Hydration for Migration

Livestock water quantity, quality and distribution is a limiting resource across all of Blaine and Phillips Counties. Specifically, water shortage for livestock is an area-wide issue and is evident in the northeast corner of Blaine County and northwest corner of Phillips County along Woody Island Coulee. Due to lack of water, producers are unable to manage grazing to meet their operation goals and are often degrading plant condition and wildlife habitat. Inadequate livestock water quantity, quality and distribution is a priority resource concern identified by both Blaine and Phillips Counties local working groups and is outlined in each county's long-range plan (LRP). The goal of this Targeted Implementation Plan (TIP) is to address inadequate livestock water quantity, quality, and distribution on range and pastureland along Woody Island Coulee. With successful project implementation producers will have clean reliable livestock water which will allow them to implement new grazing management techniques. The project will have secondary impacts of improving plant productivity and health and improving terrestrial habitat for wildlife and invertebrates.

Overview/Background Information: Inadequate livestock water quantity, quality, and distribution is a concern outlined as a number one priority resource concern in the Phillips

County LRP and is outlined as a number two priority resource concern in Blaine County's LRP. In northeast Blaine County and northwest Phillips County along Woody Island Coulee many operations do not have the water quantity, quality, or distribution available to properly manage their grasslands. Reservoirs and pits are the primary means of livestock water in this area. These watering sources are not enough to meet livestock needs and cause livestock to overuse areas around water. During late summer many of these limited water sources become unusable due to lack of water quality. Lack of distribution of water sources causes overuse near watering locations and forces producers to keep livestock in units that contain water sources even as overgrazing occurs. Producers are not able to meet their grazing management goals with current available water. Due to lack of livestock water, no changes in season of grazing use can be made and overuse occurs in areas around limited water sources. Lack of water also causes overgrazing to occur in the limited units that contain water. Without changing season of use rangeland and pastureland show decreases in plant productivity and health. Production is less than expected for rangeland and pastureland sites in this area, seed-heads are less common than expected for sites, and the amount of bare ground is more than expected on rangeland and pastureland sites.

Without proper grazing management, terrestrial habitat for wildlife and invertebrates suffers. In the Woody Island coulee area, decreases in plant health and vigor reduce habitat value for wildlife species of concern, especially for pronghorn where this area is an important stop-over site during spring migration. Reduced plant productivity and health impacts forage quality for pronghorn, nesting quality for grassland birds, and reduces escape cover from predators. Limited water sources that are impacted by livestock overuse, reduce wildlife value for species of importance outlined in the LRP. Lack of livestock water limits profitability of the landscape for grazing use putting the area at greater risk for cropland conversion and fragmentation of intact grassland habitat. Aging fence infrastructure with low bottom wires and woven wire fences limits wildlife movement. Low wire fences and woven wire fences are greater concerns in the Woody Island Coulee area as this is a vital corridor for pronghorn movement (See corridor map). Degradation of terrestrial habitat for wildlife and invertebrates is a secondary concern associated with this TIP and is a number four priority concern identified by Blaine County's local working group. Blaine County's LRP outlines the importance of intact healthy grassland habitat for species of concern and the importance of functional big game migration corridors and winter range. The project area for this TIP supports essential habitat for big game migration and winter ranges. This project area is an integral piece of a Montana Fish Wildlife and Parks identified priority area, Priority area D "Canadian Border to Musselshell Plains", chosen to implement Department of Interior Secretarial Order 3362. Secretarial Order 3362 states the priority to protect and enhance big game winter ranges and migration corridors. As shown in attached maps, the Woody Island Coulee area has huge value to pronghorn connectivity. This area outlined has the highest connectivity value that is mapped in Montana according to data from Jakes 2015. Partners have worked to ensure the protection of this habitat by incentivizing agricultural practices that support wildlife habitat. Through the Ranchers Stewardship Alliance (RSA) conservation committee, over 1 million dollars has been put forward to improve agricultural systems in these areas of high wildlife value. The projects implemented include: adding livestock grazing systems to acres at risk of conversion to cropland, seeding marginal cropland back to perennial vegetation and modifying or installing fences that are wildlife friendly for migration improvement. This TIP would work to extend the efforts of these existing projects and increase the footprint of the partnership effort.

