

Legislative Climate Update



Annual report to legislature regarding climate change issues, efforts to reduce greenhouse gas emissions, and prepare the state for climate change effects.

Observed Climate

- Colorado has warmed 2 degrees in the last 30 years and 2.5 degrees over the last 50 years.
- No long term trends in precipitation have been detected.
- Increased trend in drought severity over the last 30 years.

Projected Climate Change in Colorado

By 2050, models project between 2 to 5 degrees of additional warming for Colorado. For context, with temperature increase, Denver's seasonal cycle would resemble: Pueblo (at 2°F), Lamar (at 4°F), and Albuquerque at (6°F).

The state is working across agencies to increase resilience to extreme events and variability as a result of climate change. This includes incorporating climate change mitigation and adaptation into long term planning in all sectors.

Climate Plan

Each sector is moving forward with implementing aspects of the Climate Plan as summarized below.

Ecosystems

Colorado Parks and Wildlife Commission hosted a series of climate change discussions at meetings throughout the year with subject-matter experts as invited guest speakers to open dialog on climate change within CPW and among constituents.

Colorado Parks and Wildlife received U.S. Fish and Wildlife Service approval for its updated State Wildlife Action Plan (SWAP) in March, 2016, which incorporated vulnerability assessment of priority habitats based on climate change. Approval of the SWAP provides CPW access to \$1 million in Federal funds for state programs that benefit at-risk species, such as Gunnison sage grouse, black-footed ferrets, Colorado River cutthroat trout and many others.

Colorado Parks and Wildlife and Colorado Natural Heritage Program, in collaboration with the Department of the Interior's North Central Climate Science Center, received a 2016 Climate Adaptation Leadership Award honorable mention. This award is sponsored by the National Fish, Wildlife, and Plant Climate Adaptation Strategy's Joint Implementation Working Group in partnership with other federal agencies.

Colorado Parks and Wildlife continues to build upon past work to improve stream connectivity to enhance climate adaptation for fish species. One high-profile success for 2016 is the fish passage structure installed by the City of Fort Collins at the Fossil Creek Reservoir Diversion on the Cache la Poudre River, which is successfully allowing passage of all fish species at that location.

Energy

In 2016, more than 375 MW of utility-scale renewables came online in Colorado, including Xcel's Comanche Solar Project (120 MW), Tri-State's San Isabel Solar Farm (30 MW), and Black Hills' Peak View Wind Farm (60 MW).

In FY16 CEO's Energy Performance Contracting Program completed 6 new projects bringing the total program impact to 194 projects in communities covering 75 percent of Colorado's counties, resulting in the financing of more than half a billion dollars in energy and water-related capital improvement projects. Energy performance has been improved at public schools and university buildings, veterans' facilities, libraries, parks, community centers, wastewater treatment plants, prisons and other government buildings.

The Energy Savings for Schools program secured agreements with over 30 new schools and districts and secured grants to help Colorado schools finance projects to achieve measurable energy and water savings and create sustainable energy efficiency programs.

The Colorado Agricultural Energy Efficiency Program, formerly the Colorado Dairy and Irrigation Efficiency Program, is in the second year of its statewide implementation. The program helps Colorado producers be more competitive by providing efficiency investments with substantial returns on the investments, thus reducing the operating costs for the participants. A \$1.1 million U.S. Department of Agriculture grant, leveraged with a match by CEO, the Colorado Department of Agriculture, and utility and industry partners was awarded to CEO's Colorado Agricultural Energy Efficiency Program. Over the next two program years, the efficiency improvements are expected to achieve over 5,250 MWh of electricity savings and 524,000 gallons of water savings annually, and will provide additional environmental benefits to Colorado's agricultural producers.

CEO's Weatherization Assistance Program installed over 1,000 water savings measures including bathroom aerators, kitchen aerators, and showerheads.

CEO supports the Office of Economic Development and International Trade's (OEDIT) Advanced Industries Accelerator Grants that help to drive innovation for energy clean technologies, including companies with water saving technology. Through a partnership with OEDIT, CEO awarded funds to two oil and gas energy startups that aim to demonstrate innovative technology.

