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PURPOSE

The Rural Planning Group performed the Uintah Basin Oil Study with three purposes:

1. To demonstrate how the global and U.S. oil markets affect the Uintah Basin, and highlight indicators that foreshadow major market changes
2. Identify industry impacts on communities and people in Uintah and Duchesne counties
3. To aggregate lessons learned from leaders in the Uintah Basin and provide recommendations for managing communities with economies steeped in highly volatile markets

This report will be successful if it informs readers on the above areas. Readers will better understand:

• Key indicators for the global oil market’s future
• Key drivers of oil development in the United States
• Utah’s place in the broader industry
• Impacts of the industry on the Uintah Basin
• Best practices for community planning and management in shifting markets.

Rather than provide a projection, this study seeks to inform leaders about the factors driving the oil market today—leaders can then assess their community’s future. Each section contains a brief narrative of recent events, lists variables, highlights the current circumstances, and describes the current outlook and potential changes in the near future. This analysis is intentionally brief, highlighting key considerations in-depth enough to be useful, but short enough to understand.

We advise readers to consider how different factors will interact, which impacts will occur, and what strategies will assist their community in facing future booms and busts.

Note: This type of comprehensive analysis does not hold weight for most individual companies short-term decisions. Companies make decisions based on their ability to make money, and every company has a different set of circumstances that determine their production. This study does not take into account considerations for specific companies. Rather, it assesses general industry issues which will affect every company in differing degrees. Specific companies can defy the odds, going bankrupt in apparently good times, or succeeding during apparently bad times.

All images original work unless otherwise noted.
PROJECT IMPETUS

With oil prices plummeting in late 2014, the Rural Planning Group began an investigation into Utah’s role in the oil industry and the industry’s impact on communities in the Uintah Basin. This study is the result of research on and interviews throughout the Uintah Basin.
Oil impacts each of our lives and our communities in diverse and profound ways. A sharp decline in oil prices at the end of 2014 inspired the Rural Planning Group to research the driving factors and community impacts of the oil industry in Utah’s Uintah Basin.

Rather than come to specific conclusions about where the industry is headed, this report attempts to lay-out the industry’s primary factors and allow readers to develop their own conclusions for the future of the market, even if those differ from our own.

Oil is a massive industry with many factors that influence entire economies. Utah plays a relatively minor role in the marketplace yet is deeply influenced by global and national policies. This mix of macro- and micro- economic forces make oil a very intense and difficult topic to understand and predict.

Our hope is that this document illustrates industry impacts on Utah communities and provides insights and recommendations that community leaders can use in considering their response to volatile markets and uncertain times. This study is not a magic bullet.

I wish to thank Kyle Slaughter for his tireless efforts and commitment to this project. Also for their immense contributions to not only this study but their dedication to planning in rural Utah: thank you Mike Hansen, Paul Moberly, Shannon Ellsworth and Aubrey Larsen. This project and others like it would not be possible without the support of the Department of Workforce Services, Housing and Community Development, our Assistant Director Tamara Kohler, Director Jonathan Hardy, and the Permanent Community Impact Fund Board (CIB).

Keith Heaton  
Rural Planning & Community Development Director
In early 2014, oil industry insiders and many economists agreed that the oil production boom across the globe was here to stay. Prices were high and demand kept pace with supply even as production soared. At the same time, other economists began asking how long the boom could last. Initial estimates were high: four to six years of high production and stable prices. However, from September 2014 to January 2015, prices took a dramatic dive—dropping over 50 percent. In under a year, the conversation turned from how long the boom would continue to how long the bust would last.
While the variables impacting the oil industry cross political, economic, and corporate lines, understanding the key drivers of the global oil industry is important to understanding the future of Utah's regional oil concerns. The drivers that most recently and consistently affect global supply and demand are illustrated below.

Each variable affects supply and demand for oil, but some influence one side more than the other. Global economics and international agreements affect demand most, while OPEC\(^1\) and Non-OPEC production affect supply most.

Community leaders should consider the current situation for each of these variables, and then consider what changes in these areas will mean for global supply, demand, and price—ultimately how changes will affect their communities.

In this section, each variable's impact is briefly considered and the current situation for many of these variables is explored.

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**GLOBAL ECONOMICS**

*Summary:*  
- Global economic growth is closely tied to oil demand.  
- Over time, demand is likely to increase because of developing nations.  
- The short-term situation remains unclear but will become more certain as international events unfold.

Global economic growth is closely connected with increased oil consumption. Typically, slow or no economic growth globally results in low or no increase in oil consumption; significant economic growth will lead to increased oil demand. Eventually, global growth will occur as developing nations grow, driving up oil demand. Uncertainty remains, however, about global growth in the next three to five years.

Growth occurs in two worlds: the developed world and the developing world. The U.S., E.U. (developed), and China (developing), make up approximately 50 percent of oil consumption in the world. Currently, much of the developed world is experiencing a major slowdown in demand growth. For example, the E.U.'s oil consumption declined 2.4% each year since 2007 and U.S. consumption has largely stagnated since 2008. China, the largest developing economy, saw its explosive consumption growth slow significantly in 2015 due to economic troubles. The U.S., E.U., and China with a few other developed nations, make up the majority of oil consumption in the world today. However, flattening population growth, efficiency standards, and alternative fuel vehicle adoption are likely to keep their demand growth relatively flat. An increase in use due to low prices may occur in 2015, but overall demand growth in these nations will likely remain slow.

For that reason, major increases in global consumption will primarily happen in developing nations. These countries currently use significantly less oil per capita than developed nations, but this gap will shrink over time as citizens of developing countries gain access to vehicles and other amenities. In the long-run, oil consumption will increase—the question that remains is how rapidly these countries will develop.

**DEVELOPING WORLD ECONOMICS**

*Summary:*  
- Developing nations retain the majority of demand growth potential.  
- Developed nations' economies are either flat or flattening.

China's oil consumption has expanded quickly for the past two decades lifted by enormous economic growth. Demand growth in China is beginning to slow however due to an economic downturn this past summer. There are few indicators that demand from China or the developed world will change drastically in the near-term.

The potential demand growth in developing nations is enormous—quick development of even a few countries could spur global demand. India is a specifically important player in oil consumption in coming years. Their burgeoning population and economic advancements are increasing the size of the middle class, and have significantly increased vehicle ownership. Some estimate India could even become the 3rd biggest oil consumer in the world during 2015. Other nations are also increasing their consumption as they develop. As a result, the developing world will be fundamental to the future of oil production, consumption, and prices.
INTERNATIONAL AGREEMENTS & REGULATIONS

Summary:
- Free trade agreements typically increase oil consumption by increasing economic prosperity.
- Vehicle efficiency standards flatten demand growth.

Free trade agreements and vehicle efficiency standards across the globe impact the oil industry directly and indirectly. The recently signed but yet-to-be-adopted Trans-Pacific Partnership is a great example of indirect impacts. Despite having few provisions that directly relate to oil, the agreement briefly lifted oil prices as investors expect the agreement to increase economic growth and spur oil demand.

However, vehicle efficiency standards in any nation can cause demand to flatten by reducing the overall need for fuel. By 2013, nine countries covering 80 percent of the motor vehicle market had adopted vehicle efficiency standards. Evidence of vehicle efficiency measures flattening demand exists in the U.S., where consumption remained below 20 million bpd (barrels per day) since 2007, despite economic resurgence after the 2008 recession.

SANCTIONS

Summary:
- Sanctions typically impact oil markets by decreasing demand from sanctioned countries or decreasing supply from sanctioned countries.

Sanctions restrict trade with a specific country or group of countries and often target energy development and exportation. Sanctions placed on high-demand or high-production countries have the largest impacts on global oil supply and demand.

Although sanctions can be designed to directly decrease production, they can also decrease oil demand within the sanctioned country. For example, current sanctions on Russia and Iran (both large producers) affect the oil market significantly. Sanctions on Iran for nuclear weapon development have decreased their oil production by approximately one million bpd. Meanwhile, recent sanctions imposed on Russia for their annexation of the Crimean Peninsula have significantly impacted their economy and reduced non-military oil demand.

1 Vehicle Efficiency Standards relate to a vehicle's Miles Per Gallon (MPG). Countries can set standards requiring vehicles to meet certain benchmarks.

2 The trans-pacific partnership is an agreement between 12 pacific rim nations allowing free trade for specific goods and services between nations.

TECHNOLOGICAL ADVANCEMENTS

Summary:
- Advances in technology will likely decrease the cost of extracting oil.
- Advances in technology will likely decrease the cost of competing energy sources, like batteries, solar, etc.
- Advances in technology will likely increase efficiency of oil use, decreasing demand.
- Advances in technology will likely open new oil sources for development.

Technological advancements will dictate the fiscal feasibility of continued oil production, determine the competition to traditional fuel, and increase the level of demand for oil across the globe. Technological advances affect the oil industry in four primary ways:

**Improved oil extraction and refinement**

Oil extraction technology (like horizontal drilling, oil shale, and tar sands extraction) can significantly increase the amount of oil extracted from each well and/or the amount of recoverable oil globally.

As refineries in these processes and technologies progress, oil production will continue to get less expensive allowing companies using new technology to compete in low cost environments.

**Improved efficiency**

As vehicle efficiency improves, demand for oil from developed nations will likely stay relatively flat. However, new vehicle and transportation markets in the developing world will likely increase consumption regardless of efficiency measures.

**Alternative fuel development**

Electric cars, natural gas vehicles, hydrogen cars, and solar cars are all competing in the motor vehicles market. To date, the impact has been negligible, but these technologies have the capacity to significantly decrease demand if the technology improves and is widely adopted.
REGIONAL AND GLOBAL WARS

Summary:
- War can impact producing regions, decreasing or increasing oil exports.
- War can increase demand as countries fund and support their military operations.
- War can disrupt demand by decimating regional or national economies.

Regional and global wars typically affect oil production in one of three ways: wars impact producing regions and producing nations, decreasing their ability to supply oil to the global market. War can increase a country’s demand for oil as they supply their troops. War can decimate oil demand in countries that experience significant destruction, resulting in economic depression.

The current war in Syria and Iraq involving ISIS occurs in a producing region. While Iraq has lost some oil fields, it has maintained control of the majority. Contrary to what may be expected, Iraq has even ramped up production despite losing some fields to help fund their war effort.

ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC) PRODUCTION LEVELS

Summary:
- OPEC is a group of oil producing countries who greatly influence the price of oil.
- By maintaining their production levels, OPEC has depressed oil prices.

The Organization of the Petroleum Exporting Countries (OPEC) is a group of 12 oil producing and exporting countries that traditionally contribute roughly 40 percent of annual global oil production. OPEC sets oil production limits for its members to reduce oil market volatility and to protect oil prices. It has traditionally used its production flexibility to counterbalance shifts in the market resulting from increased non-OPEC oil production, increased oil demand, or supply shortages. OPEC generally meets to determine their production cap every six months.

OPEC’s decision to raise, lower, or maintain its production level plays a significant role in the price of oil. Typically, increased production results in reduced prices, maintaining production leads to relatively stable prices, and decreasing production increases prices by removing supply.

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NON-OPEC PRODUCTION

Summary:
- Fracking and other technology improvements have increased non-OPEC oil production.

