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Flashpoint: It's Time to Curb Waste and Pollution from Flaring

Wyoming needs a new approach to flaring – one that better protects people and our environment.

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Flashpoint: It's Time to Curb Waste and Pollution from Flaring



BY AMBER WILSON,
ENVIRONMENTAL
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Drive past a Wyoming oil field and you're likely to notice flames leaping from the tops of stacks at producing oil wells. What you're witnessing is a process called flaring.

As drillers produce crude oil, often thousands or even millions of cubic feet of natural gas—the same resource other companies profitably extract from natural gas wells—come up along with the oil.

When operators flare that gas, it is not sent to market. It is burned off, wasting the resource while producing greenhouse gases and other pollutants. In Wyoming, the best tools available for curbing this waste and pollution are economic incentives and regulation.

Flaring is sometimes necessary to gauge flow rates, release pressure, and ensure worker safety and the safety of people downwind. But often, flaring has nothing to do with safety: instead it is a short-term business decision that has both environmental and economic costs. There are often alternatives to flaring that would still ensure human safety, be better for the environment, and benefit the state's economy. We believe the state would be wise to require operators to more frequently employ these alternatives.

Throughout Wyoming, when companies opt to burn off or “flare” natural gas associated with oil development, the severance taxes and royalties that would otherwise be paid are burned away too. Without effective regulation, flaring wastes a valuable energy resource and returns no value to the people of Wyoming.

Wyoming has ranked near the top of natural gas producing states for more than 10 years. But natural gas prices tumbled during the recession of 2008 and have yet to recover. In 2013 the price of natural gas remains at about 30 percent of what it was at its peak prior to the recession. In spite of increased demand, the United States today is awash in natural gas because of advances in technology and new discoveries. As a result, natural gas has become a commodity with substantially less value to an exploration and production company. The real profit play today is in crude oil and other petroleum liquids. In many cases it's cheaper to flare the gas than it is to gather, process, compress, and deliver it to market. Flaring is a business decision, and our current state policies enable that decision.

What this means is that an oil developer in areas where there may not be existing natural gas pipelines now sees little profit incentive for capturing and marketing the natural gas. Thus, operators regularly opt to burn the natural gas at the wellhead and market only the oil and other petroleum liquids.

In his energy strategy, released in 2013, Governor Matt Mead notes that flaring regulations in Wyoming need to be reexamined. The Wyoming Outdoor Council agrees.

The best alternative to flaring is to capture the gas and harness its potential. For example, natural gas that would otherwise be flared could be put to use on site to generate electricity for the well pad, development zone, or the larger energy grid. The gas could also be put in a pipeline and sent to market for sale.

From the developer's perspective, the problem with this alternative is that collection requires separating the gas from hydrocarbon liquids and then getting it into a pipeline and to the marketplace.

Often, operators in Wyoming are drilling in areas where a connection to a pipeline is difficult, or the nearby collector lines have insufficient capacity to take on the gas. These areas can lack necessary infrastructure and—to compound the problem—there is insufficient economic or regulatory incentive to build such infrastructure. So companies find it simply more expedient to flare the gas.

When gas is flared as a matter of expediency, however, the economic burdens do not disappear; they simply shift

from the oil company to the public in the form of lost revenue and added environmental costs.

Despite the ebbs and flows of market price, natural gas is a non-renewable resource. Decisions about how finite public resources are used should hinge on more than just a production company's profit margin in any given year.

In addition to burning away taxes and royalties that would otherwise benefit the state, there are also significant environmental

concerns with flaring. When the impure natural gas is burned, the products of its combustion include carbon dioxide, water vapor, and additional byproducts such as carbon monoxide.¹

Flaring degrades local air quality, creates risks to human health, and contributes to greenhouse gas emissions without providing benefits to

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Wyoming citizens, such as additional energy resources or revenue.

We urge a more prudent, thoughtful approach to flaring—one that is farsighted and better protects Wyoming citizens and the environment. There is a role in these improvements for the Legislature, the Department of Environmental Quality, and the Wyoming Oil and Gas Conservation Commission.