CEO, in partnership with the Regional Air Quality Council and the Colorado Department of Transportation, is working to reduce market barriers to the development of all cost effective and technologically viable alternatives to gasoline and diesel fueled transportation. To date, CEO awarded grants for the installation of 142 electric vehicle (EV) charging stations. CEO's ALT Fuels Colorado program awarded grants for four new CNG stations and installed five previously funded stations. Colorado's tax credits for the purchase of alternative fuel vehicles were made more consumer friendly under HB16-1332.



Energy (continued)

CEO spearheaded the launch of Colorado C-PACE, which offers commercial property owners a unique way to finance 100 percent of energy and water improvements to their properties. Owners repay the cost of eligible improvements through an assessment on their property tax bills. CEO developed a bill and worked with the legislature to unanimously pass the bill to make C-PACE easier for counties to implement after opting into the program. To date, 15 counties have opted in.

CEO launched a Low-Income Community Solar Demonstration Project in December 2016. The project offers low-income households that are eligible for weatherization assistance services affordable community solar options: clean, low-cost electricity from a shared generation resource. Up to 12 community solar models will be developed by CEO through its grant recipient, GRID Alternatives, in fiscal years 2016 and 2017. Cumulatively, the models will serve approximately 300 income eligible families and will amount to at least 1 megawatt of installed solar capacity.



Local Affairs

The Planning for Hazards: Land Use Solutions for Colorado guide was published and website launched in the spring of 2016 (planningforhazards.com). In 2016, 12 trainings on the Planning for Hazards guide were held, reaching over 425 attendees. The website has been used over 2,000 times by over 1,400 unique users from around the world. This guide is being used by local government planners, emergency managers, and the private sector to integrate information regarding changing hazard risks and resilience principles into local plans and land use codes. The guide currently includes a “Climate Plan” tool profile to inform local governments about climate-related vulnerabilities and coordinated community risk reduction strategies and planning efforts. In 2017, the guide and website will be expanded to include new tools and additional model codes. The Town of Milliken and City of Manitou Springs have been selected to participate as pilot communities to demonstrate how communities can use the guide to reduce the risk of damage or destruction due to hazards such as floods and wildfires.

DOLA’s Divisions of Local Government (DLG), Housing, and Disaster Recovery manage CDBG-DR funds to support local recovery efforts. In 2016, DLG awarded over \$15 million to disaster-impacted communities across Colorado to integrate hazards and resilience into local plans, projects, and studies.

The Colorado Division of Housing promotes energy efficient and green construction through affordable housing grant and loan programs as well as factory-built construction programs. Enterprise Green Communities standards are required for all multi-family rehabilitation and new construction projects and provide a basis for developing high-performing, neighborhood-connected housing. The Division’s factory-built programs adopt and enforce the latest version of the International Energy Conservation Code (IECC). The Division is an active member in the Colorado Energy Code Compliance Collaborative that promotes the adoption of newer energy codes across the state.

Transportation

Department of Transportation (CDOT) held a Climate Change Adaptation in the Planning Process Workshop July 14, 2016. At this workshop CDOT obtained information from peers, and input from staff, state and local agencies, and planning partners regarding the identification of the best approach to incorporate climate change adaptation into Colorado's long-range planning processes, and in developing the next Statewide Transportation Plan. These long-range planning processes are important as they inform and directly link to decisions related to programming, financing, and eventual construction of transportation projects. This peer exchange was a collaborative effort that built upon recent work accomplished by the Colorado Resiliency Working Group to move forward with implementing recommendations of the 2015 Colorado Climate Plan.

