

# NATURAL RESOURCES AND CONSERVATION



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## STATE OF MONTANA

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### FINAL - Finding of No Significant Impact ENVIRONMENTAL ASSESSMENT CHECKLIST

<b>Project Name:</b>	Dawson Irrigation Pivot Installation
<b>Proposed Implementation Date:</b>	Winter 2022/2023 – or upon funding approval and supplies
<b>Proponent:</b>	John Dawson and Sons Ranch, LLC
<b>Location:</b>	Sections 30 & 31, Township 3N, Range 2W
<b>County:</b>	Jefferson

#### I. TYPE AND PURPOSE OF ACTION

John Dawson and Sons Ranch, LLC (herein, the proponent) is proposing to use Montana Department of Natural Resources and Conservation (DNRC) Conservation and Resource Development (CARDD) private loan funding to develop previously unirrigated land into irrigated agricultural land.

The proponent proposes to develop its current prairieland to plant alfalfa and hay, which would serve as a forage species for cattle, or other livestock. The project implementation would include power development for pump, procuring material, site prep for installation of mainline, installing mainline, install pivot, and cleanup.

The property is surrounded on nearly all sides by hundreds of acres of private, agricultural properties, with Montana State Trust Lands to the immediate southwest of the project area of interest. The property is located at Sections 30 and 31, Township 3N, Range 2W and approximately seven and a half miles northeast of the town of Cardwell, Jefferson County, Montana. The proponent proposes to begin implementation Winter 2022/2023, or upon funding approval and supplies.

Responsibly irrigating the property will reduce water waste, prevent soil erosion, reduce fuel for fires, reduce noxious weed growth, and improve wildlife habitat (including fowl, deer and honeybees).

DNRC will approve the loan to provide funding for the Dawson Irrigation Pivot Installation Project.

#### II. PROJECT DEVELOPMENT

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

*Provide a brief chronology of the scoping and ongoing involvement for this project. List number of individuals contacted, number of responses received, and newspapers in which notices were placed and for how long. Briefly summarize issues received from the public.*

The proponent did not submit letters of support or provide public comment. The proposed action is occurring on their private lands, and it is unknown to what extent their water development may

impact surrounding lands.

DNRC will post a draft of this Environmental Assessment for public comment for two weeks on the DNRC – Public Notices webpage. In addition, the MEPA Coordinator will provide a letter of notice for public comment to the applicant and send notice to applicable/affected entities.

For any comments submitted by the public, the MEPA Coordinator will review and work with the Grant Manager and applicant to adequately address those comments.

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

*Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open Burning Permit.*

The proposed project area (POU) will be a new irrigated area designated in the water right(s) or outside the area historically irrigated with the existing water right and will likely require an authorization from DNRC to change the water right.

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**3. ALTERNATIVE DEVELOPMENT:**

*Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why. Include the No Action alternative.*

1) Alternative 1 (*Preferred Alternative*): Install an electric pump center pivot

- a. Irrigation sprinkler pivots are known have high water use efficiency as they distribute water more uniformly while using less water overall. This more efficient distribution increases crop production but allows for less manual labor compared with flood irrigation (e.g., reduces the need to either open flood gates or distribute piping). Because pivots can precisely control the amount of water on a field, the soil moisture also increases. This is an important consideration for harvest and second cutting.
- b. The pipeline will cause some initial soil disturbance due to construction and digging.
- c. This option would be more favorable for instream flows as compared to flood irrigation, because there is no ditch loss or evaporation in the pipeline. Thus, more water would be returned to the stream.

2) Alternative 2: Flood irrigation

- a. Flood irrigation can be advantageous in areas where the topography is relatively flat or gentle slopes that can be leveled<sup>1</sup>.
- b. Flood irrigation techniques are more suited to fine soil types with low infiltration rates.
- c. Flood irrigation techniques typically have lower efficiency and therefore more water

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<sup>1</sup>Brown, P.W. 2008. Flood vs. pivot irrigation for forage crops: what are the advantages and disadvantages? Proceedings, 2008 California Alfalfa & Forage Symposium and Western Seed Conference, San Diego, CA, 2-4 December, 2008.

is required to adequately provide water for crops. Thus, irrigators often use their entire water rights for application and leave little water for instream use.

3) Alternative 3: No Action

- a. The applicant would continue to divert water into a ditch for flood irrigation, which would mean continued increased labor and labor costs, and they would not irrigate a new potentially crop area. Crop production would also continue to be low or even decrease with the inefficient distribution of irrigated water.
- b. This solution does not meet the goals of the applicant in terms of increasing crop production and decreasing labor and associated labor costs.