By making sound policy decisions and reshaping Wyoming's regulatory and statutory framework, we can reduce flaring and its associated pollution, ensure conservation of finite resources for future generations, and collect substantial revenue that would otherwise be lost forever.

We urge the Legislature to remove the severance tax exemption for gas flaring and work with companies to increase the capacity of

infrastructure to collect natural gas.

Wyoming's regulatory agencies could, on a parallel track, improve environmental rules to more strictly limit the practice.

Of the two state agencies that most directly regulate flaring—the Oil and Gas Commission and the DEQ—neither have clear instructions, via existing policies or regulations, to meaningfully reduce the environmental and economic costs of venting² and flaring.

Currently, the DEQ awards operators a “Chapter 6, Section 2” oil and gas permit. Essentially that means the DEQ doesn't tell an operator it can't vent or flare; rather, the agency simply tracks all emissions from a project, including the flaring, to determine whether the total emissions for the project are expected to be fewer than 100 tons per year.

If emissions are expected to exceed 100 tons per year, the project becomes what's called “a major source” requiring a different operating permit.³ Generally, oil and gas operations are considered a “minor source” in Wyoming and regulations require no additional action by the DEQ.

Given the impact of flaring on air quality and climate change, the DEQ should be specifically directed to evaluate and regulate flaring, with the goals of reducing the total amount of flaring and decreasing the amount of pollution created by the flaring that does occur.

The agency would benefit from the development of regulatory standards that help it determine when emissions from flaring are too great to permit. Additionally, regulations that use metrics consistent with the Oil and Gas Commission's (e.g., measuring the gas in thousands of cubic feet as opposed to tons per year) would also help streamline interagency coordination of flaring regulation and its enforcement.

The Oil and Gas Commission, for its part, has a statutory responsibility to ensure the state's oil and gas resources are not wasted. Unfortunately, the statutory definition of “waste” is vague.⁴ This isn't helpful to the Commission when it is charged with determining whether flaring constitutes “waste.” With no clear standard that defines “waste” the rules have the potential to permit unrestricted flaring at any production well.

The Oil and Gas Commission currently allows oil well operators to flare, indefinitely, up to 60,000 cubic feet per day, per well. That's more than 13 million cubic feet of natural gas per year that can potentially be flared from just one oil well.

Operators who wish to flare more than 60,000 cubic feet per day can appear before the Oil and Gas Commission in a “show cause” hearing to seek approval. While the Commission may be reluctant to grant these exceptions, we note that they are frequently made, often at volumes far in excess of 60,000 cubic feet per day.⁵

An example of a recent exception, and of why strengthening the rules is crucial, occurred at the Oil and Gas Commission's September 2013 hearing. The Commission granted a request by Peak Powder River Resources to flare up to 1.5 million cubic feet

“Every second that natural gas is flared we lose revenue, pollute the local air, and add greenhouse gases to the atmosphere, with no benefit to the state or the nation.”

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A Constitutional Argument for Collecting Severance Taxes on Flaring



BY RICHARD GARRETT, ENERGY POLICY ANALYST AND LEGISLATIVE ADVOCATE

In October, the State Legislature’s joint interim revenue committee voted down a bill that would have required oil and gas producers to pay severance taxes on the natural gas they flare. Currently, producers enjoy a severance tax exemption on flared gas. This exemption helps enable the practice, which pollutes local air and contributes to climate change.

Speaking in support of removing this exemption, the committee’s co-chair, Representative Michael Madden of Buffalo, observed:

“You know, if you’re a poor little gas molecule coming up that pipe...you don’t know if you’re going to go into the pipeline and do some good for somebody or whether you’re going to be flared. But we make a distinction about it by saying if it’s flared, it’s tax-free, but if it’s not flared, we’re going to tax it.”

His point is not only colorful but has sound legal underpinnings. Wyoming’s legislators have a duty to protect and defend Wyoming’s constitution on behalf of everyone in the state. And the constitution has some fairly unambiguous things to say on the topic of mineral and severance taxes:

Article 15, Section 19

Mineral excise tax; distribution.