Producer interest is high in this TIP area. Eight producers, three in Blaine County and five in Phillips County are interested in addressing the primary concern of inadequate livestock water quantity, quality and distribution as well secondary concerns of terrestrial habitat for wildlife and invertebrates and plant productivity and health. Partners are engaged and invested in this plan. The RSA's conservation committee has exceedingly shown their support for leveraging dollars spent in these targeted areas. The likelihood of success is high with NRCS support in this partnership effort.

Problem Statement: Inadequate livestock water quantity, quality and distribution is causing a grazing management issue in Blaine and Phillips Counties. Inadequate livestock water quantity, quality and distribution removes a livestock managers ability to properly manage their grasslands to meet their goals and keep their operation sustainable. Livestock concentration around water sources is occurring, no changes in grazing season of use is occurring, and long grazing periods are occurring. As these events occur plant productivity and health decline. As plant productivity and health decline the forage quality for pronghorn across a vital stopover area declines, nesting habitat for waterfowl is decreased, and escape cover from predators is reduced. In addition, aging fence infrastructure with low bottom wires and woven wire fences across a vital pronghorn corridor inhibit wildlife movement. This TIP will focus on an area in northeast Blaine County and northwest Phillips County around the Woody Island Coulee drainage. Five adjacent land managers are ready, willing, and able to implement this plan. This TIP will directly address inadequate livestock water quantity, quality and distribution, which is listed as primary concerns identified by both Blaine and Phillips Counties long range plans. Secondarily, it will address inadequate terrestrial habitat for wildlife and invertebrates also a priority resource concern identified by the Blaine County local working group and the Chinook Field Office long range plan and plant productivity and health. Thirdly, this TIP has invested partners that have already shown their support with on the ground project implementation in the project area and further committed funds to see the successful implementation of the project.

The TIP boundary contains 212,676 acres. 82,988 acres of BLM, 11,433 acres of State Lands, and 116,993 acres of private land. 160,385 acres are rangeland and 49,732 acres are cropland within the TIP boundary. Woody Island Coulee Creek runs through much of the project area providing some reliable water to a limited number of grazing units. Some existing pipeline infrastructure is in place on BLM allotments in the area. Yet, most of the units do not have reliable water. Pits and reservoirs run dry in late summer and during periods of drought. Springs are underdeveloped and underutilized. All producers in the TIP area are currently unable to meet prescribed grazing specifications due to inability to change season of grazing use on integral grazing units. This TIP aims to impact over 119,353 acres in three years impacting at least 70% of the rangeland and pastureland acres within the TIP boundary. With full funding in the first year 65,879 acres are estimated to be improved. In the second and third years an additional 53,474 acres are expected with more acres possible depending on outreach and interest. Successful implementation of year 1 would directly address at least 18,129.2 acres of inadequate livestock water quantity, quality, and distribution. In addition, 18,000 number of acres would remain intact habitat through USFWS PFW agreements, 50 miles of fence line would be modified to wildlife friendly standards, and 65,879 number of acres would see improved plant productivity and health through management changes. Projects will benefit public land, but will not be installed on them unless necessary to achieve needed improvements.

Goals and Objectives (Desired Future Conditions): Providing clean and reliable livestock water that allows for a higher level of grazing management is the primary goal of this TIP. Secondary goals include increasing plant productivity and health and improving terrestrial habitat for wildlife and invertebrates.

For this TIP to be a success, livestock watering systems will be installed to address inadequate livestock water quantity, quality and distribution on at least 18,129 acres in the first year of the TIP. The practices needed to address the concern are: pumping plant (533), well (642), livestock pipeline (516), watering facilities (614), aquifer flow test (533), Spring Development (574).