### 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 direct, indirect, and cumulative effects to soils.*

The location of the proposed area is within Cenozoic sedimentary deposits, which contain largely Quaternary alluviums and alluvial fan geologic units<sup>2</sup>. DNRC used the NRCS Web Soil Survey mapping application and identified Sappington-Amesha gravelly clay loams (60.3% of proposed area; 2 to 8% slopes) and Sappington-Amesha loams (39.2% of proposed area; 0 to 2% slopes; see attached NRCS Soil Report, date accessed: 10/24/2022). The Geohrock-Crago very cobbly loams are considered well-drained and nonsaline to very slightly saline. The Sappington-Amesha complex 0 to 2% slopes are considered farmland of statewide importance, well-drained, and nonsaline to very slightly saline. The Sappington-Amesha complex 2 to 8% slopes are farmland of local importance and well-drained.

Proposed Alternative – Potentially minor, short-term, adverse impacts to the soils during the construction of the mainline. Cumulative adverse impacts may occur with the future pivot installation and the tire tracks associated with the pivot wheels.

No Action – There will be no impacts to the project plot.

#### 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 direct, indirect, and cumulative effects to water resources.*

The applicant is proposing to use their acquired water rights from the Boulder River. The Boulder River has a mean annual flow ranging from 48.2 ft<sup>3</sup> s<sup>-1</sup> (recorded in 2000) to 272.20 (recorded in 2011; USGS 06033000 Boulder River near Boulder MT gaging station; date accessed: 10/25/2022). The Montana Fish, Wildlife and Parks (FWP) operated an instream flow gaging station at the Boulder River near the Cutoff Road near Cardwell, Montana during the irrigation season periods from 2018 to 2021. The table summarizes the mean discharge during the period of record (Table data from Montana DNRC StAGE – Stream and Gage Explorer; Boulder River at Cutoff Rd nr Cardwell – 41E 33880; date accessed: 10/24/2022):

<sup>2</sup>MacLaurin, C., Mahoney, J.B., Guy, A., Forgette, M., Kjos, A., Wittkop, C., Kohel, C., Balgord, E., Barber, B., and Ihinger, P.D. 2010. Geologic map of the Dunn Creek, 7.5' quadrangle, west-central Montana. EDMAP 9, scale: 1:24,000.

<i>Period of Record</i>	<i>Average Flow (ft<sup>3</sup> s<sup>-1</sup>)</i>
7/20/2018 to 11/5/2018	50.6
7/11/2019 to 10/26/2019	67.7
7/23/2020 to 10/21/2020	20.4
6/23/2021 to 10/26/2021	4.6

The Boulder River is within the Upper Missouri River Basin and part of the Missouri Headwaters watershed (DEQ Water Quality Standards Attainment Record; 2020). Montana Department of Environmental Quality (DEQ) lists the Boulder River as a class B-1 stream, or those waters which are 'are to be maintained suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.'

Groundwater depths in the immediate project area are relatively shallow, ranging from 120 to 30 ft in depth (static water level; Montana Bureau of Mines and Geology, Groundwater Information Center (GWIC) mapping application - <http://mbmg.mtech.edu/mapper/mapper.asp?view=Wells&>; date accessed: 10/25/2022).

*Proposed Alternative* – Potentially adverse, cumulative, impacts to the quantity, or distribution of water as the proponent would be using their water rights directly from the Boulder River. The Missouri River basin overall is experiencing increasing drought conditions. There are generally beneficial impacts to the water quantity and quality as installing a center pivot generally provides a more uniform application of water than flood irrigation, in turn producing less irrigation runoff, and subsequently any excess sediment or nutrients/pathogens.

No Action – No impacts to the supply, quality, or distribution of water as the project proponent would not implement an irrigated cropland area.

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## **6. AIR QUALITY:**

*What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.*

The project area is not listed as impaired in air quality particulates per the Montana DEQ Air Quality Nonattainment Status list (Source: Montana DEQ Air Quality Website visit).

*Proposed Alternative & No Action* – No impact to surrounding air quality. If there are any air quality impacts associated with construction, these impacts will likely be minor and short-term.

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## **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 direct, indirect, and cumulative effects to vegetation.*

The project area is primarily within private, Big Sagebrush Steppe and Rocky Mountain Lower Montane, Foothill, and Valley Grassland (at least >99% drawn area of interest; Montana Natural Heritage Program Map Environmental Summary Report – date retrieved 10/21/2022). Cultivated cropland and low intensity residential/roads make up much of the surrounding area, with minimal Northern Rocky Mountain Lower Montana Riparian Woodland and Shrubland making up the

remainder of the land cover types for the drawn area of interest. There are two plant Species of Concern that may occur in the project area, the Parry's Fleabane (*Erigeron parryi*) and Silver Bladderpod (*Physaria ludoviciana*; Montana Natural Heritage Program Map Plant Species of Concern by Township and Range – date retrieved 10/25/2022).