Non-OPEC production exploded after 2010, led primarily by fracking in the U.S. and other technological advancements enabling traditionally non-producing countries to enter the market. This resulted in significant increases to supply with no governing body to regulate the amount of production (i.e. OPEC). This was a primary factor in the 2014 price drop and will affect the future of oil development across the globe.
OPEC’S NEW STRATEGY

In 1979, OPEC (led by Saudi Arabia) was concerned about rising non-OPEC supply decreasing global oil prices. To keep prices high, OPEC cut production. The cuts were enormous: Saudi Arabia cut production from 10.3 million to 3.6 million bpd—a 65% reduction. The reductions failed to raise prices. What resulted was lost market share, withered revenue, and decreased influence for OPEC nations. Many economists estimate that prices remained lower than demand would normally dictate for 20 years after these events.

Today, OPEC is reading the market as a mirror image of the 1980’s. In November 2014, while non-OPEC production surged, rather than responding as they did in the 1980’s, OPEC maintained their 30 million bpd production levels. Despite production outpacing global demand and prices falling, they’ve maintained this strategy. In combination with other global and regional factors, this has led to low oil prices across the globe.

IMPLICATIONS

OPEC is key to oil’s future. If their current production cap remains, and global demand growth remains sluggish, current prices will stay low. As a result, U.S. fracking firms and producers whose costs are higher than current prices will have to reduce costs or be priced out of the market.

OPEC has traditionally dropped production to maintain global oil prices. Currently, they are maintaining production in spite of prices, attempting to force other producers to cut production.

“As a policy for OPEC...it is not in the interest of OPEC producers to cut their production, whatever the price is. Whether it goes down to $20, 30, 40, 50, 60—it is irrelevant.”

Ali Al-Naimi, Saudi Arabia’s Oil Minister
CONCLUSION

These variables continually affect production and consumption. Significant changes in any area can greatly impact global markets, but will not remove the effect of other factors. Thinking about the industry as a whole and recognizing that multiple factors are continually at work will help leaders understand the trajectory of a changing industry.

Changes in these variables ultimately affect supply or demand, resulting in increased or decreased prices. Framing the impact of these factors in the current market provides a simple visual depiction of the state of the global oil industry and the impact of those factors on prices. The visual to the right is not scientific. Rather it is a thought exercise for considering oil's current position and the changes that would have to occur before the industry shifts out of current low prices. This analysis is not comprehensive but highlights important factors; other factors exist which may shift prices (e.g. natural disasters, political shifts, etc.). Readers should draw their own conclusions.

Most countries have reduced oil production; however, not enough to balance supply with demand.

Sanctions imposed on Russia have forced continued production to maintain their economy.

Lifting sanctions on Iran will likely bring one million bpd production into the market over the course of a year.

The war with ISIS is forcing high oil production in Iraq to fund their war effort.

Extraction technology advances in horizontal drilling and fracking have opened production in new areas.

OPEC is currently maintaining a 30 million bpd cap which adds to a global oil oversupply.

Developing nations will continue to grow long-term.

International Trade Agreements in the Asia-Pacific region will likely economically benefit member countries.

Low prices will increase availability of fuel and other oil byproducts for poorer global regions

Technology advances in renewables and alternative fuel vehicles will continue to improve.

Countries continue to adopt vehicle efficiency standards.

Most developed nations' growth rates are stagnant.

China's growth rate has slowed.
**Canada**
Production: 6th, 4.7%
Consumption: 8th, 2.5%
Factors: Oil prices, environmental concerns with oil sand development

**United States of America**
Production: 1st, 14.2%
Consumption: 1st, 20.9%
Factors: Technology (fracking), EPCA repeal, environmental concerns, political shifts

**Brazil**
Production: 9th, 3.1%
Consumption: 6th, 3.3%
Factors: Civil unrest, drought, economic instability, oil prices

**Russia**
Production: 3rd, 11.9%
Consumption: 5th, 3.3%
Factors: Sanctions, global production levels

**Europe**
Production: 2.0%
Consumption: 14.9%
Factors: Slowed growth (France, Germany), Greek debt crisis, refugee crisis

**Iran**
Production: 7th, 3.7%
Consumption: 2.1%
Factors: Sanctions lifting, resource development

**Iraq**
Production: 8th, 3.7%
Consumption: 0.8%
Factors: ISIS

**Japan**
Production: 0.15%
Consumption: 3rd, 5.1%
Factors: Economic stagnation, efficiency improvements

**Greece**
Production: <0.001%
Consumption: 0.31%
Factors: Debt crisis, European Union exit

**China**
Production: 4th, 4.7%
Consumption: 2nd, 11.5%
Factors: Economic stagnation, efficiency improvements

**European Union**
Production: 2.0%
Consumption: 14.9%
Factors: Slowed growth (France, Germany), Greek debt crisis, refugee crisis

**Brazil**
Production: 9th, 3.1%
Consumption: 6th, 3.3%
Factors: Civil unrest, drought, economic instability, oil prices

**Global Factors**

Many additional countries are experiencing and creating economic and political opportunities and hardships that are and will affect the oil industry. These highlights demonstrate some of the factors that have led to current low prices, and issues that will continue affecting the market in coming months and years. Radical shifts with any of these countries could fundamentally alter the markets for years to come, and events in these countries warrant leaders attention as they prepare their communities for the future.

Note: In many nations, all oil production is state-owned. This allows the government to set production levels. In free market nations (e.g. U.S.), companies change their production levels independently. Both types respond to international markets; however, state-owned production can be manipulated in connection with a country’s overall strategy.


1. See website (www.ruralplanning.org/oil) for more information on many of these countries.
The Uintah Basin’s most common waxy crudes (yellow and black) are sweet crudes with low sulfur content. Utah’s crudes also have very high paraffin content—this means they solidify like a candle when under their “pour point” temperature. For black waxes, the pour point is 105°F, while yellow crudes have a higher pour point at 120°F. High paraffin makes transporting the crude over long distances difficult and expensive. High paraffinic content crudes require additional equipment to refine. This results in increased costs for refineries taking significant amounts of paraffinic crude. High paraffin content also makes Uintah crudes useful in making lubricants and other oil byproducts besides gasoline.

Since 2010, Utah crudes have generally been discounted at least 10 percent from WTI, and even more from Brent crude. This is due, at least in part, to Uintah waxy crudes’ different characteristics and the requirement of additional equipment to refine it.

Understanding Crude

Refineries mix these different types of oils for optimal weight and sweetness for the products they are making.

Prices are based on the characteristics of a given crude. Refineries discount local crude oils based on the difference in their characteristics relative to a benchmark crude. West Texas Intermediate (WTI) is the benchmark U.S. oil, with Brent crude being a standard global benchmark. Generally, the closer to Brent’s characteristics, the higher the price.
THE U.S.

In 2010, U.S. oil production started an exponential growth pattern: from just under 10 million to roughly 14 million bpd in 2014. This 30 percent increase in oil production fundamentally changed the global market. Tens of thousands of high-wage jobs were created across America, and oil-dependent communities experienced the ups and downs of burgeoning populations and economies.

However, at the end of 2014 the production boom reversed when OPEC decided to maintain a 30 million bpd production cap despite massive growth in non-OPEC production. Global prices dropped sharply. Production levels in areas with higher production costs dropped significantly. As a direct result, those high-paying jobs dissipated and disrupted communities and families finances—a harbinger to oil and oil service companies across the country.
U.S. oil development is vulnerable to global factors. Base prices are the ultimate determinant for future production. Because prices are a function of global supply and demand, oil development in the U.S. will largely respond to factors it can not directly control. However, within the U.S. there are several other factors that affect U.S. production specifically.

**FEDERAL REGULATIONS & PERMITTING**

Summary:
- Governmental regulations affect development on federal lands by increasing costs and delaying production.
- Federal law creates a captive market by barring exportation, resulting in lower prices for U.S. crudes than international benchmark crudes.

Drilling requires multiple permits. The amount of time required varies with the type of permit and land ownership. For example, according to the U.S. House Committee on Natural Resources, an application for a permit to drill (APD) on federal lands took an average of 20 times longer than the same permitting on state or private lands (2009–2013). Utah’s state and federal permitting times are less disparate, however significant differences remain. Federal regulations also disaggregate and disperse the land that is available for development due to endangered species habitat and other environmental regulations. This increases costs for companies who must build long roads to bypass protected areas. As a result, federal lands are often the last to be developed—oil fields with high concentrations of federal lands, and their surrounding communities, are frequently the last to benefit from development.

The BLM accepts “expressions of interest” (EOI) from oil companies for federal lands the companies would like to develop. The BLM uses these EOIs as a factor in determining which lands to lease. From 2005–2010, approximately 50 percent of the EOIs were put up for sale. In contrast, from 2010–2015, only about 10 percent of the land that companies expressed interest in were put up for sale. This and other application processes and regulations greatly decrease the incentive to develop on federal lands.

In addition, the Energy Policy and Conservation Act (EPCA) of 1975 bars exportation of U.S. crudes to other nations. This creates a captive market of producers for U.S. refineries and decreases the price U.S. producers can get for their oil compared to international crudes.

“If peak oil happens before the next couple hundred years, it will be because of governmental regulation.”

*Industry insider*
In August 2012, the U.S. Environmental Protection Agency and National Highway and Traffic Safety Administration released Vehicle Efficiency Regulations requiring vehicles to achieve 54.5 miles per gallon (mpg) on average by 2025 for light and standard vehicles models (compared to 29 mpg in 2012). The Obama administration estimated that these regulations will reduce oil consumption 2 million bpd.

Currently, an associated efficiency and emissions regulation just finished its comment period; the agencies intend the rule to go into effect between 2021 and 2027. This regulation, while still not formal, would reduce U.S. oil consumption by approximately 75 billion barrels over the life of the regulated vehicles. These regulations are likely to have serious implications for U.S. oil consumption and production.

**Price Discrepancy**

Summary:
- As a result of federal law, U.S. benchmark crudes average around $10 less than international benchmark crudes.
- Partially due to federal law’s effect on prices, U.S. companies find it difficult to compete in low-price markets.

As a direct result of the EPCA, West Texas Intermediate (WTI) (a primary U.S. benchmark crude) prices have averaged $9.46 less than Brent crude (a standard global benchmark crude) since 2010. This price discrepancy is most burdensome during low price periods when margins are tight.

A recent U.S. Government Accountability Office study, and several private industry studies, suggest that the gap between U.S. benchmark crude prices and global crude prices would decrease significantly if the export ban were removed. This suggests that lower U.S. benchmark prices are largely artificial and created by the U.S. being a captive market rather than by free-market forces.

**Fracking Costs**

Summary:
- Fracking is generally more expensive per barrel than many other extraction techniques, reducing profit margins for fracking firms in down markets.
- The price discount on U.S. oil exacerbates these pressures.

Fracking accounts for roughly half of U.S. oil development and is the primary driver of the 2010 U.S. oil production explosion. Fracking costs more than many other oil extraction methods. It requires additional equipment, trucking, and water storage that is not necessary in some other well types. As a result, low oil prices are proving difficult for U.S. fracking firms to maintain and new wells are increasingly less common.

