)**

RESPONSE: Agreed. We have implemented this change in wording.

128. The draft Protocol proposes to include emissions from the generation of electricity by municipal utilities in the local government's emissions inventory. However, these

emissions are reported separately to CCAR under the Power/Utility industry specific reporting protocol, and will be reported to ARB under the Mandatory GHG Reporting program. We believe it is not appropriate to include these emissions in the local government sector because they should be counted in only one sector, the electricity sector. **(LADWP)**

RESPONSE: The Protocol was developed as a tool for local governments to assess the emissions from all sources within their operations comprehensively. Because of this, it is not in a local government's best interests to exclude or ignore the emissions from a large source like a municipal utility. Even with a utility reporting its GHG emissions to the state and potentially the federal government, we do not see a conflict in having the same data appear in a number of different places to serve a number of different purposes. We include the emissions from municipal utilities in a local government's operations to be consistent with internationally recognized standards for defining organizational boundaries, and to help local governments be aware and assess all GHG sources within their operations.

129. One of the objectives of developing industry specific protocols such as the Power/Utility protocol and the LGO protocol is to provide standardized reporting of emissions to allow comparison between entities within that sector. Providing electric service to the community is not a core local government service. Therefore, including electricity generation emissions in some cities' emissions inventories but not in others is inconsistent. This would skew the inventories for those cities with municipal utilities so that they are not comparable with cities that do not provide this service. **(LADWP)**

RESPONSE: Following the organizational boundary standards laid out by WRI/WBCSD, municipal utilities clearly fall within the organizational boundary of a local government, as they are most often a department of the local government. As this Protocol and the partners who developed it strive for consistency with this internationally recognized GHG accounting standard, municipal utilities are to be reported as part of a local government's operations (although separately from other facilities, so it is clear which local governments have power generation and which do not). There are many sources embodied in this Protocol that some local governments will have and other will not - the focus of the Protocol is not comparability between local governments on each emission source reported, but rather creating a comprehensive GHG inventory against which to track internal progress over time.

Stationary Combustion: Measurement-Based Methodology (8.1, p. 76)

130. [The Protocol] appears to require the use of 40 CFR Part 75 CEMs for calculating annual CO_2 mass emissions. We request that Part 75 CEMs not be exclusively used. 40 CFR Part 60 CEMs and 40 CFR 60 Appendix A EPA test methods including Method 19 should be included as acceptable alternatives for calculating annual CO_2 emissions. **(SWICS, WM)**

RESPONSE: The protocol includes two recommended methods to quantify CO_2 emissions from stationary combustion; a measurement-based and a fuel use-based methodology. Local governments that report CO_2 emissions using the

measurement-based methodology must use the method outlined in the U.S. EPA 40 CFR Part 75 rule to calculate CO_2 emissions.

We recognize and acknowledge that 40 CFR Part 60 methods can be used to install, certify, operate, and maintain continuous emissions monitoring systems (CEMS) configurations. However, we are relying on the 40 CFR Part 75 method calculate CO_2 emissions because it is the one federal regulation that mandates reporting CO_2 emissions.

131. The proposed measurement-based methodology suggests that there is only one approved USEPA standard for certifying continuous emission monitors, i.e., 40 CFR Part 75. The USEPA has promulgated emissions standards for municipal waste combustors (MWCs, also called EfW facilities) that also contain CEMS requirements. The MWC standards are found in 40 CFR 60, Subpart Cb for existing facilities and Subpart Eb for new facilities. The CEMS requirements pertaining to these standards are found in 40 CFR Part 60, Appendices A, B, and F. These federally approved procedures are presently being followed at all 87 EfW facilities in the U.S. **(Covanta)**

RESPONSE: Local governments can use either rule to operate, install, certify, operate, and maintain CEMS. However, local governments that select the measurement-based methodology must use the method outlined in the U.S. EPA 40 CFR Part 75 rule to calculate CO_2 emissions. 40 CFR Part 75 provides a consistent method for calculating CO_2 emissions.

Stationary Combustion: Fuel Use-Based Methodology (8.2, pg. 76)

132. It would be useful to emphasize in the text that the CO_2 being calculated for stationary combustion includes the "pass through" CO_2 in your fuel stream. Local governments that combust landfill gas may be uncertain whether to include both CO_2 produced from the methane combustion and CO_2 originally present in the landfill gas and passed through the combustion system and emitted. If they don't use the default emission factor, they may calculate their own based on just the CH_4 portion of the landfill gas. **(SLC)**

RESPONSE: Agreed. We have changed the MSW and LFG/biogas default emission factors to not include "pass through" biogenic CO_2 and have added clarifying language that "pass through" biogenic emissions should not be reported.

133. For biomass, MSW, and waste-derived fuels containing biomass, the LGO Protocol should allow the use of annual steam production and design boiler efficiency, as is currently contemplated under CARB regulation, in lieu of MSW quantities and carbon content. The LGO Protocol should discourage the testing of MSW and other heterogeneous fuels in favor of using reliable alternatives such as described in CARB's proposed *Regulation for the Mandatory Reporting of Greenhouse Gas Emissions.* **(Covanta)**

RESPONSE: Local governments with power generation facilities subject to mandatory reporting are required to use the methods outlined in the GHG reporting regulation. Please refer to page 75 where this information is noted in the text box. Any mandatory reporting requirements for AB 32 supersede the

methods outlined in the LGO Protocol. The Protocol has been updated to allow the use of annual steam production and design boiler efficiency as a method to estimate CO_2 emissions from combustion of biomass, MSW, or waste derived fuels with biomass using Section 95125 (h).

Box 8.1 Biofuels, Waste Fuels, and Biomass Co-Firing in a Unity with CEMS (pg. 77)

134. In the paragraph for waste fuels please give guidance for facilities that combust wastewater sludge; is there a non-biogenic component? **(MC)**

RESPONSE: Wastewater sludge, also called "biosolids" is considered completely biogenic in origin. We have added language to this section and Chapter 10 to clarify this.

135. Periodic flue gas testing using ASTM D-6866 should be identified as the superior and recommended method for determining biogenic CO_2 emissions from combustion of waste fuels and from co-firing of mixed biomass and fossil fuels. The draft "Waste Fuels" section identifies the preferred option for determining the amount of biogenic CO_2 as a field MSW characterization study, with the ASTM D-6866 methodology given as an alternative. CARB regulations require EfW facility operators to report biomass-derived CO_2 emissions using ASTM D-6866. **(Covanta)**

RESPONSE: There are no recommended or alternate methodologies for calculating biogenic emissions from biomass combustion - local governments are free to use any of the three approaches.

Fugitive Emissions from Solid Fuel Handling & Storage (8.4.2, p. 82-83)

136. This section refers local governments to use industrial best practices to estimate emissions associated with fuel handling and storage. There should be a list of some of these practices to guarantee uniformity among all Reporters. In lieu of standardized methodologies for calculating emission sources for biomass handling & storage, the protocol should reference acceptable "industry best practices." The same is true for 8.4.2, coal handling and storage. If the methodologies are that vague, perhaps reporting should wait until better understood/established. **(Hennepin)**

RESPONSE: Noted. There are currently no widely accepted methodologies for calculating fugitive emissions from solid fuel handling and storage, thus we are unable to provide references to specific methodologies. Nevertheless, this is a potential source of emissions and local governments who have solid fuel storage should attempt to quantify in order for their inventory to be comprehensive. We hope to add methodologies for these sources as the state of the science in this area progresses.

Chapter 9 Solid Waste Facilities

(pg.84)

137. The citations in Chapter 9 should more inclusive and better referenced. For example, sources in Tables 9.3, 9.4, and 9.5 are listed as simply "EPA" or "IPCC" with no specifics. **(Covanta, SLC)**

RESPONSE: Agreed. We have added additional detail to the references throughout Chapter 9.

138. The LGO protocol should recognize the important role of landfills in sequestering carbon. Because carbon sequestration is an anthropogenic sink, it should be reflected in any estimate of landfill emissions so as to provide a complete, carbon mass balance. Both the IPCC and EPA for national inventories recognize and account for carbon sequestration of undecomposed wood products, food scraps and yard trimmings disposed of in landfills. **(WM, LACSD)**

RESPONSE: Per Section 2.3, the Protocol is not designed to quantify carbon sinks - this is outside the scope of this document. The Protocol has a different focus than the IPCC and EPA inventories. IPCC and EPA assess carbon flux at the national level - this Protocol concentrates on emission sources only at the entity-level.

139. While the GHG emission of fixed facilities and transportation associated with solid waste management may be address in other parts of the protocol, the protocol fails to evaluate the GHG emissions and benefits from: composting, recycling, biogenic energy from waste, and carbon storage or sequestration associated with waste management activities. The US EPA has developed extensive documentation of the GHG emissions and benefits of the above activities that appear to be ignored by the proposed protocol *(See reference submitted with SWICS comments)*. **(SWICS)**

RESPONSE: The inventory created by using the Protocol is not meant to be a balance sheet that represents "net" emissions - it is meant to help local governments quantify and report the total physical emissions associated with their activities. We do encourage local governments to disclose information about these activities as an information item in Section 2 of the local government report, and these issues will be looked at in more detail under the community guidance development process.

140. SWICS continues to be concerned that this protocol continues to ignore peer reviewed nationally recognized experts in focusing unwarranted attention on landfill emissions. *(See documents submitted with SWICS comments)*. **(SWICS)**

RESPONSE: This Protocol contains only calculation methodologies that have been recommended by IPCC and EPA, or that follow guidance developed through a multi-stakeholder workgroup process by CCAR, TCR or ARB. The SWICS protocol was developed by industry and has not been reviewed or accepted by any of these organizations. The methodologies would need to go through additional vetting and approval by some or all of these organizations in order to be included in this Protocol.

141. The Protocol should recommend that methane emissions generated from waste disposed of as a result of local government operations be included and reported in all local government inventories. This differs from the LGOP's recommendation to only include waste sector emissions in the local government inventory if the government owns/operates the landfill. It is more appropriate to include this emissions source in

all local government inventories to acknowledge the impact of waste generation on climate change and to send the appropriate policy signals to local governments working to reduce their waste and emissions levels. **(StopWaste et al.)**

RESPONSE: The concept of requiring Scope 3 emissions under this Protocol was discussed with the workgroup and advisory group - it was decided that it would be too difficult at this time due to a lack of data and estimation methodologies for these sources. This issue will be addressed under the community guidance to be developed starting this fall, as the majority of the sources in that protocol will be scope 3.

142. The City of Seattle will be unable to satisfy the data needs of landfill element of this protocol. We do not have the front end data (tons/year, waste composition and percent burned) to even make a guess at the generation rates for any of the sites. Therefore, in our case estimation based on actual scaled data with some minor modifications based on model inputs will be the most accurate. More generally, we have significant concerns with the model used for landfills. The model is overly complex and not grounded in real world data. One of the biggest weaknesses in our opinion is that many of the component equations are modeled to a high level of assumed accuracy, yet the entire model is then modified by very gross assumptions. **(Seattle)**

RESPONSE: If the City owns and operates a landfill, it should have basic data regarding the waste in place, average rainfall at the landfill. These are the only inputs needed to run the FOD model, as defaults are available for the other variables. We understand that this model produces a simplistic estimation, but it represents the best available methodology for estimated fugitive CH_4 emissions at this time. As stated in Section 9.2, there is much work to be done on calculation methodologies for this sector, and this chapter will be updated accordingly as the state of the science improves.