*Proposed Alternative* – Potentially adverse, long-term impacts as the proponent will plant the current native grassland into a cultivated cropland area, reducing any potential beneficial habitat for native plant species. However, there may be beneficial impacts as targeted crop production may in turn protect sensitive or fragile plant species by reducing extensive erosion associated with grazing.

*No Action* – The local grassland community will not be significantly impacted if there was no change to the environment.

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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 direct, indirect, and cumulative effects to fish and wildlife.*

The project area is primarily within private, Big Sagebrush Steppe and Rocky Mountain Lower Montane, Foothill, and Valley Grassland (at least >99% drawn area of interest; Montana Natural Heritage Program Map Environmental Summary Report – date retrieved 10/21/2022). Cultivated cropland and low intensity residential/roads make up much of the surrounding area, with minimal Northern Rocky Mountain Lower Montana Riparian Woodland and Shrubland making up the remainder of the land cover types for the drawn area of interest. There are two plant Species of Concern that may occur in the project area, the Parry's Fleabane (*Erigeron parryi*) and Silver Bladderpod (*Physaria ludoviciana*; Montana Natural Heritage Program Map Plant Species of Concern by Township and Range – date retrieved 10/25/2022).

The project area does not fall within an Executive Order – General/Priority habitat area for Sage Grouse, and therefore will not likely impact sage grouse habitat (DNRC Montana Sage Grouse Habitat Conservation Map). The project area does not appear to be impacting any Federal crucial and/or critical habitat areas; <https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77>) however, there have been Golden Eagle (*Aquila chrysaetos*) and Little Brown Myotis (*Myotis lucifugus*) observed in the nearby vicinity of the project area. Golden Eagle fall under the Migratory Bird Treaty Act. The region is in the Pacific Flyway for migratory birds (Montana Fish, Wildlife and Parks, Migratory Bird Flyways web mapping application. Date Accessed: 10/25/2022).

*Proposed Alternative* – Potentially adverse, long-term impacts as the proponent will plant the current native grassland into a cultivated cropland area, reducing any potential beneficial habitat for native plant species. However, there may be beneficial impacts as targeted crop production may in turn protect sensitive or fragile plant and animal species by reducing extensive erosion associated with other equine grazing and movements.

*No Action* – No impact to terrestrial, avian, or aquatic life and habitats.

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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 direct, indirect, and cumulative effects to these species and their habitat.*

DNRC used the National Wetlands Inventory (NWI) website to determine if wetlands were present within the lands adjacent to the project location (map attached in this assessment). This search indicated there are wetlands present within one (1) mile of the proposed project area.

There are 10 species of concern listed as potentially using the area as viable habitat. (Source: Montana Fish, Wildlife, and Parks FishMT; Montana Natural Heritage Program Species of Concern Report – date accessed 10/25/2022). DNRC also used the U.S. Fish and Wildlife Service IPaC tool to generate a resource list summarizing any endangered or threatened species that are known or expected to be near the project area. The IPaC list generated four (4) Federally listed species as potentially occurring in the greater project area: the Canada Lynx (*Lynx canadensis*), Grizzly Bear (*Ursus arctos horribilis*), North American wolverine (*Gulo gulo luscus*), and Monarch Butterfly (*Danaus plexippus*; USFWS IPaC report. Date accessed: 10/26/2022).

*Proposed Alternative* – Potentially minimal beneficial and adverse impacts as the project would install a pivot on previously open ground, which may serve as beneficial habitat in its current state. However, the planting of hay and alfalfa may provide some habitat cover. The listed species mentioned above are not likely using the area as human activities likely cause avoidance of use by these species. The wetlands in are not within the immediate vicinity of the proposed location and are not likely to be impacted given the distance and usage of the project area.

*No Action* – Likely no impact to current unique, endangered, or fragile species.

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## **10. HISTORICAL AND ARCHAEOLOGICAL SITES:**

*Identify and determine direct, indirect, and cumulative effects to historical, archaeological or paleontological resources.*

The project area is primarily on private, grasslands and cropland with no known historic or archeological resources in the area.

*Proposed Alternative* – No impact is expected as there have been no historic or archaeological resources identified in the proposed project area; however, given there has never been a SHPO survey, it is unknown if there are potential cultural resources that could be disturbed while installing the pipeline. In addition, using a pivot system creates increased crop production, which could obscure other cultural resources. If previously unknown cultural or paleontological materials are identified during project related activities, the DNRC grant manager will be notified, and all work will cease until a professional assessment of such resources can be made.

