APRIL 2018 • COLORADO MUNICIPAL LEAGUE

COLORADO MUNICIPALITIES

ENERGY AND SUSTAINABILITY

COLORADO'S NEW ENERGY ECONOMY, PREPARING FOR ELECTRIC VEHICLES, MEMORANDA OF UNDERSTANDING FOR REGULATING OIL AND GAS, AND MORE

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COLORADO MUNICIPAL LEAGUE

CML'S VISION:

Empowered cities and towns, united for a strong Colorado.

CML'S MISSION:

Founded in 1923, the Colorado Municipal League is a nonprofit, nonpartisan organization providing services and resources to assist municipal officials in managing their governments and serving the cities and towns of Colorado.

Thanks to all of our members who sent us photos for the cover of this issue!

Pictured above are Aspen, Carbondale, and Louisville. Some others can be found throughout the issue.

The June issue will focus on all the things that Colorado's cities and towns make possible. To submit a photo for consideration for the cover, please send to tstoffel@cml.org by April 15.

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Mission

Colorado Municipalities is published to inform, educate, and advise appointed and elected municipal officials about new programs, services, trends, and information to help them perform their jobs and better serve their citizens and communities.

Manuscripts: Original articles on subjects of interest to Colorado municipal officials accepted. Contact the editor for guidelines.

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The Colorado Municipal League is a nonprofit association organized and operated by Colorado municipalities to provide support services to member cities and towns. The League has two main objectives: 1) To represent cities and towns collectively in matters before the state and federal government; and 2) To provide a wide range of information services to help municipal officials manage their governments.

COLORADO MUNICIPALITIES

*On the cover: Solar installation in the Town of Silt.
Photo courtesy of Clean Energy Economy for the Region.
Background photos (clocckwise from top left):
Solar arrays in Greeley and Lafayette,
drilling in Westminster and wind turbines in Fort Collins.*

ADVERTISE.

Each issue of ***Colorado Municipalities*** reaches **5,000 municipal officials and decision makers.** Reach those who lead Colorado cities and towns for as little as $175 per insertion. Contact Christine Taniguchi, CML communications coordinator, at 303-831-6411 or ctaniguchi@cml.org.

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LETTERS TO THE EDITOR

Have some thoughts about an article that you read in Colorado Municipalities*?*

Want to share those thoughts with your colleagues across the state?

CML welcomes thought-provoking letters to the editor!

Send your comments to Communications & Design Specialist Traci Stoffel at tstoffel@cml.org.

ABOUT SOME OF OUR CONTRIBUTORS

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Gov. Bill Ritter was elected Colorado's 41st governor in 2006. During his four-year term, Ritter established Colorado as a national and international leader in clean energy by building a New Energy Economy. After leaving the governor's office, Ritter founded the Center for the New Energy Economy at Colorado State University, which works with state and federal policy makers to create clean energy policy throughout the country. Ritter is the author of a recent book, *Powering Forward: What Everyone Should Know About America's Energy Revolution*.

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MY VIEW

By Bill Ritter, Jr., Colorado State University Center for the New Energy Economy director and Colorado's 41st governor

COLORADO'S NEW ENERGY ECONOMY

MORE THAN 13 YEARS AGO, the voters of Colorado approved Amendment 37, which required investor-owned utilities (IOUs) to produce 10 percent of their energy generation from renewable resources, such as wind and solar energy, by 2015. In doing so, Colorado became the first state to pass a renewable portfolio standard (RPS) at the ballot box. It is fair to say that this launched Colorado on a path toward a clean energy future that is paying big dividends now.

I was elected governor of Colorado in November 2006, and took office in January 2007. Between the passage of Amendment 37 and my swearing-in, Xcel Energy, the state's largest IOU, found that its customers wanted more clean energy and it would meet its Amendment 37 obligations eight years early. In my first 100 days in office, with Xcel's backing, and with favorable bipartisan support in the legislature, I signed a bill into law that doubled the IOUs' RPS to 20 percent by 2020. That law also required rural electric co-ops and municipal utilities of a certain size to get 10 percent of their total generation from renewables.

In 2010, because of the continued success the IOUs were experiencing in deploying renewable energy, we once again extended the RPS for IOUs — this time to 30 percent by 2020. That same session, with Xcel's support, I signed the Clean Air Clean Jobs Act that retired more than 900 megawatts of coal-fired generation and replaced it with a combination of renewables, energy efficiency, and cleaner-burning natural gas generation.

The New Energy Economy in Colorado was the product of much more than the RPS laws and the Clean Air Clean Jobs measure. In fact, during the four years of my administration, I signed 57 clean energy measures into law that dealt with energy efficiency, electric vehicles, clean energy, transmission financing, and much, much more.

The story my team and I told was that it was possible to build out a different, cleaner energy portfolio in Colorado using domestic energy resources such as wind, solar, and natural gas. We also believed that in doing so we could simultaneously reduce emissions from the electric sector, create clean energy jobs for Coloradans, and protect customers from unaffordable energy price increases. Eleven years after I first took office, it is good to check in on our progress as a state, and ask ourselves if we were right.

On the production side, we have gone from 275 megawatts of wind in Colorado in early 2007 to more than 3,100 megawatts of installed wind today. Xcel's Rush Creek project was approved last year by the Public Utilities Commission (PUC), and it will bring on another 600 megawatts of wind power on the Eastern Plains. In early 2007, we had 14.6 megawatts of installed solar. Today, we have a gigawatt — which is 1,000 megawatts — of installed solar, with 195,000 homes powered by solar energy.

If Xcel's Colorado Energy Plan is approved by the PUC, the utility will retire another 660 megawatts of coal and replace that with a portfolio of 55 percent renewable energy, including a mix of wind power, solar power, and storage. Companies that have responded to Xcel's request for proposals under the Colorado Energy Plan have submitted bids with historically low prices for solar, wind, and storage. Xcel also estimates that its plan will spur $2.8 billion of investment, most of it in eastern Colorado.

To try and place the 55 percent in some context, no one in 2007 was talking about that amount of renewable energy penetration by 2026. Most energy experts, and even most environmentalists, would have found the number incredible. But here we are.

The good news does not stop there. Xcel also reports that by 2026, with its Colorado Energy Plan, the company will reduce emissions by 60 percent from its 2005 levels. A decade ago, prognosticators would have found those emissions reductions as inconceivable as the 55 percent renewable penetration metric.

On the job creation front, there is still more good news. A report, Clean Jobs Colorado, estimates that there are more than 62,000 clean energy jobs in the state, with the biggest numbers in energy efficiency (40,000), wind energy manufacturing and installation (more than 6,000), and solar energy manufacturing and installation (more than 6,700). The rest of the jobs are in sectors that include biomass, geothermal, low-impact hydropower, storage, smart grid, and clean vehicles. That same report estimates that the number of electric vehicles will increase twelvefold over the next 15 years.

You will note that the Clean Jobs Colorado report does not include the natural gas sector. I mention this because my thesis about developing a clean energy economy in Colorado includes a role for natural gas. It is a cleaner-burning fuel than coal, and it can "firm up" power supplies when the sun does not shine or the wind does not blow. We do know that the oil and gas industry is susceptible to boom and bust cycles. But the U.S. Energy and Employment report states that, in 2017, there were about 10,400 jobs in Colorado's natural gas industry, in "mining and extraction" and "electric power generation," with only 486 of those jobs in electric power generation. Boom or bust, it is still fair to say that the natural gas industry is a major player in the state's energy economy.

Many of my "environmental" friends will blanch at me for including natural gas as an important player in the new energy economy. If one of our metrics, however, is reducing carbon emissions, natural gas has inarguably played a major role. Looking forward to a time when climate scientists say we will need to enter a period of "deep de-carbonization," probably 20 years from now at the most, the natural gas sector will then have to develop economical ways to capture and store or utilize carbon dioxide. If the industry fails to do that, it faces the prospect of becoming seriously marginalized.

So, what has been the impact of all this on rate payers? Xcel Energy reports: "Overall, our residential customers' average electric bill in Colorado has declined 9.4 percent over the past four years, and we expect customer bills to remain flat for the foreseeable future even with the Colorado Energy Plan."

Much of this piece has dealt with Colorado's largest investor-owned utility, Xcel Energy. It is important to note that Xcel powers nearly two-thirds of the homes and businesses in Colorado. The rest rely on Black Hills Energy, rural co-ops, and municipal utilities. On that score, some municipalities and co-ops are in front of Xcel, while others lag behind. What is not in dispute is that those co-ops and municipal utilities that have embraced the New Energy Economy are reducing risk to their customers while delivering affordable domestic power, reducing emissions, and creating new, clean energy jobs.

At the end of the day, we are all part of something much bigger than even Colorado. We are showing the rest of the country that a clean, vibrant energy economy is not just possible, but our very future.

FEATURE

By Jackson Rueter and Brian Lewandowski, University of Colorado Boulder Leeds School of Business, Business Research Division

ENERGY IN COLORADO

THE ENERGY INDUSTRY IN Colorado is proving resilient as oil prices return to more normal levels following the price crash that began in 2014. In 2016, the oil and gas industry totaled more than 19,000 jobs statewide. The WTI Spot price increased 21.3 percent year over year in January 2018 to an average price of $63.70 per barrel, and natural gas prices have followed suit, increasing 18.4 percent year over year to $3.91 per million BTU. According to the most recent data from the Colorado Oil and Gas Conservation Commission (COGCC), Colorado oil production is up 6.2 percent year over year, to 103.6 million barrels as of October 2017. As oil prices stabilize, so too will Colorado's oil and gas industry.

