United States
Department of
Agriculture

Forest Service

Colorado
National Forests

November 2016

Rulemaking for Colorado Roadless Areas

Summary of Supplemental Final Environmental Impact Statement

Colorado National Forests with roadless areas include:
Arapaho and Roosevelt; Grand Mesa, Uncompahgre, and Gunnison; Manti-La Sal (portion in Colorado); Pike and San Isabel; Rio Grande; Routt; San Juan; and White River National Forests

Commonly Used Acronyms and Abbreviations

2012 FEIS – 2012 Rulemaking for Colorado Roadless Areas Final Environmental Impact Statement
BLM – Bureau of Land Management
BTU – British thermal unit
CARA – Comment Analysis and Response Application
CH_4 – Methane
CO_2 – Carbon dioxide
CO_2e – Carbon dioxide equivalent
CRA – Colorado Roadless Area
DEIS – Draft Environmental Impact Statement
EIS – Environmental Impact Statement
EPA – Environmental Protection Agency
ESA – Endangered Species Act
FEIS – Final Environmental Impact Statement
GHG – Greenhouse gas
GMUG – Grand Mesa, Uncompahgre, and Gunnison National Forests
GWh – Gigawatt hour
IMPLAN – IMpact Analysis for PLANning
IPM – Integrated Planning Model
IWG – Interagency Working Group
LAA – May affect, likely to adversely affect
LCZ – Linear construction zone
MAII – May adversely impact individuals, but not likely to result in a loss of viability, nor cause a trend toward Federal listing
MDW – Methane drainage wells
N_2O – Nitrous oxide
NEPA – National Environmental Policy Act
NFS – National Forest System
NI – No Impact
NO_X – Generic term for the mono-nitrogen oxides NO and NO_2 gases
PNV – Present Net Value
OSMRE – Office of Surface Mining Reclamation and Enforcement
SCC – Social Cost of Carbon
SCM – Social Cost of Methane
SDEIS – Supplemental Draft Environmental Impact Statement
SEIS – Supplemental Environmental Impact Statement
SFEIS – Supplemental Final Environmental Impact Statement
TEPS – Threatened, Endangered, Proposed, and Sensitive
USDA – United States Department of Agriculture
VAM – Ventilation air methane

Rulemaking for Colorado Roadless Areas
Summary of the
Supplemental Final Environmental Impact Statement

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Cooperating Agencies:	Colorado Department of Natural Resources; Bureau of Land Management; Office of Surface Mining, Reclamation and Enforcement
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Abstract: The U.S. Department of Agriculture, U.S. Forest Service, in cooperation with the State of Colorado, proposes to reinstate the North Fork Coal Mining Area exception of the Colorado Roadless Rule on about 19,700 acres of National Forest System lands on the Grand Mesa, Uncompahgre, and Gunnison National Forests. This Supplemental Environmental Impact Statement is a response to deficiencies outlined by the District Court of Colorado in *High Country Conservation Advocates v. United States Forest Service* (U.S. District Court of Colorado, 2014) and supplements the 2012 Final Environmental Impact Statement for the Colorado Roadless Rule with additional analyses. Three alternatives are addressed in detail in this Environmental Impact Statement. Alternative A is the No Action Alternative and continues the current management under the Colorado Roadless Rule without a North Fork Coal Mining Area exception. Alternative B (preferred alternative), reinstates the North Fork Coal Mining Area exception, allowing temporary road construction for coal mining related activities on about 19,700 acres of Colorado Roadless acres. Alternative C (exclusion of "wilderness capable" lands) establishes the North Fork Coal Mining Area exception, but excluded National Forest System lands identified as "wilderness capable" during the 2007 Grand Mesa, Uncompahgre, and Gunnison draft Forest Plan revision process. In addition, all alternatives include a boundary correction of Colorado Roadless Areas based on new information obtained since the promulgation of the 2012 Colorado Roadless Rule.

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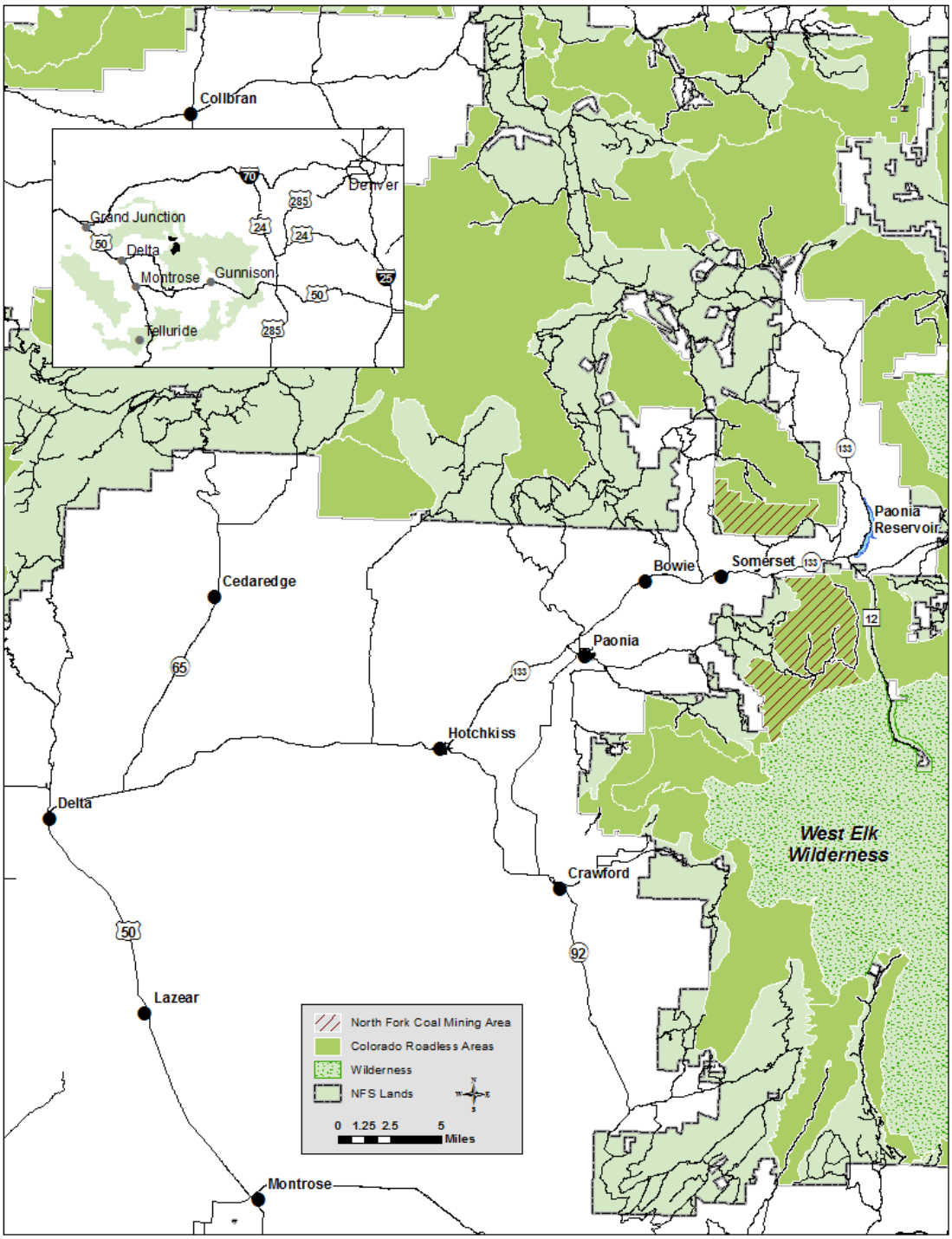

