March 2, 2017

To: The Chatham County Board of Commissioners

From: The Climate Change Advisory Committee

Re: The 2015 Greenhouse Gas Emissions Inventory for Chatham County

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The Climate Change Committee is pleased to present the "2015 Greenhouse Gas Emissions Inventory for Chatham County." The "Report" was prepared during the fall semester 2016 by Lauren Joca and Carl Kolosna, two graduate students at UNC. Preparation of this Report required a great deal of effort by these students. We hope the Board will express its appreciation to Lauren and Carl, and we will be happy to assist you in doing that.

The Report reflects the data now available. The UNC team received help in obtaining important data. A major example is that with Renee Paschal's help, we were able to get electricity sales data from all three of the public utilities that serve Chatham County. However, the team was not able to develop estimates for emissions for certain sectors, such as industrial facilities and landfills. Further, the team had to develop estimates for other emission sources based on limited data. The Report may include both over- and under-estimates. On the whole, the Committee believes the report may underestimate total carbon emissions for the County.

In reviewing the findings of the Report, it must be kept in mind that they are subject to the substantial qualifications noted above. With that caveat, the findings include:

-- Total CO_2 equivalents emitted in Chatham County in 2015 was 1.7 million metric tons. Unfortunately, the CO_2 sequestered by soil, trees and woodlands amounted only to 1.3 million metric tons.

-- The Report classifies emissions in several categories.

The largest category by far was the category, transportation, which accounted for 74% of total emissions. This presumably is explained by the fact that many Chatham residents commute to work outside the County. Moreover, the methodology used for this calculation may have actually understated the transportation factor.

As you know, we also have the "Baseline Greenhouse Gas Inventory" for 2010 that was prepared by Betsy McCorkle. Because different data sources and methods were used, a comparison of the 2010 inventory with the current Report is not reliable. Nevertheless, we note that the total emissions found in the 2010 report were 2.1 million U.S. tons of CO_2 equivalents as compared to the current finding of 1.7 million metric tons. The 2010 inventory also ranked transportation as the biggest emission source accounting for 59%, as compared to the present Report finding 74%. In addition, we have recently noted that the 2010 inventory did not count direct emissions from three industrial operations, which, if they had been included, would have essentially doubled the total. From a purely climate change point of view, a happy development is that two of these industries are now closed (including the Duke Energy Cape Fear power plant) and the third is apparently emitting low levels of GHG gases.

As noted, the Report raises several questions and presents several data gaps and deficiencies. Some of the more important ones are:

-- It is possible that the emissions attributed to electricity sales in the County did not adequately allow for the extent of Duke Energy's reliance on the Shearon Harris plant, which does not emit CO_2.

-- As noted, with vehicle miles traveled (VMT) data not being available the method used may have understated transportation emissions.

-- A data gap exists because we were unable to obtain the dollar volume of electricity purchases by

Pittsboro, Siler City and Goldston.

-- A very interesting problem is presented in determining the number of dairy cows in the County. This is important because dairy cows are a major source of methane and they emit substantially more methane than beef cattle. USDA records indicate there were 37,000 bovines in the County in 2015 but 21,200 of them were not categorized as either dairy or beef. The Report works this data and, for the moment, uses 2811 as the number for dairy cows. Since our recent investigation indicates there may only be two or three dairy farms now in Chatham, we suspect that most of these 2811 are actually beef cattle.

Reviewing the Report leads us to make certain recommendations, as follows:

1. We suggest that the County hire Lauren Joca to help us close some of the data gaps and produce a more reliable report, and assist in other ways as noted below. Members of the Committee can help collect some of the data. Lauren is available for this task during this spring semester. She would charge $15 per hour and we believe that the total amount required would be reasonable.

2. We believe that the Board should either designate a current County employee or consider hiring a new staff person who, among other things, could become familiar with the ClearPath software (available to us from our membership in ICLEI) that was used to produce the Report. Lauren could help train such a person to use the software.

3. We recommend that the Report be updated annually. Lauren could help us develop a “system” whereby the data could be collected and, in effect, analyzed by the software. Such a process could be much less laborious than was production of the current Report. This process is described in “Recommendation 3” on page 11 of the Report. We might note that we believe attention should be paid to total emissions in the County, not just those by government operations as is suggested in Recommendation 2 of the Report.

4. The purpose of ongoing emission inventories is to guide emission reduction efforts directed both at existing sources and new developments of all kinds in the County. We believe that an emissions evaluation should be incorporated into all new residential and other developments. Such a process could provide for actions that would substantially reduce or even eliminate GHG emissions from new developments. Among other things, this process should be included in the new Comprehensive Plan.

5. A class of UNC undergraduates is working on the emission reduction problem during this spring semester. The UNC undergraduates will be meeting with several "focus groups" as part of their work and they hope to present their final report to the Commissioners.

6. As a result of a large newspaper report about both the Moncure and Siler City megasites that appeared in the N&O on February 6, we are prompted to point out that the County needs to act aggressively to control GHG emissions from any industrial operations that are located on these sites. It occurs to us that it would be a satisfying development if these sites were occupied by "green" entities, e.g., producing solar panels or vanes for wind turbines. Even such activities, however, would require limits for GHG emissions.

Finally ----------

The Committee believes that the current Emissions Inventory Report represents a major step toward reduction of emissions and increase in carbon sequestration in the County. But it also believes that real progress will require dedication to the task by the Board of Commissioners. The Committee will, of course, guide and help as best it can.

Many local governments have identified as a goal the reduction of GHG emissions to zero by 2050 and to 80% by 2030. This is a very challenging goal that will require dedication of the County to achieve. We hope that Chatham County will make that commitment.