Summary of Proposals being onsidered by the Dane County Council on Climate Change for inclusion in the Dane County Climate Action Plan

(As of November 2018)

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Preface

The following list of climate change mitigation recommendations (programs, policies and projects) are being considered by the Dane County Climate Council for possible inclusion in a Dane County Climate Action Plan (CAP). These recommendations are the result of just over a year of deliberations by the Dane Climate Council and 10 work groups that are advising the Dane County Office of Energy and Climate Change which staffs and facilitates the Dane Climate Council.

We are sharing this document at this time to begin the process of public engagement and public input into the CAP. Please recognize that none of these recommendations are finalized and the work of the Climate Council is far from over; there will be numerous additional recommendations considered by the Council for inclusion in the CAP. At this point we are looking for general reactions to the list of recommendations that follows including ideas related to recommendations you see listed and especially ideas that you think we have missed.

Lastly, please recognize that these are very cursory descriptions of the recommendations/proposals and that there are a lot of details behind each of those. You will also have an opportunity to comment on those details when we send you a draft CAP. The Climate Council has identified these recommendations and shaped them with five major principals in mind: 1. Equity and justice; 2. Economic benefits; 3. Health benefits; 4. Resiliency and energy security; and 5. Bridging the urban and rural divide.

Please submit your comments via the online comment form. Thank you in advance for any input you may have.

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Energy Efficiency

The goal of the energy efficiency recommendations is to inspire more action on, and investments in, energy efficiency by engaging citizens in sectors with the greatest potential (e.g. rural residents, small businesses, multi-family owners and residents). The program will be comprehensive in scope offering support and technical assistance not just for energy efficiency, but also for transportation, water use, and all aspects of sustainability.

Recommendations

Create a comprehensive county-wide energy efficiency, conservation and demand-side management program

The program goal is to increase energy efficiency achievement county-wide by 25% by providing technical support, efficiency services and finance tools.

- Offer reliable and comprehensive efficiency information, beginning with underserved rural and urban households, multifamily residents, and small businesses.
- Connect participants with current state and local resources.
- Suggest low- or no-cost strategies to reduce resource use.
- Share case studies and showcase successes.
- Recognize efforts and develop a culture of efficiency leadership.

Buildings

Building & Climate Leadership Program

Dane County will join leading local governments across the globe by tackling carbon emissions from the buildings sector. The energy savings from the Building & Climate Leadership Program will improve the quality of life in Dane County by offering our residents healthier, more productive and more economical places to live, work and learn.

To encourage robust participation in the Building & Climate leadership program, the program will be positioned around the following key drivers:

- Market and peer recognition for participants.
- Health, productivity and quality of life benefits from efficiency and clean energy.
- Community engagement, economic development and creating a built environment aligned with Dane County's values.
- Return on investment over simple payback.

Recommendations

Voluntary Performance Challenge

In lieu of stronger building codes, Dane County would provide technically sound high-performance building guidelines that would:

- Provide a range of energy performance targets for new construction by building type.
- County recognition given to building owners that achieve one of four levels:
    - Net zero energy
    - 75% less energy than others in sector
    - 50% less energy
    - 25% less energy
- Develop additional incentives (e.g. fast-tracked permitting, financial rewards, technical assistance) focused on the top two levels of performance.

Dane Co. participation in the U.S. Dept. of Energy Better Buildings Challenge

Dane County and its cities and villages will lead by example by participating in the Challenge, which asks building owners to reduce energy use by 20% over 10 years and to share their strategies and results.

Target under-performers

- Collaborate with utilities and Focus on Energy to identify high energy use buildings.
- Offer a comprehensive suite of technical assistance and incentives to help those buildings improve their energy performance.

Benchmarking policy support for municipalities

- Share best practices with and between municipalities.
- Provide model policy language when requested.