143. [The opening paragraphs of this chapter indicate] to see other chapters on the reporting of CO_2. It is not clear to me whether the following sources of CO_2 should be reported as scope 1, scope 2 or scope 3 or anthropogenic or biogenic:

a. CO_2 that is emitted by the boiler stack after combustion of landfill gas in the boiler

RESPONSE: Biogenic CO_2 emission from biomass combustion - should not be reported as a scope, but rather as an Information Item.

b. CO_2 that is emitted by the flare after combustion of landfill gas on site

RESPONSE: Biogenic CO_2 emission from biomass combustion - should not be reported as a scope, but rather as an Information Item.

c. CO_2 that is a fugitive emission from the surface of the landfill **(Sacramento)**

RESPONSE: Non-combustion biogenic CO_2 emission - this Protocol focuses on biogenic emissions from biomass combustion only (see

response to comment 66), and thus does not have a pre-determined place for these types of biogenic emissions to be reported.

144. Clarify how emissions would be affected if solid waste and/or green waste is used to produce energy. I'm guessing that the solid waste emissions would not change, but that we could offset utility marginal or average missions with zero emission produced electricity? **(Sacramento)**

RESPONSE: Where you may see a change in emissions is fewer Scope 1 emissions from stationary combustion, as you would be using less fossil fuel by burning biomass instead.

145. Please provide guidance for emissions from incineration and other waste disposal operations. Only including landfills sends the message those other disposal methods are carbon neutral in the inventory. This is not the case when petroleum based plastics and other products are incinerated (and per guidance in the chapter 13, biogenic emissions from an incinerator should be captured as an informational item as well). **(Alameda, Oakland)**

RESPONSE: Agreed. There is a default emission factor in Table C.2 for municipal solid waste and we have added clarifying guidance regarding calculating emissions from incineration to chapters 8 and 9.

146. Please provide guidance for the inclusion of any "closed" landfills that a jurisdiction may own. Is there an amount of time after closing that a landfill can be excluded from the inventory (or would ever landfill be included even if many have been closed for over 100 years)? **(Alameda, Oakland)**

RESPONSE: All known landfills should be assessed for potential GHG emissions using the best available information. There is currently no widely accepted standard age when a landfill is assumed to not produce any GHG emissions. However, we have added clarifying language that only landfills that accepted or accept organic waste should be assessed and included in the inventory.

For local governments in California, they can consult with the CIWMB for information regarding closed landfills.

147. The current chapter addressing municipal landfills should be converted into an appendix in the protocol that can be maintained and updated on a regular basis without having to revise the general LGO protocol. **(CEChoice)**

RESPONSE: Many chapters in the Protocol will undergo updates and changes as new information becomes available. There is no need to separate out this particular chapter in a unique way.

148. Adjust the text in the front of this section to acknowledge that industrial-scale compost facilities, which do generate small amounts of methane, are excluded from analysis as described in section 9.4. **(Oakland)**

RESPONSE: Information regarding composting can be found in its own section

(9.4). This section header is included in the Table of Contents, and we feel it is the more appropriate to keep the information in one section.

149. Please clarify up front that this section only deals with estimating emissions associated with waste disposal facilities that meet the chosen control definition and that guidance on estimating emissions associated with waste disposed by the local government (regardless of whether or not that waste is going to a facility under the local government's control) is provided in another section. **(Oakland)**

RESPONSE: Agreed. We have added clarifying language to Section 9.1 regarding this issue.

150. The term 'stationary combustion source' needs to be clearly defined. Is the term stationary combustion source referring to one point/unit or is it the facility? It would be best to define it the same way as the Federal air regulations to reduce confusion but it would be best for us if it was by unit as it would require less reporting, meaning only a flare which emits over 25,000 metric tons CO_2e would need reporting. **(Phoenix)**

RESPONSE: Throughout this Protocol, stationary combustion source refers to a combustion source of any size. Under this Protocol, there is no significance threshold for the inclusion of an emission source - all sources should be assessed and included.

151. Clarify that for MSW flares (or other units) that the combustion by-products from methane combustion are included in the GHG totals. **(Phoenix)**

RESPONSE: This is clarified in Section 4.6. We have added additional clarifying language regarding this issue in chapters 8 and 9.

152. The protocol needs to be more holistic and look at the entire infrastructure which includes benefits/offsets associated with recycling and compost application as well as LFG-derived fuels. As currently structured, the protocol penalizes local governments for these efforts which, from a GHG reduction point of view, may incentivize landfilling of these recyclable and compostable materials. **(CIWMB)**

RESPONSE: The inventory created by using the Protocol is not meant to be a balance sheet that represents "net" emissions - it is meant to help local governments quantify and report the total physical emissions associated with their activities. We do encourage local governments to disclose information about these activities as an information item in Section 2 of the local government report, and these issues will be looked at in more detail under the community guidance development process.

"California Local Governments and AB 32" Box, p.84

153. Weblink outdated: http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm **(Hennepin)**

RESPONSE: Noted. The weblink has been corrected.

Organizational Boundary Issues (9.1, p. 84)

154. The City's internal operations generated(/s) about 1% to 3% of the solid waste produced within the City of Sacramento; residents and businesses making up the rest. It has never been clear to me whether 1% to 3% of the emissions of the landfill should be included in the internal operations greenhouse gas inventory and 97% to 99% included in community greenhouse gas inventory, or whether 100% of the data should be included in the internal operations inventory. Please clarify. **(Sacramento)**

RESPONSE: The answer depends on whether the landfill receiving the waste is within the city's organizational boundaries. If it is, the city reports 100% of the emissions associated with the landfill, regardless of where the waste came from. If the city does not own/operate the landfill, then it can report waste-associated emissions as Scope 3 under the LGO Protocol. The community protocol will provide additional guidelines on how the emissions from community waste should be reported.

Estimation Methodologies (9.3, pg. 85)

155. It appears inconsistent to calculate just the fugitive emissions of methane from landfill cap leakage, and not also calculate the fugitive emissions of CO_2 in landfill gas leaking from the landfill cap (to be reported as a biogenic emissions). Under Section 8 guidance, it appears that this portion of CO_2 in landfill gas captured and subsequently used for power generation would be reported as a biogenic emission of CO_2. However, under Section 9, it appears that unrecovered landfill gas is only included in Scope 1 emissions of methane, and the CO_2 portion of the leaking landfill gas would be ignored. **(SLC)**

RESPONSE: Regarding biogenic emissions, the Protocol concentrates on biogenic emissions from combustion only. Quantifying non-combustion biogenic emissions (e.g. CO_2 leaking from a landfill cap) is beyond the scope of this Protocol. We have changed the MSW default emission factor in Table C.2 to not include pass through CO_2 to remedy this inconsistency.

156. Note that the composition of the waste sent to landfill, not just the amount, is also an important factor in determining the amount of methane produced. **(Oakland)**

RESPONSE: Noted. We understand that waste composition is an important factor, and default waste composition values based on ARB and EPA data are built into the FOD model to address this issue. Per the guidance on p.88 of the Protocol, if a local government has information about the waste composition at its own landfill, it can replace the default values in the FOD model with site-specific values.

Landfills with No LFG Collection System (9.3.1, pg. 85)

157. Define the acronym FOD and the model. **(Oakland, Phoenix)**

RESPONSE: Agreed. First-Order Decay (FOD) Model, which means the amount of carbon that will decay is directly proportional to the current amount of material available to undergo that decay. So if you have twice the material, you will have twice as much carbon that decays. We have added clarifying language to the Protocol.

158. Please specifically clarify that the waste composition going into the landfill should include all organic material, even material used as alternative daily cover (ADC) such as biosolids and plant debris. ADC is considered "diversion" for waste reporting in California, but it still produces GHG emissions in a landfill. As that distinction does exist in other state guidance, ADC should be specifically mentioned in the protocol. **(Alameda, Oakland)**

RESPONSE: Agreed. We have added clarifying language to address this issue and the amount of daily cover (greenwaste/ compost and sludge) is factored into the FOD model. You include both the waste buried as well as the degradable cover materials used for daily cover, since these eventually get buried with the waste and effectively become additional waste material to degrade.

159. Under step 1, determining the annual waste in place at a landfill, the draft LGO protocol suggests that if information about the opening year of the landfill is not available, the reporter should assume the opening date was 60 years prior to the reporting year. There is no basis for such an assumption provided in the protocol. Further, while no information on the opening year may be available, alternative information that points to a more educated assumption than the arbitrary 60 years should be used by the reporter and allowed under the protocol. **(SWICS, WM)**

RESPONSE: Noted. A better estimate is always welcome - the default is provided for those who have no better data to use.

160. The LGO Protocol should allow local governments to use a default MSW methane generation potential for landfills having no LFG collection system. An appropriate and accepted value used by USEPA is 100 scm CH_4/MT MSW, which corresponds to TDOC (0.2) and DANF (0.5) values that can be used in the IPCC waste model. **(Covanta)**

RESPONSE: To be consistent, each landfill should use the same method, and the IPCC model is internationally recognized and also used by the ARB for its inventory, so this makes using any other method inconsistent. If another method can be shown to be objectively superior to the IPCC model, then we would want to make the switch to it not just for this protocol, but for the inventory as a whole. Using a default MSW methane generation potential would create less accurate results than the methodology currently included in the Protocol.

161. We note that use of the IPCC FOD Model and default parameters to estimate fugitive methane emissions are not site specific, and could lead to inaccurate estimates of emissions. **(LA)**

RESPONSE: Noted. We understand that this model produces a simplistic estimation, but it represents the best available methodology for estimated fugitive CH_4 emissions. As stated in Section 9.2, there is much work to be done on calculation methodologies for this sector, and this chapter will be updated accordingly as the state of the science improves.

162. The IPCC FOD model and CARB Excel-based tool are not readily available for review and therefore we cannot comment on it. **(Hennepin)**

RESPONSE: Noted. The excel-based FOD tool will be released in a beta versions and will available for download with the final Protocol.

Box 9.1, p. 87

163. The data necessary to account for prior year disposal is unreasonably difficult to obtain. **(Hennepin)**

RESPONSE: Annual jurisdiction population can be obtained from the US Census Bureau.

Table 9.4, p. 88

164. The protocol needs to specify if this is on a dry or wet weight basis; also, if it is on a wet basis, the assumed moisture content. **(SWICS)**

RESPONSE: The waste should be on an "as deposited" basis, which means, wet basis. The ANDOC factors take this wet tonnage and give you dry carbon from it, so the moisture content conversion is imbedded in the factors. We can provide documentation for these factors for those who want to investigate them. We've added clarifying language in the Protocol to address this issue.

Soil Cover Oxidation, Sections 9.3.2 & 9.3.3

165. The synthetic cover instructions would only apply to areas with final cover. Since much of the landfill will have intermediate cover, it does not make sense to apply one number to the entire landfill. Please refer to the SWICS protocol document for suggested methane oxidation efficiencies by cover type. WM urges the protocol developers to consider the information in the SWICS protocol and allow reporters to use the ranges provided based on landfill cover type and design, rather than the outdated default value of 10 percent. **(SWICS, WM)**

RESPONSE: 10% oxidation for soil cover is the internationally accepted default value. Until new values are approved by ARB, EPA or IPCC, we will continue to reference the internationally-accepted standard.

