CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Dunham Creek 2 Irrigation Ditch Alternative Practice
Proposed Implementation Date:	July 2018
Proponent:	Tony Hulett
Location:	Section 30 Township 16 North Range 12 West
County:	Powell

I. TYPE AND PURPOSE OF ACTION

Tony Hulett has applied for a Streamside Management Zone (SMZ) Alternative Practice for approximately 4,000 feet on both sides of Dunham Ditch. Downstream of the project area this ditch forks, with one fork going into a reservoir. Therefore, this ditch segment is an Other Body of Water under the Streamside Management Zone Law. The applicant seeks an Alternative Practice to cut submerchantable trees and shrubs within the SMZ and to operate equipment to within 15 feet of the ordinary high water mark.

The primary purpose of this treatment is to protect the integrity of the ditch and facilitate maintenance. Additionally, within and adjacent to the SMZ, the project would, salvage harvest trees that have been killed by the mountain pine beetle or severely defoliated by the spruce budworm; and thin the timber stand to improve timber stand health and vigor and reduce the risk of stand replacing wildfire.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

No public scoping was involved regarding this Alternative Practice on private land.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

None.

3. ALTERNATIVES CONSIDERED:

Scope of Analysis and Definition of Project Area: The following document describes conditions within and nearby the Dunham Creek Ditch and describes the larger irrigation system which includes the Dunham Creek Ditch. However, the project area is defined as those portions of the Dunham Creek Ditch SMZ on which Tony Hulett has requested and Alternative Practice. Potential effects analyzed under the action and no action alternatives are limited this project area. Ongoing forest operations exclusive of the Alternative Practice request are considered part of base line conditions.

No Action Alternative: Timber harvest would likely occur and meet all SMZ rules. Most merchantable trees within 30 feet of the ditch would likely be harvested. During the commercial harvest shrubs and submerchantable trees would be protected and equipment operation would follow rule 36.11.304. Following harvest, non-commercial cutting, outside the jurisdiction of the SMZ law, would likely occur.

Action Alternative: Under this alternative, an Alternative Practice to not protect and retain submerchantable trees and shrubs to the extent practicable and to operate equipment within the SMZ would be granted. The primary purpose of this Alternative Practice is to remove trees and shrubs that are negatively impacting the ditch and risking the integrity of the ditch, therefore all merchantable and sub-merchantable trees and shrubs on the

fill slope of the dich and within 10 feet of the upper bank would be permitted to be cut. The following mitigations would be a part of the Alternative Practice.

- On the downhill side of the ditch equipment may operate up to the toe of the ditch fill slope.
- On the uphill side of the ditch equipment may operate to within 15 feet of the ordinary high water mark on slopes less than 20 percent. On slopes greater than 20 percent, equipment may not operate closer than 25 feet to the ordinary high water mark unless on designated trails approved by the DNRC prior to use. This boundary must be flagged and approved prior to operations beginning.
- Commercial tree harvest shall not occur on slopes beyond 20 percent. Shrub and submerchantable material may be removed on these areas.
- Harvest shall be done during dry or frozen soil conditions.
- Beyond the fill slope and 10 feet from the upper bank the healthiest trees of all size classes would be retained at a spacing of approximately 15 - 25 feet between stems.
- Healthy trees that are on the bank, fillslope, or within 10 feet of the cutslope, that are not a risk to the integrity of the ditch, would be retained.
- SMZ understory shrubs and herbaceous plants which do not impede the ditch would be retained to the extent practicable.
- No excavation or pulling of roots shall occur on the bank or fillslope to maintain ditch integrity.
- No material may be cast into the stream channel. If branches or materials do enter the stream channel, they will be required to be removed immediately.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Soils in the project area are gravelly loams on slopes ranging from approximately 5 – 40 percent. Generally, these soils are resistant to compaction. They have a varying rutting hazard ranging from slight to severe. Numerous adjacent wetlands exist within the project area and it is these areas that are most susceptible to adverse soil impacts. Under either alternative, operations would only take place under dry or winter conditions. Under the action alternative any disturbed areas would be grass seeded and installation of erosion control measures such as slash-filter windrows would be required. Considering the operation restrictions and mitigation measures, minimal direct, indirect or cumulative impacts would be expected under either alternative.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Is it possible that implementing this alternative practice would impact the integrity of the SMZ and these specific functions?