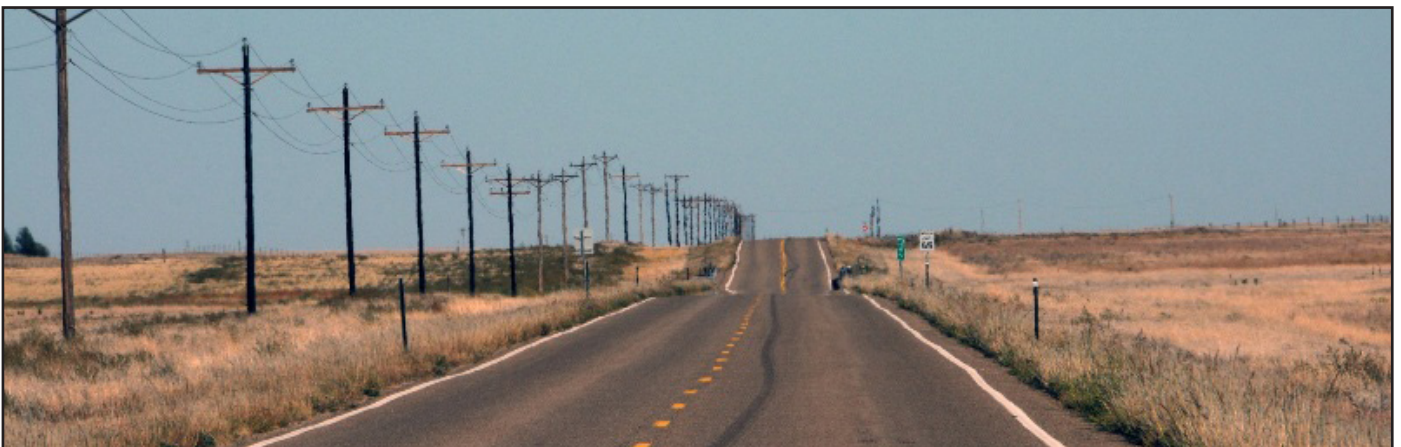
CDOT embarked on its Together We Go effort. This was the first annual two-way conversation with stakeholders to report progress made on the Statewide Transportation Plan, highlight key initiatives and how these relate to the public, and to expand and strengthen interactions with stakeholders. A part of this effort, outreach to key environmental stakeholders and special interest groups was conducted highlighting the importance of recognizing climate change particularly in the area of adaptation and its relationship to transportation planning and future infrastructure improvements. More than 20,000 Coloradoans participated in the town halls and 24 stakeholders attend a presentation at the Alliance for Sustainable Colorado.

Surface transportation in Colorado is the largest source of greenhouse gas emissions, and therefore a large contributor to climate change. The majority of carbon dioxide (CO₂) emissions come from moving people or goods with cars and trucks. To reduce CO₂ emissions from the transportation sector, several mitigation efforts are underway to utilize more efficient vehicles, alternative fuels, reduce traffic congestion, and to reduce vehicle miles traveled (VMT). As traffic congestion increases, so does fuel consumption and CO₂ emissions.

The following efforts can help mitigate the impact of traffic on climate change:

The High-Performance Transportation Enterprise (HPTE) was formed to aggressively pursue innovative means of more efficiently financing important surface transportation infrastructure projects that will, in part, allow more efficient movement of people, goods, and information throughout the state. CDOT HPTE efforts include:

- US 36 Bus Rapid Transit program has experienced a 45% increase in bus ridership. On US 36, the general purpose lanes report 29% faster drive time in the morning, and 20% faster in the evening, compared to 2011 data.
- I-25 North Express Lanes from US 36 to 120th have allowed the Fort Collins to Denver Bustang route a 10-minute travel time savings.
- I-70 Mountain Express Lane shows a 26% to 52% travel time improvement from the 2012 Martin Luther King holiday compared to the same holiday in 2016.



