

Conserving the Thompson Divide: A Case Study of the Public Interest, the National
Environmental Policy Act, and the Civic Republican Ideal

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*A thesis submitted to the
University of Colorado at Boulder
in partial fulfillment
of the requirements to receive
Honors designation in
Environmental Studies
December 2015*

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Abstract

This is a case study of a public lands management conflict in the Thompson Divide Region of White River National Forest, Colorado. To create an empirical database, I use literature review, semi-structured interviews with key stakeholders, and topic coding of written comments from an Environmental Impact Statement. I organize this data through an applied problem orientation framework, and then evaluate a Forest Service public engagement process within the context of the Civic Republican Ideal, a conceptual legal framework focused on guiding public engagement processes. I then present policy alternatives and recommendations aimed at ensuring a continued public interest management scenario, structured for both bottom up and top down policy processes. I argue that improving federal regulatory agency processes to better engage and reflect public interests may be the best way to manage the Thompson Divide in the long term, and propose that the Forest Service and Bureau of Land Management implement an adaptive management framework to continue to conserve environmental assets in the region.

Keywords:

Thompson Divide Region – NEPA – Civic Republican Ideal – Public Interest

Public Lands – Civic Engagement – Problem Orientation Framework

Preface

I was initially drawn to the compelling narrative of the Thompson Divide conflict through an interest in how U.S. citizens, the government, and the private sector use and relate to montane public lands.

The Divide, as locals affectionately call it, is a pristine expanse of Colorado backcountry that resonates with cultural and community significance. People love this place.

I spent a portion of the summer of 2015 in the area, and became acquainted with both the environment and the people around it. I came to understand the sense of place that many express.

The current conflict over energy development in the Divide is a big deal to these people. It's their livelihoods, their culture at stake. And they're fighting for it. But this conflict isn't morally unilateral. Every stakeholder has valid interests and points of view as to how the landscape should be managed.

This study unfolds this complex narrative and presents a public interest solution.

"We're going to have to take this problem on ourselves, and it's probably going to happen through civil democracy, because that's the only way we can get anything done"

Casey Sheahan, CEO, Patagonia Co.

Forest Service Open House, 2013

"The farther one gets into the wilderness, the greater is the attraction of its freedom"

Theodore Roosevelt

Acknowledgements

Thank you,

to my advisors: Lisa, Mark, and Dale for providing invaluable assistance, critiques, and resources throughout the project,

to Nichole Barger and the Western Public Lands Research Fellowship of the University of Colorado Boulder, for providing funding and guidance,

to the University of Colorado faculty who assisted me on this project but were not included on my defense committee, Nancy Billica (PSCI), Carol Wessman (EBIO)

to everyone I interviewed and worked with during this project. I was amazed at the amount of help and resources you provided, and the dedication that many of you continue to display in fighting for public interests,

and a special thank you to my wonderful family—Mom, Dad and Kyle—and friends for providing moral support and words of encouragement through this project.

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List of Acronyms

AOI- Area of Special Interest
APA- Administrative Procedure Act
APD- Application for a Permit to Drill
BBL- A 42-Gallon Barrel of Oil
BBC- BBC Research and Consulting Firm
Bcf- One billion cubic feet of natural gas
BLM- Bureau of Land Management
CARA- Comment Response and Analysis Software Application
CDPHE- Colorado Department of Public Health and the Environment
CEQ- Council on Environmental Quality
CFF- Colorado Future Fund
CFR- Code of Federal Regulations
COGCC- Colorado Oil and Gas Commission
CRWA- Colorado Rural Water Association
CSO- Controlled Surface Occupancy Leasing Stipulation
CWQC- Colorado Water Quality Commission
CWQD- Colorado Water Quality Division
DNR- Colorado Department of Natural Resources
DROD- Draft Record of Decision
DEIS- Draft Environmental Impact Statement
DOW- Colorado Department of Wildlife
EIA- U.S. Energy Information Administration
EPA- Environmental Protection Agency
EPAct- Energy Policy Act of 2005
ESA- Endangered Species Act
FEIS- Final Environmental Impact Statement
FLPMA- Federal Land Policy and Management Act of 1976
FROD- Final Record of Decision
FS- United States Forest Service
GIS- Geographic Information System
IBLA- Interior Bureau of Land Appeals
IRA- Inventoried Roadless Areas
JSA- Job Safety Analysis
Mcf- One thousand cubic feet of natural gas
MSLF- Mountain States Legal Foundation
NEPA- National Environmental Policy Act of 1969
NGO- Non-Governmental Association
NOI- Notice of Intent to begin oil and gas development
NOS- Notice of Staking to submit an APD
NRDC- National Resources Defense Council
NSG- NEPA Services Group
NSO- No Surface Occupancy Leasing Stipulation
NTCA- North Thompson Cattlemen's Association
OHSA- Occupational Health and Safety Act
OW- Outstanding Waters Designation
PAC- Political Action Committee
PPGIS- Public Participation Geographic Information System
RFC- The Roaring Fork Conservancy
RFD- Reasonably Foreseeable Development Scenario

List of Acronyms, Continued

SGI- SG Interests I, LLC

SWPA- Source Water Protection Association (Carbondale)

SWPP- Source Water Protection Plan

Tcf- One Trillion cubic feet of natural gas

TDC- Thompson Divide Coalition

TDR- Thompson Divide Region

TPCM- Talking Points Collaborative Mapping GIS System

TU- Trout Unlimited

Ursa- Ursa Resources Group

U.S.C.- United States Congress

WRNF- The White River National Forest

WSCOGA- West Slope Colorado Oil and Gas Association

WW- Wilderness Workshop

Chapter 1: Introduction and Background

Intentions and Research Questions

This is a case study of public land management in the Thompson Divide Region (TDR) of White River National Forest (WRNF), Colorado. Aptly termed the “forgotten wilderness”, the TDR is a 225,000 acre, mid-elevation montane region that spans the surface and mineral jurisdiction of the United States Forest Service (FS) and Bureau of Land Management (BLM) in the White River, Gunnison, and Grand Mesa-Uncompahgre National Forests. The region underlies the Pitkin, Garfield, Gunnison, and Mesa Counties, borders the municipalities of Carbondale and Glenwood Springs, and divides the heavily developed oil and gas fields overlying the Piceance Basin, in the West Slope of Colorado, and the high-elevation wilderness regions to the east, bordering Aspen. Although the region contains 8 Inventoried Roadless Areas (IRAs), the area is currently the focal point of conflict surrounding 23 oil and gas leases issued in 2003, which have engaged the efforts of numerous stakeholders and advocacy groups, and initiated a number of regulatory, legislative, and litigation processes focusing on management strategies for

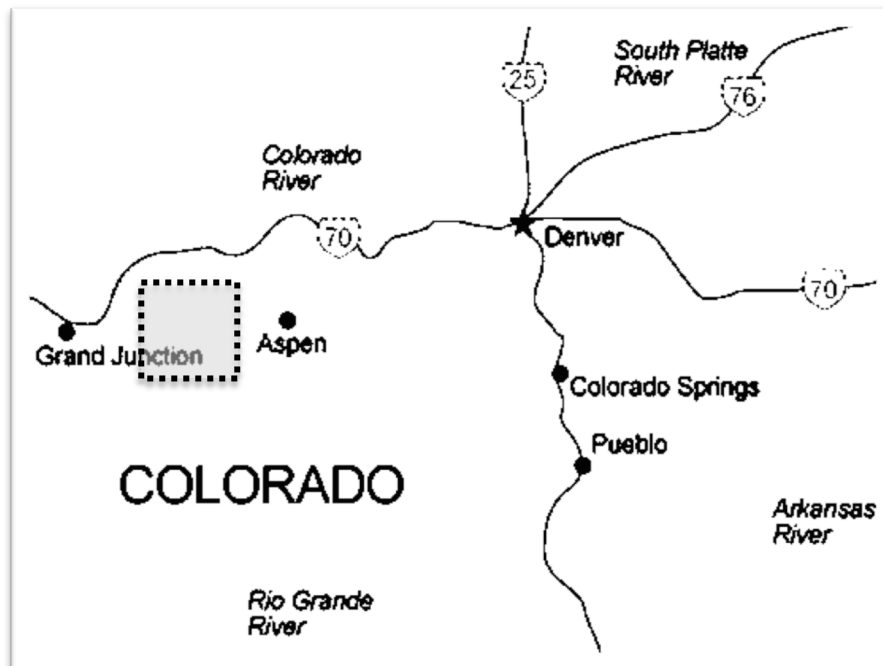


Figure 1.1: Map of Colorado; the TDR is located roughly within the boxed region (Colorado.gov, 2015)

the TDR in the both short and long term.

Through the structure of an interdisciplinary policy analysis, this thesis focuses on understanding how stakeholders define and achieve goals in public land management of the TDR, and then contrasts bottom-up and top-down regulatory, legal, and economic policies and instruments that could achieve public interest management goals. In addition, through analysis of civic engagement during a National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) process conducted by the Forest Service (FS) White River National Forest (WRNF) Field Office throughout 2012-2104, this case study explores how an executive-level regulatory agency identifies, defines, and incorporates public values into project-level NEPA EIS decision-making.

This thesis primarily intends to provide relevant and timely insights, analysis, and information directed at stakeholders or interested parties in the outcome of the TDR land management decision, or those who would like to further engage in regulatory decision-making processes. As public lands by nature belong to all American citizens, a key intention of this study is to present a relevant and accurate depiction of a possible public interest management scenario, along with actions that could achieve this outcome. In particular, results of this analysis target BLM and FS Field Offices located across Colorado, as well as municipal, county, state, or congressional-level public lands decision makers seeking to better understand or incorporate civic engagement methods. Lastly, this analysis may provide relevant insights for professionals involved in natural resource management who seek examples of the application of a process based, systematic policy analysis framework evaluating public lands natural resource management issues, or in a broader context, scholars who seek to further understand NEPA, federal oil and gas leasing conflicts, or public land management in the American West.

To complete the research intentions and provide relevant information for the intended audience, I developed specific research questions and integrated a variety of policy analysis methods including literature review, interviews with stakeholders, topic coding of public

comments from a FS Environmental Impact Statement (EIS), and a problem orientation framework. These methods are discussed in Chapter 2. The research questions are presented below:

- 1) How does the FS identify and define the public interest in management strategy for the TDR? Are stakeholders who are unable to participate in decisions, such as future generations and nonhuman parties, included in the public interest? In FS NEPA civic engagement, do stakeholders play a significant role in identifying and defining the public interest?
- 2) Do stakeholders in the TDR share similar problem definitions, management goals, or strategies to achieve these goals for public land management in the TDR? How could these commonalities, if evident, aid in resolving the conflict in terms of the public interest?
- 3) How does law and policy -- including statutes, rules, court decisions, contracts, and policy instruments -- help the FS manage the TDR in the public interest? Outside of the FS NEPA arena, have law or policy instruments been employed to attempt to further the public interest or individual stakeholder management goals? Could elements of these processes be combined to aid the enactment of a public interest management scenario?
- 4) Should FS decision-making reflect the civic republican model? To what extent does the process currently reflect the model, as exemplified by the NEPA public involvement process of the 2014 FS WRNF EIS? Can and should future civic engagement processes in the region be improved to better reflect the public interest?

Although there are a multitude of ongoing policies and plausible research topics within the context of the TDR conflict, the scope of this analysis is relatively focused. In general, the scope of this case study is the geography and dynamics of the TDR conflict, including related legislative, litigation, and NEPA processes. Modern policy analysis approaches emphasize that analysis and solutions must be context dependent; it is difficult to apply solutions uniformly due to the degree of associated factors evident in public resource management decisions (Cherney, et

al, 2008; Lasswell, 1972). I propose that improvements to regulatory agency civic engagement processes, to better define and reflect the public interest in land management, as well as connecting bottom-up and top-down policy initiatives, are the best means to ensure the continued management of the TDR in the public interest. As a result, this thesis presents analysis and recommendations primarily aimed at ensuring short and long term public-interest management strategies for the TDR, including implementing specific policy instruments and re-structuring regulatory agency civic engagement processes.

Framing the Problem

In the American West, public land management is a complex and interdisciplinary issue, spanning a multitude of decision-making jurisdictions, policies, and public and private stakeholder interests. Although the U.S. is a global leader in balancing public land conservation and development for the benefit of the public, difficult decisions repeatedly arise. The multiple use mandate, including oil and gas development, ensures that public lands must not only be used for recreation or wildlife preservation, but also for natural resource extraction¹. However, as social values and perceptions toward public lands change, so do land use strategies. In the American West, uses of public lands are increasingly changing from historical boom and bust cycles of natural resource extraction, such as energy development, to longer-term, sustainable uses such as recreation and tourism (Bernot, 2015; Archie et al, 2012). For instance the WRNF, which encompasses the TDR, is the most highly visited forest in the nation, receiving over 12 million visitors annually and generating significant revenue from tourism and recreation (FS, 2013). These lands are very valuable, though stakeholders have very different definitions and concepts of their value. Since many stakeholders make their living from these public lands, or commonly recreate on them, stakeholder perceptions of the best management strategy are often

¹ See the Federal Land and Policy Management Act (FLPMA), 43 U.S.C. 1701, Sec. 102.(a) and NEPA Statute

² Social polarization refers to the divergence of political attitudes to ideological extremes. Polarization can

socially polarized², creating difficulties in compromises or the balancing of values to achieve a public interest scenario (Clark, 2002). And as ecological boundaries rarely completely overlap political or regulatory jurisdictions, these decisions may be further complicated through spatial and scaling problems (Fraser, 2004). In addition, the task of accurately defining and ensuring the public interest in regulatory decision-making is further complicated by the necessity to structure decisions as legally sound and possibly incorporate the interests of both non-human or disadvantaged parties and future generations (Squillace, 2013). For public lands, the NEPA process serves as the primary analytic tool for decision-makers, especially the FS and BLM, to make informed decisions through a comprehensive analysis of potential actions and their impacts. As these agencies are legally bound to follow NEPA policies and procedure, I primarily focus upon this act for top-down policy analysis.

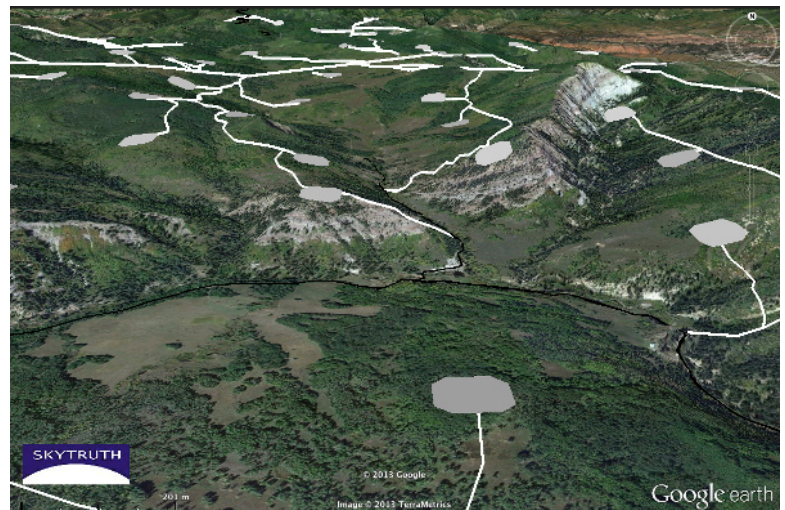
The TDR is unique from other pristine montane areas across Colorado. Although the surrounding high elevation peaks including the Maroon Bells and Holy Cross Wilderness Areas prohibit energy development because of their wilderness designation, the majority of public land in the TDR is under no concrete development restrictions except FS Roadless rules and FS/BLM Land Management Planning leasing stipulations (Sloan Shoemaker, 20:30). However, this multi-use designation is preferred by many stakeholders; several wilderness designation initiatives have failed for the region to date, and the landscape supports a variety of land use activities including landscape development for grazing and snowmobiling, which currently are banned in wilderness areas (Wilderness Workshop (WW), 2011). Prior to the early 2000s, the landscape was relatively unknown, and received the name “Thompson Divide” only after leases were sold within the region, as a stakeholder political strategy for creating community involvement (Shoemaker, 4:36). Beginning in 2004, FS lands in the region were nominated for energy auction through the BLM,

² Social polarization refers to the divergence of political attitudes to ideological extremes. Polarization can refer to such divergence in public opinion as a whole, or to such divergence within a particular sub-set or group (like party elites). (DiMaggio et al, 1996)

and leases were awarded to several energy operating companies, totaling to over 100,000 acres of leases within the TDR. Although a number of leases were allotted in WRNF, the 23 existing leases within the TDR will be focus of this analysis. These lease sales sparked significant controversy in the region, and the issue has recently become increasingly publicized. The following two images display several acres of the TDR, along with a GIS a simulation of proposed energy development infrastructure:



*Figure 1.2: FS public lands, TDR,
Photo Credit: Skytruth, 2013*



*Figure 1.3: GIS simulation of SG leases created by
Skytruth, an environmental advocacy group (Skytruth, 2013)*

The TDR conflict is further complicated when taking into account the multitude of past and ongoing legal and political processes and initiatives. As both top-down and bottom-up policy strategies are evident within the TDR, this analysis will focus on aspects of both alternatives. Top-down policy implementation typically reflects decisions of central authorities carrying out direction by statute, executive order, or court decision, whereas bottom-up policy implementation typically begins with the interest of the public advocating for specific entities on a local to regional scale (DeLeon et al, 2002; Matland, 1995). As neither strategy is universally applicable in environmental issues, and each has its relative criticisms, I evaluate and synthesize both these strategies in relation to the TDR (Matland, 2015). In addition, these two types of policy

approaches are rarely mutually exclusive, and are typically linked through a varying continuum of processes and actors (Cherney et al, 2008). In this study, I defined top-down actors as the federal government, including executive agencies and Congress, whereas I defined the bottom-up as state, county, and municipal governments, as well as advocacy groups and the general public. This study addresses each process separately and then focuses on mechanisms to connect aspects of the processes.

Federal “Top-Down” Policy and Legal Processes

Recent federal actions, from both the executive and legislative branches, have included several EIS plans and legislation processes. The FS WRNF Field Office released its *White River National Forest Final Environmental Impact Statement on Oil and Gas Leasing* (2014 FS EIS) in 2014, which updates its 1993 energy leasing EIS, and focuses on future leasing for the next 20 years on WRNF lands including the TDR. In addition, the FS 2002 *Land and Resources Management Plan* for WRNF contains relevant lease and land use stipulations for the TDR. The BLM Colorado River Valley Field Office is currently in the process of conducting their 2015 *Existing Leases on the White River National Forest Environmental Impact Statement*, in response to a BLM internal tribunal decision from the IBLA (Interior Board of Land Appeals), which ruled that 65 existing leases issued within WRNF during the early 2000s must undergo NEPA analysis. To date, the BLM is currently in the process of creating their Draft Environmental Impact Statement (DEIS) for this project, which will play a crucial role in determining the outcome of land management usage in the region.

Furthermore, there have been several legislative processes proposed on behalf of Senators Bennet (D) and former Senator Udall (D) which attempted to advocate for congressional wilderness designation or withdrawal of these public lands, including the attempted S. 651, *The Thompson Divide Withdrawal and Protection Act*. In addition, multiple stakeholders are in the process of appealing BLM decisions at multiple levels, including a pending 2015 IBLA appellate

review of a unitization decision, further entangling the web of administrative decision-making. Although a significant amount of peer-reviewed literature exists surrounding specific attributes in the TDR, such as economic or hydrological analysis, a comprehensive external analysis of stakeholders and NEPA public engagement has not yet been conducted-- this thesis seeks to better understand and address these concerns.

Figure 1.4: Aerial view of the TDR, looking northwest from the McClure Pass region, photo credit: EcoFlight, 2013



Chapter 2: Methods

This analysis integrated several policy analysis methods including 1) literature review, 2) semi-structured interviews with stakeholders and regulatory agencies, 3) topic coding of NEPA public comments, and 4) analysis using the policy science's problem orientation framework. Qualitative data collection and analysis methods were largely selected over in-depth quantitative methods due to the nature of the TDR conflict as well as the research intentions. First, I reviewed a variety of documents, including peer-reviewed articles, land and resource management plans, environmental impact statements, independent consultant reports, federal and state case law, statutes, & rules, news and journalistic articles, public NEPA comments, and others. Chapters 3 and 4 synthesize these sources and discuss key aspects of NEPA, public land management statute, agency civic engagement, and the TDR, as well as define a 'good' public interest decision and the civic republican ideal. Second, I conducted semi-structured interviews with stakeholders and regulatory agencies throughout a three-month period; these interviews created the primary empirical database for this study. Third, I read over 400 written public NEPA comments from the 2014 FS WRNF Oil and Gas Leasing DEIS-Final Environmental Impact Statement (FEIS) comment period, then coded and categorized specific concerns according to 15 key topics, and then framed the process within the context of the civic republican ideal. Lastly, I used an overarching problem orientation framework to guide and structure the analysis, providing a multi-step set of conceptual tools to investigate, organize, and evaluate data, allowing for process-based policy analysis and recommendations (Cherney, 2008). Used in conjunction, these four methods provided both an interdisciplinary and systemic approach to understanding and analyzing the TDR management conflict. The following sections further detail these methods and summarize each step of the problem orientation framework.

Semi-Structured Stakeholder Interviews

This section will discuss the rationale for selecting this analysis method, along with the strategies used to schedule and evaluate interviews. In resource management analysis, qualitative interviews with stakeholders can provide a set of in-depth, unique perspectives surrounding the issue that highlight stakeholder relationships and conflicts (Ritchie, 2013). In addition, inferences drawn from interviews may also provide insight into how potential policies or management decisions will functionally interact with stakeholders and regional interests and clarify possible environmental, social, or economic repercussions (Cherney, et al. 2008).

I identified key subjects primarily using news articles, FS documents, and organization websites, and conducted subject recruitment through email and phone communication. I utilized a two-step subject recruitment approach, first entailing a preliminary question set determining the subject's degree of involvement and knowledge surrounding the TDR. If the subject demonstrated that they were both knowledgeable of and held a significant value towards public land in the TDR, either on an economic, or cultural level, they were selected as a stakeholder interview candidate. I provided informed consent protocol to each participant in accordance with University of Colorado, Boulder, Institutional Review Board requirements. Roughly 40 subjects were contacted initially, with 13 participating in the study. Stakeholders were selected who were able to speak for the general interests of their organization or government.

Table 2.1, Selected stakeholders who participated in interviews

Stakeholder Group	Name	Position	Date Interviewed
Counties			
Pitkin County	Chris Seldin	Assistant County Attorney	7/22/15
Mesa County	Rose Pugliese	County Commissioner	7/27/15
Municipalities			
Town of Carbondale	Katrina Byars	Energy Liaison of COGCC	7/20/15
Environmental NGOS			
Thompson Divide Coalition	Zane Kessler	Executive Director	7/20/15
Earth Justice	Michael Freeman	Attorney	7/14/15
Wilderness Workshop	Sloan Shoemaker	Executive Director	8/11/15
Trout Unlimited	Aaron Kindle	Policy Analyst	7/10/15
Roaring Fork Water Conservancy	Chad Rudrow	Water Policy Coordinator	7/21/15
Energy Firms and Advocates			
Ursa Co	Don Simpson	Vice President, Operations	8/14/15
Public Lands Advocacy	Claire Moseley	Policy Analyst	7/24/15
Mountain States Legal Foundation	Jamie Cavanagh	Attorney, Rep. WillSource	7/24/15
Recreationalists	Josh Darling	Recreationalist, Glenwood Springs citizen	8/20/15
North Thompson Cattlemens Assoc.	Bill Fales	Director, Ranch Owner, Carbondale Citizen	7/22/15

This study utilized a semi-structured qualitative interview format composed of ten questions. These questions were designed to be neutral and open-ended to allow for all points of view to be expressed. In most cases, both the written research statement and the question set had to be approved by an organization's legal or public relations team before the subject could consent to participate, and certain topics were not open for discussion, such as potential litigation or lease development strategies. In addition, several key stakeholders declined to participate, including leaseholders SG Interests I (SGI) & Encana Ltd, as well as advocacy group Colorado West Slope Oil and Gas Association (WSCOGA), citing media and legal reasons. Overall, however, the semi-

structured format allowed for in-depth perspectives and specific information that could not be gained from secondhand document analysis. The question set is presented below, as:

Figure 2.1: Stakeholder Semi-Structured Interview Questions

1. What is your relationship with the Thompson Divide Region? How long have you been involved?
2. Do you think the Thompson Divide has an important cultural value, or sense of place, to the surrounding communities?
3. What activities are most important toward maintaining the economic health of the region?
4. What are the most important environmental attributes of the region? For example, its value as a watershed, species habitat, undeveloped grasslands for grazing, etc?
5. Do you think that natural resource use, more specifically natural gas extraction, and the preservation of the environmental health of the region are mutually exclusive? That is, can both of these things be accomplished at once?
6. Do stakeholders in the region work together to further their interests? Have you had any experience working with others, or can you provide any examples?
7. Are there a lot of different views about land management strategies and natural resource use in this region? Can you provide any examples when conflicts of interest were present?
8. What do you think is the most important consideration when thinking about land management and natural resource use in the Thompson Divide Region?
9. Do you think there is a public interest in land management strategies for the Thompson Divide? How do you define the problem in the region?
10. Are you familiar with the National Environmental Policy Act (NEPA) and the NEPA process conducted by the US Forest Service in the Thompson Divide region?
- 10.1 [If yes]: Are you aware of the 2014 White River National Forest Final Oil and Gas Leasing Environmental Impact Statement Decision and its public review and scoping process?
- 10.2 [If yes]: Did you participate in the public review process, either through submitting a form letter, written comment, or verbal comment at a public review meeting?
- 10.3 [If yes]: Did you feel your comment was properly addressed through the Record of Decision, and selection of the Proposed Action?
11. Do you have anything else to add that we haven't yet covered?

During each interview, the participant agreed to be voice recorded, except for the representative from Ursa Operating Company (Ursa). In this instance, detailed notes were taken. Following the interview, the conversation was transcribed and key quotes were organized and categorized across the following topics: 1) key values, 2) stakeholder identity, 3) base values, 4) tasks, 5) key relationships, 6) problem definition, 7) goals, and 8) solutions. Although it is beyond the scope of this analysis to include this transcription database, this strategy allowed for the systematic qualitative identification of goals, as well as the identification of stakeholder

involvement in TDR trends, conditions, and developments. As I targeted these questions primarily at evaluating stakeholder views in the following problem orientation framework, with a less direct focus on NEPA civic engagement, an additional NEPA qualitative analytic method was employed to further aid in civic engagement analysis and expand the scope of this study.

FS NEPA Civic Engagement Analysis

A primary goal of this case study is to evaluate relationships between involved stakeholders, the public, and the NEPA process, focused upon the 2014 EIS conducted by the FS. As the research questions center on understanding and improving civic engagement, I used public comment coding analysis to aggregate and identify topics key to the public interest. In addition, I assessed selected FS documents to identify key perceptions and methods used by the FS in their civic engagement process. Lastly, I evaluated this process in terms of the civic republican ideal, a guiding model for regulatory agency public engagement that entails four main principals, which are discussed in Chapter 3.

In public participation research, content analysis to develop a set of coding categories with accompanying frequencies is typically used to identify, aggregate, and quantify participants views (Krueger, 1994). First, I read 419 public letters in relation to the TDR, from the 2014 FS Final Oil and Gas Leasing on WRNF EIS, along with the eight legal objections submitted following the release of the Draft Record of Decision (DROD), and then coded and categorized specific concerns from the comment and objection letters in relation to three primary topics and 15 sub-topics evaluated to be of key importance based on the literature review. Comments and objections were submitted from November 3rd, 2012 to December 3rd, 2012. Objections differ in multiple aspects from comments. To successfully submit an objection, the party must utilize the structure as identified in 36 Code of Federal Regulations (CFR) 219.55, which requires a statement of the issues and the location in the EIS where the proposed amendments could apply (FS, 2014). There were several instances where citizens attempted to submit an objection, but the

FS was required to set aside their concern due to lack of statutory compliance (FS, 2015).

However, analysis of these objections still provided important information, especially through insight into potential aspects of the EIS that may be contentious in future litigation.

Objection letters used in the coding process were obtained from the EIS project webpage, referenced as *Figure A.9* in the Appendix. Comments were obtained from an FS online database called the ‘Public Comment Reading Room’, which is accessible from the EIS project webpage, as of November 9th, 2015 (FS, 2015). This analytic method provided important quantitative data surrounding who participated in the DEIS - Final Environmental Impact Statement (FEIS) commenting process, what topics were considered to be the most important, and the spatial locations of participating parties. Although every comment was read, it was not included in the coding data unless the commenter made a specific reference to the TDR.

Coding Strategies and Topic Selection

These methods focused on quantifying several aspects of DEIS-FEIS public comments, including participants geographic location or affiliation and participants concerns about key issues in the EIS. Taking into account stakeholder concerns for the TDR, topics chosen for analysis were structured through three primary facets- 1) support for future oil and gas leasing on WRNF, 2) opposition to future oil and gas leasing on WRNF, and 3) DEIS alternative support. To focus the analysis, 15 sub-topics were chosen surrounding key topics of concern to the TDR, including aspects of the physical, social, and economic environment. Coding symbols were created to allow for graphical representation. Commenters were grouped into location by the address listed upon their comment. Note that some municipalities overlap counties- if the participant identified with specific municipality in Pitkin, Gunnison, Garfield, Mesa, or Delta County, they were placed in the group as such. If a participant identified with an organization, they were categorized accordingly regardless of location. For the purposes of this study, ‘comment’ means the letter that the party submitted, and ‘concern’ represents a single concern

that the public expressed surrounding leasing and the TDR. *Table 2.2* describes each topic used in coding:

Table 2.2, Topic Coding Symbols and Descriptions:

Topic and Coding Symbol	Topic Description
<i>Against Future Oil and Gas Leasing</i>	<i>Comments which did not support future oil and gas leasing in the TDR</i>
Watershed Impacts (W)	Concern for detrimental effects of oil and gas development on TDR watersheds and riparian zones, and water quality downstream in the Crystal, Roaring Fork, and Colorado Rivers
Air Quality Impacts (A)	Concern for detrimental effects of oil and gas development on air quality in the TDR
Ecological Impacts (E)	Concern for detrimental effects of oil and gas development on habitat regions, migratory routes, and cumulative impacts of energy infrastructure in the TDR
Negative Economic Effects (Ec)	Concern for detrimental effects on the TDR-related economy due to the risk of oil and gas leasing to not co-exist well with existing land uses
Cultural and Scenic Impacts (C)	Concern for detrimental community, cultural, and scenic impacts resulting from oil and gas development in the TDR
No Leasing in Roadless Areas (R)	Value for the binding enactment of the FS Roadless Rule in ensuring no leasing or infrastructure development in designated Roadless Areas in the TDR
<i>Support Future Oil and Gas Leasing</i>	<i>Comments which did support future oil and gas leasing in the TDR</i>
Social and Economic Losses (S)	Concern for lack of positive economic benefits as a result of no oil and gas leasing in the TDR
Lack of Perceived Environmental Impact (Le)	Belief that oil and gas leasing in the area will not have a significant environmental impact, due to existing lease stipulations, best management practices, or technological industry improvements in the TDR
Legal Rights of Leaseholders (Lr)	Belief that oil and gas leasing in the area should be legally possible for operators within FS and BLM leasing procedure and existing management plans in the TDR
High Probability of Gas Potential (Pr)	Belief that the area should be developed for energy due a high potential of occurrence of natural gas in the TDR
<i>EIS Alternative Support</i>	<i>Which specific alternative the comment supported</i>
Alternative A (A)	Alternative A, or the continuation of current management practices with no change
Alternative B (B)	Alternative B, or no new lease issuance for the EIS lifetime over the entire WRNF
Alternative C (C)	Alternative C, including the proposed action
Other Possible Action (O)	A comment supporting an alternative which was not selected for analysis in the EIS

Then, I connected this coding analysis to several documents from 2014 FS EIS, including the Notice of Intent (NOI), the DEIS, the Final Environmental Impact Statement (FEIS), and the DROD, which were qualitatively evaluated for topics that were noted to be of key concern to the public, methods or tools used in engaging the public throughout the EIS process, and instances

where public opinion was stated to be an important factor in the decision. Unfortunately, the FS did not release the Final Record of Decision (FROD) for their 2014 EIS within the time frame of this study. Lastly, I also summarize perceptions of the FS NEPA process gained from stakeholder interviews.

Next, interviews were conducted with regulatory agencies, including the BLM Colorado River Valley Field office located in Silt, and the Central Mountains Regional Office of Senator Bennet. Although I made substantial efforts to interview a FS representative, timing and logistical difficulties did not permit this. *Table 2.3* presents the list of regulatory agencies that participated in interviews.