Low prices have forced many fracking companies to restructure their operations by laying-off workers, reducing contractor work, improving processes, and increasing output with new technology and extraction methods. However, many industry leaders believe these cuts will force enough operational improvement for fracking companies to compete in any market environment. This manifests in more efficient drilling rigs, improved directional drilling, and improved water and sand injection techniques. These improvements increase profit margins, allowing many fracking firms to compete despite low prices.

**Shut-In Wells & Storage Capacity**

Summary:
- Shut-in wells act as a cap on prices: every time prices start to climb, companies put idled wells into production, pressuring prices back down.
- Current high inventories will absorb any increase in demand for a period, extending the duration of low prices.

Shut-in wells are wells that have been placed on hold as producing companies wait for higher prices before increasing production. Earlier in 2015, up to 3,600 wells were reported as shut in in the United States. These wells act as a cap on new development and prices. As prices increase slightly, companies can restart idled wells quickly, thereby increasing supply and driving prices back down. This acts as a “backlog” that slows new well development.

Oil storage capacity and refined petroleum product storage capacity are nearly full. These refined products will absorb the impact of demand growth over time, as the current inventory must be used before new product is needed. In addition, many manufacturing companies that use petroleum in their products have exploited low prices by expanding their inventory. All of these factors will delay the impact of increased oil consumption on oil prices. This threat has caused many investors to drop stocks in oil, and raises concerns about the potential duration of current low prices.

**Investment**

Summary:
- Banks and investors have greatly increased scrutiny of oil industry lending.

Since oil prices have fallen, lenders—especially banks—have increased their scrutiny of oil field investments. This results in capital that is either not available or is increasingly difficult to access for production firms and support companies. It also reduces the ability of those who are operating profitably to expand. In sum this puts some production companies in impossible situations, where they need to expand to survive but cannot access the capital necessary to expand.

“Capital runs from uncertainty, and it has in this case.”

Industry insider
PUBLIC OPINION

Summary:
- Public opinion drives long-term policy decisions through elected officials.
- Nationwide public opinion of fracking (which accounts for 90 percent of new development in the U.S.) is split.
- If young Americans maintain their perspective over time, opposition will likely outweigh support in the long-term.

Public opinion drives public policy. Typically, public sentiment motivates elected officials, who then regulate based on their perception of public opinion (or at least the opinion of their political base). While Utah likely favors fracking, according to a 2015 Gallup poll, national opinion is currently split down the middle: 40 percent support, 40 percent oppose, and 19 percent are undecided. Younger Americans and Democrats tend to oppose fracking, while Republicans and older Americans tend to support fracking development. These opinions tend to be geographically spread: several eastern states recently adopted fracking restrictions, while western states tend to accept and promote energy development within their jurisdictions.

If opinion swings away from fracking or oil development generally, more stringent regulations can be expected. Similarly, if the younger generation maintains their current perspective over time, the majority of the U.S. will oppose fracking as a development technique.

CONCLUSION

The current status of oil development factors in the U.S. is generally negative for prices and development. In the near future, the EPCA, the number of shut-in wells, and improvements to drilling and fracking technology will have the largest impact on U.S. producers’ decisions to increase or decrease production.

Over the long term, permitting processes and public opinion will have the largest impact on U.S. development. The following illustration presents an estimate of the current impact of these variables on prices in the U.S.

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1 Gallup is a polling company that tracks citizen attitudes across a range of topics.

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[Diagram of supply and demand, increase and decrease in prices, U.S. indicators]

Current price discounts negatively affect production, reducing supply and increasing prices.

Regulations on federal lands continue to increase the cost of production, thereby reducing production.

Public opinion is currently split, and is unlikely to affect oil prices in the near-term.

Decreasing costs for fracking wells have increased the number of producers in the market.

Near-capacity oil inventories and refined product storage limits increases in oil production.

Shut-in wells come online when prices edge upwards, acting as a cap for increasing prices.

The EPCA reduces the price U.S. producers receive when compared with global prices.

Current low prices are increasing demand.

New vehicle fuel efficiency requirements will decrease fuel consumption per vehicle.
PINPOINT PRESSURE
Wyoming, Utah, and New Mexico make up 72 percent of applications for permits to drill on federal lands in the U.S. (2014), increasing difficulty of development for federal portions of these states.

TOP PRODUCERS
Four states make up 67% of U.S. production: Texas, North Dakota, Alaska (including North Slope Production), and California.

CURRENT U.S. FACTORS

U.S. PRICE DISCOUNT
U.S. prices have been discounted roughly 10 percent per barrel since the beginning of 2010. This automatic reduction greatly decreases profit margins for U.S. companies and increases the impacts of low global prices. Removing this discount would likely increase production.

PUBLIC OPINION
According to 2015 Gallup poll, public opinion is split on fracking with almost 20 percent uncertain. Those undecided respondents could shift the future of fracking regulations.

Public opinion translates into policy. Vermont, New York, Massachusetts, Maryland, and North Carolina currently have temporary or permanent bans on fracking. Colorado will have an initiative on the 2016 ballot to allow municipalities to ban fracking within their jurisdictions. Counties and communities in 11 other states have banned fracking development within their jurisdictions while the state legislatures of Oklahoma and Texas have barred county and municipal level bans.

U.S. PRESIDENTIAL RACE
The 2016 presidential election will likely affect all forms of energy development in the U.S. primarily through the number, regularity, and severity of regulations prohibiting development.
Regulations affect oil development long before the oil is pumped out of the ground, and follow it all the way to consumers’ end use. The rules are many and complex. Separating regulations based on local, state, and federal levels can contextualize the challenges the industry faces.

**LOCAL LEVEL**

Individual communities have attempted, and succeeded, at banning fracking within their jurisdictions in Midwest and Eastern states. Other municipalities in Texas and Oklahoma have attempted the same but failed. Both state’s legislatures denied communities the right to refuse development in their jurisdiction to preserve personal land ownership rights and to avoid a “patchwork of unreasonable ordinances that would threaten oil and gas production.”

On the other hand, counties and communities in roughly eleven other states have banned fracking development within their jurisdictions. While still not widespread, if the banning practice continues, it could make production more difficult for fracking companies as they attempt to develop wells through a maze of local regulations, reducing the scale of development.

**STATE LEVEL**

New York and Vermont both adopted bans on all fracking activities within their states. Maryland, Massachusetts, and North Carolina have moratoriums on fracking to provide time for conducting additional research on the impacts of the process and for creating regulations for the industry before development begins.

Proposed legislation banning fracking has appeared in California, though the measure was defeated in the legislature. Efforts in Colorado will likely result in an initiative that would allow local communities to ban fracking to be on the ballot in 2016.

**FEDERAL REGULATIONS**

From 2005 to 2010, the Bureau of Land Management (BLM) offered 50.2 percent of the acreage for sale that the oil and gas industry expressed interest in leasing. Since a 2010 change in the lease sale and application processes, only 10.3 percent of acreage industry expressed interested in was offered for lease—an 80 percent decline in the amount of lands offered by the BLM.

Other regulations (like the Endangered Species Act) break-up the areas that the BLM offers for lease based on critical habitat designation and other criteria. In effect, this creates a checkerboard of small disconnected areas for development rather than large, connected areas. These types of regulations negatively affect development, as many companies avoid the added cost and difficulty. Ironically, it also negatively impacts the environment: companies must build multiple roads to well-sites that are spread far apart, rather than building one road to service many sites.

Federal regulation also bans the export of almost all crude oils. Many believe this results in U.S. producers receiving less per barrel than international competitors.

**PATTERN**

A clear pattern of “layer upon layer” exists for regulations: regulations are layered one on top of another at each level of government. This changes the fiscal and physical landscape for oil development.

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1. Troy Fraser, Texas State Senator

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**Layer Upon Layer**

Regulations tend to continue layering on top of one another at all three levels of government. This results in a complicated regulatory picture for oil companies who have to navigate regulation before accessing oil deposits.

Effective influence on federal regulations is largely beyond the ability of players in individual basins, while state and local regulations can be influenced greatly by local groups.
From 2010 to 2014, oil production in Utah increased by 40 percent, decreasing unemployment in the Uintah Basin to the lowest levels in the state. Oil jobs were easy to come by; entrepreneurship blossomed in oil and gas service businesses. Sales, transient room, fuel, and property tax revenues filled municipal and county coffers, allowing significant infrastructure development in Uintah Basin communities.

The disruptive 2014 price plunge surprised many people. Larger companies laid-off employees, many startups shuttered their doors, and retail and service businesses began to feel negative pressure as resident paychecks suffered.

In spite of this, the population has not decreased as quickly as in many past downturns—communities are showing resilience in expectation of better days ahead.
Uintah Basin development will be affected by all the factors relevant to the global and U.S. markets. The Uintah Basin also has unique oil resources. This means that it will be affected by unique difficulties and opportunities that are separate from those that affect other oil producing regions. The following are key components of why the Uintah Basin is unique, where it is now, and where it is likely to find itself in the future.

**GLOBAL ECONOMICS**
- Developing Economies
- International Agreements & Sanctions
- Technology
- Regional Wars
- OPEC Production
- Non-OPEC Production

**DEMAND**
- Public Opinion
- Price Discounts
- Cost of Fracking
- Shut-in Wells
- Regulations & Permitting
- Investment

**SUPPLY**
- Limited Market
- Oil Characteristics
- Price Discount
- Unconventional Resources
- Land Ownership

Even though Utah ranks 11th in U.S. oil production, this equated to only 1.27 percent of national oil production in 2014 and less than 0.01 percent of global production. 80 percent of Utah’s oil came out of the Uintah Basin, and roughly 90 percent of new oil development occurred there in 2014.

Despite being a small player in national and international production, the region’s culture appreciates and encourages the industry’s development while some other regions of the country try to discourage it. The Basin’s culture has been heavily influenced by the oil industry since oil and natural gas provide the majority of employment and wealth for the region. This culture is generally expressed through a hard-working, unassuming attitude. This resonates well with producers and attracts development despite some of the region’s production challenges. With few other economic drivers, the future of the Uintah Basin depends greatly on the future of the oil industry.

**UNIQUE OIL CHARACTERISTICS**

Summary:
- It’s waxy, solidifies easily, and has low sulfur content.
- While optimal for making lubricants, Uintah Basin waxy crudes have low gasoline content. Additional equipment is needed to refine large quantities.

One of the difficulties of oil development in the Uintah Basin are the Uintah crudes’ “waxy” characteristics. These crudes have a high paraffin content that causes them to harden when their temperature falls below approximately 105°F. This results in transportation difficulties, but the paraffinic quality also makes waxy crudes valuable for specific petroleum-based products and lubricants. Uintah crudes are also renowned for their low sulfur content, which makes meeting federal emissions regulations less expensive for refineries than many other crudes.

However, this oil does not provide as much gasoline per barrel as some other oil types available to Salt Lake refineries. It also requires additional refining equipment to break the hydrocarbon chain and remove the waxy characteristics before continuing the refinement process. Largely due to these characteristics, Uintah waxy crudes experience a significant price discount from refineries.

“I think the Uintah Basin is always going to be somewhat successful just because the people that live here work hard. They’re pretty tough people—they’re going to find ways to succeed.”

