

## CHECKLIST ENVIRONMENTAL ASSESSMENT

<b>Project Name:</b>	Dry Creek Hydroelectric Facility
<b>Proposed Implementation Date:</b>	2011 to Spring 2012 (Depending on FERC approvals)
<b>Proponent:</b>	Hydrodynamics, Inc.
<b>Location:</b>	Section 32, Township 1 North, Range 15 East (Common Schools)
<b>County:</b>	Sweet Grass

### I. TYPE AND PURPOSE OF ACTION

The proponent, Hydrodynamics, Inc., responded to a commercial lease Request for Proposals (RFP) issued by the DNRC Southern Land Office for a hydroelectric facility and associated infrastructure on Section 32, T1N, R15E in Sweet Grass County. Hydrodynamics, Inc. was selected as the successful respondent by DNRC. The proposed hydroelectric facility includes a powerhouse, underground electric line and underground 36" water pipeline on Trust land and deeded lands. The powerhouse would contain a turbine/generator with an installed capacity of 500 kilowatts and will be connected to an existing Park Electric utility line. The project would divert irrigation water out of the Dry Creek Canal into a pipeline where it would gain energy traveling down a hillside to power the turbine/generator. The water would then be returned to the Dry Creek Canal Company system. This project does not involve the placement of any facility within the bed of navigable riverbed. The proposal places facilities on Common School Trust land and utilizes approximately 0.75 acres of this section.

### 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 formal public scoping was performed by DNRC for this environmental assessment. However, the RFP was advertised on the DNRC web site, along with legal advertisements that were placed in the Big Timber Pioneer and the Billings Gazette. These legal ads did generate calls to the Southern Land Office, including one from the Sweet Grass County Commissioners. All of the calls fielded were questions regarding the proposal and there were no objections raised on the proposed project.

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

The proposed project would be licensed by the Federal Energy Regulatory Commission (FERC) and this would be the overarching permitting. Other permits or approvals that could be required include: DEQ Section 401 Water Quality Certification; US Army Corps of Engineers Section 404 permit; DNRC non-consumptive water use permit and evaluation of cultural resources, as required by FERC.

#### 3. ALTERNATIVES CONSIDERED:

**Proposed Alternative:** Issue a commercial lease on approximately 0.75 acres of Trust land in Section 32-1N-15E to allow the location of a hydroelectric facility including a powerhouse and associated infrastructure.

**No Action Alternative:** Not issue a commercial lease for the proposed hydroelectric facility and associated infrastructure.

### 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.*

The proposed project will consist of an approximately 35' x 35' powerhouse that will be located near Dry Creek Road, where the canal currently crosses under the road, along with an underground penstock, driveway and underground powerline. The area where the powerhouse is proposed has some limiting soil factors; however the biggest factor noted in the soil survey were floodplain concerns. This area does not have a published floodplain map and the closest flowing water is Dry Creek Canal. The area that the underground water pipeline will traverse has some limitations, however, the biggest is "large stones" which are common in this area and are not expected to be a significant issue in the pipeline construction. The lease will require that the areas disturbed by the underground penstock be reclaimed and reseeded since the current surface lessee will continue to use it for ag and grazing purposes after the penstock is installed. No significant impacts are expected.

#### 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.*

The proposed hydroelectric powerhouse would generate electricity from water that is temporarily diverted from the Dry Creek Canal system into a new underground 36" penstock down a hillside to generate force to spin a 500kW turbine. The maximum flow capacity of the penstock would be approximately 40 cubic feet/second (cfs). The water will be discharged back into the Dry Creek Canal system via a pipeline or concrete flume at or below the existing velocity of the water in the canal so that it can be used by members further down the system. As noted in above #2, the facility would be required to obtain a non-consumptive water use permit from the DNRC Water Resources Division.

Since the turbine will rely on irrigation water to generate electricity, it will only operate during the normal irrigation season. No significant impacts to water quality, quantity or distribution are anticipated from the proposed action.

#### 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.*

The proposal would require limited vehicular and equipment travel on the Trust land during construction which would emit some particulates, especially from the heavy equipment. However, the completed facility will provide a source of clean energy with zero direct emission of pollutants during power generation. No significant adverse impacts to air quality are anticipated from the proposed action.

#### 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.*

Long term vegetative cover removal would occur as a result of constructing the powerhouse and driveway. Temporary vegetative disturbance would occur during installation of the 36" underground penstock and underground powerline. The mitigations will require that the areas disturbed during the placement of the underground penstock and powerline be rehabilitated and reseeded. No significant impacts are expected from implementing the proposed action.