-Ability to act as an effective sediment filter.
-Ability to provide shade to regulate stream temperature.
-Protection of stream channel and banks.
-Ability to provide large woody debris for eventual recruitment into the stream to maintain riffles, pools, and other elements of channel stability.

Existing Condition

In the project area the Dunham Creek ditch is constructed across a slope ranging in steepness from 5 – 25 percent. Numerous large and small trees are growing out of the ditch cut slope and fill slope. These trees are utilizing water from the ditch. In some instances, trees growing out of the fill slope are causing some instability to

it. Downstream from the project area the ditch goes through an enclosed siphon to move the water uphill, then the ditch forks with one fork going into James Lake, which is a reservoir and the other fork continuing on and being completely used for irrigation. The outlet of James Lake is a headgate to the Barbour Irrigation Ditch that does not return flow to any other bodies of water. See Attachment A-1 for an overview map of the project area and ditch segment.

In the project area the area adjacent to the ditch is mostly heavily forested with trees of all sizes growing out of the ditch banks. Forest health in the area is suffering due to overstocking, mountain pine beetle, and spruce budworm. Downstream from the project area the ditch goes through forestland, native grassland, and irrigated agricultural fields.

Potential Environmental Effects

No Action Alternative: The SMZ law would be followed during commercial activities therefore it is unlikely there would be impacts to water quality, quantity, distribution or to the functionality of the SMZ during commercial activities. However, after commercial activities the ditch owner could remove trees and shrubs to facilitate ditch maintenance and increase water yield.

Action Alternative:

Under the action alternative an Alternative Practice would be granted to allow the ditch owner to cut commercial and sub-merchantable trees and shrubs in the SMZ and to utilize equipment within the SMZ to facilitate this thinning. The ditch owner would be required to follow mitigation measures outlined in this document. Due to the reduction of trees adjacent to the ditch there could be a minor increase in water yield within the irrigation ditch.

-The ability of the SMZ to act as an effective sediment filter would be maintained as no additional ground disturbance would be expected beyond the no-action alternative.

-The ability of the SMZ to provide shade would be maintained. This is due to the retention of more large trees than is normally required by the SMZ law.

-Mitigations measures would provide protection of the stream channel and banks at the same levels as the no action alternative. The operator may cross the stream as a pre-approved alternative practice in accordance with MCA 36.11.304(3). This could result in minor impacts to irrigation ditch channel and banks.

-The potential recruitment of large woody debris would be maintained as more large trees than is legally required under the SMZ law would be retained.

-The ability of the SMZ to promote floodplain stability would not be impacted.

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

Slash created from the project would need to be disposed of in accordance with all applicable laws. Impacts would be the same under either alternative and would be expected to be minor.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Existing Condition

The SMZ is a heavily stocked forest with multiple ages and size classes. Douglas-fir, western larch and lodgepole pine are represented in the stands overstory. Many lodgepole pine were killed by the recent bark

beetle epidemic, fortunately this infestation has subsided. Spruce budworm was active in the stand which caused defoliation and even mortality in Douglas-fir trees of all sizes.

Potential Environmental Effects

No Action: Harvest would follow the SMZ law. It is likely all merchantable trees would be harvested from within 30 feet of the irrigation ditch. Non-merchantable material would be retained regardless of tree health or vigor.

