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**ATTACHMENT 2**

**The Community Carbon Reduction (CRed) Project**

A Collaboration between the Town of Chapel Hill and the Carolina Environmental Program of the University of North Carolina at Chapel Hill

Draft 8-29-05

**Overview**

The Community Carbon Reduction (CRed) program began at the University of East Anglia in England following the release in 2003 of that country's ambitious plan for a 60% reduction in carbon dioxide emissions by 2050. While the English government is providing strong national incentives for movement towards technologies that are carbon neutral (i.e. fuel whose production absorbs as much carbon as is ultimately released during burning for energy), there was recognition that the root cause of carbon dioxide emissions was the design of communities and the choices individuals make daily when living in those communities. The School of Environmental Sciences at the University of East Anglia started CRed to make the essential link between the national and local efforts, providing a clearinghouse for information and advice and bringing the resources of that university to bear on this important national effort. They began the effort with collaborations in Norwich (the town where the university is located), then spread the efforts to the region of East Anglia, then moved to the larger region known as East of England. As they say on their web site (www.cred-uk.org):

"*We have already started to build the CRed community. Members include representatives from many sections of our community: schools, businesses (small and large), local authorities, hospitals, community groups, individuals and organisations. In fact anyone and everyone who participates in Norfolk life can join in! The CRed team is working with partners to estimate how much $CO_2$ they are responsible for, and in partnership, identifying where and how to reduce emissions in the short, medium and long term. However, ultimately you will decide what will work best for you. Some partners will wish to participate during the working day. Others participate in the home. Some are changing the way they travel. Some are looking at every aspect of their activities; others at a single aspect. Only you can decide how you wish to participate. Building the community, defining targets and commitments and ways of reaching them will continue for the next two years. After this period we will be ready to take on the 60% challenge by 2025. And the world will have noticed.*"

Note that the CRed project tightened the goal of the national government, calling for the 60% reduction in their community by 2025.

By summer 2004, CRed encompassed the City of Norwich, with more than a thousand pledges to reduce carbon dioxide emissions, along with substantive plans as to how those pledges would we met (this number is now in excess of 1,800). In that summer, 8 students from UNC-Chapel Hill attended the Carolina Environmental Program's field site in International Energy Policy and Environmental Assessment located at Cambridge

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University. For their semester, team-based project (required of all environmental majors at Carolina), the students approached the City of Cambridge for ideas on projects that would benefit that community. The City proposed that the students help them develop plans to become a CRed partner (the first outside Norwich), and suggested working with the City Council and the University of Cambridge on a proposed Northwest development similar to the designs for Carolina North. The student team began that project, which then was continued in the summer of 2005 by a second student team attending the Cambridge field site. The City Council of Cambridge has voted to adopt a CRed pledge developed by the student team, focusing initially on carbon reduction measures within their holdings and vehicle fleet and the behavior of Council staff (see www.unc.edu/~dcrawfor/newhome.htm). The decision to focus initially on Council practices stems from the claim by the students that the Council must first "get its own house in order" before it can take a leadership role for other sectors of the Cambridge community. The Cambridge City Council agreed with this position. A summary of the student argument to Cambridge City Council is appended to this memo.

And so that brings us to the proposal at hand: to have ~~make~~ the Town of Chapel Hill ~~into~~ volunteer to become the first U.S.-based CRed partner, eventually twinning with the City of Cambridge to exchange ideas, information and incentives to carbon dioxide reduction.

The initial proposal here is that the Carolina Environmental Program (CEP) and the Town of Chapel Hill form an official CRed "partner" (the term used in the CRed program for an entity that agrees to carbon reduction planning and implementation), focused initially on carbon emissions reductions in Town activities (offices, fleet, employees, etc) so the Town Council and Town Offices can take a leadership role in bringing such changes to other sectors of the Town. Such a partnership requires the filing of a non-binding "pledge" through the CRed web site, stating the carbon dioxide reduction goal and the timeline for reaching that goal. It then requires development of a formal plan for reaching that goal. The plan contains short-term measures that can be adopted with a horizon of 1 or 2 years at no cost; medium-term measures that have an initial cost but a pay-back period of 5 years or less; and long-term measures that either have no pay-back (other than carbon reduction) and/or require coordination with significant stakeholders in other sectors of the Town. Having developed that plan, it is understood that the partnership will move forward, using the plan to guide not only future activities but to alter existing activities and structures (e.g. through stimulating retrofitting of buildings with energy efficient appliances and equipment). As stated above, the plan is not legally binding in any way, but an assessment is performed every two years to determine how well a CRed partner is moving towards the goal.

