

Buffalo Municipal Watershed Project Review

What was the supposed issue (wildfire)

versus

where the treatments (clear cuts) are being implemented.

Scoping Notice

Buffalo Municipal Watershed Project

Powder River Ranger District, Bighorn National Forest

Johnson County, Wyoming

June 2017

Comments welcome

The Powder River Ranger District of the Bighorn National Forest welcomes your written, specific comments on the proposed Buffalo Municipal Watershed Project.

Background

The majority of Buffalo's municipal water supply is located in the Bighorn National Forest, primarily the Clear Creek watershed.

Water is collected above the intake on Clear Creek, about six miles west of Buffalo. The Tie Hack Reservoir, constructed in 1997, is owned by the city and is the primary storage facility.

Historically, the watershed has been the setting for disturbances from wildland fires. About 50 percent of the area burned in the late 1800s. In 1943 and 1988, the Duck Creek and Lost fires burned about 20,000 acres combined. The West Range fire burned approximately 2,000 acres of Bureau of Land Management, private, and State of Wyoming lands in 2015. **Fire is a natural process**, whether caused by lightning or people, and its effects should be anticipated on the landscape, as evidenced by ignitions every year that are routinely suppressed.

Purpose and need for action

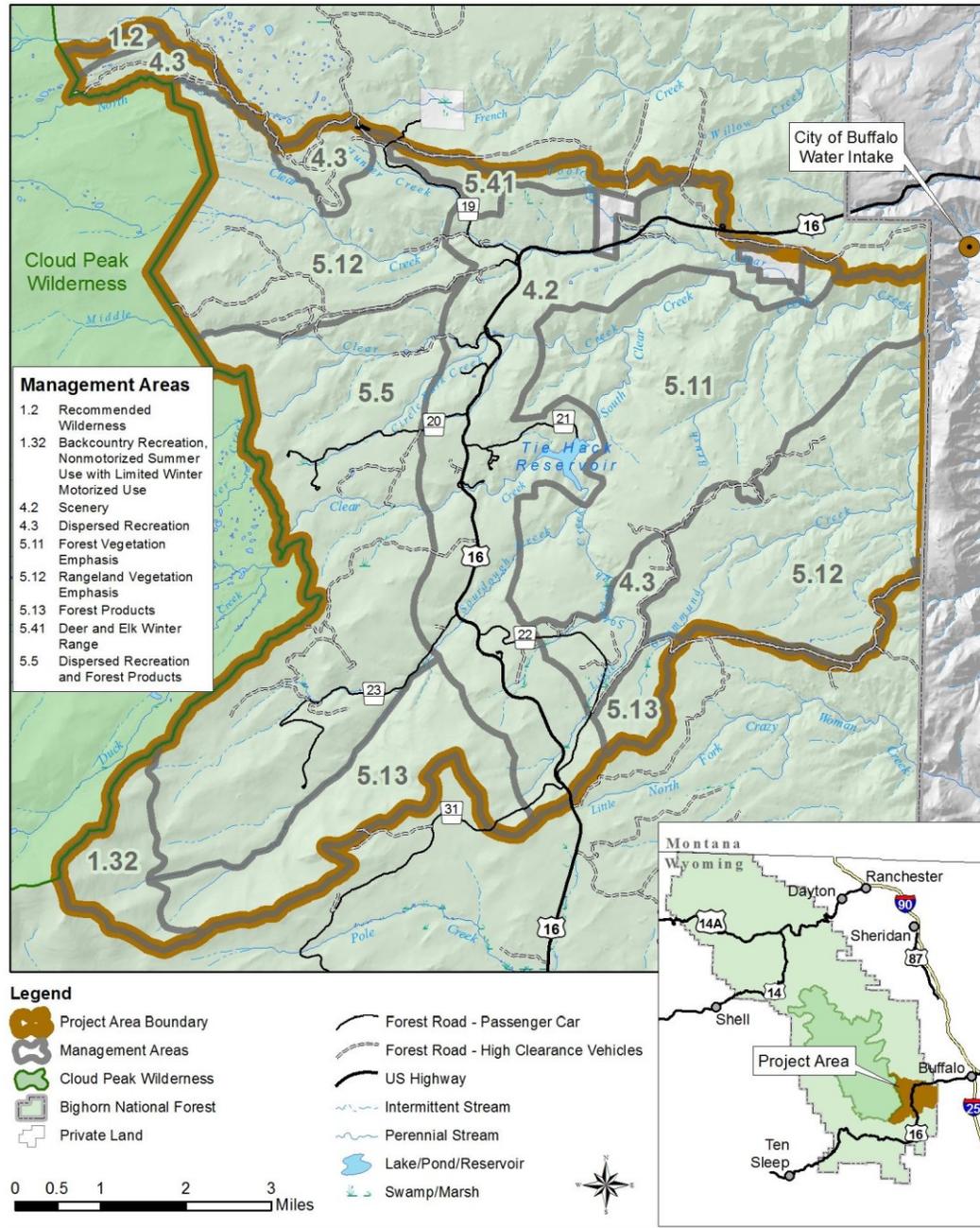
A primary threat to municipal water supplies is sedimentation. Depending on severity, topography, soil types, and proximity to stream courses, large fires can pose a significant risk to water quality. Out of concerns for its municipal water supply, the city of Buffalo and the **Wyoming Water Development Office contracted for an assessment of conditions and the possible effects from wildfire within the Buffalo municipal watershed.** The assessment found that, "The city of Buffalo's municipal water supply is sourced from a heavily forested watershed in the Bighorn Mountains and is **particularly vulnerable to wildfire**" (RESPEC 2017)

Buffalo Municipal Watershed Project Area

Management Area Prescriptions:

Prefixes starting with 4 are for other than Timber management

Prefixes starting with 5 are for commodity Production emphasis typically range or timber



The next slide is from the RESPEC report of 2017.
It shows areas ranging from high Hazard for wildfire in red
to lower hazard of wildfire in green.