Industry Metrics

The oil and gas industry in Colorado slowed after the collapse of oil prices began in mid-2014, but has been on the mend in 2017 and 2018. June 2014 marked the start of a precipitous pricing fall, from $100-plus per barrel to under $30 per barrel in January and February 2016. With the decrease in price, drilling permits in Colorado fell year over year by 28.7 percent in 2015 and 5.1 percent in 2016. However, as prices recovered in late 2017, industry activity picked up. Permit activity in 2017 reflected renewed optimism, growing by 37.9 percent to 3,909 permits.

In addition, the rig count in Colorado is rebounding, up to an average of 34 in January 2018, a 21.8 percent increase year over year. Drilling permits and rig count tend to be relatively responsive to the price levels of oil and gas. The drilling and completion stage of the well life cycle is the most costly, so as prices fluctuate, so does the economic value of each well. If it is not economical to drill, firms will reduce their planned drilling activity, lowering the number of permit applications. The rig count responds similarly, but lags behind price changes and is more stable within price ranges. This is primarily because rigs are contracted over longer periods, so only substantial changes in price conditions and price sentiment or outlook will affect whether rig contracts are renewed.

Production fell by 5.1 percent in 2016 — the first annual decrease since the 1990s. Decreases in production also generally lag behind market events. Once a well is drilled and completed, operating costs are relatively low, so producing oil from completed wells makes economic sense. Reduced production comes into the picture only after sustained periods of low pricing, when drilling and completion of wells have been reduced or halted for long enough that production is affected.

Employment

The oil and gas industry is defined as jobs in oil and gas extraction, support activities for oil and gas operations, and drilling oil and gas wells. Average oil and gas employment in Colorado for the 12 months ending in June 2017 was 19,252, according to data from the Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW). Excluded from this number are a small minority of sole-proprietor oil and gas workers who are not covered by unemployment insurance, but who contribute to the industry and economy in Colorado.

Support activities for oil and gas operations constitute the largest oil and gas subsector in the state, representing 49 percent of oil and gas employment. Oil and gas extraction follows closely, with 44.1 percent. Drilling oil and gas wells is the smallest subsector, with 6.9 percent of employment. The City and County of Denver has the greatest number of oil and gas employees in the state, accounting for 35.2 percent of the total. Weld County, Colorado's most productive oil and gas county, accounts for 29.9 percent.

Employment declined 10.8 percent and 24.9 percent in 2015 and 2016, respectively, when the WTI Spot price bottomed out at $26.19 per barrel on Feb. 11, 2016. However, the price of oil turned the corner in 2017, recently hitting $64.18 per barrel on Feb. 5, 2018. As such, industry employment numbers in Colorado are expected to follow prices upward in 2017 and 2018. However, technological advances in the sector have led to greater productivity, diluting the jobs impact even as industry activity rises.

Wages

Oil and gas jobs in Colorado are high paying, earning more than the state average annual pay. Oil and gas extraction is the most highly paid of all subsectors in the state, with average annual pay of $166,398 in 2016 — more than three times the state average of $54,664. It is followed by drilling oil and gas wells, at $87,587, and support activities for oil and gas operations, at $82,868.

Wages in Weld County are lower than those at the state level for the energy industry, but remain above the state overall. Oil and gas extraction remains the highest-paid subsector at the county level, recording average annual pay of $133,921, while support activities for oil and gas operations jobs earn the lowest average annual wage, at $66,931. However, both of these wage levels are still above the overall state wage.

Firms

Statewide, the number of firms in the oil and gas industry fell sharply in 2016, tumbling 7.6 percent year over year, the first decline since 2010. Due to the availability of external financing, firms are able to continue operating under depressed prices. This causes the decrease in the number of firms to lag behind major market events, such as the 2014 price crash. This phenomenon also was evident following the 2008 price decline, as the number of firms did not contract until 2010, well after the price slide began in 2008.

Public Revenue Streams

Colorado oil and gas companies generate revenue for the state and local communities in multiple ways, including severance taxes, property taxes, land leases and royalties on public lands, and permit fees. Two of the largest revenue generators are severance and property taxes.

Severance taxes in Colorado are determined by the revenue produced from extracted natural resources, less any costs associated with their manufacturing, processing, and

CLEAN ENERGY JOBS

By Melissa Mata, Colorado Municipal League municipal research analyst

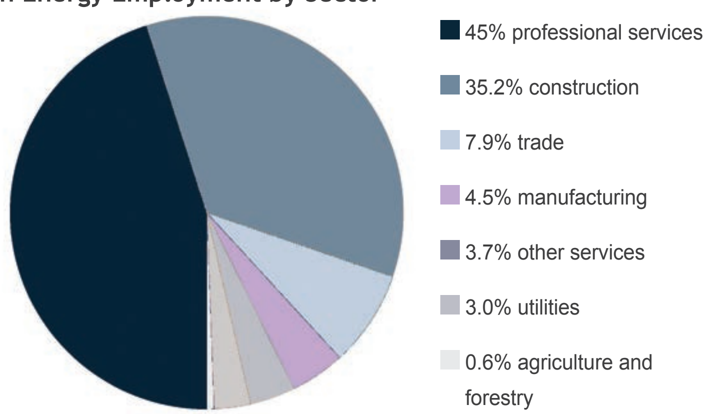
IN SEPTEMBER 2017, ENVIRONMENTAL ENTREPRENEURS (E2) RELEASED ITS LATEST REPORT ON Colorado employment related to energy efficiency and renewable energy: *Clean Jobs Colorado 2017*. The analysis shows that the sector that E2 calls clean energy employs more than 66,000 Coloradans. The 2017 numbers show greater than a 6 percent increase over the previous year.

E2 defines clean energy jobs as those in the renewable energy, energy efficiency, advanced grid, advanced transportation, and clean fuels industries. The 2017 report shows that the clean energy field has room for a variety of backgrounds: the jobs range from construction workers to manufacturing workers to software developers and marketing professionals.

Photo courtesy of the City of Boulder.

The clean energy employment boom in Colorado is mirrored across the United States. According to the Bureau of Labor Statistics, solar panel installer jobs (2016 median annual wage: $39,240) are predicted to grow by 105 percent and wind turbine service technicians (2016 median annual wage: $52,260) by 96 percent between 2016 and 2026.

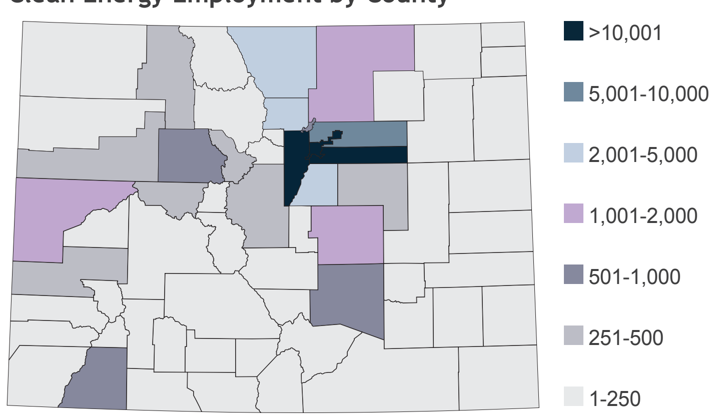
Clean Energy Employment by Sector



While Denver County has the highest number of jobs related to clean energy, regions across the state are benefitting from the expansion. There is still room to grow: More than 80 percent of Colorado's wind energy potential is located in Logan, Prowers, Weld, and Lincoln counties.

E2 also reports that Coloradans are benefitting not only from jobs related to energy efficiency, they are benefitting as consumers. For every dollar invested in energy efficiency, Xcel Energy and Black Hills Energy customers have saved almost three dollars on their electric bills.

Clean Energy Employment by County



E2 is a national, nonpartisan organization founded in 2000 to advocate for policies that simultaneously benefit the economy and the environment. To view a complete copy of *Clean Jobs Colorado 2017* and its methodology, visit *www.e2.org/wp-content/uploads/2017/09/CleanJobsCO_2017.pdf.*

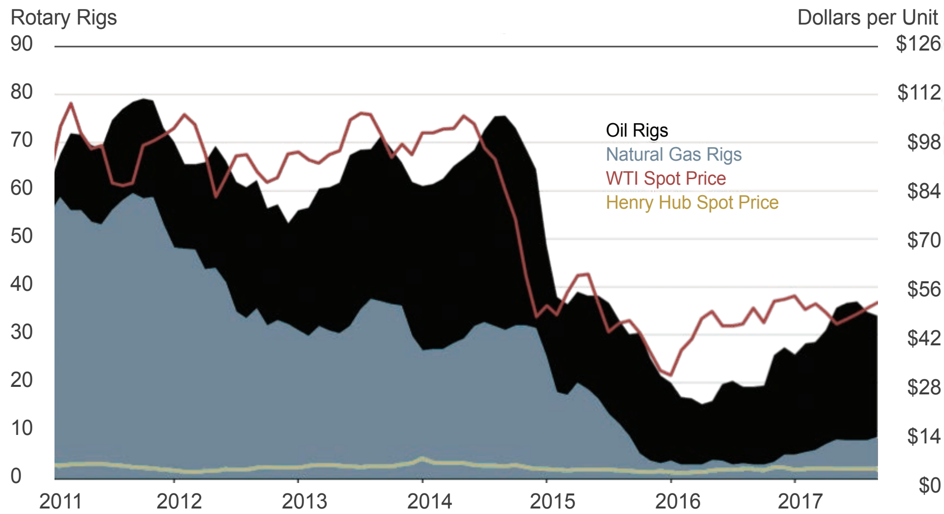
transportation (the "wellhead" price). Historically, severance taxes have contributed hundreds of millions of tax dollars to the state each year, averaging $172.9 million per year from 2007 to 2016 (peaking at almost $300 million in 2015). However, in 2016, the Colorado Supreme Court ruled that oil and gas companies could deduct the cost of capital from investing in manufacturing, processing, and transportation systems, reducing the firms' severance tax liability. Fiscal year 2017 produced a net refund of $7.2 million to oil and gas companies as a result. Any company that can provide evidence for an applicable refund on severance taxes within the past three years is entitled to receive a refund from the state.