What does it mean to form a CRed partnership between the CEP and the Town of Chapel Hill? There are several concrete steps to be taken:

1. The CEP and Town will jointly author a pledge to the CRed program, stating clearly the reduction goals and time-line for reaching those goals. ~~As it is feasible to reach a target of a 60% reduction of carbon dioxide emissions (from 2005 levels) by 2050, it is proposed here that this be the goal and time-line (the more stringent time-line of~~Separate goals should be proposed for 2025 and 2050, culminating in a total reduction of 60% over that total period. These goals would

relate initially to measures to be taken by the Town in its own activities, positioning the Town Council to become the leaders on this issue in urging other sectors forward. ~~2025 being less realistic in the U.S. than it is in England).~~

2. Students in the BA Environmental Studies, BS Environmental Science and BSPH Environmental Health Science degree programs are required to complete a semester-long, team-based research project with a community partner. This project is guided by a team of graduate students and faculty with expertise in the subject of the project. Those students who cannot travel to the off-campus CEP field sites remain on campus at the Francis Lynn Sustainable Triangle Field Site. It is proposed here that these campus-based students (and their graduate and faculty mentors) use the CRed project over the 2005-2006 and 2006-2007 academic years as their team-based project. The student teams will be responsible for working with the Town of Chapel Hill (and then later with developers, citizens, etc), to produce the CRed pledge.
3. It is further proposed that the CEP serve as a resource to the Town for information and assessment, continuing that service after 2007. This will include organizing the assessment of progress towards the CRed pledge goals every two years; providing a pool of technical advisors to which organizations can turn for help in identifying and implementing plans; creating and maintaining a web site for information; and making presentations to the Town, citizens, business, university and industries as needed to stimulate participation.
4. It is further proposed that the geographic area to be considered include all land within the jurisdiction of the Town of Chapel Hill, although the focus of initial proposals would be on those activities and holdings under direct administration of the Town (Town office buildings, vehicle fleet, employees, etc).
5. It is further proposed that the Town of Carrboro and the University of North Carolina at Chapel Hill be approached at some point to join the partnership. This would occur at whatever time the Mayors of Chapel Hill and Carrboro, and the Chancellor of the University, agree that such partnerships are desired. ~~warranted.~~
6. It is further proposed that the student and faculty teams of the CEP have responsibility for creating a model of the geographic area detailing sources of carbon dioxide emissions and sinks for absorption of carbon dioxide, working with Town officials to develop the database needed to use the model. The model will allow the Town to simulate alternative policies, determine whether those policies will meet the goals of the CRed pledge, and locate the most effective policies.
7. It is further proposed that future plans for meeting the CRed pledge (developed after the Town has made its own pledge and, therefore, taken on a leadership role) include consideration of a suite of measures that draw on participation by the full range of potential partners in the community (government, business, individuals, university, etc), and that employ a mixture of policy strategies (free market approaches; permitting approaches; tax incentives; etc.). The CEP student and faculty teams will assist the Town in identifying potential policy approaches, assessing the success of such approaches elsewhere and identifying resources needed for each approach.

The time-line for these activities is as follows*:

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1. Fall 2005- Town Council adopts a proposal to become a CRed partner with the CEP and to begin development of a CRed pledge.
2. Fall 2005 and Spring 2006- Chapel Hill-based CEP student and faculty team develops the model of carbon dioxide emissions and policies specific to Town holdings; team works with Town Council staff to formalize proposal. Formal presentation of results to Town in April, 2006.
3. May 2006- CRed proposal is presented to the Town Council for a vote.

~~5.~~4. Summer 2006- Formal pledge to develop policy proposals is made to the CRed program based on Spring 2006 results, authored jointly by the CEP and the Town of Chapel Hill.

~~6.~~5. Fall 2006- Chapel Hill-based CEP student and faculty team, along with Town Council, develop and assess preliminary suite of policy options to meet CRed goals.

~~7.~~6. December, 2006- Formal proposal is made as to the preliminary suite of policy options, and transmitted to CRed center at University of East Anglia.

7. December 2006- Joint CEP/Town of Chapel Hill web site to support assessments of alternative policy and community design options, and to support future decisions, is launched.

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**Argument presented to the City Council of Cambridge, August 3, 2006**

1. The link between human activity, especially the burning of fossil fuels at current rates, and the risk of climate change is no longer a significant source of debate in the scientific community. The question is the timing and extent of the risk, not the existence of that risk.

2. There is broad scientific consensus that the concentration of carbon dioxide in the atmosphere must be limited to a doubling of the pre-industrial revolution levels to prevent a degree of climate change that will be unacceptable.