Cody Christensen
Uintah Basin AOG Planner

1 Roughly 105°F for black wax, 120°F for yellow wax.
LIMITED MARKET FOR SELLING WAXY CRUDES

Summary:
- Only two routes are available to export Basin oil. High shipping costs can also limit shipping distance due to its waxy characteristics.
- Salt Lake refineries are set up to handle waxy crudes.

Until recently, the only economically feasible selling option for the Uintah Basin producers was the five refineries along the Wasatch Front via State Highway 40 (with a very small percentage continuing on to Wyoming). Over time, these refineries have ensured that they have adequate capacity to handle essentially all Uintah Basin production.

In 2014, three oil transloading facilities opened in Carbon County as old coal shipping facilities diversified their portfolios. The three stations have capacity to haul 69 percent of the oil that is produced in the Uintah Basin\(^2\). Currently, these rails take oil on heated cars to the Gulf and West Coasts, with a limited amount being shipped to Oklahoma. Despite low oil prices, a pipeline from the Basin to these facilities is currently in discussion. These facilities have opened many doors for producers; however, their full impact on the industry is still to be determined.

PRICE DISCOUNT

Summary:
- Uintah Basin crude is discounted about $10 a barrel less than U.S. average prices.
- A reduction in the price discount will likely increase production and help Basin producers ride out low prices better.

Uintah Basin crude has been discounted an average of $11.93 less than WTI prices per barrel, and $21.40 less than Brent crude. Many people in the Basin believe the discount is partly a result of Uintah Basin crude’s constrained access to a handful of refineries. They claim transportation barriers to shipping waxy crudes hold the market captive to Salt Lake refineries since the oil has nowhere else to go.

West Texas Intermediate (WTI) is a benchmark crude oil for the U.S. This means that oils produced in different regions are priced based on their characteristics compared with WTI. Brent is a global benchmark crude, against which many oils are priced. Despite having very similar characteristics, U.S. crudes have been discounted substantially from Brent, averaging $9.46 less since 2010. Utah’s waxy crudes have been discounted significantly more, based on differing characteristics and, some believe, as a result of the captive market to refineries in the Salt Lake area. Utah’s first purchase price averaged a discount of $11.93 from WTI and $21.40 from Brent prices.

“[The price discount causes] a reduction in net profit. It turns the Basin into kind of a lightswitch basin—you have a Basin where a 30% decrease in the price of the commodity creates an 80–90% decrease in activity. People send their capital elsewhere in the country.”

Industry insider

\(^{2}\) Based on 2014 production levels (27,000 bpd capacity).
This has resulted in the belief that expanding Utah's oil refinery market will bring waxy crude prices closer to the U.S. average. However, the necessity of heating the oil for transportation may not result in leveling prices completely. The new oil transloading stations will allow Utah producers to test these assumptions.

Regardless of the cause, the size of the price discount is burdensome for Utah producers, especially when prices are down; their prices are reduced to among the lowest in the U.S. market. As a result, any great change in the discount is likely to increase Basin production.

**UNCONVENTIONAL RESOURCES**

**Summary:**
- The Basin has large untapped resources in oil sand and oil shale. Small demonstration facilities recently started demonstrated extraction feasibility.
- Large-scale development will bring increased economic stability to the region.

Oil sand and oil shale deposits in the Uintah Basin contain a combined 320 billion barrels of oil. Estimates of what is recoverable vary, however Utah's oil and gas in the Basin and the impact of the Uintah Basin Applied Technical College (UBATC) and Utah State University Extension (USU), the Basin has a trained and capable work population. This workforce increases the attractiveness of the region to oil industry businesses. Continued development of these educational institutions will improve these benefits and help locals transition to management positions in oil companies in the Basin and across the country.

**MCW Energy Group and U.S. Oil Sands are currently demonstrating promising new tar sand oil extraction technologies at their respective facilities in the Basin. On the other hand, oil shale companies have been impacted more severely by low prices than other unconventional and have slowed development. It is unclear when development of their facilities will be completed.**

These oil operations tend to have higher levels of production stability than fracking operations. The capital costs of these mining facilities generally require them to continue producing at a base level regardless of oil prices. For this reason, they could provide high-paying jobs that fluctuate much less with the market than their fracking counterparts. Local tax revenue would also be more consistent for local governments. Large scale development of these operations would bring more economic stability to the region.

**Land Ownership**

**Summary:**
- Much of the Basin's oil resources are located on federal and tribal lands.
- Regulations on federal land significantly deter oil development.

Despite accounting for only 1.27 percent of U.S. oil production, Utah accounted for over 25 percent of all permits to drill on federal lands. Two-thirds of Utah is federal land. Much of the conventional and unconventional oil reserves in the Uintah Basin exist on federal and tribal lands. As noted previously, permitting for land managed by the federal government takes significantly longer and has many more regulations constraining development than state or private lands. Duchesne County is 44 percent federal land, and 20 percent tribal land; Uintah County is 58 and 16 percent respectively.

As a result, changes in federal land management, permitting processes, and regulations will impact the Uintah Basin more than almost all other U.S. oil-producing regions. As regulations and permitting procedures are reduced, more federal lands will be developed. If the current trend of increasing regulations and permitting times continues, production on federal land will continue to decrease as a percentage of total development.

**Conclusion**

The Uintah Basin's pro-oil culture and significant oil resources mean that oil production in the Basin will continue to fluctuate with global markets. The Basin oil industry will face continued difficulties as a result of the waxy characteristics of Basin crudes, limited access to refinery markets, the resultant price discount, and regulations that hamper development of federal lands. Changes in these variables will have a significant impact on Utah's oil production capacity. In the long-run, oil development in the Basin could grow significantly if current recovery efforts of oil sands extraction and/or if planned oil shale recovery methods prove economical.

**Workforce**

As a result of long-term development of oil and gas in the Basin and the impact of the Uintah Basin Applied Technical College (UBATC) and Utah State University Extension (USU), the Basin has a trained and capable work population. This workforce increases the attractiveness of the region to oil industry businesses. Continued development of these educational institutions will improve these benefits and help locals transition to management positions in oil companies in the Basin and across the country.
When developed, unconventional resources continue producing even in downturns, resulting in potentially more stable development.

Extensive federal lands in the Basin result in more expensive development for oil companies who do not have access to private land.

Uintah Basin’s pro-oil development culture results in leaders who support industry development.

A highly trained, in-place workforce make starting production in the Basin easier than many locations.

Limited access to refineries decreases the size of the market Utah producers can sell to.

The waxy crude discount decreases both profit margins and the price Utah producers are paid for their product.

“Honestly, I would guess that you would be looking at 100% more oil that would have been produced in the Basin if it weren’t for federal regulations.”

Industry insider
Prices of production are different for every process, oil-field, company, and well. Determining specific prices is all but impossible. Different regions, however, have cost-per-barrel ranges that provide insight into whether or not a company will make the decision to produce within a specified region.

These numbers come from engineering firm estimates, industry experts, and industry insiders. It does not depict all global production prices, and these prices change depending on new technologies and processes. Since prices fell, oil companies have greatly reduced their cost per barrel, which allows many to remain viable who otherwise would not produce given current low prices. This data comes from before and in the beginning of the drop in prices, and therefore does not hold today. Still, the estimates listed above provide an insight into cost of production in the Uintah Basin.

The money given to the Permanent Community Impact Fund is distributed by a ten member board of elected officials and representatives appointed by the Governor. These board members steward the funds received from the federal government and appropriate them to communities that apply. According to state and federal statute, the Permanent Community Impact Fund Board is tasked with prioritizing funding for areas most impacted by extractive activities.

### Money from Federal Lands

Natural resource extraction on federal lands generates economic activity in the originating counties and the state. A portion of funds received by the federal government from extraction on federal lands are returned to the state of Utah. State statute reserves this money for a few state agencies, the county of origin, and the Permanent Community Impact Fund.

The funds returned to the county are intended for use in mitigating the impacts of resource extraction.
There are many issues that will affect Utah production in the coming months and years. These are a few highlights of recent events and upcoming issues that will play a role in the continued development of oil in the Uintah Basin.

**Opportunities for increased control or influence over federal lands provide important opportunities for increasing oil development, while new transportation possibilities could help improve returns for producers.**

Unconventional oil resources in the Basin are the basis for enormous future development potential, but no significant change can be expected till prices rise.

**Legislation**

Rep. Bishop’s APPLE proposal would allow western states to select 5,000 acres of BLM or USFS land to allow development. The revenue would be used for public schools.

Rep. Bishop proposed the Public Lands Initiative which would assign federal protections to 3.9 million acres of eastern Utah in exchange for 365,000 acres in the Uintah Basin for oil and gas development.

**Transportation**

As the primary route for oil from the Basin, Highway 40 has ~300 oil trucks drive over it every day—the same road impact as 1,500,000 cars each day.

Highway 191 provides a new alternate means of moving oil to three new oil loading train stations.

Rail lines through Carbon County enabled rail access to refineries throughout the country.

Three new oil load-out facilities have daily capacity to carry about 77,000 barrels of Uintah crudes to markets nationwide every day—about 69% of Uintah crude production (2014).

**Land Ownership**

Utah is 66.5% federal land.

A land swap in 2014 deeded ~25,000 acres of state land in Grand County for ~35,000 acres of federal land in Uintah County that could be developed for resource extraction.

**Resources**

Oil sand resources contain 15 billion barrels of recoverable oil.

Green River Oil Shale Deposit contains 77 billion barrels of recoverable oil.
The United States is the only major oil producing country in the world that has a ban on exporting oil. This ban results from the 1975 Energy Policy and Conservation Act (EPCA) which went into effect during President Ford’s administration. The ban was instituted in response to the 1973 oil crisis caused by an oil embargo placed on the U.S. by the Organization of Arab Petroleum Exporting Countries (OAPEC). The policy was intended to protect America from oil supply disruptions.

The recent explosion in production pushed the U.S. to be the number one oil producing nation in 2014; now companies and representatives in Congress question the continued need for the export ban in light of the U.S.’s expanded role in global production.

The most pressing impact of the EPCA for oil companies in today’s market are the pricing discrepancies between U.S. oil and global oil prices. Simply put, U.S. refineries are able to pay less for U.S. crude because the ban creates a captive market for suppliers. This has reduced the ability of many oil companies to compete in low-price conditions.

Advocates of removing the ban believe that its removal will result in a balancing of WTI and Brent because U.S. oils would be able to compete and sell to foreign refineries. Several reports support these findings, including a report from the Government Accountability Office.

The Uintah Basin faces similar difficulties in getting to market. Until recently, the only option for producers was selling their crudes to five refineries on the Wasatch front. Many producers believe this is the cause of even higher price discounts placed on Utah’s waxy crudes. The lower prices that Utah producers are paid make production in the Basin difficult when compared with many other crude prices in the country and across the world. From 2010 to August 2015, Utah’s black waxy crude was discounted an average of $11.93 from WTI and over $21 dollars from Brent Crude.

CHANGE IS COMING

In 2015, Legislators in the U.S. House of Representatives proposed a bill that would eliminate the ban on exporting oil from the U.S.—the cause is gaining political vitality. It is possible that the ban could be lifted in the near future, allowing U.S. producers to compete in the global market on an even footing.