Transportation (continued)

CDOT created the Division of Transportation Systems Management and Operations (TSM&O) to align the core functional business areas that provide operational activities, programs, strategies, and services on a statewide basis. TSM&O has implemented several projects to reduce congestion on the transportation network:

- Corridor Operations and Bottleneck Reduction Assistance (COBRA) Program - A three year program aimed at reducing congestion at bottleneck areas. Currently there are 26 active projects Statewide.
- Traffic Incident Management (TIM) - The goal of TIM is to have safe quick clearance of incidents on highway corridors. Quick clearance decreases congestion. As of December 2016, 19% of Colorado responders have attended the SHRP2 TIM Training Program. That is an increase of nearly 50% in one year (December 2015, 13%). This training is now provided regularly through the CDOT Maintenance Training Academy.
- I-70 Mountain Express Lane and I-25 North Express Lane Operations - Successfully and safely operated the I-70 Mountain Express Lane in its first year of operation, resulting in 15% more throughput, 18% faster travel times in the General Purpose lanes, reduced traffic on local roads, and the successful management of 23 incidents in the Express Lane segment, averaging an 22 minute clearance time. Also successfully operated the I-25 North Express Lanes between US 36 and 120th, managing toll rates, traffic incidents, and traveler information of the lanes.
- CDOT has partnered with the National Renewable Energy Lab (NREL), Regional Air Quality Council (RAQC), Colorado Energy Office (CEO), City & County of Denver, and Southwest Energy Efficiency Project (SWEET) to conduct an analysis of electric vehicle charging corridors in Colorado. This analysis will help the project partners maximize the benefits of future EV infrastructure investments and support the development of a statewide alternative fuels network.
- The 2015 Colorado Climate Plan includes a strategy and recommendation to: Promote and encourage fuel-efficient vehicle technologies and programs to reduce vehicle emissions. CDOT is working toward this through the following:

Automatic Vehicle Locator (AVL) installation is complete in all 892 CDOT light fleet vehicles and 1270 heavy fleet vehicles. Utilizing AVL to track fleet utilization will help to optimize the fleet during Fiscal year 2018. Rightsizing the fleet will help with the reduction in vehicle costs. AVLs will be used to locate fleet vehicles in real-time, and to generate and track data on excessive idle time, fuel consumption and savings, and reduction in greenhouse gas emissions. CDOT is evaluating options to install AVL in the remaining heavy fleet equipment.

Idle Reduction systems are installed in 38 units. The idle reduction system was not installed and programmed correctly. CDOT is presently working with the installer to correct this problem. Corrections are to be completed by April 14, 2017. Once the corrections are made CDOT will begin to measure idle reduction.



Water

Work is underway to update the Statewide Water Supply Initiative with a focus on data and analysis to serve as the technical foundation for future refinements to the basin and statewide planning efforts. The CWCB Project Management Team and Consultant Team are in the process of developing methodologies that build upon previous efforts and expand to include scenario planning, climate change, conservation impacts, and agricultural and nonconsumptive gaps. The update is scheduled to be finalized by December 2017.

The Governor has endorsed two water projects - the Windy Gap Firming Project and the Gross Reservoir expansion. These projects center on partnership, compromise, and reaching shared goals. The water plan has provided a framework for these types of projects in the future to ensure that the state's water values are protected and balanced.

During 2016 state and federal partners and community stakeholders completed a Lean event on the water project permitting process. The Lean team is focused on implementing the recommendations to streamline the permitting process while maintaining rigorous environmental protection.

Since the approval of Colorado's Water Plan in November 2015, the CWCB has granted \$444,825 in water efficiency planning and implementation projects for conservation planning, plan implementation, and public education and outreach. These projects assist in achieving Colorado's Water Plan measurable objective of 400,000 acre-feet of conservation savings by 2050.

Throughout 2016 the CWCB developed a 3-5 year funding plan critical to many of Colorado's Water Plan implementation efforts, which will seek approvals from the CWCB Board and the Colorado legislature through the annual Projects Bill. If approved, the funding plan will create a repayment guarantee fund. This fund will be used to financially support regional projects with multiple sponsors.

The CWCB is looking to provide an additional \$5 million to the Watershed Restoration Program for roundtables and stakeholder groups to develop watershed restoration and stream management plans and projects for the priority streams identified in Basin Implementation Plans (BIPs) and other watershed planning documents. This \$5 million is dependent on the approval of the proposed CWCB funding plan.