Action Alternative: Commercial harvest and sub-merchantable thinning would take place within the SMZ. Thinning would focus on salvaging trees that have been killed by the pine beetle or defoliated by the budworm and removing trees that are suppressed, overtopped, or have poor form and vigor. Western larch and Douglas-fir would be the preferred species to retain. The healthiest trees of all size classes would be retained at a spacing of approximately 15 – 25 feet between stems. No roots shall be disturbed as to retain bank stability. Work shall be done under dry or frozen conditions. Throughout the SMZ understory shrubs and herbaceous plants would be retained to the extent practicable although shrub removal is permitted if the material is impeding the ditch. It is expected this thinning would result in a healthier timber stand and individual trees that are healthier and faster growing. Following thinning, the stand would more closely resemble historic conditions and be more resilient to insects, disease and catastrophic wildfire.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Terrestrial and Avian Life and Habitats:
The area is well used by numerous terrestrial and avian species including grizzly bears. On field visits no nests or dens of any animals were discovered. Considering that under the no action alternative the landowner could alter stand conditions similar to under the action alternative effects to terrestrial and avian species would be expected to be minor under either alternative.

Aquatic life and habitats:
The headgate of the ditch has a fish screen to ensure fish are not utilizing the ditch. The volume and timing of water in irrigation ditch is dependent on the needs of the ditch owner and the ditch is only used seasonally. The action alternative is a minor action compared to other ditch maintenance that is allowed under Montana laws and regulations. Only minor impacts to aquatic life and habitat would be expected under either alternative.

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9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Grizzly bears are known to use the project area. Effects would not likely differ substantially under either alternative.

There are isolated and adjacent wetlands in the project area. Within these wetlands, no deviation from standard forestry BMP's or the SMZ law is requested under either alternative. Effects to wetlands would be expected to be minor under either alternative.

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

No cultural resources have been identified within the project area. No impacts would be expected under either alternative.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

Impacts to aesthetics would be the same under either alternative and would be perceived differently by different people. However, the treatment would be similar to other treatments that have recently taken place nearby and would be considered minimal to moderate by most people.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

None.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

None.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

None.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

None.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

Under either alternative the project would be expected to provide a 10 or fewer short term jobs.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

None.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

None.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

None.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

The project area is private property and public use is controlled by the landowner. No effects would be expected under either alternative.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

None.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

None.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

None.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

None.

EA Checklist Prepared By:	**Name:**	Brad French	**Date:**	7/2/2018
	Title:	Service Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

Following a review of the document as well as the corresponding Department policies and rules, the Action Alternative has been selected because it meets the intent of the project objectives outlined in Section I – Type and Purpose of Action. This includes but is not limited to the need to remove trees that are negatively impacting the ditch and risking the integrity of the ditch.