## 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.*

This Trust Land is used by a variety of wildlife species, including white-tailed and mule deer, antelope and numerous non-game birds typical of undeveloped land throughout this portion of Sweet Grass County. Wildlife populations can be affected by land use activities associated with livestock grazing, residential development or agricultural practices. In this case, the installation of a powerhouse may cause some disturbance to wildlife when operational during irrigation season. No significant impacts are expected from implementing the proposed action.

## 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.*

A proposed project area search of the Montana Natural Heritage Program database identified five vertebrate animals listed as a sensitive species, species of concern or threatened species: peregrine falcon, greater sage-grouse, bobolink, gray wolf, and greater short-horned lizard.

**Peregrine falcon** is listed as a species of concern and the subject property is included in a nest area buffer that can extend to 10,000 meters (3.1 miles). According to the Montana Field Guide, the “[n]ests typically are situated on ledges of vertical cliffs, often with a sheltering overhang. Ideal locations include undisturbed areas with a wide view, near water, and close to plentiful prey. Substitute man-made sites can include tall buildings, bridges, rock quarries, and raised platforms.” The parcel does not contain any vertical cliffs and the new powerline will be buried, so there will not be any artificial perches created with the proposed action.

**Greater Sage-Grouse** is listed as a species of concern and is known to exist in the general area of the proposed project based on recent lek data from Montana Fish, Wildlife and Parks. The closest reported leks are over 5 miles away from the subject property. The majority of the subject property has been tilled and does not contain any sagebrush which is its preferred habitat. The portion of the property that contains sagebrush is on a hillside, which is not preferred terrain. Additionally, the operation of the powerhouse would be during irrigation season which has little overlap with the sage-grouse lekking season that takes place from March to May.

**Bobolink** is listed as a species of concern and breeds in Montana during the summer. According to the Montana Field Guide, the bobolink prefers tall and mixed grass habitat. The area immediately around the powerhouse is actively hayed and grazed and does not currently provide the preferred habitat for the bobolink.

**Gray wolf** is listed as a sensitive species, having been de-listed as an endangered species in May of 2009 after reaching biologic recovery goals. However the gray wolf was re-listed as endangered/experimental on 5 August 2010 by Federal Court order. According to the Montana Field Guide, the gray wolf migrates seasonally, with no particular preference to habitat, following ungulates that are its main food source. The average annual range for Yellowstone gray wolves is 344 square miles. It is conceivable that a wolf could traverse this section; however, it would be unlikely that they would remain there for any significant period of time.

**Greater Short-horned Lizard** is listed as a sensitive species. The proposed easement area has many of the characteristics of the preferred habitat of the greater short-horned lizard. The Montana Field Guide shows their Montana range as the eastern 2/3rds of the state, essentially the portion of the state east of the Rocky Mountain Front. The Guide also notes that the preferred habitat is areas with sagebrush and the subject property has been actively tilled and does not presently have sagebrush. However, any impact of the proposed action will be minimal in comparison to their entire range.

The proposed action is not expected to have a significant impact on any of the species listed above.

**10. HISTORICAL AND ARCHAEOLOGICAL SITES:**

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

The Southern Land Office Land Use Specialist and Land Use Planner both were on site in March of 2010 and walked the route proposed for the underground penstock as well as the area proposed for the powerhouse. No archaeological resources were noted. Additionally, in the previous lease reviews completed by the Land Use Specialist, no cultural resources were noted. Finally, the DNRC Archaeologist was consulted and no additional inspection was recommended. No significant impacts historical or archaeological sites are anticipated.

**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.*

The proposed project area is located in a sparsely populated area with very few residences; however the powerhouse would be located within 100-200 yards of Dry Creek Road. The new powerhouse would generate noise; however the proponent has stated that the level would be low due to the slow rpm's of the turbine.

The proponent has stated their intention of constructing an attractive powerhouse structure. In addition, the lease will allow for the DNRC to review the building style prior to its erection to ensure that the structure will fit in with the area and be unobtrusive. Aesthetics and noise are not expected to be significantly impacted by the proposed action.

**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.*

No significant impacts to environmental resources of land, water, air or energy are anticipated as a result of implementing the proposed alternative. Implementation of the proposed alternative would provide for a clean source of energy during irrigation season.

**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.*

There are no other known State actions planned in the immediate area.

**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.*

No significant impacts to human health and safety are anticipated as a result of implementing the proposed alternative.