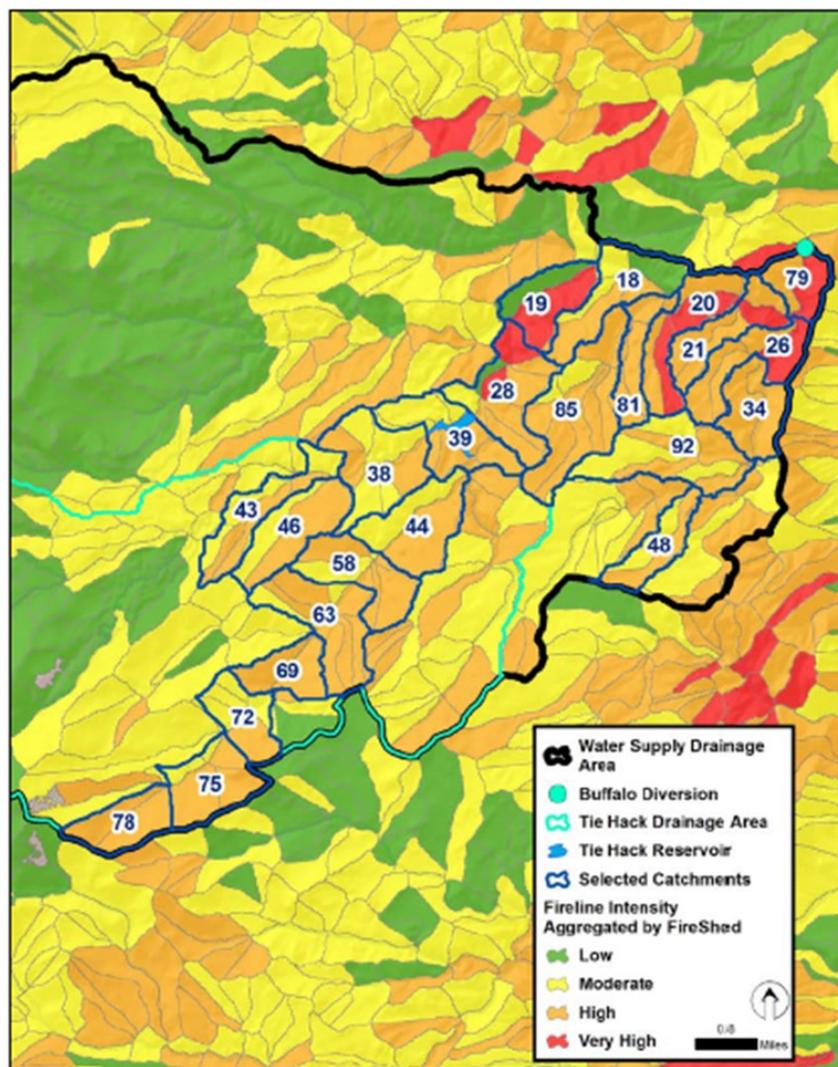


Figure 6-2. Selected Catchments Overlaying FireSheds to Identify Areas of Greatest Concern Defined By Fire-Behavior and Postfire Hydrologic Hazard Analyses, at a Scale Appropriate for Treatment Design.

The next slide shows areas planned for treatment.
Planned treatment areas are not in the areas of very
high priority as shown on the previous slide.