166. Table 9.6 provides the default values for Landfill Cover Oxidation Value (OX) for two different types of cover, namely, soil and synthetic. Instead of having these types of cover, many landfills are now landscaped with trees and vegetation, which collectively provide a natural means for carbon sequestration. It is thus recommended that an OX value for this type of landscape at landfills should also be established. **(LA)**

RESPONSE: After further discussions, we have decided that it is more appropriate to use a default 10% oxidation rate for all types of covers, as differentiated cover types combined with the 75% collection efficiency would make CH_4 emissions at landfills with synthetic covers *higher* rather than lower. Thus, we will not be adding additional factors to differentiate cover types further.

167. Please provide clarification why a value of "0.00" is the assigned oxidation factor for landfills with synthetic covers. This value implies that a landfill with a synthetic cover would emit more emissions that one with a soil cover that is allowed an oxidation factor of "0.10," when a synthetic cover is actually a better barrier to emissions. In addition, landfills with synthetic covers also require a vegetative soil layer. Therefore, methane that escapes the synthetic cover could potentially be oxidized by this vegetative soil layer. **(CIWMB)**

RESPONSE: Agreed. We have updated this chapter to eliminate the distinction between soil and synthetic covers to address this issue.

75% Default Collection Efficiency, Sections 9.3.2 & 9.3.3

168. The proposed draft protocol uses the landfill gas collection efficiency (75%) that is derived from US EPA documents. However, the technical basis for this collection efficiency is by no means robust. The default 75% collection efficiency does not take into account the different LFG collection systems that are utilized at landfills. In July 2007, SWICS released its first white paper titled *Current MSW Industry Position and State-of-the-Practice on LFG Collection Efficiency, Methane Oxidation, and Carbon Sequestration in Landfills* [A July 2008 update of this document is now available]. In the paper, SWICS proposed a revision to the existing California Air Resources Board methodology for calculating methane emissions from landfills. LFG system owners and operators believe the use of default values prevents individual landfill sites from demonstrating higher collection efficiency using available site-specific information. The protocol developed by SWICS is much more rigorous and, unlike the 75% US EPA default, is up-to-date with respect to state-of-the-art knowledge of landfill gas collection systems. We recommend that the LGO protocol not exclusively use EPA national default values. We believe that reporters should be able to substitute the landfill GHG emission results of the SWICS model with that of the US EPA default assumptions. **(SWICS, WM, SWMD)**

169. WM strongly recommends that public and private landfill operators have the flexibility to use the default 75percent value if they choose, or alternatively, use the default ranges in the SWICS protocol, or provide a site-specific demonstration of LFG collection efficiency. **(WM)**

170. A 60% recovery rate is a more appropriate average than 75% in this context. While the EPA recommends using a collection efficiency of 60% to 85% in the AP 42 guidelines, methane poses such a significant climate impact that more conservative estimates should be applied. Furthermore, studies have shown that certain types of waste, e.g., food, can release most of their methane prior to capture systems being in place. Until there is a better system for determining how much methane is lost through lateral cracks, leaks in the wells and piping, and prior to and after the active phase of the methane collection system, the standard capture efficiency number should be at the more conservative lower end of the range of EPA's AP 42 guidelines, which is 60%. **(StopWaste et al., Oakland)**

171. Although not reported to the CCAR, the City has calculated greenhouse gas emissions for the closed landfill since 2004. Based on feedback from the local AQMD, the City has used a standard collection efficiency of 85%. Is it better to try

and use data from the best available source (i.e. AQMD) instead of using default values of 75%? **(Sacramento)**

RESPONSE TO COMMENTS 172-175: Per the comments above, there are arguments for both increasing and decreasing the default collection efficiency of 75%. 75% is the collection efficiency used currently by both EPA and CARB. There is no best source for collection efficiency values, because no proven method exists for determining one. Therefore, it is best to be consistent and treat all the unknowns in the same manner, which would be through the use of the standard assumption of 75 percent. Until a new default value is approved by ARB or EPA (or a widely-accepted methodology is created for measuring site-specific collection efficiency), we believe it is appropriate to remain consistent with the widely-accepted standard and continue to use 75%.

Section 9.3.2 & 9.3.3, p. 90 & 91

172. With respect to the proposed partial vs. comprehensive gas recovery system, all landfills that are open should be considered partial with only closed landfills considered comprehensive. **(StopWaste et al., Covanta)**

RESPONSE: We have clarified the definition of "comprehensive systems" to include only those landfills that are required to have comprehensive LFG collection systems via NPDS permits or other local air district requirements. Limiting the use of this methodology to closed landfills would fail to recognize the substantial efforts in place at many landfills to control CH4 emissions. As better information becomes available on the site-specific efficiency of collection systems, we will consider updating this definition.

173. The LGO Protocol appropriately identifies that operating landfills with partial LFG collection systems have increased levels of methane emissions; however, the current version of Equation 9.2 results in *lower* emissions and should be corrected to represent real emissions. To more accurately predict methane emissions of an operating landfill, the LGO protocol should require separate calculations for each cell of an operating landfill to account for differences in LFG collection efficiency and methane generation rates. In order to accurately account for emissions, the protocol should require a complete status of each operating cell in a landfill including the following information:

- Amount of MSW landfilled and the age of such
- Extent of horizontal and vertical landfill gas collection system
- Field measurement data that includes fugitive emissions and collected methane
- Destruction efficiency data of the flare and/or energy recovery equipment

Landfill emissions can only be estimated after these facts are known. If the above information is not available, then assumed defaults may be the only remaining option but then the results should be labeled as "assumed". An inventory that considers all information to be of the same caliber will mislead readers of the report. **(Covanta)**

RESPONSE: Noted. However, the level of information you described above is not currently available, and therefore cannot be the basis of a standardized methodology in this version of the Protocol. We understand the need for better

data and methodologies to calculate these emissions (per the discussion in Section 9.2), and will work to improve all methodologies as more information becomes available.

Step 4: Determine the methane destruction efficiency of the control device. **(pg. 91)**

174. The terminology 'accredited source test provider' is used. Is there an expected accreditation requirement on source testers? Note that on page 90 under Step 2 this terminology is not used. We recommend that all data from a source test that was accepted for reporting purposes by a regulatory agency be acceptable under this protocol guidance. **(Phoenix)**

RESPONSE: Agreed. The language has been changed accordingly.

Equation 9.1 & 9.2, p. 90 & 92

175. Equation. 9.1 appears to be in error as written. It appears that if the order of operations outlined in equation 9.1 is followed, erroneous results will be obtained. The equation should be written as:

CH_4 emitted (metric tons CO_2E) =
[[LFG collected x CH_4% x (1 - DE)] + [((LFG collected x CH_4%)/CE) x [(1 - CE) x (1 - OX)]]] x unit conversion x GWP

RESPONSE: The equation is exactly the same as the one you suggested here; it distributes the *(LFG collected x CH_4%)* term whereas the original factors it out. The factored version saves space, as it does not repeat the *(LFG collected x CH_4%)* term twice as the suggested equation does.

Landfills with Comprehensive LFG Collection Systems (9.3.2, p. 90)

176. Under Step 2, the LGO protocol should allow other procedures for determining methane content besides those required by a government agency. Continuous monitoring of LFG entering a flare system should be considered, as should other routine measurements. For example, a Title V exempt facility might measure LFG on a routine basis for other operating reasons. Such data should be acceptable as an alternative to source testing or use of the default 50 percent fraction. **(SWICS, WM)**

RESPONSE: Agreed. The wording has been updated to include any form of verifiable measurement data.

Table 9.7, p. 91

177. Please define open flare and closed flare. **(Sacramento)**

RESPONSE: Agreed. Definitions have been added.

Landfills with Partial LFG Collection Systems (9.3.3, pg. 92)

178. Equation 9.2 also appears to be in error as written. This equation has the same issue described for Equation 9.1 above. Additionally, it has the problem that it will not calculate emissions from landfills with partial gas collection as intended. This equation implies that by using the “AF” factor (calculated by dividing the uncovered area of the landfill by the total area, which will be less than 1.0) the amount emitted

will be further reduced by the AF factor when actually, a landfill with a partial system emits more than one that is comprehensive. **(CIWMB, SWICS, WM)**

A possible solution may be to scale-up the emissions by applying a factor based on the system's coverage. For example, given a 100 acre landfill where waste has been placed. Of the 100 acres, 10 acres have an operating system that collects 100 scfm. As such, 90 acres are uncontrolled. So:

$$\frac{CH_4 \text{ Collected (Actual)}}{\text{Controlled Area}} = \frac{X\ (CH_4 \text{ Potentially Uncontrolled})}{\text{Uncontrolled Area}}$$

or:

$X = CH_4$ Collected x (Uncontrolled Area / Controlled Area)

CH_4 Potentially Uncontrolled = 100 scfm x (90 acres/10 acres) = 900 scfm

Then the oxidation factor could be applied to obtain emissions. Then this value could be added to the first part of the equation above to get total emissions. **(CIWMB)**

RESPONSE: Agreed. This equation has been corrected. The AF term should be directly multiplied by both CE terms. So in both instances where you see a CE in that equation, replace it with (CE x AF) and remove the AF term from the last part of the equation.

179. The draft Protocol includes an interesting calculation concept that accounts for the methane emissions from uncovered (uncollected LFG) portions of landfills that otherwise have a collection system. While the method is an oversimplification and needs work, at least it offers an opportunity to customize the calculation using local landfill information rather than use the one-size-fits-all 75% collection efficiency for the entire landfill, as has been used for larger scale inventories like EPA's nationwide GHG inventory. The partial collection concept has merit and should be developed further for application in the final protocol. I realize that in California, with its stringent APCD requirements and the pending CARB Early Action Measure, partial LFG collection is less likely to be an issue. Unfortunately, California is an exception, and the LGO Protocol will apply in 49 other states, most of which are not as aggressive in dealing with landfill methane control. Since the default collection efficiency has been a debated issue, the partial collection concept allows consideration of local landfill-specific conditions while still allowing the interim use of a default value for the collected portion until more field data are available from ongoing LFG testing programs. **(Stratosphere)**

RESPONSE: Noted. Please keep in mind that the methodology for partial LFG collection systems still utilizes the standard 75% collection efficiency. We will work to improve this methodology as more information becomes available.

180. Given the importance of landfill covers in estimating methane emissions, the term "uncovered area" may be misleading. Consider using the term "uncollected area" to represent those areas of a landfill not covered by a LFG collection system. This

recognizes that a portion of the landfill may be covered with uncollected LFG. **(Covanta)**

RESPONSE: Agreed. The language has been changed accordingly.

Optional Reporting Using Surface Measurements Data (9.3.4, pg. 93)

181. Wouldn't it be double counting to include surface measured fugitive emissions and emissions from one of the methodologies listed before? **(Alameda)**

RESPONSE: Noted. Per the guidance in this section "care should be taken not to add together the optionally reported emission estimates and the emission estimates from the methodologies above, which would grossly overestimate a local government's fugitive CH_4 emissions from its landfill." Optionally reported emissions should not be added to Scope 1 or 2 emissions.