Table 2.3: Regulatory agencies participating in interviews

Regulatory Agency	Name	Position	Date Interviewed
BLM, CO River Valley Field Office	Gregory Larson	Lead NEPA Planner	7/22/15
Office of Senator Bennet	Noah Koerber	Policy Analyst	7/10/15

These interviews followed the same structure as interviews conducted with stakeholders, utilizing a semi-structured format consisting of 8 questions. These questions specifically targeted how the regulatory agency incorporated the four fundamentals of the civic republican ideal presented above, although the questions did not explicitly state this to avoid implicit bias. The regulatory agency question set is presented below:

Figure 2.2: Regulatory Agency Question Set:

1. What is your relationship with the TDR? How long have you been involved?
2. Which strategies have you used to engage the public in this decision-making process?
3. Do you see any engagement strategies as more effective than others for creating informed public deliberation?
4. Do you think this decision accurately reflected the public interest, including parties not represented and non-human interests? How could have it been improved?
5. Do you think that this FS decision was built on a commitment to political and social equality?
6. Do you think that this FS decision reflects an achievable, definable common good?
7. How did you see citizens engage in this process, both in person and through commenting? Were private interests commonly expressed, or was focusing on the public interest the primary goal?
8. How could public engagement strategies be improved? Ex: Extending the public scoping and comment time durations for more informed decision-making, incorporating post-assessment public engagement?

9. Do you have anything else to add that we haven't covered?

Lastly, I synthesize data obtained from these methods, to summarize and evaluate how the FS engaged the public in their EIS process, to what extent the civic republican ideal was reflected, and how the civic engagement process could be improved on behalf of both the FS and BLM. As a result, these methods provide focused, yet comprehensive, insights that may be applicable to a wide variety of regulatory agencies.

Clark's Problem Orientation Framework

I employed the problem orientation framework, outlined in *The Policy Process: A Practical Guide for Natural Resource Professionals*, (Clark, 2002), to provide a qualitative analytic structure, adequately evaluate the problem, and create further recommendations. In the field of policy sciences, qualitative policy analysis frameworks are often used to analyze complex problems and present comprehensive insights and solutions (Sabatier, et al. 2014). In addition, the accurate identification of complex stakeholder dynamics is widely considered a crucial aspect of natural resource management; structured frameworks allow for a systematic demarcation of stakeholder interests and relationships (Reed, et al. 2009). In his work, Clark presents a qualitative framework applied to natural resource management decisions. The problem orientation framework entails a five-step process allowing for a comprehensive problem definition and stakeholder analysis, as well as the derivation of relevant management alternatives (Clark, 2002). This framework advocates for a process based analysis, focusing on issues and their underlying causes to present a relevant solution (Clark, 2002). These five steps are presented below as described by Clark (first) and in my own words (in parenthesis) in *Figure 2.3*:

Figure 2.3: The 5 Steps of Clark's Problem Orientation Framework

- 1) the clarification of goals (who wants what)
 - 2) the identification of trends (what is happening regarding key metrics of interest to stakeholders)
 - 3) the analysis of conditions (what is causing the observed trends)
 - 4) the projection of developments (given current understandings and conditions, how will these trends play out in the future)
 - 5) the selection of policy alternatives (what are relevant policy alternatives that could achieve goals or support trends aligning with public interest goals)
- (Clark, 2002)

This analytic method was employed to provide the overarching policy analysis framework; data and insights gained from the framework, interview process, and the NEPA analysis are synthesized in Chapter 6. Each step is discussed in detail below. Taking into account this data, Chapter 7 focuses on providing directed answers to the research questions and relevant policy alternatives.

Step 1: Clarifying Stakeholder Goals

The first step of the problem orientation process requires clarifying the goals of participants and stakeholders involved in the issue, as well as understanding which potential strategies could achieve these goals (Clark, 2002). In natural resource management, especially upon public land, this is not a simple process. Involved stakeholders may hold varied interests and goals for the region; in some instances, the only commonality between certain groups may be a commitment to the public forum as the primary arena for problem solving (Clark, 2002).

According to Clark, goals are defined as the “preferred outcomes in a specific context in terms of the distribution of values, practices, and institutions”; as a result, he emphasizes the importance of first clearly defining broad goals, and then refining these values to reflect specific desires of participants (Clark, 2002). Another key identification at this stage understands how stakeholders define the problem; this definition yields further insight into stakeholder goals and creates a base to expand the framework (Clark, 2002). Lastly, Clark presents a social mapping framework that aids in stakeholder identification and categorization. I used several key concepts from this social

mapping process, including the identification of participant's base values, tasks, and relationships in relation to the TDR, both within and out of the FS NEPA arena (Clark, 2002).

In the application of the framework to this study, in this step I extracted several varying problem definitions, defined both broad and sub-categories of goals, and summarized relevant tasks which stakeholders have used to achieve or attempted to achieve goals. Data was primarily obtained from stakeholder interviews, although news articles, radio interviews, and public comments also provided relevant insights. Aspects of questions within the interview question set were explicitly targeted at providing this data: questions 1-5 focused on stakeholder identities and values; questions 6-7 focused on understanding stakeholders tasks and relationships; and questions 8-9 focused on understanding stakeholder goals, problem definitions, and perceptions of the public interest. In addition, these specific concepts guided conversations and allowed each stakeholder to provide a thoughtful, unique perspective upon the issue. As a result, qualitative data analysis was systematic and process based, connecting stakeholder identities to specific goals, as well as tasks to achieve these goals. I then constructed specific goals with an emphasis on understanding and displaying commonalities that stakeholders share within the TDR conflict.

Step 2: Identifying Trends and Step 3: Proposing Underlying Conditions

Steps 2 and 3 of Clark's framework entail first summarizing key past and present trends in the issue, and then identifying the underlying conditions that created these trends. In this step, past and current social and environmental trends are described in relation to stakeholders of the management conflict; this establishes a rational baseline of current management dynamics and may help to clarify current or future management scenarios. Clark emphasizes several strategies to keep this relevant and within the scope of the analysis, which include the evaluation of 1) how past events and decisions have influenced and achieved the goals of stakeholders, as well as the common interest, 2) the consequences of past events and decisions, in terms of specific values, and 3) the ways in which certain stakeholder interests and practices were advanced or pushed to

the background (Clark, 2002). However, he asserts that the identification of solely trends is not adequate for a comprehensive policy analysis; the underlying factors that created these trends must be identified and analyzed, which entails the third step of the process.

In the application of this step, I present a number of key trends along with plausible explanations of their underlying conditions. Due to the complexity of the issue and the multitude of stakeholder interactions, I first created a detailed timeline to outline and organize key events, which aided in categorizing events in terms of Clark's suggestions as described above. Then, I focus on identifying and aggregating events in the conflict, from an interdisciplinary environmental, social, political, and legal context. Lastly, I evaluate each trend in terms of past and present causes, ranging from specific stakeholder relationships to macro political and economic conditions. I used empirical data gained from literature review and stakeholder interviews to complete this step.

Step 4: Projecting Developments

The fourth step, projecting developments, entails projecting how conditions in the region will evolve in the future, based on stakeholder goals, trends, and conditions examined in the three prior steps. Clark emphasizes the importance of accurate prediction, describing how resource management policies must provide future solutions based on rationally projected developments (Clark, 2002). Topics of special focus include estimating if stakeholders will realize their preferred management outcomes through their unique strategies, and evaluating which key future events could shift management outcomes to specific stakeholder goals; these topics form the development construct, or the systematic projection of the identified trends and conditions (Clark, 2002). Essentially, this stage evaluates future outcomes if nothing changes, and then estimates the potential for alternative policies that could shift the trajectory or outcome of the conflict.

I projected developments in key metrics related to the TDR based off the prior framework steps, empirical stakeholder interviews, and literature review. This stage of the framework

process focused on understanding how outcomes of interest in the TDR conflict (such as environmental quality, the degree of oil and gas development, or fluctuations in local income) will evolve into future based off what is currently happening now. As a result, in this step I summarize possible future events and trends in the conflict, taking into account projected political, economic, and legal developments and their resulting consequences. I also focus on discussing potential actions of stakeholders and regulatory agencies at multiple levels of influence, from both the bottom up and top down, in terms of the public interest in management for the TDR. This stage of the process, in conjunction with the previous three stages, formed the basis for the final stage, the identification and analysis of potential management alternatives.

Step 5: Inventing, Evaluating, and Selecting Alternatives

This step brings the framework analysis full circle, synthesizing the concepts derived in each previous stage to create management alternatives which are rational, focus on commonalities in the conflict, and practically achievable (Clark, 2002). In addition, in this step I expand on the methods as discussed in Clark, taking into account the insights gained from the NEPA analysis section. Clark emphasizes three types of policy solutions, including compromise, which requires parties to negotiate and seek to minimize resource value deprivations (Clark, 2002). In addition, this strategy highlights the necessity for the application of the previous framework steps to identify commonalities, key resource values, and key areas where stakeholders are unwilling to compromise. Although other strategies are emphasized, I selected this strategy as the primary focus due to the complex nature of the TDR conflict, the socially and politically polarized nature of certain participants, and the capacity and likelihood of future litigation attempts to ensure goals.

As a variety of multi-scope regulatory and policy processes are ongoing in the TDR, I focus alternatives through two primary channels: bottom up solutions, of which stakeholders can engage within municipal, county, and state governments, as well as advocacy groups or private

interests. In contrast, I also provide top down solutions, which in this conflict target primarily FS and BLM regulatory NEPA processes, as well as Congressional legislation and advocacy processes. Although top-down alternatives may be the most important in terms of conflict outcomes, the public interest is not always apparent in agency decisions; as a result, this analysis focuses on methods to further incorporate these values into regulatory decisions, yet also provides alternative strategies for stakeholders in the possibility of a biased regulatory decision (one that is not in achievement of a ‘good’ public interest decision).

A Selected Example of Clark’s Framework Application

The execution of this framework in a similar natural resource management issue is perhaps best exemplified in Cherney, et al’s work: *The American West’s Longest Large Mammal Migration: Clarifying and Securing the Common Interest* (Cherney, et al. 2008). This study examined how stakeholders create policy outcomes that serve the common interest in regards to management decision-making surrounding the longest mammal migration (the Pronghorn Antelope) in North America (Cherney, et al. 2008). Certain characteristics in both the Pronghorn migration and the TDR region are paralleled, such as the degree of stakeholder and environmental complexities, along with the roles of regulatory agencies; in addition, the authors utilized similar methods, including the problem orientation framework and semi-structured interviews with various stakeholders (Cherney, et al. 2008). As a result, the authors successfully identified several relevant bottom-up and top-down policy alternatives, using the process-based framework to create solutions through the identification of problem definitions, goals, trends and conditions, and developments.

Overall, the organization of Cherney’s study served as a guiding framework for this thesis. However, taking into account the importance of top-down regulatory processes to the management outcome of the region, I expanded this thesis’s scope through integrating the focused NEPA analysis, including topic coding comment analysis and the application of the civic

republican ideal, to further increase this thesis's analytic depth and relevancy. I propose that future studies aiming to understand and resolve similar natural resource management conflicts, in terms of the public interest, should apply a similar combination of such methods as necessary, using the problem orientation framework as a guiding structure to organize empirical data and specific analytic methods to target key aspects of the conflict.

Chapter 3: NEPA and Public Lands Literature Review

This section examines a variety of literature, and intends to provide and summarize key information in relation to the research intentions and questions; stakeholder interview data is also selectively incorporated. First, NEPA policy and procedure, along with federal oil and gas leasing

procedure and several key categorical exclusions, are discussed. Although a summary of relevant policies to the TDR beyond NEPA is largely beyond the scope of this analysis, these policies are available for reference through FS or BLM resources³.

NEPA Overview

Regarded by some as the ‘modern-day environmental Magna Carta’, NEPA established the fundamental procedures and mandates of U.S. environmental policy, and legally binds federal agencies to follow specific procedures to evaluate the impact of federal decisions on the environment, as well as to involve and inform the public in decision-making. NEPA also established the Council for Environmental Quality (CEQ), which resides in the executive office of the president. The CEQ: 1) establishes fundamental executive branch Federal agency procedures and binding regulations, 2) reviews NEPA processes, 3) and aids in conflict resolution (CEQ, 2007). In 1978, the CEQ implemented binding regulations ensuring that agencies comply with their specific NEPA responsibilities (CEQ, 2007). I will now summarize NEPA’s Title I statutes, CEQ Regulations, FS and BLM oil and gas leasing procedures, and key administrative law concepts, as well as relevant federal statute specifically governing civic engagement responsibilities.

Sections 101 and 102 of *NEPA*, 42 U.S.C. §4331 - §4332, establish fundamental values of environmental quality, and direct agencies to use all practicable measures to promote general welfare and attempt to create coexistence between development and conservation (USC, 1969). In addition, Sec. 101.(c) emphasizes a responsibility for American citizens to contribute to the protection and enhancement of the environment (U.S.C., 1969). Agencies are obligated to cooperate with public and private organizations, along with other federal agencies (U.S.C., 1969).

³ The basic structure for federal land use planning falls under the FLPMA of 1976, governing BLM lands, and the National Forest Management Act (NFMA) of 1976, governing FS lands. In addition, C.F.R. § Title 36, Part 228 and C.F.R. Title 43, Part 3100, governs federal oil and gas leasing procedure, along with selected statutes including the Federal Onshore Oil and Gas Leasing Reform Act of 1987, the Multiple-Use Sustained-Yield Act of 1960, and the FS Service Manuals 2820 and 2860 (FS, 2013)

Although NEPA highly values environmental preservation and quality, a multiple use mandate is also likely evident, as exemplified in Sec. 101.(b)(5), “[to] achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities” (U.S.C., 1969).

The CEQ Regulations establish definitive and systematic procedures to ensure compliance with NEPA statutory values. Key elements of Sec. 1502, which determines rules for environmental impact statements, include 1) regulations surrounding timing, staging, and format, and 2) analysis requirements of alternatives, including a proposed action, the affected environment, and environmental consequences of these alternatives (CEQ, 1978). In addition, Sec. 1508 defines relevant terms as applied to the EIS process. For instance, analysis of effects includes both direct and indirect effects. Indirect effects are caused by the initial action at a later date, but are also reasonably foreseeable (CEQ, 1978). Cumulative impacts are defined as the collective environmental consequences of an action due to incremental impact in the past, present, and future (CEQ, 1978). Lastly, scope is defined as the range of actions (connected, cumulative, and similar), alternatives (no action, other courses of actions, or mitigation measures), and impacts (direct, indirect, or cumulative) to be considered in an environmental impact statement (CEQ, 1978). As a result, these responsibilities attempt to ensure a comprehensive take on assessing and projecting the possible impacts of federal land management decisions. *Figure A.1*, in the Appendix, presents a flowchart of possible agency NEPA EIS procedures.

NEPA and Civic Engagement

In the U.S., public engagement in governmental decision-making is a cornerstone of our civic ideals. The First Amendment specifically prohibits the Congress from making any law “abridging . . . the right of the people . . . to petition the government for a redress of grievances”

(Squillace, 2013). As factors⁴ influenced the decline of practicable public engagement at the federal congressional level, civic engagement opportunities vastly expanded within executive branch agencies (Squillace, 2013). In modern day natural resource decision-making, which is often complex and multi-level, public participation is increasingly being sought as a means to create decisions that are flexible and diverse (Stringer, et al. 2007). In addition, positive benefits of civic engagement may be 1) the incorporation of public values into decisions, 2) the improvement of the substantive quality of the decision, 3) the resolution of conflict among competing interests, 4) the building of trust in agencies, and 5) the education of the public (Squillace, 2013).

However, when agencies fail to incorporate or engage interests properly, stakeholders may be disillusioned and discouraged from further participating in current or future processes (Reed, 2008). In addition, certain arguments against civic engagement include its resource intensive and costly nature, as well as the sentiment that cumbersome governmental institutions are not necessary (Squillace, 2013). However, taking into account the current dynamics of environmental decision-making, as well as binding statutes and precedent mandating civic engagement, civic engagement overall tends to have a positive impact on decisions (Squillace, 2013).

NEPA serves as a key administrative tool for incorporating and understanding public concerns about resource management decisions for the FS and BLM. Stakeholders acknowledge this reality, as evidenced in one advocacy group's opinion towards NEPA: "NEPA is agnostic, it allows for public involvement . . . NEPA is all we've got" (Sloan Shoemaker, 1:10). A NEPA document is legally sufficient only if its "form, content and preparation . . . foster both informed decision-making and informed public participation" (185 F.3d 1162, 1172, 10th Cir. 1999). The following statutes, extracted directly from the 1978 CEQ NEPA regulations, summarize how the

⁴ Such factors may include population growth and the increasing influence of lobbyists, large donors, or interest groups on the legislative branch, among others. This has resulted in decreasing personal interactions between members and staffers of Congress and the general public (Squillace, 2013)

FS and BLM must reach out to, incorporate, and respond to public opinion when conducting a NEPA EIS:

Figure 3.1: Selected CEQ NEPA civic engagement statutes

§ 1500.2 Policy: (d) Federal agencies shall to the fullest extent possible: encourage and facilitate public involvement in decisions which affect the quality of the human environment.

§ 1501.7 Scoping: (a) As part of the scoping process the lead agency shall:

(1) Invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds), unless there is a limited exception under § 1507.3(c)

§ 1503.1 Inviting comments: (2)(4) Request comments from the public, affirmatively soliciting comments from those persons or organizations who may be interested or affected.

§ 1503.4 Response to comments: (a) An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement. Possible responses are to: (1) Modify alternatives including the proposed action. (2) Develop and evaluate alternatives not previously given serious consideration by the agency. (3) Supplement, improve, or modify its analyses. (4) Make factual corrections. (5) Explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

(b) All substantive comments received on the draft statement (or summaries thereof where the response has been exceptionally voluminous), should be attached to the final statement whether or not the comment is thought to merit individual discussion by the agency in the text of the statement.

§ 1506.6 Public involvement: Agencies shall: (a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures.

(b) Provide public notice of NEPA related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected. (3) In the case of an action with effects primarily of local concern the notice may include: (iv) Publication in local newspapers (in papers of general circulation rather than legal papers). (vi) Notice to potentially interested community organizations including small business associations. (vii) Publication in newsletters that may be expected to reach potentially interested persons.

(c) Hold or sponsor public hearings or public meetings whenever appropriate or in accordance with statutory requirements applicable to the agency. Criteria shall include whether there is: (1) Substantial environmental controversy concerning the proposed action or substantial interest in holding the hearing.

(d) Solicit appropriate information from the public. (CEQ, 1978)

In addition, the CEQ has presented several formal recommendations for citizens engaged in public participation, including *A Citizen's Guide to NEPA* (CEQ, 2007). The CEQ acknowledges that “being active in the NEPA process requires you to dedicate your resources to the effort . . . [it] requires a commitment of time and a willingness to share information” (CEQ,

1978). This is quite evident when considering the depth of certain NEPA analysis; for instance, the 2014 FS FEIS is over 700 pages long (FS, 2014). Lastly, the CEQ recommends public participation in agency monitoring and mitigation strategies. If applicable by the FROD, community interest groups and the public retain the ability to participate in and influence monitoring and mitigation decisions (CEQ, 1978). However, NEPA is by no means a perfect system, and has received substantial criticism. In a meta-NEPA analysis conducted by the CEQ NEPA Task Force, public comments suggested that agencies participate in information and best practices sharing to improve public involvement skills, such as expanding scoping and Notice of Intent notification beyond the Federal Register, extending the comment period so the public can better educate themselves to the relevant data, and increasing the uniformity of agency procedure to better facilitate public involvement (CEQ, 2004). Additional strategies and recommendations are presented in Chapter 7.

Models of Regulatory Agency Civic Engagement

This section will summarize common models of stakeholder civic engagement for executive level regulatory actors exercising discretionary power (Squillace, 2013). As agency and CEQ engagement values and abilities have evolved since the passage of NEPA, different civic engagement models have attempted to ensure compliance with agency responsibilities. The first, the expert agency model, posits that good science can lead to good decisions; however, this model fails to account for policy and social dynamics which significantly influence decision outcomes, and therefore is most likely not the most comprehensive model for civic engagement (Squillace, 2013). The second, the plurality model, focuses on collaboration as a means to resolve conflict between parties. Although many agencies incorporate this model, it may lead to a disproportionate representation of interests, especially focusing on private interests of significantly involved parties, which reduces the likelihood of accurately reflecting the public interest in complex resource management decisions (Squillace, 2013). The third model, or the

civic republican ideal, **focuses squarely on the public interest as its cornerstone** (Squillace, 2013). This model commonly entails four main principles, including:

Figure 3.2, Fundamentals of the Civic Republican Ideal

- (1) It is deliberative
 - (2) it promotes political equality
 - (3) it is designed to achieve a definable, common good
 - (4) it requires participants to engage in the process, not as parties with private interests, but as citizens committed to the public interest
- (Squillace, 2013; Sunstein 1988)

As a result, this model asks participants to engage the decision-making process beyond the scope of their own interests-- to instead engage the process with a rational focus on achieving the public interest (Squillace, 2013; Sunstein, 1988). Although no current empirical metrics are available to measure the success of processes guided under the civic republican model, Sunstein proposes that this ideal, adapted as a guiding model in agency decisions, could result in improvements to the civic engagement process and better agency decisions that center on the public interest in resource management (Sunstein, 1988). Although this ideal places a responsibility on the public, regulatory agencies can play an important role in facilitating and guiding the process, and can utilize engagement tools such as 1) public notice and comment, 2) formal and informal hearings, 3) the town hall meeting, 4) open house meetings, or 5) workshops and consensus based processes (Squillace, 2013)⁵. These strategies are further discussed in Chapters 6 and 7. Given the shortcomings of the two previous models, civic republicanism appears to be the best model as which to accurately define and reflect the public interest (Squillace, 2013). As a result, I selected the civic republican ideal as the primary agency public engagement model in this analysis.

Public Lands Oil and Gas Leasing NEPA Procedure

⁵ Further expansion and critique of these methods is available from *Meaningful Engagement in Public Lands Decision-Making* (Squillace, 2013)

On federal public lands in Colorado, both the FS and BLM participate in leasing and regulating energy development, along with the Colorado Oil and Gas Conservation Commission (COGCC) from the Colorado Department of Natural Resources (DNR). These agencies fulfill unique regulatory and analytic roles through several leasing stages, including developmental and project level NEPA, Application for a Permit to Drill (APD) evaluation, and consulting with other federal agencies, interest groups, independent consultants, and the public (FS, 2015; BLM, 2013). In the TDR, the BLM oversees lease issuance and sales, whereas the FS fulfills management and evaluation roles. The leasing roles and procedure of the BLM and FS are best summarized through the following diagram, presented as *Figure A.2* in the Appendix; development and mitigation procedure is beyond the scope of this analysis but widely available for reference through FS and BLM sources.

Notable Public Land Oil and Gas Statutes & Categorical Exclusions

Several recent federal statutes have included notable categorical exclusions for oil and gas leasing which have attracted controversy. In 1978, Congress amended the Clean Water Act to exempt the EPA from developing a permitting program for pollution as a result of exploration, production, or processing of oil and gas development (U.S.C., 1978). However, these exemptions were further expanded in 2005 through Sec. 390 of the Energy Policy Act (EPA), which further exempted the Environmental Protection Agency (EPA) from permitting runoff as a result of oil and gas infrastructure processing, treatment operations, or transmission facilities (U.S.C., 1978). These stipulations may limit the ability of an administrative agency to take a ‘hard look’ at impacts and alternatives when sensitive natural resources are at stake (Anderson, 2009). Lastly, the FS Roadless Rule has served as a key statute for ensuring the continued preservation non-fragmented landscapes in the TDR⁶.

⁶ The Roadless Rule was originally implemented as 36 CFR Part 294, published in the Federal Register in 2001 (Federal Register, 2001).

On the other hand, recent state and agency level developments have received praise; the Colorado Department of Public Health (CDPHE) 2013 regulations, targeted at restricting and reducing methane emissions at development, production, processing, and transport stages of oil and gas development, were unprecedented nationwide and have been effective to reduce methane emissions from energy development at natural gas extraction and transport stages (CDPHE, 2013). Don Simpson, representing Ursa, remarked that these regulations have been very influential towards reducing methane leakage through the required enactment of Best Management Practices (BMPs) and improvements to infrastructure (Simpson, 8/14/15). As a result, these regulations have addressed key state interests towards reducing the environmental impact of energy development, and may be key towards ensuring that potential lease development in the TDR meets air quality standards (Simpson, 8/14/15).

Civic Engagement, NEPA Case Law, and the Administrative Procedure Act

Although there are no clear statutory requirements that agencies must take into account public concerns found in NEPA civic engagement processes, this responsibility is better evidenced in case law precedent, especially Federal Circuit judicial review of agency decisions that the public views as non-compliant with legally binding requirements. NEPA litigation is a common occurrence; for instance, in 2013, public interest groups filed 65 out of 98 NEPA lawsuits against governmental agencies (CEQ, 2014). The American West 9th and 10th Circuit courts are the most active in NEPA cases; for instance, these courts viewed 68% of total NEPA litigation from 2006-2011 (CEQ, 2014). With the passage of the Administrative Procedure Act (APA) in 1946, the American public was awarded greatly expanded opportunities to participate in executive branch decision-making through public comment and review; in addition, the APA also ensures the right of affected parties to engage agencies in formal adjudication processes

(Squillace, 2013). *Figure A.3*, presented in the appendix, describes potential litigation points in the NEPA process (Miner, 2010). Many NEPA appeals seeking adjudication of agency decision typically cite Sec. 706 of the APA, or the ‘hard look requirement’:

Figure 2.2: Sec 706(2)(A) of the Administrative Procedure Act, definition of ‘arbitrary and capricious’

5 U.S.C. § Section 706.(2)(A) - Scope of review: To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall:

(2) hold unlawful and set aside agency action, findings, and conclusions found to be -

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law (U.S.C., 1946)

The 1983 case *Motor Vehicles Manufacturers Association v. State Farm* best defines ‘arbitrary and capricious’ actions for the purposes of the Administrative Procedure Act. According to the Supreme Court; an arbitrary and capricious action is if, “the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, or offered an explanation for its decision that runs counter to the evidence before the agency” (463 U.S. 29, 1983). As a result, this ‘hard look requirement’ ensures that the agency presents a rational connection between the facts found and the choice made; the reviewing court may set aside or reverse agency decision, including reversing a decision not to undertake an EIS analysis (APA, 1946). Public comments can play a key role in reviewing these connections and reversing agency decisions; **for instance, if hypothetically** in their current EIS, the BLM finds that a certain action (i.e. allowing a well pad within a key wildlife migratory corridor) will have significant negative impacts on an endangered species (perhaps reducing key habitat areas during calving season) yet permits the action in their FROD, the public could describe this action as arbitrary and capricious, in that the agency made an irrational connection between the choice made and facts found, thus creating opportunities for a litigation process.

Department of Interior Board of Land Appeals Review

In addition, the IBLA tribunal, which exclusively oversees BLM decisions, is another option for parties to seek adjudication of BLM NEPA decisions. To retain standing in the process, the party must demonstrate that the BLM has both adjudicated the interests of the party, as well as have adversely affected the party (Hughes, 1993). Following the submission of an appeal, the BLM must refrain from any further adjudicatory activity surrounding the resources; however, the BLM is open to reconsider its decision or engaging in settlement negotiations (Hughes, 2013). The district court where the decision is being considered reserves the right to oversee judicial review of the IBLA decision (Hughes, 2013).

The IBLA tribunal is especially important to the TDR. In 2007, appellants argued in IBLA decision 2005-9 & 2005-10, *Board of Commissioners of Pitkin County and Wilderness Workshop, et al.*, that the BLM decision to lease three land parcels for oil and gas in the TDR, without prior EIS adoption or analysis, violated 1) the FS Roadless Rule, 2) the Endangered Species Act, and 3) NEPA, by failing to prepare an EIS, recognize the controversial nature of this proposed leasing (i.e., public concern), and consider new information (IBLA, 2007). In response, the IBLA declined to rule surrounding the Roadless Rule and Endangered Species Act (ESA) due to lack of agency purview and information, but reversed the BLM NEPA decision, thus prompting the BLM CO River Valley Office's recent actions including SGI and Ursa lease suspensions, the current leases on WRNF EIS, and lease unitization proposal suspensions (BLM, 2013).

What is a Good Public Interest Decision?

Although the definition of public interest is somewhat ambiguous, considering the literature as well as practical considerations of changing scenarios and party identities, this study will rely on several well-established perceptions. A 'good' decision at the very minimum, in

terms of the public interest, must be understood and accepted by the public as credible on policy and legal grounds, even if certain parties disagree, along with identifying and protecting the public interest towards the affected natural resources (Squillace, 2013). Furthermore, the agency should take into consideration the interests of parties beyond those who have engaged the agency, disadvantaged parties including future generations, and perhaps even non-human interests (Leopold, 1949). Although the public interest is commonly perceived as unattainable, it is often practically achievable through a well-conducted civic engagement process (Brunner, et al. 2002; Cherney, et al. 2008; Ascher and Healy, 1990). It is also important to consider a public interest decision as an ongoing solution, involving compromise among alternatives and parties (Cherney, et al. 2008). As a result, this study will collectively focus on these insights, focusing on both bottom-up and top-down alternatives and decisions that could aid in ensuring the public interest in management of TDR natural resources.

Chapter 4: Overview of the Thompson Divide Region and Conflict

This section reviews key data surrounding the environmental and social aspects of the TDR, and then summarizes current developments relevant to the conflict. First, the TDR will be

examined from an environmental perspective; then, the human dimension is discussed from a historical, economic, and cultural standpoint.

Environmental Attributes

This section will provide a comprehensive review of the relevant environmental characteristics of the TDR, with a focus on geographical, hydrological, ecological, and geological data, incorporating both independent stakeholder analysis as well as data presented in the FS NEPA process. The TDR offers a variety of ecosystem services, which support a vast number of human and non-human species. The primary focus will examine the environment in relation to existing uses and potential oil and gas development, especially surrounding upon the areas overlaying the Lake Ridge and Wolf Springs unitization proposals, and the ecosystem services which result from these specific regions.

Geography and Landscape

In Colorado, the TDR is the largest expanse of mid-elevation mixed forest backcountry, untouched by roads, that still remains undesignated as wilderness by federal legislation (Kessler, 10:10). The region contains a rugged topography, with steep slopes that create difficulty for vehicle or ATV access, although snowmobiles are commonly used to access remote backcountry points during the winter (Fales, 6:40). The region encompasses the largest remaining complex of unprotected IRAs in Colorado, and creates significant benefits for wildlife, as well as preserving cultural and scenic values (Sloan Shoemaker, 15:40). Vegetation in the area is largely comprised of mixed spruce-pine forests and low-growth brush and scrublands, along with interspersed aspen stands, riparian zones, and cliff outcroppings (Sloan Shoemaker, 12:07). Notably, the TDR contains the second largest Aspen stand in the American West, which is among the largest living organisms in the world (Byars, 5:00). *Figure A.4*, in the Appendix, presents a Geographic

Information Systems (GIS) map overview of land ownership, county jurisdiction, IRAs, and energy leases within the TDR boundary.

Water and Air Quality

The TDR contains over 12 watersheds that supply water to both the east and west side of the Divide, which play a key role in sustaining multiple regional economies, as well as a multitude of species within the TDR. The leases in contention are found in key watersheds, including the Four Mile Creek, Thompson Creek, Coal Creek, Upper East Divide Creek, and Headwaters West Divide Creek watersheds (TDC, 2009). *Figure A.5* in the Appendix displays watershed regions within the TDR boundary.

The proposed Lake Ridge Unitization⁷ leases (the 18 leases which SGI holds) overlay the Four Mile Creek, Thompson Creek, and portions of the Coal Basin watersheds; the proposed Wolf Springs Unitization leases (the 7 leases which Ursa holds) overlay portions of the Thompson Creek and the Upper East Divide Creek watersheds (TDC, 2009). As a result, these watersheds will be the focus of analysis. On east side of the TDR, key watersheds include Four Mile Creek, Coal Basin, and the North, Middle and South Thompson Creeks, which eventually flow into the Crystal River. The Crystal River then flows through Carbondale before merging with the Roaring Fork River (Rudrow, 2:00). The Roaring Fork eventually flows into the Colorado River.

On the west side of the TDR, these watersheds eventually flow north through their respective streams into the Colorado River, crossing the expansive oil and gas fields through the Mesa and Rifle Counties (Rudrow, 2:20). This water plays an integral role in supporting life throughout the TDR; according to one study, at least 85% of species living in the TDR must visit

⁷ Unitization is a combination of 2 or more leases for joint exploration or development of a common hydrocarbon accumulation under terms of a Unit Agreement and a Unit Operating Agreement, i.e. acts as a single lease (BLM, 2015)

the riparian zone at least once in their lives, which due to the steep topography in the TDR, is typically a small zone and commonly susceptible to anthropogenic disturbance (Rudrow, 9:20). As a result, significant independent study has focused on water quality and quantity within the Thompson, Four Mile, and Coal Basin watersheds, along with FS EIS analysis.