*No Action* – No impact to historical or archaeological sites.

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## **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 direct, indirect, and cumulative effects to aesthetics.*

The project area is on rural private property which is comprised primarily of cultivated cropland and/or Big Sagebrush Steppe and Rocky Mountain Lower Montane, Foothill, and Valley Grassland. In addition, the project area is approximately seven and a half miles northeast of the town of Cardwell, Jefferson County, Montana, and well outside more populated, residential areas.

*Proposed Alternative* – No impact is expected to visual quality, nor will the project cause nuisance (e.g., glare, fumes) as the proposed area is on private lands.

*No Action* – no impact to aesthetics.

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**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 direct, indirect, and cumulative effects to environmental resources.*

The project area is primarily on private pastureland and will be developing future pivot irrigation.

*Proposed Alternative* – Potentially adverse impacts as using the pivot would increase the demand for energy or gas, depending on the proponent’s decision for using either power source. In addition, there would a demand on water resources.

*No Action* – There would continue to be a demand on land resource use with the continued equine grazing of the proposed area.

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**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.*

- Project proponent provided their recent water rights application/acquisition for the new use.

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<b>IV. IMPACTS ON THE HUMAN POPULATION</b>
<ul style="list-style-type: none"><li>• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i></li><li>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i></li><li>• <i>Enter "NONE" If no impacts are identified or the resource is not present.</i></li></ul>

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**14. HUMAN HEALTH AND SAFETY:**

*Identify any health and safety risks posed by the project.*

The project implements floodplain irrigation on private crop- and pastureland.

*Proposed Alternative* – Potentially beneficial as the project proposes to use a pivot irrigation system controlled by either a remote application or going to the pivot point to start the pivot. The pump control will be wired to automatically start from the pivot point (or remote control) as well as shut off the pump if inadequate pressures are observed. The operator selects the depth of the required application or the speed, verifies directions, and presses start.

*No Action* – No impact to human health and safety.



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**15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:**

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

The project is on rural grazing and agricultural land and the project would propose to irrigate 115 acres out of their total 4400 acres for hay and alfalfa production. As of 2021, the national average price for all hay was \$186 per ton, hay (excluding alfalfa) was \$147 per ton, and alfalfa was \$206 per ton (USDA Crop Value 2021 Summary Report). The total production of hay (excluding alfalfa) in 2017 for Jefferson County was 14, 517 tons and for alfalfa in 2018 it was 32,200.

*Proposed Alternative* – Potentially beneficial as the pivot increases both water efficiency and distribution. The increase in water efficiency and distribution will likely produce more alfalfa and thus more revenues. The proponent estimates approximately 720 tons of hay from their proposed fields, which with the 2021 price estimate for all hay of \$186 per ton, the proponent could likely produce an estimated \$133,920 with their proposed expanded operation.

*No Action* – The project proponent will continue to use floodplain irrigation for their current crop production, which provides less water efficiency and distribution is poor. The poor distribution may prove additionally detrimental during drought, due to excessive evaporation or other natural loss, and thus significantly impacting crop production.

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**16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:**

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

The landowners (applicant) install and maintain the current infrastructure on the farmlands.

*Proposed Alternative* – Potentially beneficial, short-term impact as the installation would be performed by local contractors. In addition, the additional production of hay and alfalfa may create more transportation need.

*No Action* – No impact to quantity and distribution of employment.

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**17. LOCAL AND STATE TAX BASE AND TAX REVENUES:**

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

Current value from the applicant's grazing is approximately \$12,165 (Montana Cadastral Ag/Forest Land value estimates, <https://svc.mt.gov/msl/mtcadastral/>. Date accessed: 10/26/2022). The taxable value of the land and buildings owned by the applicant on the proposed project area appear to have been \$162,649 in 2021 and \$155,725 in 2022 (Montana Property Assessment Division, <https://svc.mt.gov/dor/property>).

*Proposed Alternative* – Potentially beneficial as the proposed alternative will provide more efficient water delivery and distribution, thus increasing crop production. Given the crop product (hay and alfalfa) could be sold within either Cardwell, Boulder, or the greater Bozeman area (see attached application), there is likely local and state revenue benefit through the selling of hay for livestock.

*No Action* – No impact is expected to local and state tax base and tax revenues.

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**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 direct, indirect, and cumulative effects of this and other projects on government services*

DNRC does not expect an impact to governmental services as the project would occur entirely on private pastureland.