Figure S-1. *Location of North Fork Coal Mining Area.*

Summary of the Environmental Impact Statement

Background

On July 3, 2012, the U.S. Department of Agriculture (USDA or Department) promulgated the Colorado Roadless Rule, a State-specific regulation for management of 4.2 million acres of Colorado Roadless Areas (CRAs) on National Forest System (NFS) lands (77 FR 39576) (U.S. Forest Service, 2012a). The State of Colorado, USDA, U.S. Forest Service, and the public worked in partnership to find a balance between conserving roadless area characteristics for future generations and allowing management activities within CRAs that are important to Colorado's citizens and economy. One State-specific concern was to avoid foreclosing exploration and development of coal resources on the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests. The Colorado Roadless Rule addressed this by defining the North Fork Coal Mining Area and developing an exception that allows temporary road construction for coal-related activities within that defined area. A temporary road is defined as a road necessary for emergency operations, or authorized by contract, permit, lease, or other written authorization, that is not a forest road and is not included in a forest transportation atlas.

In July 2013, High Country Conservation Advocates, WildEarth Guardians, and the Sierra Club challenged the Forest Service decision to consent to the Bureau of Land Management's (BLM) modification of two existing coal leases, the BLM's companion decision to modify the leases, BLM's authorization of an exploration plan in the lease modification areas, and the Forest Service North Fork Coal Mining Area exception of the Colorado Roadless Rule (36 CFR 294.43(c)(1)(ix)) (U.S. Forest Service, 2012a).

In June 2014, the District Court of Colorado found the environmental documents supporting the four decisions to be in violation of the National Environmental Policy Act (NEPA) due to analysis deficiencies. In September 2014, the District Court of Colorado vacated the lease modifications, the exploration plan, and the North Fork Coal Mining Area exception of the Colorado Roadless Rule.

This Supplemental Final Environmental Impact Statement (SFEIS) is a limited-scope document that complements the May 2012 Rulemaking for Colorado Roadless Areas Final Environmental Impact Statement (2012 FEIS) (U.S. Forest Service, 2012b). This SFEIS addresses the deficiencies identified by the District Court of Colorado in *High Country Conservation Advocates v. United States Forest Service (U.S. District Court of Colorado, 2014)*, and in conjunction with the 2012 FEIS, discloses the environmental consequences of reinstating the North Fork Coal Mining Area exception, including re-consultation with the U.S. Fish and Wildlife Service. The three other decisions vacated by the District Court of Colorado are not part of this analysis and will be addressed in future Forest Service and BLM NEPA efforts.

The Colorado Roadless Rule is not a coal mining rule; rather, it establishes a regulatory framework for roadless conservation that accommodates activities within CRAs that are important to the State of Colorado. Similarly, the reinstatement of the North Fork Coal Mining Area exception is a provision of the Colorado Roadless Rule that does not authorize or permit coal exploration, mining, or related activities. The exception merely removes the prohibition of temporary road construction so as to not foreclose the option for future Federal coal resource exploration and surface uses related to coal resource development in the North Fork Coal Mining Area.

Summary of Changes between Draft and Final

Changes made between the Supplemental Draft Environmental Impact Statement (SDEIS) and SFEIS were based on public comments received on the SDEIS. No new alternatives or issues were analyzed in detail in the SFEIS. Notable changes include:

- Annual and cumulative methane emission estimates were recomputed using an updated methane emissions factor based on 4 years of methane emissions data from mines in the North Fork Coal Mining Area, rather than 3 years. In addition, methane emission estimates for substituted surface and subsurface coal were recomputed.
- The market substitution analysis was updated utilizing a newer model (IPM® (Integrated Planning Model) v5.15 rather than v5.13 used in the SDEIS).[1] This resulted in a reduction in the estimated GHG emission impacts and associated social costs. Specific changes include:
  - Electricity demand assumptions in the market substitution analysis were revised downward.
  - Natural gas supply assumptions in the market substitution analysis were revised downward.
  - Coal supply adjustments were made in the market substitution analysis, leading to lower coal prices.
  - Coal transportation assumptions were updated to reflect a higher diesel outlook.
  - Accounts for implementation of the final Clean Power Plan (40 CFR Part 60 subpart UUUU) rather than relying on a carbon price proxy to account for the proposed Clean Power Plan.[2]
- The social cost of methane (SCM) was incorporated into the Present Net Value (PNV) estimates using a protocol recommended by the U.S. Interagency Working Group (IWG) on the Social Cost of Greenhouse Gases.
- The benefit-cost analysis results based on the 10th percentile SCC estimates and the Forest and National Boundary stance have been removed:
  - The 10th percentile SCC and SCM estimates were removed from the analysis based on comments from EPA and others to remain consistent with other Federal agencies' application of the IWG Technical Support Document, Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (IWG, 2016a).
  - The Forest and National Boundary stances used in the benefit-cost analysis were removed from the analysis due to concerns expressed by EPA and other commenters that the analysis should focus on the societal costs associated with combustion and downstream use of coal because of the distinctive global nature of the climate-change issue. This analysis focuses on the Global Boundary stance.