In 2011 the Roaring Fork Conservancy (RFC), along with several hydrological consulting partners, initiated a series of baseline water quality studies aimed at quantifying water quality and quantity in the TDR in response to projected energy developments. These studies especially focus on the potential impact of energy infrastructure on water quality and quantity (Miller, 2010; Moran and Rudrow, 2011). The Thompson Creek and Four Mile watersheds lie within the study areas. In addition, the RFC provided a detailed comment in the FS DEIS public comment process that synthesized this information, along with an analysis of the Coal Basin Watershed (Lofaro, 2012).

Using various field methods, these peer-reviewed studies found that Thompson Creek is a pristine watershed containing a high flow rate and high macro invertebrate density, a proxy indicator for good overall stream health (Miller, 2010). However, several portions are designated as an Area of Critical Concern by the BLM, and potential oil and gas development could damage surface and groundwater through chemical spills, and sedimentary loading through road building, erosion, and stream channelization (Lofaro, 2012). Overall, roads are typically known to detrimentally affect montane riparian zones through creating stream bank instability, decreased water depths, changes to water flows, reduced dissolved O₂ capacity, and changes to water temperature (Lofaro, 2012). The Four Mile Creek watershed, on the other hand, suffers from low flow due to hydropower and irrigation diversions, including rights from Sunlight Mountain Ski Resort, which can exacerbate habitat degradation as a result of anthropogenic pollution (Moran and Rudrow, 2011). Although the watershed sustains macro invertebrate populations and several key species, streams are at a higher risk of potential negative effects than the other regions (Moran and Rudrow, 2011). As a result, projected energy development could alter hydrology

through decreased water quantity, and changed surface stream networks through road development, along with sedimentary loading (Lofaro, 2012). Lastly, the Coal Creek watershed contains relatively low water quality and habitat as a result of previous coal mining in the region (Lofaro, 2012). Presently, this has created significant sedimentary loading as a result of unstable slopes and tailings piles, as well as reduced species habitat and reduced macro invertebrate density and diversity (Lofaro, 2012). Coal Creek contributes the highest suspended solid concentration of any tributary to the Crystal River (Lofaro, 2012). The area is currently undergoing reclamation efforts by the WRNF FS and partners, including road reclamation, alluvial stream reshaping, and native grass studies (FS, 2013). However, the Coal Basin area is projected to be a focal point of surface disturbance for projected energy developments, which could detrimentally impact current reclamation efforts and exacerbate sedimentary loading and stream bank instability (Lofaro, 2012). The RFC noted that any additional construction, especially well platforms, pipelines, or roads, would require substantial reclamation and re-vegetation efforts (Lofaro, 2012).

Chad Rudrow, the Water Quality Coordinator with the RFC who coordinated fieldwork for these studies, was skeptical about the coexistence of current activities and energy development, emphasizing, “it's a tough call to say that they could all happen in harmony” (Rudrow, 24:43). In addition, these risks could not only produce negative impacts on these watersheds, but also upon the Crystal, Roaring Fork, and Colorado rivers. In their 2013 DEIS, the FS rated the Outlet Roaring Fork River as having High Watershed Sensitivity, which is predominantly fed by Thompson Creek drainage (FS, 2013). In addition, the Roaring Fork contains the Gold Medal Stream designation as a result of its prized trout habitats and angling opportunities, which potential sedimentary loading and chemical spills could compromise (Kindle, 8:40). In sum, water quality and quantity is perhaps the key concern for potential risks of development in the TDR and must be addressed as such.

In the TDR, air quality has received far less attention, from both NEPA and independent analysis, although the issue is still of key importance. This is evident in the Roan Plateau case, a similar energy development conflict on the Western Slope in 2012. In *Colorado Environmental Coalition V. Salazar*, plaintiffs argued that the BLM failed to consider cumulative impacts on air quality and ozone, which contributed to the court's decision to set aside and remand the defendants BLM's EIS decision that allowed leasing within the area; eventually a settlement was reached between parties, and 17/19 leases were cancelled (875 F.Supp.2d 1233, 2012).

In the TDR, FS EIS air quality analysis was framed in accordance with National Ambient Air Quality (NAAQ) regulations, and relied on monitoring stations in Aspen, Sunlight Mtn. Resort, Rifle, and Parachute (FS, 2013). Based on data, the FS determined that air quality standards were in compliance with NAAQ directive for the surrounding wilderness areas, including the Maroon Bells/Snowmass and Mount Zirkel areas (FS, 2013). The EIS cited that each of the monitoring stations is in accordance with the NAAQs; only one violation was recorded in 2008 in Parachute, which is in the heart of the Piceance basin gas fields (FS, 2013). In addition, in an analysis of Alternatives A, B, and C, the FS did not estimate any violations to NAAQ standards or Class I visibility requirements (wilderness areas), even taking into account Reasonable Foreseeable Development (RFD) scenarios of projected energy developments (FS, 2013).

Species Ecology

The TDR offers wildlife habitat for a variety of terrestrial and riparian species due to its mid-elevation character, topography and several accessible migration corridors, which have been extensively studied by NEPA and the DNR Division of Wildlife (DOW) analysis. Due to its Roadless nature and mid-elevation, the area plays a key role in providing summer grazing habitat, as well as winter sheltering habitat, for a variety of species including mule deer, elk, moose, black bears, the Canadian Lynx, and numerous varieties of small mammals (Groves, 2009; FS, 2013).

These species, which prefer solitude and react negatively to anthropogenic disturbance, use the TDR to graze and prepare for the winter, and are especially prone to disturbance during their spring calving season (Groves, 2009). Described as the ‘elk factory’ by one stakeholder, the TDR contains one of the largest elk herds in the state of Colorado (Kessler, 6:50). Black bears tend to shelter in all regions of the TDR in all seasons, especially in the numerous aspen stands, and are prone to disturbance during the fall feeding season, prior to hibernation (Groves, 2009). In addition, elk, mule deer, and moose species use several migration corridors from the high elevation wilderness areas, including the Snowmass Wilderness area, to shelter during the winter at lower elevation regions within the TDR, including a southern route along the Crystal River which contains large quantities of migrating moose during the fall season (Groves, 2009; Shoemaker, 5:40). Lastly, the Canadian lynx, although less studied, uses all regions of the TDR for habitat and reproduction; in addition, as CO Lynx populations increase, these areas are likely to be increasingly populated by the lynx (Groves, 2009). All of these species are highly dependent on riparian zones, relying on willow-choked streams for grazing, shelter, and migration (Groves, 2009). Several raptor and hawk species also use the TDR as nesting and hunting habitat, in addition to a multitude of migratory bird species (Groves, 2009).

A multitude of riparian species are also present in the TDR throughout the various watersheds. Present within the Four Mile, Thompson, and Coal creeks are a variety of trout species, including brown, rainbow, brook, and Colorado cutthroat trout, the mottled sculpin, and the Northern Leopold Brown Frog, a FS sensitive species (Groves, 2009; Lofaro, 2012). In addition, throughout the North, Middle, and South Thompson Creeks, over 8 conservation populations of genetically pure Colorado native Cutthroat Trout are present, which constitute over half of the existing native populations in Colorado (Kindle, 7:37). These riparian areas are surrounded by dense willow clusters and native grasses, as well as algae, which contribute to water filtration and macro invertebrate diversity (Groves, 2009). These species may all

experience detrimental effects due to the anthropogenic riparian zone disturbance risks from energy development, as discussed above (Lofaro, 2012; Groves, 2009).

Although present human uses within the TDR produce detrimental impacts on wildlife, projected energy developments may have a far greater risk of significant negative impact on both terrestrial and riparian species (Joslin, et al, 1999). Habitat fragmentation, which is the division of landscape habitat into smaller, isolated segments, may produce the most significant negative effects upon mammal species, especially during the calving season (Didham, 2010). In addition, fragmentation may result in synergistic negative effects in conjunction with time-lagged population decreases, trait-dependent species responses, and other landscape changes such as fire or pine-beetle disturbance (Didham, 2010). Although fragmentation is currently limited within the TDR, due to IRAs and a limited road infrastructure due to the regional topography, the necessity of increased road infrastructure for energy development, and the subsequent increased anthropogenic usage of roads, may produce substantial negative effects on large mammals (Groves, 2009). In addition, the creation of road infrastructure and pipelines may reduce the surface area of migratory corridors that access the TDR, reducing genetic diversity and species density (DOW, 2011). It is important to note the cumulative impacts of natural gas development, which include not only well pads and roads, but heavy truck traffic, light and noise pollution, and direct mortalities from vehicle strikes, all of which produce negative impacts on wildlife (DOW, 2011). Many stakeholders emphasized that these direct and indirect potential effects, along with the increasing alternative land uses in the last decade such as recreation, may compromise the pristine habitat quality and backcountry character in the TDR (Kessler, 24:43; Fales, 3:39; Darling, 4:19).

Anthropogenic Uses & Relationships

This section summarizes anthropogenic relationships to public land within the TDR, from a land use, economic, and cultural perspective. In addition, this section will especially focus on the existing, suspended, and proposed oil and gas leasing and infrastructure within the TDR.

Land Use, Economics, and Culture

Public lands in WRNF are important financial assets, and each county surrounding the TDR has different perceptions and values towards the uses of their respective public lands. Federal public lands make up 60% of Garfield County, 86% of Pitkin County, and 76% of Mesa County, which are the three primary counties who have participated in the TDR conflict; although Mesa County and Garfield both heavily rely on energy development for revenue intake on these public lands, whereas Pitkin County generally focuses on agriculture, recreation, and tourism (Garfield County, 2011; Seldin, 11:30; Pugliese, 5:40). In addition, the municipalities of Carbondale and Glenwood Springs rely heavily on public lands in and surrounding the TDR for

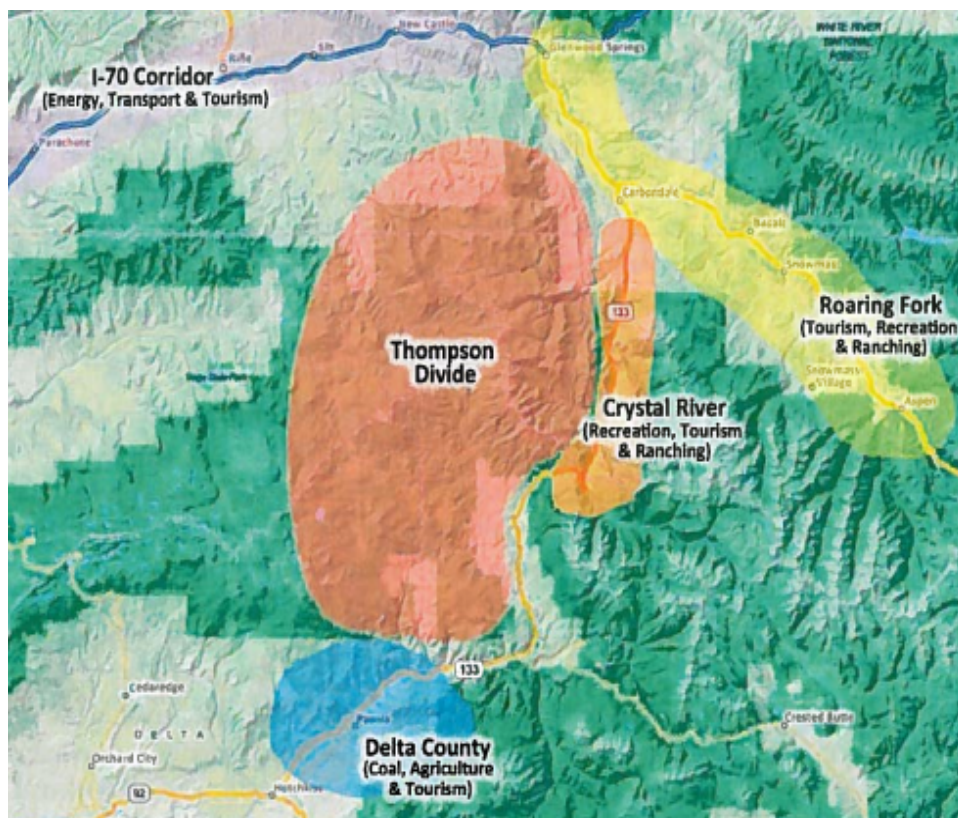


Figure 4.1: Economic Benefits of the Thompson Divide (BBC, 2012)

revenue intake through recreation and tourism. As one stakeholder emphasized, “if you look at a business directory in Carbondale, over half the businesses are either directly related to agribusiness and tourism, or indirectly rely on it” (Kindle, 6:04).

In 2011, the Thompson Divide Coalition (TDC) funded an independent study aimed at quantifying the existing values of public land within the TDR, conducted by the BBC Research and Consulting Group (BBC). This study focused on quantifying economic values of public land usage within the TDR boundary, in terms of annual revenue generation and jobs created, to areas surrounding the TDR. Of these uses, primary revenue generators include 1) hunting, which generates \$6.8 million in annual revenue and roughly 78 jobs, 2) fishing, which generates \$1.5 million in annual revenue and roughly 20 jobs, 3) recreation, which generates \$12.6 million dollars in annual revenue and supports roughly 138 jobs, and 4) grazing, of which direct and indirect contributions from grazing allotments were projected at \$11.2 million, (BBC, 2012). The total direct and indirect annual revenue benefits of these activities were estimated at \$29 million, along with 294 jobs, of which over half were estimated to occur in the property vicinity of the TDR (BBC, 2012). In addition, the firm noted a number of highly valuable ecosystem services, which due to lack of reliable economic metrics were not quantified, but included species habitat, erosion control, carbon sequestration, and clean water (BBC, 2012).

As economic uses in these regions have shifted, cultural perceptions of the value of public lands have also changed, especially as applied to the TDR. For instance, in the Carbondale area, a number of stakeholders expressed the sense of place that accompanies the region, and the resulting positive community effects from co-existing land uses (Bernot, 2015; Seldin, 3:00; Shoemaker, 25:40; Byars, 15:30). These values recognize both the economic and cultural values of pristine lands, albeit with or without wilderness designation, and the resulting social benefits that accompany these types of landscapes. Wilderness advocate Sloan Shoemaker emphasized that the TDR “helps to keep our community healthy . . . healthy landscapes and healthy communities really go hand in hand. Both physical and mental health.” (Shoemaker, 20:30). As a

result, many of these stakeholders place significant value towards the preservation of this pristine landscape.

Oil and Gas Leasing

Although limited oil and gas leasing has been present in the TDR since the 1950s, the leases which are the focal point of the current conflict were issued in 2003. These leases were issued as part of an expansive effort on behalf of the Bush Administration to expand domestic energy production due to fluctuating international energy markets (WW, 2014). Through 2001-2006, more than 17,000 gas and oil wells were drilled on public land in the Rockies, which nearly doubles the total number of wells drilled during the previous Clinton Administration (Klopf, et al. 2007). During the last two decades, significant industry technological improvements have greatly expanded the extraction capabilities of operators, especially through horizontal drilling and hydraulic fracturing technologies that can accurately pinpoint small gas reserves up to 10,000 feet underground (Simpson, 8/4/15). In addition, as a result of regulation and industry environmental stewardship, new technologies are continually targeting improvements in produced water management, methane leaks, and chemical spill prevention (Kiger, 2014). In the last two decades, these technologies, in conjunction with an increasing market for domestic and exported natural gas, greatly expanded drilling prospects for energy operating companies, including areas within the Piceance Basin.

The Piceance Basin contains tight gas shale and sandstone reserves with low permeability, although the greater formation is estimated to contain over 21 trillion cubic feet (tcf) of natural gas (USGS, 2002). The area has undergone intensive development in the last decade, from producing ~200 million cubic feet (mcf) of gas in 2000 to more than ~1 billion cubic feet (BCF) in 2009 (Johnson, 1989). Towards the edges of the Piceance basin, the economic feasibility of development decreases as gas-saturation decreases; the available gas from deeper shale reserves within the TDR remains questionable, and would most likely require well depths of

up to 10,000 feet (Johnson, 1989; Don Simpson, 8/4/15). Relatively, WRNF has a minimal focus on oil and gas development; in 2013, 72 oil and gas sites were administered to standards, producing 2.2 million mcf of natural and 4,421 bbls of oil estimated at \$9.1 million value (USFS, 2013). Of the four wells historically drilled in the region, 3 have not successfully resulted in production of gas reserves (BLM, 2014; Watson, 2013).

There are three primary areas which are currently leased in the TDR, held by three different leaseholders, in addition to a natural gas deep-well storage facility (WW, 2014). SourceGas Co. currently operates the Wolf Creek storage facility, which consists of previous wells drilled in the 1970s and results in minimal infrastructure surface disturbance; however, SGI recently purchased the rights for production for the leases around the storage unit (BLM, 2014). In July of 2015, SG submitted a Notice of Staking (NOS) for a proposed exploratory well and well pad in this unit, which is the first step for submitting an APD (BLM, 2014). The COGCC previously approved a state-level APD permit for this area, pending BLM analysis (Byars, 22:00). In addition, there are 5 other producing units in the area, operated by various companies including the Bull Mountain unit by SGI, although these units have undergone significantly less public controversy and produce relatively minimal anthropogenic impacts (Watson, 2013).

Of these other three leasing areas, only one is currently in development; WillSource currently holds three unitized wells by production in area termed the Willow Springs Unit, which includes 2 well pads and an access road (Cavanaugh, 7:55). On the other hand, SGI and Ursa currently hold 23 leases that are under 2014 BLM suspension until the release of their FROD for current leasing on WRNF, projected in 2016 (BLM, 2014). Through BLM quarterly auction, these leases sold for very low prices, including many for the statutory minimum of 2\$/acre; in contrast, the Roan Plateau leases sold for \$11,000/acre (Shoemaker, 18:00). Of these leases, 7 are unitized in the Wolf Creek Unit and held by Ursa, which were acquired from Antero Resources in 2013; 16 of these leases are unitized in the Lake Ridge Unit, spanning over 28,000 acres, which is held by SGI (BLM, 2014). *Figures 4.2 and 4.3 (pg. 47) display the Lake Ridge, Willow Springs*

and Wolf Creek Units, along with a speculated GIS simulation of the infrastructure which SG has proposed for development, including access roads and 132 5-acre well pads; however, this GIS simulation cannot be verified for complete accuracy, and is hypothetical. Nineteen of these leases and 20,516 acres are wholly or partly within the boundaries of Pitkin County; an additional 9,136 acres are located in Garfield County, and 3,533 acres overlay Mesa County (Seldin, 6/2/2015).

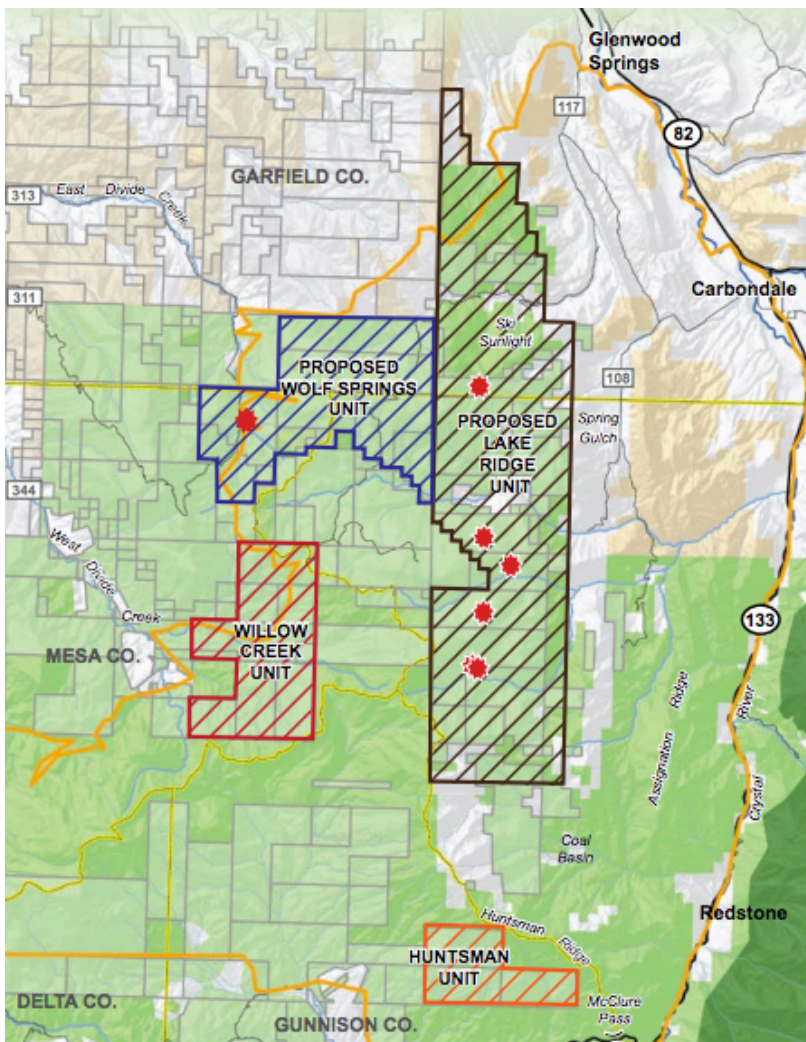
Although these leases have undergone no formal agency EIS, or adoption of EIS by the BLM, the leases contain surface stipulations in accordance with the 2002 FS WRNF Land and Resource management plan (FS, 2002). Proponents disagree over the status of these leases; critics argue that the leases are invalid, as they were issued after the 2001 Colorado Roadless Rule, yet advocates argue that the BLM and FS maintains their legality under agency purview (Watson, 2013). *Figure A.6* in the Appendix presents SG Interest's currently held leases within the TDR, along with development stipulations as created within the FS 2002 Land and Resource Management Plan (Watson, 2013). These leases can be referenced in *Figure A.4* for geographic reference in terms of management jurisdiction and location within the TDR boundary.

Overall, as the actual volume of gas reserves beneath the TDR is relatively unknown, also taking into account the complexities of infrastructure and maintenance, it is difficult to quantify specific economic values of lease development; however, Ursa and SGI emphasized that they believe that the leases are economically feasible for development, and would produce significant amounts of natural gas (Simpson, 8/14/15).



Figure 4.2: The Proposed Lake Ridge, Wolf Springs, and Willow Springs Units, left (Wilderness Workshop, 2012)

Figure 4.3: GIS simulation of the Lake Ridge development plan, above (Skytruth, 2013)



Chapter 5: Problem Orientation Framework Application

This chapter is organized in four sections: *Problem Definition*, which identifies and contrasts stakeholder perceptions of the issue, *Goals and Tasks*, which summarizes key stakeholder goals and their underlying tasks, with a focus on identifying commonalities, *Trends and Conditions*, which identifies key trends and their underlying conditions, and *Projecting Developments*, which projects how these trends may evolve into the future.

Defining the Problem

I identified three primary problem definitions by analyzing and aggregating key perceptions of the conflict, based on data gained in stakeholder interviews. Although these definitions do not convey the views of every possible party involved in the TDR conflict, some of the main views are represented. Problem definitions “yield insight to how an individual views ‘the causes and consequence of undesirable circumstances and . . . how to improve them’” (Cherney et al, 2002). As a result, these observations provided insight into multiple viewpoints on the ground, and aided in understanding how stakeholder goals are formed, taking into account stakeholder’s identities and abilities. In addition, these problem definitions also aided in understanding how stakeholders perceive and interact with regulatory agencies. I will now summarize the definitions and identify stakeholders that typically associate with a certain orientation.

The “Not Appropriate for the Area” Problem Definition

This problem definition is perhaps the most widespread across the TDR conflict; a large majority of stakeholders expressed this definition, including every pro-environmental non-governmental organization (NGO), both the municipalities of Glenwood Springs and Carbondale, the Pitkin County, the North Thompson Cattlemen's Association, and recreationists. People who primarily define the problem as such tend to highly value the TDR for its existing uses, yet also

cite the benefits of energy development in the Western Slope of Colorado; they simply perceive energy development in the TDR as incompatible with existing uses. Although the general perception is universal, that leasing is not appropriate for the region, each stakeholder cites a variety of different reasons for identifying with the problem as such, ranging from citing the region's topography, steep terrain, and pristine nature, to citing social coexistence, or how currently “everybody is using the landscape, and coexisting for the most part” (Rudrow, 13:30; Fales; 6:05; Shoemaker, 11:30). In addition, this definition emphasizes how the risk of potential adverse effects of energy development do not outweigh the potential benefits, as stated by Bill Fales, “it [the TDR] doesn't seem worth risking that for a little gas, which is questionable. And to get that gas, it would take a lot of road building, which would really destroy that area” (Fales, 7:30). A variety of stakeholders feel that although several drill pads may not produce significant negative effects, the cumulative impacts of development as proposed by SGI, including pipeline infrastructure, road building, heavy usage from oil and gas truck systems, invasive species such as noxious weeds, and detrimental social and scenic values from infrastructure would simply not be compatible with the current public land uses and attributes (Kessler, 32:00; Darling, 1:47; Kindle, 27:15). Lastly, this definition encompasses stakeholder beliefs emphasizing that the TDR is one of the last mid-elevation pristine landscapes in the American West, and is therefore not appropriate for energy development. (Kessler; 31:29, Shoemaker; 41:02; Darling, 29:32). Lastly, people expressing this definition typically emphasized that they had participated in NEPA processes through attending open houses, public meetings, and submitted form letter comments to the FS 2014 EIS.

The “Lease Legality” Problem Definition

In contrast to the previous definition, this problem view incorporates multiple conflicting perspectives surrounding the legality of the current WRNF leases, including the Lake Ridge leases held by SGI and the Wolf Creek leases held by Ursa. Certain stakeholders perceive a lack

of federal agency accountability as the key problem, whereas other stakeholders feel that federal agencies must acknowledge leaseholder rights and act fairly towards the industry, even in politicized conflicts such as the TDR. As this problem definition requires knowledge of the legal and regulatory processes in the region, stakeholders who primarily express this view are typically knowledgeable of NEPA procedure and administrative law, or have been significantly involved in the NEPA regulatory process.

On one hand, pro environmental stakeholders emphasize a lack of sufficient agency accountability and a lack of ability to respond to changing conditions (i.e. technological changes in the energy industry), for agencies including primarily the FS and BLM. These parties highlighted the lack of proper administrative NEPA review on these leases, citing the IBLA decision that reversed the BLM's decisions to reject appellants protests under NEPA, therefore compelling the BLM to undergo administrative NEPA review of the 65 current leases issued on WRNF (IBLA 2009-5, 2007). In addition, stakeholders also cited a deficiency or lack of accurate and relevant administrative NEPA analysis of oil and gas leasing on WRNF, on behalf of both the BLM and FS (Shoemaker, 37:57). As Pitkin County emphasized, "NEPA is the vehicle that provides for public involvement in oil and gas leasing decisions . . . They did not engage the public when they leased those minerals, they did not engage local governments, they violated the law. The outcome has been an incredibly controversial community dialogue over these leases" (Seldin, 30:53). In addition, certain legal advocacy groups stated that the problem began even before the lease issuance, in that the 1993 FS Oil and Gas Leasing EIS failed to properly project a reasonable and foreseeable development scenario "the '93 EIS said there may be 20-24 wells drilled in WRNF throughout the life of this EIS . . . they didn't anticipate the demand, nor anticipate the technology that would make those tight sands practicable . . . it became apparent that the EIS was outdated" (Shoemaker, 37:20). In addition, Shoemaker cited a "memo, under the Bush Administration that practically said you will remove all impediments to energy production on public lands. . . [the BLM] they are rubber stamping everything oil and gas that comes across

the desk” (Shoemaker, 34:08). As demonstrated, these stakeholders blame regulatory agencies for not following proper administrative procedure and not accurately anticipating future conditions as the primary root of the TDR conflict.

On the other hand, certain stakeholders share the same perception of lease legality as the primary issue, yet argue that the Lake Ridge and Wolf Springs leases are valid, and highlight the necessity of recognizing existing property rights of leaseholders, as well as the need for consistency in federal oil and gas leasing procedure, even in acknowledgement of significant and negative public interest. For instance, in regards to the BLM’s current EIS, the Joint Association’s Scoping Comments on WRNF Leases to the BLM CO River Valley Field Office, including signatory David Ludlum of WSCOGA, emphasized that a changing of SG Interest’s and Ursa’s lease terms would violate, “valid existing lease rights, but also undermine the confidence in which private operators enter into contract with the federal government in the future” (Joint Association, May 2014). In addition, the Joint Association expressed that in regards to several leases which have already undergone development within WRNF, excluding the Lake Ridge and Wolf Creek leases, the BLM has already undergone developmental-level NEPA, thus extending further changes to the unitized leases as an “arbitrary and capricious action, violating fundamental administrative law” (Joint Association, May 2014). Leaseholders Ursa view their Wolf Creek leases as legally sound, emphasizing that they would not have purchased the leases from Antero Resources in 2013 if they didn’t perceive a significant economic, legally sound, and achievable benefit from the leases (Simpson, 8/14/15). Ursa supported this argument with specific examples of internal regulatory procedure that would aid in adherence with existing lease stipulations, thus ensuring legal development under current BLM regulation. (Simpson, 8/4/15).

As evident, stakeholders display clear, yet contradictory, points of view sharing the same root perception of the conflict-- whether the leases (and agency actions) are legal. Many stakeholders primarily expressing this definition participated in the NEPA process through submitting objections, including WW, WSCOGA, the Mountain States Legal Foundation

(MSLF), and the Joint Association. As a result, this definition forms the basis for several stakeholder goals, especially within the context of administrative law, to influence the outcome and management decisions of regulatory and legal processes in the TDR.

The “Climate Change & Fracking” Problem Definition

This last definition shifts conflict perceptions from specific resource disputes to a macro level perception of energy development, society, and the environment. This definition encompasses perceptions of climate change, natural gas as a bridge-fuel to renewable energy, and the importance of long term resource planning. As a result, this definition embodies the views of parties beyond the direct sphere of influence in the TDR, including American citizens and those advocating for the interests of future generations. This definition also encompassed competing points of view, including disagreements over the role of natural gas development in global climate change and the accuracy of analysis surrounding the environmental repercussions of hydraulic fracking.

On one hand, parties tend to argue that the development of renewable energy sources should be the priority over hydrocarbon extraction and development, emphasizing the detrimental effects of methane release on climate change and the high environmental risks of fracking. Environmental advocacy groups, which self-identified as towards the extreme end of the anti-energy development spectrum, such as WW, emphasized that, “as a nation, as a world, its time to move beyond fossil fuels. The more we leave in the ground, the better off were going to be- we need to transition to non-fossil fuels as soon as possible” (Shoemaker, 47:49). Furthermore, a vast majority of stakeholders opposing fracking in the TDR cite the “scientific unknowns about the extent of these risks [resulting from fracking] on public lands, or the methods to safeguard the environment and human health . . . including drinking water . . . irrigation water . . . and wildlife habitat” (WW, 2012). In addition, a Colorado Springs, CO resident expressed in a written public comment that, “international corporations have no business in the land for the people, spreading

poison and making cities. Saving the forest is saving the children and saving the environment for the future” (Clark, 2012). As demonstrated, these stakeholders feel that natural gas extraction, especially using fracking technology, should be heavily restricted on public lands, due to both climate change and detrimental environmental impacts.

On the other side, stakeholders tend to cite a positive perception of natural gas as an energy source, as well as how they perceive fracking to currently be a sensationalized issue based on biased media coverage and incorrect information. For instance, Don Simpson of Ursa views natural gas as a key transition fuel, which produces significantly less detrimental environmental effects than other hydrocarbon sources, and emphasized how Ursa is currently looking to create local electrical generation infrastructure to reduce externalities of risk and transport costs (Simpson, 8/14/15). In addition, Simpson acknowledged that the oil and gas industry had done a poor job of educating the public, which has led to significant misperception and a general negative stigma toward certain aspects of energy development (Simpson, 8/14/15). The MSLF also acknowledged similar views, regarding fracking as a “sensationalized issue right now. There is not a lot of scientific research saying that it shouldn’t be done. But now it's being sensationalized and demonized by the media, and I think people have a hard time putting that in terms of their own life” (Cavanaugh, 10:30). As a result, Cavanaugh criticized opponents to energy development in the region, stating, “you can’t live in this vacuum and say no development here when you're looking at one's lifestyle” (Cavanaugh, 11:00).