Oil and gas has the third-highest total assessed property value in Colorado (8.1 percent), according to the 2016 Department of Local Affairs Annual Report, following residential (46.6 percent) and commercial (28.6 percent) property. Property taxes for oil and gas companies are determined by the revenue produced from extracted resources, using the wellhead price. Oil and gas property is assessed at 87.5 percent of property value, which determines the value a county's mill levy will be applied to. For reference, this rate is 29 percent for commercial and 7.2 percent for residential property.

Moving Forward

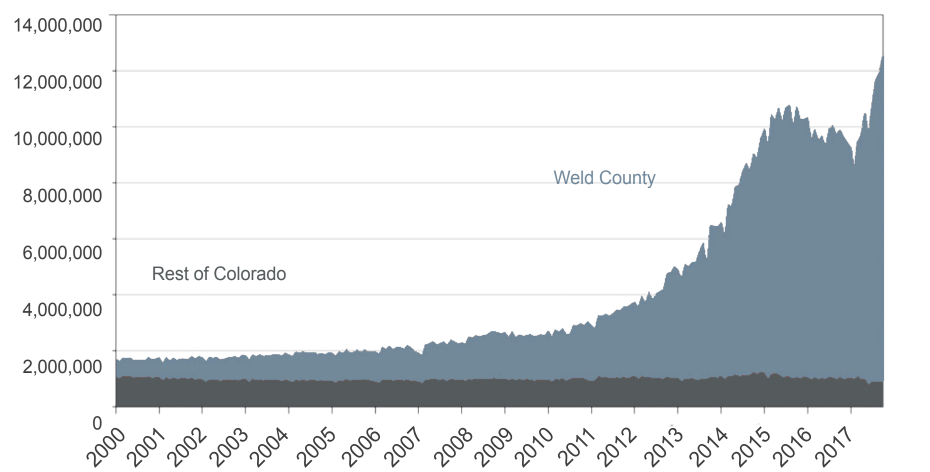
With the stabilization of prices in 2017 and beyond, oil and gas activity in the state has picked up, and the trend is expected to continue. The oil and gas industry is a relatively productive sector in the state economy. For example, oil and gas extraction alone contributed 4.4 percent of Colorado's real gross domestic product in 2015 (most recent data available), despite representing only 0.4 percent of state employment that year. As the industry bounces back, the Colorado economy should see benefits from a more active oil and gas sector.

Colorado Rotary Rig Count



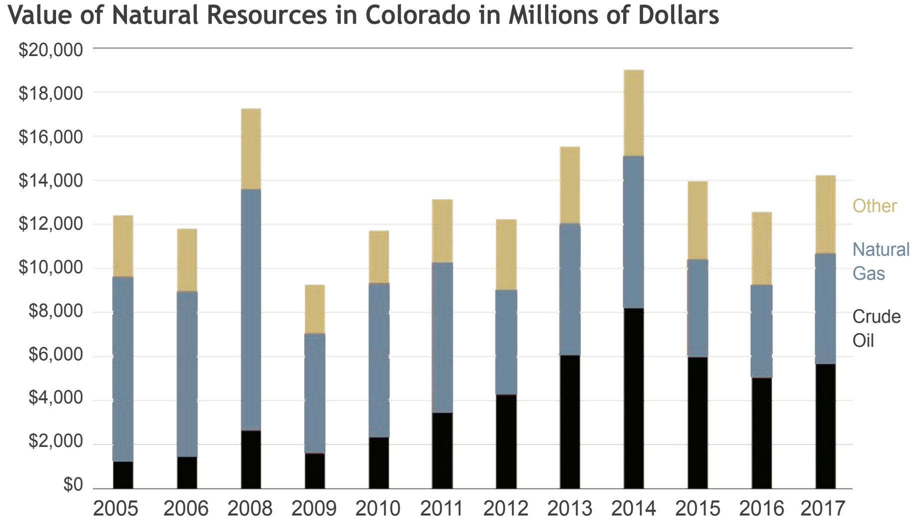
Source: Baker Hughes, Energy Information Administration.

Colorado Oil Production in Barrels Monthly



Source: Colorado Oil & Gas Conservation Commission.

Value of Natural Resources in Colorado in Millions of Dollars



Sources: 2018 Colorado Business Outlook, Colorado Geological Survey Mineral and Minerals Fuel Activity Reports, Colorado Oil & Gas Conservation Commission, Department of Minerals and Geology.

By Michael King, Colorado Department of Transportation transportation planner

PREPARING FOR ELECTRIC VEHICLES

Introduction

Colorado is one the most scenic places in the nation to go for a drive, and thanks to the growing adoption of electric vehicles (EVs) across the state, it may soon become one of the greenest, too. The state is rapidly emerging as a national leader in EV sales, ranking eighth for market share and seventh in the number of EVs per capita. In 2016, *The Washington Post* named Colorado as the best place in the country to buy a new electric vehicle based on state tax incentives, and the momentum continues to grow, with EV sales up 73 percent in the first eight months of 2017 when compared to the same period in 2016.

As adoption continues to rise, new challenges and opportunities are emerging across Colorado. In the past, many EV drivers were willing to trade convenience and a limited number of vehicle options in the interest of technology and environmental sustainability. However, as more models with longer ranges become available, drivers will increasingly expect an experience that is as good as or better than that of a gas-powered vehicle. While EVs outperform many gasoline vehicles in terms of torque, fuel cost, and maintenance efficiencies, consumers expect more choice in terms of vehicle features, price levels, and number of models available. The major automobile manufacturers are responding; companies from GM to Volvo have pledged to drastically increase their production of EVs and even, in some cases, are setting target dates for phasing out their gasoline-powered models altogether.

In addition, EV drivers seek improved access to destinations across the state — not just for daily needs such as commuting, but also for longer-distance recreational trips to ski resorts, hiking trails, national parks, and other more remote areas of Colorado. Finally, some drivers are looking forward to the day when they can travel long distances across the Intermountain West and the broader United States.

Currently, the possibilities for EV travel are limited by the relative scarcity of publicly accessible charging locations outside of the Front Range, and a broader network of stations will be needed to change the equation. Getting there will require state and local support, innovative partnerships, and potentially new business models that will reshape the way Coloradans travel in the years to come.

Why Are Drivers Choosing EVs?

There are a number of reasons why electric vehicles appeal to consumers. One benefit is environmental, since EVs produce no tailpipe emissions. Electricity in Colorado is produced from a variety of sources, including

coal, but unlike conventional vehicles, EVs will become cleaner as more renewables come online. According to the Colorado Electric Vehicle Plan, it is estimated that putting 1 million EVs on the road by 2030 could result in an annual reduction of ozone-forming pollutants estimated at 800 tons of nitrogen oxide (NOx), 800 tons of volatile organic compounds (VOC), and up to 3 million tons of greenhouse gases (GHG) across Colorado.

Another factor driving adoption is the economics of owning an EV. Average electricity costs are lower than those of gasoline, meaning that driving an EV is the cost equivalent of paying $1.15 per gallon of gas — less than half the cost of fueling up in Colorado. EVs require less maintenance due to the fewer moving parts in an electric engine compared to one powered by gasoline. Finally, state and federal tax incentives help bring down the cost of new EVs to near or below that of conventional vehicles, which translates to a lower up-front investment that also produces long-term savings for the owner. In fact, Colorado has the most generous EV tax incentives of any state in the nation — $5,000 for purchase and $2,500 for lease of a new EV. In addition, the price of EVs will to continue to drop as battery technology becomes increasingly efficient and more manufacturers join the competition.

Finally, you cannot discount the cool factor. Long before Elon Musk was launching his own Tesla Roadster into orbit, he accomplished a feat long thought impossible — making an electric car that people wanted to be seen in. Not every new EV model looks like it belongs in a *Fast and Furious* movie, but consumers are still drawn to the sleek profiles and high-tech features that are becoming standard in even mid-range EV models. As more and more manufacturers get into the EV market, we can expect to see even greater competition in terms of styling and apps aimed at appealing to every type of buyer.

How Can Colorado Communities Support the Transition?

Auto manufacturers certainly are doing their part to drive the EV transition, but governments also have a role to play. Tax incentives at the federal and state levels have helped to bring EVs within the financial reach of more drivers than ever before, while educational resources such as Refuel Colorado can provide neutral third-party information for fleets and consumers considering a switch. The biggest barrier to adoption remains the lack of publicly accessible charging outside of major metro areas, which restricts the potential for long-distance travel and can prevent users from accessing many of the state's most popular destinations. Without a truly statewide network of convenient, reliable, and affordable charging locations, Colorado's EV transition could stall out.