The Legislature shall provide by law for an excise tax on the privilege of severing or extracting minerals, of one and one-half percent (1 1/2%) on the value of the gross product extracted...Such tax shall be in addition to any other excise, severance or ad valorem tax.

Article 3, Section 27

Special and local laws prohibited.

The legislature shall not pass local or special laws...exempting property from taxation.

Representative Madden’s point thus seems spot-on—the state cannot exempt flared natural gas from taxation. Every molecule produced must be treated equally. Gas

that is flared—just like gas that is captured and sent to market—is a non-renewable resource; it has a value, and it has been extracted (and severed) from the state. Extraction of a mineral natural resource is a privilege, and producers should be required to pay for this privilege by way of our well-established severance tax formula. After all, it’s not just a producer’s natural gas, it belongs to all of us. And until it is severed it belongs to future generations too.

This topic becomes more pressing each passing day because Wyoming—like North Dakota seven years ago—looks to be on the edge of a new boom, this time in the form of a shale oil and natural gas liquids “play.” Remarkable and rapid development is already starting in the east-central part of Wyoming near Douglas.

For the first time in memory, it looks as if significant drilling is going to happen near an urban population in Wyoming. If the



Flaring at night in North Dakota’s Bakken oil play. Photo by Joshua Doubek via Wikimedia Commons.

combination of environmental regulations and tax policies that currently enables the wasting and flaring of natural gas during oil production is not changed, it may well have significant detrimental effects on local air quality, and it will certainly affect the state's revenue picture.

It will also change the lives of the people who live nearby, and change eastern Wyoming's open spaces and uncluttered vistas. We only need to look about 450 miles north of Douglas to Williston, ND to see what Douglas could look like—both from the ground and from space—if we fail to curb flaring and the wasting of natural gas.