Mitigation Planning

•PRIORITIZE LOCATIONS

○Hazard Index

•Combines Wildfire and Postfire Hydrologic Assessments

○Operability Index

•Permitting/ Administrative Constraints

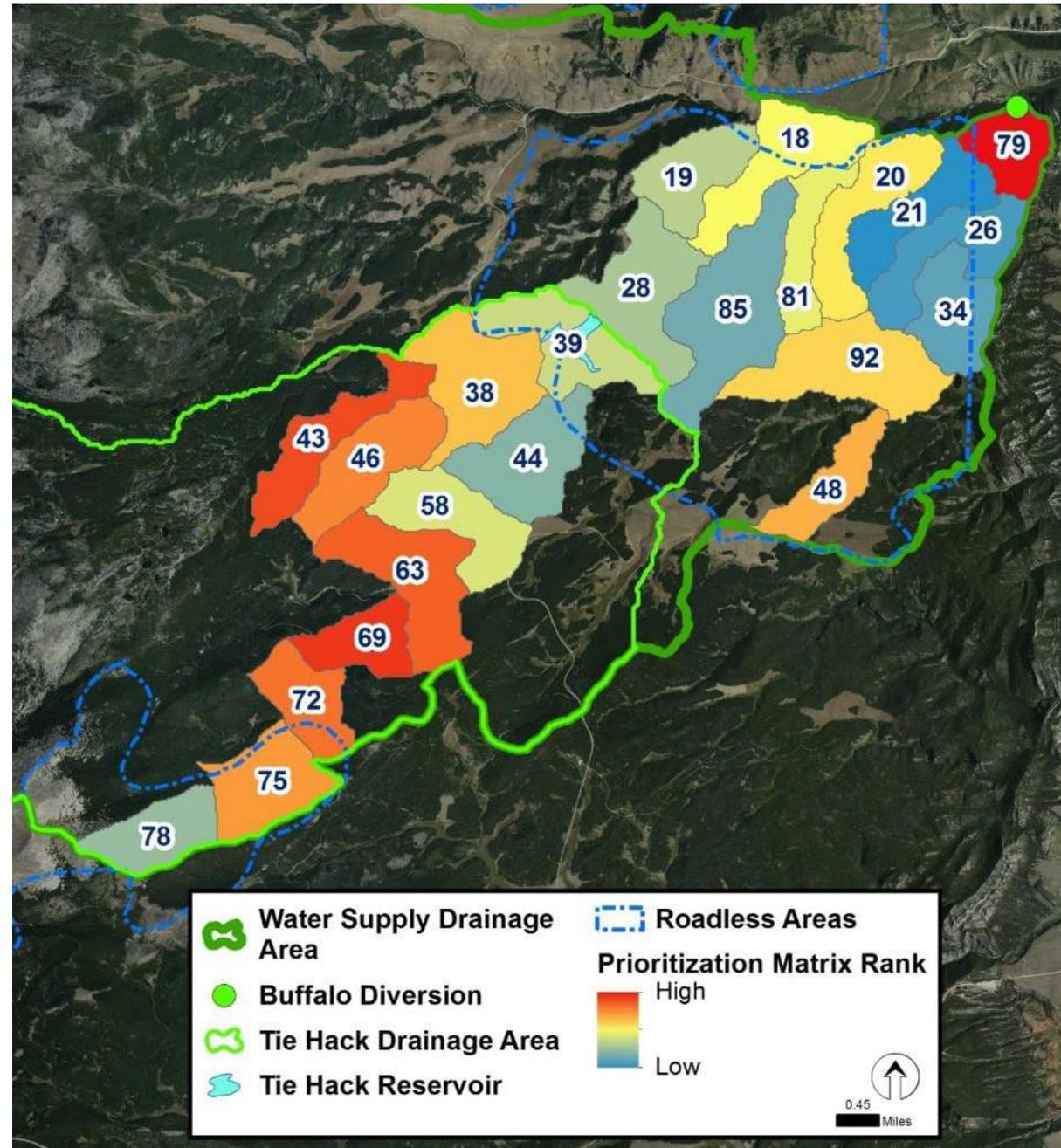
•Crucial Habitat

•Forest Access/ Forest Plan

○Combine Indices for Priority Matrix Index

○Rank Priority Matrix Index from 1 to 23 to get Final Rank

RESPEC report



The proposal was listed in the Bighorn National Forest's schedule of proposed actions report beginning January 1, 2017, and was provided to the public and other agencies for comment during a 30-day scoping period beginning June 1, 2017. Thirteen letters were received: one from a Federal agency; four from State of Wyoming agencies; and, eight from adjacent landowners and other interested members of the public. A pre-scoping public meeting was held in Buffalo on May 9, 2017, where people were given a pre-scoping 'heads-up'. A public field trip that was largely focused on the BMW project was held with the Bighorn National Forest Plan Steering Committee on August 29, 2017, and a public field trip specifically on the BMW project was held on August 30, 2017. Additional meetings and field visits were held with individuals and small groups throughout the summer and fall of 2017.

The following key issue statement captures the logic behind which the proposed action was iteratively developed, as well as the consideration for alternatives considered but not analyzed in detail.

Would the proposed actions help sustain and improve the long term water quality within the Buffalo Municipal Watershed project area, by reducing sources of sediment and debris that may impact the city's water intake and supply system, given the likelihood of a wildfire occurring within the watershed?

Alternative 2 – Proposed Action

Activities in the Buffalo Municipal Watershed project area would be implemented to achieve the Purpose and Need for the project. The major categories of activities include the following, and are described in detail below. Implementation would likely occur over a ten year period, or longer, depending on funding available and contract requirements. Rather than developing several action alternatives, the best elements from many ideas and proposals to address the key issue were combined into this one action alternative including:

- a) Prescribed burning, thinning, and fuelbreak construction in the **Grommund Inventoried Roadless Area** (IRA) and sites adjacent to it (~3,000 acres)
- b) Road management and maintenance (~92 miles)
- c) Aspen restoration (~1,600 acres)
- d) Construction of beaver dam analogues (4 sites)
- e) **Mechanical fuels reduction/timber harvest (~1,900 acres)**

These proposed actions implement the Forest Plan strategies and objectives applicable to the project area, summarized as follows:

Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary (Forest Plan page 1-2)

Increase the amount of forests and rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species (Forest Plan page 1-4)

Manage to rehabilitate and enhance landscapes viewed from the scenic byways (Forest Plan page 1-9)

Annually offer a reliable level of forest products (Forest Plan page 1-9)

Improve travel management, provide a wide range of recreation opportunities, and maintain Forest facilities, buildings, roads, and trails in an efficient manner (Forest Plan page 1-11)

Improve the safety and economy of Forest Service roads, trails, facilities, and operations (Forest Plan page 1-11)

Identify and decommission 4 miles of system or non-system road, annually (Forest Plan page 1-11)

Details of Item E from previous slide:

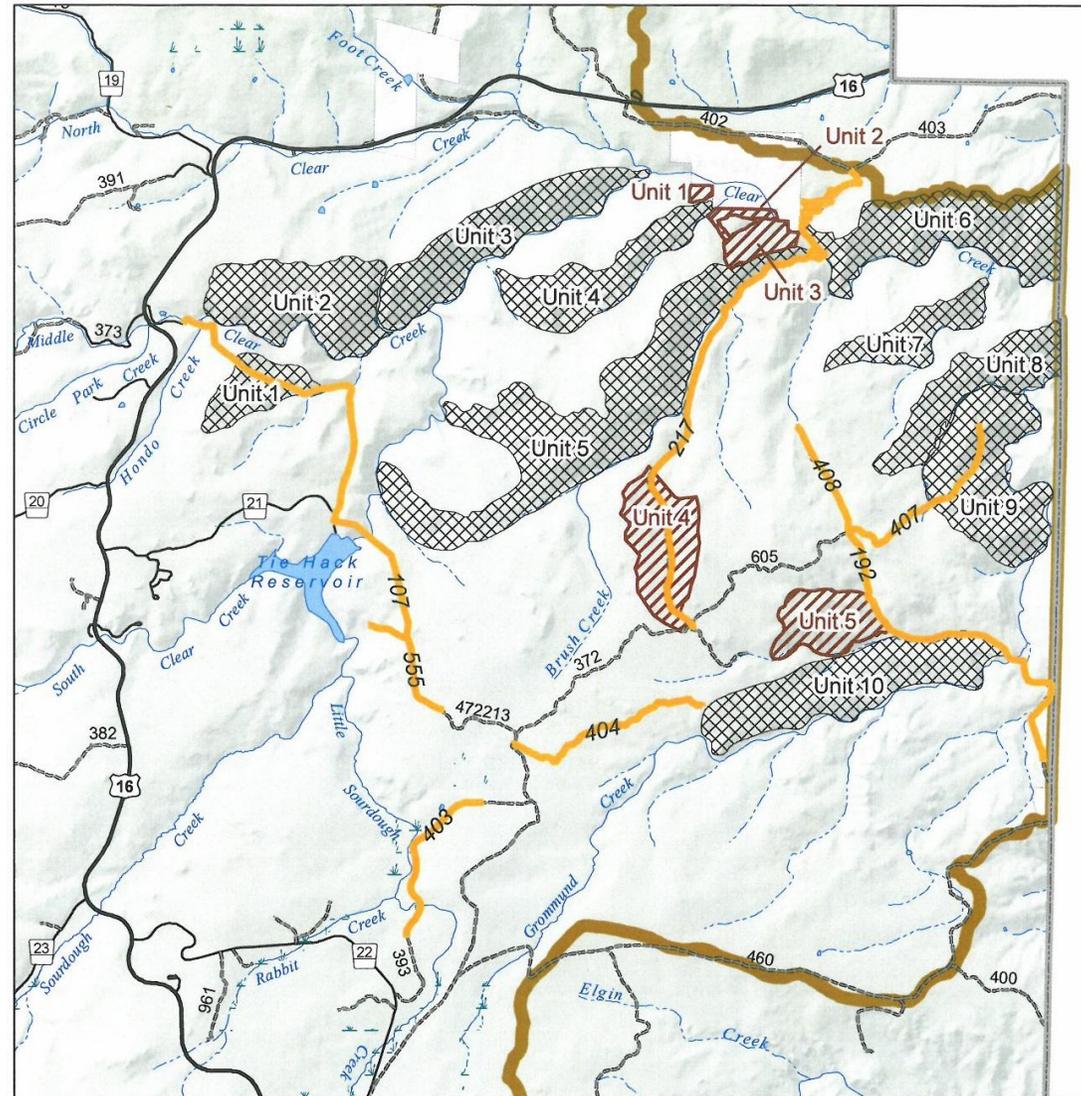
Cut and pile trees by hand thinning and hand piling:

Thin approximately **351** acres of dense lodgepole pine within 5 different units. This thinning would be accomplished by cutting trees to a **spacing of 15 to 25 feet apart** depending upon the average size of trees, and existing density of the stand in the units. The material that is thinned would be **piled**, allowed to dry for approximately two years, and then **burned**. The piles would be burned when snow cover is present or wet enough conditions exist to prevent fire from spreading beyond the piles. The **purpose of the thinning is to reduce the likelihood of crown fire** being able to carry in these areas, and thereby reduce the fire severity in the event of a wildfire in these treated areas. They were selected for treatment based on RESPEC report identified polygons.