The Colorado Energy Office (CEO) is one of the state agencies working to overcome this obstacle. Through the Charge Ahead Colorado Program, CEO and the Regional Air Quality Council offer grants to support the purchase and installation of electric vehicle charging stations statewide as well as technical support to help identify system gaps and target these areas for future investment. As of 2017, more than 600 charging stations have been funded through the program, many in partnership with municipal governments. In late 2018, Charge Ahead Colorado will receive additional funding from the settlement of the Volkswagen emissions cheating scandal.

In March, CEO released a request for applications through the ALT Fuels Colorado Program to solicit proposals to develop charging stations along Colorado's major transportation corridors. By funding entire corridors, CEO intends to develop a statewide network of fast-charging stations that facilitate long-distance travel and connect local and regional charging networks around the state. In the longer term, this corridor-based strategy also will help to accomplish the goals of the Regional Electric Vehicle Plan for the West (REV West), a memorandum of understanding signed by the governors of Colorado, Arizona, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming in order to connect their major highways with coordinated EV charging infrastructure and allow for a

FUNDS AVAILABLE FOR PROJECTS MITIGATING DIESEL EMISSIONS

By Christine Hoefler, Colorado Department of Health and Environment Small Business Assistance Program

THE STATE OF COLORADO WILL RECEIVE $68.7 MILLION IN SETTLEMENT FUNDS FOLLOWING resolution of the Volkswagen emissions scandal. Volkswagen Group of America and certain related entities admitted they violated the federal Clean Air Act by selling vehicles with 2.0-liter and 3.0-liter diesel engines that emitted more air pollution than the federal Clean Air Act allows, and by cheating on federal emission tests to hide the excess pollution.

To mitigate the environmental damages from violating the federal Clean Air Act, the settlement requires Volkswagen to place $2.9 billion in an independently administered environmental trust. The trust will fund projects across the country to mitigate the diesel emissions caused by the offending Volkswagen vehicles. Colorado was designated officially as a beneficiary of the funds, which were filed with the court on Jan. 29, 2018, and anticipates it will begin to receive funds in spring 2018.

The Colorado Department of Public Health and Environment (CDPHE) will be designated as the state's lead agency to implement the trust. CDPHE partnered with the Colorado Department of Transportation, Colorado Energy Office, and Regional Air Quality Council to develop a spending plan. When the state receives funds from the trust, these agencies will work together to distribute the funds to public and private fleets to incentivize emission reduction projects.

CDPHE and its partner agencies developed a spending plan on how the trust funds should be used, formally known as a Beneficiary Mitigation Plan (BMP). On Aug. 28, 2017, the BMP was released for public comment, which was posted on CDPHE's Volkswagen website. CDPHE held a public comment meeting regarding the proposed BMP on Sept. 18, 2017, and comments were accepted during the public meeting and in writing until Oct. 13, 2017. CDPHE received approximately 2,400 comments. CDPHE and its partner agencies will consider all timely comments and make any appropriate revisions to finalize the BMP. The final BMP will be posted on CDPHE's VW website and submitted to the trustee.

The settlement specifies certain categories of mitigation actions that are eligible to receive funding from the trust. When selecting eligible projects for funding, CDPHE and its partner agencies will consider all the benefits of a proposed project, including NOx emission reductions, reductions of other pollutants, and improved safety, among other benefits. To maximize air quality benefits, Colorado proposes to distribute the funds as follows:

Photo courtesy of the City of Durango.

- $18 million to replace medium- and heavy-duty diesel trucks, school buses, and shuttle buses with alternate fuel or electric vehicles. Businesses with fleet vehicles could receive incentives to replace old diesel vehicles with new diesels.
- $18 million to replace diesel transit buses with alternate fuel or electric buses.
- $10.3 million to install charging stations or fueling stations for zero-emission passenger cars and trucks.
- $5 million to reduce emissions from non-road diesel engines or diesel equipment.
- Approximately $11 million held by Colorado in a flexible fund that would be allocated to eligible projects based on demand.

Additional details on who is eligible and how to apply for funds can be found at *www.colorado.gov/cdphe/VW*, and questions can be emailed to cdphe.commentsapcd@state.co.us.

seamless travel experience across the Intermountain West region of the United States.

Municipal governments play an important role in helping to build a sustainable statewide EV charging network. They may install EV charging stations on their own sites or partner with local businesses to increase availability to the public. They might convene local stakeholders interested in EV adoption for a discount group purchase of vehicles or set EV adoption goals for their own fleets. Perhaps most importantly, municipal staff and leadership can educate themselves on the opportunities, challenges, and trends in EV adoption to serve as community liaisons and sources of information on this topic for their constituents and neighbors.

Some interesting examples are the efforts of Aurora and Aspen, two Colorado communities with different landscapes that both experienced the benefits of increased EV adoption.

In Aurora, the SmartFleet Initiative was launched in 2010 with the twin goals of reducing fuel costs and cutting GHG and particulate emissions. Between 2014 and 2017, Aurora expanded its plug-in hybrid electric vehicle (PHEV) fleet from three to 21, and installed 44 charging ports to keep them running. The results between January 2015 and February 2017 were encouraging, with fuel savings of approximately 2,678 gallons among the PHEV fleet (equating to $7,255 in unspent public funds) plus an initial $5,331 savings in the cost of each new vehicle when offset by grants. In addition, between 2014 and 2017, members of the public who charged their own vehicles saved 3,038 gallons of gasoline while contributing $2,024 in revenue to recover the costs of electricity. Based on these results and growing acceptance within the community, Aurora plans to continue its fleet conversion and begin integrating full EVs into the mix moving forward. At the same time, the City is continuing its EV outreach to residents through test drive events, discount group purchases, and integration with transit surrounding its R Line light rail stations.

Aspen may seem like a very different place from Aurora, but its experience with EV adoption met with similar success. Aspen's top priority in expanding EV use was to meet its carbon reduction goals, establish a hierarchy of transportation options, and work to maximize the use of EVs and hybrids over gasoline vehicles as well as to prioritize transit, biking, and walking over all cars. The City pursued this by increasing the availability of charging infrastructure, expanding public understanding and visibility of EVs, incentivizing shared use, and planning for the long-term grid impacts of greater EV usage and renewable energy adoption. The result has been a growing use of EV charging in Aspen each year, with a 110 percent increase in sessions from 2016 to 2017 and plans to continue expanding the number of publicly available EV chargers moving forward. Best of all, Aspen's municipally owned electric utility is sourced with 100 percent renewable energy, meaning that every EV charge is emission-free.

Whether the goal is saving money, saving the planet, or both, vehicle electrification offers a path forward for municipalities looking to make small changes with big impacts. As EV options grow and prices continue to fall, more municipal governments are likely to step into a leading role in their communities as electric vehicle adopters.

What Are the Long-Term Impacts?

It is difficult to say what the future of EVs in Colorado might look like, with forecasts ranging from fewer than 50,000 EVs in the state by 2030 to 1 million or more by the same date. However, there is little doubt that the number and variety of EVs on the market will continue to grow and that EV charging will become faster, more visible, and more widely dispersed across Colorado.

If these trends continue, the environmental and consumer benefits could be enormous, but new challenges to traditional business models and electrical grid capacity may accompany them. EV adoption also may exacerbate the already serious decline of the gas tax revenues that currently fund the bulk of state and local transportation investments, requiring an alternative method of funding for the system.

Whatever the challenges, it will be important for state agencies, municipal governments, and the public to continue their collaboration and ensure the best outcome for all Coloradans on the road ahead.

Solar rooftop power generation is always a hot topic, but commercial solar lighting is another key solar segment gaining momentum: over the last 20 years, adoption has spread across the country, and Colorado has proven itself as a strong proponent of innovative projects. The trend was born both from a need to provide light where traditional lighting wasn't feasible and from a desire to invest in sustainable solutions. Today, many cities are finding the solar lighting option more viable for a greater range of projects due to cost savings, aging infrastructure issues, and municipalization of power generation.

The City of Aurora, CO, installed solar lighting systems in Sand Creek Park for two main reasons: traditional lighting was too expensive, and the city had a desire to include sustainable, environmentally friendly amenities in their parks.

READ THE FULL STORY >>
solarlighting.com/AuroraCO

"We're also looking at what the most efficient use of our resources is and how we can continue to challenge the status quo."
– James DePue, City Manager, City of Wray

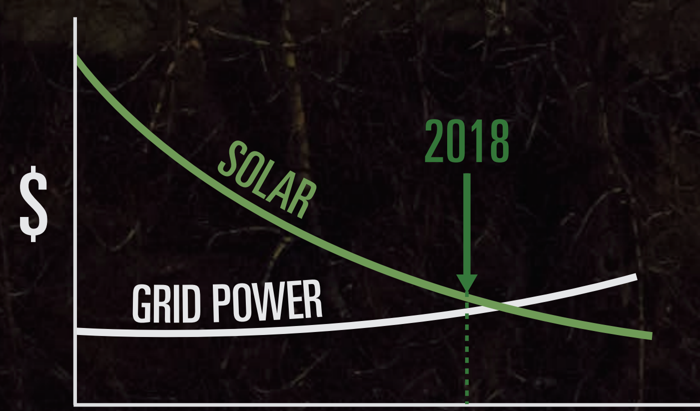
Ten years later, we talked to the electrical lineman supervisor, who told us how the lights are working today.