Overall, this definition was highly evident across environmental advocates, as well as participants in the 2014 EIS process. It is likely that this definition of the problem influenced citizen’s decisions to send form letters opposing future oil and gas development on the WRNF, who may not be especially knowledgeable of the TDR, but instead support the efforts of environmental groups such as WW out of general concerns for climate change and the perceived effects of fracking.

Having clarified various perspectives of the problem, I will now move on to the second stage of the problem orientation framework, identifying stakeholder goals and tasks.

Stakeholder Goals & Tasks

Building from the problem definitions and background, two overarching goals are apparent for management of the TDR: to either develop the area for energy, or leave the area as it is now. Initially, these goals may seem relatively straightforward, yet each entails a series of more complex underlying sub-goals and tasks, which are the primary focus of this analysis. In addition, specific past and present stakeholder tasks and strategies are discussed that could further the achievement of these goals. Although some aspects of these goals are conflicting, I especially emphasize areas where stakeholders could find commonalities or compromises to further ensure a public interest outcome.

Protection of Water and Species in the TDR

In the TDR, as evident in each of the problem definitions, a primary goal is to ensure the protection of hydrological and ecological systems. Stakeholders in close geographic proximity to the TDR especially hold this goal due to their high dependence on ecosystem services and assets. Water quality and quantity may be the most crucial economic asset that the TDR provides. For instance, Carbondale receives part of its primary municipal water supply directly from the west side of the TDR watershed, ranchers and farmers along the Crystal River hold water rights for irrigation and livestock, and recreation outfitters (i.e. fly-fishing) depend on pristine riparian and aquatic ecosystems (Byars, 27:50; Fales, 1:01). As a result, significant analysis and effort has been focused on conserving the Four Mile, Thompson Creek, and Coal Basin watersheds, which are perceived to be at the highest risk if SGI and Ursa's lease development occurs (Rudrow, 42:16). The protection of species ecosystem services is also a key aspect of this goal, as evidenced in the high value of species population and habitat by multiple stakeholders, along with

the dependency of hunting outfitters (Seldin, 9:55). However, as a multitude of species must regularly interact with riparian zones, such as zones bordering the Thompson and Four Mile Creeks, the protection of such riparian areas may also ensure key habitat protections for terrestrial species including elk, deer, and bear populations (Rudrow, 34:54). Lastly, many stakeholders in the region have developed a strong ethic for environmental conservation and value. For instance, a Town of Carbondale representative emphasized, “there is an environmental ethic in the Carbondale community which has created a strong intolerance for activity which diminishes environmental quality (Byars 19:40). In addition, Pitkin county expressed these same interests, stating, “we take wildlife and watershed health very seriously” (Seldin, 6:04). Lastly, leaseholders Ursa expressed a similar sentiment, noting, “conservation should be the first thing on everyone’s mind”; however this group perceives the problem differently, in that energy development may not detrimentally affect the landscape (Simpson, 8/14/15). Overall, however, stakeholders have engaged a number of bottom-up strategies to achieve these water and species protection goals, including site-specific policy instruments and legal contracts for the purchase of conservation easements, in addition to other proposed larger-scope policy instruments that are explored in the following sections.

Many stakeholders have succeeded in actively engaging a variety of policy instruments seeking site-specific protections of TDR water systems. These initiatives have often been successful as a result of stakeholder cooperation and partnership. For example, in 2013, following the release of the RFC TDR watershed analysis studies, Trout Unlimited (TU) approached the group seeking to submit a proposal to designate the Thompson Creek watershed, including the North, Middle, and South Thompson Creeks, as Outstanding Water (OW) by the Colorado Water Quality Division (CWQD) under the CDPHE⁸. TU referenced the data provided by the RFC as a

⁸ This designation, implemented in the 1992 Colorado State Legislature *House Bill 92-1200*, was established under Section 25-8-209, creating, “an outstanding waters designation for certain waters for which no degradation will be allowed” (CWQD, 1992). Under this designation, these rivers “constitute an outstanding state or national resource . . . and shall be maintained at their existing quality” (5 CCR 1002-

key source in their proposal, in addition to engaging the community on the decision, and successfully achieved OW designation for the entire Thompson Creek Watershed. In their decision, the Colorado Water Quality Commission (CWQC) cited the “outreach undertaken by Trout Unlimited. . . helps to demonstrate broad support for the conclusion that these waters constitute an outstanding natural resource. . . and additional protection provided by this designation is appropriate” (CWQC, 2015). Acknowledging the co-existence of these existing uses, the CWQC emphasized that “this OW designation should not be used to establish additional permit requirements [such as future oil and gas or grazing permits] for existing uses within this area” (CWQC, 2015). As a result, the RFC emphasized the importance of sound scientific analysis and cooperation among stakeholders in support of the goal of watershed protection, acknowledging that the OW designation “sets the bar higher. It's not just focused on oil and gas, anybody in the area has to show that they will not negatively affect the creek . . . and it came out of having that information being out there" (Rudrow 35:04). Although these policy instruments represents the partial achievement of the goal of protecting water systems in the TDR, other efforts, especially on behalf of the Municipality of Carbondale, have similarly focused on protecting water quality and quantity.

The Municipality of Carbondale also highly values the protection of watershed systems in the TDR. Although the city obtains a majority of its water supply from the Roaring Fork River, the municipality also holds important water rights drawing from Crystal River and the South Thompson Creek (the Crystal Well). As a result, the protection of the water quality and quantity of this watershed is a top priority for the Town of Carbondale (Byars, 36:50). In 2013, Carbondale established a Steering Committee focused upon producing a Source Water Protection Plan (SWPP), aided by a financial contribution by the CDPHE of \$5,000, as well as consulting assistance by the Colorado Rural Water Association’s (CRWA) Source Water Protection

31; Sec. 31.8(1)a, CWQD, 2013). To achieve this designation, the proposal must prove that the waters meet existing water quality criterion, are a demonstrated national resource, or are otherwise significantly pristine and unaffected by anthropogenic disturbance (5 CCR 1002-31; Sec. 31.8(2)a, CWQD, 2013).

Specialist, Paul Hempel (Hempel, et al. 2015). This processes was funded upon the concept that local citizens, equipped with valuable knowledge of local watersheds, may be the most effective advocates for protection (Hempel, et al. 2015). This committee's goals included the education of the community to possible risks upon the surface and groundwater quality of their watershed, the encouragement of education and voluntary solutions to alleviate pollution risks, and the promotion of management practices to protect the drinking water supply (Hempel et al, 2015). Through its analysis, the report identified key stakeholders and partners, along with threats to the Thompson Creek and Crystal River watersheds including oil and gas development (Hempel et al, 2015). The report identified municipal zoning jurisdictions within the Crystal Wells area, including a 1,000 foot perimeter on both sides of the Crystal River, and a 156 square mile area of key tributaries, including the primarily the Thompson Creek watersheds as designated source water protection areas (Hempel et al, 2015).

In their analysis, the Carbondale Source Water Protection Association (SWPA) cited oil and gas operations as having a medium impact and probability of occurrence on these watersheds (Hempel et al, 2015). As a result, Carbondale identified the authority to prevent pollution of source waters within a 5-mile watershed protection ordinance, through Carbondale Municipal Code Section 13.32.030⁹ (Hempel et al, 2015). The report recognized that since COGCC APD approval must be obtained prior to all drilling operations on Federal lands, the FS and BLM should incorporate these protection stipulations into their EIS, and also recommended that oil and gas operators maintain ongoing communication about present and future industry activity within the SWPA to allow for ongoing protection from spills and other risks (Hempel et al, 2015). A database was created to tabulate and monitor future best practice assessments, especially those by

⁹ Carbondale identified this authority through the *Colorado Revised Statutes, Title 31, 31-15-707(1)(b)*, which applies to all point and nonpoint pollutants (Hempel et al, 2015). In addition, Carbondale cited COGCC Rule 317B, which includes protective measures to safeguard against potential water source contamination to due to oil and gas development activities within 15 miles of the Town's intakes, notably excluding drilling within 300 feet of a water segment, along with specific drilling and protection requirements within ½ mile of the water supply segment (Hempel et al, 2015; COGCC, 2015).

oil and gas operators, if leases proceed to the development stage (Hempel et al, 2015). This committee and its efforts, which are voluntary and not mandated by law, achieved practical and legally-recognizable results including the acknowledgement of zoning rights of Carbondale, best management practices for the FS and leaseholders, and community education, which will aid in the achievement of securing protection for water systems and species in the TDR.

Although the primary focus of bottom up policy instruments has been water systems, efforts have also focused on protecting terrestrial species habitat. For instance, in 2007, the Pitkin and Garfield Counties, along with the North Thompson Cattlemen's Association (NTCA), entered into a contract for the purchase and stewardship of over 4,800 acres of land from the North Thompson Mineral Company for over \$7 million dollars (Seldin, 10/30/2012). This land was subsequently titled in the name of the NTCA as the "Jerome Park Conservation Easement", and is managed by Pitkin County Trails and Open Space (Seldin, 10/30/2012). This easement is relevant to this analysis of public lands as species including elk, deer, and moose presently use the easement as a migratory corridor to travel between WRNF lands, highlighting how synthesizing key jurisdictional and ecological boundaries may help to ensure more relevant analysis and management of public lands (Seldin, 10/30/2012). As Pitkin County emphasized, "the conservation easement that we acquired ensured that the connectivity would continue of this migratory wildlife habitat", and also allows for recreational opportunities pursuant to Pitkin County Trails and Open Space regulation, as well as an access point to the WRNF within the TDR (Seldin, 8:10). Although this private land is functionally immune to development, considering both the rights held (mineral and surface) and the sentiment of the title-holders, Pitkin County emphasized that oil and gas operations on the Lake Ridge Unit could produce detrimental effects on migratory routes of wildlife passing through the easement (Seldin, 13:40).

On the other hand, several leaseholders in the TDR, including WillSource and Ursa, also noted that environmental protection of the TDR is a high priority. For instance, Don Simpson noted that "conservation should be the first thing on everyone's mind" (Simpson, 8/14/15). When

considering leases in current and projected development, these operators emphasized how agency, federal, and state regulations, as well as BMPs, could allow for the co-existence for both environmental assets and lease development. The MSLF cited how lease stipulations imposed by the FS in their 2002 *Land and Resource Management Plan* currently allowed for minimal impacts of development on the surrounding regions, stating how the leases have “stipulations for Colorado cutthroat trout spawning season, elk mating season” (Cavanaugh, 4:00). In addition, MSLF emphasized how they presently cooperate with other land users, even beyond the requirements of lease stipulations, as “Willsource being a good neighbor, and working with the existing people who use that area of the forest” (Cavanaugh, 4:30). Lastly, MSLF emphasized how their best management practices of maintenance on existing infrastructure in the region, such as dust, spills, and sediment controls of the access road to their Willow Springs Unit, allows for a minimization of anthropogenic wildlife disturbance and cooperation with other land users (Cavanaugh, 7:35).

Ursa also acknowledged several strategies that could be implemented to reduce environmental impacts of the projected development of their Wolf Creek leases. First, the group cited how the recent airborne pollutant regulations, implemented by the CDPHE, have functionally ensured decreases in methane leakage, and how compliance with agency, state, and federal legislation is a top priority (Simpson, 8/14/15). In addition, the group cited how developments in technology have greatly minimized the necessary surface disturbance, including their ability to horizontally drill wells at depths greater than 10,000 feet (Simpson, 8/14/15). As a result, Ursa emphasized that, depending on the actual characteristics of the gas formation, up to 40 wells could be drilled from a single surface pad (Simpson, 8/14/15). Through these techniques, Ursa could potentially extract gas reserves underlying NSO and IRAs, of distances up to several miles away, allowing for a minimization of surface infrastructure and habitat disturbance (Simpson, 8/14/15).

In addition, Ursa cited several BMPs that allow for the minimization of hydrological and ecological disturbance across pre-construction, development, and reclamation phases. For instance, prior to any development, Ursa will invite local stakeholders and agencies to the development site to seek any insights that could mitigate environmental impacts, in addition to ensuring that all stages will remain compliant with regulations (Simpson, 8/15/15). During the

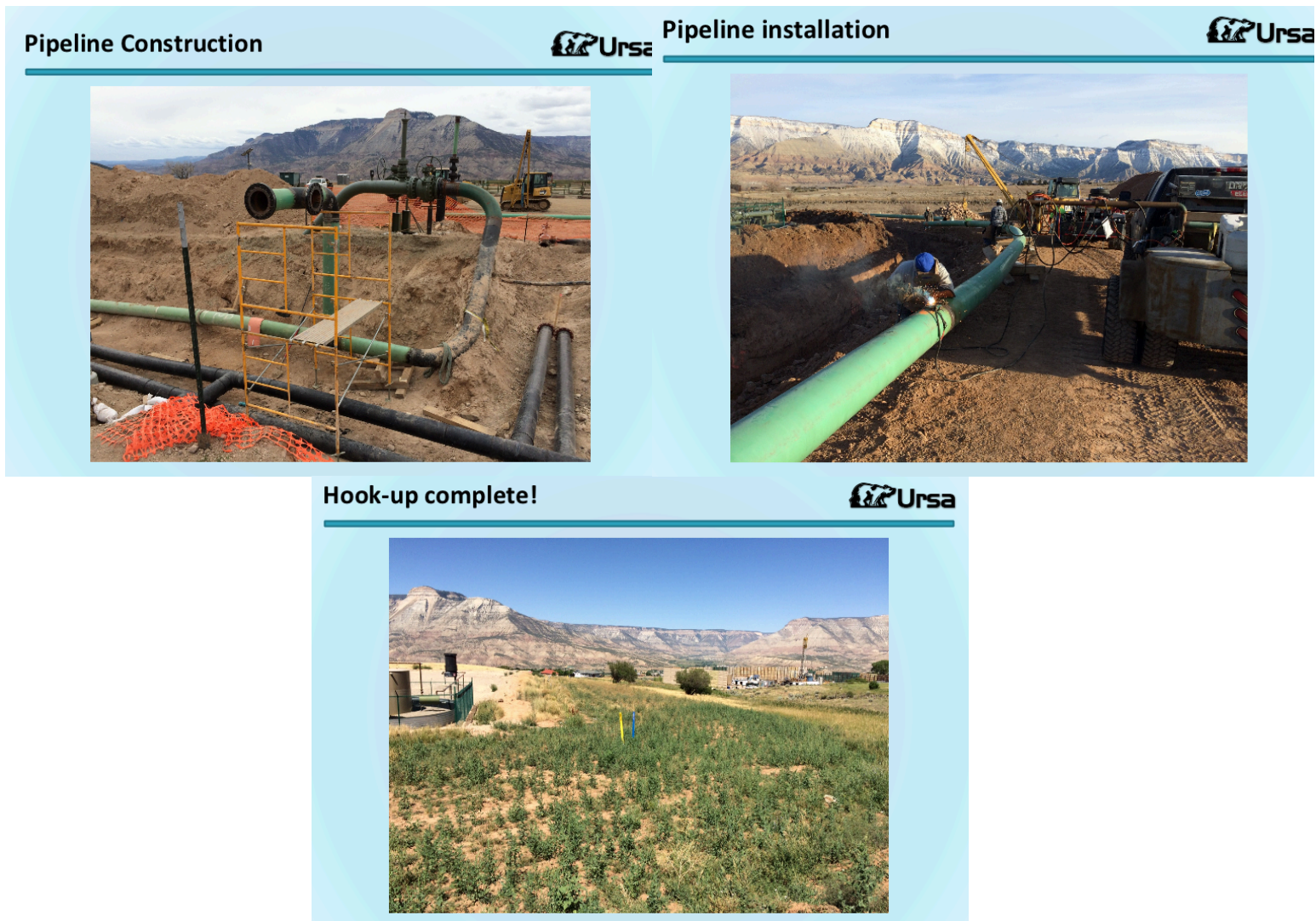


Figure 5.1: Ursa Pipeline installation and reclamation process for the Watson Ranch B Pad (Ursa, 2015)

development phase, Ursa uses a comprehensive daily safety and environmental impact checklist (JSA), in compliance with the Occupational Safety and Health Act (OSHA) requirements, to

reduce the risk of human error, aid in the implementation of storm water controls to reduce the risk of riparian zone chemical contamination, and ensure timing limitations on natural gas transport vehicles to reduce anthropogenic noise disturbance on wildlife (Simpson, 8/15/15). Key elements of the JSA BMPs include dust and noise prevention strategies, noxious weed pesticides to reduce invasive species, chemical spills prevention and mitigation programs, and water, cultural, and visual resources preservation strategies (Simpson, 8/15/15). Through these strategies, Ursa feels that the goal of coexistence between development and existing land characteristics is an achievable and realistic goal.

Public Engagement

Another primary goal for stakeholders on both sides of the management dispute is to further engage the surrounding community in education, discussion, and advocacy, to garner support for either conservation of the area or energy development. Different stakeholders acknowledged different focuses in community engagement; some simply want to provide sound and relevant information regarding the conflict for the benefit of the community, whereas others see community engagement as an opportunity to further their own political interests. As a result, tasks have included public meetings, the creation of form letters targeted at both NEPA and legislative processes, weekly newsletters surrounding updates in the TDR, local radio interviews between key stakeholders, and social media engagement. As the focus of Chapter 6 is primarily public engagement within the NEPA forum, the focus of this section will evaluate these tasks outside of the NEPA processes. Although the goal is ongoing, stakeholders have achieved significant success in presently engaging the community.

In municipalities such as Carbondale, community engagement has been highly effective towards informing and involving the public in the TDR conflict. This is largely due to efforts of advocacy groups including the TDC, who has also partnered with the Town of Carbondale and WW. For instance, in 2011, the three partners “hosted a community rally . . . to spread public

awareness [about the issue]” (Byars, 13:20). These community rallies, structured outside of the NEPA process, have proven useful and informative for certain stakeholders. As a Glenwood Springs citizen remarked, “I’ve been to a couple meetings, and more people are there than you would expect. It’s a diverse crowd, and the meetings provide good information” (Darling, 18:00). In addition, WW recently coordinated a ‘Thompson Divide Campout’ during an on-site preliminary meeting between FS, BLM, and SGI representatives regarding their NOS for an exploratory Wolf Creek Well, of which over 40 area citizens attended (Swezyck, 9/2/2015). To further inform the community surrounding developments in the conflict, Katrina Byars and Zane Kessler participated in an interview with KDNK Community Radio, focused on updating the public in multiple aspects of the conflict, including the 2015 SGI lease exchange proposal, the BLM’s 2015 EIS, and the COGCC’s role in SGI’s 2015 NOS (Hadden, 6/15/2015). These efforts have likely allowed these communities to reach a majority consensus surrounding land management in the TDR. For instance, Bill Fales remarked, “the whole way the community has rallied behind the TDC, to get mountain bikers, snowmobilers, ranchers, birders, and hunters all in a room, agreeing, is unprecedented. At least here, usually you just can't do that” (Fales, 8:45). As clearly evident, stakeholders in the region express high values surrounding management of the TDR, and have responded positively to engagement efforts.

Certain stakeholders in the conflict withdraw from direct political and community involvement roles, yet engage the conflict with a focus on providing sound information upon which to base decisions and inform the community. However, as scientific analysis does not automatically translate into an informed public or sound decisions, deliberate processes must connect these entities to ensure meaningful and accurate decision-making (Dilling and Lemos, 2015). Stakeholder partnerships have allowed for this translation to occur effectively, especially in regards to information surrounding water quality and quantity, exemplified between the RFC and TU. The RFC identifies as “not an advocacy group . . . we pride ourselves on conducting good, sound science” (Rudrow, 12:54). Rudrow emphasized that the partnership between TU and

the RFC, “has worked out really well. They [TU] are an advocacy group, and have a goal in mind for the TDR” (Rudrow, 13:30). However, Rudrow acknowledged that the release of their objective studies “definitely played a role” in informing the public and possibly influencing the decision-making of regulatory agencies (Rudrow, 30:20).

On the other hand, energy development companies and advocacy groups have also focused on community engagement, although this engagement has been focused on communities in the Garfield and Mesa Counties who are typically more supportive of energy development (Simpson, 8/14/15). However, Ursa remarked that in the past, energy companies along the Western Slope have done a poor job of engaging the community and facilitating accurate information regarding public concerns (Simpson, 8/14/15). Ursa has made recent attempts to remediate this, including holding several public engagement meetings in Silt and Rifle discussing how BMPs and reclamation efforts allow for minimal environmental effects (Simpson, 8/14/15). In addition, the group cites how in their pre-development stage, notices of intent are filed to surrounding community members, who are invited on-site to share their input regarding best practice (Simpson, 8/15/15). However, Simpson stated that Ursa continues to look forward to engaging the community and facilitating informed dialogue surrounding development activities. (Simpson, 8/14/15).

In sum, stakeholders have put significant effort in community engagement; this will most likely continue to be an important goal for many stakeholders. I discuss public engagement techniques within the FS NEPA process in Chapter 6, and then propose several means to connect these processes in Chapter 7.

Negotiating Federal Legislation

A primary goal of many stakeholders is enacting Congressional legislation to create a bipartisan solution that mutually benefits involved parties. During 2011, recognizing that wilderness designation may not be a plausible option for protecting the area from energy

development, the Thompson Divide Coalition initiated a dialogue with Congressional representatives, including Senator Bennet, Senator Gardner, and Representative Udall, to discuss potential congressional legislation aimed at withdrawing the area from oil and gas leasing (Kessler, 42:20). The TDC's primary goal is clear: "to protect the area permanently from oil and gas development" (Kessler, 22:00). As a result, the group has utilized two different strategies requiring Congressional legislation, which include 1) seeking an act allowing for the direct withdrawal of future mineral leases, and 2) proposing market-based solutions for leaseholders to potentially buy out the leases, along with a long-term conservation and withdrawal stipulations (Kessler, 49:23).

In 2012, the Coalition offered a collective \$2.5 million buyout for leases within the region, including \$61,623 to WillSource for 3 leases, \$817,000 to Antero (Ursa) for 7 leases, and \$577,838 to SGI for 22 leases; however, the offers were declined by each leaseholder (Kessler, 45:67). In 2013, following a community outreach campaign, Senator Bennet proposed *S. 651, The Thompson Divide Withdrawal and Protection Act*, which recognized the rights of existing leaseholders to negotiate monetary compensation or acreage exchange, while withdrawing the lands permanently for further nomination, appropriation, or development of mineral leasing (Koerber, 7/10/15; U.S.C., 2013)¹⁰. Although the act was referred to the Senate Committee on Natural Resources, Congress declined to take any further action (Koerber, 7/10/15). Senator Bennet cited a lack of bipartisan support in the lack of Congressional action, and emphasized that a reintroduction attempt of such legislation will not occur without the support of affected counties, municipalities, environmental groups, and energy groups (Szewczyk, 7/30/2015).

¹⁰ Proposed legislation, definition of 'withdraw': SEC. 4. THOMPSON DIVIDE WITHDRAWAL AND PROTECTION AREA:

(a) In General- Subject to valid existing rights, the Thompson Divide Withdrawal and Protection Area is withdrawn from all forms of

(1) entry, appropriation, and disposal under the public land laws;

(2) location, entry, and patent under mining laws; and

(3) operation of the mineral leasing, mineral materials, and geothermal leasing laws.

(U.S.C., S.651, 2013)

However, the TDC has continued to engage regional stakeholders in negotiating and compromising upon specific withdrawal terms (such as negotiating the boundary of protected land within the TDR) for legislation, including the removal of nearly 40,000 acres overlaying Delta and Mesa Counties within the TDR boundary, which will now be excluded from future legislation attempts at withdrawal from oil and gas leasing (Szewczyk, 7/30/2015). In recent negotiations surrounding the legislative withdrawal between the TDC, Gunnison County, and Gunnison Energy LLC, which holds several leases by production within Gunnison County land jurisdiction in the southern boundary of the TDR, the TDC agreed to remove over 10,000 acres in the southern portion of the TDR, prompting Gunnison County to support a legislative withdrawal of acreage overlaying the Lake Ridge and Wolf Creek leases (Stroud, 4/6/2015).

Stakeholders also expressed their opinions on crucial aspects of successful legislation, including advocacy groups WW and the TDC, who emphasize that the legislation must have “some meaningful conservation component as part of the exchange” (Kessler, 55:18; Fales, 26:31; Darling, 31:57; Seldin, 20:50). In addition, Ursa emphasize that a market-based proposal would most likely be successful if it was kept simple, garnered the support of local governments, and allowed for development of their property rights in least impactful way (Simpson, 8/14/15).

During the course of this study, a promising legislation proposal was presented by leaseholder SGI, which involves trading the Lake Ridge and Wolf Creek leases for similar acreage in counties surrounding the TDR. This tentative proposal also reflects a market-based aspect, requiring the passage of Congressional legislation. The proposal would trade SG’s 18 leases on the WRNF, including their rights to drilling under the Wolf Creek Storage Unit, totaling over 30,000 acres, for roughly 30,000 acres in Delta and Mesa Counties overlaying the Grand Mesa, Uncompahgre, and Gunnison National Forests (Stroud, 4/6/2015). In addition, Ursa’s 7 leases in Wolf Creek Unit, totaling roughly 12,000 acres, would be traded for similar acreage in Rio Blanco County, overlaying the WRNF (Stroud, 4/6/2015). Further analysis and summary of leases on the receiving end is beyond the scope of this analysis, but is widely available for

reference online. Of course, these leases will receive project or developmental-level agency EIS analysis prior to development.

As a result, SG urged Senators Michael Bennet (D) and Corey Gardner (R), along with House Representative Scott Tipton (R) to begin research surrounding tentative legislation supporting the proposal (Stroud, 4/6/2015). As SG Interest's representative Eric Sanford emphasized in a preliminary meeting with Garfield County Commissioners, "it would be preferable to develop the leases we already own . . . but this is the first step in what promises to be a lengthy process" (Stroud, 4/6/2015).

This proposal has garnered the tentative support of surrounding local governments, stakeholders, and interest groups. Following the proposal, SG engaged in a dialogue with each affected county, including the Pitkin, Garfield, Mesa, Delta, and Rio Blanco County Commissioners (Seldin, 6/2/2015; Jankovsky et al, 4/20/2015; Pugliese et al, 4/29/2015; Roeber et al, 6/2/2015; Eckelson et al, 3/3/2015). In response to the proposal, environmental factions sparked significant controversy in the Delta County North Roaring Fork Valley, where acreage was proposed in geographically similar locations to the TDR (Roeber et al, 6/2/2015). This subsequently prompted the removal of certain acreage in the North Fork valley from the proposal (Roeber et al, 6/2/2015). However, in a July 6th letter to SGI, along with Representatives Bennet, Tipton, and Gardner, and the FS and BLM, Delta County Commissioners acknowledged that "Delta County fully supported the SG Interests proposal . . . Delta County and adjacent Gunnison County both have current oil and gas operations near these proposed exchange leases and are already experiencing the impacts of the ongoing development . . . Delta County will be at the table during the drafting, editing, amending, and final process" (Roeber et al. 7/6/15).

In addition, Mesa County Commissioner Pugliese expressed interest and support for the proposal, emphasizing that "is it beneficial, yes we will have some leases that can be operated in Mesa County . . . I feel for the industry in that they want to be able to have productive leases" (Pugliese, 18:35). On behalf of leases within the TDR, both Pitkin and Garfield Counties also

expressed their support, identifying with the proposal as a solution to “resolve the key disagreement in the Thompson Divide, while compensating lessees fairly, that is, with the opportunity to develop federal oil and gas leases in more appropriate areas” (Jankovsky et al. 4/20/15; Seldin, 6/2/2015). Garfield County Commissioner Jankovsky highlighted similarities between the proposal and the recent Roan Plateau Settlement, which cancelled leases in high value areas while compensating leaseholders by allowing the development of other existing leases (Jankovsky et al. 4/20/15). The BLM has also acknowledged the possibility of the lease exchange, but intends to continue on with their regulatory analysis of the existing leases. As BLM EIS Project Manager Greg Larson emphasized, “We’re really taking a wait and see attitude to this. We’ll react if and when that happens. Otherwise, we’re moving ahead with the decision that we told the public that we intend on making” (Larson, 14:00). However, Larson acknowledged the potential importance of the proposed exchange, noting, “it could influence what our process and decision to be made is . . . that if successful, it would foreclose some of our decision to be made” (Larson, 15:23). However, of course BLM CO River Valley Field Office would still play a crucial role in evaluating and overseeing the land encompassing the leases, as well as engaging the public in such decisions.

Environmental and energy advocacy groups have also expressed tentative support for the proposal, along with local residents, largely on the condition that the public and local governments on the receiving end support the exchange; as one Glenwood Springs citizen noted, their stance on the issue is not a “not in my backyard” scenario (Darling, 33:08). In addition, as one Carbondale citizen emphasized, “we don’t want to export our problem elsewhere” (Fales, 19:20). In addition, both the TDC and WW have expressed support of the exchange, on the condition that parties on the receiving end of are represented (Shoemaker, 53:00; Kessler, 52:22). Parties on the receiving end of the leases recognize this, and have reacted similarly to TDR area residents. For instance, in a manner similar to the birth of the TDC, environmental advocacy group Citizens for a Healthy Community emphasized their intent to, “analyze the details carefully

to make sure that it's bringing enduring, meaningful protections and not creating new problems” (Stroud, 4/6/2015). In addition, the proposal has achieved the support of key energy advocacy groups, including WSCOGA. In April of 2015, David Ludlum, Executive Director of WSCOGA, stated that “we would like to offer our endorsement of this proposal . . . it may allow them to proceed in a more expedient way” (Stroud, 4/6/2015).

However, even acknowledging the tentative bi-partisan support, this proposal is not without conflict. Perhaps the key point of contention is whether the legislation should include a permanent withdrawal from leasing stipulation for lands within the TDR boundary—the proposal currently lacks this key stipulation. For instance, Peter Hart, Staff Attorney of WW, expressed concern that “we want to see enduring protection of that area [TDR], not just a short-term solution” (Stroud, 4/6/2015). Although while David Ludlum acknowledged the interests of permanent withdrawal, Ludlum emphasized that the TDR “receive de facto permanent withdrawal (a minimum of 20 years) of limited acreages,” failing to express interest in a stipulation that would ensure permanent withdrawal beyond the scope of the 2014 FS WRNF EIS (Szewczyk, 7/30/2015). In addition, groups have debated whether other lands in the TDR should be included within the withdrawal. For instance, Gunnison County, in their negotiations with the TDC surrounding the Bennet’s legislation, emphasized their desire for, “a larger solution . . . exchanges, withdrawals, and no surface occupancy designations could be used to help create a more comprehensive and regional solution” (Szewczyk, 7/30/2015). Yet WSCOGA responded by emphasizing to Senator Bennet that “would likely be forced to actively oppose legislative efforts that include additional non-related or indirectly related acreages for withdrawal” (Szewczyk, 7/30/2015). In addition, Ludlum emphasized that the industry must meet production deadlines, citing SG’s recently filed Notice of Staking to drill an exploratory well in the Wolf Creek area on a 1954-era lease (Szewczyk, 7/30/15). This move prompted disapproval on behalf of environmental groups, including the TDC, who stated “it’s tough to fathom how this move can be seen as negotiating in good faith— especially while we have a possible resolution on the table”

(Kessler, 8/4/15). In sum, these disputes highlight how the fate of this proposal is at this point uncertain and highly reliant on a willingness to cooperate and compromise between conflicting parties.

Overall, however, taking into account the tentative widespread support expressed by governments, leaseholders, and the public, the proposal at this stage may be termed a hypothetically plausible solution to the TDR conflict, and at the very least has made far more progress than previous legislative attempts in terms of engaging all affected stakeholders in a meaningful dialogue focused on negotiating and solving problems. As a result, the achievement of bipartisan-supported legislation represents an important and realistic goal in the TDR in regards to a public-interest management alternative.

Avoiding Litigation and a Timely Issue Resolution

Across the board, stakeholders shared the most common ground towards the goal of creating a solution in a timely manner. To many, this entails engagement in constructive dialogue, value or resource use compromises, and the avoidance of a lengthy litigation process. As many stakeholders emphasized that the current BLM EIS is highly likely to be challenged through IBLA appeals and litigation by one or more parties, the construction of this document in a legally sound manner is a key responsibility of the BLM towards the avoidance of a litigation process (Seldin, 19:00). Stakeholders cited a variety of benefits from resolving the conflict, including energy advocacy groups, who noted the appeal of the exchange proposal in creating economic and social benefits timely lease development (Cavanaugh, 15:58). In addition, stakeholder groups across the board, including ranchers, environmental advocacy NGOs, leaseholders, and political figures, stated that a conflict resolution without litigation would provide a variety of economic and social benefits, including the ability to allocate resources to other interests besides legal fees (Simpson, 8/14/15; Shoemaker, 45:18).