Proposed Prescribed Fire and Non-commercial Thinning Treatments

Red diagonal areas are non-Commercial thinning areas

Cross hatched areas are Prescribed burn areas



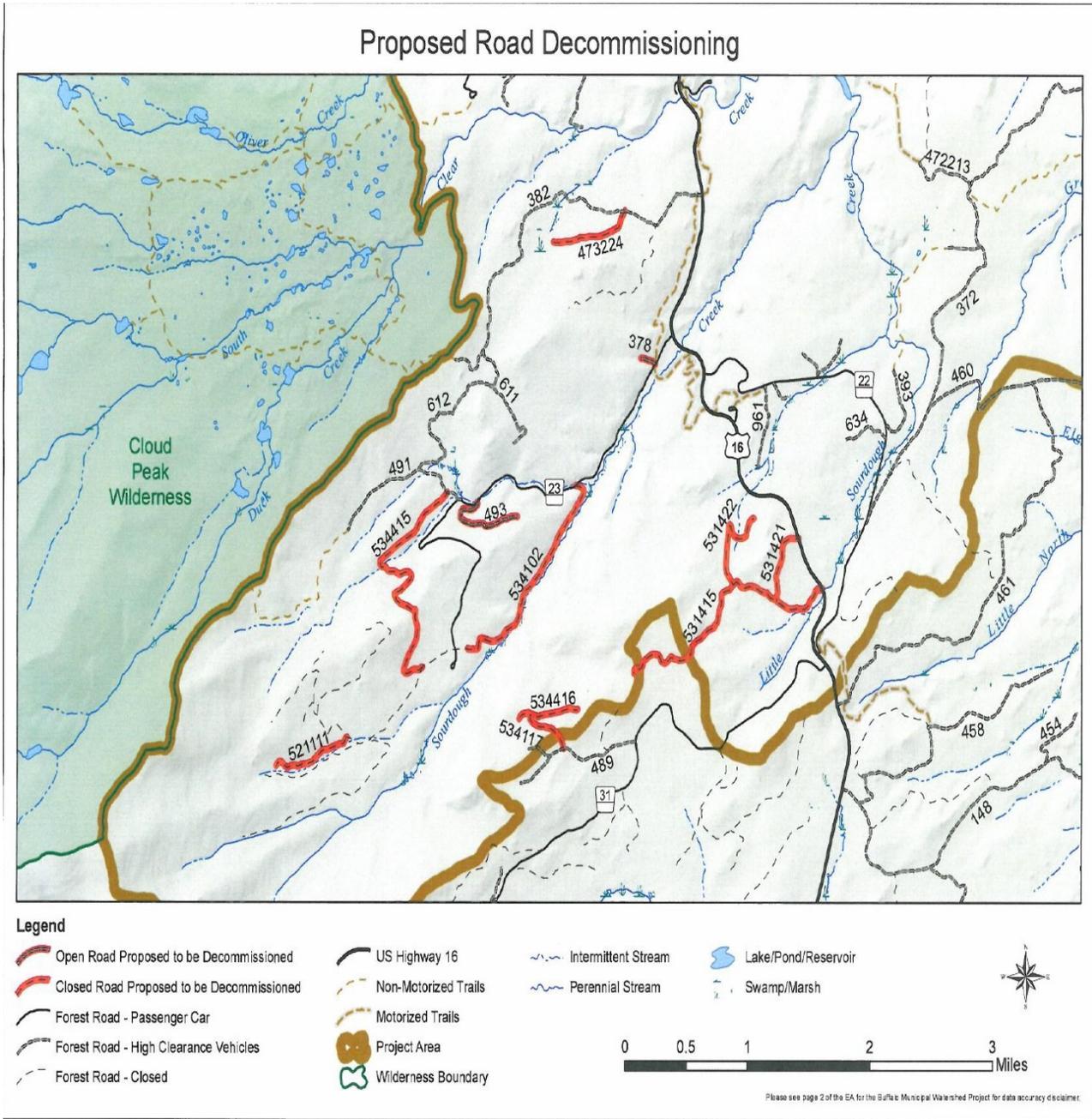
Legend

-  Proposed Trails Fuels Treatment Areas
-  Proposed Non-commercial Thinning Areas
-  Proposed Prescribed Burn Areas
-  Project Area Boundary
-  Bighorn National Forest Boundary
-  Forest Road - Passenger Car
-  Forest Road - High Clearance Vehicles
-  US Highway 16
-  Intermittent Stream
-  Perennial Stream
-  Lake/Pond/Reservoir
-  Swamp/Marsh



- The 2005 BNF LRMP in the Geographic Areas section page 3-6 also discusses the higher road density in the Clear Creek drainage relative to other Geographic areas of the BNF. It further states, “A higher road density is assumed to pose a higher risk to watershed health than other road levels, through sedimentation, hydrologic connectivity, and drainage efficiency.” It continues that project level planning and implementation are expected to reduce the impacts of roads ...within the geographic area. Why are there no proposals to reduce the impacts from roads by reducing the miles of roads within the Clear Creek watershed in this project planning when the BNF’s own opinion is that roads pose a higher risk to watershed health? Reducing road miles would appear to be a much surer way of reducing sedimentation than trying to mitigate impacts from a possible wildfire in an unknown location in the watershed?

Most of the roads shown in red highlight are Level 1 roads. Meaning they were already closed and put to bed. There are currently only two open roads which are planned to be closed. The actual reduction in road density is very limited. Less than 1 mile of open roads are planned for closure.



Mechanical fuels reduction/timber harvest

The location of proposed mechanical fuel reduction units were selected for treatment considering the recommendations in the RESPEC report to reduce flammability of the conifer stands in the event of wildfire, to lower the severity of a potential wildfire, thereby lowering potential sediment produced in the watershed. In addition, stands treated alter the overall diversity of the forested stands, improving resilience in the event of a wildfire. Where feasible, treatment units were also selected to incorporate aspen treatments. Five larger units (2, 13, 14, 16, 18) on the map depict a “gross area to be treated” approach, wherein the individual treatment units (a through e, e.g.) in that area are shown with a possible location. Actual location may vary during sale layout to avoid wet areas or steep slopes or rock outcrops, but would approximate the location and size of the proposed treatment locations shown.

Timber product removal will occur in these units. Removal of that biomass will help achieve the purpose of this project by lowering the intensity and severity of future fires by removing total biomass. This is consistent with the project need of providing wood products commensurate with management emphases in the watershed.

Mechanical fuels reduction treatments proposed are consistent with Roadless Area Conservation Rule (RACR) roadless areas as they have been previously substantially altered. The two areas that were deemed previously substantially altered include a small area along Road 21 into Tie Hack Reservoir, before the campground, on the south side of the road, and what is called the Elgin Timber Sale area, represented by units 18 through 21 along Road 372. There is additional analysis of RACR implications elsewhere in the project record.

Acres of mechanical harvest and precommercial thinning summarized

Silvicultural treatment

Estimated Acres :

Clearcut 1215

Precommercial Thin 370

Shelterwood – Seed Cut or Overstory Removal 310

(Timber stand improvement thinning will occur after the shelterwood harvest on these units.)