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**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.*

DNRC does not expect an impact to locally adopted environmental plans or goals as the project would occur entirely on private pastureland; however, more efficient water application does benefit the objectives outlined in the 2015 State Water Plan issued by the DNRC.

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**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 direct, indirect, and cumulative effects to recreational and wilderness activities.*

DNRC does not expect an impact to access or quality of recreational areas as the project would occur entirely on private pastureland and is not located near any publicly accessed areas.

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**21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:**

*Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.*

DNRC does not expect an impact to density or distribution of population or housing as the project would be converting private pasture to irrigated cropland and would not be building any additional housing.

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**22. SOCIAL STRUCTURES AND MORES:**

*Identify potential disruption of native or traditional lifestyles or communities.*

The proposed area is surrounded entirely by cultivated cropland and agricultural lifestyles.

*Proposed Alternative* – Potentially beneficial as the project applicant proposes to convert pastureland to cropland, following the same trend as the surrounding area.

*No Action* – No impact to social structures.

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**23. CULTURAL UNIQUENESS AND DIVERSITY:**

*How would the action affect any unique quality of the area?*

Similar to the 'Archaeological Resources' section above, DNRC does not expect any impacts to cultural

uniqueness or diversity.

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**24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:**

*Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.*

DNRC does not expect additional impact to other social or economic circumstances.

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**25. DRINKING WATER AND/OR CLEAN WATER**

*Identify potential impacts to water and/or sewer infrastructure (e.g., community water supply, stormwater, sewage system, solid waste management) and identify direct, indirect, and cumulative effects likely to occur as a result of the proposed action.*

DNRC used the Montana DEQ data mapping application and did not find any drinking water and/or clean water services in the immediate area. In addition, given the applicant proposes to use the water for irrigation purposes, DNRC does not expect any impacts to drinking water and/or clean water infrastructure.

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**25. ENVIRONMENTAL JUSTICE**

*Will the proposed project result in disproportionately high or adverse human health or environmental effects on minority or low-income populations per the Environmental Justice Executive Order 12898? Identify potential impacts to and identify direct, indirect, and cumulative effects likely to occur as a result of the proposed action.*

DNRC used the NEPAssist Online Mapping tool to assess any disproportionate risk to minority or low-income populations and found the project area to be within the 50-60 percentile for RMP Facility Proximity and Wastewater Discharge Indicators. For all other Environmental Justice (EJ) Indices, the project area was within less than the 50<sup>th</sup> percentile.

*Proposed Alternative and No Action:* Potentially no impact to minority or low-income populations given the project area is not located within immediate EJ Indices and is occurring entirely within private land.

<b>EA Prepared By:</b>	<b>Name:</b> Demitra Blythe	<b>Date:</b> 10/26/2022
	<b>Title:</b> MEPA/NEPA Coordinator	
	<b>Email:</b> Demitra.Blythe@mt.gov	

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**V. FINDING**

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**26. ALTERNATIVE SELECTED:**

- 1) Alternative 1 (*Preferred Alternative*): Install an electric pump center pivot
  - a. Irrigation sprinkler pivots are known have high water use efficiency as they distribute water more uniformly while using less water overall. This more efficient distribution

increases crop production but allows for less manual labor compared with flood irrigation (e.g., reduces the need to either open flood gates or distribute piping). Because pivots can precisely control the amount of water on a field, the soil moisture also increases. This is an important consideration for harvest and second cutting.

- b. The pipeline will cause some initial soil disturbance due to construction and digging.
- c. This option would be more favorable for instream flows as compared to flood irrigation, because there is no ditch loss or evaporation in the pipeline. Thus, more water would be returned to the stream.

**27. SIGNIFICANCE OF POTENTIAL IMPACTS:**

DNRC does not expect any significant adverse impacts and any impacts associated with construction of the mainline will likely be minimal and relegated to the immediate area. In addition, the future planting of hay and alfalfa will likely recover any soil disturbance and mitigate the erosion that may occur because of digging the pivot pipeline.

**28. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:**

EIS

More Detailed EA

No Further Analysis

<b>EA Approved By:</b>	<b>Name:</b> Mark Bostrom
	<b>Title:</b> CARD Division Administrator
<b>Signature:</b>	<b>Date:</b> 11/15/2022   9:55:32 AM MST

DocuSigned by: Mark W Bostrom  
BE7A1C50B2AE4DF

For additional information or list of the resources DNRC used to analyze this project, please contact Demitra Blythe, MEPA/NEPA Coordinator, [Demitra.Blythe@mt.gov](mailto:Demitra.Blythe@mt.gov), 1539 11<sup>th</sup> Avenue, Helena, Montana 59601, 406-444-6619 or 406-422-3369.