READ THE FULL STORY >>
solarlighting.com/WrayCO

2 important trends for commercial solar lighting:

1. Americans continue to demand smart, sustainable solutions, and municipalities are considering innovative ways to future-proof their cities. Colorado is already on the way—ranking seventh among U.S. states for clean technology activities, according to the 2017 U.S. Clean Tech Leadership Index.

2. Technology improvements are leading to parity with grid-connected lights—both in terms of lighting performance and capital costs. A combination of falling component costs and rising power management efficiencies for those components helps solar lighting systems become more compact, reducing overall costs even more. Meanwhile, traditional lighting and utility costs keep increasing. Sol's new EverGen solar light, installed in Aurora, has a 10-year battery (requiring little to no maintenance) and is guaranteed to meet IES light levels through the night.



By Mirka della Cava, Colorado Energy Office senior program manager

UNLOCKING CAPITAL FOR FACILITY UPGRADES: ENERGY PERFORMANCE CONTRACTING

WHEN THE CITY OF FOUNTAIN wanted to reduce energy costs at its facilities and move forward with much-needed equipment upgrades, the municipality knew it required a comprehensive solution that also made sense in a budget-constrained environment. To meet these needs and deliver on its maintenance goals, Fountain chose to leverage the State of Colorado's Energy Performance Contracting program to repurpose utility cost savings to fund facility improvement projects that pay for themselves over time.

Through Energy Performance Contracting (EPC) — and with ongoing, no-cost project support from the Colorado Energy Office (CEO) — municipalities can partner with a prequalified, experienced energy service company (ESCO) to analyze utility bills and conduct an investment-grade audit of selected public facilities, including offices, courthouses, recreation centers, and water and wastewater treatment facilities, among others. If the audit's proposed improvements yield the required utility savings benefits, an energy performance contract is signed between the municipal jurisdiction and the ESCO. The ESCO guarantees the utility cost savings identified, and these savings pay for project construction. A third party is contracted for financing, and when the performance period ends, all subsequent utility cost savings accrue to the jurisdiction.

The City of Fountain decided on 10 facilities for the audit, including the city hall, police department, and two fire stations. Siemens — an ESCO prequalified in the Colorado EPC program — conducted a detailed energy audit and identified a $1 million facility improvement project eligible for financing under the EPC model.

Why Colorado Energy Performance Contracting Works

- A Colorado Energy Office energy performance contracting (EPC) engineer provides free technical expertise to program participants for the term of the EPC
- Pre-qualified energy service company partners
- Standardized contract templates and toolkits
- Access to private, market-based project financing
- High standards, transparency, continuous improvement, and collaboration
- The Colorado EPC program serves as a model for programs across the country

Fountain and Siemens entered into an EPC, with more than $70,000 in annual utility and operational cost savings identified to pay for the facility improvements. The City of Fountain further supported the project with a one-time capital contribution.

The efficiency measures for this project include the conversion of existing fluorescent lighting to newer LED technology, upgrade of rooftop heating and air-conditioning equipment, and improvement of heating and air-conditioning controls and schedules, as well as the insulation, air-sealing, and replacement of doors. Construction on the project began in late 2017 and is expected to be completed by this summer. As with all Colorado EPC projects, CEO provided standardized contracts and guidance documents for all steps in the process and will provide free engineering support for the project's lifetime.

"As local governments, we know how stretched our resources are, and how rare the opportunities are that allow us to invest in local assets with no fiscal impact to our budgets," said Scott Trainor, Fountain city manager. "Working hand in hand with

experts from CEO, the EPC process allowed us to make much-needed improvements to our facilities while funding those improvements through guaranteed cost savings. It has been a great process for us."

The City of Lakewood and its residents recognize the roles of energy, water, and the built environment in fostering a vibrant and sustainable community. Lakewood's residents envision a collective future where low-impact development, renewable energy sources, and resource-efficient buildings protect local ecosystems, enhance water quality, reduce man-made greenhouse gas emissions, and ensure energy availability and affordability. As a component of its sustainability plan to enhance citywide building energy efficiencies, the City of Lakewood partnered with CEO to evaluate its facilities for possible energy and water efficiency projects.

McKinstry, another prequalified Colorado EPC ESCO, conducted an investment-grade energy audit of the City of Lakewood's public safety center, two recreation centers, and a community center, and made recommendations for energy and water efficiency measures that would deliver the savings required for an EPC. Proposed energy-efficiency upgrades include HVAC controls optimization, LED lighting retrofit, water conservation measures, pool energy recovery ventilator, and replacement pool water boilers.

McKinstry identified a $2.5 million facility improvement project eligible for financing under the EPC model, representing approximately $115,000 in annual utility cost savings identified to pay for these upgrades.

The City of Lakewood has entered into an EPC with McKinstry and will be moving forward this summer to implement the recommendations, realizing its goal of more efficient, functional facilities.

"The process with CEO was very positive and helpful in providing guidelines, documentation, and RFP templates that were utilized through the City's procurement and bidding procedures in hiring an experienced energy service company," said WallyPiccone, Lakewood projects and maintenance manager. "CEO has been a great partner for the project, with an experienced and knowledgeable staff to help the City effectively manage and reduce municipal energy use while meeting the goals established in our sustainability plan."

Lakewood and Fountain are indicative of the municipalities across Colorado that, over the years, have benefitted from EPC. To date, the Colorado EPC program has supported 200 projects, 36 of which are in the municipal sector. Project size ranges from $11,000 to $420,000. Most contract terms are between 12 and 15 years, though some are as short as three years or as long as 20.

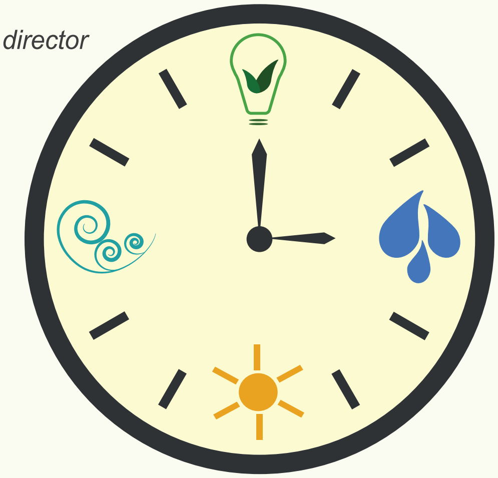
"While EPC is a time-tested financing tool for public jurisdictions, each project has its own unique characteristics. Our program brings the wisdom of all the projects we have supported to service each client's needs," said Mirka della Cava, CEO senior program manager and lead for the Colorado EPC program. "Whether you are a larger city along the Front Range or a smaller, rural town — this program can work for you."

Interested in learning more about Colorado Energy Performance Contracting? Contact Mirka della Cava, CEO EPC senior program manager, at 303-866-3464 or mirka.dellacava@state.co.us.

Colorado Municipalities with Energy Performance Contracts

- Arvada
- Aspen
- Boulder
- Breckenridge
- Brighton
- Carbondale
- Central City
- Colorado Springs
- Commerce City
- Cortez
- Denver
- Durango
- Englewood
- Florence
- Fountain
- Fowler
- Glenwood Springs
- Golden
- Grand Junction
- Lafayette
- Lakewood
- Lamar
- Limon
- Longmont
- Montrose
- Pueblo
- Rifle
- Steamboat Springs
- Trinidad
- Vail
- Westminster
- Windsor

By Daniel M. Kreeger, Association of Climate Change Officers executive director



THE TIME IS NOW

COLORADO COMMUNITY LEADERS ARE POISED AND READY TO BUILD A CLEAN ENERGY AND RESILIENT ECONOMY

COLORADO IS EXPERIENCING A dynamic and increasing set of economic, social, and environmental challenges, and is poised to pursue some of the most innovative and impactful work in the country toward building a clean and resilient economy. This is not about politics. It is about reducing unnecessary risks, seizing tangible opportunities, and ensuring that Coloradans can be healthy, secure, and prosperous.

Earlier this year, more than 65 elected officials and city and town managers from across the state joined Gov. John Hickenlooper, six cabinet members, senior staff from 10 state agencies, and more than 350 other individuals from across sectors for the first Colorado Communities Symposium. The event centered around a series of facilitated discussions on topics such as resilience, clean transportation, water, agriculture, forestry, energy efficiency, clean energy, and economic vitality. Prevailing themes echoed by attendees included:

- These challenges require meaningful and sustained regional collaboration.
- Can we develop better data and decision-support tools that will enable sound local, regional, and statewide action?
- How can we best orient solutions toward marginalized communities in both rural and urban parts of the state?

Out of the discussions came more than 50 attainable action items that will help Colorado communities take substantial steps toward realizing goals of a cleaner and more resilient state:

- developing statewide data on the economic value of energy efficiency initiatives and clean energy deployment, and the economic impacts of climate change and extreme events experienced in recent years;
- establishing a program that facilitates rotating, detailing, lending, and training of staff amongst local, regional, and state agencies;
- deploying strategic economic development and clean energy solutions that specifically help marginalized and underserved communities with other issues, such as poverty, broadband, and public health;
- catalyzing partnerships with major employers and facilitating public-private partnerships in cleaner transportation solutions, renewable energy, smart agriculture, and water management;
- creating models for communities to aggregate their interests in procurement and financing of initiatives;
- building toolkits with case studies, impacts, costs, economic data, sample policies, etc.;
- supporting entrepreneurship programs and centers;
- forming innovative funding solutions leveraging public- and private-sector sources to help communities implement solutions;
- providing a template for economic risk modeling and scenario planning; and
- standardizing a communication framework with resources that can be used to engage the general public.