In Utah, three new rail oil load-out facilities in Carbon County have opened the way for waxy crude to find its way to refineries in the Gulf and West Coasts, where they are needed to mix with the light, sweet crudes coming from the Bakken region in North Dakota and Montana. Whether Salt Lake refineries will be willing to pay more as a result of increased competition remains to be seen.

For the Uintah Basin, a change in the status quo that allows for exportation of oil and/or increased markets for its waxy crude would benefit producers in the region and help them compete more in the current low-price environment.


EIA Spot Prices

From 2010 to August 2015, West Texas Intermediate (WTI), a U.S. benchmark crude oil, sold for an average of $9.46 less than Brent Crude. This reduction doesn’t decrease production much when prices are high; however in low price environments, this cut is more difficult to deal with.

During interviews with two Salt Lake refineries, one refinery operator stated they were unlikely to reduce the discount as a result of increased competition, while another said he believed increased competition would increase prices.
The oil industry impacts every community near its operations. Each community has unique concerns, issues, and opportunities, but many impacts are shared. Market booms raise questions about housing, water, and service provision to quickly increasing populations, while busts create concerns about funding basic infrastructure needs, city services, and how to plan for a very uncertain future. Duchesne and Uintah Counties and Roosevelt City are no exception. They are experiencing the benefits and difficulties of the industry in a unique and shared manner.
COMMUNITY IMPACTS

The following section explores the shared impacts of oil on Duchesne and Uintah Counties and Roosevelt City. The level of impact is profound on factors from finances to regional culture. These issues are considered in context of their impact during 2014, and the ensuing price bust in 2015:

- Culture
- Infrastructure
- Government Finance
- Demographics/Socioeconomics
- Economic Diversification
- Planning for the Future

CULTURE

Interviews with community leaders, business owners, current residents, and former residents, demonstrated the impact of oil on the culture of the Uintah Basin. Oil rig work is backbreaking, driving trucks entails long hours, and rough roads can make any job in the oil fields difficult. The characteristic of oil work, combined with the history of hardworking ranchers have created a resilient, hardworking culture that is pervasive across the communities in the region and helps community members as they find ways to weather tough economic times.

The surrounding mountains and desert landscapes provide recreational opportunities for residents that are an important feature of community life. Residents hunt, fish, hike, and ride in the mountains and desert. They understand and care about the surrounding land because, for many, that land anchors them to the Basin. The people here know that developing oil and gas and preserving pristine natural beauty are not mutually exclusive. They work hard to accomplish both ends through responsible development and wise decisions about when, where, and how to develop.

Local decisions improve local outcomes: community members have the most to lose or gain and understand both the land and industry from experience.

INFRASTRUCTURE

Population booms and busts make providing the right level of infrastructure difficult. During boom times, community assets (roadways, parks, sewers, and water systems) can almost always seem inadequate, while busts can make funding these assets difficult. Two specific areas of concern are roadways and water.

Oil development has a very high impact on roadways in Uintah and Duchesne County. While oil production on federal lands typically occurs off paved roadways and on federally maintained roads, oil production on private property increases the impact of oil traffic on locally maintained roadways and collector streets that bring traffic to the highway. The Basin’s cold winters and warm summers, heavy oil and gas truck traffic, and increasing traffic from population growth result in a constant need for road repair.

Water is also a primary concern for the relatively dry region. Fracking and other oil developments require significant amounts of water. Ranching and agricultural developments throughout the region also use significant amounts of water, and often have historic water rights. These water demands, combined with a fast-growing population, create concerns that continued growth of the oil and gas industry and local populations could lead to conflict over water management in the future.
GOVERNMENT FINANCE
In high production periods, the oil industry generates significant tax revenues that help counties and cities fund capital projects and services. Increased property values, federal mineral leases royalties, sales tax revenue, and transient room tax revenue from filled hotels fill government coffers. Costs also rise as city services and infrastructure extend to, and are used by more people more frequently. However, costs do not rise proportionally because most of the infrastructure exists already.

In low production periods, decreased population, empty hotels, decreased sales tax revenue, and less federal lease royalties result in less revenue for communities. This poses budgeting problems for community leaders as they try to budget for projects that require long-term commitment from a community’s funds. These issues are most apparent when high production drops quickly. In these situations, planning for next year can be based on logical assumptions, yet end up being completely incorrect. This can cause fiscally responsible decisions today to have negative fiscal consequences tomorrow.

DEMOGRAPHICS & SOCIOECONOMICS
Leaders from both Uintah and Duchesne counties estimated that oil and gas make-up roughly 50-60 percent of the local economy. As a result, population and employment follow the ebbs and flows of prices and production of natural resources. This leads to very different demographic shifts in boom and busts.

During high production, housing capacity is a problem, leading to exceptionally high prices. Since many temporary workers stay for long periods in hotels, rooms are difficult to find unless booked months in advance. This makes tourism a difficult strategy in boom periods. At the same time, unemployment plummets, income per household jumps, and opportunities for entrepreneurs abound.

When energy prices go down, unemployment rises, housing becomes vacant, blight becomes problematic, and property values fall, leaving those who purchased during the boom in fiscally difficult situations. Income contracts, job losses are common, and many peoples’ hours are reduced from having significant overtime to full-time or even part-time work. This makes paying for homes and vehicles purchased in the boom very difficult and many residents experience financial trouble.

Between 2014 and 2015, Utah’s Department of Workforce Services (DWS) estimated that Uintah and Duchesne counties have lost a combined 1,089 jobs due to low oil prices. Many local leaders estimate that the real number is actually closer to 2,000 or 2,500 since DWS does not have data on many small businesses involved in the oil fields. These leaders also pointed out that DWS’s estimate did not account for the large contingency of workers who went from regularly working overtime to 40 hours or less a week.

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ECONOMIC DIVERSIFICATION
Residents, elected officials, and private industry leaders consider economic diversification key to the future success of the Basin. The Basin has progressed since the 1980s, and there are significantly more opportunities now than in the past; however, diversifying the Basin’s portfolio with businesses that can pay enough to keep workers from leaving to work in the oil and gas industry is difficult. Distance from population centers and limited access by air, rail, or major freeway also make diversification difficult.

PLANNING FOR THE FUTURE
Fluctuating development pressure, population size, and governmental revenue make planning for the future exceptionally important—and exceptionally difficult—in the Uintah Basin. This mostly affects long-term planning, but also significantly affects short-term budgeting. Basin leaders must consider how a fluctuating oil industry will affect their ability to fund long-term projects across an inconsistent revenue stream, and how to incorporate a variable population while planning 10, 15, and 20 years down the road.

In addition, despite bringing in significant amounts of revenue, the industry makes planning next year’s budget difficult. Budgeting six months into a production upswing for the following year can cause reasonable conclusions about next year’s spending capacity to run a community far over budget. Having an economy based on oil and gas makes the standard practice of planning based on past revenues a very dangerous practice. Instead, leaders almost have to divine the future as they make reserved estimates about the upcoming budget cycle. Adding to the difficulty, citizens generally oppose governments saving significant amounts of tax revenue, making the establishment of rainy-day funds politically difficult.

“\nWhen people plan on sustainable income, rather than their “boom” income, they are much better prepared for and can handle the busts. There are opportunities in both types of markets—by good planning local companies and individuals can benefit from the boom and the busts.”

Nathan Snow
Real Estate Broker
When the oil markets boomed in 2010, oil production in Uintah County more than doubled, increasing 103 percent by 2014. This increased the number of oil service companies in the county and contributed economically to a county already experiencing the benefits of significant natural gas development. New, unique, and unconventional resources in oil shale and tar sand projects were in development. Jobs were plentiful and the outlook was positive.

Deflating natural gas prices in 2014 and 2015 decreased production, while dropping oil prices significantly reduced development by most conventional and unconventional oil producers. Well-servicing and drilling companies experienced the most immediate impacts, resulting in job losses and reduced workloads. However, many producing companies continue to maintain some level of production and have positioned themselves well to handle low prices.
Transportation
Almost all oil and some natural gas extracted in Uintah County is taken to market on Highway 40 through Duchesne County. That equated to roughly 120 trucks per day in 2014.

The completion of Seep Ridge Road in November 2014 increased access to oil and gas resources in the Book Cliffs region of Uintah County.

Natural Gas
Uintah County produced 69.3% of Utah’s total natural gas in 2014. This additional economic boon typically counterbalances low oil prices. Unfortunately, recent low prices in natural gas have created a net reduction in activity.

Land Ownership
A large amount of the energy development in Uintah County occurs on federal lands, increasing county revenues.

In a land swap, completed in May 2014, 35,000 acres of federal land in Uintah County were deeded to the state for development in exchange for increased protection of 25,000 acres of formal state land in neighboring Grand County.

Economic Diversity
Vernal has become the economic hub of the Uintah Basin, with many residents driving from across Duchesne and Uintah counties to shop there. This increases economic stability for the city and employment opportunities county-wide.

Tourism increases Uintah County’s economic stability. Dinosaur National Monument and Green River rafting trips bring in tourists from across the globe. In 2014 250,000 people visited Dinosaur National Monument.

Alternative Resources
MCW Energy Group recently opened a demonstration facility on Asphalt Ridge, becoming the first oil sand development company in the United States. Although a small operation, the prospect of continued development of oil sand resources could result in significant development.

The vast majority of the 77 billion barrels of recoverable oil contained in oil shale is located in Uintah County. Tomco Energy, Red Leaf Resources, and Enefit American Oil are all vested in producing from this resource, though none of the three have expected start dates.

U.S. Oil Sands has a tar sand mine in the PR Springs area in southern Uintah County that is expected to begin producing 2,000 bpd by the end of the year and expects to expand the operation over time.

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Uintah County currently produces less oil than Duchesne because the county has a smaller reserve of shale oil deposits than Duchesne County. However, Uintah County still produced 32 percent of the state's oil in 2014. The county has additional resources and characteristics that make the level of impact oil has on its economy and communities different from Duchesne County including:

- Significant unconventional oil resources
- Largest natural gas deposits and production in Utah
- Commercial hub of the Uintah Basin
- Significantly more development on federal lands
- Location of a national monument and access to the Green River

UNCONVENTIONAL RESOURCES

Uintah County is home to the vast majority of oil shale and tar sands in Utah. The estimated 92 billion barrels of recoverable oil from these two resources is a great potential boon for Uintah County. These resources are mined, not pumped or extracted like traditional oil wells. Traditionally, these types of facilities maintain some level of operation through price changes, which increases employment stability.

Tar Sands

MCW Energy Group is currently operating a small tar sand oil recovery operation on Asphalt Ridge, just west of Vernal. U.S. Oil Sands is planning on starting their mining operation located south of Vernal in the Book Cliffs by the end of 2015. With an estimated 15 billion barrels of recoverable oil from tar sands existing in the Basin, these companies could be the beginning of largescale tar sand development in the state.

If these tar sand mines expand, it could greatly increase economic stability in the area. These operations can typically vary the intensity of their operations to a degree, but shutting down is often cost prohibitive. Even when prices slump they will likely continue developing the resource, leaving jobs in place.

Oil Shale

Under Uintah County lies the Green River rock formation with 77 billion barrels of recoverable oil. The thickest, most resource-concentrated sections of oil shale deposits are in Uintah County. Enefit and RedLeaf Resources both took significant strides towards production through 2014, but low prices have slowed their development significantly. TomCo Energy is new to the region as of 2014; they own leases but are waiting until oil prices rise to continue the permitting and facility development process.