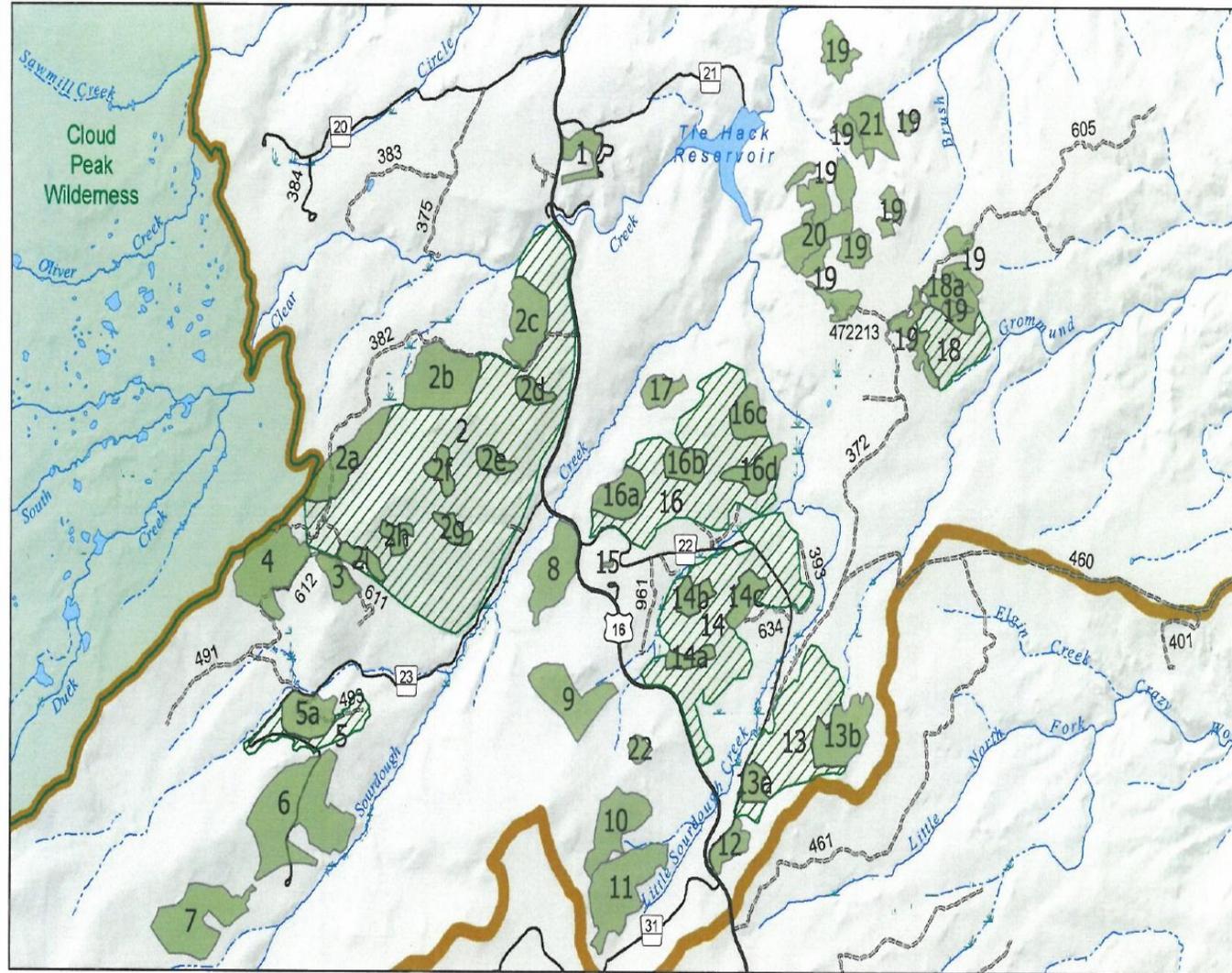
Group Selection 13

TOTAL ACRES CUT: 1908

Mechanical Timber Harvest Treatment Map

Dark green areas are Planned for clearcutting. Units 12, 13a, 13b, 6 and 7 Have been clear cut as of Summer of 2020 and 2021. Pictures Later in presentation.

Green slashed areas for Planned for pre-commercial Thinning and piling of slash, Pictures of this action later in Presentation.



Legend

- Proposed Areas of Mechanical Fuels Reduction; Approximately 1,848 acres
- Outer Extent (gross area) of Proposed Mechanical Fuels Reduction, Individual Units May Be Moved Within This Area
- Project Area
- Forest Road - Passenger Car
- Forest Road - High Clearance Vehicles
- US Highway 16
- Wilderness Boundary
- Bighorn National Forest Boundary
- Intermittent Stream
- Perennial Stream
- Lake/Pond/Reservoir
- Swamp/Marsh



Unit 13a
Clearcut
Along FR
22, Elgin
Park, road on
The south end.



June 29, 2015

Global Synthesis of Large Wildland Fires Shows They Are Ecologically Beneficial

Dominick A. DellaSala, Ph.D., Chief Scientist Chad Hanson, Ph.D., Ecologist
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Ashland, OR – 25 leading fire scientists from around the world released a new synthesis “*The Ecological Importance of Mixed-Severity Fires: Nature’s Phoenix*” published by Elsevier, a world-leading provider of scientific, technical and medical information products and services.

For the first time extensive documentation from around the world reveals that **forests and other plant communities need a variety of different types of fires, including severe ones, to rejuvenate over the long-term.** These findings are timely as Members of Congress propose to weaken environmental laws based on the **assumption that fires are damaging to forests, and logging is needed to reduce fire effects.**

According to Dominick A. DellaSala, Chief Scientist of the Ashland-based Geos Institute and co-editor, “This is the first global synthesis of the countless ecosystem benefits of large and severe fires. **Simply put, fire is to dry forests as rain is to rainforests, both are needed for vibrant forest ecosystems to remain that way.**”