[1] EPA uses IPM to analyze the impact of air emissions policies on the U.S. electric power sector. As part of this analysis, EPA publishes its assumptions and other information regarding its use of IPM on its website. Although this documentation provides insight into EPA's assumptions, the data and assumptions used by the Forest Service in this analysis are not necessarily the same as used by EPA. However, the Forest Service did use many of the EPA assumptions as described in more detail in Section 1.2 of documentation available in the planning record (ICF, 2015a). Because of these similarities, this analysis uses IPM nomenclature (5.13 and 5.15) similar to EPA. Use of this nomenclature is not meant to indicate that the Forest Service has used IPM in the exact manner as EPA. See Appendix C for more detail regarding the Forest Service's use of IPM.

[2] The United States is currently defending the legality of the Clean Power Plan. West Virginia v. Environmental Protection Agency, No. 15-1363 (D.C. Cir.). On February 9, 2016, the U.S. Supreme Court stayed the Clean Power Plan pending judicial review before the D.C. Circuit Court of Appeals and any subsequent proceedings in the Supreme Court.

Purpose of and Need for Action

The overarching purpose and need for reinstating the North Fork Coal Mining Area exception is the same as the 2012 purpose and need statement for the Rule. However, the specific purpose and need for reinstating the North Fork Coal Mining Area exception is to provide management direction for conserving about 4.2 million acres of CRAs while addressing the State's interest in not foreclosing opportunities for exploration and development of coal resources in the North Fork Coal Mining Area.

The original Purpose of and Need for Action as articulated in the 2012 FEIS is as follows:

The Department, the Forest Service, and the State of Colorado agree that a need exists to provide management direction for conserving roadless area characteristics within roadless areas in Colorado. In its petition to the Secretary of Agriculture, the State of Colorado indicated a need to develop State-specific regulations for the management of Colorado's roadless areas for the following reasons:

- Roadless areas are important because they are, among other things, sources of drinking water, important fish and wildlife habitat, semi-primitive or primitive recreation areas that include both motorized and non-motorized recreation opportunities, and naturally appearing landscapes. A need exists to provide for the conservation and management of roadless area characteristics.
- The Department, the Forest Service, and the State of Colorado recognize that tree cutting, sale, or removal and road construction/reconstruction have the greatest likelihood of altering and fragmenting landscapes, resulting in immediate, long-term loss of roadless area characteristics. Therefore, there is a need to generally prohibit these activities in roadless areas. Some have argued that linear construction zones (LCZs) also need to be restricted.
- A need exists to accommodate State-specific situations and concerns in Colorado's roadless areas. These include:
  - reducing the risk of wildfire to communities and municipal water supply systems,
  - facilitating exploration and development of coal resources in the North Fork coal mining area,
  - permitting construction and maintenance of water conveyance structures,
  - restricting LCZs, while permitting access to current and future electrical power lines, and
  - accommodating existing permitted or allocated ski areas.
- There is a need to ensure that CRAs are accurately mapped.

Proposed Action

The proposed action (Alternative B) is to reinstate the North Fork Coal Mining Area exception as written in 36 CFR 294.43(c)(1)(ix) on 19,700 acres of NFS lands. The exception provides for temporary road construction and reconstruction for coal exploration and/or coal-related surface activities within the North Fork Coal Mining Area. The exception also provides that such roads may be used for collection/transport of coal mine methane. The exception defines that buried infrastructure, including pipelines, needed for the capture, collection, and use of coal mine methane could be located within the rights-of-way of temporary roads that are necessary for coal-related surface activities, including the installation and operation of methane venting wells subject to site-specific permitting. No upper tier acres are designated in the North Fork Coal Mining Area under this alternative. Upper tier acres are a subset of CRAs that have limited exceptions and receive a higher-level of protection than non-upper tier CRA acres.

Decision Framework

The Secretary of Agriculture will decide whether to reinstate the North Fork Coal Mining Area exception and on what areas the exception could be applied. The decision involves a choice among the three alternatives analyzed in detail to address Court-identified deficiencies in this SFEIS, which means determining whether to do one of the following:

1. Take no action. No North Fork Coal Mining Area exception would be promulgated. CRAs would be managed according to the Colorado Roadless Rule without the exception, and the North Fork Coal Mining Area would be managed the same as other non-upper tier acres. (Alternative A).
2. Promulgate the North Fork Coal Mining Area exception and apply it to about 19,700 acres of CRAs (Alternative B).
3. Promulgate the North Fork Coal Mining Area exception and apply it to about 12,600 acres of CRAs (Alternative C).

In addition, all three of the alternatives will correct three CRA boundaries by aligning the North Fork Coal Mining Area boundary with CRA boundaries.

Public Involvement

On November 20, 2015, a notice of proposed rulemaking and notice of availability for the SDEIS were published in the *Federal Register*, initiating the 45-day SDEIS comment period that was to end on January 4, 2016. On December 30, 2015, a notice extending the 45-day comment period by 11 days to January 15, 2016, was published in the *Federal Register*. The extension was based on requests from the public due to the 45-day comment period overlapping with the holiday season. In addition to the *Federal Register* notices, the Forest Service sent about 1,400 hard copy letters and 43,000 emails to individuals and organizations known to be interested in the Colorado Roadless Rule. About 104,500 letters were received during the SDEIS comment period and about 33,000 letters were received after the close of the comment period. In addition, two public open houses were held, one in Paonia, Colorado, and one in Denver, Colorado, on December 7 and 9, 2015, respectively, to allow the public to ask questions and clarify information on the proposal to reinstate the North Fork Coal Mining Area exception.

On April 7, 2015, a notice of intent to prepare a Supplemental Environmental Impact Statement (SEIS) was published in the *Federal Register,* which initiated the 45-day scoping comment period ending on May 22, 2015. In addition to the Notice of Intent, the Forest Service sent about 1,400 hard copy letters and 43,000 emails to individuals and organizations known to be interested in the Colorado Roadless Rule to solicit comments. About 119,400 comment letters were received. The letter received from the EPA has been included for review in Appendix D.

In addition to the public comment periods associated with the supplemental, there were five formal public involvement processes associated with the development of the 2012 Colorado Roadless Rule. These five efforts included 35 public meetings held throughout Colorado and in Washington D.C. and resulted in about 312,000 public comments.

Tribal Consultation

In addition to the outreach to the general public for comments on the Colorado Roadless Rule, the Forest Service contacted the three tribes most likely to be concerned or directly impacted by the proposed rule. Those tribes included the Ute, Ute Mountain Ute, and Southern Ute Tribes. The Forest Service sent background information on the proposal to reinstate the North Fork Coal Mining Area

exception and offered government-to-government consultation meetings with each of the Tribes. The Tribes provided no formal comments and did not request any meetings.