NATURAL GAS PRODUCTION

Uintah County accounted for 69.3 percent of Utah's natural gas production in 2013, maintaining their rank as the number one natural gas producing county in Utah. These abundant gas resources diversify Uintah County’s employment and government revenue streams, limiting the impact of low oil prices.

COMMERCIAL HUB UINTAH BASIN

Since the Vernal Walmart was completed in December 1990, Vernal has steadily increased its commercial presence in the region and has become the shopping hub for most Basin communities. Today, most major chain stores in the region have locations in Vernal and essentially all personal services are available in Vernal. This increases revenues for the county and city, and has attracted significant population growth. This growth buffers the impact of low oil prices on public finances by diversifying revenue streams and providing additional employment.

DEVELOPMENT ON FEDERAL LANDS

Uintah County has 14 percent more federal land than Duchesne County; tribal lands make up 16 percent of the county compared with Duchesne's almost 20 percent. This has resulted in increased development on federal lands compared to Duchesne County. As a result, Uintah County has less development on private and tribal lands, which lessens the impact of oil and gas development on paved municipal and county roads—much of the oil development occurs away from populated areas and private lands.
250,000 tourists visited Dinosaur National Monument in 2014, and thousands of tourists rafted the Green River in eastern Uintah County. These and other tourist attractions, like renowned mountain-biking trails, attract a large number of visitors to Uintah County, particularly in summer months. While not the main economic driver, the number of tourists add to Uintah County’s economic diversity and represent possibilities for future economic development.

Uintah County receives significantly more mineral lease funds through the state than Duchesne County as a direct result of a higher percentage of oil and gas development occurring on federal lands. Being the regional shopping hub also increases Uintah County communities’ sales tax revenues, and the natural gas resources significantly add to Uintah County’s revenues.

Jess grew up in the Basin helping his father set up living quarters for oil and gas rig workers. He started his own trucking company, servicing oil and gas rigs across the Basin. However, this bust has hit his company hard and he’s run through a string of bad luck. It’s the strong ties from growing-up in the Basin that have helped him get work when others can’t. Jess isn’t sure about his next step, but trusts that time will tell. When questioned about the future of the oil industry, he stated, “we haven’t seen the worst of it yet.”
“We have our road map laid out; whether we go fast down that road or slow, we’re still following [the] path that’s been laid out.”

Robert Barnhill
Uintah County Planner
DUCHESNE COUNTY

Riding the wave of higher oil prices, Duchesne County increased production by 78 percent from 2010 to 2014. In the same period, new federal permitting regulations pushed oil producers to private and tribal lands. This decreased county revenues but jobs were still plentiful—Duchesne residents had the highest average pay in the state. The population exploded: in 2013, Duchesne grew at the second fastest pace in the nation.

When prices dropped in 2014, county revenues plummeted. From 2014–2015, approximately 749 jobs were lost and employment became scarce.
Tourism
Despite having many spectacular regions, tourism in the Uintah mountains and Nine Mile Canyon area is constrained. No specific attraction exists that currently drive high levels of tourism in Duchesne County.

Transportation
Highway 40, and a few other county roads, get all traffic to and from the Wasatch Front (including all oil and gas traffic). The average impact of one of these trucks equates to 5,000 vehicles. In 2014, this highway saw 300 oil trucks a day—or the equivalent impact of 1,500,000 daily vehicles—from oil and gas traffic.

Natural Gas
Duchesne County accounted for 9.5% of Utah natural gas production in 2013. Natural gas production acts as a counterbalance to oil, but is relatively small in Duchesne County. Recent low natural gas prices have also decreased its impact.

Resources
Part of the 77 billion barrels of recoverable oil located in the Green River formation's oil shale is in Duchesne County. Generally, these reserves appear to be less thick than in Uintah County, and are less likely to be developed in the near term.

Land Ownership
Since 2010, a decreasing percentage of oil development in Duchesne County has occurred on federal lands. Significant private and tribal land resources allow access to the resource without using federal land, thus decreasing federal lease revenues. Significant amounts of oil extraction occurs on tribal lands in Duchesne County. The county gets much of the wear and tear on roadways that access these developments, but little revenue for maintenance.

BLM regulations have pushed production to private lands, thereby increasing the use of county and municipal roads to transport equipment and oil. This significantly impacts county and community roads.

Infrastructure
A new pipeline project is being considered that could accept up to 60,000 barrels per day. Market conditions, production levels, and demand for waxy crudes will help determine the feasibility of the project.

A 135 mile pipeline that was being studied from Duchesne County, south of Myton, to the Tesoro Refinery north of Salt Lake City was cancelled in May 2015 due to low oil prices. The project may be resurrected when prices and production rebound.
As community members struggle financially, so does Duchesne County and its communities. Nearly 70 percent of Uintah Basin job losses reported by DWS were in Duchesne County. An additional 1,000 to 1,500 jobs are estimated to have been lost in the Basin due to low prices—most of which are likely in Duchesne County. This is largely because Duchesne County is home to the majority of oil development that occurs in Utah, and has less economic diversity. As a result, fluctuations in the oil market affect Duchesne’s communities more than any other county in the state.

The following impacts are unique to Duchesne County:

- Land ownership—Federal, Tribal
- Development on Private Lands
- Federal Lease Revenue
- Single Resource—Oil
- Funding
- Location

**LAND OWNERSHIP**

Federal lands make up 44.4 percent of Duchesne County’s land, with another 20 percent being tribal lands. However, Duchesne County has almost 13 percent more private land than Uintah County (28 vs 15 percent respectively).

The oil deposits in Duchesne County are on federal, state, tribal, and private land. Due to increasingly difficult federal land regulations and permitting however, a large percentage of natural resource production within the county occurs on tribal and private lands—significantly more than neighboring Uintah County. Having such high percentages of production on private and tribal lands has unique consequences for the county and its communities.

**Private:** Development of private lands has increased the amount of oil traffic on paved county and municipal roadways within Duchesne County. This increases the amount of maintenance required by both levels of government, but does not bring in tax revenue equal to the level of wear and tear on roads. Private land development also creates issues between landowners and mineral rights owners. Many people have purchased land without owning or controlling the extraction of minerals that lie beneath, leading to misunderstandings between property owners and mineral rights owners.

**Tribal:** Development on tribal lands results in very little revenue returning to the county via severance taxes on wells drilled. The concern mirrors development on private lands: development occurring on tribal lands uses county roads to get oil out, but does not provide funds equal to the cost of the maintenance.

**LOCATION**

State Highway 40, the primary thoroughfare for all Basin traffic, runs through the center of Duchesne County and her largest communities. This large amount of traffic benefits communities in many ways, increasing gas and roadside purchases, but it also creates challenges for the communities.

**State Road**

Highways 40 and 191 are both state roads and their maintenance is the responsibility of the Utah Department of Transportation (UDOT). Basin leaders expressed appreciation for the high-quality job UDOT does in managing the highways. Opportunities for improvement exist, but overall most people were pleased. The significant impact of boom-time traffic makes maintenance difficult, especially when considering the Basin’s hot summers and cold winters.

Having high levels of production on these two land ownership types increases funding challenges for Duchesne County with respect to roadways and other capital projects under their jurisdiction.

**LESS NATURAL GAS**

Duchesne County was the third largest producer of natural gas in 2013 at 9.5 percent of Utah’s total production1. This relatively large amount of natural gas development does counter-balance oil production in some respects. However, production is far too low to actually offset oil revenues during low price periods. In addition, recent low gas prices will likely result in less natural gas production than previous years for Duchesne and Uintah Counties.

Kathy grew up in the Basin surrounded by her beloved desert and mountains. All of her family has stayed in the Basin except one sister, “I feel sorry for them, they miss out on so much.” Kathy has over 20 years of experience as an employment counselor for the Department of Workforce Services; she’s seen the ups and downs of oil and gas. According to Kathy, the 2014 bust has put a lot of pressure on employment in the area. She explained that the local job board typically has 200-300 postings, but in recent months it’s been reduced to 100—the lowest she can remember.

Still, her outlook is positive. She believes in the region and its people to get through hard times—they have before and they will again.

> “2008 was really scary, but I’m thinking we’re there—it’s probably as bad as it was then.”

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1. Compared with the top producers Uintah County (69 percent), and Carbon County (13 percent).

**The Counselor Kathy Deets**

**Occupation** Employment Counselor; DWS

**Time in Basin** Whole life

**Why the Basin?**

- Camping, fishing, and four-wheeling
- Safe community
- The community works together

**Recommendation** Work closely together as a region

**Contact Information**

Kathy Deets
Employment Counselor
Department of Workforce Services

**Kathy’s Story**

Kathy grew up in the Basin surrounded by her beloved desert and mountains. All of her family has stayed in the Basin except one sister, “I feel sorry for them, they miss out on so much.” Kathy has over 20 years of experience as an employment counselor for the Department of Workforce Services; she’s seen the ups and downs of oil and gas. According to Kathy, the 2014 bust has put a lot of pressure on employment in the area. She explained that the local job board typically has 200-300 postings, but in recent months it’s been reduced to 100—the lowest she can remember.

Still, her outlook is positive. She believes in the region and its people to get through hard times—they have before and they will again.

> “2008 was really scary, but I’m thinking we’re there—it’s probably as bad as it was then.”
Timing
As the only truck route to nearby refineries, highway maintenance impacts the oil industry in the Uintah Basin more than other basins. Because waxy crudes solidify over time, quick transportation is of the utmost concern to Basin production and hauling companies. Similarly, the amount of time drivers are on the road increases costs in personnel, fuel, and maintenance. In this industry, time literally is money. This makes timing repairs on Highway 40 important.

Downtown
Multiple Duchesne County communities have Highway 40 as their main street, making repairs in these areas difficult for UDOT and the communities. During high production periods, managing the repairs of these streets has serious implications for mainstreet businesses, quality of life, and the amount of time it takes trucks to get to market. In addition, these towns have hundreds of large oil trucks rumbling through each day, further disrupting the ambiance of small-town mainstreets.

The Builder Darren Snow

Occupation: Owner of C & D Construction
Time in Basin: Most of life
Why the Basin?: Boating and Camping, Slower pace, it’s not a rat race, Family lives here
Recommendation: Prepare for the bust during the boom, and the boom during the bust.

Optimistic, straight-forward, and charismatic, it’s clear Darren works hard and plays hard. Born and raised in the Uintah Basin, he’s experienced both sides of the boom and bust cycle many times. He’s quick to note that the fluctuations aren’t as severe today as they were when he was a kid. He remembers classes at school being full one week and half empty the next week because of a slump in prices. He believes the community is handling low prices better today than it did when he was younger.

After high school, Darren graduated from Utah State University and worked in Logan for a time until he decided to live closer to family, and the opportunities the Basin affords. He worked for his uncle until he was able to start his own construction business in 2007. The lessons he learned growing up in the Basin’s volatile economy stuck with Darren, and he’s applied them to his business by keeping the long view, being financially conservative, working alongside his crew, and ensuring they have a broad skillset to handle any job that’s available.
“We’ve had booms, we’ve had busts. It’s happened and it’s going to keep happening. You’ve just got to plan for it.”