In 2018, state agency leaders and Colorado Compact members will convene to determine which action items each organization will administer, and will issue a call for proposals inviting more community leaders, nonprofit organizations, higher education institutions, and other third parties to help administer and/or participate in a number of the proposed action items.

There is an enormous opportunity sitting before Coloradans — and the will displayed by attendees to take on this challenge was clear, present, and palpable. This symposium was built upon the foundation of commitments made by several dozen Colorado cities and counties, and an executive order issued by the governor.

How It Came to Be

This journey has been building for years, but it got a substantial boost when Aspen Mayor Steve Skadron decided to host a summit for municipal and county leaders across Colorado. Having attended the United Nations climate talks in Paris, Skadron returned with a conviction to work more closely and productively with his peers across the state.

As Skadron and his team, led by Aspen Sustainability Director Ashley Perl, were contemplating where to go with his vision, CML Executive Director Sam Mamet reached out to the Association of Climate Change Officers (ACCO) to provide some input that would help with the launch event.

ACCO is a national organization founded on the principle that achieving clean, adaptive, and resilient economies and communities would require a transformation of decision-making. Elected officials, local government managers, and staff would need to hone skills and be aligned in efforts to address an increasingly complicated and dynamically changing world.

While nations deliberate on national and international policy related to climate change, local governments are faced with the daunting challenge of addressing the localized implications of climate change on their communities and operations. Ultimately, climate change poses an unparalleled volume and diversity of challenges for any organization, let alone local governments that frequently do not (or may not think they) have sufficient resources to successfully address these considerations — and are burdened with a variety of other critical priorities.

Collaborating with local leaders to build a new model for regional collaboration that would substantially scale up informed decision-making on these issues while enabling communities to develop innovative solutions and work across organizational jurisdictions and boundaries is an exciting proposition. After just a few calls, Aspen and ACCO were running full steam ahead toward the vision they had jointly forged.

Undeterred by a storm that hit Colorado the day before the summit, leaders from nearly 30 municipalities and counties trekked to Aspen to discuss this vision and pledge to submit a prospective resolution before their councils or commissions for approval. That day, 27 communities signed on, and were followed by a few more shortly thereafter.

But realizing these visions can be challenging, so a team of mayors, councilmembers, and local government staff shaped a structure by which communities could agree to abide by the membership guidelines and thus formally join the Compact of Colorado Communities.

Just after the drafting of these charter documents was finished, Gov. John Hickenlooper issued his executive order, "Supporting Colorado's Clean Energy Transition," which established a statewide vision on clean energy deployment, greenhouse gas reduction, and climate preparedness. In particular, one of the components of that order required that the state "through meaningful consultation and collaboration with local governments … identify opportunities to partner with local governments to support locally led climate goals and resilience solutions."

Suddenly, the seeds of a partnership between the compact and the state had been planted. From those seeds grew the Colorado Communities Symposium, the vision for which was to bring local and state government leaders together with key stakeholders from the nongovernmental organization community, higher education institutions, professional service firms, and the private sector to chart a path toward constructive collaboration designed to achieve tangible objectives.

The Rest of the Nation Is Watching

At the same time as it was supporting Colorado local governments in this effort, ACCO has been working with state and local leaders in Maryland, Texas, and the Midwest on related initiatives. Several leaders from those parts of the country attended the symposium to see how Colorado community and state leaders were working together and addressing clean energy and climate preparedness.

While numerous regional collaborations have sprouted around the country, the Compact of Colorado Communities was the first to focus explicitly on training decision-makers, institutionalizing clean energy and climate change into strategic planning, and providing technical support and innovative staffing solutions to local governments. That focus, along with the collaboration with the state agencies, has made for a very powerful force.

Since the symposium, community leaders from Phoenix, Portland, and southern Florida have expressed an interest in replicating components of Colorado's work this past year.

So now the nation is watching — and Coloradans are ready to transform their communities into national role models.

An Invitation

Climate change has been a politically challenging issue. Colorado state agencies and the Compact of Colorado Communities are working together to pursue common-sense solutions that improve public health, drive economic development, and ensure a resilient Colorado.

Here is what you can do:

- Attend town hall discussions that will be held around the state to better understand the challenges Colorado communities are facing.
- Respond to an upcoming call for participants and proposals related to the symposium action items.
- Join the Compact of Colorado Communities! Learn more at *www.compactofcolorado communities.org*.

By Kathryn Mutz, Natural Resources LLC

MEMORANDA OF UNDERSTANDING FOR REGULATING OIL AND GAS DEVELOPMENT

A MEMORANDUM OF Understanding (MOU), also known as an operator agreement or a development agreement, memorializes an agreement between parties. In Colorado, local governments and oil and gas operators negotiate MOUs to set out how, and under what conditions, the operator will develop resources and operate production facilities within the community.

MOUs vary in length and complexity, but generally include an introductory or recitals section, a list of agreements, and various exhibits. The introduction conveys the intent of the parties in creating the agreement, current status of development, and circumstances that have brought the parties to the agreement. It also might set the parameters for amendment, termination, or assignment of the agreement; describe the applicability of the agreement to existing or future well sites; address enforceability of the agreement; and describe various pre-development commitments of the parties. These may include communications between the operator and the local government, and community members; baseline sampling; conceptual review meetings; and plan preparation. Central to all these agreements is enumeration of a set of best management practices (BMPs) to be implemented by the operator.

Evolution of MOUs in Colorado

La Plata County negotiated the first MOUs with operators in Colorado in 2005, adding two dozen additional MOUs in the following decade. In 2012, three municipalities — Hudson, Erie, and Longmont — negotiated MOUs. Other communities followed and, as of late 2017, there were seven municipalities and five counties regulating development with MOUs negotiated with more than two dozen operators. La Plata County is party to more than half of the agreements and remains the only jurisdiction outside the Front Range to regulate oil and gas development with MOUs.

The early La Plata County MOUs focus on issues regarding road use, maintenance, and impact fees for infill drilling in developed fields. In 2012, communities on the Front Range began using this tool to help manage oil and gas development as it grew closer to residential development. Like La Plata County, the Town of Hudson focused on road issues, including traffic and emergency response planning.

Erie and Longmont were the first Front Range communities to expand MOUs to address additional issues. Erie's MOUs with Anadarko/Kerr-McGee and Encana in 2012 require notifying landowners; maximizing setbacks from occupied buildings and residences; and using berms, closed loop systems, and vapor recovery units. The operators also agreed to submit plans — "for informational purposes only" — regarding site development, operations, noise, lights, traffic, and reclamation. Longmont was the first community to develop an extensive MOU (with TOP Operating) covering a wide variety of issues.

As opportunity has allowed, municipalities such as Erie have renegotiated MOUs with operators (Encana).

The most recent 2017 MOUs (Brighton and Broomfield) have addressed additional issues and include more provisions that go beyond state requirements.

MOU provisions can simply reaffirm the requirement of operators to comply with federal and state law, or can provide more robust protections by tweaking existing legal

Best Management Practices

Best management practices (BMPs) are state-of-the-art mitigation practices applied to oil and natural gas drilling and production to help ensure that energy development is protective of both the environment and the community. Practices can be voluntary, memorialized in law (federal, state, or local), or promised in a contractual agreement.

BMPs in the 2017 Broomfield MOU include alternative site analysis, electric drilling/production equipment, natural gas fracking equipment, oil pipelines, soil testing at plugged/abandoned locations, remotely operated surface safety valve, fire and explosion reporting, expanded baseline water quality sampling, prohibition of problematic chemicals, lower permitted residential noise levels, quiet fleet fracking technology, pipeline integrity standards, funding for air quality sampling, and right to inspect.

WORKING THROUGH A MEMORANDUM OF UNDERSTANDING WITH OIL AND GAS

By Joe Racine, former Hudson town manager

HUDSON IS IN SOUTHEASTERN WELD COUNTY, A VERY BUSY PART OF THE OIL AND GAS INDUSTRY OF the Denver-Julesburg Basin. In recent years, the Town of Hudson has been actively working with energy companies to ensure that development of resources in its vicinity is done in ways that minimize adverse impacts on the community. One tool available to Hudson is the memorandum of understanding (MOU).

Oil and gas activity within the corporate limits of the Town of Hudson requires that the energy company obtain a Use by Special Review (USR) permit. Subdivision and zoning regulations also enable the Town to manage the relationship between in-town energy development and surrounding land uses. Overweight vehicle permits and access permits provide a means to help with maintenance costs and traffic impacts. However, when oil and gas development is proposed nearby but outside of Hudson's jurisdiction, presenting possible impacts that include traffic and wear and tear on municipal streets, the Town relies on a voluntary MOU to help ensure that adverse impacts are managed appropriately.

Not having in-house expertise in areas of air and groundwater quality, the Town of Hudson relies on state regulations to address most environmental quality areas of concern. Issues addressed in MOUs tend to deal with traffic and impact on infrastructure, primarily streets. Agreements have provided for routing of traffic, both during short-term development of well sites and during ongoing operations. Where feasible, the Town has asked that companies agree to route traffic away from populated areas. Impact on infrastructure, primarily pavement, is more difficult to isolate — because wear and tear on pavement often is seen over long periods of time, and determining the exact extent of an oil and gas operator's contribution to pavement deterioration is difficult to prove. Hudson has settled on agreed-upon contributions to offset assumed impacts — both cash and, in the case of a gravel road, addition of material to the road surface. Agreements also ask for company-produced traffic studies with recommendations, adherence to best management practices as listed in Colorado Oil and Gas Conservation Commission (COGCC) permits, and understandings that trucks obtain overweight permits for traffic on Town streets and access permits as may be required by Town ordinances.