182. We recommend that operators of landfills that do not have LFG control systems also have the option to estimate their fugitive methane emissions using the data from measured methane surface emissions (flux, instantaneous or integrated surface measurements) and Equation 9.3, which may be modified to account for the absence of a LFG control system. **(LA)**

RESPONSE: Agreed. While there is not a way to modify Equation 9.3, we have added language that operators of landfills that do not have LFG control systems also have the option to estimate their fugitive methane emissions using the data from measured methane surface emissions.

183. It is stated that the total emissions through the surface of the landfill should be summed from several sources, including "diffuse sources such as poor quality capping", "leaking gas wells", and "faulty pipes." Including these sources is incorrect. With regard to capping, intermediate or final caps on landfills must be done under very prescriptive regulations, therefore it is unlikely that there will be "poor quality capping." Also, with regard to gas well leaks or faulty piping, it should be realized that the gas collection system operates under vacuum. Therefore, gas wells do not leak out. The same would apply to faulty piping (piping under vacuum would become a source of air intrusion) as long as the piping is under vacuum. **(LACSD)**

RESPONSE: Noted. We have updated the language in this section to state these are potential sources of GHGs that should be assessed, but not necessarily sources of GHG emissions at every landfill.

184. The SWICS protocol should be recognized as a legitimate alternative reporting under Section 9.3.4. However, the standard should not be limited to "surface measurements". Rather, the standard should include "state-of-the-art assessments". We suggest the following additional changes:

- Change the term "optional" to "alternative".
- Do not limit alternative reporting to only those facilities with site-specific surface measurement data.

- Allow alternative reporting to be based on protocols that are based on data or protocols that are at least as rigorous as the US EPA default assumption. **(SWICS)**

  RESPONSE: The SWICS protocol has not been vetted or accepted by a regulatory agency and, as such, is not recommended at this time as an optional or alternative methodology to the methodologies presented.

Composting (9.4, p. 94)

185. For composting processes that are under a cities control, it is not clear whether cities should be reporting the CO_2 emissions from compost as it degrades. Does the statement that references future information suggest that composting should be ignored for now? **(Hennepin, Sacramento)**

RESPONSE: We agree that no emission source should be ignored, but we are currently unable to provide a standardized methodology for estimated emissions from this source. You should therefore assess the potential for emissions from your composting activities based on best available information. We will work to update this section as more information becomes available.

186. The discussion on composting should include statements from both EPA and CARB indicating the strong possibility that compost application to agricultural soils results in net carbon sequestration when compared to commercial fertilizers on a life-cycle basis. **(LACSD)**

RESPONSE: Discussions of "net emissions" are beyond the scope of this Protocol.

187. We appreciate the recognition that composting, when performed poorly, can be a source of methane and nitrous oxides. We strongly recommend that future updates provide a greater emphasis on the potential for these emissions since composting, as a solid waste management option, is likely to increase in coming years, and thus be a greater contributor to greenhouse gas emissions from this sector. **(LACSD)**

RESPONSE: Noted. We will work to update this section as more information becomes available.

188. We are concerned that the proposed protocol has chosen to emphasis GHG emissions from landfills while choosing to ignore GHG emissions from composting operations. We believe that the proposed protocol should treat all solid waste management activities with equal objectivity. We strongly recommend that GHG emissions and benefits from all solid waste operations be equally evaluated with at least the same degree of attention as the proposed protocol does with solid waste landfills**.** To maintain consistency with international and national inventory methods and to improve the scientific rigor and credibility of the LGO protocol, WM urges that composting GHG emissions be addressed in this protocol. **(SWICS, WM)**

RESPONSE: We agree that no emission source should be ignored, but we are currently unable to provide a standardized methodology for estimated emissions from this source. You should therefore assess the potential for emissions from

your composting activities based on best available information. We will work to update this section as more information becomes available.

Chapter 10 Centralized Wastewater Treatment Facilities

(pg. 95)

189. The current chapter addressing publicly owned wastewater treatment plants should be converted into an appendix in the protocol that can be maintained and updated on a regular basis without having to revise the general LGO protocol. **(CEChoice)**

RESPONSE: Many chapters in the Protocol will undergo updates and changes as new information becomes available. There is no need to separate out this particular chapter in a unique way.

190. In future updates, please consider including a standardized methodology to estimate the GHG emissions related to thermal treatment of biosolids, a by-product of wastewater treatment process. This treatment is necessary and commonly in practice as part of regulatory requirements to ensure the final product is safe for beneficial land application. **(LA)**

RESPONSE: Noted. We will look into this potential emission source and update this chapter as more information becomes available.

191. Please note that advanced secondary and tertiary treatments of wastewater require more energy consumption than those in primary treatment. However, it should be noted these advanced treatments result in higher effluent quality that enables it to be used to reduce the local demand for water supply that is transported from remote sources. **(LA)**

RESPONSE: Discussion of the effects of different treatment levels are outside the scope of this Protocol. However, we will consider this issue in the development of the community level guidance.

192. The introductory paragraph acknowledges the existence of primary treatment (plants) but the subsequent discussions make an assumption that all wastewater treatment plants are secondary plants and that all secondary plants generate N_2O at the levels indicated. Some WWTPs are unique and have process N_2O emissions and CO_2 emissions an order of magnitude less than standard wastewater treatment processes. These processes should be encouraged by at acknowledging that alternative processes exist. **(CWCCG, SDMWD)**

RESPONSE: Discussion of the effects of different treatment levels are outside the scope of this Protocol. However, we will consider this issue in the development of the community level guidance.

193. Last sentence, 2nd paragraph: “Table 10.1 provides... for common GHG sources related to solid waste.” Do you mean wastewater and not solid waste? **(CWCCG)**

RESPONSE: Yes. This error has been corrected.

194. Throughout chapter, replace "Centralized WWTP" with "Standard Centralized Secondary WWTP" **(CWCCG, SDMWD)**

RESPONSE: This would be inaccurate, as the methodologies presented in this chapter are appropriate for both primary and secondary WWTPs.

195. One of the CWCCGs recommendations was to use emission factors developed by recognized industry leaders. These factors were presented in a letter (attached) to U.S.EPA Climate Change Division in January 2007 by National Association of Clean Water Agencies (NACWA). The emission factors recommended by NACWA are scientifically based and provide more accurate quantification of GHG gases. Please consider using these factors as standardized methodology in the LGOP. **(LA, LACSD)**

RESPONSE: We understand CWCCG and NACWA are in the process of having ARB and EPA review these emission factors. But until these emission factors are vetted with and/or accepted by a regulatory agency, we will continue to rely on IPCC/EPA's widely-accepted emission factors.

Organizational Boundary Issue (10.1, p.95)

196. Need to clarify sentence: examine your wastewater treatment activities according to the organizational boundary guidance in Chapter 3. **(CWCCG)**

RESPONSE: Agreed. Additional clarifying language has been added.

Emissions Unique to Wastewater Treatment (10.2, pg. 95 - 96)

197. Last sentence, 1st paragraph, revise to read "Centralized wastewater treatment systems...for removing nutrients and providing disinfection." **(CWCCG)**

RESPONSE: Agreed. Change has been implemented.

198. In the third paragraph, first sentence, after "wastewater," please insert the words "in most secondary treatment processes." This clarifies the applicability of this statement. **(SDMWD)**

RESPONSE: This sentence is accurate as it is taken directly from US EPA's 2007 inventory document.

199. Last sentence, 2nd paragraph: This sentence is not accurate. Also, the proper word for "sludge" is "biosolids". **(CWCCG)**

RESPONSE: This sentence is accurate as it is taken directly from US EPA's 2007 inventory document. We have replaced the work "sludge" with "biosolids".

200. First 3 paragraphs on page 96:

- These paragraphs do not make much sense, confusing, and does not support the info provided in Table 10.2. If the intent of these paragraphs are to explain the source of CH_4 and N_2O, these paragraph need to be expand to better explain the intent.

- First sentence, 3rd paragraph: after the word "wastewater" insert the words "in most secondary treatment processes" **(CWCCG)**

  RESPONSE: These paragraphs are referenced from US EPA's 2007 inventory document and provide basic background information on the processes involved in wastewater treatment and why there are unique GHG emission sources from these processes. We think these paragraphs serve as clear and credible background information for this chapter. We would welcome specific recommendations on how to improve/expand on this information in future versions of the Protocol.

Table 10.2 Summary of Wastewater Treatment Process and Fugitive Emission Sources (pg. 96)

201. The "F" in this table needs to be defined since they do not mean the same thing. **(CWCCG)**

RESPONSE: Agreed. F terms have been more clearly defined in the table.

Box 10.1 The California Wastewater Climate Change Group (pg. 97)

202. This box indicates "these methodologies will allow flexibility for wastewater treatment plant type" but no method to report lower emissions from significantly cleaner wastewater plants is made available. We suggest, at this time in the protocol's development, that this statement be removed. **(SDMWD)**

RESPONSE: The information in this box is forward-looking and referencing methodologies that will become available in the future. Therefore, it is appropriate to leave this sentence in.

203. Please re-write the text within the box as follows: *(See comments for suggested text)* **(CWCCG, LACSD)**

RESPONSE: Agreed. We have updated the text according to CWCCG's suggestions.

204. Is the discussion paper referenced at the end included in the Appendix or somewhere in the LGO Protocol? **(CWCCG)**

RESPONSE: No documents referenced in the Protocol are included in the Protocol itself - it would make the document unnecessarily long. We are happy to include a link to CWCCG's discussion paper if it is publicly available via a webpage.

CH_4 Emissions Estimation Methodologies (10.3.1, p. 97)

205. The proposed equations are based on such unreliable information as "population served" that the emissions of GHG using these EFs will remain under the well-based suspicion. We'd prefer the usage of the methodology that utilizes mostly site-specific collected or standardized requirements (e.g. NPDS permits or operational monitoring data) **(OCSD)**

RESPONSE: In most cases, two methodologies are available for each emission

source - one that is based on population and one that is based on more site-specific information. As wastewater treatment is not a sector that has been required to report data on GHG emissions in the past, often site-specific data is not yet available. The population-based methodology allows for local governments to estimate the GHG emissions from these facilities with the current data available to them. They can then work to collect the site-specific data in the future.

Fugitive Emissions from Incomplete Combustion of Digester Gas (10.3.1.1, p. 97)

206. Biogas is not necessarily produce during wastewater treatment. Biogas is typically a byproduct of the biosolids treatment process. Revise 1st paragraph to read: "Many local governments... digester for biosolids stabilization. Biogas is a by‐product of the digestion process which often is captured and used in energy production or is combusted. As there may be some inefficiency in ... CH_4 emissions." **(CWCCG)**

RESPONSE: Agreed. We have updated the text according to your suggestions.

Process Emissions from Wastewater Treatment Lagoons (10.3.1.2, p. 99)

207. "F removed" needs to be defined as "fraction of overall BOD5 removal performance." **(CWCCG)**

RESPONSE: Agreed. The definition has been updated.

Equation 10.6, p. 101

208. Is equation 10.6 for publicly owned/operated septic systems…or sum of all the estimated septic systems w/in a jurisdiction? If it's the latter, then septic systems should be include in the community level protocol and not the LGO Protocol. **(CWCCG)**

RESPONSE: It is the former. In our discussions with the workgroup, it was discovered that in some parts of the country, local governments manage the city's septic systems. For septic systems within a jurisdiction *not* operated by the local government, guidance will be included in the community level protocol.