Cody Christensen
Uintah Basin AOG Planner
ROOSEVELT CITY

When oil prices rose over 100 dollars per barrel and production in the Uintah Basin took off, Roosevelt City filled to near capacity. New homes were being sold as soon as they were built. Highway 40 was full of oil and gas trucks, industry workers spent money in downtown shops, and hotels were full to capacity. Private companies and citizens donated to rebuild the city pool. City revenue rose significantly and companies in the community were thriving.

When prices dropped in 2014, the game changed overnight for the city and its residents. Sales and transient room tax revenue dropped by over 30 percent each, and funding for major city projects became questionable.
Highway 40 and State Road 121 converge in Roosevelt—this results in a majority of oil developed in Uintah County and northern Duchesne coming through town. The community’s employment is closely tied to the oil industry, as are the viability of many shops, restaurants, and stores in town. Considerations specific to Roosevelt include:

- The Town of Ballard’s boundary on the other side of the county line
- Limited land available for continued development
- Leakage of sales tax revenue to Vernal and Ballard
- Service provision to those outside its boundaries

NEIGHBORING COMMUNITIES

Ballard is a small town abutting Roosevelt on the Uintah side of the county line. Union High School literally straddles the line, and the separation between the two towns is nearly indistinguishable. However, Ballard has a significant amount of open, available land east of the county line. This land has attracted several new businesses, and it is likely to attract more because land is readily available on the regions primary thoroughfare.

SALES TAX

Many Roosevelt residents shop in Vernal because of the larger variety of retail. In boom times, this leakage is less difficult to endure—revenue increases significantly from the surrounding shops, restaurants and businesses. However, when the market busts and people shop more on a “needs” basis, Roosevelt is left with significantly less sales tax revenue relative to the area’s sales tax revenue potential.

LIMITED LAND

Roosevelt has a limited amount of land available for continued development along Highway 40, its primary thoroughfare. While some land still exists in the southwest “stem” of town towards the airport, it’s largely built out with oil and gas service companies, equipment sale companies, repair shops, and a hotel. All of the land in downtown is taken by shops, gas stations, restaurants, car dealerships, offices, and stores. This lack of open land on the primary road makes new development for companies difficult.

SERVICE PROVISION

Roughly 4,000 people live in the unincorporated areas surrounding Roosevelt City. Despite being outside city boundaries, most of these people use city services and are considered part of the community. This creates a false perception of Roosevelt’s size as smaller than it actually is. City leaders are concerned Roosevelt is overlooked by some companies and potential retail because their official population is smaller than the actual size of the community when contiguous developments are included.

This large population outside of city limits also creates significant infrastructure for which the city is financially responsible. This infrastructure creates significant costs; if the city is not deliberate in setting service fees, it could cause future fiscal problems.

PLANNING IN THE BOOM & BUST

Roosevelt grows and shrinks with the price of oil. This raises questions about how and when to make decisions as a community. Community leaders encourage residents to help develop plans, but the swings of the local economy often impact the input and perspective of community members.

Residents’ attitudes can change dramatically. Support for projects may be significantly higher when city revenues are high and residents have work opportunities. Conversely, when employment falls in the bust, the community is more likely to have reservations towards community projects and opportunities. Community leaders have difficult decisions about how and when to plan, and how and when to implement those plans.

The Everyday Man

Suni Crosby

Occupation: Water Hauler
Time in Basin: Whole life
Why the Basin: Scenery and the mountains
Riding his motorcycle
It is home to him
Recommendation: Be careful, save during the boom

We met Suni outside enjoying a coffee on a late-summer day. Not one to volunteer unsolicited advice, Suni sums up the unassuming, hardworking attitude that is fundamental to the community culture in the Basin. He grew up here; he loves the area—it’s his home.

“When you’re booming, you got all that money and you think you’re on top of the world. But if you don’t save up and prepare for it, when it busts—you’re screwed.”

With a quiet tone, Suni described his life living in the Basin—working hard trying to survive financially as a delivery man or as an employee of a local laundromat in low production periods, to working on a fracking crew and water hauler when production was up. Like many in the Basin, Suni does what needs to be done which collectively keeps the wheels of the local economy turning. He is currently hauling water, and says he’s not too worried about losing his job: he works hard, does it well, and doesn’t complain—it’s his recipe for staying employed in a tough market.
CURRENT ROOSEVELT CITY FACTORS

The city is contemplating the annexation of a broad region where they already provide city services.

A new swimming pool, replacing the old one, is planned to be built near the city offices. While providing recreation for much of Duchesne County and some communities in Uintah County, the pool’s operations might be difficult to fund in down markets.

Oil and gas service companies make up the commercial development from the airport to the southwest of downtown.

Oil and gas traffic largely travels down Highway 40/191 and collector streets.

Clusters of manufactured homes fill many spots, creating blight in poorly maintained areas of the community.

A significant number of new homes were built in the city and the surrounding county since 2000. After the price drop, builders have experienced more difficulty finding jobs for new construction or renovation.

Limited open land in Roosevelt combined with the gravity of current commercial development and open space is pushing commercial development into the neighboring city of Ballard.
“If you’re saying that [any] boom is different, I think you’re being optimistic. Everyone wants this boom to be different.”

Cody Christensen
Uintah Basin AOG Planner
RECOMMENDATIONS

The Rural Planning Group’s goal is to help communities consider their own personalized response, not determine their response for them. These recommendations are ideas rather than hard and fast action plans.

In an effort to make the best, most comprehensive recommendations possible, over 30 individuals contributed ideas, including current and former residents, oil service company workers, company owners, and government officials. Their responses are intermingled with recommendations from the Rural Planning Group in the following section.
THERE ARE NO SILVER BULLETS

There are no silver bullet solutions to the problems of a volatile, single-industry economic base. Effective management, practical planning, and strategic budgeting can improve municipal finances. Additionally, best practices for planning and management in this environment should be tailored to a particular community’s needs, under the guidance of overarching principles and processes. Four key areas of community management and planning that require special emphasis in cyclical economies include:

1. Knowing the industry’s primary opportunities and challenges.
2. Working together as a region.
3. Developing a process and timeline for community management, and applying that process to long-range community planning, capital asset construction, repair, purchases, and economic development.
4. Strategic budgeting.

Following these guidelines, the ensuing recommendations are intended to help communities consider their own personalized response to volatile conditions. Their solutions may differ from those outlined here.

KNOW THE INDUSTRY

Most community leaders in the Uintah Basin understand the industry at the local level; they know the major employers, the service companies, and how these companies are doing generally. However, some lack knowledge of the oil industry’s primary drivers. Leaders do not need expertise in economics or global oil-politics. However, by expanding their understanding of the industry on which their community is based, community leaders can understand the fundamental drivers of the global market that shape the industry and ultimately their communities.

This study is a first step toward empowering leaders to consider their community’s current position and understanding what would have to change globally, nationally, or regionally before their community’s economic situation will change. This knowledge empowers leaders to be proactive when the industry’s trajectory appears to be changing, rather than waiting to respond after a boom or a bust has taken the market. Similarly, this allows leaders to advocate more effectively for the local and regional issues that will help the oil industry succeed, and for causes that can help the Basin in other ways.

WORK TOGETHER

Having a common understanding of the industry and what affects it regionally helps leaders to work together on important local causes. Governments across the Basin should be vested in supporting decisions by their neighboring communities that will improve each community’s resiliency. A united voice from all Basin communities will carry more weight than an individual county commissioner or mayor on questions of regulation, production on state and federal lands, decisions about Highway 40, etc. This requires recognition that success in one community does not preclude success in another; success for one community often breeds opportunity for all.

Similarly, asking for advice and assistance from others with direct experience is crucial. There are many appointed officials, elected officials, planners, and managers who have worked in this environment for decades. Obtaining their input will greatly inform leader’s decisions and actions.

COMMUNITY PLANNING

Population and revenue fluctuations make long term planning difficult, but also provide opportunities. Many community leaders recommended using production downturns as opportunities to perform the bulk of the planning work that needs to be completed. Downturns are great times to prepare for the next upswing.

Obviously, planning will occur during all periods, and community leaders can never know when the industry will fall flat or grow wildly. Still, prioritizing plans during low production periods benefits communities in multiple ways:

1. It allows city officials to review the last boom period, and determine how well their previous plans shaped and supported the type of growth (residential, commercial, economic diversity, etc.) the community desired. This allows leaders to evaluate what went well and what they would have done differently.

During the bust

GENERAL PLANS

Low production periods are an important time for the planning commission to consider how it did in implementing the general plan through the last boom cycle.

It is also great time to write a general plan project because residents may have more energy for focusing on a better future.

MUNICIPAL CODE

Lulls in production are also great times to evaluate the success of the municipal code in supporting the general plan.

These considerations should evolve into edits that will assist during the next growth period in shaping the development and growth that occurs.

ECONOMIC DEVELOPMENT PLAN

After a boom, economic goals should be reviewed and updated. Special consideration should be given to the types of companies that leave during the slowdown, and goals for attracting companies that will stay should be formalized.

Doing this will assist communities in building on the growth they experienced during the last boom, rather than experiencing the same growth and then losing it every time there is a turn.

During the Boom

Implementing during the boom does not necessarily mean building all capital projects during the boom cycle. Rather, it means that the general plan, municipal code, economic development plan, and master plans are followed as new development occurs. It also means that the city or county should start saving during the boom, and using the plans the community supported to justify saving. This will help the revenue of the community be more consistent, and allow for construction at the best possible times.
Planning is essential during both time periods; however, as projects and opportunities arise, most major plans that occur within the community should occur on this schedule. Then growth during boom periods can play into community plans rather than occurring without public leadership or direction.

CAPITAL ASSET PLANNING

Capital asset planning is difficult to time in a fluctuating market for three primary reasons. First, repairs and capital asset improvements are best done during a lull in production when asset use is low and industry / quality-of-life disruption would be limited (e.g. road repair, sewer, water, etc.). Precisely timing these repairs with the market is nearly impossible. Second, cities build when funding is available and funding is most readily available during boom cycles. Finally, when cities try to save, citizens often do not understand why their community taxes them for a rainy day that they don’t believe will come.

For these reasons, planning and carrying-out capital improvements and construction often have to occur at the same time. Good planning can reduce the need to do major construction projects during the boom by driving development where the community desires it, and by getting the best time frames for needed repairs and overloaded systems (see illustration below).

Saving during upswings for projects can reduce service provision disruption, road delays, and municipal and county financial troubles by increasing expendable capital during busts. As a result, cities can have sufficient funding to pay for projects that require significant bonding or borrowing, rather than barely affording their loan obligations.

Cities and counties should educate community members on the benefits of saving during upswings. Just as saving should be part of personal finance, especially in the Basin, saving funds should also be part of a community’s planning and budgeting. Engaging community members about municipal saving will help residents understand and embrace the value of preparing for bust cycles.

ECONOMIC DEVELOPMENT

Community leaders should focus their economic development on maintaining local businesses first, followed by developing local entrepreneurs and local entrepreneurial opportunities, and finally by attracting new companies. Following this pattern maximizes the effect of economic development efforts, and ensures support for companies who are vested in the community.