Renewable Electricity & Heat

Overview

There are a variety of recommendations based on renewable electricity and heating technologies and strategies. These recommendations are intended to transition Dane County to increased utilization of renewable resources as quickly as possible

- Solar energy
- Energy Storage
- Supporting municipal renewable energy targets/goals
- Public education on distributed solar for homes and buildings
- Heat pumps
- Wind Energy (yet to come)
- Geothermal (yet to come)

Recommendations

Accelerate Solar

Promote utility (large) scale and distributed (small) solar systems to achieve a goal of meeting at least one third of county-wide electricity needs (1200 MW) from solar energy. Dane County can play a role in spurring project developments in a variety ways including by purchasing renewable energy credits and by helping to aggregate municipal customers.

Energy Storage

Storing excess zero-carbon electricity generated by the sun and wind for night-time and calm days may be required to meet the carbon reduction goals of this Plan. The Climate Council has discussed five potential applications of energy storage for Dane County. In general, energy storage can be located at a home or business, at a local utility, or on the local utility's electric distribution system. The five energy storage proposals under consideration are:

- Utility-scale storage on the electric distribution system.
- Co-owned utility-scale storage on customer premises between the utility and customer.
- Storage for microgrids at critical Dane County Governmental Facilities.
- Facilitate customer-sited storage for commercial and industrial buildings.
- Encourage customer-sited storage for home and residential buildings.

Municipalities lead by example

There are 28 cities and villages in Dane County, 33 towns, and many other unincorporated communities in Dane County. Each of these has facilities and operations with carbon footprints that Dane County's Office of Energy and Climate Change can work with to reduce those emissions.

- Recommend municipalities adopt clean energy goals by resolution. Facilitate sharing of, and provide assistance with, the development of resolutions.
- Assist with grant writing to help municipalities fund programs and projects.
- Work with utilities to provide renewable energy opportunities to municipalities.
- Ensure equitable access to clean energy for low- and moderate-income neighborhoods.
- Use same measurement tools for all municipalities county-wide.
    - EPA Portfolio Manager for municipal operations and businesses.
    - ICLEI GHG Protocol for Cities
- Facilitate data entry for municipalities to ensure community-wide energy use is tracked.

Solar Energy Education

This proposal recognized that education and awareness about the state of solar technology, affordability and other aspects of installing solar electric generating systems is a major barrier to realizing greater solar adoption. Dane County's Office of Energy and Climate Change will

work with solar developers and consultants, utilities, clean energy advocates, municipalities, Wisconsin Energy Institute, UW Extension and others to develop, test and launch a public relations campaign and outreach effort with the goal of increasing business and individual investment in solar PV systems.

Rural heat pump program (low-income furnace replacement)

This would be a pilot program to promote air and ground source heat pumps to replace propane or fuel oil furnaces as the primary heating/cooling source for select homes in rural areas. Program delivery and administration could potentially be tied to the low-income weatherization program. The primary goal of this recommendation is to gain experience with heat pumps as a technology that could play a role in electrification of space heating and cooling.

Transportation & Land Use

Transportation accounts for approximately one-third of all Dane County emissions today, or approximately 3 MMT CO_2 equivalent. To meet our aggressive 2050 goals, these emissions need to be drastically reduced. Cars and light trucks account for 94% of all transportation emissions in the County, and were the main focus of the recommendations. Two broad pathways to our goal were identified and need to be implemented simultaneously: reducing driving and electrifying vehicles.

Recommendations

Pathway 1

Reducing vehicle miles traveled through efficient land-use, zoning and pricing. Estimated carbon reduction potential: 20-34%

Land Conservation

Continue to fund, implement and expand the Dane County Parks and Open Space Plan that preserves natural resource areas, greenspace and farmland.

Smart Growth

This proposal aims to identify and Incentivize zoning laws and development patterns to create communities that are compact, mixed use, promote infill, have high-quality public spaces and are transit oriented. The County would create a set of templates and guidelines that cities, towns and villages can use to modify their codes and ordinances to promote development that reduces the number and distance of single-occupancy vehicle trips, fosters the use of active transportation and public transit. Sixty percent of new urban growth should occur as compact development by 2030 and 90% of new urban growth should occur as compact development by 2050.