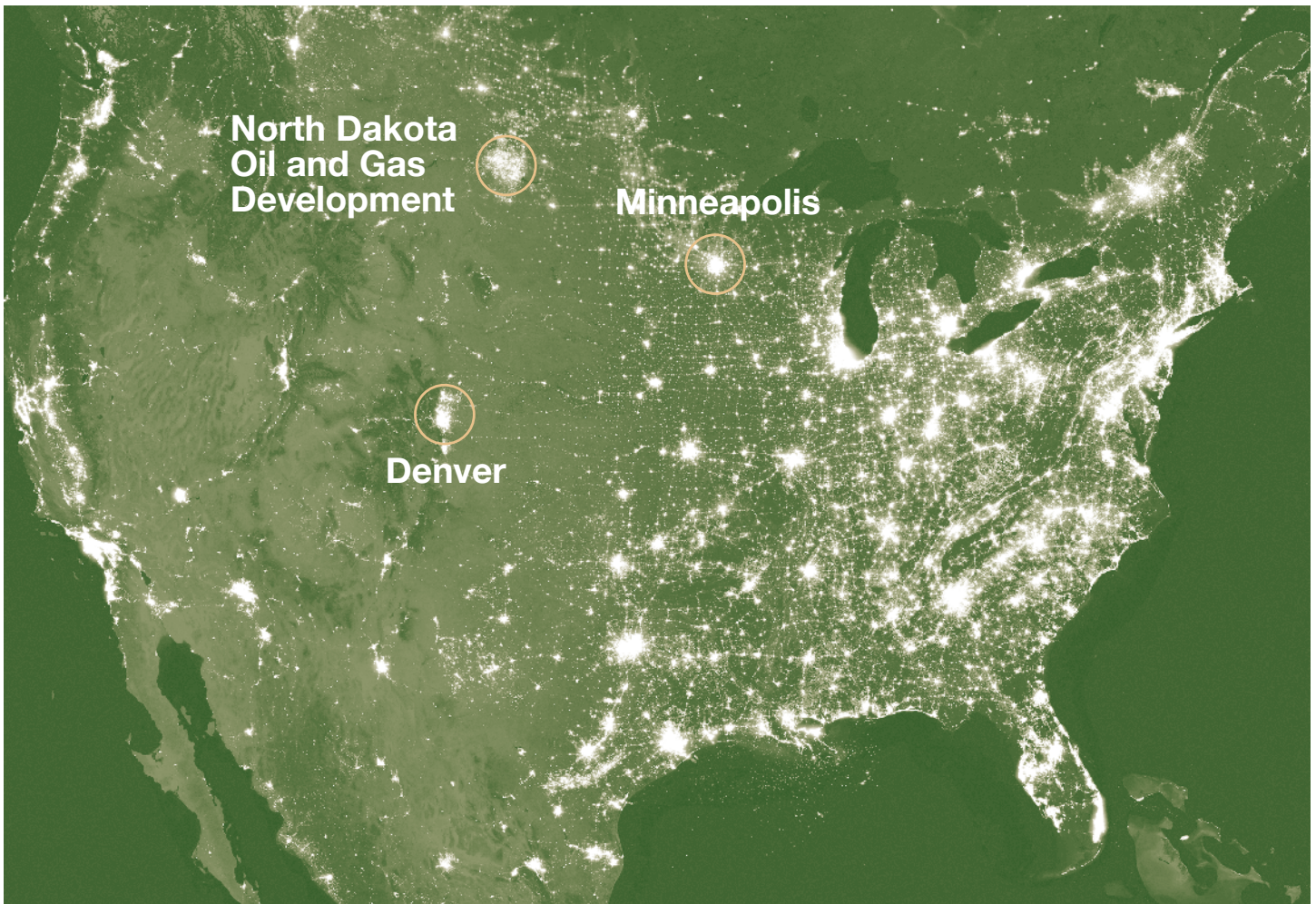
Take a look at the NASA satellite image

below. It was captured on November 12 of this year, and it shows the gas flares from the oil development in North Dakota's Bakken formation, visible from space.

The breadth and brightness of this field's development and associated flaring rivals the lights of major metropolitan areas such as Minneapolis-St. Paul, Chicago, and Denver. The North Dakota Legislature hopes to curb the practice of flaring, but a lot of damage—and waste—has already happened. We believe the Wyoming Legislature can and should learn from the experiences of our neighbors. We are fortunate in Wyoming—because we've been able to observe the way the development

has played out in North Dakota—to be in a position to be proactive rather than reactive to gas flaring.

That is why, during this winter's legislative session, the Wyoming Outdoor Council, along with many others, will be taking the case for better flaring policies to Cheyenne. On behalf of our members, I will be working for a better combination of tax policies and environmental regulations that—instead of allowing for large-scale waste—will make sure that our state's constitution and the people it serves are protected. 📖



This NASA satellite image, captured on November 12, 2013, shows gas flaring in North Dakota's Bakken shale oil field development, as seen from space. We are committed to helping the state of Wyoming examine, reevaluate, and strengthen its regulation of natural gas flaring so the same scenario doesn't play out here.

“Often, flaring has nothing to do with safety: it is a short-term business decision, with both environmental and economic costs.”

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of natural gas per day until February 11, 2014,⁶ authorizing the company to potentially flare more than 229 million cubic feet of gas. Even given the low price of natural gas as this article goes to print, the wholesale market price of that amount of gas could exceed \$800,000. That is no small exception.

To put these numbers into perspective, the residential per capita consumption of natural gas in Wyoming in 2011 (the latest data available) was 23,597 cubic feet for that year.⁷ The total volume the Oil and Gas Commission authorized Peak to flare from one well over a 153-day period is equivalent to more than nine thousand times Wyoming’s annual per capita consumption of natural gas.⁸

Put another way, the volume Peak Powder River Resources is authorized to burn in just one day could support up to 29 Wyoming homes for one year.⁹ The total amount of natural gas the company is authorized to flare by February 2014 could support more than 4,000 Wyoming households for an entire year.¹⁰


One might be curious to know how much total gas is flared annually in Wyoming. But it’s impossible to know for sure. Unless an operator flares more than the standard 60,000 cubic feet per day, it isn’t tracked. We propose that, at a minimum, the Oil and Gas Commission should require a report of actual flared volumes (not just the volume that is authorized) and comprehensively track all

flared gas, including volumes from wells that flare fewer than 60,000 cubic feet per day.

