Planning for low-carbon communities

Making meaningful progress towards California’s climate mitigation goal — reducing greenhouse gas (GHG) emissions 80 percent below 1990 levels by 2050 — is one of the front-line sustainability challenges facing planners. This reduction is the minimum required globally to stay within a safe trajectory of global warming and, hopefully, climate re-stabilization. Meeting this challenge requires planning for — and producing — low-carbon communities and economies by 2050.

UC Berkeley researchers released a report last year whose title reflects its key finding: Suburban sprawl cancels carbon-footprint savings of dense urban cores. The study uses local census, weather and other data – 37 variables in total – to approximate greenhouse gas emissions resulting from the energy, transportation, food, goods and services consumed by U.S. households, so-called household carbon footprints. The study shows that transportation and house size remain a community’s highest contributing factors to GHG emissions because fossil fuels are presently our primary source of energy. Thus, even a “smart growth,” dense, new-urbanist community will increase a region’s GHG emissions if people have to drive to work, for shopping, etc.

Building on the study, Chris Jones of UC Berkeley’s Renewable and Appropriate Energy Laboratory and David Burch of Bay Area Air Quality Management District (BAAQMD), discussed their on-going work at a SPUR-SF evening forum on February 24th. The forum addressed the planning and behavioral changes required to produce low-carbon communities. Their research suggests that responding effectively to climate change will require a more nuanced, place-based approach.

In addition, David Burch and his BAAQMD colleagues are compiling a new, neighborhood-scale Bay Area GHG emissions inventory. The inclusion of consumption-related GHGs in the inventory (emissions from production of goods elsewhere that are consumed locally) will create a more accurate estimate of the region’s true carbon footprint and a benchmark for local low-carbon community planning.

The BAAQMD is also collaborating with UC Berkeley’s Renewable and Appropriate Energy Laboratory to identify the role of smart planning tools and place-based solutions in meeting California’s 2050 GHG emission reduction goals. Solutions would vary by community, as already shown by the lab’s Cool California City Challenge.

The BAAQMD and UC Berkeley collaboration are conducting a Yolo County case study that is developing short- and medium-term strategies applicable to any community. Short-term behavioral strategies include campaigns to encourage purchase of electric vehicles and residential solar energy systems, home weatherization, and energy savings assistance programs. Medium-term planning strategies include creating incentives for residential size and location efficiency, completely phasing out natural gas as an energy source for residences, and transitioning to renewable power, including for transportation.
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It's a challenging task for any community to reduce GHG emissions to 80 percent of 1990 levels by 2050. Is your community on track? What would it take to meet the 80 percent target?

Watch this space. We'll be reviewing some possibilities in upcoming posts.

By Scott T. Edmondson, AICP, and Josh Hohn, AICP

(Note: This is a cross post of the Northern News’ “Plan-it sustainably” Column, March 2015 (upcoming), editing by Naphtali H. Knox, FAICP, a service of the APA California Northern Section’s Sustainability Committee. The SPUR evening forum panel was moderated by Josh Hohn, AICP (jnho@un.com), Lead, Northern Section’s Energy Work Group, and supported by Dave Javid, AICP (davejavid@gmail.com), co-director of the Section’s Sustainability Committee. Scott T. Edmondson, AICP (scott-e@sustainability2030.com), is founder, former co-director, and research lead of the Section’s Sustainability Committee, and an APA Sustainability Champion.)