Issues

The June 2014 District Court of Colorado's opinion in *High Country Conservation Advocates v. United States Forest Service* and public comments were used to identify key issues. Key issues are environmental issues that were studied in detail and were needed to make informed decisions in conjunction with the 2012 FEIS. The following key issues carried through the SFEIS analysis:

- **Greenhouse Gas (GHG) Emissions** – Public comments and the District Court of Colorado ruling suggested the need for a quantitative GHG analysis. Additional analyses related to GHGs were evaluated.
- **Climate Change** – The environmental issue behind the GHG emissions concern is climate change. The quantitative GHG emissions analysis was put into context of climate change for an informed decision.
- **Social Cost of Carbon** – Public comments and the District Court of Colorado ruling suggested the use of the SCC protocol to evaluate costs of increased carbon emissions generated by the proposal. The SCC was evaluated based on public comments and the Court ruling.
- **Coal Economics** – Corrections and proposed changes to the North Fork Coal Mining Area boundary and changes in demographics/economic trends throughout the State of Colorado affect the 2012 estimated economic outputs. Additional economic modeling and data were considered to address new information for the coal resources.
- **Fisheries** – After a NEPA sufficiency review of the 2012 FEIS, it was determined that new information had emerged regarding the genetics of Colorado River cutthroat trout in the southern Rockies. Supplemental analyses addressed this new information and comments received from the public.
- **Federally Listed Threatened, Endangered, Proposed, and Sensitive Species** – After a NEPA sufficiency review of the 2012 FEIS, it was determined that several species listed, and critical habitat designated, under the Endangered Species Act (ESA) affect CRAs. In addition, the Regional Forester updated the sensitive species list in August 2013. Supplemental analyses were completed under the ESA, and consultation with the U.S. Fish and Wildlife Service was re-initiated for the entire Colorado Roadless Rule. The review under ESA is a statewide review of all 4.2 million CRA acres—an area that includes, but is not limited to, the North Fork Coal Mining Area.

Issues raised by the public and considered by the interdisciplinary team that are not to be key issues are described in pages 10–11 of the 2012 FEIS, Appendix B–Issues of the SDEIS, and Appendix E – Response to Comments of this SFEIS. Issues not considered to be key issues were not analyzed in detail because they were:

- General opinions or position statements not specific to the proposed action
- Items addressed by other laws, regulations, or policies
- Items not relevant to the potential effects of the proposed action, or otherwise outside the scope of this analysis
- Other content of the 2012 FEIS, which informs, but is not repeated.

Alternatives Considered

The Forest Service analyzed three alternatives in detail in the SEIS. Alternative A is the required no action alternative and reflects continuation of current management. The District Court of Colorado vacated on the North Fork Coal Mining Area exception, leaving the remaining Colorado Roadless Rule intact. Currently the North Fork Coal Mining Area is being managed the same as non-upper tier acres with general prohibitions on tree cutting, sale and removal; road construction/reconstruction; and use of LCZs within CRAs.

Features Common to All Alternatives

This section describes the features that are common to all alternatives analyzed in detail.

Colorado Roadless Area Boundary Correction

All alternatives, including the no action alternative, propose to administratively correct CRA boundaries associated with the North Fork Coal Mining Area (36 CFR 294.47(b)). Roads that existed prior to 2012 in the vicinity of the North Fork Coal Mining Area were re-inventoried with global positioning system technology that allows for more accurate boundary location of CRAs. The boundaries of the CRAs would be adjusted to match the actual location of roads on the ground. The administrative correction to CRAs associated with the North Fork Coal Mining Area would entail:

- Adding 65 acres based on a more accurate mapping of the national forest boundary along the Pilot Knob CRA and more accurate inventory of forest roads 711, 711.3B, and 711.3c.
- Subtracting 35 acres based on a more accurate inventory of forest roads 711, 711.3B, and 711.3c.

The Colorado Roadless Rule recognized that CRA boundaries would need to be corrected to remedy errors and account for improvements in mapping technology. Procedures for correcting CRA boundaries require public notice and a 30-day comment period. No associated environmental documentation process pursuant to NEPA is required for administrative corrections. This is due to the recognition that these corrections are minor, such as the proposed correction associated with the North Fork Coal Mining Area.

Colorado Roadless Upper Tier Acres

None of the alternatives would add any upper tier acres to the 2012 FEIS inventory or manage any of the acres within the North Fork Coal Mining Area CRAs as upper tier acres. Upper tier acres are a subset of CRAs that have limited exceptions and receive a higher level of protection than non-upper tier CRAs. All CRAs that are not upper-tier are considered non-upper tier or standard CRA acres. In development of the Colorado Roadless Rule, all roadless acres were first CRAs, in which all exceptions applied. Later, as public comments were addressed, the upper tier was created in which only limited exceptions applied. A second term for the rest of the CRA acres was not coined.

North Fork Coal Mining Area Range of Size

The size of the North Fork Coal Mining Area as promulgated under the 2012 Colorado Roadless Rule was substantially reduced through the 7-year collaborative process. The North Fork Coal Mining Area was originally about 55,000 acres when the State submitted the first petition in 2006. That was winnowed down to 19,500 acres by 2012 based on Forest Service analysis and input from the State, coal industry, local communities, environmental groups, and other interested publics. The SFEIS includes Alternative C, which further reduced the North Fork Coal Mining Area to 12,600 acres. This

range of size from 12,600 to 55,000 acres of the North Fork Coal Mining Area considered throughout the development of the Rule, including this supplemental, is a reasonable range.

Federal and State Requirements

Management of NFS lands in Colorado is governed by a variety of Federal statutes, regulations, executive orders, and the Forest Service directive system (manuals and handbooks). In addition, some State laws and regulations apply on NFS lands within the State. The selection of any of the alternatives in this would not affect the applicability of any Federal or State requirements.

Forest Plans

The National Forest Management Act and its implementing regulations at 36 CFR 219 obligate the Forest Service to develop, amend, or revise plans for each national forest. Forest plans provide guidance for management activities on a national forest, including establishing forest-wide management requirements and direction applicable to the entire forest or to specific management areas. When guidance in a forest plan is more restrictive than direction described under the alternatives, actions must be consistent with the more restrictive direction. For example, if a forest plan standard prohibits road construction where it is allowed under a roadless rule alternative, road construction cannot occur.

None of the alternatives compel the Forest Service to amend or revise any forest plan. In addition, none of the alternatives limit the authority of a responsible official to amend or revise a forest plan. However, a responsible official would not be able to modify or reduce the restrictions of the adopted rule through a forest plan amendment or revision. Any changes to the restrictions of the adopted rule would be in the discretion of the Secretary of Agriculture and made through a future rulemaking effort.