Keeping Current Businesses

Current businesses have a vested interest in the community and create the largest disruption if they leave. Maintaining current businesses is the foundation of a solid economic base for any community.

In context of oil and natural gas prices, maintaining current businesses is also a major difficulty as oil production and service companies lay-off and reduce hours for workers, and often even close when boom goes bust. The resulting reductions in disposable income throughout the community cause food and retail based companies to struggle. In these cases, community amenities will not be enough for many of these businesses when revenue and costs don’t balance.

The Shop Team

Tony & Carrie Serrano

Tony: Shop Foreman, Carrie: Business Operator

Time in Basin: 6 years, off and on

Why the Basin: Small-town feel, Recreating in the desert and mountains

Employment opportunities

Recommendation: Make opportunities for youth a priority

Tony and Carrie are two of the warmest, kindest, and most welcoming people in the Basin. They are, in some ways, newcomers to the Uintah Basin. As a talented welder with years of general shop experience, Tony was attracted to the Basin for high-paying job opportunities in the mid-2000’s. Due to a drop in prices, they left the Basin in late 2009, finding work along the Wasatch Front where they lived for five years. Tony and Carrie had enjoyed their time in the Basin, and in 2013, when the S & S Welding & Waterjet owner asked Tony to return, they jumped at the opportunity. Tony went back to the shop, and Carrie, a talented designer and administrator, took over managing the company’s front-end.

By diversifying their offerings to home decor, personalized gifts, and other specialized orders using their unique waterjet cutter, S & S has weathered current low prices better than in the past. Tony and Carrie both plan to weather current low prices because the Basin has become their home.
Increased tourism and ‘buy local’ campaigns can increase sales to local companies which benefit the local governments that rely on their sales tax for maintaining governmental services.

**Assisting Local Entrepreneurs**

Local entrepreneurs are more likely to be vested in the community, and are therefore less likely to leave when margins tighten. Local entrepreneurs in every field should be supported, but special emphasis should be given to businesses that bring wealth into the community (exports, tourism) rather than passing wealth around the Basin (retail, local services).

Current efforts in Duchesne and Uintah County high schools, USU Extension, UBATC, and the assistance programs and events produced by the local chambers of commerce are extensive and valuable. These efforts maintain momentum and develop economic diversity from within. Additional small business grant and loan opportunities should be developed for local entrepreneurs.

**Attracting Companies from Outside**

Outside businesses are also a priority; yet their commitment to the local area is generally weaker, and significant time can be wasted trying to attract even one business unsuccessfully. For this reason, efforts to attract new industry and businesses should be conducted only after programs to maintain local companies and bolster local entrepreneurs are established.

The Uintah Basin provides unique difficulties for new industry and employers. Many companies cannot or do not pay employees enough to prevent them from entering into the oil workforce where wages are high and jobs are plentiful. A lack of a freeway, railroad, or major airport makes shipping goods expensive. For these reasons, most of the successful outside businesses that have relocated to rural communities in Utah are operated by people who grew up in a rural community then returned with their business to that community to be closer to family. A slightly unorthodox idea would be to establish a directory of former residents and contact this ‘alumni network’ with regularity. The states of Wyoming and Montana, as well as some midwestern towns, have tried a similar approach, inviting former residents to move back, bringing their work with them.

Manufacturing, tourism, and web-based companies were the most commonly recommended options by community members and leaders for attracting and developing new businesses in the Basin.

**Manufacturing**

Despite having a well-trained, capable workforce for manufacturing, the Uintah Basin lacks transportation capacity to support intensive manufacturing projects. Lacking a major freeway, railway, and/or major airport creates obstacles that are difficult to surmount for manufacturing companies who may consider the Basin as a business location.

A major manufacturer relocating to the Uintah Basin is unlikely, yet smaller niche shops that rely less on bulk transportation could make use of the labor force and increase economic stability.

**Tourism**

The desert and mountains surrounding the communities of the Uintah Basin, alongside unique hieroglyphic and archaeological resources, are opportunities for increased tourism in the Basin. However, challenges for tourism exist in high-production periods. Hotel rooms are extremely difficult to book, restaurants and roadways are much busier in the high-production period (which decreases the small-town feel that some tourists enjoy), and employee retention is difficult when higher paying jobs are readily available. Tourism brings revenue from outside the Basin, increasing the amount of new cash that can be spent at local stores. Tourism also provides jobs for population segments that generally do not work in the oil and gas fields (considered under 18 and over 60 years of age).

Facilitating tourism by addressing these concerns will benefit communities; however, it is unlikely to counterbalance the revenue loss attendant a slide in oil and gas development on its own.

**Tech Businesses**

Tech business products often do not require shipping at all, reducing the transportation barrier for location in the Basin. Similarly, many residents of the Basin consider Strata Networks, the Basin’s local internet provider, as the best in Utah. To support the tech industry, the current workforce would need to be completely re-educated—a new company relocating would have to bring many of its workers to the region. Still, some tech companies have expressed interest in moving to locations with lower costs and a quality of life not available in urban communities.

Another opportunity exists for bringing money into Basin communities through telecommuters. While not widespread yet, some people are opting to work from home and relocating to rural regions that are close to family, have a slower pace, and provide the quality of life they prefer while keeping their job in urban centers. The Uintah Basin’s relatively high quality internet, quality of life, and sense of community make it a possibility for some of these employees.

**Education**

As people become unemployed during bust cycles, many seek additional education. The Uintah Basin Applied Technology College, and Utah State University Extension, support returning students and general workforce development. In addition, these institutions respond to the trainings requirements of the oil and gas industry.

When prices slide they ensure their advertising to specifically attracts laid-off workers, enabling them to stay in the Basin as they increase their skillsets in multiple fields. Funding assistance and other programs allow these laid-off workers to pursue higher education and be better prepared for the next boom or bust.

**Energy: All of the Above Approach**

Utah Governor Gary Herbert has an “all of the above” approach for energy development in Utah; this attitude could be very valuable to Basin communities. Of particular importance for Duchesne and Uintah Counties is the shift in energy production that will occur in Utah during the next 20 years. Coal-fired power has increasing regulations that will eventually lead to closures of many coal-fired plants; natural gas and renewables are expected to fill the void. With coal-fired power at roughly two-thirds of Utah’s energy production mix, replacing coal will require a significant number of new power sources.

Assuming that the air quality issues could be addressed, Uintah and Duchesne County’s large natural gas deposits would be favorable for the development of power plants within the Basin. This would increase the amount of money natural gas generates for Basin communities by providing jobs, increasing government revenue, and turning natural gas into money twice (once as it’s extracted and once as it’s turned into electricity).

Getting a power plant to locate within the region would take significant amounts of planning, time, and effort on the part of counties, but may not be an impossibility in the future, specifically near high capacity lines that currently tie in to the Bonanza power plant.

Finding a second industry that could truly counterbalance oil and gas market shifts is unlikely. Rather, the Uintah Basin needs to maintain their current “all of the above” approach to economic development, while recognizing and attempting to mitigate the barriers that exist for new development. The counties should continue promoting maintenance of Highway 40, improving air and rail transportation, and helping communities absorb tourists and industry workers. Accomplishing these tasks will help communities remove the barriers to diversify into new industries.
BUDGETING

Prioritizing expenditures can be extremely difficult when revenue is strong. During these periods, the temptation is to go after every project that appears to have public support and will benefit the community. Advice from every person interviewed in the Basin came with a word of caution about maxing expenditures and borrowing based on boom-time revenues—most from personal experience. The following principles for strategic budgeting surfaced many times in conversations with community members:

1. Base funding decisions on a worst-case scenario. When obtaining loans or grants for projects, consider your communities capacity to fund the project in a worst-case scenario. Will this asset be able to pay for itself? Will operations and maintenance take funds from other projects that are more vital to the community?

2. Be patient. Having a long-term vision for your community will likely involve many city projects that assist the community in reaching its goals. Conducting all projects at the same time is a mistake, even if current funding appears sufficient. When revenues can fluctuate so significantly in such a short period of time, community projects are best broken down into several, smaller pieces that require less long-term commitment and allow the community to hold back in low revenue periods and surge forward in high revenue periods.

3. Empower the community by saving funds. Another way to protect the budget and pay for long-term obligations is to save during the boom. This makes funding capacity more consistent in booms and busts.

4. Prioritize needs first. Decision making about when and how to use funds is fundamental to the provision of government services, and is also where city and county officials expose themselves to risk. Effective planning helps community leaders prioritize and focus their finite resources on critical needs. While every community is different and will have unique needs at specific times, there is a general hierarchy to community assets which center around the physical, fiscal, and economic aspects of a place (although these shift in importance based on a community’s characteristics).

**Patient Budgeting**

Breaking long-term goals into shorter term projects also keeps communities from having to repair or replace an entire project all at the same time when the project’s useful life is over. Rather, the community can manage the maintenance and replacement piece by piece, which protects the community budget from major maintenance obligations 20–30 years in the future.

This type of budgeting can make the timeframes for reaching goals more difficult to predict than in cities with more consistent revenue streams. Variations in the market can put projects on hold for much longer than desired. For this reason, a firm long-term vision and goals are necessary to ensure community projects and development work towards a focused goal even as the market fluctuates.
Long-Term Vision

Because revenue cycles extend over different periods of time, it is vital that leaders are able to maintain focus on the long-term goals of the community, so that smaller, broken down components of a larger plan fit into context of the communities long-term ambitions.

To assist with the long-term health of a community, leaders should prioritize essential infrastructure, then basic services, and lastly amenities which can be safely financed into the future. This protects communities from severe fiscal problems in the long-run and enables leaders to prioritize their time in the most meaningful manner first. City and county leaders should consider what is most important to their citizens, as well as what will enable the community to reach its long-term goals. Using these goals, leaders should create a list of criteria by which they will prioritize their projects. This protects political leaders from the threat of arbitrary decision making, and justifies decisions through consistency. Flexibility should remain so that leaders can make decisions based on specific circumstances, but all decisions should be informed by a set of criteria that illustrate a project’s importance to the community.

This graphic illustrates the Rural Planning Group’s approach to the provision of governmental services. Infrastructure and basic services that the community can control take first priority. Amenities, policies, etc. that affect community life are important, yet a lack of control over outcomes should make these lower priorities. Using this guide will help ensure that public infrastructure is prioritized first and can help keep leaders from wasting time.
“From a planner’s perspective, we want to paint a beautiful picture. It’s easy to paint a beautiful picture with other people’s stuff.”

Robert Barnhill
Uintah County Planner
CONCLUSION

Until oil markets fundamentally change, the future of the oil industry in the Uintah Basin is certain: bust will turn to boom, and boom will turn back to bust. The extent of the current bust remains uncertain, yet global, U.S., and Utah specific factors suggest prolonged low prices are probable until major factors change at multiple levels.

The impact of current prices and production are affecting Basin communities in profound ways. Employment is down, cities and the counties are struggling to fund necessary government services and infrastructure, and barriers remain for diversification of the region’s economy. Yet, with every boom cycle the region slowly waxes stronger, improving its economy and increasing its population.

While the Basin grows stronger, it’s still vital to maximize the benefits and mitigate the challenges of the oil industry in local communities. Accomplishing this task requires leaders to maintain a long-term vision for their community, protect community financial viability, and seek opportunities to diversify their economies.