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

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

The new underground penstock will cross existing agricultural lands leased by DNRC. The proponent has offered to place irrigation taps off the new penstock for use by the Trust land lessee. This could result in greater

production on the parcel and therefore greater lease revenue to the Trust. No significant adverse impacts to agricultural, industrial or commercial activities are anticipated as a result of issuing the lease..

**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.*

The implementation of the proposed action is not expected to create any new jobs. The proponent is expected to utilize existing employees to monitor the power generation facility. There would also be work generated to outside firm(s) during the construction of the powerhouse and associated underground facilities. The proposed action is not expected to have a significant impact on employment.

**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.*

The subject property is currently exempt from property taxes, however when a commercial structure is erected on Trust land, that new property is taxed by the Department of Revenue. The new powerhouse and associated facilities would bring in additional revenue to Sweet Grass County and the State, but the exact amount is not known at this time.

**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.*

The implementation of the proposed alternative is not expected to generate an increased demand for government services.

**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.*

Sweet Grass County does have an adopted Growth Policy that covers the entire County and the proposed alternative does not conflict with the Growth Policy. Also, the subject section has not been zoned by Sweet Grass County.

**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.*

DNRC Administrative Rule 36.25.150 provides that Trust lands with commercial leases are categorically closed to recreational use. Since this Trust parcel has legal public access, it is expected that there is some hunting that takes place on it, however the level of recreational use is unknown at this time. The administrative rules do provide for the DNRC Area Manager to consider opening the property to recreational use if petitioned. The Area Manager makes the determination with the potential that the decision could be appealed to the Director of DNRC. It is also possible that a portion of the property, especially that portion that contains the powerhouse could remain closed, while the remaining portion of the Trust land could be opened to recreational use. In addition, the Area Manager does have the ability to open lands to recreational use with certain restrictions, such as restrictions on firearm discharge.

The implementation of the proposed action could have an impact on the recreational use opportunities on the parcel, but there are mechanisms for the Southern Land Office Area Manager to allow recreational use as well as protection of the lease improvements. Due to these factors, the implementation of the proposed action is not expected to have a significant adverse impact on the recreation or hunting activity on the Trust land.

**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.*

The proposed alternative is not expected to have an adverse effect on density and distribution of population and housing.

**22. SOCIAL STRUCTURES AND MORES:**

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

There are no native, unique or traditional lifestyles or communities in the vicinity that are expected to be impacted by the proposed alternative.

**23. CULTURAL UNIQUENESS AND DIVERSITY:**

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

The proposed alternative is not expected to significantly impact cultural uniqueness or diversity.

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

*Estimate the return to the trust. 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.*

The Common Schools Trust will benefit by getting lease revenue from the proposed hydroelectric facility that would be the greater of: \$1,200/MW/year or 3% of the gross annual revenue or \$1,500.00/year/acre. The establishment of the hydroelectric use would not preclude the continuation of the existing agricultural and grazing lease on the remainder of the subject property. Due to the installation of irrigation taps in the new penstock there is a potential for increased agricultural production from the Trust land which in turn would lead to greater revenue generation for the Common Schools Trust.

<b>EA Checklist Prepared By:</b>	<b>Name:</b> Jeff Bollman, AICP	<b>Date:</b> 29 December 2010
	<b>Title:</b> Area Planner, Southern Land Office	

**V. FINDING**

**25. ALTERNATIVE SELECTED:**

The proposed alternative has been selected and it is recommended that a commercial lease be issued on approximately 0.75 acres of Trust land in Section 32-1N-15E to allow the location of a hydroelectric facility including a powerhouse and associated infrastructure.

**26. SIGNIFICANCE OF POTENTIAL IMPACTS:**

The potential for significant impacts to the State Trust land is minimal based on the above analysis of the project. One area that has potential for impact is the aesthetic impact for travelers on Dry Creek Road of the proposed powerhouse. This impact would be mitigated partly due to its small size as well as the building design review that will take place by the Southern Land Office before the structure is erected. Another potential area of impact is to recreational use of the property due to the Administrative Rule categorical closure. However, as noted above, there is potential for this closure to be reviewed and lifted in part or whole, at the discretion of the Southern Land Office Area Manager.

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

EIS

More Detailed EA

No Further Analysis

<b>EA Checklist Approved By:</b>	<b>Name:</b> Richard A. Moore
	<b>Title:</b> Area Manager, Southern Land Office
<b>Signature:</b> /s/ Richard A. Moore	<b>Date:</b> 1/3/11