These stakeholders emphasized that litigation is never a priority and only implemented as a last resort (Shoemaker, 45:00). Although stakeholders noted that litigation is always an option, these groups highlighted how mutual discourse through the ongoing NEPA process could possibly resolve the conflict through a pre-litigation settlement. For instance, WW stated, “litigation is where it ends up, if you don’t resolve your conflicts along the whole spectrum of opportunities, from pre-NEPA conversations, to scoping, to the NEPA processes” (Shoemaker, 44:39). As a result, the BLM must play a key role in moderating and facilitating dialogues between opposing stakeholder groups and the public, as well as ensure that the document is ‘good’-- that is, it is legally sound from a policy and regulatory standpoint, as well as taking into account the interests of stakeholders and the general public. However, taking into account the continued criticism of the BLM, many stakeholders simply reflected perhaps the best way to avoid litigation would be to ensure that the lease exchange is successfully enacted before a binding BLM decision is proposed.

Key Trends & Conditions

This section identifies several key trends and their plausible underlying conditions in the TDR conflict, taking into account both the past and the present. These trends are discussed in relation to stakeholder goals, also taking into account the varying perspectives of the problem, and are a key aspect in projecting developments in the conflict, as well as understanding how policy alternatives could be implemented in terms of stakeholder and public interests.

Minimal Anthropogenic Impact

A key trend in the TDR is a lack of anthropogenic impact on the region. This trend, coupled with a lack of significant ecological disturbance, such as pine beetle mortalities or recent crown fires, has allowed for the most part, the preservation of the ecological and hydrological integrity of the region (Shoemaker, 4:29). This trend contrasts other mid-elevation forest regions

in Colorado (Veblen et al, 1986; Rowland et al, 2004). A number of conditions may provide reasonable explanations for this trend of minimal anthropogenic impact, including the topography and geography of the TDR, social factors, and technological and market-driven factors influencing the lack of lease development.

A primary condition influencing a low anthropogenic impact in the TDR is the fact that a lack of developed infrastructure in the area greatly minimizes public access, largely resulting from 2001 IRA designations. Without roads, transport such as cross-country skiing, horseback or snowmobile is required to practically access large portions of the TDR. As a result, public usage of notable recreation areas in the TDR, such as 'The Fins', a popular rock-climbing destination, has been relatively low as compared to the number of visitors in the surrounding wilderness areas in WRNF, such as the Maroon-Bells (Fales, 5:10). The surrounding community also notes this, as many outfitting operations facilitate and guide hunting, fishing, climbing, and snowmobiling activities, allowing access to remote points in the region that would otherwise not be typically possible; in addition, ranchers do not use roads to graze cattle herds. As Bill Fales emphasized, "we do all our work ranching on horseback. . . and the topography up there makes it so that a lot of people couldn't even track our impacts" (Fales, 6:00). Although mining has previously occurred in the TDR, these efforts were largely ceased in the 1980's, and impacts were only significant upon the Coal Basin watershed area, where reclamation processes are in progress (Bernot, 2015). Many stakeholders expressed how current recreational uses of the TDR produce a relatively small impact, and do not produce a significant detrimental impact (Kessler, 2:48). As a result, anthropogenic disturbance has overall been relatively minimal.

In addition, several factors have affected the absence of further anthropogenic impacts, specifically energy development, including geological and topographic challenges. First, the topography in the TDR is rugged and highly variant; for instance, many slopes are highly prone to erosion and contain an incline greater than 45 degrees, resulting in significant challenges for energy infrastructure (Simpson, 8/14/15). In addition, for much of the 21st century, petroleum

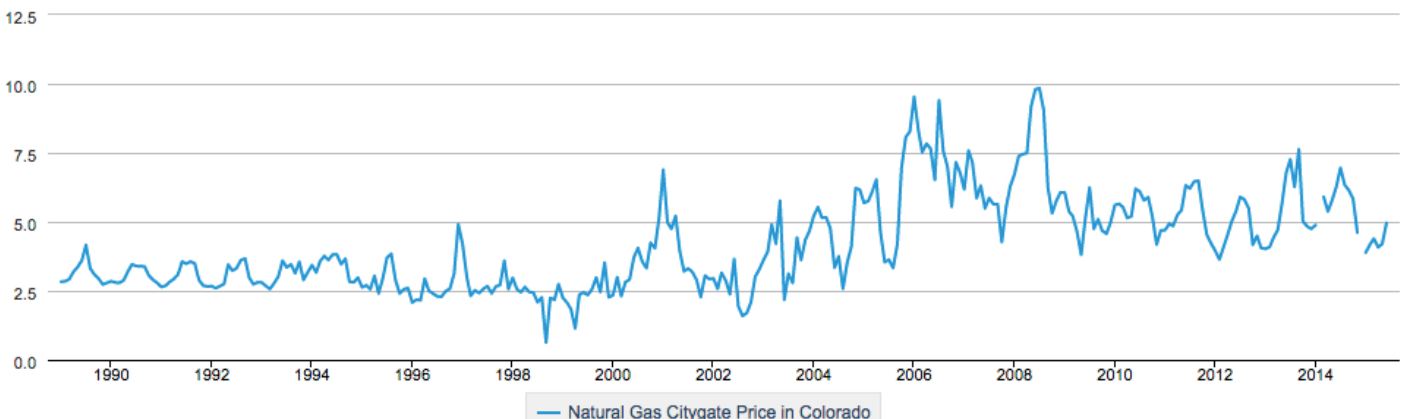
geology and engineering methods could not feasibly extract gas reserves up to 10,000 feet deep, as is projected in the TDR Bakken Shale Formation (Johnson, 1989). As a result, as the extraction of gas reserves in the greater Piceance Basin became feasible for operators through improvements in technology, the TDR became subsequently nominated for leasing in 2003. The extractable volume of the natural gas reserves underlying the TDR is a point of contention between stakeholders (Simpson, 8/14/15; Kessler, 43:54). These factors may be reflected in the fact that through BLM quarterly auction, these leases sold for very low prices, including many for the statutory minimum of 2\$/acre; in contrast, the Roan Plateau leases sold for \$11,000/acre (Shoemaker, 18:00). These conditions may provide plausible explanations as to why the area has not yet been developed for oil or gas on a large scale as proposed by the current lease units.

Another factor that may have influenced the lack of lease development is the recent fluctuation and decline in natural gas market prices available to operators in Colorado. This condition, in conjunction with the above challenges, may indicate why leases have lacked development in the TDR. The Citygate price metric measures the prices received by natural gas storage and distributing companies as paid by private and public utilities commissions, and is widely considered to be a useful benchmark of natural gas market characteristics (EIA, 2014). The Citygate price has recently declined in Colorado in the last several years. *Figure 5.2* displays price changes since 1990, provided by the Energy Information Administration (EIA) (EIA, 2014).

Figure 5.2: Natural Gas Citygate Price in Colorado (EIA, 2014)

Natural Gas Citygate Price in Colorado

Dollars per Thousand Cubic Feet



Although the market peaked around the time when the leases were issued, especially as in 2006-2008, the operators did not initiate a NOS, APD, or other first steps in lease development, only engaging legal processes (i.e. lease suspension and unitization proposals) with the BLM, as the leases neared the end of their ten year lifetime, as a means to further extend the duration of lease lifetimes. This may further indicate practical challenges for energy operators in development of the TDR.

In sum, likely due to these conditions, the TDR has experienced a relatively minimal degree of anthropogenic impact as compared to surrounding mid-elevation montane regions in Colorado, and the continuation of this trend is an important goal to many stakeholders.

Increasing Community Awareness of the TDR

Another important trend is the increasing degree of community awareness and involvement in the issue, both within and without of the scope of the NEPA arena. Prior to the last decade, many stakeholders had little knowledge surrounding the area, except for existing land users such as recreationalists and ranchers. However, following the lease issuance, the conflict rapidly gained attention, most likely due to the primary conditioning factor, the political efforts of advocacy groups, which are facilitated through and local and national media attention.

Political campaigns began after the issuance of the Lake Ridge and Wolf Creek leases in 2003, when WW discovered that the area had been leased for energy development (Shoemaker, 3:23). As a result, WW cited their initial efforts to study the TDR, primarily through creating GIS overlays of Roadless areas, leases, land management, watersheds, and species habitat. These GIS tools allowed WW to “give it a name, give it an identity for the public” (Shoemaker, 6:01). This allowed these stakeholders, for the first time, to understand and display the TDR from a landscape perspective, contributing to awareness of the general public of the existing benefits and ecosystem services that the region provides (Shoemaker, 5:35). In 2008, Carbondale and Glenwood Springs residents formed the TDC with an interest in generating community

involvement and awareness of the issue, especially focused within Pitkin and Garfield Counties (TDC, 2015). To further increase community awareness, the group funded a series of ecological, geological, and economic analyses on the TDR, and then translated key insights of these analyses to the public via newsletters, e-mailing lists, form letters, and social media, which the TDC felt aided the public in identifying with the region and participating in an informed dialogue (TDC, 2015).

WW has also used similar techniques to spread information, relying on their expertise in translating information surrounding administrative law to the general public. For instance, WW conducted a community awareness campaign surrounding the unitization and lease suspension proposals, stating that they did an, “investigation on agency processes and permitting. We extract that information and we tell it to the community. And we organize the community about raising hell about it” (Shoemaker, 34:50). WW uses a coordinated outreach campaign to spread information in instances such as these, relying on a large email list, local media outlets, and community meetings to create awareness. For instance, WW emphasized, “we just do it, even though there's not a formal comment opportunity. It's about politics, giving the community an opportunity to raise its voice” (Shoemaker, 41:45). These efforts, in conjunction with other awareness and outreach campaigns conducted on smaller scales by the RFC and TU, facilitated significant community involvement and awareness in the region, in turn driving public dialogue with regulatory agencies and Congressional representatives prior to the initiation of the FS NEPA scoping process.

These political advocacy groups have been influential not only on regional scales, but also through creating statewide and national awareness of the TDR conflict. Larger scale environmental advocacy groups have also brought increasing nationwide attention to the TDR, including the Sierra Club, the Wilderness Society, and the National Resources Defense Council (NRDC). For instance, in 2013, the Sierra Club, which retains a large and actively engaged audience, published a feature article upon the TDR, focusing on between the TDR and similar

conflicts such as the Roan Plateau conflict on the Western Slope of Colorado and the Powder River Basin conflict in Wyoming (Zaffos, 2013). In a 2015 report, the Wilderness Society also included the TDR in their *Too Wild to Drill* land use campaign, allowed nationwide users to submit a letter to Secretary Jewell of the DOI emphasizing that these places should not be developed (Wilderness Society, 2013). In addition, the NRDC has repeatedly highlighted the Thompson Divide in analysis of key nationwide water sources that are threatened by energy development (Mall, 2012). As a result, the continuation of engagement efforts will further increase public interest, knowledge, and involvement in the TDR, in addition to involving other environmental advocacy groups. Therefore, taking into account the past actions and perceptions of the stakeholders themselves, the public, and other interest groups, it seems likely that these political efforts are the driving force behind community involvement, at least outside of the NEPA arena. However, these groups also have an important influence in public involvement within the NEPA process, which will be discussed further in Chapter 6.

Failure of Federal Legislation

Federal legislation focusing on the TDR has consistently failed throughout the last decade. The most successful attempt to date has been the introduction of Bennet's *S. 651*. Taking these attempts, as well as future proposals, into account, several further factors may be relevant in this trend beyond the stakeholder conflicts discussed previously. These may include the overall lack of support for initial wilderness designation in the TDR, due to complexities in stakeholder interests, as well as the difficulties of uniting bi-partisan interests to support and pass Congressional legislation. These factors will likely continue to influence the outcome and likelihood of potential legislation, and therefore represent practical challenges that proponents of the legislation must overcome to implement this policy solution.

Although WW has petitioned several times for wilderness designation in the TDR, beginning in 2004, these efforts were not met with significant public support, instead receiving

significant criticism (Shoemaker, 4:30). Through their 2000-era Hidden Gems Wilderness Campaign, the group recommended significant acreage in the greater WRNF for wilderness designation, including the areas underlying the Lake Ridge and Wolf Creek units (Shoemaker, 4:35). However, as the Wilderness Act contains strict stipulations on motorized vehicle usage, oil and gas leases, and forest maintenance infrastructure, several stakeholders, including WW, acknowledged, “wilderness simply isn’t going to work here” (Shoemaker, 5:16; Fales, 28:30). Taking this into account, WW removed the Wolf Creek and Lake Ridge acreage from their proposal, effectively removing the majority of the TDR from their WRNF designation campaign (Shoemaker, 6:05). However, the group is still advocating for wilderness designation of the Assignment Ridge area within the southeast corner of the TDR boundary, near the Huntsman Ridge Unit (See *Figure A.4*). Taking into account the present nature and trajectory of the conflict, however, it seems unlikely that a wilderness designation will successfully pass, at the very least until the leasing conflict is resolved, thus rendering the potential solution as neither realistic nor plausible.

A number of stakeholders expressed concerns about the ability of Congress to successfully pass the legislation needed for a lease withdrawal, buyout, or exchange. This concern takes into account the fact that the 112th and 113th sessions of Congress have enacted historically low levels of legislation, which is often attributed to bi-partisan gridlock (GovTrack, 2015). For instance, in a 2013 Gallup Poll, only 34% of respondents expressed a great deal or fair amount of trust and confidence in the legislative branch (Gallup Polls, 2012). Although this gridlock mainly occurs surrounding the passage of large acts beyond the scope of TDR legislation, these bipartisan relationships can disrupt smaller legislative proposals such as the TDR legislation (Lyman, 10/2/2015). The trend of partisan gridlock has also carried upon to the present 114th Congress (Lyman, 10/2/2015). Stakeholders expressed concern at this factor, such as Bill Fales, who acknowledged, “this Congress doesn’t give anybody of any political persuasion much enthusiasm for their work, or trust to get something done for the good of the country. . . all the

other problems are pretty easy to figure out, but I don't know how to figure out Congress" (Fales, 34:05).

Several stakeholders also expressed concern surrounding the political stance and actions of Rep. Tipton, who represents the 3rd District, which covers a large portion of the Roaring Fork Valley (Fales, 35:00; Darling, 16:09). The TDC emphasized that cooperation and assistance from Rep. Tipton is essential to ensuring successful legislation; although he supports energy development in the 3rd District, he has stated he does not support the permanent legislative withdrawal of the TDR (Hanel, 2012; Fales, 36:00). Stakeholders also noted that in 2011, according to campaign reports, company affiliates of SGI, including owners, investors, and engineers, contributed \$10,600 to Tipton's political campaign. In addition, in 2012, SGI was the sole funder of a political action committee (PAC) called the Colorado Future Fund (CFF) (Hanel, 2012). The CFF, which is not required to disclose specific donation amounts, participated in political advocacy efforts exclusively against Rep. Tipton's opponent in the 2012 election, Sal Pace (Hanel, 2012). Interestingly, the CFF is located at Denver-based law firm Zakhem Law, run by president John Zakhem, who was also the chief re-election lawyer for Rep. Tipton's 2012 campaign (Hanel, 2012). In sum, it is reasonable for certain stakeholders to perceive Rep. Tipton as a key obstacle to successfully achieving legislation, especially conservation-related legislation, taking into account his relationships with energy operators and his stance on energy development.

Taking these actions and relationships into account, it is quite likely that the above factors and conditions are key points in the failure of past legislation, and must be addressed to successfully ensure the passage of legislation aimed at resolving the conflict.

Criticism and Legal Engagement of the BLM

Many federal agencies are currently subject to widespread public criticism; for instance, in 2012, a Gallup Poll indicated that only 52% of U.S. citizens displayed trust and confidence in federal agencies (Gallup Poll, 2012). This trend is especially apparent towards the BLM in the

TDR conflict, and is reflected through stakeholder criticism and legal engagement of certain BLM actions. This trend may be driven by several factors, including the influence of the executive branch upon BLM decisions, as well as difficulties in translating federal statute to practical decisions.

Many stakeholders expressed criticism of past actions and decisions of the BLM. As many of these stakeholders identified with the “legality of the BLM’s decision’ problem definition, these BLM actions center on the decisions to issue the TD leases, suspend the leases, thus extending their lifetime, and consider the unitization of the leases. Stakeholders have engaged in litigation surrounding these actions, as they believe that the decisions are not compliant with regulatory procedure. For instance, Pitkin County stated that, “litigation focuses on a decision from the BLM to extend the duration of the principal leases in question . . . because we feel that the leases were issued illegally, were not going to abandon our efforts” (Seldin, 36:15). In addition, WW described these actions on behalf of the BLM as “the same locations, the same processes, the same failures . . . they’ve missed the opportunity, they’ve extended the leases illegally time after time” (Shoemaker, 41:52). In addition, another stakeholder cited how he personally viewed the BLM as unable to complete land management requirements, citing how, “in BLM land in the TDR, you’ll see trash piles, its not taken care of as well as it should be” (Darling, 28:33). This statement, and others, reflects a general lack of trust in the BLM, which is perhaps the key aspect of relationships between a regulatory agency and its citizens (Shoemaker, 50:05; Squillace, 2013). As a result, this trend of criticism may be important in the TDR conflict for two primary reasons, in that 1) a lack of trust in the BLM may decrease the confidence and willingness of citizens to engage the agency with a focus on ensuring a public interest decision, and 2) a lack of faith in regulatory compliance may drive certain stakeholders to litigate against action, thus extending the lifetime of the conflict and further reducing public trust in the agency to make a ‘good’ decision.

A key factor in this trend may be the significant influence of the presidential administration upon the outcome of decisions made by the BLM. Several qualitative legal analyses have emphasized this occurrence, especially those that analyzed the impact of BLM decisions made during the Bush Administration. First, studies displayed that the BLM has failed to meet environmental requirements throughout the last decade in accordance with oil and gas development. According to a 2005 report issued by the Government Accountability Office (GAO), the BLM increased the annual number of drilling permits--95% of which are in the American West--issued from 1,803 in 1999 to 6,399 in 2004 (GAO, 2005). The report, titled *Oil and Gas Development- Increased Drilling Permit Activity Has Lessened BLM's Ability to Meet its Environmental Protection Responsibilities*, emphasized that due to factors including 1) policy changes and the incentivization of lease permitting for employees, 2) budget constraints and employees overloaded with work, and 3) outdated BLM land planning procedures and policies, the BLM has significantly reduced its ability to meet environmental protection requirements such as inspection and regulatory requirements (GAO, 2005). Another study found that in adaptation planning for climate change across western public lands, a similar undertaking in scope and depth to planning as compared to a forest-wide leasing EIS, funding and lack of agency staff was seen as the main obstacle for creating an effective plan (Archie et al, 2012).

This may be caused by several factors, including series of Executive Orders (EOs) under the Bush Administration, such as the 2001 EO 13212, which stated that agencies must "expedite their review of permits or take other actions as necessary to accelerate the completion of such projects" (EO 13212, C.F.R., 2001). In addition, the GAO cited an increased workload pressure during the early 2000's due to increased permitting activity and a subsequent increase in appeals and litigation of BLM decisions (GAO, 2001). In response to this report, the DOI agreed with all of GAO's recommendations and stated, "the report generally does much to capture the many demands involved in managing BLM's oil and gas program" (GAO, 2001). In addition, an independent legal analysis postulated that agencies which maintain close ties to the industries that

they regulate, such as the BLM and the energy industry, decisions may “swing toward industry interests . . . this can be the result of former industry employees staffing the agency, or the potential of hiring from agencies to the industry” (Seidenfeld, 1992; Spence et al, 2000).

Collectively, these factors may present an underlying motive and rationale unto why the BLM has taken previous actions, as well as why stakeholders have criticized these actions on social and legal levels.

This is reflected in the tasks of the BLM CO River Valley Office, which is charged with management of over 560,000 acres of public land across Colorado. Greg Larson, of this office, also emphasized that, in regards to their current EIS, “the public has a wide range of concerns . . . the NEPA legislation says that it should be very concise, but it's gotten harder to do over the years, to write a really concise document” (Larson, 7:50). Considering the importance of the BLM’s EIS decision to the outcome of the conflict, especially in terms of the public interest, the transparency and accurate inclusion of public sentiments must be a crucial aspect of their decision. This study synthesizes insights derived from Chapter 6 to further address these concerns in Chapter 7.

Alternative Land Use Strategies across the American West

In many regions throughout the last several decades, public land use strategies have changed. This is particularly evident in Colorado, especially within the Crystal River and Roaring Fork Valleys, and may be caused by a variety of factors, including the desire for communities to recognize and move past the boom and bust cycle, a growing valuation of the benefits sustainable land uses such as agriculture and recreation, and the corresponding growth of business models which facilitate these activities in the Roaring Fork and Crystal River Valleys. These factors will likely continue to be an important influence on this trend.

The boom and bust cycle has been a continued economic trend in Colorado since the arrival of Anglo-European pioneers. This trend results from the explosive growth of markets and

communities focused on a single commodity, and began with the fur trade, progressed to silver, gold, and metals mining, and presently culminated in coal, oil, and natural gas production (Limerick et al, 2013). However, this growth is rarely sustained, not only due to the limited availability of the natural commodity but also due to the impacts of macro-level factors such as fashion trends (the decline of the fur trade) to market and policy factors (fluctuating mining and hydrocarbon development margins) (Limerick et al, 2013). As a result, these economies then typically experience the ‘bust’ phase, resulting in periods of rapid economic and community collapse. Although current actors in these markets retain a variety of strategies to undercut the effects of these cycles, such as the hedging of natural gas to anticipate future prices and community infrastructure investment, energy operators such as Ursa acknowledged that, surrounding the boom and bust cycle, “it’s not our choice . . . the nature of the business is instability. It’s the nature of the whole industry” (Simpson, 8/14/15).

Many regional citizens emphasized the importance and history of past industries, but expressed a desire to keep the land uses as they presently are, as quantified in the BBC Firm 2012 analysis, thus identifying with the corresponding problem definition of “keeping the TDR the way it is now”. For instance, the current Mayor of Carbondale Stacey Bernot, emphasized, “as the daughter of a coal miner and a fifth-generation Western Slope native. . . I believe extractive industries are an important part of Colorado’s economy . . . but we need to balance our needs with the needs of future generations as well” (Bernot, 6/6/2015). Regional economies surrounding the TDR, across the Roaring Fork and Crystal River valleys, haven’t always relied on these land use strategies. Although agriculture has been and remains a land use staple in the region, boom and bust cycles of hydrocarbon extraction were traditionally the primary revenue generators and employers. Present day municipalities such as Aspen, Carbondale, and Glenwood Springs first arose as in the late 19th century as coal mining towns, and experienced boom and bust cycles, as typically evident in natural resource extraction in the American West, in periods of rapid economic growth, followed by periods of rapid economic collapse (Gray, 2006). However,

throughout the late 20th century, these economies began to shift land use strategies towards more sustainable economies, due to a variety of factors including increasing environmental regulation, shifting public perceptions and accessibility of mountain recreation, and increasing interest in sustainable agri-business (Gray, 2006). For example, recreational opportunities have greatly expanded in the TDR to include hunting, fishing, hiking, mountain biking, skiing, and snowmobiling opportunities, in addition to increasing sustainable agri-tourism opportunities (Kessler, 4:27). Significant revenue is indirectly derived from tourism to other related businesses, including transportation, lodging, and other industries (BBC, 2012).

As this trend continues, based on the projected continuation of the expansion of sustainable business models, it will most likely continue to drive stakeholder strategies for using public lands in the long-term interest, further decreasing stakeholder support of hydrocarbon development, especially in the Pitkin and Garfield Counties. As a result, this trend will likely drive continued public engagement and opposition to recurring energy development initiatives upon these public lands.

Projecting Developments

The TDR conflict is complex. There are many shifting variables which could produce a wide variety of future outcomes, as evident in the contrasting stakeholder problem definitions and goals, the diverse conflict trends and underlying conditions, and the number of ongoing policy, regulatory, and legal processes. In addition, significant difficulty is inherently reliant in projecting accurate stakeholder actions and developments in resource management conflicts (Cherney et al. 2008). However, certain events or trends have a higher likelihood for occurrence than others. For instance, as regulatory processes must follow strict procedural guidelines, these processes can be projected with a degree of accuracy, and form the base of developments projected in this section. Building from these basic guidelines, the conflict is projected in accordance with the trends, conditions, goals, and tasks discussed.

The timelines of regulatory processes on behalf of the FS and BLM provide the best structure upon which to base these developments. Unless due to extenuating circumstances, FS and BLM Oil and Gas Leasing EIS's have a lifetime of 15-20 years following the release of their FROD. The FROD, released by the FS after the completion of this study, ensures that the FS decisions will guide leasing in the WRNF until 2035, creating an almost-certain likelihood¹¹ that no new leases will be auctioned or developed in the TDR until 2035 upon FS WRNF land. There is a significant lesser degree of certainty surrounding the BLM's EIS. The DEIS is projected for release during the winter of 2016, with a FEIS predicted for the fall of 2016. However, these estimated dates are not binding, and taking into account the nature of the conflict, these dates may likely be extended. The BLM has stated that this EIS will analyze a range of five potential alternatives, ranging from cancelling all 65 leases in analysis (A5) to maintaining the legal status of all 65 leases (A1) (Larson, 11:15). In addition, Larson emphasized, "some of our alternatives are basically looking at applying their forward looking stipulations [from the FS 2014 EIS] on those leases" (11:45). Larson declined to comment on which alternative was likely to be selected as the proposed action in their process (Larson, 12:30).

However, a letter on behalf of the Town of Carbondale, dated August 11th, 2015, stated that, "the BLM has indicated it is currently leaning towards Alternative 2 as the Proposed Action in the DEIS . . . if carried forward, such a decision threatens to undermine much of the trust, goodwill, and working relationships that developed between BLM the Town, and other concerned local governments" (Bernot, 2015). Although uncertain, this may indicate that the BLM is considering upholding the legal status of the Lake Ridge and Wolf Creek leases, taking into account the sentiment expressed on behalf of the Town of Carbondale. Taking into account the controversy surrounding the Lake Ridge and Wolf Creek leases, it is likely that litigation, if engaged, will center on the Proposed Action regarding the decision of these leases, at 'Litigation

¹¹ Regulatory EIS plans are not set in stone, and may be subject to change depending on circumstances such as changes in technology or executive branch directive; their typical lifetime is 15-20 years (FS, 2013)

Point B' displayed in *Figure A.3*, of the Appendix. As noted by Pitkin County, this process could result in a final, binding decision surrounding the two leasing units (Seldin, 15:10). It seems likely that advocacy groups such as WW will pursue litigation if the proposed action reflects an alternative that maintains the legality of the two leasing units, as the group, in addition to Pitkin County, strongly feels that the leases were issued illegally; this is expressed in the problem definition stage. This scenario was discussed with WW, who emphasized that “we’ll do everything we can to protect the TDR. All tools. This includes litigation, if need be” (56:38). As a result, depending on the decision of the BLM, the trend of BLM criticism and legal engagement will likely continue, thus reducing the likelihood of resolving the conflict in a timely manner.

A similar difficulty is inherent in projecting the outcome of the SGI proposal for a lease exchange, which exemplifies the typical formula for a top-down solution and aligns with several problem definitions, and could achieve the goals of preserving habitat and water quality. The trends discussed may either aid or disrupt efforts to achieve this goal; Congress and bi-partisan conflicts are primary obstacles, whereas the goals of ending the issue in a timely manner and the continuing trends of BLM criticism, increasing public engagement, and alternative land use strategies may aid in successfully passing legislation. However, projecting these varied scenarios is beyond the feasibility of this analysis. At present, it seems that this scenario may be the most effective top-down process for resolving the conflict in terms of the public interest.

Public awareness and involvement in the conflict is very likely to increase throughout the future, both within and without of the NEPA process. The BLM EIS is already receiving arguably a much greater degree of public involvement than the FS EIS process. For instance, Greg Larson noted that, as compared to past projects that he had been involved in, “leasing decisions don’t tend to attract that kind of public comment, in my experience” (Larson, 19:10). For instance, the agency received over 30,000 public comments in the initial scoping stage (Shoemaker, 55:00). Due to the increasing interest on a national scale in the TDR conflict, and the efforts of advocacy groups, this trend is likely to continue throughout each stage of the EIS process, in addition to

engagement surrounding federal legislation and other BLM legal actions surrounding the TDR. This trend is likely to be supported and facilitated by the efforts of environmental advocacy groups, and will most likely support the efforts of parties who want to protect the area from leasing. In addition, increasing awareness of the issue may create benefits for these groups beside political involvement, such as legal aid in potential litigation, increased funding, and a possible positive feedback loop between increasing environmental advocacy group involvement and increasing public interest.

Constructing from possible variables including the BLM EIS, the possibility of litigation, a lease exchange, and other policy or legal initiatives, three main scenarios remain- that the leases are either cancelled, the leases are developed in part, or the leases are fully unitized, developed, and reclaimed. Chapter 7 will present stakeholder strategies, policy and legal instruments, and suggestions for regulatory agencies to address these scenarios in terms of the public interest.

Chapter 6: NEPA Civic Engagement Analysis

This chapter uses qualitative and quantitative methods to analyze civic engagement processes in the FS 2014 WRNF Final Oil and Gas Leasing EIS. First, this study presents relevant aspects of the Scoping, the DEIS, FEIS, and DROD processes, with a focus on statements and data that indicates the engagement and inclusion of public interests. Then, I present comment and objection topic coding results. Although the scope of this analysis is largely within written content (i.e. public comments and objections) stakeholder perceptions of the FS NEPA are also discussed (gained from my interview methods). Due to timing and logistical difficulties, it was not possible to attend FS open house meetings or obtain transcripts of these meetings. Lastly, FS engagement strategies are discussed in the context of the civic republican ideal.

Notice of Intent & Scoping

In 2010, the FS WRNF Supervisors Office, located in Glenwood Springs, CO, published a NOI to prepare an EIS in the Federal Register (FS, 2010). This notice identified the purpose and need for action and the range of possible decision alternatives. The NOI also identified the FS as the lead agency and the BLM as a cooperating agency for its responsibilities of offering, selling, and issuing leases through a Memorandum of Understanding (MOU) (FS, 2010). Following the notice of intent, a public comment period was initiated from June 30th - July 30th of 2010. In addition, a public open house was held on July 14th, which lasted over 5 hours. The public scoping process was summarized and the FS specifically requested public comments on the nature and scope of environmental, social, and economic issues as related to oil and gas leasing on FS WRNF land (FS, 2010). In addition, further public engagement methods included the publication of a legal notice for an opportunity to comment in local newspapers, the mailing of

proposed action for public scoping to over 400 parties, the posting of scoping proposal documents on the WRNF webpage, and a press release to local media outlets (FS, 2010). Site-specific comments or concerns were identified as the most important and valuable information (FS, 2010). The FS also included a section titled “Early Notice of Importance of Public Participation in Subsequent Environmental Review”, which summarized two relevant court rulings surrounding public engagement, including 1) *Vermont Yankee Nuclear Power Corp. v. NRDC*, which requires that reviewers of the DEIS must structure their participation to reflect their personal concerns and contentions in a meaningful way, and 2) *City of Angoon v. Hodel*, which states that public objections raised after the completion of the FEIS may be dismissed by the reviewing court in an adjudication attempt (FS, 2010; 435 U.S. 519-553 1978; 490 F. Supp. 1334, 1338 E.D. Wis. 1980). During this period, the FS received 185 unique letters and 3 different form letters that were submitted approximately 1,200 times (FS, 2013).

DEIS, FEIS, and DROD Process and Results

The DEIS was published in August of 2012 in the Federal Register; this initiated a 90-day comment period, which the topic coding methods focused upon (FS, 2014). In addition, two public meetings were held following the release of the DEIS, including 1) an open house on Wednesday, 12 September 2012, held from 3pm to 6pm at the BLM Colorado River Valley Field Office in Silt, CO, and 2) an open house held on Tuesday, 2 October 2012, from 3pm to 6pm, in Carbondale, CO (FS, 2014). The DEIS, a 621-page document, presents a comprehensive overview of the effects several management alternatives, along with the Proposed Action (FS, 2012). The range of possible alternatives was identified between 1) no action, which continues oil and gas leasing on the WRNF in accordance with the 1993 EIS and 2002 management plan, or 2) no new leasing, which closes the area to future leases while not affecting current leases (FS, 2012). The DEIS presented the proposed action in Alternative C, which identified the TDR to as Legally Closed to Future Leasing, updated NSO stipulations for all Inventoried Roadless Areas,

and updated surface stipulations for other areas in WRNF (FS, 2012). Throughout the comment period, the FS received 107 unique letters, and another 3 form letters, termed ‘organized campaign responses’ by the agency, which were submitted more than 550 times (FS, 2015). Out of these 550 comments, 419 were directly concerning leasing within the TDR (FS, 2015). The FS derived over 500 unique concerns directly from public comment sources, which are summarized in the FEIS Appendix (FS, 2014).

