In 2006, the California legislature passed Assembly Bill 32 (AB 32), The California Global Warming Solutions Act, which set a state-wide greenhouse gas emissions reduction goal of 1990 levels by 2020. The interpretation and subsequent implementation of this bill has resulted in the preparation of climate action plans by cities and counties throughout California. The development of climate action plans poses a unique set of challenges for practicing planners and planning students.

Over the 2008-2009 academic year, a group of 25 fourth year undergraduate students and two graduate students had the opportunity to develop a climate action plan in collaboration with the City of Benicia. The plan development took place over six months in two, one quarter long community planning studios. These capstone studios are structured to simulate the work of professional planners and expose students to innovative methods and techniques used in “real-world” planning situations. By developing a climate action plan, students were provided the opportunity to gain expertise in an emerging area of planning policy. The plan development process was conducted as a collaborative planning effort between Cal Poly and the appropriate City of Benicia Departments as well as community members and key regional stakeholders.

The City of Benicia, population 27,916, is located in southern Solano County, California, approximately 35 miles northeast of San Francisco, and 57 miles southwest of Sacramento. Approximately 12.9 square miles in size, Benicia lies on the north shore of the Carquinez Strait, which connects San Francisco Bay to the west, with the Sacramento and San Joaquin River Delta to the east.

In 2007, the City of Benicia joined an increasing number of California communities in developing plans to address climate change on a local level by adopting a resolution to act on climate protection and officially joined the Local Governments for Sustainability (ICLEI) Cities for Climate Protection Campaign. Benicia’s Mayor, Elizabeth Patterson, signed the U.S. Mayor’s Climate Protection Agreement in 2008. Benicia conducted a greenhouse gas emissions inventory and set emissions reduction targets that were adopted by the City Council in September 2008. The City selected the community planning studio to develop a Draft Climate Action Plan that identified strategies to reach the emissions reduction targets.

Planning Process

The six month climate action plan development process was broken into two phases. Phase One entailed: extensive background research that included an inventory of relevant legislation and guidance; an audit of existing City policies and programs that support or potentially conflict with the City’s emissions reduction
goals; a review of existing climate change policy plans to assess strategies used by other jurisdictions to lower greenhouse gas emissions; and holding community outreach events to gather community input on the Plan. In addition to hosting community events, digital outreach was utilized through development of a website and an online survey. Phase Two involved drafting a Climate Action Plan to identify specific emissions reduction objectives and strategies, develop indicators to track progress, and provide policy recommendations for implementation. To successfully complete Phase Two, additional outreach was conducted focusing on key stakeholders, community organizations, and City departments.

The students conducted five community outreach events during the planning process. The initial effort involved conversing with citizens at the Farmers’ Market to increase community awareness, answer questions, and extend an invitation to attend the October kick-off Planning Commission meeting and the November community workshop. The second and third outreach efforts were workshops— a visioning workshop with the Benicia High School students and a public workshop targeting all community stakeholders. An interactive web site was created to provide another vehicle for residents to participate in the Plan preparation process. The website enabled the community stakeholders to participate in a survey, offer suggestions, and learn about climate change issues and efforts conducted by other communities. Near the end of the six-month process to create the Draft Climate Action Plan, meetings were held with local stakeholders to obtain information about operations and current actions undertaken by various public and private entities. The draft Plan with proposed strategies to achieve the emissions reduction targets was presented to the community at the Planning Commission Meeting in March, 2009.

Participation in development of a Climate Action Plan provided the students with the opportunity to gain experience in a new area of focus for the planning profession. Climate action planning poses a set of distinct challenges to planning students. One aspect of plan development unique to climate action planning is the need to specifically quantify the estimated emissions reduction resulting from the implementation of objectives and strategies. This required a level of technical expertise that is not traditionally included in planning education. For example, to estimate the effectiveness of solar power installations, students had to make defensible assumptions about the likely solar input, photovoltaic efficiency, and power output.

Every aspect of the plan required a set of assumptions to be made and supported through research from anticipated vehicle emissions improvements to the effectiveness of the recommended education programs. These technical challenges were overcome by drawing on outside experts as needs were identified, and through student enthusiasm for exploring a topic that required innovation and creativity. The added informational and organizational burden energized students as it also marked added freedom and provided them an opportunity to develop expertise in an increasingly important area of planning.

**Outcomes and Implementation**

The Draft Benicia Climate Action Plan identified emissions reduction objectives and supporting strategies in eight focus areas: energy production, transportation and land use, buildings, commercial and industrial, water
and wastewater, solid waste, parks and open space, and public education and outreach. For each reduction measure, indicators to track progress are identified and a suggested implementation sequence is defined. Taken together, the measures detailed in the Plan provide the City of Benicia with a roadmap to meeting the adopted emissions reduction targets.

The draft plan was submitted to the City in May 2009, and following refinement by staff, the Plan was adopted by the Benicia City Council in September 2009. Benicia was the first city in Solano County to prepare and adopt a Climate Action Plan. In addition, implementation of several of the strategies identified in the Plan has already begun including the pursuit of local renewable energy generation. The City continues to utilize the website developed by the students with regular updates at <BeniciaClimateActionPlan.com>.

The student project received an academic award of merit from the California Chapter, America Planning Association at the annual conference in September, 2009.

**Conclusion**

The need to address climate change is increasingly an area of emphasis internationally, nationally, and, particularly, on the state level in California. The ability for the State to reach the emissions reduction target identified in AB 32, The California Global Warming Solutions Act, relies, in part, on actions taken at the local level (California Attorney General). In addition, greenhouse gases and the resulting changes in climate have recently been identified as a potentially significant impact under the California Environmental Quality Act.

The legislative mandate to address climate change has created a need for planning professionals with the skills students gained through this project. As a result, the student project not only benefits Benicia, but also any of the communities with whom these students will work in their professional careers. This project from the 2008-2009 academic year has led to a similar project being pursued during the 2009-2010 academic year, where the studio is developing a draft Climate Action Plan for the City of San Luis Obispo. Also, a new course is being developed for spring 2010 titled Climate Action Planning in an effort to expose a greater number of undergraduate and graduate planning students to the principles of climate planning.