26. SIGNIFICANCE OF POTENTIAL IMPACTS

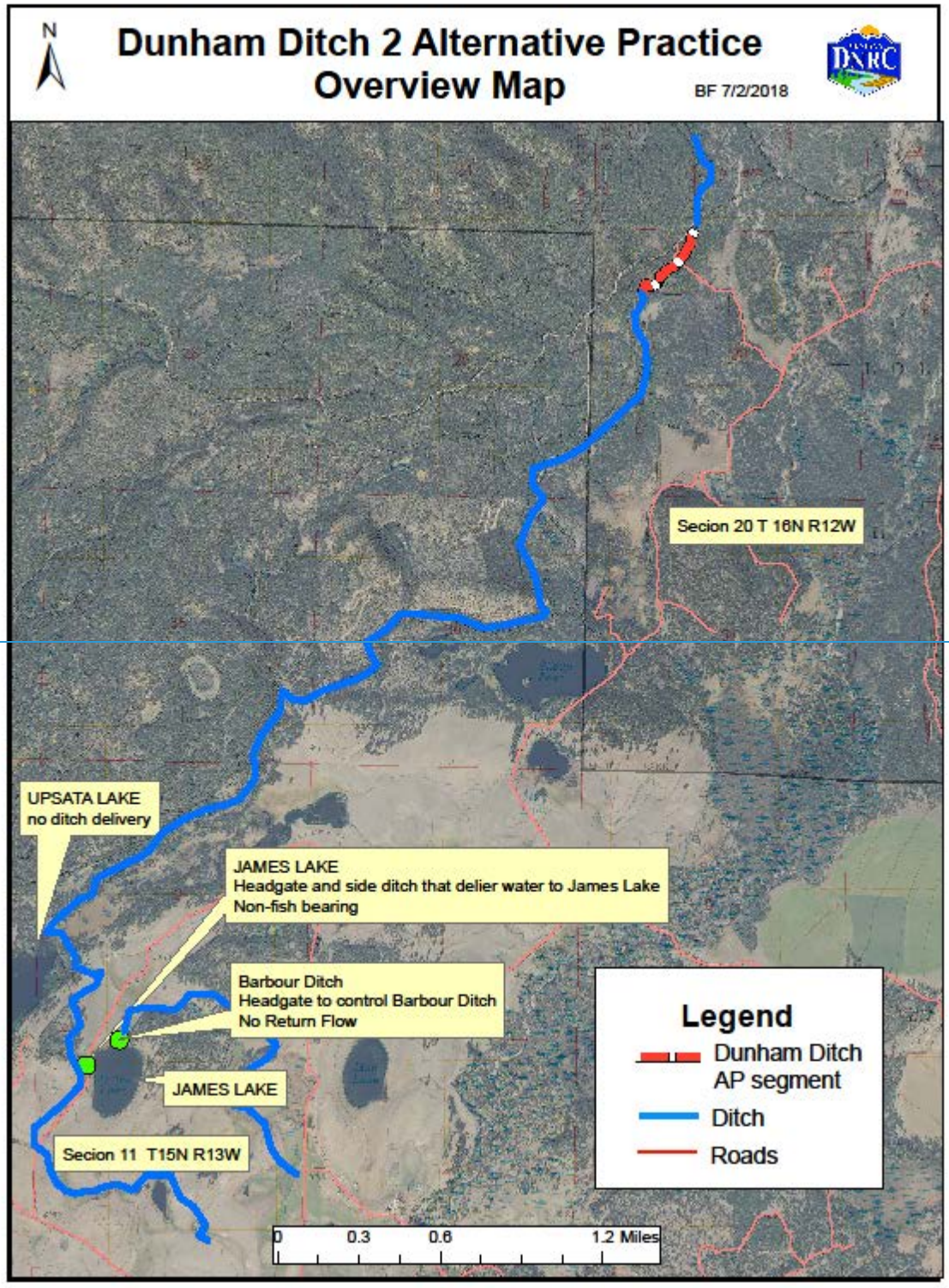
I find that the Action Alternative will not have significant impacts for the following reasons:

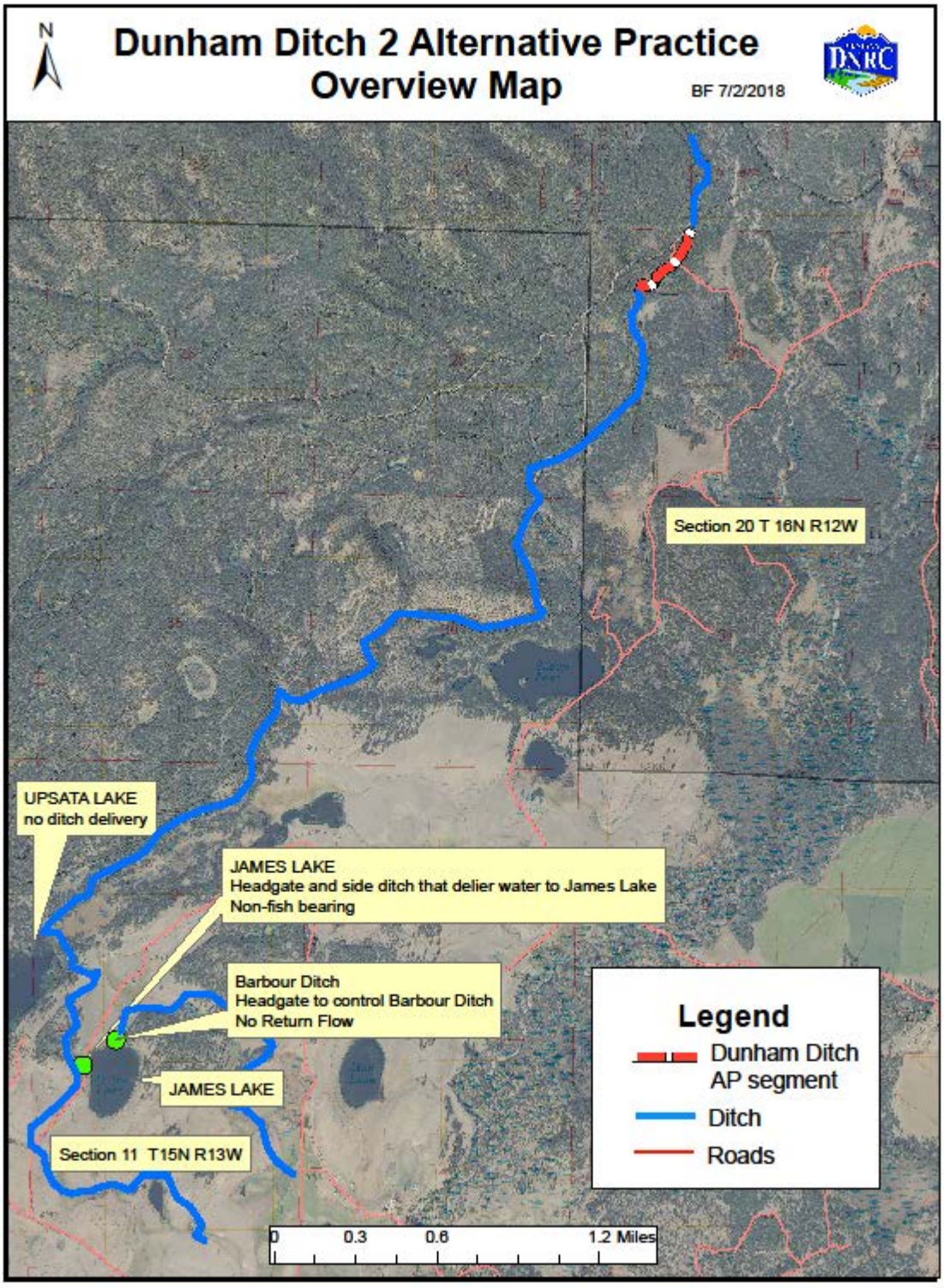
- The Action Alternative is in compliance with the existing laws, rules, policies, and standards applicable to this type of proposed action.
- Appropriate mitigations have been proposed to minimize potential impacts to resources such as vegetation, soil, and water quality.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

EA Checklist Approved By:	**Name:** Kristen Baker-Dickinson **Title:** Unit Manager, Clearwater		
Signature: */s/* *K. Baker-Dickinson*		**Date**:	7/2/2018