Wyoming’s Oil and Gas Conservation Commission has the authority to set reasonable and responsible limits on the flaring of natural gas.¹¹ We believe the Commission should strengthen its rules to more clearly define “waste,” and based on that clearer definition, regulate and minimize flaring. Operators should not be granted exceptions, save under the most extraordinary of circumstances involving the health and safety of workers and local communities.

Every second that natural gas is flared at oil wells we in Wyoming and U.S. citizens in general are losing a valuable, marketable, and limited natural resource. We lose revenue, we pollute the local air, and we add greenhouse gases to the atmosphere with no benefit to the state or the nation.

We commend Governor Mead for calling attention to this issue in his energy strategy.

We are committed to helping the state of Wyoming to examine, reevaluate, and strengthen its regulation of natural gas flaring. With reasonable and responsible policies, Wyoming can better protect its people, the resources we depend on, and the environment. It’s time for better flaring regulations. 

¹ <http://www.epa.gov/ttnchie1/ap42/ch13/final/c13s05.pdf>

² Venting is another method of natural gas disposal addressed in the same state regulations as flaring. Venting natural gas releases it directly into the atmosphere and is just as wasteful and has even worse environmental consequences. Historically, the Wyoming Oil and Gas Conservation Commission, as well as operators, have rightly viewed flaring as a much safer and better alternative to venting.

³ Chapter 6, Section 2. Wyoming Department of Environmental Quality Air Quality Division Standards and Regulations.

⁴ WY STAT 30-5-101 (a) (i) (A-H)

⁵ Oil and Gas Conservation Commission. “Flaring/Gas Plant Turnarounds.” 11/1/2013.

⁶ Docket 656-2013. Oil and Gas Conservation Commission monthly hearing. Sept. 10, 2013. Oil and Gas Conservation Commission. Casper, WY.

⁷ Total annual residential use of natural gas in Wyoming in 2011 was 13.3 billion cubic feet (Energy Information Administration. “Natural Gas Consumption by End Use.” http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SWY_a.htm). The 2010 population of Wyoming was 563,626 (United States Census Bureau, Wyoming. <http://quickfacts.census.gov/qfd/states/56000.html>). 13,300,000,000 ft³/563,626 people = 23,597 ft³ residential natural gas consumption per capita.

⁸ 229,500,000 cubic feet of natural gas authorized to be flared by Peak Powder River Resources over 153 days (Oil and Gas Conservation Commission. “Flaring/Gas Plant Turnarounds.” 11/1/2013). Divide 229,500,000 cubic feet by 23,597 cubic feet of residential natural gas consumption per capita = 9,725.8.

⁹ 229,500,000 cubic feet of natural gas authorized to be flared by Peak Powder River Resources over 153 days divided by 50,088.9 cubic feet of natural gas consumed per WY household in 2011 [13.3 billion cubic feet of natural gas consumed by residential customers in Wyoming in 2011 (Energy Information Administration. “Natural Gas Consumption by End Use.” http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SWY_a.htm). The number of households in Wyoming in 2011: 265,528 households (<http://quickfacts.census.gov/qfd/states/56000.html>). 13.3 billion cubic feet/265,528 households = 50,088.9 cubic feet of natural gas (approximate) consumed per household in 2011].

¹⁰ 13.3 billion cubic feet of natural gas consumed by residential customers in Wyoming in 2011 (Energy Information Administration. “Natural Gas Consumption by End Use.” http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SWY_a.htm). The number of households in Wyoming in 2011: 265,528 households (<http://quickfacts.census.gov/qfd/states/56000.html>). 13.3 billion cubic feet/265,528 households = 50,088.9 cubic feet of natural gas (approximate) consumed per household in 2011. 229,500,000 cubic feet of natural gas authorized to be flared by Peak Powder River Resources over 153 days/50,088.9 cubic feet of natural gas consumed per household in one year = 4,581.9.