Project-Specific Environmental Analysis

None of the alternatives authorize any exploration, leasing, or other ground-disturbing activities. Specific projects that include the leasing, exploration, or development of coal must undergo site-specific environmental analysis required by NEPA and required permitting conducted by the Colorado Division of Reclamation, Mining and Safety.

Reserved and Outstanding Rights

Under all alternatives, the reasonable exercise of reserved or outstanding rights for access, occupancy, and use of NFS lands within roadless areas would not be affected. The rights include those that exist by law, by treaty, or by other authority. They include, but are not limited to, the right to provide reasonable access across NFS lands to private property, mining claims for locatable minerals under the 1872 Mining Law, and land uses protected by Native American treaty rights.

Existing Land Use Authorizations

“Authorizations” refer to land uses allowed under a special use permit, contract, or similar legal instrument. Numerous types of lands and recreation-related authorizations are issued for occupancy and use of NFS lands. All of the alternatives allow for the continuation, transfer, or renewal of existing land-use authorizations for activities in roadless areas. “Existing authorizations” are those that are issued before the effective date of the final rule.

Private recreational activities do not require an authorization and are not affected by any alternative.

Existing coal leases would continue pursuant to the terms and stipulations of the lease. None of the alternatives revoke, suspend, or modify any existing coal leases within the North Fork Coal Mining Area (36 CFR 294.48(a)).

Other Forest Activities

Activities that are not otherwise prohibited under the alternatives (tree cutting, sale, or removal; road construction and reconstruction; and use of LCZs) are permissible in roadless areas, if not restricted by other law, regulations, and policies. These activities include, but are not limited to, the following:

- Motorized and non-motorized trail construction or maintenance;
- Hunting, fishing, camping, or other dispersed recreational uses;
- Use of a motorized vehicle on a trail open to motorized use;
- Mountain biking on a trail open to mechanized use;
- Prescribed burning, including tree cutting for fireline construction to manage a prescribed fire; and
- Livestock grazing.

Alternative A: The No Action Alternative

This alternative is the no action alternative as required by NEPA and reflects continuation of current management (Fig. S-2) consistent with the District Court of Colorado ruling to vacate the North Fork Coal Mining Area exception to the Colorado Roadless Rule. The District Court of Colorado's ruling changed only management of CRAs in the North Fork Coal Mining Area; the remainder of the rule was left intact. Currently, the North Fork Coal Mining Area is being managed the same as non-upper tier CRAs. Rights to coal and uses associated with existing coal leases continue in accordance with the terms and conditions of those leases. This alternative would continue current management, with the general prohibitions on tree cutting, sale, and removal; road construction/reconstruction; and use of LCZs within CRAs, with some of those activities permitted under certain exceptions as defined in 36 CFR 294 Subpart D.

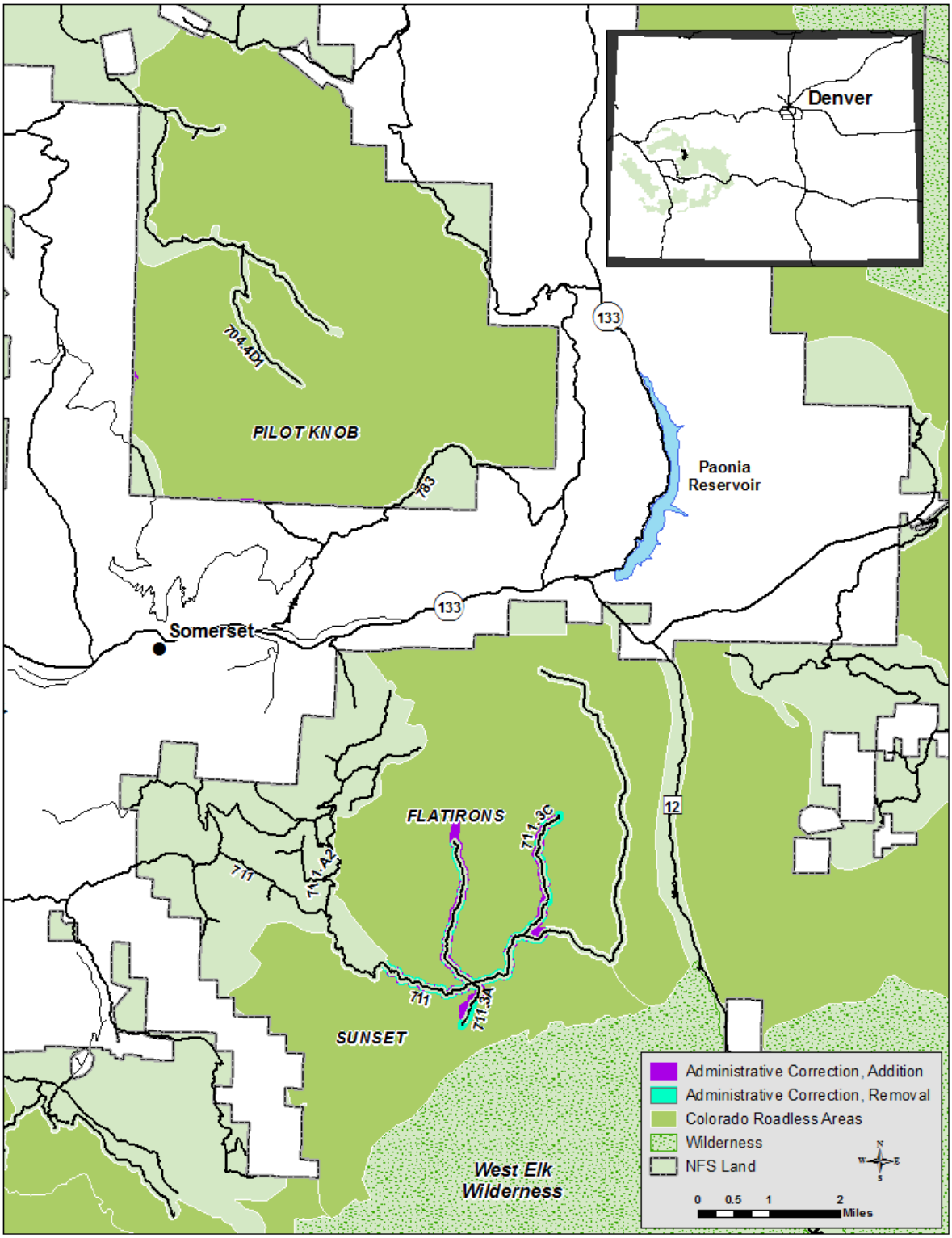

Figure S-2. *Map of Alternative A, Colorado Roadless Areas near the analysis area with administrative corrections.*