Regional Rapid Transit System

The County would work with cities and the State of Wisconsin to identify local, state and federal funding for the creation of a high-quality rapid transit network that connects major population centers within its boundaries. A key funding mechanism could be the creation of a regional ***transportation*** authority within Dane County (similar to an RTA but with alternative sources of funding). .

Active Transportation

The County would increase their active transportation budget to achieve the build-out of a comprehensive bike and pedestrian network that enables non-motorized transportation between its communities.

Implement Project Scoring

Use a scoring framework for transportation projects that prioritizes the design and implementation of those projects that reduce carbon emissions, improves access and economic vitality, improves safety and prevents the perpetuation of inequity.

Smart Pricing

Create a program that accurately prices the cost of driving and parking. These could include new road pricing mechanisms to stabilize revenues and manage vehicle travel demand.

Pathway 2

Replace public and personal internal combustion engine vehicles with electric vehicles.

Municipal Electrification

- Replace existing county vehicles with electric, and incentivize cities, towns and villages to do so as well.
- Explore bulk purchasing opportunities that could bring down the cost of charging infrastructure.
- Identify and implement municipal policies that support curbside charging.

Improve and expand charging infrastructure for EVs

- Near-term: install 15 DCFC stations and 150 Level 2 stations.
- Increase charging infrastructure at single family and multifamily developments by a given percentage. Introduce policy that supports provisions for EV-ready affordable housing (add as a requirement for grant program), as well as construction requirements.
- Develop EV parking hubs.
- Incentivize publicly accessible charging on private property.

Create EV outreach and education programs

- Create a program to educate municipalities, businesses, residents, and developers on the benefits, cost savings and incentive opportunities to transition to electric vehicles.
- Create a program to educate dealership sales staff: encourage dealerships to have EV inventory, understand charging and know their inventory and EV benefits.
- Encourage "ride and drives" at community events and partner with local businesses to hold such events. .
- Work with electric utilities to include EV education communications in newsletters, bill inserts, web content and other outlets. .
- Create an EV education center where people can go to learn about and test drive multiple models of EVs with no sales pressure.

Ag, Forestry & Food

Dane County covers approximately 1,238 square miles of land (791,978 acres). Agriculture, forests and other undeveloped areas account for 82% of the county's land area. Dane County's significant farm and forest lands offer a crucial opportunity in its climate change mitigation portfolio.

Recommendations

Carbon Sequestration: Soils

- Dane County should promote carbon sequestration by expanding healthy soils and perennial based farming practices.
- Add a Soil Conservationist staffer to the Land and Water Resources Department to select, educate and implement NRCS soil regenerative and agroforestry projects such as riparian buffers, ally cropping, silvopasture, forest farming and multi-story cropping on private lands. Partner with a Friends group to assist in selecting Dane County properties where practices could be incorporated.
- Join the "4 Per 1000 Initiative: Soils for Food Security and Climate".
- Expand integration of perennial agricultural practices including perennial cover crops, prairie strips, ally cropping.
- Convert Dane county-owned land purchased with conservation fund dollars currently leased to row crops to perennial cover such as alfalfa or pasture land, or perennial food crops like kernza, fruit and nut orchards or other advanced, more regenerative agriculture systems (e.g. those mentioned above).
- Provide technical assistance to encourage upcycling (no inputs that make products or by-products toxic or difficult to recycle or reuse).
- Facilitate the expansion of agricultural conservation easements.

- Help farmers apply for DATCP designation of a county-wide rural area Agricultural Enterprise Area (AEA).