Of the \$5 million transferred in the 2016 Projects Bill to assist in the implementation of Colorado's Water Plan, staff is recommending the following approximate amounts to the Board and legislature for appropriation in 2017:

- \$1 million will support efforts with watershed-level flood and drought planning and response;
- \$.5 million for grants to provide technical assistance to irrigators for assistance with federal cost-sharing improvement programs;
- \$1.2 million for water forecasting and measuring efforts;
- \$1.3 million to update reuse regulations as well as to fund a training program for local water providers to better understand AWWA's methodology for water loss control; and
- \$1 million to support the Alternative Agricultural Water Transfer Methods Grant Program



Public Health

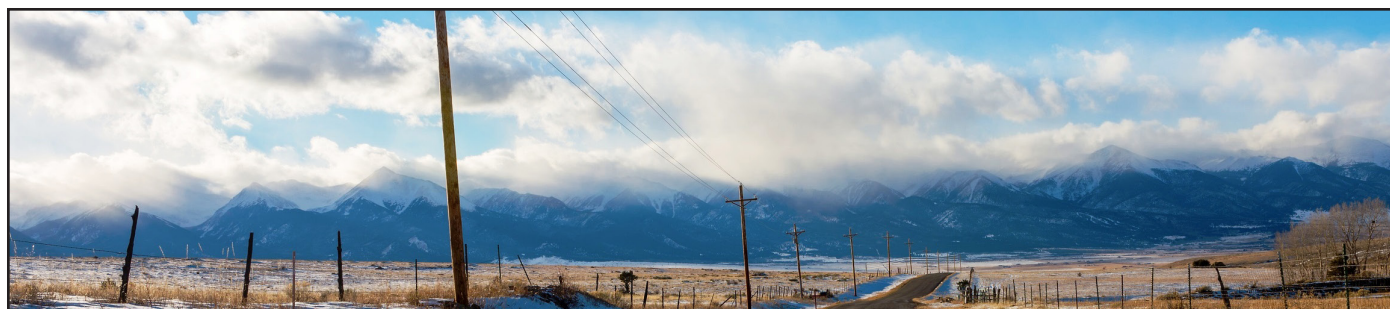
The Air Quality Control Commission (“AQCC”) adopted revisions to the ozone State Implementation Plan (“SIP”) in November 2016. The SIP includes a wide range of state and federal ozone control strategies, including regulations to reduce emissions from motor vehicles, oil and gas facilities, power plants, gasoline, printing operations, industrial cleaning solvents and other sources. Several of the actions to reduce ozone also reduce emissions of greenhouse gases including methane and carbon dioxide. Colorado was required to adopt this SIP revision and submit it for Environmental Protection Agency (“EPA”) approval because the EPA redesignated the Denver Metro/ North Front Range Area (“DMNFR”) as a “moderate” ozone nonattainment area for purposes of the 2008 National Ambient Air Quality Standard (“NAAQS”). As part of its ongoing ozone planning, and to comply with EPA regulations, CDPHE has initiated stakeholder processes to evaluate whether oil and gas facilities and certain major sources of air emissions must be subject to additional emission controls. Colorado may need to adopt additional ozone control measures in the future to attain the more stringent 2015 ozone standard, or if the DMNFR is redesignated to a “serious” nonattainment area under the 2008 ozone standard.

In 2014, the AQCC approved revisions to Regulation Number 7 that reduce leaks of methane and other hydrocarbons at oil and gas production facilities by requiring infrared camera inspections, or approved alternatives. The new rules fully took effect in 2016. EPA subsequently adopted a similar requirement that applies in all states.

A Supreme Court order staying the EPA’s Clean Power Plan and a federal Executive Order have created legal uncertainty around this rule. CDPHE is not developing a state plan to submit to EPA while the Clean Power Plan is stayed. The department will evaluate any changes to the federal rule and respond appropriately. Climate change remains a critical environmental and public health and welfare issue.