Chapter 11 Other Process and Fugitive Emissions

(pg. 104)

209. There are in fact a number of existing methodologies for calculating fugitive emissions from natural gas transmission and distribution facilities, such as those found in the *API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry* <http://www.api.org/ehs/climate/new/upload/2004_COMPENDIUM.pdfhttp:/www.api.org/ehs/climate/new/upload/2004_COMPENDIUM.pdf>. **(PG&E)**

RESPONSE: Noted. We have referenced this as a currently available resource.

Chapter 12 Scope 3 Emission Sources

(pg. 106)

210. What about biogenic Scope 3 emissions (e.g. biofuels used by a contracted waste hauler)? Are these reported as an aggregate number with biogenic emissions from other scopes? Or are they separated by scope? **(SLC)**

> **RESPONSE:** CO_2 from combustion of biomass does not fall into a scope but is reported as an information item. Users of this protocol should report CO_2 from combustion of biomass that falls within their organizational boundary as an information items. CO_2 emissions from biomass combustion that does not fall within the defined organizational boundary but over which the government does not have either operational or financial control (dependent upon consolidation method), may be tracked by the government, but is not required for the standard report. We have added language to chapter 12 clarifying this point.

211. Cities that have exemplary recycling programs should be able to claim scope 3 offsets for their efforts. **(Sacramento)**

> **RESPONSE:** While we agree that there are numerous climate benefits to recycling, quantification of offsets from recycling is beyond the purpose of this protocol. Local governments may choose to include waste generated through their operations as a Scope 3 source of emissions. Changes to the amount of waste generated over time will be revealed in future inventories.

Potential Emission Sources (12.2, pg. 107)

212. With each example, please include a description of why it is considered scope 3. An explanation would be particularly useful for why business travel is considered optional for reporting. All business related travel, regardless of whether the vehicles are owned by the local government or not, should be considered an emissions source in the inventory. **(Alameda)**

> **RESPONSE:** The definitions of the scopes are established in Chapter 4 and are based on internationally accepted standards of GHG accounting. Business travel on a commercial airline occurs on planes under the operational and financial control of another organization (the airline) which should account for these emissions in their own Scope 1. The inclusion of these emissions in the local government's inventory would constitute double counting. They are included as a Scope 3 source because we believe these emissions to be of significance to the local government. The option of requiring some Scope 3 sources for reporting was discussed by the workgroup. We ultimately decided against this because in situations where a government does not have operational or financial control over a source it is often difficult to acquire reliable, accurate data and it was felt that requiring these sources would discourage use of the Protocol.

Transportation Related Sources (12.2.1, pg. 107)

213. More direction is needed concerning airports and air travel for those local governments that own and operate airports. Even if cities do not own aircraft, they may on occasion be leased. **(CMS)**

RESPONSE: Airports have been segregated as a separate sector. The US Department of Transportation and others are currently developing an airport specific protocol, which we have now referenced. Please note we do have default mobile emission factors for jet fuel available in the Protocol; local governments can use this to calculate emissions from leased aircraft.

214. The omission of employee commute from the protocol, and relegating tracking and measures addressing this to a level 3 voluntary, is a mistake. In an era of diminishing resources and tough policy choices, local governments are concentrating on the necessary and required, and the chances of having this area adequately addressed in that environment are poor. The area of transportation/commute must be addressed for us to really address climate change in California. However, funding/resources must also be made available to local governments to accomplish this task. An unfunded mandate is not an option. Local Government can and will manage this issue given adequate resources. This element of the program must be developed in concert with standards and requirements. **(Sonoma)**

RESPONSE: The definitions of the scopes are established in Chapter 4 and are based on internationally accepted standards of GHG accounting. Employee commuting occurs in vehicles under the operational and financial control of the employee who could account for these emissions in their own Scope 1. The inclusion of these emissions in the local government's inventory would constitute double counting. They are included as a Scope 3 source because we believe these emissions to be of significance to the local government. The option of requiring some Scope 3 sources for reporting was discussed by the workgroup. We ultimately decided against this because in situations where a government does not have operational or financial control over a source it is often difficult to acquire reliable, accurate data and it was felt that requiring these sources would discourage use of the protocol.

215. Many web calculators are useful – especially www.aspenzgreen.com/offsets_calculator_air.cfm developed through the City of Aspen and the State of Colorado Government. The commercial air travel portion of the calculator offers voluntary inclusion of a radiative forcing factor, emissions by flight distance segments, and a background great circle distance calculator. The calculator contains information for 144 makes and models of *private and business jets and turboprop aircraft*, including pertinent aircraft emission averages by size (if make and model is unknown). **(CMS)**

RESPONSE: Noted. The protocol partners will be supporting their members' use of the protocol, providing additional tools and resources. This calculator looks like it may be a valuable resource.

216. We ask you to clarify that a local government should be considered to have operational control over transit emissions if it reports these services to the National Transit Database (NTD). This is important for both consistency and to avoid double counting between local governments. This implies that (1) a local government that outsources transit service would still be considered to have operational control (and would report data on these services to NTD). This is appropriate given the criteria on

p. 108 as (i) this is a service normally provided by local governments; and (ii) the local government exerts significant influence (e.g. specifying routes, schedules and equipment); and (2) a local government that operates service on behalf of another local government or transit agency would *not* be considered to have operational control (and would not report these data to NTD). **(APTA)**

RESPONSE: The criteria established on page 108 are guidelines for which scope 3 emissions from contracted services should be included in the inventory. These are sources over which the government does not have operational or financial (dependent their upon consolidation method) control over. Transit emissions reported in scope 1 should be those that their consolidation method dictates that they have control over as defined in chapter 3.

Supply Chain Sources (12.2.2, pg. 108)

217. Emissions from waste generation and disposal within local government operations should be classified as Scope 2 emissions and treated in the same manner as electricity consumption. We recognize that this is a departure from the precedent set by WRI/WBCSD's definition of Scope 2 emissions, but it would significantly improve the validity of the protocol [for many reasons - see complete comments for more details]. If waste disposal emissions cannot be classified as Scope 2, at a minimum, it should be made a required Scope 3 element for reporting purposes under the Protocol. **(Alameda, Oakland, StopWaste et al.)**

RESPONSE: In order for this protocol to be consistent with established standards we have opted to comply with the explicit limitation of Scope 2 to consumed power which is generated elsewhere. Consistency with established standards is central to the success of this protocol.

218. Use the equations embedded in the EPA's warm model as the most appropriate methodology for quantifying [Scope 3] methane emissions from waste disposal (instead of the IPCC FOD model, which should only be applied to the Scope 1 emissions for landfill operators or governments owning/operating landfills) and provide explicit guidance to the local government on using WARM. While the WARM model is often used as a lifecycle tool to calculate the benefits of recycling, subtracting out both the lifecycle component of the tool and the landfill sequestration leaves a valuable methane generation methodology that has been used by hundreds of communities to generate methane emissions from their waste. While the use of FOD and WARM do not yield significantly different results, the WARM model is much more user friendly and easier for local jurisdictions to use. **(StopWaste et al., Oakland)**

RESPONSE: It is outside the scope of this version of the Protocol to provide methodologies for calculating Scope 3 emissions. Individual partners hope to provide additional resources on estimating Scope 3 sources, and we hope to build estimations methodologies for these sources into future versions of the Protocol.

219. Encourage local governments to report upstream emissions that result from decisions surrounding purchasing and product disposal and provide guidance on how to complete those calculations. This will incorporate information into the

inventory about the full spectrum of emissions that are generated by a local government's purchasing, disposal and waste diversion decisions. These calculations could be as simple as entering landfilled waste into the life-cycle part of the WARM model. **(StopWaste et al.)**

RESPONSE: The scope of this project has not allowed us to provide methodologies for Scope 3 sources, and we do not feel comfortable recommending the reporting of this Scope 3 emission source without providing an estimation methodology. We have highlighted the importance of waste generation as a source of emissions for local governments in the section, and plan on expanding the guidance on this emission source in future versions of this Protocol, as well as addressing it more fully in the community protocol.

PART IV Reporting Your Emissions

Chapter 13 Local Government Operations Standard Inventory Report

220. We foresee confusion by the use of the term "standard" to refer to the Local Government Operations Protocol, for example as stated in: "The Local Government Operations Protocol establishes a program-neutral standard." We see the GHG Protocol Corporate Standard as the program-neutral standard upon which the Local Government Operations Protocol is founded (as acknowledged on page 11), so we recommend not calling this protocol a standard, but instead "program-neutral guidelines," "program-neutral protocol," etc. **(WRI)**

RESPONSE: Agreed. We have deleted the sentence "The Local Government Operations Protocol establishes a program-neutral standard" and references in the chapter to the Protocol as a standard.

221. The protocol and inventory report is complicated. Many cities are having issues with trying to use ICLEI's software. It seems like the protocol would require more consultant work. Extensive training to individuals in local government should be provided upon finalizing the protocol. **(MH)**

RESPONSE: Agreed. Organizations like ICLEI and CCAR will be offering training to local governments on how to apply this Protocol. ICLEI will be issuing guidelines on how to continue using CACPS to support implementation of the Protocol. In the end we hope that this Protocol, be creating a common standard will make it easier for communities to uptake without consultancies by making it easy to adapt the work of other communities following the Protocol.

222. Since many cities have signed up with ICLEI to use their software, it would be efficient to incorporate the protocol into their existing CACP software and generate reports. **(MH)**

RESPONSE: ICLEI will be issuing guidelines on how to update CACPS. ICLEI is also working on additional software products with other partners, like Project 2 Degrees, that will provide more reporting functionality. It is important to lock

down the protocol contents through this stakeholder process before beginning software design.

Local Government Profile Information (13.1.1, pg. 110)

223. Please provide clarification / additional instructions on the following points:

- When reporting the government's annual budget, should the budget for semi-autonomous agencies, which are not included in the government's emissions inventory because they are not within its operational control, be subtracted from the governments overall budget?

  RESPONSE: Semi-autonomous agencies whose emissions are not included in the inventory should not have their budgets included in this indicator. We have added language to clarify this point.

- Additionally, climate zone should be included in the profile to facilitate accurate comparisons between similar jurisdictions.

  RESPONSE: Agreed. Climate zone has been added to the profile section.

- Finally, the heating degree days and cooling degree days for the inventory year should be reported. Variation in weather patters can lead to significant variations in emissions from year to year. HDD and CDD will allow for normalization of inventory data between years and prevent misinterpretation of emission trends. **(Alameda)**

  RESPONSE: Agreed. Annual heating and cooling degree days has been added to the profile section.

224. To clearly understand the annual operating budget, the instructions could be further refined to state that the figure should only include operating budget projections from all sources…or specifically state to exclude capital project funding. **(Carlsbad)**

RESPONSE: Agreed. We have changed the requirement to specify annual operating budget and modified text to state "exclude transient capital funding".

225. How will annual budget information be used? This may need to be broken out in more detail to be useful as a reporting metric given the diversity of services offered by local governments and changes within individual local governments over time. **(Oakland)**

RESPONSE: The working group opted not to include standard metrics and only to include indicators. Individual readers of the report will be able to make what they can of the indicators. Future versions of the protocol or individual reporting programs may choose to create standard metrics which would need to be more carefully tailored to their uses. We encourage readers to contribute further to this area when the protocol is modified and updated in the future.