Alternative B: Proposed Action & Preferred Alternative

Alternative B is the proposed action and preferred alternative (Fig. S-3). This alternative would reinstate the North Fork Coal Mining Area exception as written in 36 CFR 294.43(c)(1)(ix). Specifically, the following clause would be reinstated:

> *A temporary road is needed for coal exploration and/or coal-related surface activities for certain lands within Colorado Roadless Areas in the North Fork coal mining area of the Grand Mesa, Uncompahgre, and Gunnison National Forests as defined by the North Fork coal mining area displayed on the final Colorado Roadless Areas map. Such roads may also be used for collecting and transporting coal mine methane. Any buried infrastructure, including pipelines, needed for the capture, collection, and use of coal mine methane, will be located within the rights-of-way of temporary roads that are otherwise necessary for coal-related surface activities including the installation and operation of methane venting wells.*

Alternative B would apply to an area similar to the North Fork Coal Mining Area described in the 2012 FEIS with minor differences described below.

North Fork Coal Mining Area Boundary Changes

Alternative B proposes to administratively change the North Fork Coal Mining Area boundary to align it to the CRA boundary and to resolve two errors that occurred during the development of the 2012 FEIS. These errors included:

- Changes to CRAs between the DEIS and revised DEIS: specifically, the CRA boundaries were updated but the corresponding match between the CRA boundary and North Fork Coal Mining Area boundary was not made, resulting in numerous inadvertent “slivers” along the boundary.
- Due to an error calculating acres made during the preparation of the 2012 FEIS, an area of about 470 acres was subtracted from the North Fork Coal Mining Area total acreage twice. With this error the final North Fork Coal Mining Area acreage was incorrectly reported as 19,100 acres in the FEIS but should have been reported as 19,500 acres. This error did not physically change the North Fork Coal Mining Area, but the correctly reported total acres increases.

The change to the North Fork Coal Mining Area boundary would entail:

- Adding 409 acres to align the North Fork Coal Mining Area with CRA boundaries.
- Removing 254 acres to align the North Fork Coal Mining Area with CRA boundaries.
- Total size of the North Fork Coal Mining Area would be about 19,700 acres.

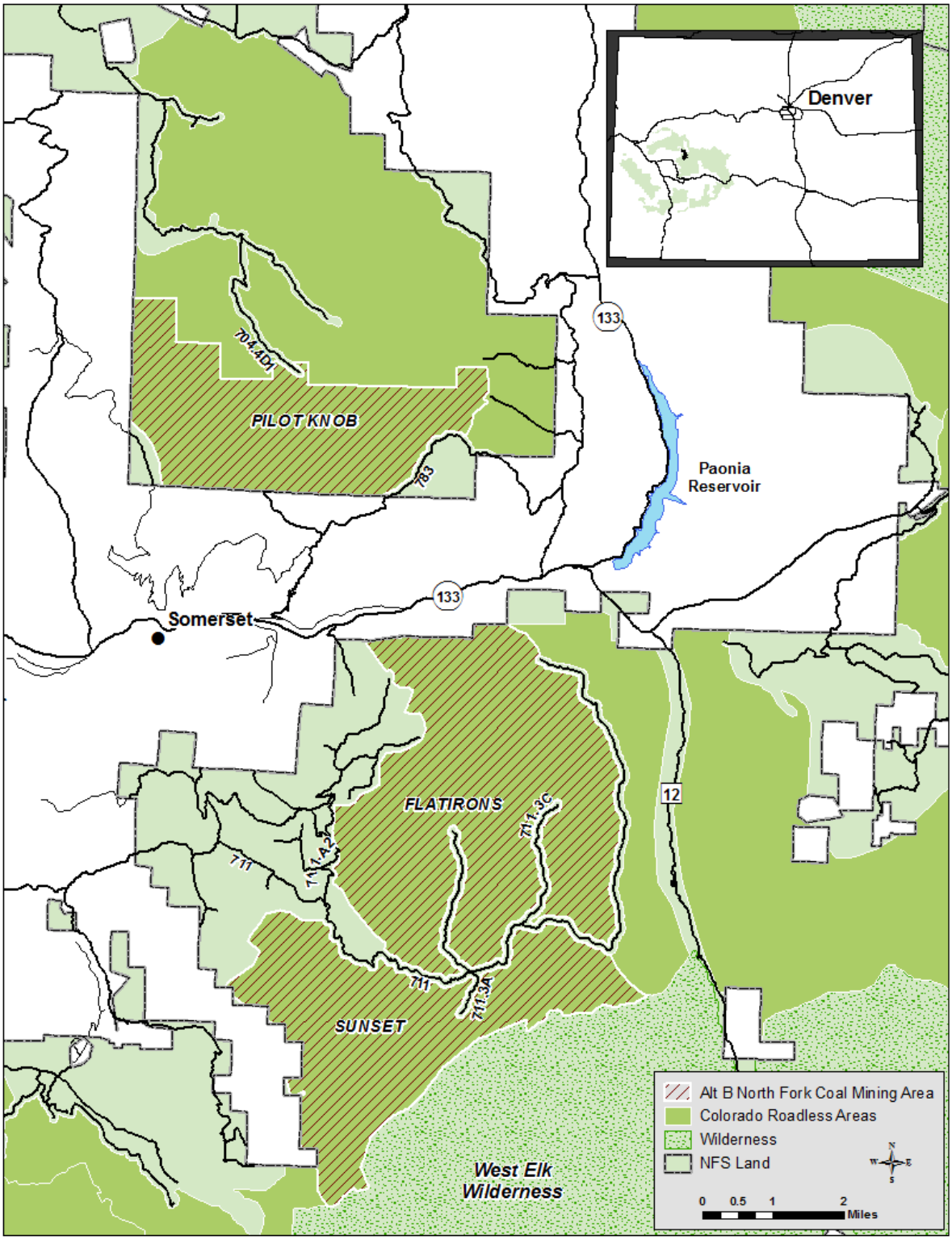

Figure S-3. *Map of Alternative B, the North Fork Coal Mining Area.*

Alternative C: Reduced North Fork Coal Mining Area

Alternative C is similar to Alternative B in that it would reinstate the North Fork Coal Mining Area exception as written in 36 CFR 294.43(c)(1)(ix). Specifically, the following clause would be reinstated:

> *A temporary road is needed for coal exploration and/or coal-related surface activities for certain lands within Colorado Roadless Areas in the North Fork coal mining area of the Grand Mesa, Uncompahgre, and Gunnison National Forests as defined by the North Fork coal mining area displayed on the final Colorado Roadless Areas map. Such roads may also be used for collecting and transporting coal mine methane. Any buried infrastructure, including pipelines, needed for the capture, collection, and use of coal mine methane, will be located within the rights-of-way of temporary roads that are otherwise necessary for coal-related surface activities including the installation and operation of methane venting wells.*

North Fork Coal Mining Area Boundary Changes

Alternative C would apply to an area similar to that of Alternative B, except areas identified as "wilderness capable" in the 2007 GMUG Forest Plan revision effort would be excluded from the North Fork Coal Mining Area (Fig. S-4). The North Fork Coal Mining Area under this alternative would be about 12,600 acres and would include no upper tier acres. Changes to the North Fork Coal Mining Area boundary would include administrative corrections to resolve the three errors described in the *Features Common to all Alternatives* section and a boundary change to exclude the area identified as "wilderness capable."

During the 2007 GMUG plan revision effort, the capability of potential wilderness areas was defined as the degree to which that area contains the basic characteristics that would make it suitable for wilderness. Characteristics considered in the 2007 revision evaluation included:

- **Environmental** – the degree to which an area appears to be free from disturbance so that the normal biological processes continue and the degree to which the area provides a visitor opportunity for solitude and a sense of remoteness.
- **Challenge** – the degree to which the area offers visitors opportunity to experience adventure and self-reliance, often measured by physical character of the land (terrain and vegetation) and proximity to sights and sounds of developments and travel systems.
- **Manageability of boundaries** – consideration of the ability to manage the area as wilderness; factors considered are size, shape, and juxtaposition to external influences.
- **Special features** – the area's capability to provide other values such as geologic, scenic, or cultural features.

The Sunset Roadless Area, identified as "wilderness capable," was not recommended for wilderness in the 2007 GMUG revision effort due to mineral values and boundary management issues (see Appendix A). The Flatirons Roadless Area, identified as "wilderness capable," was not recommended for wilderness in the 2007 GMUG revision effort because it was less than the minimum size of 5,000 acres. If selected, Alternative C removes these "wilderness capable" acres from the North Fork Coal Mining Area but would not recommend them for wilderness. Any future evaluations and further recommendations would be completed during the GMUG forest plan revision process.

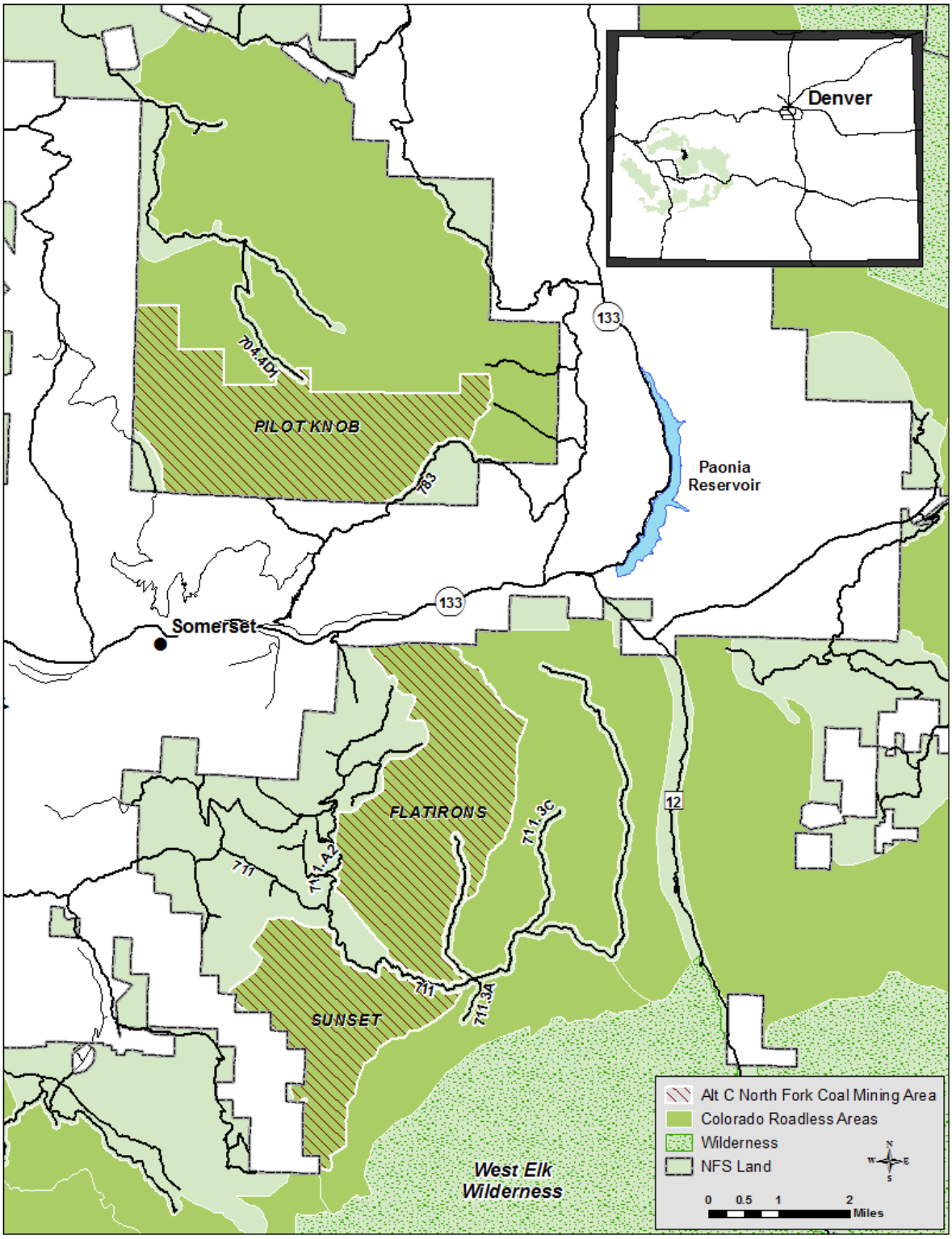

Figure S-4. *Map of Alternative C, the North Fork Coal Mining Area excluding "wilderness capable" lands.*

Comparison of Alternatives

This section provides a comparative summary of each alternative from two perspectives: key issues and potential environmental consequences. The key issues of each alternative are listed in Table S-1, and the potential environmental consequences of each alternative are listed in Table S-2.