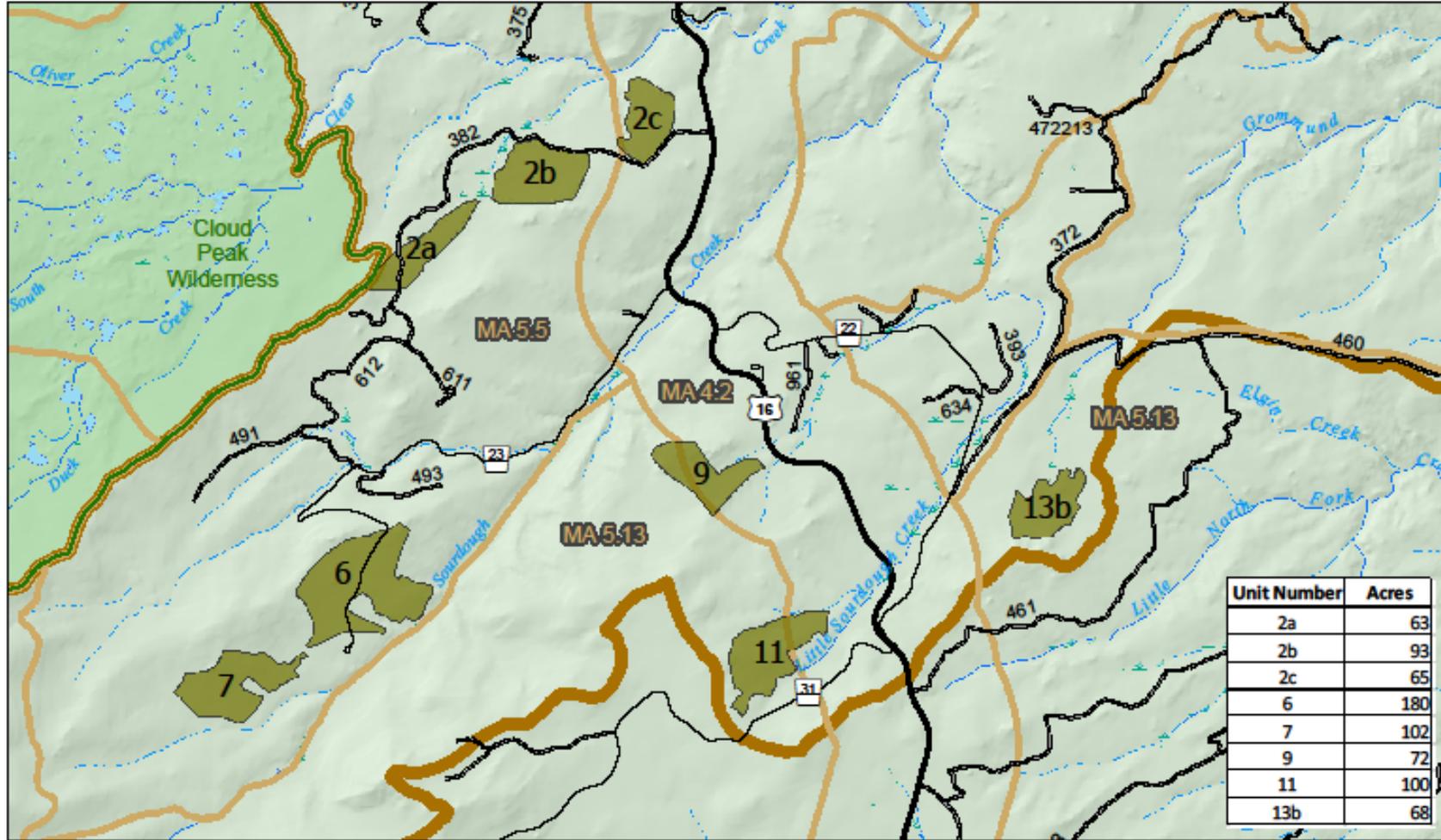
RESPEC report used examples of impacts from Wildfires in geologic and vegetation types unrelated to the Clear Creek watershed on the BNF. The use of those examples such as the Hayman fire **in ponderosa pine type and on decomposed granitic soils, erroneously heightens the publics' and city officials' concern about and desire for some management actions by the BNF** to maintain the water quality for the citizens of Buffalo. In addition, the **RESPEC report did not provide any estimates to quantify the amount of potential sediment which may be produced from a wildfire in the watershed?**

The RESPEC report states, "...is particularly vulnerable to wildfire" as shown on Page 1 of the Scoping notice. What does that mean? How did they reach that conclusion? Is that what WWDC wanted to hear? All wild landscapes are vulnerable to fire if weather conditions are dry enough.

RESPEC report estimates of sedimentation above Tie Hack Reservoir interpreted by Chris Williams, BNF hydrologist, May 2, 2018

The calculated mass for each reservoir is relatively small if you consider that a typical dump truck holds 10 or 12 tons, so not a lot impact from sediment volume for Tie Hack (46 tons) relative to the size of the reservoir. 46 tons would be 4 or 5 truckloads.

Proposed Clearcuts Over 40 Acres



Legend

Proposed Clearcuts of More Than 40 Acres

Forest Road - Passenger Car

Intermittent Stream

Lake/Pond/Reservoir

Management Areas

4.2 Scenery

Forest Road - High Clearance Vehicles

Perennial Stream

Swamp/Marsh

5.13 Forest Products

US Highway 16

Project Area Boundary

5.5 Dispersed Recreation and Forest Products

Wilderness Boundary



As of late Summer of 2021 clearcuts 6, 7 and 13b Were done. 2a, 2b, 2c, 9 And 11 remain To be cut.

Clearcut 13b from
Preceding map.
Located near FR 22,
Elgin Park Road.



Clearcut number
6 along FR 23,
Sourdough Road



Clearcut number 7
Just beyond the end
Of FR 23,
Sourdough
Road



Example of
Pre-commercial
Thinning along
FR 23, Sourdough
Road, summer of
2021.



Precommercial
Thinning along FR
23, Sourdough
Road, prior to
burning
Of hand piles.
Spacing of leave trees
About 15 to 20 feet
Apart. Summer of
2021.



Previous location
Of Precommercial
Thinning after the
Hand piles were
Burnt. The heat
from the burning of
the hand piles killed
the remaining
standing
Trees.



Another view of the
Same area as in
The previous slide.
A few years later and
Regeneration of the
Area is evident.
Photograph taken
Summer of 2021.



Bozeman Watershed Project Spills Bad Blood

By George Wuerthner

- Back in the Middle Ages, it was a common practice for "doctors" to bleed the "bad blood" from sick patients. If the patient survived, the doctors took credit for their recovery. If the patient died, well, obviously, not enough bad blood was removed.
- A similar logic drives the Forest Service thinning programs like the proposed Bozeman Watershed Project. The agency suggests the problem for communities like Bozeman is too much "fuel" (like bad blood) in the watershed. Like the doctors of old, the solution is to reduce the "bad" blood or thin the forest.
- The fundamental problem is that thinning the forest is MORE likely to increase the occurrence of high severity burns, not reduce it. Further, **one of the justifications for the logging proposal is to preclude sedimentation from entering the Bozeman water system. One of the most significant and most chronic sources of sedimentation across the West is from logging roads.**
- All large (high severity) fires are driven by weather-not fuel.
- This is a representative sample from scientists at the Missoula Fire Lab. **"Extreme environmental conditions. .overwhelmed most fuel treatment effects. . . This included almost all treatment methods, including prescribed burning and thinning ...** Suppression efforts had little benefit from fuel modifications."