The FS also identified their decision-making process for addressing and incorporating public comments and concerns at the scoping phase, which relies primarily on CEQ directives, including the issue identification process presented in the Appendix as *Figure A.8*. This process takes into account data gained from internal scoping, existing FS resources, and public scoping concerns. Taking into account the public scoping process, the agency identified four major issue categories considered relevant, including: 1) impacts on physical resources, 2) impacts on biological resources, 3) impacts on social and economic resources, and 4) impacts on IRAs and areas of special interest (AOI) (FS, 2012). The DEIS and FEIS analysis processes are then structured accordingly from these major issue categories. These impact categories were taken into account when constructing the public comment coding analysis presented below. In addition, the agency cited several issues presented but not considered relevant, including the use of hydraulic fracturing, and the Thompson Divide AOI (FS, 2012). In their reason the FS considered the TDR AOI as an issue not considered relevant, the FS 1) cited that current leases in WRNF were beyond the scope of analysis for the EIS, and 2) acknowledged the rights of groups including the TDC to legislatively prevent future leasing and development activity from occurring as a separate public process; as a result, the FS addressed these concerns through Alternative B, no new leasing under FS management direction (FS, 2012).

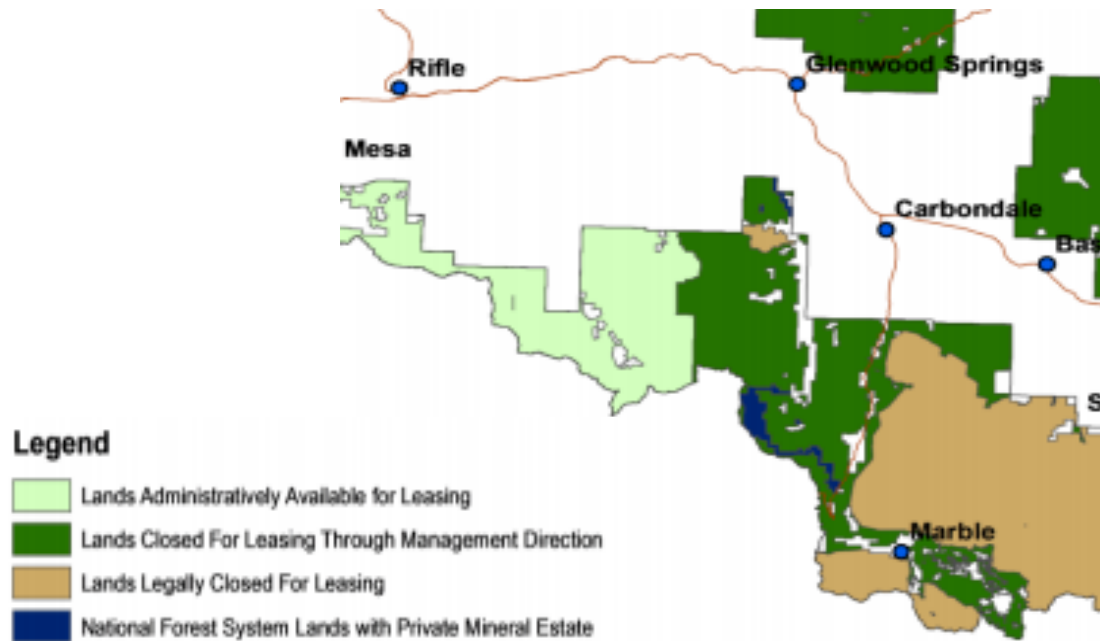
The DEIS also presented lists of cooperating agencies, governments, and organizations, as well as individuals who commented during the scoping process. This database, along with media sources, aided in determining which stakeholders play influential roles in the conflict.

These parties included the Cities of Aspen, Glenwood Springs, Rifle, and Carbondale, the Gunnison, Pitkin, Garfield, and Mesa County Commissioners, SGI, Willsource Enterprises, SourceGas Energy, Antero Resources (prior to Ursa's Wolf Creek leases ownership), Trout Unlimited, WW, the Roaring Fork Conservancy, the Colorado Division of Wildlife, and the TDC (FS, 2012). As a result, many of these agencies were able to discuss how they perceived the FS to have engaged the public, and incorporated the public's interests into their decision.

In December 2014, the FS released their FEIS, taking into account specific public concerns and information released after the DEIS publication, and revising the draft according to both these sources and new information (FS, 2014). This EIS first summarizes the alternatives, the proposed action, and repercussions of the direct, indirect, and cumulative impacts of each alternative, focused through physical, biological, social, and economic resource analysis (FS, 2014).

The FEIS selected Alternative C as the Proposed Action. This alternative proposes new land availability decisions for future oil and gas leasing in the WRNF, and designates these lands as either 1) administratively available for oil and gas leasing, 2) closed for leasing through management direction, or 3) legally closed for leasing (FS, 2014). In addition, this decision updates and proposes new lease stipulations, including a No Surface Occupancy (NSO) stipulation for all IRAs (FS, 2014). Importantly, **this decision closes all WRNF lands within the TDR boundary for future leasing under FS management direction.** Maps of land availability and lease stipulations are available from the FS EIS project webpage as of November 9th, 2015. *Figure 6.1* displays the area closed for future leasing through FS management direction in the TDR:

Figure 6.1: DROD TDR area management direction- base the TDR boundary off Figure A.4, using Glenwood Springs and Carbondale as reference points (FS, 2014)



In the FEIS, the FS also identified their process for analyzing public concerns, termed the “Content Analysis Process”, which was developed by the NEPA Services Group (NSG) (FS, 2014). The NSG focuses on public comment analysis through providing staff assistance, technical consulting, and agency contract services for additional resources (FS, 2015). Goals of this process include: 1) ensuring that every response is considered, 2) identifying the concerns raised by all respondents, and 3) representing the depth of the public concerns as fairly as possible (FS, 2015).

The FS recently implemented the Comment Analysis and Response Application (CARA) software, a web-based tool that organizes, codes, and summarizes public comments (FS, 2015). In addition, this software can recognize specific concerns, and respond via e-mail with links to further information and project resources (FS, 2015). Using CARA, the FS identified six major categories of public concern, including 1) decision-making processes, public involvement and coordination, 2) DEIS, alternatives and analysis, 3) natural resources management, 4) transportation management and planning, 5) recreation management, 6) lands management and

socio-economic concerns (FS, 2014). Through these methods, the FS identified over 500 concerns from the DEIS-FEIS period, which are available for reference in the FEIS appendix, and responded to each concern pursuant to NEPA statute (FS, 2014). However, coding results and quantitative data analysis was not provided, nor the analysis of comments prior to the DEIS process- as a result, this study developed coding methods in accordance with these strategies to quantify these results. The FS did not cite methods for addressing public concerns from open house meetings, or include these insights in their response to comments section.

The DROD stated and outlined the draft decision of the EIS process as Alternative C (the Proposed Action). Written by the FS WRNF Field Office Director Scott Fitzwilliams, the DROD “takes a conservation-minded approach to future gas leasing on the WRNF” (Fitzwilliams, 2014). Fitzwilliams recognized the “significant input from a wide variety of interested people who have a genuine stake in the management of the WRNF . . . this input was helpful and weighed heavily in my decision” (Fitzwilliams, 2014). In addition, Fitzwilliams emphasized how the most notable public concerns were surrounding specific impacts or locations in the TDR, especially surrounding potential impacts to “recreation, ranching, outfitting, air quality, and wildlife as a result of making them available for leasing” (Fitzwilliams, 2014). As a result, Fitzwilliams gave strong consideration to conserving these values, through the combination of “timing, controlled use, and NSO stipulations, and no leasing through management direction” (Fitzwilliams, 2014). Taking into account the statements made by Fitzwilliams, along with the management direction for the WRNF inside the TDR boundary, it seems that this decision accurately reflected the general public interest for management. However, the FS engagement process will be further discussed below, taking into account the quantitative data gained from topic coding. Both the FS and BLM EIS project document databases, available online as of November 9th, 2015, are displayed in the *Appendix* as *Figure A.9* (FS) and *Figure A.10* (BLM).

Insights from Participants in this NEPA Process

A number of stakeholders who participated in the public comment process emphasized that they believed the FS did an excellent job in engaging the public and accurately translating concerns into their management decision (Kessler, 45:40; Byars, 32:34; Seldin, 35:29; Rudrow, 45:18; Fales, 23:40; Shoemaker, 41:42; Kindle, 20:38; Darling, 22:38). However, although stakeholders were generally satisfied with the decision, as based on analysis and public commentary, certain stakeholders expressed concern surrounding the procedure used in planning, outreach, and engagement. Several stakeholders expressed that from their perspective, it is unlikely that an average citizen will have the time or skill to fully analyze and engage a project level EIS. For instance, in his comments, one stakeholder remarked, “I struggled through most of the draft statement. It is somewhat beyond my aptitude and, with great respect, I need to say that very few people have the competence to intelligently respond” (Peter Martin, 11/26/2012).

This is a somewhat common occurrence across NEPA processes; for instance, the CEQ stated, “NEPA’s purpose is not to generate paperwork, even excellent paperwork, but to foster excellent action” (40 C.F.R. 1500.11). As many EIS’s are complex analyses, the time and resources required to engage in the analysis may discourage stakeholders from participating. As a NEPA expert stated, “in approaching this subject one is inclined to focus on process . . . however . . . proposal design can significantly impact the ability of parties to engage the agency in a meaningful way” (Squillace, 2013). Certain stakeholders reflected that the proposal design, including outreach methods, documents, and commenting system, does not by itself facilitate involvement from the average citizen, even within a relatively close geographic area of the project. Instead, these stakeholders expressed that advocacy groups make the process approachable (Darling, 25:00; Byars, 43:06). For instance, a Glenwood Springs citizen remarked, “as a citizen, I wouldn’t engage in NEPA without being told what to do. I don’t know anything about NEPA, but the Thompson Divide Coalition and Wilderness Workshop make it accessible to engage in the process” (Darling, 25:53). This system is also reflected by WW, who emphasized

that NEPA is their primary arena of involvement, stating, “NEPA is what we do. We provide scoping comments, we organize the community to support our scoping comments, we read and analyze the DEIS, we provide comments based on science, policy, and community will” (Shoemaker, 38:55). As a result, it appears that in regards to the current process, advocacy groups are more effective towards facilitating NEPA engagement than the FS, in terms of organizing and informing public comment to participate in the commenting process; this is further reflected in the quantitative results.

Having summarized key stakeholder perceptions and concerns surrounding the FS public engagement process, I will now present results from the topic coding comment and objection analysis.

DEIS-FEIS Comment Topic Coding Results

<i>Table 5.2: FS WRNF DEIS-FEIS Public Comment Period Coding Results</i>	Do Not Support Future Leasing						EIS Alternative Support			
Participant	W	A	E	Ec	C	R	A	B	C	O
Pitkin County	17	16	16	16	16	16		16	2	
Gunnison County	2	2	2	2	2	2		2		
Garfield County	1	1	1	1	1	1		1		
Mesa County	3	3	4	4	4	3		3		
Delta County	5	5	5	4	4	5		5		
Town of Carbondale	87	87	87	86	88	87		87		
Town of Glenwood Springs	46	45	43	45	45	43		44		
Silt & Rifle	4	3	4	3	3	4		4		1
Town of Aspen	50	49	50	50	52	49		49		
Other US Citizens	194	194	194	194	193	194		193		
Thompson Divide Coalition	1	1	1	1	1	1				
Wilderness Workshop	1	1	1	1	1	1		1		
Roaring Fork Water Conservancy	1		1	1	1	1			1	
North Thompson Cattlemen's Assoc./Ranchers	2	2	2	2	2	2	1			
Total Number of Comments	413	409	411	410	413	409	1	405	3	1

<i>Table 5.3: 2014 FS WRNF EIS Scoping-DROD Objections Analysis</i>	Against Future OG Leasing			Support Future OG Leasing				EIS Alternative Support	
Objecting Party	Ec	C	R	S	Le	Lr	Pr	A	O
Rebecca Watson, representing SG Interests I, LLC					1	1	1		
Mountain States Legal Foundation					2	2	1	1	
WSCOGA				2	2	2	2		1
Wilderness Workshop	1	2	2						
Pitkin County		2							
Mesa County Commissioners				1	2	1	2		
Encana Operating Company				1	1	2	1		
Total # Objections/Topic	1	4	2	4	8	8	7	1	1

Figure 5.1: DEIS-FEIS Public Comment Graph

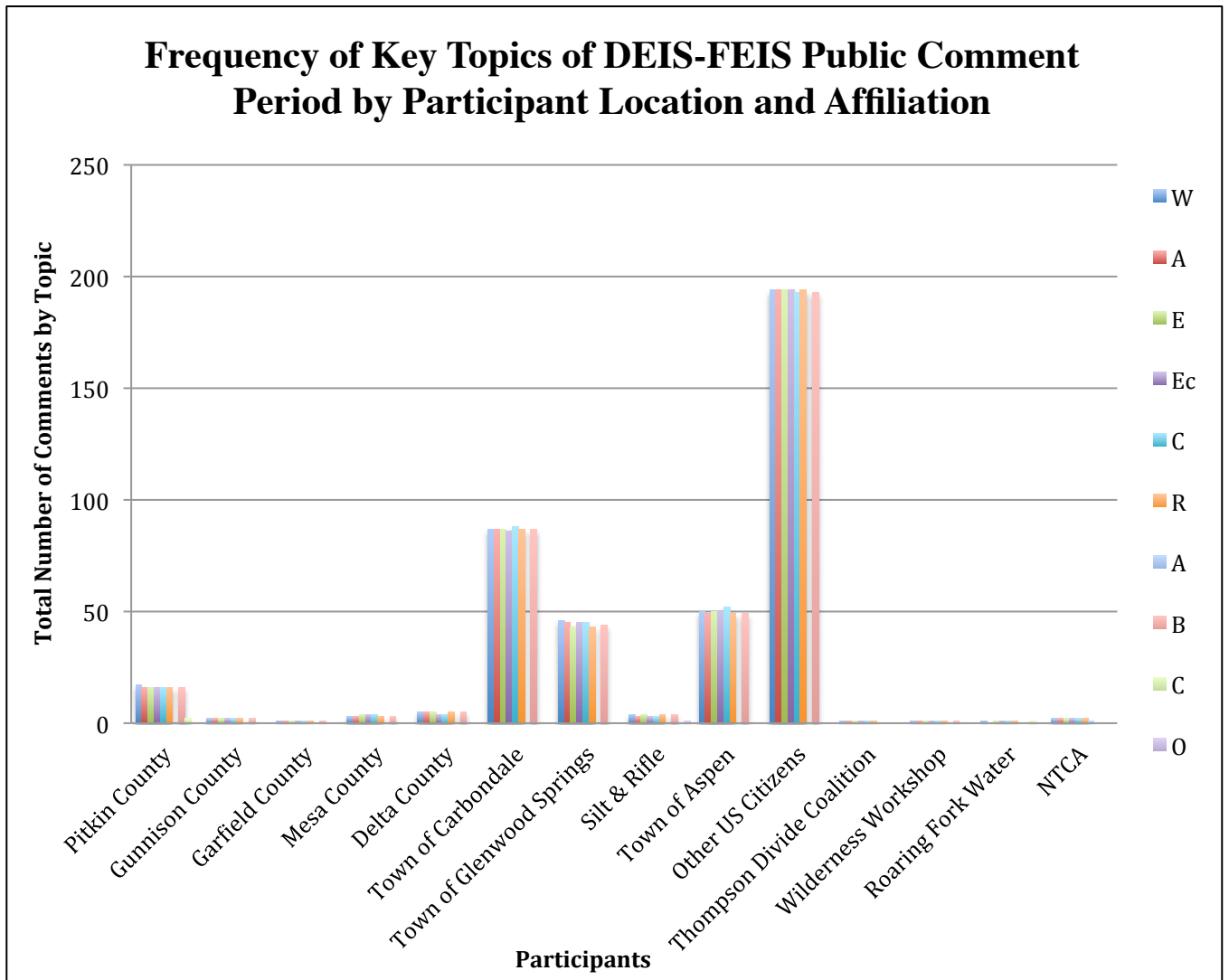


Figure 5.2: DEIS-FEIS Public Comment Totals by Topic Graph

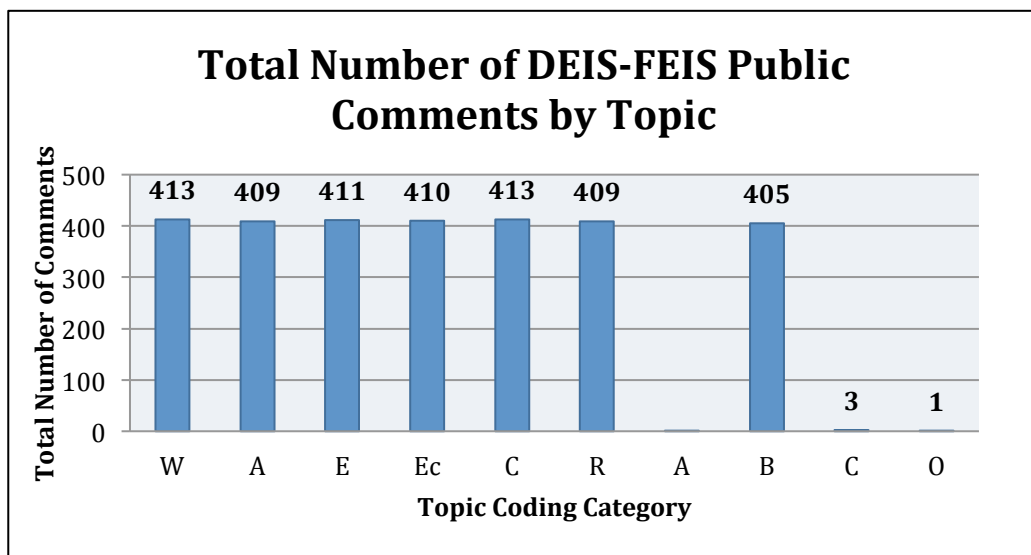


Figure 5.3: Objection Topic Coding Results Graph

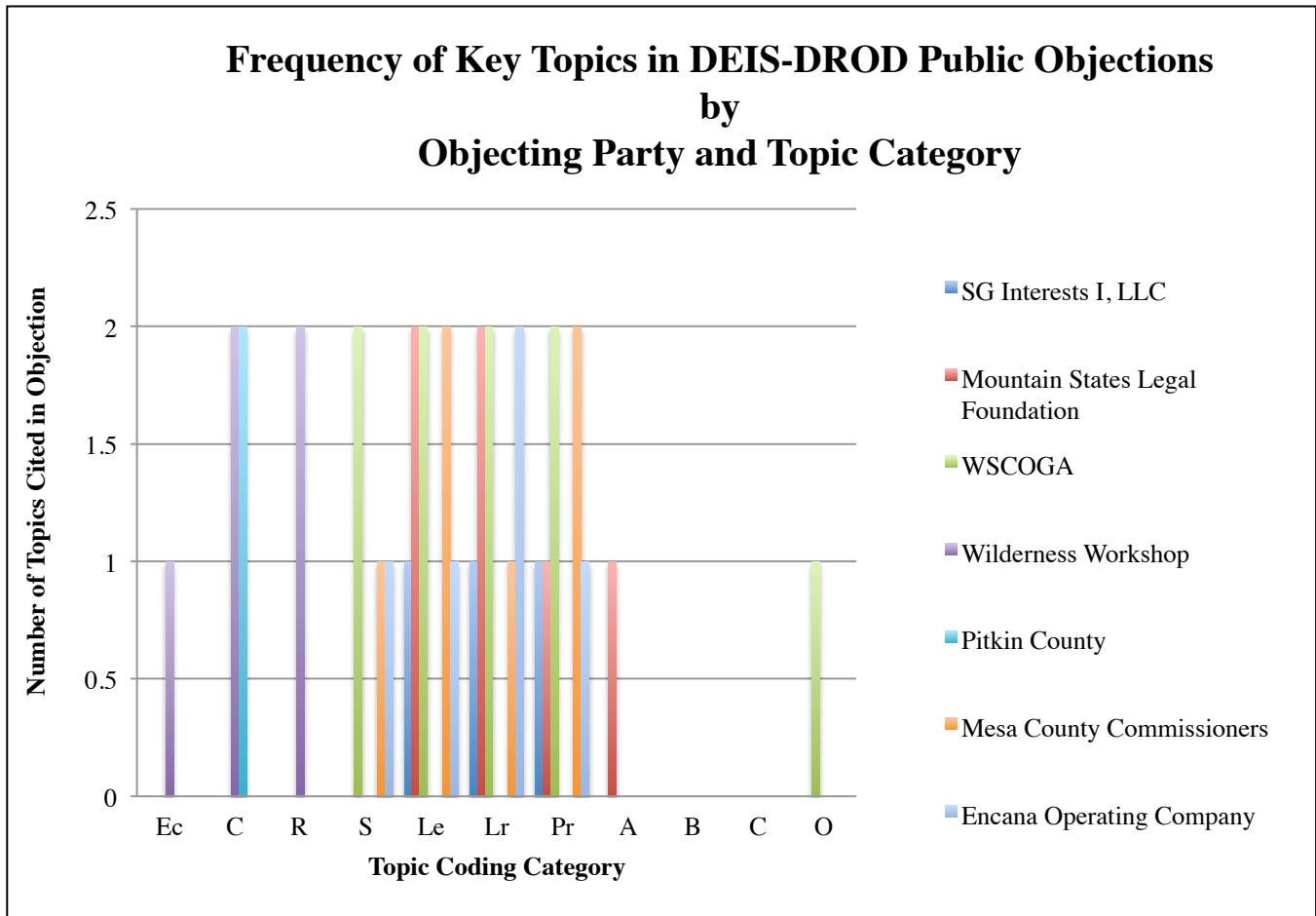
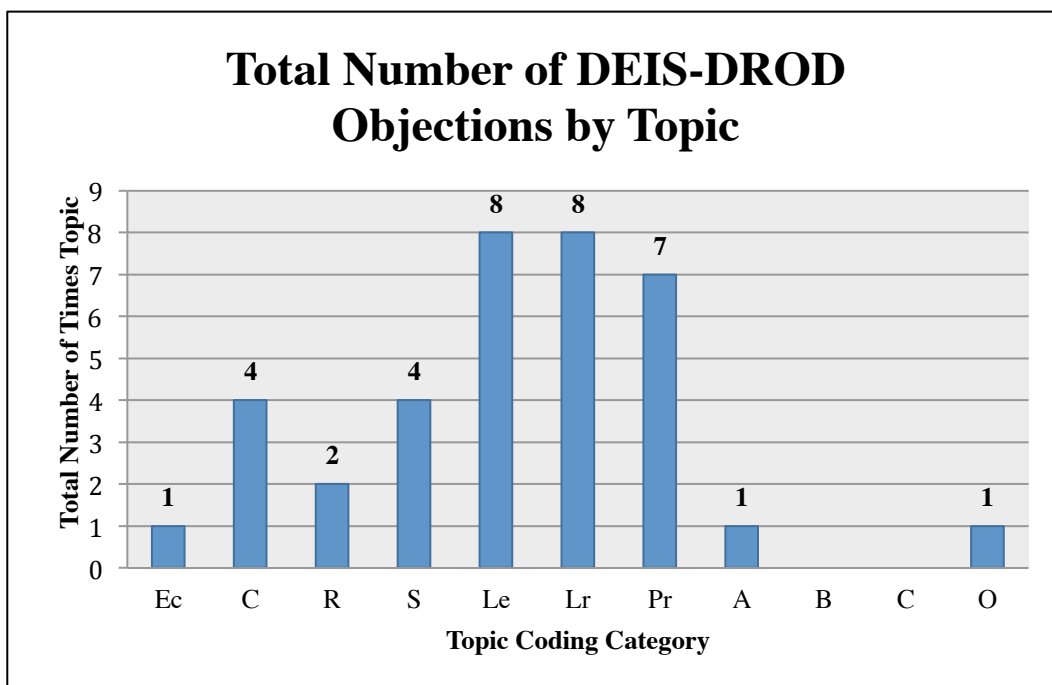


Figure 5.4: Total Number of DEIS-DROD Objections Graph



Analysis of Results and FS Public Engagement

This section will first discuss key aspects of the topic coding results, and then analyze the FS EIS processes within the context of the civic republican ideal.

Key Aspects of Quantitative Data

This quantitative analysis revealed a number of interesting characteristics surrounding the public's concern towards leasing in the TDR from both a social and legal standpoint. Overall, these results indicate that across the board, the public feels that leasing is not appropriate in the TDR. Notably, the FS did not receive a single comment that supported leasing in the TDR, instead receiving 405 concerns that preferred Alternative B, no new leasing.

In this comment process, 86% of total letters were an organized campaign response developed by WW, of which the participant did not edit or add additional concerns. As a remaining 11% of letters includes stakeholders who edited or added content to the form letter, the number of stakeholders who wrote their own response is below 3% of total letters submitted. This form letter is referenced in the appendix as *Figure 8*. This widespread use of form letters accounts for the lack of deviation between the total number of coding categories, as well as the nearly universal support for Alternative B.

The geographic locations of participants are also important, noting how citizens in Carbondale, Aspen, and Glenwood Springs expressed the greatest concerns relative to regional communities. It is interesting to note that although the FS reached out to stakeholders on both the west and east sides of the Divide, Pitkin and Garfield Counties expressed the greatest number of concerns, whereas municipalities and counties on the west side participated relatively little.

It is also important to note the large portion of comments submitted by parties outside the geographic scope of the TDR conflict. Although the majority of these participants were not invited to the scoping process, it is likely that the efforts of WW facilitated their involvement due to email outreach methods that the group cited.

In addition, the energy operators and industry advocates did not participate in the public comment process, although these parties did submit legal objections on behalf of both the DROD and the DEIS. Energy advocacy groups did not organize or distribute organized campaign responses to facilitate stakeholder involvement on behalf of their interests. However, these parties were active in submitting objections to both the DEIS and the DROD, expressing that they supported future leasing, due to concerns that development would lack a significant environmental impact, as well as be in legal accordance of federal statutes and forest plans.

Lastly, in response to comments and objections submitted, the FS did not express the intent to create any major changes (i.e., significantly restructuring alternatives, procedures, or land availability decisions) due to concerns expressed in objections or comments. In their responses to the concerns in the FEIS appendix, the FS cited how their decision, connected to the facts found, was within legal compliance with NEPA statute, FS policy, or other federal or state statutes, codes, and policies (FS, 2014). In addition, in response to concerns, the FS cited and outlined EIS sections for which the public could find key information, and described analytic decisions for evaluating environmental attributes and quantifying economic value (FS, 2014).

The Civic Republican Model and Stakeholder Engagement

Taking into account the FS public comment analysis system, the quantitative results, and the public's perceptions, it seems that the process reflects certain characteristics of the civic republican ideal while lacking others. Overall, taking into account the nature of the conflict, I believe the FS constructed a 'good decision', in terms of the definition previously cited. The FS remained compliant with NEPA statute, particularly 40 CFR §1503.4 (listed in *Figure 3.1*), and several attorneys who participated in legal analysis of the EIS expressed that they believed the decision to be legally sound (Seldin, 32:05; Freeman, 23:04). In addition, it appears that the FS did indeed take into account both future generations and non-human interests through a

conservation minded decision, allowing for a sustainable allocation of resource assets between present and future generations.

However, agency processes are seldom perfect, and there is nearly always room for improvement (Squillace, 2013). As a result, I selected the civic republican ideal as a guiding model to evaluate the FS process and provide recommendations for improvement. The following sections outline the degree of attainment of the FS for each of the four principles of the civic republican ideal, including deliberation, the promotion of political equality, an achievable and definable good, and the promotion of the public interest.

Deliberation

Deliberation, described by Sunstein, ensures that “political outcomes will be supported by reference to a consensus (or at least broad agreement) among political equals . . . arguing in favor of liberty of expression and conscience and the right to vote” (Sunstein, 1988). Based on my observations, I believe that the FS has achieved this ideal in part. Their decision to withdraw the TDR through management direction from future leasing reflects the nearly unanimous support as expressed in public commenting process. As a result, this reflects that the FS has, within the range of their jurisdiction, allowed for the promotion of public interest and subsequent protection of the key concerns as expressed in the comment period (reflecting the topic coding topics and issues of key concern as cited above). However, it is likely that the FS could better support informed deliberation among involved parties, increasing the relevancy and value of information gained from public comments.

The widespread usage of form letters, instead of personal responses focusing on site-specific attributes within the TDR, may be a key indicator that FS strategies to encourage deliberation among interested parties could be improved. As many stakeholders reflected that the EIS was relatively unapproachable, due to the complexity and depth of the analysis, it is likely that the vast majority of participants did not read or analyze FS data, and instead turned to

advocacy groups to translate and understand key aspects of the EIS. This is understandable; for instance, the FS FEIS is a 700-page document that analyzes each proposed alternative, along with RFD scenarios for each alternative, while failing to provide a section which summarizes direct impacts on the TDR (FS, 2014). Therefore, to determine the impacts on the region, one must comprehensively seek out specific geographic features evident in the TDR per alternative and piece together the analysis, which is a difficult and lengthy process. As a result, it is likely that the public instead turned to third parties, and of course their organized form letters, to efficiently express their concerns to the FS, instead of engaging directly with FS EIS resources and documents.

In addition, although the public meetings may have allowed for deliberation between the public and agency officials, the total time of FS availability for these meetings totaled only 11 hours of public engagement. Taking into account both the number of stakeholders represented and the depth of the analysis, it is unlikely that every participant was able to attend these meetings, adequately gain information, and fully express their concerns. As a result, I focus policy recommendations for the FS to better achieve the deliberative principle, upon improvements toward both written and personal FS engagement processes.

Promotion of Political Equality

Sunstein describes political equality as the, “the requirement that all individuals and groups have access to the political process (Sunstein, 1988). He further notes, “large disparities in political influence are disfavored” (Sunstein, 1988). I believe that this FS has also attained this principle in part. The FS reached out to a significant number of stakeholders, as cited in their DEIS, to engage stakeholders representing diverse political interests, as well as many members of the surrounding communities located within the Garfield, Pitkin, Mesa, Gunnison, and Delta Counties. To engage stakeholders, the FS employed a diverse variety of methods, taking into account their publications in various media sources surrounding document releases and public

commenting opportunities, as well as personal letters addressed to both key stakeholders and the general public, seeking information and concerns. As a result, I believe it is likely that the FS provided every interested party both notice and opportunity to participate and engage in the process, thus fully achieving the promotion of political equality aspect of this principle.

However, it is evident that the process is highly politicized, likely due to the efforts of advocacy groups to persuade and create directed public opinion; for instance, WW openly described their form letter (making up 86% of comments analyzed) as a political process for which to achieve internal goals of environmental conservation. This is a common theme in agency planning initiatives; for instance, while the 2003 FS Roadless Rule planning process received over 500,000 public comments, 95% of these responses were form letters (Walker, 2004). As discussed above, this is most likely explained due to a lack of public ability to understand EIS processes and analysis, creating opportunities for third parties to translate NEPA analysis and create public concerns within the scope of their own interests.

However, form letters present a difficult conundrum for regulatory agencies, and are most likely an inevitable occurrence for many NEPA processes. For instance, one must question the extent that stakeholders are even interested in, and want to participate in regulatory processes; form letters present an easy alternative to voice general concerns to an agency while avoiding a significant dedication of time and resources. And form letters, at the very least, still provide agencies valuable information, such as to the depth of public concern towards key issues or the geographic scope of public interest. As a result, the widespread occurrence of form letters presents a difficult ongoing challenge for agencies not only involved in the TDR conflict, but on a national scale as well, with no clear solution. It is likely that form letters are an inevitable aspect of the written engagement process; however, I provide several agency strategies that could better encourage participants to instead examine EIS analysis and documentation as a means to express informed concerns.

Achievable and Definable Good

Sunstein describes this pillar of the civic republican ideal as the, “existence of a common good, [is] to be found at the conclusion of a well-functioning deliberative process” (Sunstein, 1988). As applied to this study, this ‘common good’ can essentially be equated to a ‘good’ public interest decision, taking into the variety of data sources which indicated the nearly unanimous public concern towards the necessity of conserving environmental assets within the TDR. As a result, I consider the FS to have fully attained this principle, taking into account their methods of data analysis and public concern analysis and response, and the projected legal compliance of these two processes. Although BLM engagement process analysis was beyond the scope of this study, taking into account the ongoing trend of BLM criticism and legal engagement, this agency should strive to achieve this principle as a means to ensure a public interest management decision for the TDR, as well as to build trust between the agency and the public.