Dunham Ditch 2 Alternative Practice
Overview Map
BF 7/2/2018
N
DNRC
Secion 20 T 16N R12W
UPSATA LAKE
no ditch delivery
JAMES LAKE
Headgate and side ditch that delier water to James Lake
Non-fish bearing
Barbour Ditch
Headgate to control Barbour Ditch
No Return Flow
JAMES LAKE
Secion 11 T15N R13W
Legend
Dunham Ditch
AP segment
Ditch
Roads
0
0.3
0.6
1.2 Miles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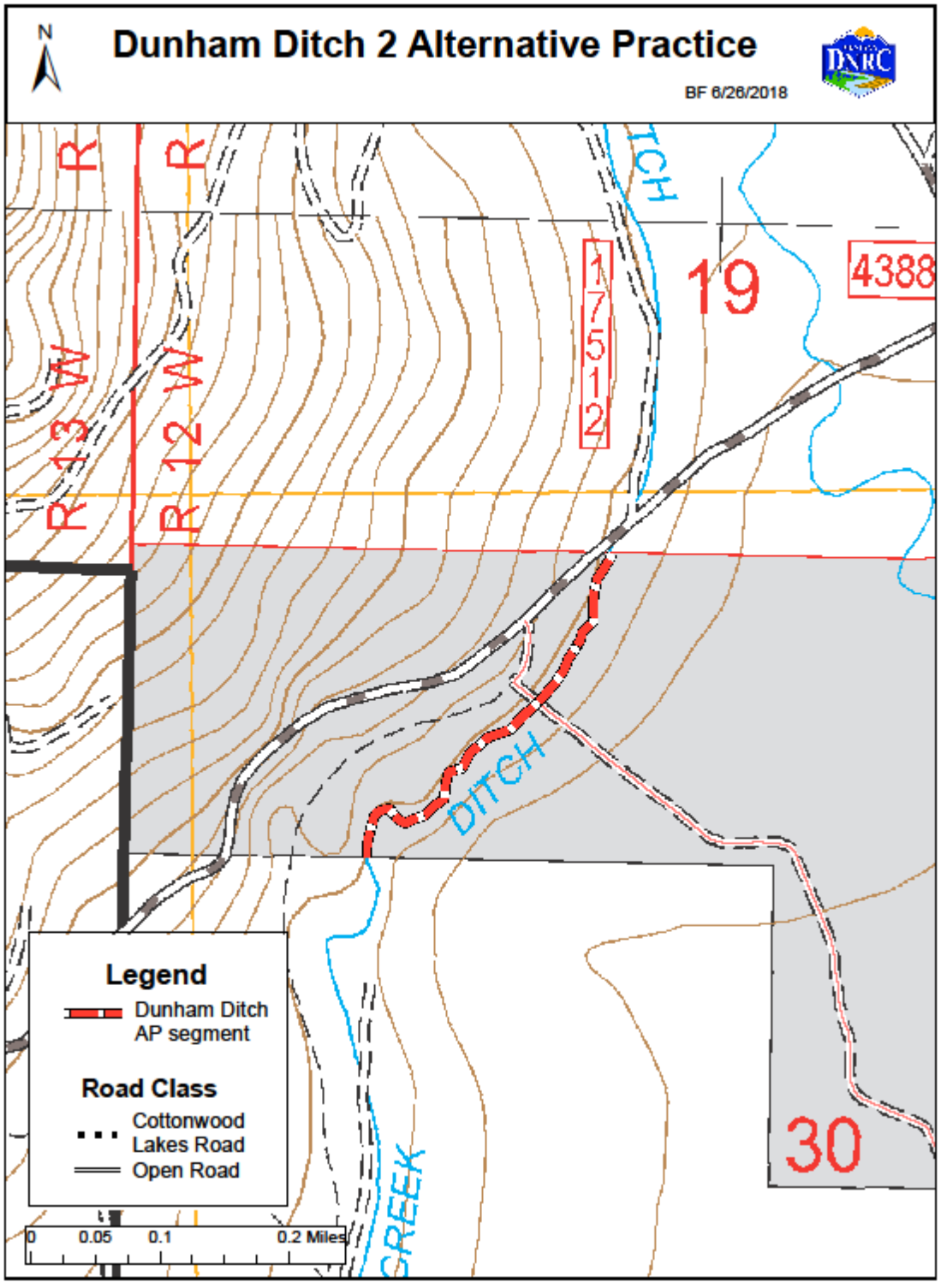
Section 11 T15N R13W
Legend
Dunham Ditch
AP segment
Ditch
Roads
0
0.3
0.6
1.2 Miles


Dunham Ditch 2 Alternative Practice
BF 6/26/2018
N
R 13 W
R 12 W
19
4388
30
DITCH
CREEK
Legend
Dunham Ditch AP segment
Road Class
Cottonwood Lakes Road
Open Road
0 0.05 0.1 0.2 Miles