It is very important that communities take advantage of the services provided by the COGCC. Having an active Local Government Designee (LGD) who monitors area activity and provides comments on permit applications that affect the community is the best way to ensure that there is at least a conversation with energy companies. Like people, energy companies have unique personalities. Some are proactive, coming to communities in advance and in good faith with information, offering to work cooperatively in managing impacts. Others require some encouragement. A proactive LGD can set the stage for productive discussions.

COGCC provides notice of applications to cities and towns when proposed well sites are within sections that include any portion of incorporated municipal boundaries. While this system does not always work, it usually will alert municipalities to pending applications in and near their incorporated limits and enable LGDs to submit formal comments. Those comments may include requests that the applicants engage in discussions regarding impact mitigation.

requirements (e.g., air quality protection) or by addressing issues outside of federal and state government purview (e.g., transportation). Similar to state and local regulations, the best practices in MOUs either express operator targets (e.g., "to the maximum extent practicable"), specify levels of performance (e.g., "at least 90 percent emissions reduction"), require use of specific equipment or procedures (e.g., infrared cameras for methane leak detection and green completions), or require a setback of activities/equipment from homes, schools, or other sensitive areas.

While communities generally report good compliance with their MOUs, the agreements can be enforced as a contract and, where applicable, as part of the local government's land use code. The Colorado Oil and Gas Conservation Commission (COGCC) can assist with enforcement as most MOU parties specify that the agreement's BMPs should be incorporated as conditions of approval into the operator's state permit. COGCC has, however, informed communities and operators that the agency can only enforce provisions over which it has authority — likely only a subset of the BMPs in any MOU.

One Size Does Not Fit All

MOUs may be a short-term fix to address state regulatory gaps or a way to tailor regulation to site- and community-specific needs. Communities have used MOUs for these purposes, rather than relying strictly on their land use and health/safety/welfare authority, in part to avoid legal challenges to their regulatory authority. Early on, La Plata County's MOUs explicitly recognized that the parties "have differing legal positions regarding the degree and extent of the County's authority to regulate certain aspects of oil and gas operations." La Plata County and operators agreed to the terms of their MOUs to avoid costly legal battles over county authority.

While they are agreeing to abide by more stringent standards and implement additional community protections, operators also can benefit from negotiating an MOU. While negotiation is a time- and energy-consuming endeavor for both the operator and the community, it can build trust and goodwill to help resolve conflict and minimize delay as development proceeds. Operators also can gain certainty for their developments in exchange for commitments to use best practices that suit community needs. As an example, La Plata County has agreed not to protest developments covered by MOUs, nor to advocate before the COGCC positions that are inconsistent with its agreements. Additionally, some municipalities encourage operators to work with them on site-specific MOUs as an alternative to compliance with more stringent generic standards (Thornton). Other municipalities offer expedited administrative processes to MOU partners (Brighton, Broomfield, and Adams County).

Despite successes in negotiating and operating under MOUs, challenges still remain for communities: getting operators to the table, accessing negotiation expertise, defining roles of councils and staff, understanding ever-changing development technologies, balancing transparency and public participation with expedited administrative processes, and more. With each new agreement, however, municipalities improve MOUs as a tool for ensuring that oil and gas are developed in partnership with the community rather than in spite of it.

For more information on MOUs, including copies of agreements and a searchable database of BMPs, visit *www.oilandgasbmps.org/resources.*

Communities with Memorandums of Understanding

Adams County	(2014–2015)
Arapahoe County	(2013)
City of Brighton	(2015–2017)
City & County of Broomfield	(2013–2017)
Elbert County	(2014)
Town of Erie	(2012–2015)
City of Fort Collins	(2013)
Town of Hudson	(2012–2015)
La Plata County	(2005–2015)
City of Longmont	(2012)
Town of Timnath	(2015)

Operators with MOUs

Agave	Energen	Petro Operating
Anadarko	Extraction	Petrogulf
Black Hills	Four Star	Samson
BP	Great Western	Sovereign
Chevron	Kerr-McGee	Swift
Coleman	Maralex	Synergy
ConocoPhilips	McElvain	TOP Operating
Elm Ridge	Pablo	XTO
Encana	Petersen Energy	

By Jerome Davis, Xcel Energy regional vice president for Colorado

PARTNERSHIP FOR A CLEAN ENERGY FUTURE

IF YOU POLL COMMUNITY leaders in Colorado's 64 counties about energy priorities, you will get at least 64 unique responses. Our beautiful state is so diverse, from its geography to the key industries that keep local economies humming. We want the best for our communities and families, but we interpret "what is best" in different ways. We have a history of working together on many energy initiatives, such as energy efficiency, but we see expanded opportunities to partner in advancing your community goals related to energy and innovation.

The baseline: Together, we are moving the needle on energy efficiency to provide customer choice and save money.

Energy efficiency is the lowest-cost energy resource. Along with smart technology, resilient grid design, decarbonized transportation, and LEED-certified buildings, Xcel Energy customers large and small are asking the company for help finding ways to use less.

And Xcel Energy is delivering. It offers 20 different business programs to improve lighting, boost efficiency in heating and cooling, cut the cost of refrigeration, or implement variable-speed drives for motors used by large industrial and commercial customers. Xcel Energy's rebates on LED light bulbs save money, whether on a three-pack for a home or on streetlights for a whole city. Customers can invite the Home Energy Squad® or Business Solutions Center experts to help identify home and business energy savings by finding the places where energy escapes, and fixing these holes with weatherization, smart monitoring and control systems, and more efficient fixtures from home shower heads to industrial boilers.

The cleanest, cheapest kilowatt is the one you do not use. Through these programs, over the years, Xcel Energy estimates that participating customers have saved enough energy to help avoid building four power plants in Colorado. Not only do these programs provide direct benefits to participating residents and businesses, but they also offer a way for communities to partner with Xcel Energy to leverage these efficiency programs with their own local efforts.

Partners in Energy puts Xcel Energy's expertise in energy efficiency and resource planning to work with communities across Colorado. These two-year collaborations include a six-month assessment period, followed by 18 months of implementation. What gets implemented is up to each community, whose leaders know best how to meet their own energy needs. The one thing everybody has in common is a shared vision for lower energy bills.

Partners in Energy launched in 2014. Xcel Energy offers free services to any city, town, or community that is interested in starting energy efficiency programs or drafting a sustainability plan. The services include forming a

team of local stakeholders, developing an Energy Action Plan, and assisting with implementation of that plan to benefit businesses, residences, and municipal projects.

For example, Garfield County worked with Xcel Energy to identify its priorities and challenges. Its six focus areas include large industrial users, such as agribusinesses and oil and gas producers, that could gain substantial benefit from lower energy costs. These industrial customers accounted for 62 percent of total electricity use and 33 percent of natural gas in the county, which stretches from Glenwood Canyon to the Utah border.

The Garfield County partnership includes the cities of Rifle and Glenwood Springs, and the towns of Carbondale, New Castle, Parachute, and Silt. Also participating in the planning were Colorado Mountain College, the Roaring Fork Transportation Authority, clean energy advocates, bankers, contractors, and the Colorado River District.

Tami Gunderzik, who directs Partners in Energy in both Colorado and Minnesota, is especially proud of the collaboration between energy providers in Garfield County, which is served by Xcel Energy, Black Hills Energy, Holy Cross Energy, and Glenwood Springs Electric. Building a unified, one-stop solution was essential to avoid customer confusion.

"It is working," she said. "We provide the framework, and all the utilities can work to provide solutions to the communities they serve."

Their common foes are outdated building codes, single-pane windows, summer sun, and winter snow. "Whatever we are competing against," Gunderzik said, "it is not each other."

Despite representing a prolific oil- and gas-producing region, the group set ambitious carbon reduction goals. Its Year 1 targets have the potential to reduce Garfield County's carbon footprint by 7,100 metric tons — the equivalent of 1,500 passenger vehicles a year.

The Next Step: Energy Future Collaborations

Less than seven months ago, Xcel Energy launched its new Energy Future Collaborations, creating a flexible framework to proactively identify and accomplish shared objectives between a community and Xcel Energy, in a way that can be replicated and scaled to other places. As communities adopt energy and innovation goals, Xcel Energy is able to align mutual interests and move forward as partners.

The uniqueness of these new collaborations is that they allow each community to focus on its local priorities beyond energy efficiency. Some will emphasize economic development or innovative technologies, such as electrified transportation or microgrids. Others

SPOTLIGHT

ENERGY ACADEMY

By Bill Meier, United Power community affairs representative

TWO OF UNITED POWER'S SEVEN COOPERATIVE OPERATING PRINCIPLES ARE "EDUCATION, TRAINING, and Information" and "Concern for Community." The first principle initially was intended to educate United Power members on the cooperative business model, but becomes actual engagement and hands-on practice when combined with the second in a partnership with Mead High School and its students through the Mead Energy Academy.

The Mead Energy Academy provides a local and deliberate forum for students to bridge the gap between study and theory to actual hands-on, in-the-field observation of the utility industry.

The academy naturally has a strong emphasis on engineering and sciences, but also shows the opportunities for business, construction, and operational aspects of the industry. United Power hopes that this experience will trigger an interest for students to become a part of the future in the utility business.