Engagement of Public Interest

Lastly, Sunstein emphasizes that this principle of the civic republican ideal is not only the responsibility of the agency to engage the interests of U.S. citizens, but also for the public to engage the process with a genuine concern for the realization of the public’s interest (Sunstein, 1988). Although this responsibility is largely placed on behalf of public participants, agencies may play a key role in facilitating arenas for involvement (Cherney et al, 2008). However, taking into account the fact that nearly all comment letters were identical, it is difficult to analyze the comment process in such a context. However, I postulate that improvements to the FS public engagement process structure, in terms of the first two principles discussed, may be the best means to ensure that the public engages the process with a focus on ensuring a public interest decision.

In review of these principles, and the various aspects of FS compliance, it appears that the civic republican ideal is a both a relevant and achievable model of stakeholder engagement

for the FS WRNF Field Office, taking into account the nature of decisions being made, the stakeholders involved, and the resources that are widely available to both these groups. Noting the similarities between decisions, stakeholders, and resources between the FS WRNF Field Office and the BLM Colorado River Valley Field Office, this ideal is also most likely an excellent guiding principle for the BLM; as a result, recommendations are directed at both agencies. The following section will emphasize how these agencies could better improve processes and decisions to reflect this ideal; furthermore, I propose that the civic republican ideal, used as a conceptual model to guide agency engagement, could ensure a better connection between stakeholders at the bottom-up and top-down policy processes.

Chapter 7: Discussion of Policy Alternatives and Recommendations

In this chapter, I provide policy and legal alternatives and recommendations based on prior problem orientation framework and NEPA process analysis. As this analysis is constructed through a top-down and bottom-up perspective, I first define the public interest for management strategy in the TDR, and then provide alternatives and recommendations for further implementing policy and legal instruments, from both the bottom-up and top-down, that could help achieve this goal. Based on my observations, I conclude that perhaps the best means to ensure the continued management of the TDR is to improve regulatory agency civic engagement processes. As a result, this thesis extends the scope of the framework by offering specific insights, within the context of the civic republican ideal, for the FS and BLM that could allow for a better inclusion of public concern into top-down agency regulation. Lastly, recognizing that combining bottom-up and top-down processes can lead to better resource decisions and more robust public participation (Fraser et al, 2009), I provide recommendations for connecting elements of these two processes to better ensure a public interest decision, using both the civic republican ideal and a cyclic adaptive land management framework. Taking into account the initial problem definitions, it is likely that recommendations focused on improving top-down policy and legal instruments are more relevant to stakeholders participating in the ‘lease legality’ definition, whereas the bottom-up recommendations are more relevant to those within the scope of the ‘not appropriate for the area’ and ‘climate change and fracking’ definitions. Lastly, I propose that the implementation of a multi-level adaptive management framework could best connect these varying perspectives and processes.

Defining a Public Interest Management Outcome

The TDR conflict is high stakes in terms of environmental, economic, and cultural assets. The likelihood of a solution that is legally sound and the preferable option for every involved

party is at best, minimal. Stakeholders simply aren't willing to negotiate upon certain interests and values, and as a result, there will have to be compromises for a public interest outcome.

Taking into account my observations, I contend that leasing and development for natural gas extraction in the TDR, including the proposed Lake Ridge and Wolf Creek units as well as future leases, is not within the scope of a 'good' public interest management scenario. Key stakeholders, as well members of the general public, emphasized a variety of characteristics that render the existing qualities and uses in the region incompatible with the unitized development plans envisioned by SGI and Ursa. This argument also is supported by FEIS decision, independent scientific and economic analysis, and the public's informed concern surrounding the issue. While it remains to be seen whether the BLM's EIS will reflect this interest, the FS decision has solidified these observations into a public interest decision.

Based on the applied framework orientation analysis, I acknowledge that the likely endgame for dispute resolution surrounding the current leasing (the Lake Ridge and Wolf Creek leases) conflict is litigation of the BLM's EIS, which could eventually progress to a binding court decision, resulting in the realization of certain goals over others. Although this will likely effectively resolve these legal conflicts, perhaps even in terms of the public interest, it is certainly not the most efficient method. There are many strategies for which stakeholders could resolve their disputes prior to litigation; in addition, this scenario would likely provide a solution more focused on the public interest. Presently, the SGI proposal may be the best means to avoid a post-BLM EIS litigation process; however, the fate of the proposal at this point is relatively uncertain. In addition, the TDR will likely continue to present management challenges for agencies and the public, even if the current conflict is resolved in terms of the public interest, due to population growth pressures and changing environmental conditions due to projected climate changes; as a result, agencies should continue to strive to better land management plans and public engagement processes.

As a result, this public interest scenario focuses on realizing the public interest through an emphasis upon commonalities, in terms of goals for the TDR, between conflicting stakeholders, thus allowing for the implementation of realistic policy and legal instruments, as well as the construction of management strategies for both the short and long term. I propose that best public interest management solution is to keep landscape management strategies and uses as they are now- without wilderness designation or significant oil and gas leasing, allowing for the continuation of existing resource uses that are compatible with the conservation of environmental assets.

Therefore, within the scope of the public interest are the goals of: 1) protecting water and species in the TDR, 2) negotiating federal legislation aimed at leasing transactions and area withdrawals, and 3) public engagement aimed at creating informed public decisions, taking into account the quantitative results of public analysis. Trends and conditions which could aid in furthering these goals, to ensure a public interest scenario, include the continued 1) minimal anthropogenic impact within the TDR, 2) increasing regional and national public awareness of the TDR, and 3) the increasing trend of alternative land use strategies in the Roaring Fork and Crystal River Valleys. These observations, along with regulatory processes focused on creating decisions centered on the public interest, could ensure the continued protection of environmental attributes and social and economic benefits reliant upon these assets, which will allow for the continued growth and coexistence of sustainable ecosystems, economies, and communities throughout the Roaring Fork and Crystal River Valleys. First, recommendations for top-down and bottom-up processes will be presented independently; then, I discuss how the civic republican ideal and an adaptive management framework (discussed below) could connect these two processes to better ensure continued public interest management strategies; I also address key barriers between these two processes, including a lack of trust and information sharing between key agencies and stakeholders.

Top-Down Process Recommendations

Two primary areas of top-down policy and legal processes are currently evident in the TDR: the ongoing discussions and proposals of federal legislation, and the completed and ongoing regulatory EIS processes. I provide recommendations and policy alternatives for each of these processes.

Congressional Legislation

The series of past Congressional legislation and negotiation attempts, in spite of their failure, have aided in further identifying what successful legislation aimed at solving the conflict may look like. Based on the attempts discussed, including the SGI proposal, successful legislation will most likely include: 1) a multi-party, market or exchange based solution that allows for the mutual benefit of both leaseholders and other parties, 2) compromise upon certain resource values and management strategies, such as specific acreage to be included or excluded in a legislative withdrawal, and 3) bi-partisan Congressional, county, and municipal support, fully backed by Colorado Senate and House representatives, as well as a general (or at least majority) public consensus.

Based on these observations, I propose that the SGI proposal (a lease acreage exchange to remove the Lake Ridge and Wolf Creek leases for similar acreage in surrounding counties) is the best current alternative for successfully enacting federal legislation aimed at removal of these leases from the TDR¹². Although the proposal currently lacks a leasing withdrawal or conservation stipulation for the areas underlying the Lake Ridge and Wolf Creek units, this may be the necessary compromise to ensure its success. Taking into account the current approval expressed by governments and stakeholders in the SGI outreach process, as well as the likelihood of support by Congressional representatives, the proposal may likely bypass the initial difficulty

¹² In addition, an executive-office initiative on behalf of the President, to designate the Thompson Divide Region as a national monument, could also possibly align with the public interest scenario outlined in this thesis.

of securing regional-state level bipartisan support. If the leasing is successful, several stakeholder goals will be achieved, including the preservation of key environmental assets, including the Thompson, Four Mile, and Coal Basin watersheds and species habitat, the economic benefit of lease development to receiving communities in support of the transaction, and the resolution of the issue in a timely manner. As a result, key stakeholders involved in negotiation including the TDC, SGI, Ursa, the CHC, as well as county and municipal governments should continue to participate in constructive dialogues, inform the public surrounding negotiation updates, and utilize available information to further garner the support of Congressional representatives and the general public. However, taking into account the previous findings surrounding the current lack of Congressional action, further speculation on the progression of this act, such as strategies to ensure a timely and successful passage through Congress, is largely beyond the scope of this analysis.

In sum, at the time of this study, I acknowledge that this effort could indeed aid in ensuring a public interest outcome towards management of the TDR and allow for multiple parties to mutually benefit as a resolution from the conflict. However, management challenges will likely continue to arise in the TDR even following the successful enactment of this legislation; as a result, I will now present recommendations for agencies to improve civic engagement, as a means to aid in ensuring the continued long-term management of the TDR in the public interest.

Civic Republicanism and Agency NEPA Processes

As emphasized, agency regulatory procedures roughly define the projected outcome of the TDR conflict, and are the most accessible top-down policy processes for which the public can engage in; thus, these processes were the primary focus of top-down analysis. In general, these recommendations are focused on both the FS and BLM, unless explicitly directed towards one agency; these offices (the FS WRNF Field Office and the BLM CO River Valley Field Office)

are simply referred to as ‘agencies’ within this section. This civic republican model could provide a variety of benefits towards improving agency public engagement processes and public interest decisions. I propose that agencies could better reflect the civic republican ideal in public engagement processes through three primary areas: 1) improving proposal and document design, 2) improving personal interaction between agencies and the public, and 3) using technology to improve the engagement process. I further propose that the implementation of public engagement strategies, in alignment with the civic republican ideal, could ensure increased transparency in agency management decisions and better relationships, built on trust, with the public; this may be especially applicable to the BLM.

Lastly, noting the lack of current qualitative or quantitative frameworks to evaluate the success of agency public engagement processes in the context of the civic republican ideal, I suggest that policy or legal scholars develop a metric to evaluate agency public engagement processes in terms of the civic republican model, allowing for a standard analytic process and comparison of results.

I will now provide suggestions for which agencies could improve the public engagement process to further align with the ideals of the civic republican model.

Improving Proposal and Document Design

To further encourage stakeholder deliberation and their engagement of the process with an interest towards ensuring a public interest decision, an important first step is to create proposals and documents that are more accessible to participants. A NEPA expert stated, “proposals that address narrow projects are far more likely to elicit meaningful comments than are complex proposals . . . agencies can sometimes break proposals down into more manageable parts that are simpler, and thus more accessible to members of the public” (Squillace, 2013). This statement is reinforced by the FS NOI, which emphasized the agencies’ desire for site-specific concerns (FS, 2010). Yet when the FS utilized the CEQ issue determination process, the agency

determined that site-specific analysis of the TDR was beyond the scope of the analysis. Although their reasons for listing the area as such may be legally compliant, when taking into account the degree of public interest and concern towards the TDR, it seems that a focused analysis of the geographic TDR AOI would greatly align with attaining the principles of the civic republican ideal. One must acknowledge that participating in and understanding an EIS process to create an informed public concern fundamentally requires a strong civic commitment and the dedication of personal resources, but with the necessity of commitment currently required, it is unlikely that this process will appeal to even the most dedicated participants.

If stakeholders could engage EIS documents with a concise focus on site-specific concerns towards regions or watersheds, for instance ranging from a scope as focused towards the greater TDR region or as specific as a certain species within the North Thompson Creek, this could possibly elicit stakeholders concerns that are personal, deliberative, and centered on addressing the public interest for the proposed land use strategies. Based on analysis of the FEIS process, it is likely that agencies could re-structure documents and EIS document databases to address these issues, without compromising regulatory compliance or risking simplifying analysis to create litigation opportunities, through several simple actions.

First, agencies could include comments and responses to comments gained from the scoping public comment period within the DEIS document, categorized by locations instead of issues within the scope of the project, thus allowing for participants to search for and gain focused information instead of piecing together data categorized by issues, and creating informed dialogue surrounding key issues prior to the release of the FEIS. Second, agencies could provide executive summaries of data and analysis towards specific locations or regions, such as the TDR, as a supplementary public guide to the FEIS, even if the locations are determined to not be significant by the recommended CEQ process. Lastly, agencies could cooperate with the NSG to further incorporate analysis of public opinion and topic coding, such as the analysis conducted in Chapter 6, to allow for increased transparency and trust between the public and agencies, thus

reinforcing the public's trust in decisions that may be controversial by allowing the public to see how many comments pertained to specific locations and topics.

As a result, the re-structuring of proposals could lead to more informed stakeholders, thus increasing 1) informed stakeholder deliberation, 2) the promotion of a greater political equality due to a lack of dependence on third parties to interpret and express informed concerns, 3) the trust on behalf of the public towards 'good' agency decisions, and 4) participation in the process with a focus on the public interest.

Improving Personal Interactions between Agencies and the Public

When taking into account the depth of the FS EIS analysis and the extent of involved stakeholders and concern, it seems unlikely that three open house meetings were sufficient for all participants to have the opportunity to personally interact with and discuss specific aspects of the EIS with agency representatives. Of course, one must recognize the budget and staff constraints for an agencies ability to host and participate in these meetings, as well as the fact that many citizens are simply not interested in dedicating their resources nor time; however, it likely that over the course of a roughly 4 year EIS analysis, several more meetings could have been held to further promote deliberation and information-sharing between agency officials and the public. However, the lack of available data (i.e. transcripts of comments expressed at FS meetings) or the author's attendance and observation of these public meetings is a significant limitation of this study, thus also limiting the extent of analysis possible.

Regardless, several insights are apparent, including: 1) holding more open house meetings more frequently, including meetings following the completion of the EIS to gain feedback and insights from the public as to how to improve future processes, 2) using voice recorders to transcribe scripts of open-house meetings, organizing these transcriptions by topics and locations of concern, and including the documents within the online project database, and 3) scheduling and participating in public radio interviews, such as the regional *KDNK Valley Voices*

Program, which frequently hosts stakeholders and governmental officials to discuss ongoing environmental issues. In addition, following the review of scoping and DEIS comments, agencies could schedule personal meetings with informed stakeholders and advocacy groups to further gain information and build trust with the community, thus increasing the depth of site-specific analysis. As a result, this could ensure that stakeholders feel more personally connected to the FS processes, and in turn, create more trust and better participation.

How Technology Could Improve the Process

There are many promising technological advances, especially in online software systems, which could aid in furthering effective public engagement in alignment with the civic republican ideal. The utility of the CARA software system demonstrates these types of benefits, which allow for computerized comment categorization, topic coding and data analysis processes, thus resulting in more efficient public comment data analysis. However, software advances could have many more useful implications for agencies. For instance, it was proposed that the Internet, through a discussion ‘thread’, could promote further deliberation among participants by allowing for give and take of information and concern, between the agency and the public, through multiple rounds of comments (Squillace, 2013). Nonetheless, based on my observations, it seems likely that stakeholders would decline to participate in further rounds of informative comments, based on both the widespread usage of form letters and the lack of engagement in actual EIS documents.

However, an emerging software system, called Public Participation GIS (PPGIS), could both ensure a greater degree of engagement into the process resulting in increased deliberation between better-informed stakeholders and agency representatives. PPGIS has recently emerged since the early 2000s as a promising software tool to encourage and inform public involvement in a variety of land use decision-making undertakings, ranging from municipal zoning exercises to forest-wide resource management plans.

In selected offices across the nation, the FS has recently implemented a prototype PPGIS system, called Talking Points Collaborative Mapping (TPCM), in accordance with the 2009 Presidents Open Government Initiative, designed to promote transparency, participation, and collaboration in agency processes, as well as the 2012 Forest Service Planning Rule, which mandates public involvement in national forest planning and encourages use of tools such as the Internet to engage the public (Aran et al, 2012; 36 CFR 219.4). This software system uses integrated GIS layers and discussion threads, available to the public online, provides a variety of benefits including 1) the ability for the FS to provide spatial layers related to project planning data, which is accessible by searching for specific sites, environmental assets, and projected risks upon these assets, or GPS coordinates, 2) increased spatial referencing of public comments, 3) collaborative capabilities allowing commenters to communicate in ‘real time’ both with each-other and FS staff, 4) automatic documentation and analysis of comments, similar to the CARA system, 5) a forum for integrating specific photos and web-links to independent analysis, and 6) software capabilities that are compatible with existing FS software (Aran et al, 2012). This software, developed in collaboration with the Integrated Resources Group, a software consulting firm, and the FS, was successfully implemented in a 2012 Flathead National Forest Resource Management Plan (FS, Flathead National Forest EIS, 2012).

As a result, taking into account the overall benefits of implementing a PPGIS system, it is recommended that the FS and BLM, along with their partners including the NSG, research and contact PPGIS consulting and development firms, especially the IRG, to project the plausibility of incorporating a prototype PPGIS tool into future EIS analysis. Through the engagement of this tool, the public could access site specific data, using multiple GIS layers to discover the various impacts of projected land use strategies such as potential risks and impacts of energy development on specific areas, watersheds, or species populations, thus reducing the necessity of investment of significant time and resources to otherwise discover this analysis. As a result, this could increase the degree of deliberation among stakeholders, especially through the ‘comment

thread' feature, reduce the widespread political disparity created by advocacy groups, ensure better decisions, and ensure that the public centers focus on the process with the public interest at mind. Although initially, this prototype should not replace the traditional commenting process, it could be a useful tool to attempt to further align with the ideals of the civic republican model, likely facilitating improvement in all four principles.

Bottom-Up Process Recommendations

This section will focus on how bottom-up initiatives could improve and achieve public interest goals through a focus on: 1) further cooperation and planning between the public and bottom-up actors to create further legislative and adaptive management strategies to ensure a continued public interest management outcome, and 2) further engagement of the public surrounding the conflict. Overall, findings reinforce the indication that cooperation, planning, and trust drive successful bottom-up policy processes in natural resource management planning (Cherney et al, 2008; Clark, 2002).

Cooperation and Planning

Taking into account the successes of bottom-up policy instruments to achieve site specific watershed protection and conservation easements promoting wildlife habitat, it is likely that the continuation these initiatives will result in furthering a public interest management scenario. For instance, the Thompson Creek watershed is now protected through several layers of policy and legal instruments under both state and municipal legislation. As observed, success emerged from processes focused on cooperation and planning between stakeholder groups, relying on areas of various expertise to successfully tackle complex and interdisciplinary problems with both scientific and policy facets.

Therefore, it is recommended that groups, including the RFC, continue publishing baseline water-quality studies focused on the Thompson Creek, Coal Basin, and Four Mile

watersheds to ensure the availability of reliable data on these hydrological assets. It is also recommended that the RFC contact and partner with the SWPA to further revise and update management plans for the Crystal Well water source, taking into account potential impacts from both regulatory decision and impacts from current uses. Although the SWPA team represented a diverse variety of expertise's and factions, the team failed to include a representative of the energy industry; in the future, the input of the industries expertise and knowledge of mitigation procedures such as BMP's could further aid in the effectiveness of monitoring and mitigating potential hydrological risks (Hempel et al, 2013).

These management and impact mitigation plans will be especially important in the future, as 1) projected population growth may likely influence the degree of anthropogenic impact on TDR hydrological and eco-systems, and 2) increasing climate change effects produce varying impacts on the timing, form, and distribution of water resources across the Roaring Fork and Crystal River valleys, in accordance with general projected climatic shifting trends in Colorado (Mayberry, 2015). However, processes centered on site-specific analysis and mitigation, relying on local expertise, cooperation, and funding, could allow for the projected adaptive management and mitigation of these two impacts. It is also suggested that advocacy and consulting groups focused on water and species resources partner with local outfitting and recreational operations, to ensure the promotion and enactment of BMP's aimed at providing land users with tools, such as environmental ethics like a 'leave no trace' policy, to further ensure that the public values and conserves these assets.

Engaging and Informing Communities

Although stakeholders have demonstrated significant success in informing the community to facilitate public-interest action, these initiatives should continue both in the short and long term to keep the community engaged in management of the TDR. In addition, organizing community meetings, radio interviews, or other public engagement processes across

county and municipal jurisdictions, such as between the differing political sentiments of the Towns of Silt and Carbondale, could help to facilitate trust building and information sharing to further unify management strategies. In addition, the continued inclusion of agency representatives to these meetings could help to facilitate better engagement and inclusion of public concern within the scope of ongoing and future NEPA processes. For instance, a series of “document analysis workshops”, led by involved legal or policy professionals and perhaps even including agency officials, could help to ensure further independent analysis of complex NEPA documents and increase the degree of informed public engagement.

Connecting the Bottom and Top

Ultimately, the fate of public land usage of the TDR lies in the hands of federal and state governments, the public, and stakeholder groups, each of whom are perceiving the problem differently, focusing on different aspects of varying goals, and taking different strategies to achieve these goals, including using a variety of policy and legal instruments at both the top-down and bottom-up. However, these processes are by no means mutually exclusive, and share many similar goals, strategies, and resources. As observations indicated the necessity for compromise to ensure legislative goals, likely limiting the extent of legislation aimed at permanent conservation, as well as the lifetimes of EIS plans, the conflict is by no means resolved even following a legally sound public interest BLM EIS decision. And even if legislation succeeds at barring oil and gas development from the greater TDR region, future challenges will still arise.

As a result, it is likely that the implementation of an adaptive management framework¹³, focused on synthesizing bottom and top policy processes to continually reassess issues and

¹³ Adaptive management is a cyclic policy analysis framework that entails (1) collecting information, (2) establishing metrics to evaluate resource conditions, (3) monitoring resources to measure management success, and (4) adapting management to reflect the new information that emerges from this process (Holling, 1978; Armitage, 2005).

present relevant solutions, will allow for the continuation of public interest management goals for the TDR. The implementation of such a framework could further increase the adaptive response of bottom-up and top-down processes to anticipated challenges, including, 1) increasing population and anthropogenic usage, 2) uncertainties towards the environmental repercussions of climate change, and 3) changing technologies resulting in alternative land use strategies.

Public lands management scholars have recently advocated that agencies implement pilot programs upon specific eco-regions and landscapes to test proposed management strategies, that focus using agency planning resources more efficiently, including the implementation of: 1) a layered planning and adaptive management framework¹⁴, 2) focused bi-annual monitoring reports which are available for public comment, concentrated on analyzing impacts of permitted resource usages in the region, (perhaps taking into account recommendations discussed above, such as implementing a PPGIS information system to easily share information and comments or restructuring documents to allow increased public accessibility), and 3) implementing an adaptive management program to respond to findings in monitoring and public outreach initiatives, and make necessary changes to reflect a continued public interest management scenario (Squillace, 2015).

Taking into account the valued environmental and social assets provided by the TDR, its unique nature as one of the last unprotected and un-developed pristine regions in Colorado, and the key roles of the FS and BLM towards ensuring a public interest management scenario, I propose that the BLM CO River Valley Field Office and the FS WRNF Field Office implement such a pilot program for management of WRNF lands within the TDR boundary. This program, of course, would be implemented within procedural and legal requirements¹⁵, and could allow for

¹⁴ The key planning layers should occur at four levels (1) the eco-region; (2) the resource management area; (3) the activity (but only where necessary and appropriate), and (4) the project (Squillace, 2015).

¹⁵ This authority can be derived from at least three provisions of FLPMA: (1) the general land use planning requirements of Section 202(a); (2) the requirement of Section 202(c)(3) to designate and protect “areas of critical environmental concern”; and (3) the obligation under Section 302(b) to prevent the “unnecessary

the FS and BLM to test such a program on a relatively small scale. The program could likely use existing land management plans and EIS analysis to establish baseline data surrounding the TDR, allowing for the establishment of layered planning processes, monitoring and mitigation strategies to meet anticipated challenges, and continued public participation towards management; these processes could also engage the expertise and resources of not only the FS and BLM, but also state-level and private advocacy groups, resulting in lasting connections between top-down and bottom-up policy processes. I also propose that these agency offices contact legal or policy scholars to allow for external, peer-reviewed analysis of such a program, allowing for improvements and the continued replication of such strategies.

It was observed that the two primary barriers in the TDR conflict, to implementing an effective layered adaptive management-framework, include: 1) a lack of information sharing between top-down and bottom-up processes, including both scientific and social analysis, but also including information surrounding policy and public engagement methods, 2) a lack of trust between agencies, advocacy groups, the energy industry, and the public, reducing the effectiveness of public engagement processes. Resolving these barriers to implement an adaptive management framework is likely the best method for ensuring a continued public interest management outcome in the TDR.

Sharing Information

The existence of accurate information surrounding land management in the TDR is likely not the barrier to an effective management framework; it is instead the lack of effective mechanisms to translate this information and engage stakeholders participating in multiple conflict perceptions. As observed, sound scientific analysis, cooperation and partnership between stakeholders and scientists, and a robust public engagement process have driven successful policy

and undue degradation of the lands”; in addition, NEPA and the ESA support the protection of eco-regions at the landscape level (Squillace, 2015)

processes in the TDR conflict. The literature also indicates that science which is usable for decision-making can be produced effectively when researchers work with users to create practically useful information (Dilling and Lemos, 2011). As a result, it seems likely that these same processes should be reflected not only horizontally, but vertically as well (connecting top-down and bottom-up processes). For instance, it seems that a greater emphasis on partnership between political advocacy groups such as WW, scientific groups such as the RFC, and agencies with a regulatory capacity, also including state-level agencies such as the CWQD, could allow for more effective public engagement through methods as described above. In addition, based on observations, it is likely that the implementation of a PPGIS system could greatly facilitate further information sharing between the top-down and bottom-up policy processes, in addition to creating a greater degree of transparency surrounding the agencies analytic and decision-making methods. It is recommended that the FS also contact potential partners, such as WW or the RFC, to further increase the plausibility of implementing a PPGIS system targeted towards public engagement.

Building Trust

Taking into account both the literature and the observations of this study, it seems that trust is perhaps the key barrier between the top-down and bottom-up policy processes, which could pose significant difficulty towards implementing a layered adaptive management framework. Yet this barrier can perhaps best be resolved through improving public engagement methods on behalf of agencies, perhaps using the model of the civic republican ideal. Noting the trend of increasing community engagement, on both a regional and nationwide scale, as well as the FS EIS analysis results, it seems that environmental advocacy groups are the primary driving force behind community engagement within the conflict (taking into account processes within and without of the NEPA arena), instead of regulatory agencies, especially in the Garfield and Pitkin counties that are increasingly turning too groups such as WW and the TDC to simplify the

engagement process. In addition, if BLM decisions, including their upcoming EIS, continue to favor selected special interests over widespread public concerns, it is likely that the public will increasingly turn instead to third parties instead of interacting directly with the agency, thus reducing trust and further increasing the trend of criticism and legal engagement. As a result, it is imperative that agencies continue to monitor the TDR, implement plans and management strategies, and seek public feedback on future engagement processes.

Identifying Study Limitations to Improve Analytic Methods

Several limitations constricted this analysis. The largest constraint included timing and personnel limitations, limiting the scope of the analysis to largely FS EIS process analysis, and also limiting the number of interviews obtained. Perhaps the key constraint on the scope and depth of the FS EIS analysis was the lack of analysis of open house meetings and personal communications. In addition, the ongoing conflict nature posed significant difficulty in obtaining interviews with key stakeholders, as well as information surrounding ongoing policy and legal processes. In addition, the BLM did not release the DEIS of their analysis within the timeframe of this study, thus limiting the extent of comparative analysis between agency analysis and decision. On the other hand, this ongoing conflict also provided benefits, such as very informative interviews with key stakeholders and a relatively wide range of information as compared to other case studies surrounding past resource management conflicts.

Overall, however, the diverse set of methods allowed for a comprehensive analysis and understanding of the conflict, thus furthering the relevance of this study to the intended audience. I recommend that future studies utilize a similar portfolio of qualitative and quantitative methods focused at understanding the various facets of the conflict from multiple perspectives, in the interdisciplinary nature typically necessary for successful resource management conflict analysis.

Chapter 8: Conclusion

When I first began this case study, the Thompson Divide conflict seemed impossibly complex. However, through the execution of my diverse portfolio of methods, I was able to break down and understand the varying angles of the conflict, using the problem orientation framework and the civic republican ideal as a means to present a public interest solution and relevant policy recommendations. As the conflict proceeds, I anticipate that my recommendations could aid stakeholders, regulators, and legislators towards ensuring a public interest management scenario and the continued protection of the environmental, economic, and social values that the TDR provides.

In a perfect world, regulatory agencies would receive adequate resources and support as a means to consistently create exemplary land management plans and decisions, which are comprehensively analyzed by eager and informed citizens pursuing U.S. civic ideals. Unfortunately, this is not a perfect world. However, although conflicts such as the TDR pose current challenges to regulatory agencies, these conflicts also provide valuable opportunities to determine what works, what doesn't, and how to adapt and proceed forward.

Overall, I propose relatively simple changes aimed at restructuring agency public engagement processes to better reflect the public interest. But this may not be enough to effectively manage public lands in the American West, especially looking forward to the anticipated challenges that landscapes such as the TDR will pose. Eventually, these agencies may need to completely redefine and restructure the current paradigm of public land management. Perhaps through such radical future changes, the U.S. will continue to better achieve the environmental and civic ideals present within our guiding policies.