This project will be achievable in 10 years or less with the following outcomes: 1.) Increased livestock water quantity, quality, and distribution on pasture and rangeland. At least 18,129.2 acres will be directly addressed with year one projects. 2.) Improve plant productivity and health on rangeland and pastureland. Photo monitoring will show reduced bare ground and more plant growth. At least 65,879 acres will see changes in management due to water availability with year one projects. 3.) Improve terrestrial habitat for wildlife and invertebrates. Specifically, through 50 miles of wildlife friendly fence modifications to facilitate pronghorn migration, 18,000 acres of USFWS Partners for Wildlife habitat agreements to keep habitat intact, and improved habitat conditions through plant productivity and health for pronghorn stop-overs and nesting habitat for birds.

Proposed Alternatives and Actions: No action alternative: Water availability will continue to be the limiting factor for improved grazing management within the TIP boundary. Wildlife habitat will continue to be degraded due to overuse of desirable plants and excessive trampling of pond/reservoir edges. Acres lacking water remain at risk of conversion to cropland, which reduces migration connectivity for wildlife. This alternative does not meet the goals and objectives of the livestock producers in the TIP boundary or the goals and objectives of engaged partners.

Alternative one: Address inadequate livestock water quantity, quality and distribution on range and pastureland-units within the TIP boundary. This will be accomplished by drilling ground water wells, developing springs, implementing livestock watering facilities, and implementing pipelines on new and existing systems to deliver water to dry grazing units. Livestock water quantity quality and distribution will be addressed on 18,129.2 acres. Producers will be able to change management, reduce grazing periods, change seasons of use, and limit impacts to pits, reservoirs, wetlands and streams. Secondarily, plant productivity and health will improve as management changes are allowed with livestock water implementation. Bare ground on uplands and around water sources will decrease, seed heads are likely to be more abundant, and overall production is likely to increase. Terrestrial habitat for wildlife and invertebrates will be improved. 18,000 acres will remain intact habitat under USFWS PFW agreements. Forage quality for pronghorn will improve, nesting cover for upland birds and waterfowl will improve and partners will be utilized to modify existing fences and work with producers to improve connectivity for pronghorn in a critical corridor. Fence modifications include raising bottom wires to at least 18 inches, converting 4-wire fences to 3-wire fences with wildlife friendly wire spacings, and converting woven wire fences to 3-wire wildlife friendly fences.

Alternative one is the preferred alternative of the land managers within the TIP boundary. There are willing and able producers ready to implement the TIP. Four producers are ready, willing and able to complete the plan, they manage 65,789 acres within the focal area. Interest is clearly high in the proposed area. The benefits of implementing the proposed action will be, addressing inadequate livestock water quantity, quality and distribution on operations within the focal area. Secondarily, plant productivity and health will be improved and terrestrial habitat for wildlife and invertebrates will be improved. The costs of implementing the proposed action will be money for installation as well as potentially increased labor for system maintenance. The practices needed to address the concern are: pumping plant (533), well (642), livestock pipeline (516), watering facilities (614), well pump test (533), spring development (574), and partner assisted fencing modification.

Partnerships and other Funding Sources: This TIP will have an impressive collaborative support from a diverse partnership. Twenty-nine thousand dollars have been put on the ground by US Fish and Wildlife Service Partners for Wildlife program (USFWS PFW) and Ranchers Stewardship Alliance (RSA) in the TIP outlined area in the last year through grass seeding and livestock water infrastructure projects. USFWS PFW has committed big game migration funding up to $100,000 to support water infrastructure development, 10-year habitat agreements, and fence modifications on two projects in the outlined area totaling 18,000 acres of private land. Pheasants Forever is invested in this TIP and will contribute staff time through a local partner biologist as well as volunteer efforts to modify fences to wildlife friendly standards. National Wildlife Federation has assisted in providing pronghorn migration and connectivity data as well as defining priority areas for migration conservation. Future grants are being pursued by RSA's conservation committee to leverage funds and further the footprint of the existing projects. With successful implementation of this project NRCS will be integrated with the conservation committee and future collaborative approaches are almost assured in the future.