Wuerthner article key points continued

- This view was echoed by the Congressional Research Service (CRS), which stated in a report to Congress “From a quantitative perspective, the CRS study indicates a very weak relationship between acres logged and the extent and severity of forest fires. ... the data indicate that fewer acres burned in areas where logging activity was limited.”
- Thinned forests also tend to get rapid regrowth of small trees, grass, and shrubs. It is these fine fuels that carry fires, not large tree boles—which is why you have snags left after a fire. The trees themselves seldom burn.
- The probability of a fire actually encountering a thinned parcel during the period when “fuels” are reduced is around 1% or less.
- It reduces carbon storage (logging releases much more carbon than a wildfire.)

Highlights added.

Buffalo Municipal Watershed Project: A Boondoggle

- Clear Creek has been the domestic water source for Buffalo since it has existed. There have been at least two large wildfires in the watershed since 1900. The Duck Creek burn in 1943 and the Lost Fire in 1988. Both of them covered more than 10,000 acres.
- How can over 1800 acres of vegetation treatment (read timber cutting) not increase the sedimentation the project is supposed to be preventing?
- For the past 20 years, the US Forest Service has been doing vegetation treatments nationwide in an attempt to reduce wildfire impacts. Studies of those treatments shows there is only a 10% chance the areas likely to burn will be treated.
- With just a 10% chance of treating the likely acres, the alleged benefit now costs more than 1000 times the actual costs Buffalo incurred from the Lost Fire.
- Taxpayers are getting taken for a ride.

Andrew Lloyd, WY Water Development Commission staff, was asked what the report analyzing the impacts to the Clear Creek watershed, completed by the consultant, RESPEC, cost? His estimate was between \$130,000 and \$150,000 dollars. That is ten times what the City of Buffalo spent nearly 30 years ago to remove the sediment from their intake in the spring of 1989 and 1990. No estimate on what the BNF is spending to prepare the documents to possibly treat some acres in the hopes of allegedly reducing the impact of wildfire in the Clear Creek drainage.

Develop a More Financially Efficient Alternative

This alternative is suggested in Forest Service Handbook 2409.18, chapter 32. It would not achieve the purpose and need. The financial efficiency (present net value of about a negative \$3.4 million) is due to the low value of wood products in this area combined with proposed actions that cost money to implement. No activities would occur if the objective was to have a positive financial present net value. Actions such as clearcutting (as opposed to thinning) and decommissioning some National Forest System roads are included to meet the purpose and need and improve the financial efficiency.

Cost comparisons of the Buffalo Municipal Watershed Project versus actual costs to the City of Buffalo after the 1988 Lost Fire

- After the Lost Fire of 1988 which burned over 10,000 acres in the Clear Creek Watershed, the City of Buffalo in the springs of 1989 and 1990 spent a total of approximately \$15,000 to clean out the water intake west of town.
- In 2017 the Wyoming Water Development Commission contracted with RESPEC for about \$150,000 to prepare a report favoring active vegetative management in the Clear Creek watershed to allegedly reduce the possibility of catastrophic wildfire in the municipal watershed. The report recommended cutting 1900 acres with 1200 acres of that recommended for clear cutting.
- The Bighorn NF estimated in their Environmental Assessment that treatments would cost from \$1000 to \$3000 per acre. The low estimate totals more than \$3,000,000. A high estimate by the staff of the Bighorn NF is \$6,000,000 to \$7,000,000.
- Research of past mitigation efforts to reduce wildfire effects shows them to be around 10% effective. That means a 1 in 10 chance of actually treating the acres which may be in a wildfire. Real costs if 10% effective are now \$30,000,000. A ratio of cost/benefit of 2000 to 1.

One more irony to this saga

- In the late 1990's there was a proposed sale in the Sourdough drainage.
- The average diameter of the trees was 7.1 inches diameter breast height (dbh).
- Sawtimber must be at least 7.0 inches dbh to be considered sawtimber.
- The sale was pulled after various groups challenged the Bighorn NF on the timber program.
- Only 250 acres of clear cuts were planned then versus 1215 acres now.

Billings Gazette

WYOMING

The Source

Section C
Friday, October 27, 2000

Bighorn timber sale withdrawn

Letter of law not followed on Sourdough sale

By JEFF TOLLEFSON
Gazette Wyoming Bureau

CODY, Wyo. — The U.S. Forest Service has withdrawn the proposed Sourdough timber sale on the Bighorn National Forest, according to environmental groups who,

along with a former agency silviculturalist, challenged the sale in court.

The timber sale involved 1.2 million board feet of timber and two to four clearcuts totaling up to 250 acres in the Clear Creek area southwest of Buffalo. The Wyoming Outdoor Council, American Wildlands and the Big Horn Forest Users Coalition argued in their lawsuit that the Forest Service failed to set a valid annual limit on the sustainable timber cut within the forest and

failed to monitor for "indicator species," such as elk and pine marten, in its environmental assessment.

The Forest Service says it pulled the sale because of deficiencies in its official record. The agency did not concede that it failed in its environmental studies.

"It was apparent to us that we probably did not have some stuff in the administrative record," Bighorn Forest Planning Officer Joel Strong said Thursday. "We are just

going to be taking a closer look at that and then determining where we want to go."

The Outdoor Council's Kelly Matheson said her group will continue to challenge all timber sales on the Bighorn National Forest until the Forest Service goes through a public process to set a valid maximum timber cut — known as an "allowable sale quantity," or ASQ — as required by federal law.

"If there are other timber sales offered and they are ille-

gal, we will challenge them. And they will be illegal until a valid (sustainable cut) is set," she said.

Strong confirmed that the agency must establish an ASQ but said the current forest plan sets that figure at about 15 million board feet.

Bob Damson, who worked for the Bighorn National Forest through 1992, said he joined the lawsuit to force the agency to set a new ASQ. He said that

Please see Sale, 11C