¹¹ Oil and Gas Conservation Commission Rules and Regulations. Chapter 3, Section 39 (a)(iv), pp 3-56. <http://soswy.state.wy.us/Rules/RULES/7928.pdf>.

Wyoming Outdoor Council

Established in 1967, the Wyoming Outdoor Council is the state's oldest statewide conservation organization. Our mission is to protect Wyoming's environment and quality of life for future generations.

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Message from the Director

New Groundwater Testing Rule is a Remarkable Achievement

GARY WILMOT, EXECUTIVE DIRECTOR



A number of years ago we set out to achieve something very important: a state-wide requirement for baseline groundwater

testing prior to new oil and gas development.

We (and many others) have long argued that collecting water quality data prior to, during, and after drilling are necessary steps.

We ramped up this campaign in December of 2011, right after the Environmental Protection Agency released a draft report of its investigation into groundwater contamination outside of Pavillion, Wyoming.

After the publication of these results—in which the agency concluded that the contamination was likely linked to gas development and hydraulic fracturing—industry and state leaders immediately launched their own campaign to discredit the scientific validity of the results. Industry representatives and some of Wyoming's elected officials accused the EPA of bias, and claimed these results were politically motivated.

The Wyoming Outdoor Council, the Powder River Basin Resource Council, the EPA, the affected landowners outside of Pavillion, and many others strongly disagreed.

We believed, given how this investigation had been politicized, that the best role we could play would be to take our case for baseline testing to as many regulators and decision makers as possible and do everything in our power to make sure this never happened again in Wyoming.

We asked Gov. Matt Mead to seriously consider a statewide groundwater baseline testing rule. We argued that all of the controversy and uncertainty surrounding the Pavillion investigation could have been avoided if a baseline testing requirement had been in place prior to drilling in the Pavillion area.

The governor ultimately came to similar conclusions. And, in November of this

year, he and the rest of the members of the Wyoming Oil and Gas Conservation Commission voted unanimously to approve new statewide rules requiring oil and gas drillers to scientifically establish and monitor the quality of groundwater around oil and gas sites prior to, during, and after development.

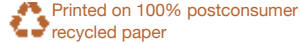
This baseline testing rule is a remarkable achievement for the state of Wyoming. While this rule is not a cure-all, we believe it is an important step that will help protect the people of Wyoming.

Water is the lifeblood of our communities. If companies are planning to drill through our aquifers to develop oil and gas, at least now we'll have the data: we'll know what the quality of that aquifer is before and after drilling.

But getting this rule on the books is only the first step. The state will now have to work hard to implement and enforce it. And this rule isn't perfect. It will likely need to be improved over the years. There may even be those who would seek to weaken it. And we, as citizens, all have a stake in its success—so we must stay engaged.

There is still more work to be done on other fronts, too. For example, we will continue our advocacy to ensure that companies are required to disclose all of the chemicals used during hydraulic fracturing, which is an issue that also has implications for the state's groundwater.

The Wyoming Outdoor Council is committed to doing everything we can to help the state get it right. And our work doesn't stop there. We have a lot more to do to protect our air and water, wildlife, and wide-open places for future generations. So let's come together again in 2014 and keep this organization strong. With our members behind us, we'll be everywhere we need to be, every day of the year. We'll be able to roll up our sleeves and take care of business for another year.



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We need travel companions too—we need you. When thousands of members stand behind our staff, the Outdoor Council has the clout and bargaining power it needs to be successful.

Keep us rolling in 2014 with your membership.

Join Us

Wyoming Outdoor Council Executive Director Gary Wilmot at the shop with our 10-year-old Subaru.



Can you help us out?

Please contact Gary Wilmot at 307-332-7031 ext. 21 or gary@wyomingoutdoorcouncil.org.