Carbon Sequestration: Forest

Dane County should adopt the following management strategies and programs:

Keep forests as forests

- Encourage land use planning that includes green infrastructure and maintaining existing forest canopy (e.g. conservation subdivisions). Identify key parcels of land that support the overall stewardship acquisition goals of the county and acquire key parcels that complement long term maintenance of forest for carbon and the variety of public benefits for these lands.
- Manage current publicly owned forests in urban and rural areas to maintain health and resilience, preventing forest loss. Identify regeneration and reforestation needs as forests age and decline.
- Explore developing a county based "managed forest law" in Dane County for privately owned forests encouraging sustaining or possibly increasing the amount of forest canopy on private lands.
- Develop options for municipalities to maintain or grow trees on private properties (e.g. through ordinances, fees, subsidies, tax benefits).

Create new forests through afforestation

- Apply to NRCS for funds to establish a new grant program for municipalities to plant and inventory urban forests.
- Pursue additional canopy assessments to gauge the success of afforestation programs that establish new forests and increases in carbon sequestration.

Keep carbon in wood

- Increase use of forest products to extend carbon storage and replace other fossil fuel intensive products.
- Utilize wood from publicly owned urban and rural forests to encourage long-term forest products that sequester carbon.

Food Security and Sequestration

- Adopt a Dane County Local Low Carbon Farms Act to promote low-carbon, regional food systems.
- Expand collection of food waste at, or at some point prior to, the landfill - partner with interested Dane County municipalities to invest in equipment to support expansion of food waste collection at Rodefeld Landfill to expand natural gas (biomethane) collection and utilization. It may also be useful to invest in a de-packaging machine.
- Invest in building a wholesale food terminal that keeps fresh food cold so that more food may flow through our region.

- Dane County's Office of Energy and Climate Change should provide matching funds for the food projects portion of the Partners in Equity grants program.

Proposals on upcycling, composting and biodigesters to come.

Water

Recommendations

Water Efficiency and Rainwater Capture Incentives Program

These proposals suggest identifying funding and developing incentives for the use of water-efficient fixtures and rainwater capture with a goal of decreasing overall per capita municipal water demand by 20%, from 110 gallons per capita per day (gpcd) to 88 gpcd. (Numbers are for City of Madison.)

- Incentivize WaterSense labelling for new homes.
- Encourage the replacement of older fixtures and appliances in existing residential and commercial buildings with EPA WaterSense-labeled products.
- Encourage the use of rainwater harvesting systems for outdoor water uses, flushing toilets and urinals, and clothes washing.
- Develop a voluntary self-certification program for water efficiency and rainwater capture.
- Analyze water efficiency and rainwater capture policies for improvement opportunities.
- Develop and promote best practices.
- The program should include and emphasize improvements in county-owned facilities.

Commercial Water Efficiency Outreach Program

- Establish a program to provide information to commercial operations on the options and benefits of water-efficient equipment.
- Develop and promote best practices.
- Identify and prioritize commercial operations that have a high potential water savings.
- The program should include and emphasize improvements in county-owned facilities.

Best Practices for Drinking Water Utilities Program

Gather best practices for energy efficiency and reduction for water utilities; share that information with utilities in the county.

Low-Oxygen Wastewater Treatment Research Project

The Madison Metropolitan Sewerage District is currently researching, in cooperation with UW-Madison researchers, low-oxygen wastewater treatment technologies and implementation. The practicality and cost-effectiveness of low-oxygen treatment are uncertain. A research project might not yield energy savings. Because of the uncertain results, the district's research funding is limited. County support could speed up research into low-oxygen wastewater treatment technologies and implementation.

Mid-Scale Solar and Storage Analysis Project

Help identify funding to analyze mid-scale solar generation capacity with integrated storage for use by drinking water or wastewater pumping systems.

Salt Regulatory Requirements Program

Monitor salt regulatory requirements for potential energy impacts; engage with organizations and interest groups to identify opportunities to reduce salt use.

Salt Reduction Research Project

Help identify funding to support and speed up research on options for reducing salt loadings and discharges to and from the wastewater treatment system in the region.

Groundwater Monitoring Research Program

Create a climate change impacts R&D research program that would include installation of distributed groundwater sensing equipment.