Table S-1. *Key issues of Alternatives A, B, and C*

Descriptor	*Alternative A: No Action with CRA Boundary Corrections*	*Alternative B: Proposed Action – Reinstatement of North Fork Coal Mining Area with CRA Boundary Corrections*	*Alternative C: Exclusion of "Wilderness Capable" Lands with CRA Boundary Corrections*
Roadless area management direction	2012 Colorado Roadless Rule without the North Fork Coal Mining Area exception	2012 Colorado Roadless Rule with the North Fork Coal Mining Area exception	2012 Colorado Roadless Rule with the North Fork Coal Mining Area exception
Administrative correction to roadless area boundaries due to mapping errors	Yes	Yes	Yes
North Fork Coal Mining Area lands available for temporary road construction	No North Fork Coal Mining Area CRAs would be managed as non-upper tier CRAs	Yes – 19,700 acres	Yes – 12,600 acres
"Wilderness capable" lands excluded	Not Applicable	No	Yes
Addresses State of Colorado's interest in not foreclosing coal development	No	Yes	Yes

Table S-2. *Potential environmental consequences of Alternatives A, B, and C (Refer to Chapter 3 of the SFEIS for details)*

[See Table C-33 of the SFEIS for detailed PNV SCC and SCM results for all assumptions.]

Issue or Affected Resource	*Alternative A: No Action with CRA Boundary Corrections*	*Alternative B: Proposed Action Reinstatement of North Fork Coal Mining Area with CRA Boundary Corrections*	*Alternative C: Exclusion of "Wilderness Capable" Lands from proposed North Fork Coal Mining Area with CRA Boundary Corrections*
Coal			
Size of North Fork Coal Mining Area (acres)	19,500	19,700	12,600
North Fork Coal Mining Area not under lease (acres)	15,600	15,700	8,600
Estimated recoverable coal not under lease (short tons)	0 (with today's technology)	172 million	95 million
Estimated years of production (for the average production scenario)	2 (existing leases)	17	9.5
Estimated miles of temporary roads (for total production)	5 (existing leases)	36 for exploration 72 for development	20 for exploration 39 for development
Estimated number of Methane Drainage Wells (for total production)	Between 15 to 30; ranging from about 4.5 to 9 acres of disturbance (existing leases)	Between 240 and 480; ranging from about 72 to 144 acres of disturbance	Between 130 and 260; ranging from about 39 to 78 acres disturbance
Air Resources - GHG Emissions			
Cumulative GHG emissions (metric tons CO_2e); includes methane	Not Applicable (unleased coal resource inaccessible with current technology and thus no additional GHG emissions, existing leases part of the environmental baseline)	443 million	244 million (assumed to be produced at the same rate per year as Alternative B)
Cumulative methane emissions (metric tons CO_2e)	Not Applicable (unleased coal resource inaccessible with current technology and thus no additional methane emissions, existing leases part of the environmental baseline)	34 million	19 million

Issue or Affected Resource	*Alternative A: No Action with CRA Boundary Corrections*	*Alternative B: Proposed Action Reinstatement of North Fork Coal Mining Area with CRA Boundary Corrections*	*Alternative C: Exclusion of "Wilderness Capable" Lands from proposed North Fork Coal Mining Area with CRA Boundary Corrections*
Climate	Unleased coal resources inaccessible, thus no additional GHG emissions beyond the environmental baseline; Climate change part of the environmental baseline	Greatest increase in GHG emissions among all alternatives. Greatest increase in atmospheric concentrations of GHGs.	Increase in GHG emissions and atmospheric concentrations more than Alternative A and less than Alternative B
Threatened, Endangered, and Sensitive Species			
No effect	Black-footed ferret, Colorado butterfly plant, grey wolf, grizzly bear, Lesser prairie-chicken, North Park phacelia, Osterhout milkvetch, Pagosa skyrocket, Penland beardtongue, southwestern willow flycatcher (critical habitat), Uncompahgre fritillary butterfly, Ute ladies'-tresses, yellow-billed cuckoo (proposed critical habitat)		
May affect, not likely to adversely affect	Canada lynx, Colorado hookless cactus, greenback cutthroat trout, DeBeque phacelia (species), Gunnison sage-grouse, Mexican spotted owl (species and critical habitat), Pawnee montane skipper, Penland alpine fen mustard, Preble's meadow jumping mouse (species and critical habitat), southwestern willow flycatcher (species and critical habitat), yellow-billed cuckoo (species and critical habitat)		
May affect, likely to adversely affect	Bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker		
Economics			
Value of production (annual average), in millions	$37	$254 – 598	$254 – 598
Employment (annual average), in number of jobs	140	985 – 2,320	985 – 2,320
Labor income (annual average), in millions	$11	$78 – 183	$78 – 183
Present Net Value IPM® v.5.15 Social Cost of Carbon (millions of 2014 dollars)			
Global Boundary	Alternative A	Alternative B - Alternative A	Alternative C - Alternative A
Lower Estimate*	Due to the use of electric power generation cost savings as a proxy	-$1,394	-$750
3% Discount Avg. (Lower)**		-$197	-$88

Issue or Affected Resource	*Alternative A: No Action with CRA Boundary Corrections*	*Alternative B: Proposed Action Reinstatement of North Fork Coal Mining Area with CRA Boundary Corrections*	*Alternative C: Exclusion of "Wilderness Capable" Lands from proposed North Fork Coal Mining Area with CRA Boundary Corrections*
3% Discount Avg. (Upper)** Upper Estimate*	for benefits, results are provided only for Alternatives B and C, relative to Alternative A (i.e., cost savings cannot be characterized for stand-alone alternatives).	$253 $457	$204 $347
Present Net Value IPM® v.5.15 Social Cost of Carbon and Social Cost of Methane (millions of 2014 dollars)*			
Global Boundary	Alternative A	Alternative B - Alternative A	Alternative C - Alternative A
Lower Estimate 3% Discount Avg. (Lower) 3% Discount Avg. (Upper) Upper Estimate	Due to the use of electric power generation cost savings as a proxy for benefits, results are provided only for Alternatives B and C, relative to Alternative A (i.e., cost savings cannot be characterized for stand-alone alternatives).	-$3,440 -$964 -$479 $206	-$1,878 -$506 -$214 $190

**Lower and upper estimates are drawn from results from coal rate schedules (low, average, permitted). See Table C-33 of the SFEIS for detailed results for all assumptions underlying assumption for PNV values. Ranges for average SCC values for 3% discount rates are singled out as representative of mid points.*