The partnership with the Mead Energy Academy is especially fortunate in that United Power has developed a large 6.5-megawatt solar field within about two miles of the high school. It is named the Maverick Solar Field in honor of the Mead High School Maverick mascot. The proximity of the project gave the students a firsthand experience in the construction of a commercial-size solar installation. Future students in the academy will have the opportunity to visit the site and observe the day-to-day operation and maintenance of this renewable energy generator.

Another project that will be near Mead High School and made accessible to the academy is the first-of-its-kind large battery storage project being developed by United Power. This will be the state's first commercial-scale energy storage project. It will show students a new and developing technology that the energy industry is learning how to integrate within the grid for storage of renewable energy that can then be applied toward outage mitigation and peak load shaving.

United Power's partnership with the Mead Energy Academy is within the cooperative principles of education and community. The company is fortunate to have this opportunity to work with students and groom the future workforce and innovators of the energy industry.

will prioritize sustainability and clean energy targets.

Xcel Energy signed its first Energy Future Collaboration Memorandum of Understanding with the Town of Breckenridge in January. The City of Denver was next to sign an MOU in February, and more communities are working with Xcel Energy.

The Colorado Energy Plan

Xcel Energy has a strong commitment to three core principles: keeping bills low, enhanced customer experience, and leadership in the transition to a clean energy future. Each principle relies on ongoing communication and collaborative partnerships with Colorado counties, cities, and towns. The commitment to these principles is evident in the Colorado Energy Plan.

The cities of Denver and Boulder were among 16 signatories on Xcel Energy's Colorado Energy Plan filing, now being considered by the Colorado Public Utilities Commission. At recent hearings before the commission, business boosters who advocated for the plan represented a wide range of communities — from Logan County Economic Development Corp. to the Colorado Farm Bureau to IBM. Lafayette Mayor Christine Berg testified in favor of the Colorado Energy Plan with her 1-year-old daughter Lumina on her lap.

The Colorado Energy Plan proposes to voluntarily retire two coal-fired generation units at the Comanche plant in Pueblo, and replace that capacity with investments in wind and solar. Xcel Energy believes it can achieve 55 percent renewable energy on its Colorado grid by 2026, and reduce carbon emissions by 60 percent from 2005 levels.

Most important, Xcel Energy's filing pledged to make this transition with no net cost increase to customers. The enthusiastic response from independent energy producers and many more stakeholders has convinced the company that this is the smart way to go.

Letters of support from across Colorado have been received advocating for this plan to be approved.

Climate change can be a contentious topic, but as Xcel Energy CEO Ben Fowke told an audience at the University of Denver recently, if we can cut emissions and reduce the risk that climate change poses to the future of our cities and towns — while creating jobs and tax base by growing renewables, at no additional cost to customers — why not do it?

Xcel Energy believes it has a responsibility to the state, cities and towns, and individual customers to offer the affordable, reliable, and clean energy customers want. It is working hard to make that a reality for every customer. But Xcel Energy cannot do it alone, and will look to Colorado Municipal League members for continued support and partnership.

By Traci Stoffel, Colorado Municipal League communications & design specialist

Each issue of Colorado Municipalities *magazine introduces you to a key person in municipal government through the "Get to Know … " column. Each person featured answers questions about his or her position, municipality, and how he or she ended up in municipal government.*

GET TO KNOW ... JOHN PONIKVAR

CRAIG MAYOR

How did you end up in public service?

When I was in high school, I was always envious and fascinated by a couple of classmates whose fathers were involved in community service. One was the mayor of Leadville and the other was secretary of the school board. When I was a senior, I read a quote by Theodore Roosevelt: "No man can be a good citizen unless he has a wage more than sufficient to cover the bare cost of living, and hours of labor short enough so that after his day's work is done he will have time and energy to bear his share in management of the community." I was hooked and have strived to fulfill my obligation to the community since then!

What do you enjoy most about your position?

I really like the fact that I can engage with any group, organization, or individual in the community at any time. I have been working on raising the profile of the mayor and city council in our community by being available, consistently offering a positive attitude, being proud of community accomplishments by recognition of those who work hard to make the community better, and encouraging collaboration and communication. I also love spending time at the schools and encouraging our future leaders.

What is the most challenging part of your position?

In my role, I need to make sure that each individual has a voice. What we do in municipal government is every bit as much about team as any sporting event. Budgets are always a challenge, but when the city employees, department heads, manager, and councilmembers all have input, feel valued, and embrace the shared vision of making the community the best it can be, we come together and make good decisions. It does not mean that everybody is totally satisfied, but we can go forward and support the direction we have decided on.

What are some exciting things going on in Craig?

Craig is moving forward in building broadband infrastructure that will ensure redundancy, reliability, and affordability. Several private providers are making meaningful investments and should reduce the amount required by government to have this valuable and necessary amenity.

In April, our hospital will break ground on a new 60,000-square-foot medical office building to complement a new walk-in clinic completed in February.

The Dodge dealership finished a year-long $2.4 million renovation that expanded and upgraded its facility.

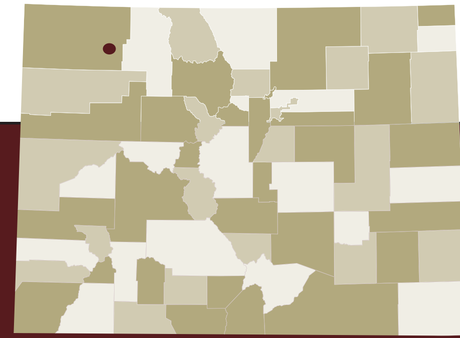
An implement company is in the middle of building a new facility.

Colowyo Coal Mine is opening a new pit that will provide 30 years of high-BTU clean-burning coal.

Trapper Mine just put into service one of the world's largest backhoes; it pairs with the largest front end loader in the world.

Xcel Energy and Tri-State Generation & Transmission Association continue to upgrade their coal-fired electrical generating turbines to be more efficient and cleaner burning.

Two state-funded sidewalk projects will make Craig safer for students and low-income residents.



GET TO KNOW THE CITY OF CRAIG

- **The City of Craig was incorporated in 1908.**
- **Population: 8,820**
- ***www.ci.craig.co.us***

A community branding project supported by the Colorado Office of Economic Development & International Trade has just been implemented.

This is an exciting time to be in Craig!

What project or undertaking are you most proud of and why?

I am pleased that the Craig City Council passed a Civility Resolution that adopted the "Nine Rules of Civility" for use at our meetings and with the community. We did not have any problems, but felt that it was important to be proactive in our communications, considering what has become the norm in today's political discourse.

I am very proud that in November the voters of Craig passed a 1.75 percent sales tax to help maintain city operations and infrastructure. This came after a failed effort in April for a 1.25 percent sales tax and 3 percent use tax. We were able to reframe the question based on a conversation that I had with the mayor of Silverthorne at the 2016 CML annual conference. The citizens of Craig had voted out the use tax in the 1980s; not having that tax put our car dealers at a disadvantage and encouraged purchasing out of town. The mayor related that Silverthorne had experienced the same problem and choose to not charge municipal tax on vehicles. The result is that more people are purchasing local, allowing businesses to grow, add employees, and generate other taxes through parts and service.

What is the impact of energy in Craig?

For the past 40 years, Craig's vibrant economy has been driven by the fossil fuel energy industry. Four coal mines, five coal-fired electrical generation units, oil, and gas have been the economic drivers. Those industries support numerous businesses and provide wages from $80,000 to $100,000 per year with excellent benefits for employees and families.

Times are changing. One of Tri-State's coal-fired turbines is scheduled to close in 2025, and the other two units possibly by 2040. The decline in tax base will have huge negative impacts to governmental agencies and their ability to serve residents. To maintain and create a resilient economy, we in Craig are having to change a culture! Change is never easy, but the community is up to the task. The City of Craig and Moffat County have partnered with schools, businesses, and organizations to identify and support industry that will match our strengths and environment. We have huge opportunities in outdoor recreation and our community college, but more will be required to diversify our economy away from energy.

What website(s) and/or publication(s) do you refer to when seeking information?

The CML website holds a wealth of information; it is my go-to for so many subjects. I keep the State Demography Office's Community Profiles (*demography.dola.colorado.gov*) on my home screen. Community/Economic Development: Resilient Region (*resilientregion.org*) is a successful, sustainable community plan. Most important is "Speak Your Peace" (*dsaspeakyourpeace.org*), a community civility project that encourages people to communicate in more respectful and effective ways.

What book are you currently reading? Are you enjoying it?

I multitask when it comes to books — I usually have at least two going at once. Right now, I am reading *Origin* by Dan Brown and *Killing England* by Bill O'Reilly and Martin Dugard. I really enjoy Brown's books; he writes in a way that I can visualize what is happening, much the way John Steinbeck's books did for me in my younger days. The suspense of not knowing who the good or the bad guys really are until the end keeps me engaged. His books also take place in areas that my wife and I have visited, so that adds to the enjoyment. *Killing England* is adding to my knowledge and appreciation of how our country was formed. I always appreciate knowing more about the struggle of the founding fathers of the United States.

John Ponikvar is a native of Leadville and a long-time business owner in Craig — he has been at his NAPA Auto Parts store for 37 years. John is a licensed airplane pilot, and has served his community as a reserve police officer, deputy coroner, certified death investigator, board of education member, United Way chair, and 14th Judicial District Community Corrections board member, and was appointed to two terms on the 14th Judicial District's Judicial Performance Commission by Gov. Bill Owens. He and his wife, Corrie, enjoy traveling to Europe yearly and looking for other adventures in far off places.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