226. Under Local Government Profile Information, peak population and number of part-time or seasonal employees should be included to paint a more complete picture. For some communities, temporary surges in population may be significant due to

seasonal industrial output, tourism, etc. that place a big GHG burden on the community. **(LACSD)**

RESPONSE: We agree that these are many factors which affect the reliability of these indicators as metrics for comparison from one government to another. Because of these kinds of concerns about inaccurate comparisons, we have opted not to include standard reporting metrics. None-the-less we would like the indicators to be as revealing as possible. We think that the use of FTE (full time equivalent) employees most accurately accounts for the seasonal and part time employees. We would like to include a measure of seasonal fluctuations in population, but would need to know that there was a reliable source of that data that would be accessible to all users of this report and so have not included such an indicator at this time. Local governments may choose to disclose additional information that they feel is relevant to understanding their situation in section 3 of the report.

Greenhouse Gas Inventory Details (13.1.2, p. 111)

227. Within the LGOP electronic reporting format, there should be separate "drop-in" categories (i.e. sector boxes) for ports and airports so those emissions can be viewed separately from other local government operations. This will allow for ports and airports to continue to separately inventory and verify GHG emissions for their operations and provide more effective year-over-year comparisons of their emissions. **(LA)**

RESPONSE: The standard report has been updated to allow for the breakout of ports and airports separately from other facilities.

Scope 1 and 2 Emissions (13.1.2.1, pg. 111)

228. In addition to reporting emissions by the sectors listed in this section, we recommend that local governments report total scope 1, total scope 2 emissions, and total scope 3 emissions. This should be reported to allow comparison with all other GHG reporting programs, including the Climate Registry, the California Climate Action Registry, ICLEI, and in line with the GHG Protocol Corporate Standard. **(WRI)**

RESPONSE: Agreed. We have modified the report to include a section to roll up emissions by scope. We placed this before the informational items section.

229. This list of sectors misses significant local government operations including transit, housing, airports and municipal liquor stores and golf courses. **(MC)**

RESPONSE: Agreed. We have made transit, airports and ports separate sectors within the standard report. We have also added language clarifying that the Buildings and Other facilities category should include all stationary and scope 2 sources which are not separately accounted for somewhere else. We have also included language clarifying that the sectors required in the standard report do not need to be the only way that the data is presented and understood. The reporting template is the minimum level of disaggregation, greater levels are certainly encouraged. We intend for local governments to examine their inventories from a variety of angles.

230. We disagree with putting all vehicle fleet information into its own sector. For example, wastewater vehicles and equipment (including lawn mowers) should be grouped with the wastewater sector. Doing otherwise would dilute the meaningfulness of both the transit/vehicle and the wastewater sectors. Moreover, for us these activities are enterprise funds and much of their revenues are restricted to that use so compiling the data in the sectors as currently described would be organizationally difficult. Perhaps you can make an exception for enterprise funds so that their ancillary operations continue to be grouped within the primary sector for which they occur? **(MC)**

RESPONSE: This issue was discussed in detail with out working group during the development of the protocol. The majority believed that the data on individual vehicles would be challenging to get on a department by department basis and that a requirement to disaggregate vehicle fleet emissions would be a significant challenge for many governments.

We have opted to separate reporting of transit fleets from the rest of the vehicle fleets to account for the very different role of these vehicles. We have also added language to indicate that local governments may choose to subdivide data in other ways as is appropriate for their situation.

231. Can you clarify whether a local government that generates heat (but not power) for others (customers outside the local government), reports those Scope 1 emissions under the Facilities sector, or under the Power Generation Facilities sector? **(SLC)**

RESPONSE: These would be listed under Scope 1 Power Generation Facilities. The heat that it produces would be considered Scope 2 for the consumers of this power. Local governments do not need to allocate Scope 1 emissions to different product streams, but rather calculate Scope 1 emissions based on fuel consumption only.

232. All local governments should report all emissions associated with electricity consumption as Scope 2 emissions, even if they are supplying this electricity from a municipally owned power plant where they are also reporting emissions as Scope 1. Reporting electricity consumption as an information item as the text is currently worded is insufficient for providing perspective on the policy relevance of this consumption-based emissions number. **(Oakland)**

RESPONSE: While we agree that there is significant policy relevance for the local government in this subset of their total emissions, reporting power that the same entity generates and consumes in both Scope 1 and 2 would constitute double counting under established international standards for reporting greenhouse gases. We believe that the compromise of requiring that this energy also be included as a separate information item is the best available option.

233. Water Facilities section – the irrigation systems item is unclear – can this be further refined? **(Carlsbad)**

RESPONSE: Upon consideration we have opted to remove this item from the list.

234. Consider renaming Water Facilities to Water Delivery Facilities. **(Oakland)**

RESPONSE: Agreed. We changed the named to Water Delivery Facilities.

235. Provide clarification under Power Generation Facilities and where a local government should report energy consumption. **(Lakewood)**

RESPONSE: We have added clarification that the methodology should employ the same emissions factor used for scope 2 emissions. This method is consistent with the U.S. EPA Green Power Profiler: http://www.epa.gov/greenpower/buygp/powerprofiler.htm

Optional Indicators (13.1.2.3, pg. 112)

Tons of solid waste accepted in the inventory year

236. This indicator would benefit from an explanatory note to ensure that all readers are interpreting "accepted" in the same way. For example, does "accepted" mean the tonnage of solid waste collected by the local government concerned or its contractor or does this mean the tonnage of waste accepted for disposal at a landfill site or incinerator operated by the local government? **(CDP)**

RESPONSE: Agreed. Text has been changed to "Tons of Solid Waste Accepted for Disposal".

237. Consider adding the tons of recycled material processed annually, in addition to the tons of solid waste. **(Carlsbad)**

RESPONSE: Agreed. We have added this indicator.

238. Local governments that operate ports or airports may like to see suggested metrics relating to passenger numbers. **(SLC)**

RESPONSE: Agreed for airports. We will add passenger count as an indicator for local governments with airports.

Information Items (13.1.2.4, pg. 113)

Biogenic CO_2 from biomass combustion

239. Suggested alternative wording as carbon in fossil fuels did have its origin in atmospheric carbon dioxide:
Change "…the carbon embodied in these emissions is not new to the atmosphere" to "…the carbon concerned is of biogenic origin and would have emitted carbon dioxide to the atmosphere through the natural process of decay." **(CDP)**

RESPONSE: Agreed. We have made this change.

240. Please clarify whether the biogenic emission noted as an information item includes Scope 3 biogenic emissions, and whether all scopes of biogenic emissions are lumped together or if they are disclosed separately by scope. **(SLC)**

RESPONSE: Scopes are reserved for fossil-based sources of GHGs. In this

Protocol, we are focusing on the biogenic CO_2 emissions from biomass combustion only. We have added language about non-combustion biogenic emissions and made it clearer that the Protocol concentrates on the direct biomass combustion subset of biogenic emissions.

Carbon Offsets Purchased/Sold

241. The Climate Trust believes local governments should adjust their GHG footprints to reflect offset transactions. The Climate Trust strongly advocates that reporting entities be required to add any offsets they sell from climate mitigation projects into their Scope 1 or Scope 2 emissions. Since the protocol does not require reporting entities to adjust for GHG offsets sold, the current draft of the Protocol will not allow buyers of GHG offsets purchased from local governments to establish unambiguous ownership over the emission reductions they purchase. By allowing cities to claim emission reductions that have been sold as offset credit, those using the Protocol could potentially double-count any offsets they sell. **(CT)**

RESPONSE: We are in agreement that a system to adjust GHG footprints to reflect offset transactions would be optimal. However, we do not believe that, as of yet, there is a sufficiently evolved mechanism to accurately track the purchase and sale of every offset in order to prevent double counting and other errors. For this reason, offsets have been included in the information category. The intent in having local governments report offsets sold is to ensure that this information is retained. While we do not yet allow governments to subtract offset credits or direct them to add back in credits that they have sold to a third party, the information is included so that governments are accustomed to correctly accounting for both purchases and sales and will be better prepared to participate in a more evolved carbon market.

242. There is little mention of how local governments should report emissions trades - many local governments are interested in either buying offsets, or selling offsets arising from infrastructure projects (such as landfill gas utilization). **(CEA)**

RESPONSE: We agree that local governments need to be able to quantify and be credited with emissions reductions. However, project specific protocols, which require attention to such elements as chain of custody and additionality are beyond the scope of this protocol. The Protocol States: “Local governments should account for and report all carbon offsets which they purchase and retire. These offsets may not be deducted from Scope 1 or Scope 2 emissions due to the fact that a complete accounting framework which accurately and credibly tracks the ownership and retirement of these credits has not yet been established. Local governments should also report any offsets that they sell as part of a climate mitigation project.”

243. If amendments are made to section 6.2.4 as mentioned earlier, it would then be appropriate to add some words to the Recording Section in Part IV in line with something like: *“… carbon offsets and renewable energy credits may be considered as deductions from inventory where credibility tracking and legitimate retirement processes are in place.”* **(Edmonton)**

RESPONSE: We will continue to monitor and track the evolution of the REC and

offsets markets. We hope that broadly used credible tracking and legitimate retirement processes will soon be in place and that future versions of this protocol will be able to provide for deductions of carbon offsets and potentially REC purchases.

13.1.2.4 & Information Items in Report Template, p. 113 & 117

244. We recommend changing "Biogenic CO_2 from Combustion" to "CO_2 from Biomass Combustion" to be consistent with the GHG Protocol. **(WRI)**

RESPONSE: Agreed. We have made this change.

245. Earlier it is stated that offsets and RECs should be recorded only when purchased and retired; perhaps this form should reflect offsets *retired* and RECs *retired*, instead of only purchased. (These terms also appear on page 125) **(WRI)**

RESPONSE: Agreed. We have made this change. We have also changed RECs and Offsets sold to RECs generated and sold and offsets created and sold to distinguish situations where a local government may have purchased and then resold offsets.

246. There is a line provided for converting purchases of RECs (in MWh) into emissions (CO_2e). There is no established methodology for doing this calculation, and none is provided in this protocol. We recommend removing this line since we are not aware of any credible basis for estimating the emissions reductions associated with a given REC purchase. It would be more transparent and accurate to simply report MWh of RECs purchased. **(WRI)**

RESPONSE: We have added clarification that the methodology should employ the same emissions factor used for scope 2 emissions. The partners fully recognize that there are questions about this methodology. We have included it as an information item only given its inherent uncertainty. We recognize that many local governments participate in REC purchasing programs and that failing to provide any basis for conversion to CO_2e could result in a significant disincentive for such efforts. This method is consistent with the U.S. EPA Green Power Profiler: http://www.epa.gov/greenpower/buygp/powerprofiler.htm

Local Government Operations Standard Inventory Report Template (13.2, pg. 115)

247. For the services provided checklist, consider providing clarification as to whether or not the boxes should be checked if the service is provided by a contractor. **(Carlsbad)**

RESPONSE: The protocol states that "Services provided by contractors working for the local governments (the emissions of which may be included in the inventory as Scope 3) should not be checked on the checklist."