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Appendix

Figure A.1: NEPA Process Flowchart. The BLM and FS EIS processes progressed (or will progress) through stages 1-2-8-9-10-11-12-13-14-15 (FS, 2013)

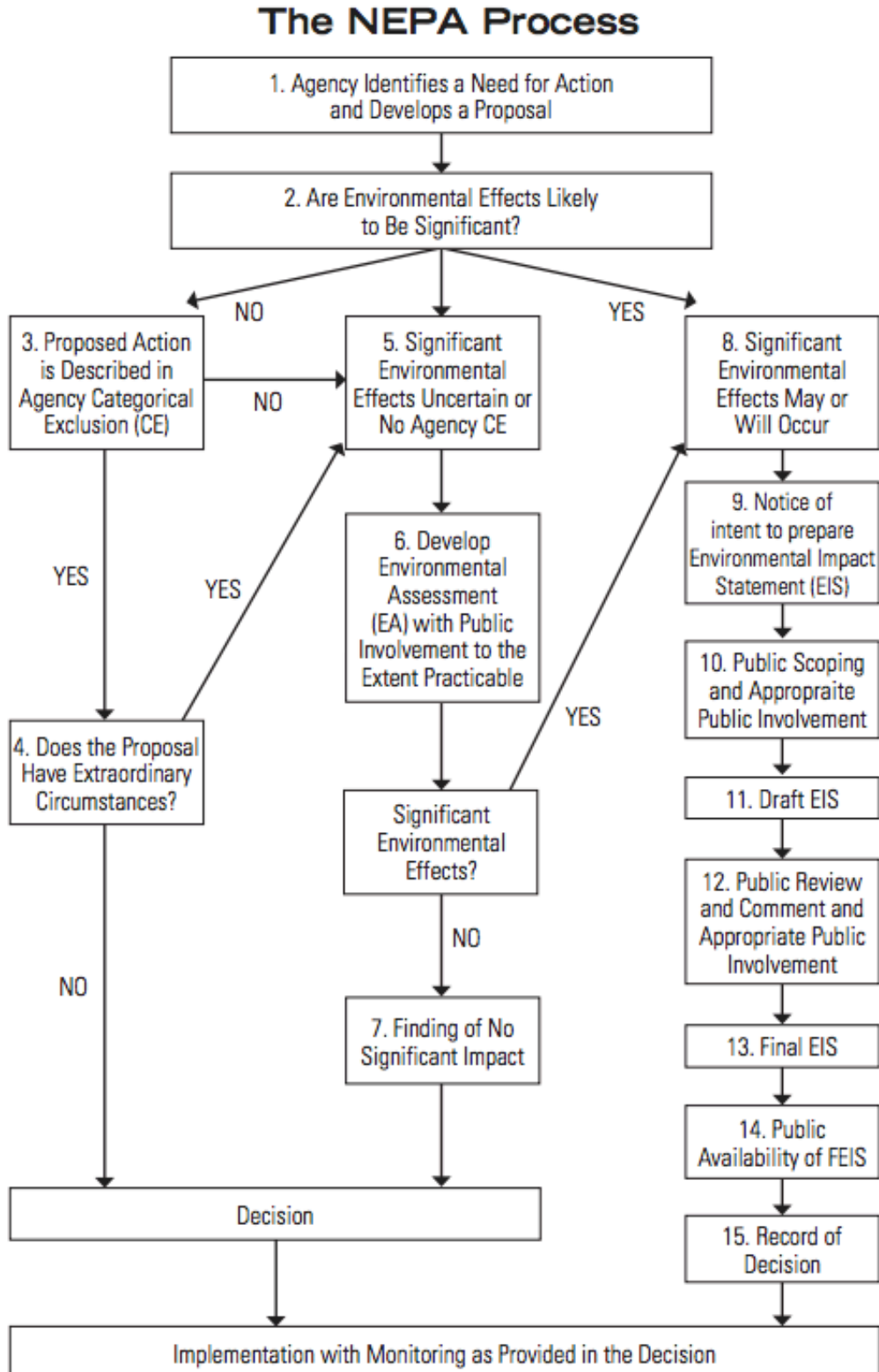


Figure A.2: BLM and FS Public Lands Oil and Gas Leasing Stages, Responsibilities, and Authorities (FS, 2013)

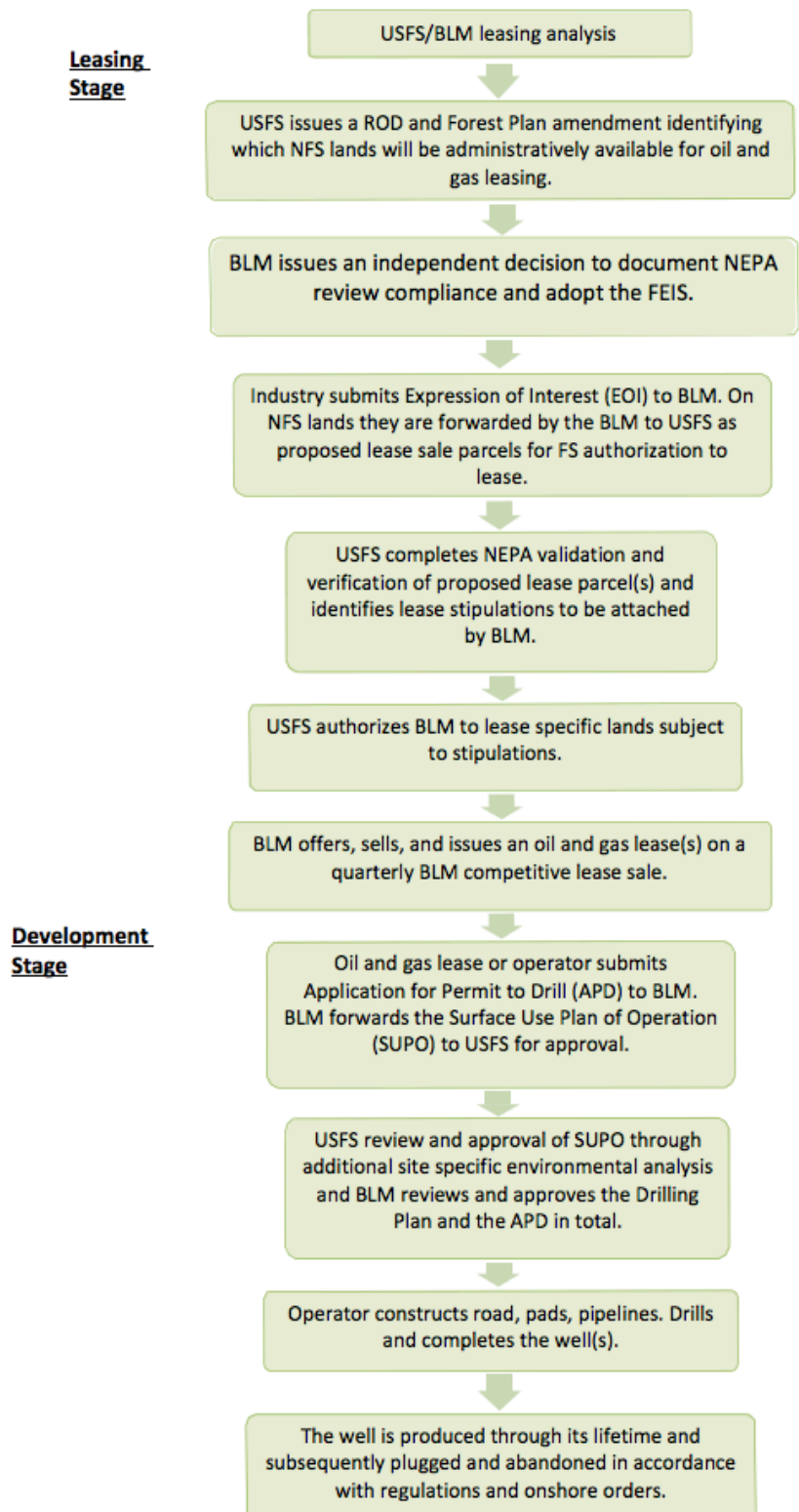


Figure A.3: Potential Litigation Points in NEPA EIS Processes (Miner, 2010)

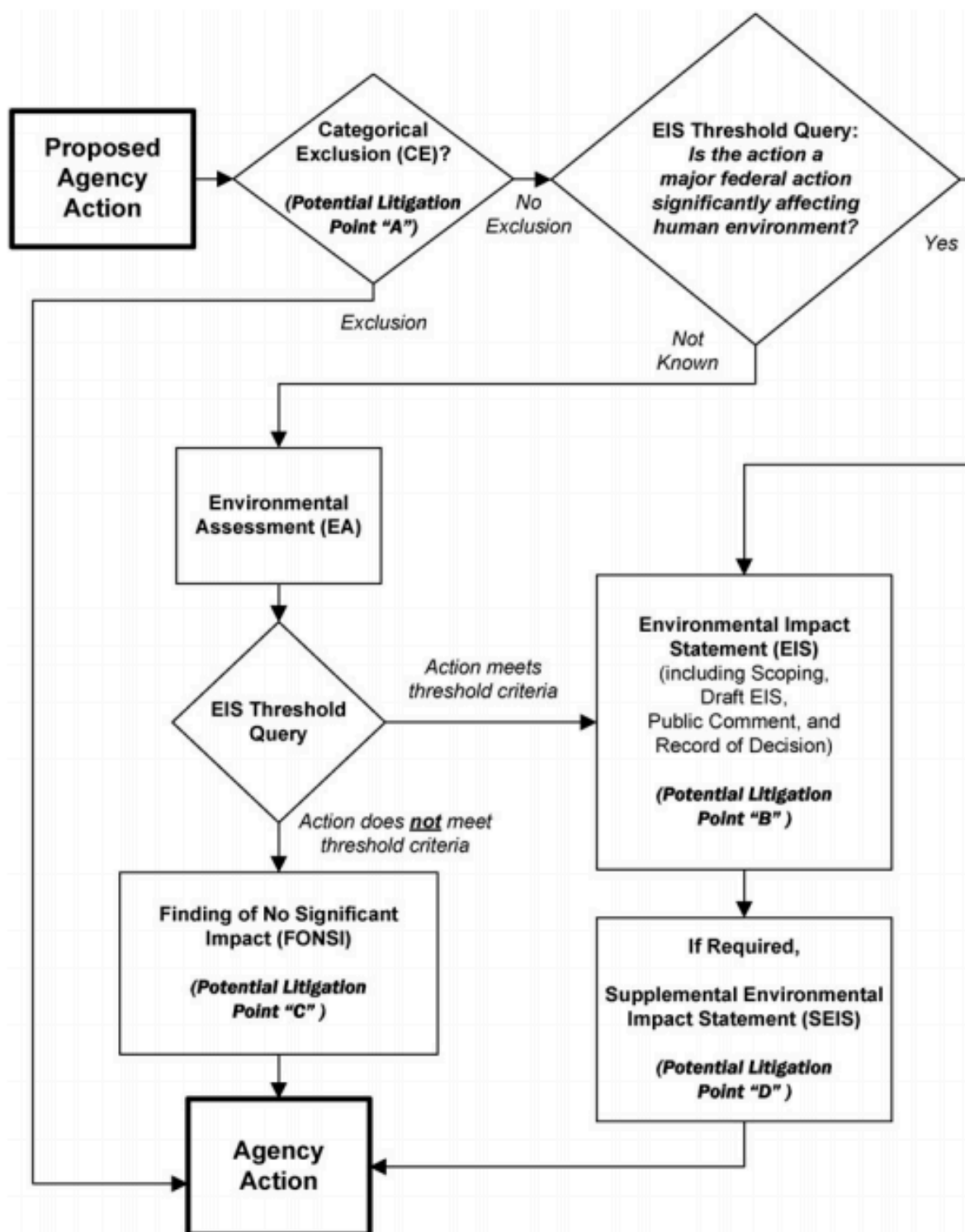


Figure A.4: Map of the TDR, with counties (Wilderness Workshop, 2012)

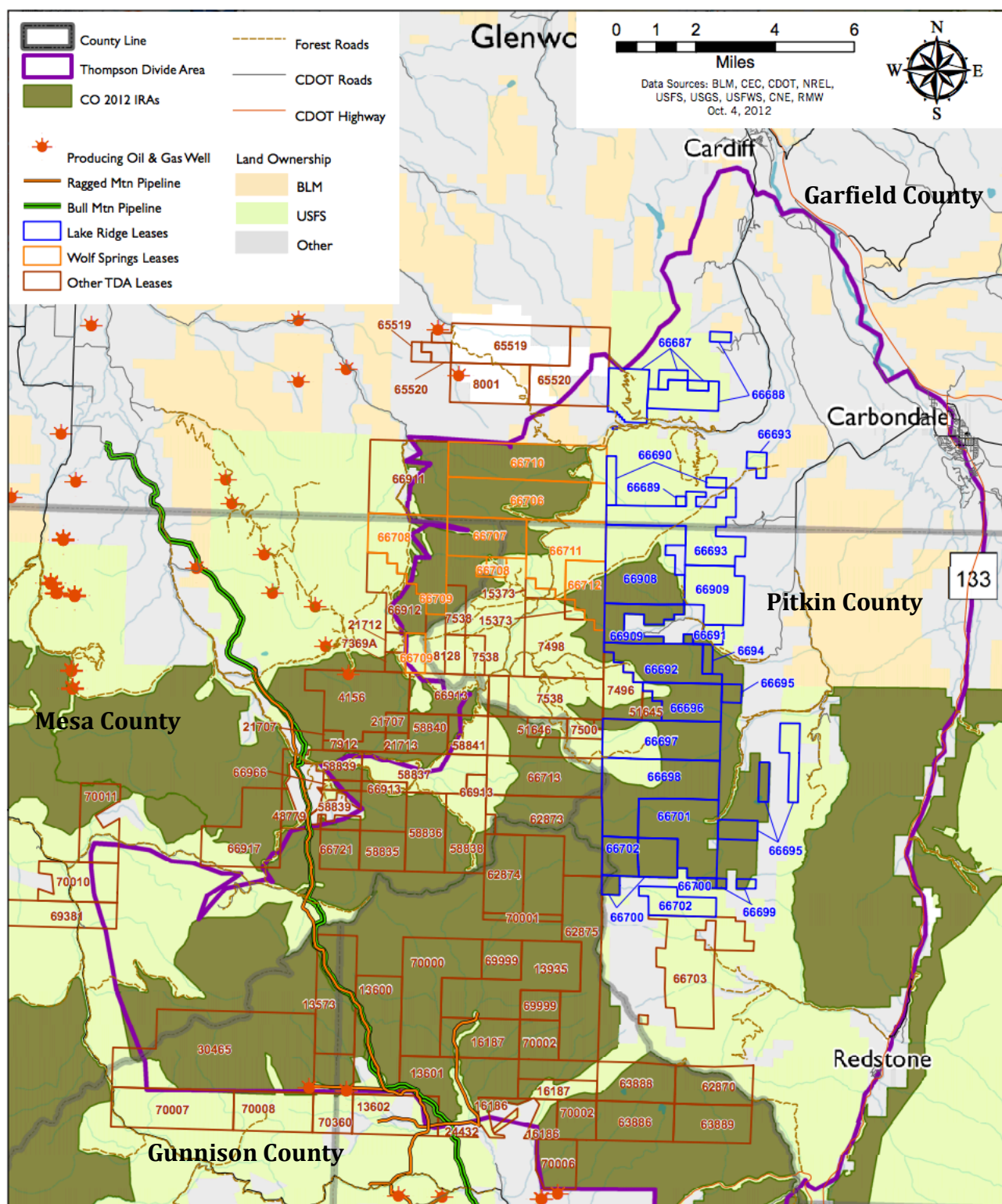


Figure A.5: Watersheds within the TDR Boundary (TDC, 2012)

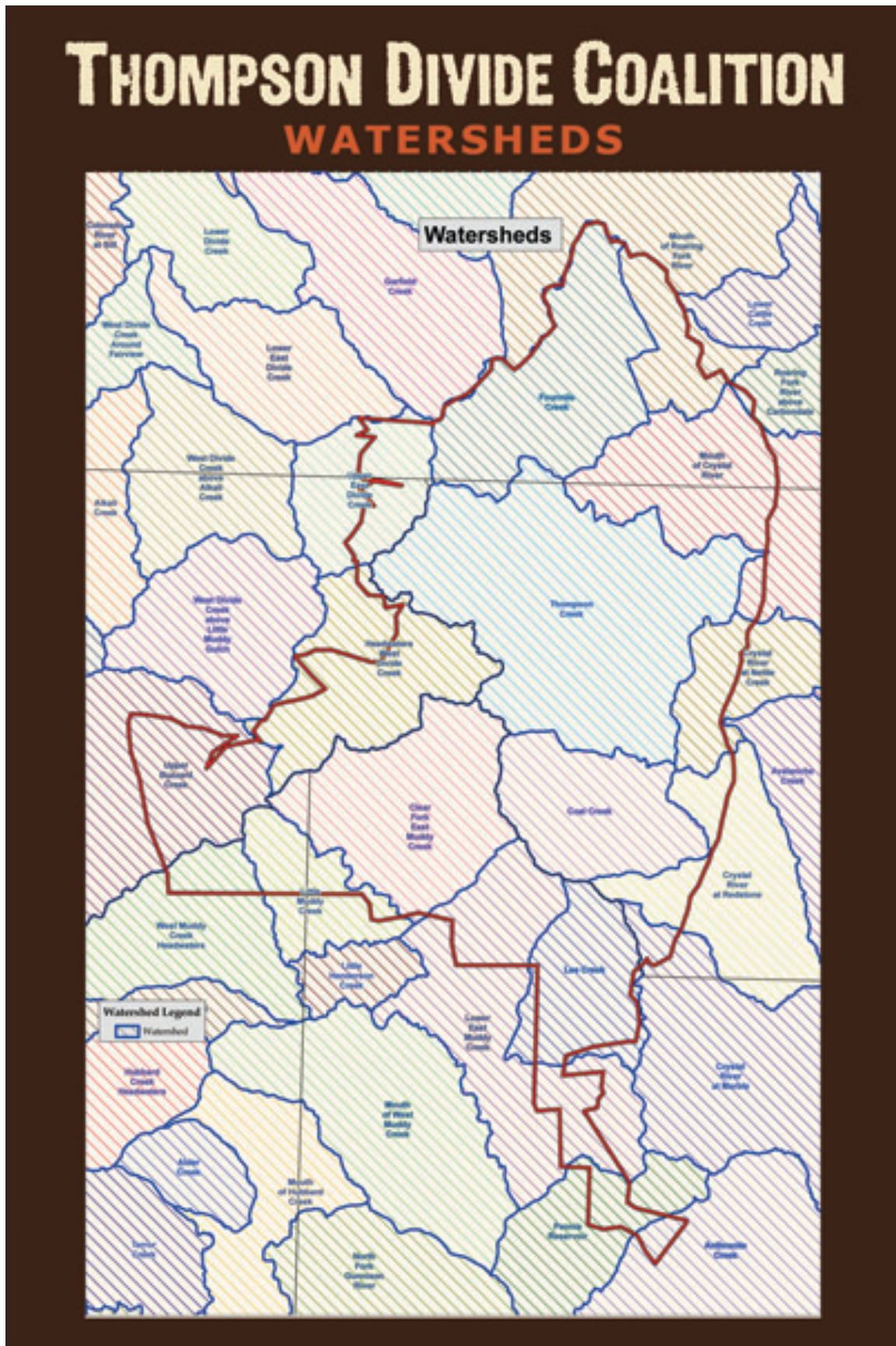


Figure A.6: SGI Leases, dates, and stipulations (Watson, 2013)

LEASE SERIAL NUMBER	LEASE EFFECTIVE DATE	LEASE EXPIRATION DATE	FS STIP Standard	PARTIAL NSO STIP Slopes > 60%	PARTIAL NSO STIP Ski Area	PARTIAL NSO STIP Colorado River Cutthroat Trout Fisheries	TIMING STIP Colorado River Cutthroat Trout Fisheries	TIMING STIP Elk Production Areas	TIMING STIP Snowmobile & Cross- Country Skiing Corridors	TIMING STIP Big Game Winter Range	CSU STIP Sensitive Level 1 Travel Routes
COC66687	6/1/2003	5/31/2013	X	X	X			X			
COC66688	6/1/2003	5/31/2013	X	X				X			
COC66689	6/1/2003	5/31/2013	X		X						
COC66690	6/1/2003	5/31/2013	X		X			X	X		X
COC66691	6/1/2003	5/31/2013	X	X		X					
COC66692	6/1/2003	5/31/2013	X	X			X				
COC66693	6/1/2003	5/31/2013	X	X			X	X		X	
COC66694	6/1/2003	5/31/2013	X	X		X					
COC66695	6/1/2003	5/31/2013	X	X			X			X	
COC66696	6/1/2003	5/31/2013	X				X				
COC66697	6/1/2003	5/31/2013	X			X	X				
COC66698	6/1/2003	5/31/2013	X				X				
COC66699	6/1/2003	5/31/2013	X				X				
COC66700	8/1/2003	7/31/2013	X	X			X				
COC66701	6/1/2003	5/31/2013	X	X		X	X				
COC66702	8/1/2003	7/31/2013	X	X			X				
COC66908	9/1/2003	8/31/2013	X				X	X			
COC66909	10/1/2003	9/30/2013	X	X		X	X	X		X	

Figure A.7: Carbondale SWPP Thompson Creek Zoning Designations (Hempel et al, 2015)

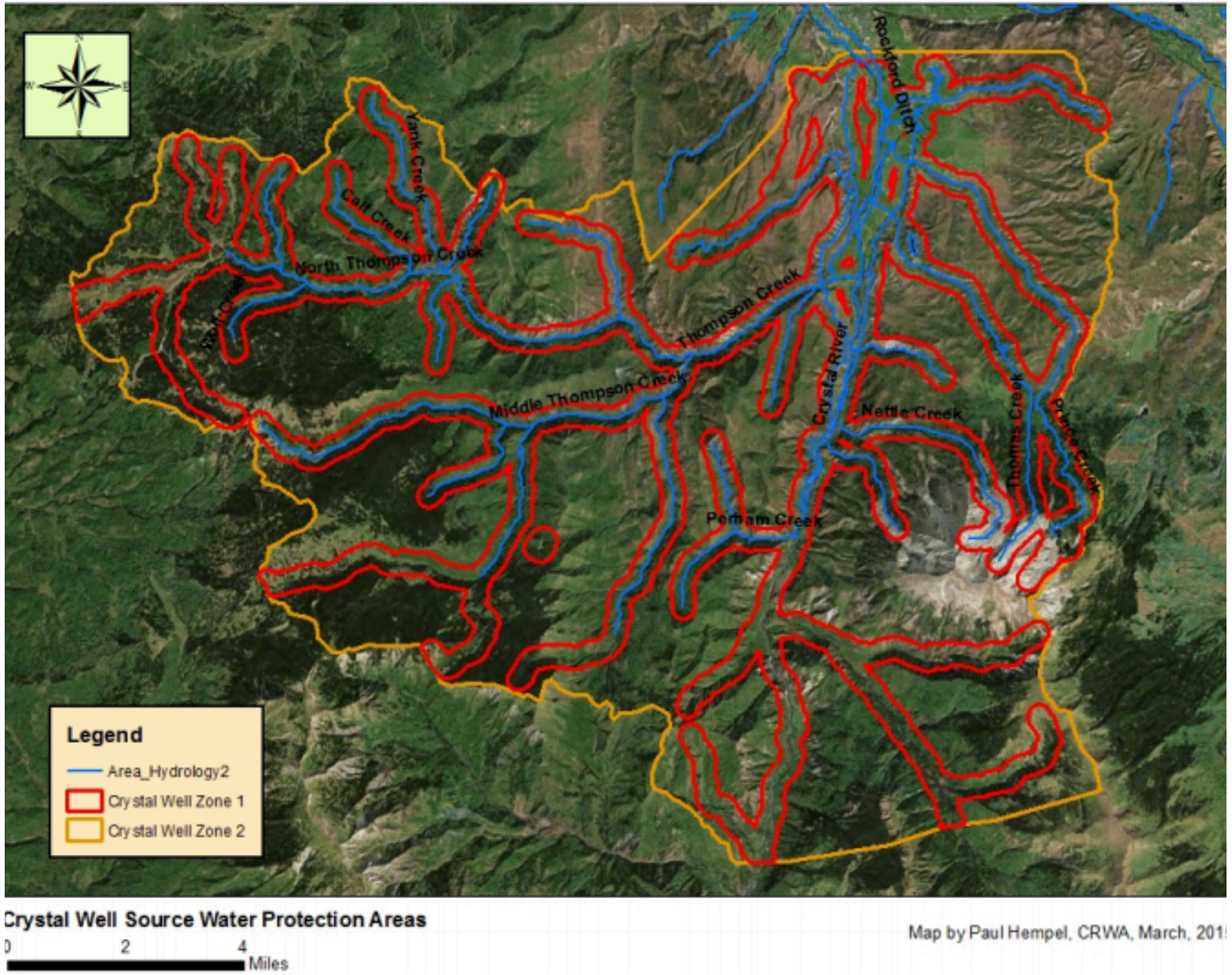


Figure A.8, CEQ Issue Analysis Process (FS, 2013)

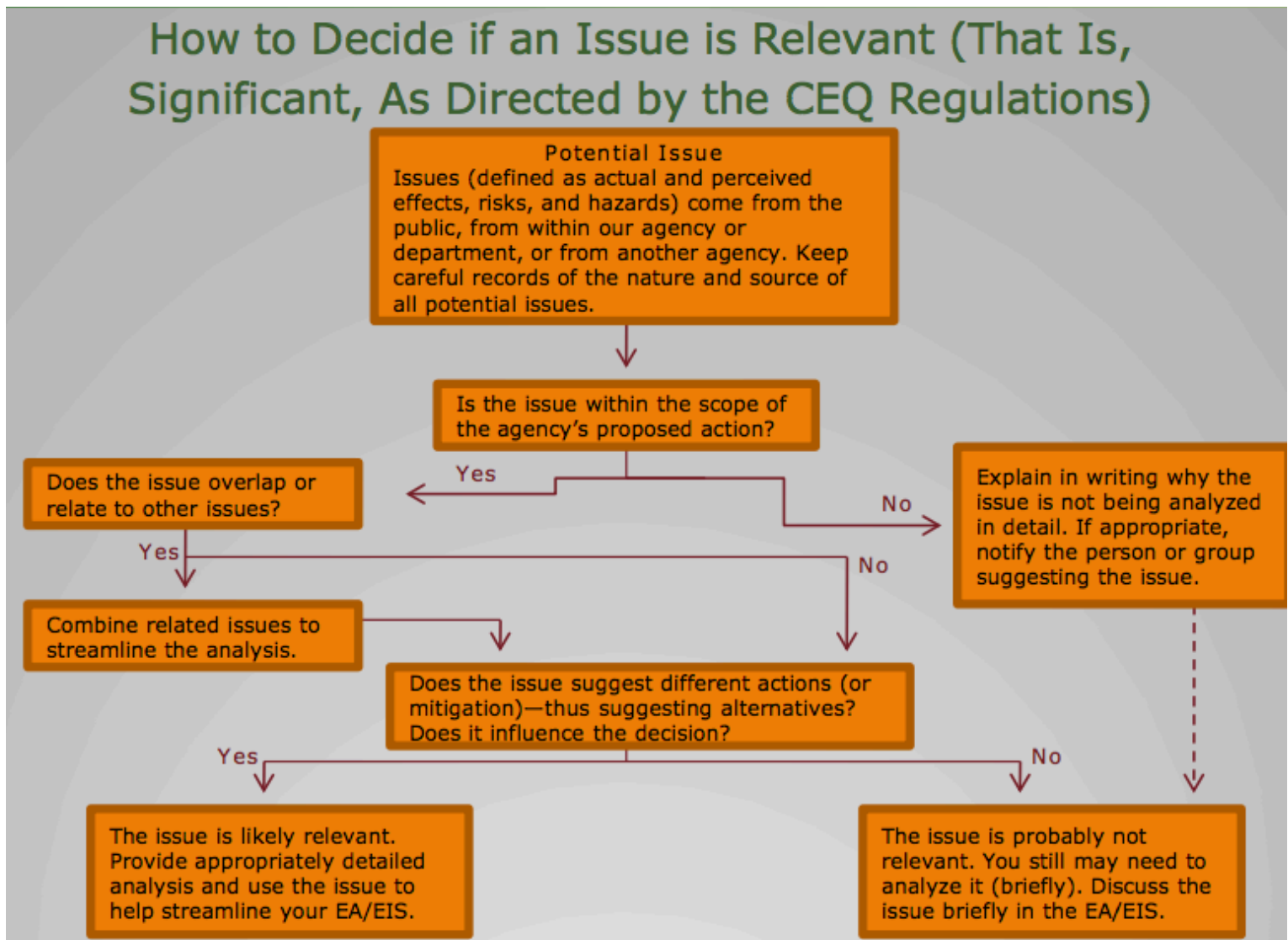


Figure A.9: Wilderness Workshop Form Letter, DEIS Comment Period (Wilderness Workshop, 2012)

To the U.S. Forest Service

As the White River National Forest considers long-term plans for oil and gas leasing, you must protect our roadless areas and the Thompson Divide from oil and gas drilling. Oil and gas extraction including drilling, fracking, processing, and pipelines, threatens clean air, clean water, pristine and unfragmented natural areas, and valuable wildlife habitat in our forests and the health of nearby communities.

There are still many scientific unknowns about the extent of these risks or the methods to safeguard the environment and human health. I am concerned about the values at stake in the White River National Forest, including the drinking water provided to many nearby communities and downstream users, and irrigation water sustaining local agriculture, the wildlife habitat for endangered and other important species, and the local economies that rely upon tourism and recreation.

I urge the Forest Service to place all roadless areas off limits for new leasing because of the road construction and fragmentation such leasing will ultimately cause. This was found essential by the national Roadless Rule to preserve the integrity of wild forests and protect habitat and drinking water from industrial development. Preserving these lands is even more important in the face of ceaseless development pressures and the changing climate.

The Thompson Divide, in its entirety, should be unavailable for oil and gas leasing because of the area's importance to local people and communities in its current, undeveloped, and unfragmented state. The area provides clean water, grazing lands, wildlife habitat, and countless recreational opportunities to people near and far. Such opportunities would be severely impacted by future drilling in the area.

In addition, the Forest Service must require the highest level of air pollution controls to protect the clean air for the forest, nearby communities, and natural wonders in the area like the world-famous Maroon Bells. Many local airsheds are Class I airsheds, meaning that they are managed to the highest standard and management agencies have an obligation to prevent degradation.

Importantly, western Colorado is already doing its part to produce natural gas for American consumers. There are close to 25,000 wells projected in two BLM field offices in northwestern Colorado in the next 15-20 years. That is half as many wells as currently exist statewide. The amount of gas coming out of this part of the State will continue at significant levels for the foreseeable future. There is no reason to open up lands on our most treasured National Forest at the same time.

The White River National Forest is too important for water production, recreation, tourism, and wildland values, and no additional leasing should take place there, I support Alternative B, which places nearly 1.5 million acres off limits to leasing, while the other alternatives would leave open at least a quarter of a million acres for future oil and gas leasing. If future leasing is allowed, any development should be restricted to areas that are already disturbed, and surface occupancy should be prohibited anywhere on the forest that is not already developed.

Figure A.10: BLM 2015 EIS Project Webpage (BLM, 2015)

BLM>Colorado>Field Offices>Colorado River Valley Field Office

[Print Page](#)

Existing Leases on the White River National Forest EIS

The BLM is currently conducting an environmental impact statement for existing leases on the White River National Forest issued since 1993.

Frequently Asked Questions

What does this EIS address?

The Environmental Impact Statement for the Previously Issued Oil and Gas Leases in the White River National Forest will analyze 65 existing leases issued since 1993 in the White River National Forest, including the 25 leases in the Thompson Divide area that were recently suspended through April 1, 2016.

Why are you doing this EIS?

In 2007, the Interior Board of Land Appeals (IBLA) ruled on a challenge of three leases in Pitkin County that BLM must either do its own environmental analysis or formally adopt the White River National Forest's 1993 Oil and Gas EIS for leasing on the White River National Forest.

Through the EIS, the BLM will conduct its own environmental analysis on 65 leases issued since the 1993 EIS to determine whether the leases should be voided, reaffirmed, modified with additional or different terms, or subject to additional mitigation measures for site-specific development proposals.

What is the timeframe of this EIS?

A draft EIS will be released for public comment once draft alternatives are complete, currently anticipated for fall 2015. A final EIS is anticipated in fall 2016.

How can I comment?

The next opportunity for public comment will be after the draft EIS is released in fall 2015.

How does this EIS differ from the Oil and Gas EIS the White River National Forest itself is developing?

The BLM EIS will analyze 65 existing oil and gas leases. The White River National Forest Oil and Gas EIS address future oil and gas leasing across the entire Forest. The BLM will incorporate into its EIS as much of the analysis from the Forest Service EIS as possible.

Why did you extend the suspensions for the 25 oil and gas leases in Thompson Divide?

These 25 leases are part of the 65 leases being addressed in the EIS. One of the circumstances in which a lease suspension is normally warranted occurs when the leaseholder is awaiting a decision from the BLM or other surface management agency, such as this EIS. Additionally, both SG Interests and Ursa have pending development and unitization proposals. The first development proposal for the Ursa leases was submitted in 2009, followed by a request to unitize its seven leases in 2012. SG Interests first submitted a proposal to unitize its leases in 2011, followed by development proposals in 2012.

What does a suspension mean?

A leaseholder has 10 years to begin developing oil and gas or their lease expires. A suspension stops that 10-year clock, but also prevents the leaseholder from developing their lease while it is suspended.

Documents

[Federal Register Notice](#)

[News Release Scoping begins \(4-1-14\)](#)

[News Release Scoping extended \(4-11-14\)](#)

[IBLA Decision 2007](#)

[List of affected leases](#)

[List of pending APDs](#)

[Posters from Scoping Meetings](#)

[Presentation from Scoping Meetings](#)

[Fact Sheet from Scoping Meetings](#)

Maps

[Overview](#)

[Lease Status](#)

[Lease Stipulations](#)

[Oil and Gas Units in Planning Area](#)

Scoping Report

[External Summary Scoping Report](#)

[Appendix A: Notice of Intent](#)

[Appendix B: News Releases and Notification Letters](#)

[Appendix C: Meeting Materials](#)

[Appendix D: Scoping Comment Providers](#)

[Appendix E: Substantive Comments by Subject](#)

Figure A.11: FS 2014 EIS Project Webpage (FS, 2015)

Project Documents	
	Date Published
► Scoping	
◦ Notice of Intent (PDF 67kb)	
► Analysis	
◦ Draft Environmental Impact Statement (DEIS)	
◦ Notice_of_Availability (PDF 200kb)	
◦ Draft Environmental Impact Statement (Entire Document) (PDF 42031kb)	
◦ Objections	
◦ Letters	
◦ Objection Letter - Hart/Wilderness Workshop (PDF 238kb)	
◦ Objection Letter - Hart/Wilderness Workshop (PDF 238kb)	
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◦ Responses	
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◦ Final Environmental Impact Statement (FEIS)	
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◦ Figure5_AltA_LandAvailability_11x17 (PDF 951kb)	
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► Decision	
◦ 12-09-14 - Opportunity to Object, Oil and Gas (PDF 1616kb)	12-09-2014
◦ WRNF Oil and Gas DRAFT_ROD_12_14 (PDF 802kb)	12-09-2014
◦ Legal_Notice_Obj_WRNF-OG_20141212 (PDF 249kb)	12-12-2014
◦ Reference-Natural Gas Development Map (PDF 2392kb)	12-15-2014
◦ Oil&GasEIS Notice of objections Filed (PDF 279kb)	02-20-2015
◦ Objection Response Letters	
◦ Signed Encana_Bemet WR O&G Objection Response (PDF 883kb)	05-12-2015
◦ Signed Ludlum WR O&G Objection Response (PDF 1562kb)	05-12-2015
◦ Signed Pitkin_Seldin WR O&G Objection Response (PDF 558kb)	05-12-2015
◦ Signed Mesa WR O&G Response to Objection (PDF 674kb)	05-12-2015
◦ Signed Watson WR O&G Objection Response (PDF 1048kb)	05-12-2015
◦ Signed Wilderness WorkshopHart WR O&G Objection Response (PDF 938kb)	05-12-2015
◦ Signed Willsource_Cavanaugh WR O&G Objection Response (PDF 1119kb)	05-12-2015
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