3. This scientific evidence further suggests that preventing this doubling will require either a reduction in carbon dioxide emissions of 60% in developed countries such as England, or an equivalent increase in the absorptive capacity of plant life.

4. Significant increases in absorption by plant life are infeasible, and hence the focus of policies should be on reduction of emissions- including use of renewables, reduction of energy needs, and/or use of technologies for carbon capture and storage.

5. The U.K government is, therefore, justified in its call for a 60% reduction in carbon dioxide emissions throughout the U.K. This call applies equally to the nation, to the East of England region, to Cambridgeshire and to the City of Cambridge.

6. These reductions will require a significant change in the practices of energy generation, transmission and use in society. The changes are the responsibility of individuals, institutions and governments, with each of these shouldering their share of the burden as appropriate and feasible.

7. While policies are needed, however, it must be remembered that these individuals and groups have legitimate needs that are being served by energy use. The task is not to deny those needs, but rather to find ways to fulfill them while reducing carbon emissions.

8. The City of Cambridge is uniquely positioned to take a regional and national (indeed, global) lead in this effort, given the combination of citizen interest in sustainability, municipal commitment to change, innovative local businesses and industries, and "intellectual horsepower" represented by one of the world's great universities.

9. While the changes will be across all sectors of society (residential, commercial, industrial, university, government and transportation), they will need to be championed and supported by someone. That "someone" is the Cambridge City Council, leading by example and providing incentives for others to change.

10. The changes made by City Council must recognize issues of social, economic, political and technological feasibility, all of which exist in the face of significant uncertainty as to (i) the extent of the threat from climate change and (ii) the ways in

which the social, economic, political and technological systems of England will evolve in response.

11. Therefore, changes made by City Council must be separated into short-term, medium-term and long-term changes phased in at different scales of time and resources, with the possibility of revision in plans as experience is gained.

12. Short-term changes are those that can be introduced at a cost-savings; i.e. which either reduce operational costs immediately or will have pay-back periods on the order of a few years. These might be implemented between now and the 2008 budget year, slotted into the annual budgeting process.

13. Medium-term changes are those that will require capital investments large enough to warrant consideration during the replacement cycle for existing capital stock, or the cycle for large capital projects requiring several years of budget allocation.

14. Long-term changes are those that will require significant collaboration between the City Council and other institutions, and/or changes to the planning and permitting functions of the City Council offices. They are to be implemented over several decades, and will require coordinated efforts by multiple stakeholders.

15. Each of these investments is justified by the following considerations: (i) they reduce or leave level operating costs; (ii) they require addition to- or reallocation of- the City Council budget, but are justified as Council's contribution to the carbon reduction goal; or (iii) they establish precedent or incentives for other stakeholders to make needed changes.

16. In establishing policies, it is important to examine "follow-on effects" that support reductions of carbon emissions, even if those effects are not linked directly to climate change. One such "follow-on effect" is cost savings for energy consumption. Another is reduction of health effects, and health care costs, in Cambridge as co-pollutants such as particulates are reduced through policies aimed originally at reducing carbon emissions.

## The Pledge

17. To codify, initiate and make public the plans for these changes, the City Council should become a Community Carbon Reduction (CRed) partner during the 2005-2006 administrative year, submitting a CRed pledge as judged appropriate by the Council.

18. This pledge should commit the City Council of Cambridge to take a leadership role in introducing changes to the energy infrastructure of the City of Cambridge, as needed to reduce carbon dioxide emissions in the City by 60% from present values.

19. To establish this position of leadership, the pledged changes should be made first in energy consumption and carbon emissions by the City Council, its offices, community properties, and transport systems. These changes should be phased in as short-term, medium-term and long-term changes over the next 20 years.

20. While introducing these changes into its own practices, the City Council should coordinate- and act as a resource for- equivalent changes in the carbon emissions of other sectors of the City: residences, commercial businesses, industries, transportation and the University and Colleges.

## Our Promise

21. The City Council will have the continuing support of the CRed programme throughout the period of the pledge, including the staff at the home office at the University of East Anglia and the students and faculty of the Carolina Environmental Program's annual summer Cambridge Field Site. This support will be available through two sites: www.cred-uk.org and www.cep.unc.edu/cred.

22. This support will include: (i) provision of information on carbon-reducing activities; (ii) description of best management practices employed in Cambridge and elsewhere; (iii) assessment of the potential effectiveness of these strategies in Cambridge, including "follow-on effects"; (iv) on-going assessment of the movement of Cambridge towards its goals; and (iv) development of inter-institutional collaborations needed to implement the strategies.