248. An electronic version of the Local Government Operations Standard Inventory Report Template with built-in formulas should be available to download from the website. **(Lakewood)**

RESPONSE: The partners are committed to supporting its use for our members, constituents and others. Once the protocol is complete we expect to provide a variety of resources which may include an Excel based reporting template or other software tools.

Chapter 14 CARB Program-Specific Reporting Requirements

249. Specific language should be inserted if ARB intends to require all local governments to use this protocol to demonstrate compliance with AB 32 or other policies in the future. **(Oakland)**

RESPONSE: Any determinations about requirements for local governments to demonstrate compliance with AB 32 would be included in the Climate Change Scoping Plan, which describes the statewide plan for reducing statewide emissions to 1990 levels. The LGO Protocol is not the appropriate document to include any type of policy language. If local governments are ever subject to mandatory reporting, a separate rulemaking process would be undertaken to develop a mandatory reporting protocol.

250. Please provide a physical mailing address to request information on local government protocol. **(Lakewood)**

RESPONSE: We have provided contact information for all partner organizations.

251. It should be noted that the goal is to reduce GHG levels to 1990 levels. **(Lakewood)**

RESPONSE: We have included additional guidance included in the main document of the protocol as well as the California chapter regarding this. AB 32 requires California to reduce statewide GHG emissions to the 1990 level by 2020. This is a statewide goal and is not tied to any particular sector such as local governments. It is not required for local governments to adopt a 1990 baseline; however, they are not discouraged from doing so either.

252. The County recommends that if CARB anticipates that it will mandate compliance with the Protocol by LGs in the future, that it only do so after another thorough series of workshops and comment periods, and not through only a rulemaking procedure. **(LA County)**

RESPONSE: Any type of rulemaking procedure would include a series of workshops and comment periods.

253. Many LGs do not have the funding or the staff time to join CCAR or ICLEI or to develop ongoing greenhouse gas reports and greenhouse gas reduction strategies. CARB should consider establishing a LG clearinghouse, through CARB, another state agency, CCAR or ICLEI, to specifically provide technical support for LGs to comply with the Protocol requirements without having to use LG general funds. **(LA County)**

RESPONSE: Thank you for the recommendation to establish a local government clearinghouse. Please submit this type of recommendation to the Scoping Plan process as it would require funding support that can be identified in the statewide plan.

254. The relationship between the CARB mandatory reporting requirements and the corresponding CCAR programs (Chapters 14 and 15) is too complicated and might eventually lead to double counting (or underreporting) of emissions. We believe that the mandatory reporting in compliance with AB-32 requirements should be superior to any other reporting programs and could be transferred to other programs (e.g. to CCAR or TCR) "as is" without additional changing and accommodating. **(OCSD)**

RESPONSE: You are correct. The CARB mandatory reporting requirements supersede any of the methods outlined in the LGO Protocol. However, local governments that want to complete a GHG inventory may have other sources of emissions to quantify that fall outside of mandatory reporting. Therefore, the LGO Protocol is intended to provide a complete overview of the methods to conduct a GHG emissions inventory.

Chapter 15 CCAR Program-Specific Reporting Requirements

255. Voluntary reporting programs such as CCAR and TCR have a General Reporting Protocol that applies to all reporters, and industry specific reporting protocols that apply to certain sectors such as the Power/Utility sector, Landfill sector, and Local Government sector. The scope of emissions reported under the LGO industry-specific reporting protocol should not overlap with other industry-specific reporting protocols, such as the Power/Utility protocol. This will avoid the double counting of the same emissions within the same reporting program. Case in point: municipal utilities report their electricity generation emissions under the Power/Utility industry specific protocol; these same emissions should not be reported again under the LGO protocol. **(LADWP)**

RESPONSE: Although municipal utilities will continue to report using the CCAR PUP, emissions from local government owned municipal utilities are an important part of a local government's operations inventory. Within the CCAR program, emissions from the municipal utility will be reported under the local government as a scope 1 emission in their inventory using the guidance in the PUP. The municipal utility's PUP report will also be attached to the CARROT report.

Definition of Local Government (15.2, p. 131)

256. The Protocol states that CARB "encourages" LGs to use the Protocol, and the use of the Protocol has been widely understood to be voluntary for LGs. However, the Protocol also states that "[CCAR] participants meeting the [LG] definition are required to follow the guidance in this Protocol when developing greenhouse gas emissions inventories for its operations." The County does not believe that CCAR participants should be required to use the Protocol, when it is voluntary for non-CCAR participants. **(LA County)**

RESPONSE: Once industry-specific protocols are developed and approved by the California Registry, it is standard procedure that the CCAR members belonging to that industry will be required to use those protocols to report their emissions in CARROT. The Local Government Operations protocol will be the best available guidance for local governments and provide more detail than the CCAR GRP. It will therefore be required for local governments to use the protocol to report their operations emissions, rather than using the GRP.

CCAR and the partners strongly recommend use of the Local Government Operations protocol for all local governments not currently members of the partner organizations if they wish to voluntarily report their emissions. If the local governments at a later time wish to join any of the partner organizations, they will have already been reporting their emissions under the approved protocol.

Reporting Requirements (15.3, p. 132)

257. CCAR is requiring all its local government members to use this Protocol. This requirement is unfortunate given that sinks, offsets and early actions are not worked into the emissions accounting. Until these "debits" can be numerically balanced against Scope 1 or 2 emissions, the requirement to use this Protocol by CCAR members should be relaxed. **(LACSD)**

RESPONSE: It is not the intention of the CCAR program to create a balance sheet of "net emissions", but rather a comprehensive inventory of physical emissions within an entity's organizational boundaries. Under the CCAR program, carbon sinks and offsets are not inventoried alongside GHG emissions, and the program does not allow any member to subtract emission reductions from sinks or offset programs. A local government operations inventory should outline all emission sources for which the local government is accountable; it should be a snapshot of annual emissions. Information regarding Offset purchases and sinks are additional to an inventory and can be reported as optional information.

Establishing and Updating a Baseline (15.4, p. 135)

258. The Protocol states that a baseline should not be adjusted for organic growth, which includes an increase in population and construction of facilities or buildings. The County believes that CARB should reconsider this directive and allow baselines to be adjusted to reflect growth in population and the commensurate increase in facilities and services. Otherwise, and especially for any LG that anticipates substantial growth in the near future, it may make sense to delay initial reporting under the Protocol to accommodate anticipated growth and include that growth in the baseline. **(LA County)**

RESPONSE: Since organic growth occurs over time and from each year to the next, it is wise for local governments to not delay their reporting based on anticipated growth. The base year or baseline, should a local government choose to define one, should reflect the expected average emissions from local government operations, a snapshot of the annual emissions. As the inventory emissions increase each year due to organic growth, the local government profile population (in the inventory report) should also be updated and increase each

year. Transparent reporting of the local government profile and emissions should show that the emissions are increasing due to population growth. As the population within a jurisdiction grows, the local government may also undergo structural changes, such as land acquisitions, after which the baseline can be adjusted. Under the CCAR program, baselines should not be adjusted for organic growth and are required to be adjusted for any structural changes resulting in an emissions increase of over 10% above the baseline emissions. Guidance on baselines should be followed to the best of the local government's ability; however, baselines can be updated at the discretion of the local government at any time.

259. The City is now in its fourth year of reporting greenhouse gases to CCAR and will begin reporting landfill fugitive emissions. This new source will increase City internal operations total emissions by approximately 20%. Please describe how this would be handled in baseline. **(Sacramento)**

RESPONSE: Sacramento will now be reporting the full suite of Kyoto GHGs in the CCAR program, including landfill fugitive emissions of methane. The baseline previously calculated only contained emissions from CO_2. Sacramento, if they choose, can report all six Kyoto GHGs for each year back to their baseline year so that the baseline, and following years, will include all the emissions from local government operations. Moving forward, the updated baseline would be used when Sacramento develops their inventory each year. However, emissions from past years would then need to be re-verified for all emission sources, including the landfill. Alternately, the change in emissions can be accounted for in the inventory report by saying there was an update and change in methodology used to calculate emissions from the city. This example should not be treated as a structural change or organic change in the local government since Sacramento owned and operated the landfill for the past four years, but was not required to report those emissions under the CCAR program until now.

Conditions for Updating Your Baseline (15.4.1, pg. 136)

260. A note should be added that a modification of the base year inventory should be undertaken for various structural changes within the organization but not for a service that is no longer provided (i.e. closing a department, not just outsourcing its services) or building a new building and selling an old one if the same services continue to be provided by the local government. Specific guidance on these points would be helpful. **(Alameda)**

RESPONSE: Agreed. We have added additional guidance to highlight that services no longer provided would not count as structural change. Local governments can also supply additional information in their inventory report to highlight the organic change in local government emissions such as closing a department. Additional information about organic growth/decline will help make the report more transparent.

261. Since the State carbon system is driven by the State's goals for 2020 and 2050 emissions, it is appropriate to make the base year be 1990 for all local government operations. Those local agencies that do not have sufficient information from that date can use a calculation method for establishing its 1990 baseline based on data

regarding population, land use, and other relevant information. Similarly, if a more appropriate base year has been established for criteria air pollutants, this carbon accounting should build upon the existing database of air emissions from municipal operations. **(CEChoice, Lakewood)**

RESPONSE: For some local governments, it will be costly and time consuming to backcast their GHG emissions to 1990. Guidance on how to backcast emissions will not be provided in this protocol. It is unnecessary for local governments to define a baseline year where complete data is not available, especially data on energy use from utilities and power providers. Local governments are advised to set a baseline representative of an average annual operating year for which complete data or approved estimated data is available.

Verification (15.7, pg. 139)

262. Unlike California Registry's General Reporting Protocol, there is no section discussing third party verification. For small to medium local governments, the cost of rigorous third party verification is not warranted, and is not the best use of taxpayer funds. We would like to see a low- or no-cost alternative that still supports the efforts of local governments to disclose and pursue change, without discouraging them with high annual verification costs. Could the California Registry provide an option for unverified posting for local governments with emissions below a certain threshold, or a reduced verification requirement for all local governments that do not choose to participate in a carbon market and are not otherwise required to report? **(SLC)**

RESPONSE: Third party verification will only be required of local governments participating in the California Registry program. Within CCAR, if the local government operations emit less than 500 metric tons of GHGs annually, they are eligible for batch verification where a group of low-emitting members will be verified as a 'batch' for a reduced cost. Larger emitting local governments will need to be third party verified using the GVP for their operations emissions.

CCAR is a voluntary registry of GHG emissions and as such, we are not connected directly to a carbon market and cannot offer discounts to potential local government members who do not wish to participate in a market. CCAR must also follow the guidelines set in the GRP and GVP and cannot register unverified emissions in CARROT for special cases.

If the local government is not a member of CCAR, their emissions can be third party verified if they choose but this is not required since using this protocol is a voluntary action.

Chapter 16 ICLEI Program-Specific Reporting Requirements

263. ICLEI should adopt the same de minimis definition contained in Chapter 15. This definition of de minimis should be moved into the main body of the Protocol where only the third party verification aspects are separately defined in Chapters 14-16. **(Oakland)**

> **RESPONSE:** While each program will have to account for the threshold of significance, each has a different approach. The differences are important enough that we have opted to include this in the program specific reporting guidelines.