In January of 2011, the AQCC adopted a Regional Haze SIP to protect and improve visibility in national parks and other Federal Class I areas. A 2015 progress report shows visibility improvement at all monitoring sites in Colorado. In 2016, based on an agreement between the parties, the AQCC adopted a Regional Haze SIP revision that affects power plants in Craig and Nucla. The Regional Haze SIP does not regulate carbon dioxide emissions, but implementation of the 2016 SIP revision could result in carbon dioxide emission reductions of approximately four million tons per year, depending on which compliance option is selected for the Craig Station.

Volkswagen entered a partial settlement of allegations that it violated the Clean Air Act and caused excess emissions of nitrogen oxides (“NOx”) by equipping some vehicles with emission control defeat devices. Colorado is slated to receive about \$68 million from an environmental mitigation trust for certain eligible projects to reduce transportation sector emissions. CDPHE will administer the settlement as the designated Lead Agency for Colorado. State agencies have begun a public stakeholder process to develop a plan to administer the trust. The projects eligible for trust funding include replacing or repowering medium and heavy duty trucks and buses, public transit vehicles, zero-emission vehicle infrastructure, and other eligible mitigation actions. Colorado has the latitude to consider reductions in emissions of greenhouse gases and other pollutants when deciding how funds will be distributed.





Agriculture

A public engagement session for the agriculture sector was held as part of the Governor's Agriculture Forum in February of 2017. Key messages shared with the state at this session include an emphasis on the importance of water storage for long term climate adaptation and resilience, support for climate smart agriculture strategies and the high feasibility of soil health projects.

The Colorado Department of Agriculture (CDA) focuses its activities around climate change planning, adaptation, and mitigation through two programs: the Colorado Agricultural Value-Added Development Board (CAVADB) and the Colorado State Conservation Board (CSCB).

The CAVADB coordinates its activities through the ACRE3 energy grant program, which provides financial and technical assistance and education to help agricultural producers develop and implement renewable energy, energy efficiency, and water-efficiency improvement projects in their operations. The ACRE3 program currently focuses on three technology pathways to achieve its goals: agricultural hydropower, agricultural energy efficiency, and renewable heating and cooling.

- RCPP Irrigation Hydropower Project: the USDA Natural Resources Conservation Service (NRCS) awarded \$1.44 million to CDA in 2015, matched by funding from CDA and 12 other state and local partners, to help agricultural producers convert from flood irrigation to more water-efficient sprinkler irrigation with integrated hydropower systems. The program provides financial and technical assistance to help producers install new sprinklers, pipelines, and hydropower. This program completed five irrigation hydropower projects so far in FY2017, with 2 other projects under construction and 12 new projects planned for FY2018.
- Agricultural Canal Hydropower Program: this program works with agricultural ditch companies and rural utilities to assist with the assessment and development of hydropower on canal drops around the state. CDA awarded \$25,000 to one project and is currently reviewing four others for FY2017.
- RCPP Agricultural Energy Efficiency program: CDA works with the Colorado Energy Office (CEO) and NRCS by providing funding for energy efficiency projects in dairies, greenhouses, cold storage facilities, and irrigation systems, as well as technical assistance to CEO for program administration. CDA is awarding \$125,000 for efficiency projects in FY2017. See the "Energy" section for more details.
- As an adjunct to the RCPP Agricultural Energy Efficiency program, CDA is awarding \$125,000 for renewable heating and cooling projects in FY2017. This program focuses on implementing solar hot water, geo-exchange, and advanced heat pump heat-recovery systems in dairies, greenhouses, and cold storage facilities. The funding will facilitate up to six projects this year.
- The Colorado Association of Conservation Districts (CACD), together with the Colorado State Conservation Board (CSCB), prepared an Agricultural Panel Discussion to address Drought Preparedness and Changing Climate at the 2015 CACD Annual Meeting. The discussion focused on changing climate patterns, drought, floods and building resilience into cropping systems through soil health cropping practices. CSCB advocates for the adoption of farming practices that improve soil health. Practices that increase organic matter in cropland soils, such as through cover crops and minimum tillage, can improve biological activity and nutrient cycling and sequester atmospheric carbon.

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