264. Additional time is needed prior to the adoption of this Operations Protocol to develop accounting framework for specific reporting requirements for ICLEI so that local governments may have an opportunity to review and comment on the additions prior to the adoption of this Operations Protocol. **(Lakewood)**

> **RESPONSE:** We agree that it would be preferable to review the protocol and reporting guidelines concurrently. Unfortunately, this chapter could not be developed until the rest of the protocol was written. We apologize for any inconvenience. ICLEI is working with a small group of our members to review the chapter prior to its inclusion in the protocol and will be happy to consider additional thoughts subsequent to its publication.

Chapter 17 Glossary of Terms

(pg. 149)

265. Please add this term: "Standard centralized secondary wastewater treatment plant": A central wastewater treatment plant with secondary and possibly additional treatment, where the secondary treatment process utilizes air as its source of oxygen. **(SDMWD)**

> **RESPONSE:** Agreed. We have added this term to the Glossary.

266. The definition of "Biogenic emissions from combustion" should be expanded to include CO_2 emissions from combusting the biofuel and biomass fraction of mixed fuels and wastes such as MSW. **(Covanta)**

> **RESPONSE:** In this Protocol, we focus on only the biogenic emissions from combustion, instead of all biogenic emissions. We have updated the default emission factors from biogas and MSW to not include "pass through" non-combustion biogenic emissions. Quantifying non-combustion biogenic emissions are beyond the scope of this Protocol.

267. In the definition of "Biomass", delete the phrase "and biodegradable". All non-fossilized organic material is biogenic whether biodegradable or not. The definition of biomass should be solely based on the origin of the carbon and not be subject to a biodegradability criterion. **(Covanta)**

RESPONSE: Agreed. The definition has been updated as per this suggestion.

268. Expand the definitions of biogenic and anthropogenic emissions. It has never been clear to me what percentage of landfill waste or green waste is biogenic or anthropogenic. **(Sacramento)**

RESPONSE: The definitions of anthropogenic and biogenic cannot be properly expanded with this information. It is unclear what percentage of landfill or green waste would be biogenic or anthropogenic as the percentage would change over time and would be difficult to calculate with present technologies.

However, methane emissions from a landfill would be considered anthropogenic emissions since those emissions would not have occurred if not for human waste and disposal, whereas CO_2 emissions from a landfill would be considered biogenic emissions. Also, if the methane at a landfill is combusted, the resulting CO_2 emissions are considered biogenic.

Appendix A Global Warming Potentials

Table A.1 GWP Factors for Greenhouse Gases (p. 150)

269. The Local Government Operations Protocol should present the newer and more scientifically relevant GWPs as an information item for local government officials to consider when making policy and GHG management decisions. The Global Warming Potentials (GWP) used throughout the protocol are based on the IPCC's Second Assessment Report (SAR). Local governments and their decision-makers should be made aware that the scientific community and in particular, the IPCC, have made adjustments to the GWPs so that these latest GWPs can be considered when making local climate change policy and GHG management decisions. The LGO Protocol should therefore contain the following information to assist in their understanding:

- The latest GWPs, those from the IPCC Fourth Assessment Report (AR4)
- An expanded GWP table including values for 20 and 500 year time horizons so the reader can understand the relative magnitude of the time horizon effect.

This important knowledge can be provided as an information item in a format similar to that provided for biofuels in Box 4.1 on page 28. **(Covanta)**

RESPONSE: The SAR 100-year potentials are the international standard for greenhouse gas accounting. Until that standard is changed, users of this protocol should employ the SAR 100 year potentials in order to be consistent with any other GHG accounting. We have opted not to include the alternate GWPs in order to avoid the impression that users of the protocol have the option to use the alternate GWPs.

Appendix C Default Emission Factors

Table C.2 Default Factors - CO_2 Emissions from Non-Fossil Fuel Combustion (p. 154)

270. Lacks reference for default values for biomass and non-fossil fuels (solid). When there are multiple references, it would be useful for the protocol to rank them for suitability. **(Hennepin)**

> **RESPONSE:** Agreed. We have updated the reference section for Table C.2 to make the emission factor to reference relationship more clear.

271. Table C.2 includes a default biomass CO_2 emission factor for MSW. Interestingly, a fossil based default CO_2 emission factor is not provided. The final protocol should provide default emission factors for both biomass and fossil based CO_2 emissions since the two factors are directly related and derived on the same basis. **(SWICS, WM)**

> **RESPONSE:** Agreed. We have updated Table C.2 to include fossil-based and biogenic CO_2 emission factors for MSW.

272. The default biomass CO_2 emission factor used in the draft LGO protocol appears to be based on California MSW specific information retrieved from Energy Information Administration (EIA) Forms EIA-906 and EIA-920 database. The protocol should provide flexibility to use site-specific or regional data. We recommend that where site-specific or regional data are not available for emissions calculations, that any recommended default emission factor provided in the protocol should be based on national information and not on one state's data. **(WM)**

> **RESPONSE:** Agreed. We have updated Table C.2 to include both a national and a California default emission factor for MSW.

273. MSW heat content should be 10.06 MMBtu/short ton. The stated MSW heat content value of 8.70 MMBtu/Short ton (4350 Btu/lb) is too low. In the attached Excel file we have sorted the 2006 EIA-906/920 report to show all MSW combustion facilities; the nationwide calculated heat content is 10.06 MMBtu/short ton (5030 Btu/lb). **(Covanta)**

> **RESPONSE:** Agreed. We have updated Table C.2 to include both a national and a California default emission factor for MSW.

Table C.4 Default CH_4 and N_2O Emission Factors by Technology Type for the Electricity Generation Sector (p. 156)

274. The LGO protocol should clarify that CH_4 and N_2O emission factors be representative of facility-specific technology. Table C.4 does not include default CH_4 and N_2O emission factors for MSW. While it is not necessary to specify default values, the protocol should make it clear to the user that selected emission factors should be representative of the specific technology employed. **(Covanta)**

> **RESPONSE:** Agreed. We have included default emission factors where available. We will add language to clarify that when default emission factors are

not available, local governments should selected emission factors that are representative of the technology employed at their facility.

Table C.8 Historical eGRID Electricity Emission Factors by eGRID Subregion (2000 data) (pg. 159)

275. The recommendation that local governments developing emissions inventories for any inventory year between 1990 and 2004 should use year 2000 emissions factors for electricity would seem to require all local governments that have developed inventories in the past for one of these years to revise their calculations in order for their inventories to be considered accurate and valid. Additional context and guidance should be provided explaining how this might be done. **(Oakland, Lakewood)**

RESPONSE: This guidance is meant for local governments who have not yet conducted a GHG inventory for those past years and want to use the Protocol to do so. The Protocol does not contain guidance on how to correct or revise past inventories - that will need to be handled by the individual programs local governments are participating in.

Table C.12 Default CH_4 and N_2O Emission Factors for Non-Highway Vehicles (pg. 162)

276. Can you recommend a source for additional emission factors that may not be included in this, and other tables (i.e. bunker fuel)? **(Alameda)**

RESPONSE: We provided default emission factors for as many fuels as possible. If your local government is using a fuel not contained in the Protocol, we encourage you to derive your own emission factor using best available data. We will also strive to include more emission factors in future version of the Protocol.

277. Please include additional clarification about how various non-highway vehicles are classified in terms of emission factors presented in table C.12. The terms "construction" and "light/heavy utility" leaves a lot of room for interpretation. **(Alameda)**

RESPONSE: Noted. These categories were pulled directly from *US EPA Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2005 (2007)*, and in most cases, are self-explanatory. We will work to improve the descriptions of these classifications in future versions.

Appendix D References

278. It is a little confusing having a general reference section, followed by some chapter-specific references but only for chapters 7 through 10. It would be clearer to have all the references blended, or to list every chapter's references individually. Also, it would be helpful to preface each reference with the same abbreviation as is used to call it out in the text (e.g.: [IPCC] Intergovernmental Panel...). **(SLC)**

RESPONSE: We have worked to improve the format of the references.

Miscellaneous Comments

Seaports Addendum to the LGO Protocol - California Energy Choice

279. For the final Protocol, it is recommended that a separate addendum be created for the LGO Protocol that provides specific guidelines for municipal port authorities and that it is developed in cooperation with the Western Climate Initiative. It is recommended that this Port addendum would reflect current initiatives at the local, state, federal and international level on air quality and climate change. In particular, this protocol should be consistent with CARB's Emission Reduction Plan for Ports and Goods Movement in California and its technical supplement on emission inventory. In so doing, this addendum has the potential of influencing the global maritime industry similar to California's historic influence on the American automotive industry.

Seaports Reporting Template- Similar in importance to accounting, reporting is the legal certification of a local government's operations carbon emissions and it is anticipated will then be available for trading purposes under a Western States trading system. With this it mind, it is recommended that the Ports addendum to the final Protocol templates and other tools to facilitate accounting and reporting of carbon credits that is verifiable.

RESPONSE: In discussions with our stakeholders, the only port operations that local governments control are emission sources already covered by this Protocol (e.g stationary combustion from support equipment, fleet vehicles, purchased electricity, etc.) Therefore, additional guidance for ports is outside the scope of this Protocol, as the remainder of emissions from ports comes from sources owned/operated by mostly private industry (e.g. emissions from ships, trucking companies serving ports, rail serving ports, etc.) Your comments may be more appropriate for the community level guidance. The development of the community protocol will include extensive opportunity for participation in stakeholder groups and for public comment. We look forward to your participation in that process. These comments will be taken into consideration once that process has begun.

Additional Disclosure for Offset Buyers/Sellers – The Climate Trust

280. The Climate Trust recommends that the Protocol require reporting entities who are buyers and/or sellers of GHG offsets to report two separate footprints: a physical GHG emission footprint and a contractual GHG emission footprint.

- The *Physical GHG emission footprint* includes all GHG emissions covered by the reporting requirements of the Protocol, without any adjustment for GHG offsets purchased or sold.
- The *Contractual GHG emission footprint* adjusts the physical GHG emission footprint to reflect any offsets purchased and/or sold.

The inclusion of both physical and contractual footprints in the Protocol will ensure that emission reductions that occur both inside and outside of reporting entities operations are accurately accounted for and tracked over time. Accounting for contractual emission reductions purchased and sold is of paramount importance to a

robust and comprehensive GHG accounting system. The contractual GHG emission footprint prepares the framework for carbon markets to accurately track and account for credits.

RESPONSE: Noted. This Protocol is designed to track the physical emissions of a local government's operations. Providing standardized guidance to enable local governments to report a "contractual" GHG inventory is beyond the scope of this project. We agree that a system to adjust GHG footprints to reflect contractual transactions would be optimal, but do not believe that, as of yet, there is a sufficiently evolved mechanism or standardized guidance on to accurately track the purchase and sale of every offset in order to prevent double counting and other errors. For this reason, offsets have been included in the information category. The intent in having local governments report offsets sold is to ensure that this information is retained. We hope to improve guidance in this area as it becomes available.

Formatting

281. Put Chapter number and title in footer. **(Sacramento)**

RESPONSE: Agreed. Change has been implemented.

282. There are numerous formatting misalignments between variables in equations and their associated explanations in Chapter 10 that should be corrected. **(LACSD)**

RESPONSE: Agreed. Change has been implemented.