TIP Partner	**Estimated Contribution**
Ranchers Stewardship Alliance (RSA)	$23,000
US Fish and Wildlife Service (USFWS)	$106,000
Pheasants Forever	Partner Biologist staff time (Non-NRCS portion), In-kind support with wildlife friendly fence modifications.
Blaine County Conservation District (BCCD)	In-kind support with outreach.
National Wildlife Federation (NWF)	Assistance with target area development and pronghorn migration data.

Implementation: The timeframe for this TIP will include three one-time, 30 day sign ups. One in FY2021, FY2021, and FY2023. The contracts will be 3-10 years in length. Malta and Chinook field offices have adequate staff to fully implement this proposed TIP.

TIP Year 1 Proposed Budget: 1 well, 6 pump tests, 19- 2500-gallon tanks, 81,463 ft of frost-free pipeline, 4 pumping plants 1hp, 1 photovoltaic pumping plant, 1- 20,000-gallon storage tank.

533	Pumping Plant	4 ea @ 1 HP / pump	$3,508
533	Well Pump Test	6 ea @ 20 hrs / test	$18,120
516	Livestock Pipeline - below frost	81,463 ft	$128,712
614	Watering Facility w/ Storage- Summer	47,500 gallons	$65,075
614	Watering Facility - Storage Tank	20,000 gallons	$11,800
642	Water Well-Typical 100-600 Ft	1 ea @ ~100 ft	$ 3,427
+ ~ 10% overage for inflation and minor changes			$ 35,877
Total Financial Assistance Request "Hydration for Migration TIP"			$394,639

TIP Year 2 Proposed Budget: 2 wells, 3 pump tests, 5- 2500-gallon summer tanks, 5- 2,000-gallon winter tanks, 50,000 ft of frost-free pipeline, 3 pumping plants 1hp and one development.

533	Pumping Plant	3 ea @ 1 HP / pump	$2,630
533	Well Pump Test	3 ea @ 20 hrs / test	$9,060
516	Livestock Pipeline - below frost	50,000 ft	$79,000
614	Watering Facility w/ Storage- Summer	12,500 gallons	$17,125
614	Watering Facility – Winter with Storage	10,000 gallons	$22,900
574	Spring Development	1 ea	$2,113
642	Water Well-Typical 100-600 Ft	2 ea @ ~500 ft	$ 28,870
+ ~ 10% overage for inflation and minor changes			$ 16,000
Total Financial Assistance Request "Hydration for Migration TIP"			$177,698

TIP Year 3 Proposed Budget: 2 wells, 3 pump tests, 5- 2500-gallon summer tanks, 5- 2,000-gallon winter tanks, 50,000 ft of frost-free pipeline, 3 pumping plants 1hp and one development.

533	Pumping Plant	3 ea @ 1 HP / pump	$2,630
533	Well Pump Test	3 ea @ 20 hrs / test	$9,060
516	Livestock Pipeline - below frost	50,000 ft	$79,000

614	Watering Facility w/ Storage- Summer	12,500 gallons	$17,125
614	Watering Facility – Winter with Storage	10,000 gallons	$22,900
574	Spring Development	1 ea	$2,113
642	Water Well-Typical 100-600 Ft	2 ea @ ~500 ft	$ 28,870
+ ~ 10% overage for inflation and minor changes			$ 16,000
Total Financial Assistance Request “Hydration for Migration TIP”			$177,698

TIP Year	**Cost per year**
Year 1	$394,639
Year 2	$177,698
Year 3	$177,698
TIP Total:	**$750,035**

The Chinook and Malta field office staff will manage plan implementation with assistance from Civil Engineering Technicians. System operation and maintenance is covered by NRCS standards and specifications. Preliminary engineering and cost estimates are complete with ready willing and able participants whose properties are within TIP boundary. Conservation Districts will assist NRCS and involved partners perform outreach to landowners interested in big game migration and habitat improvements. Each plan is estimated to take 15 staff days to complete. Total of 75 staff days needed to fully implement plan.

Progress Evaluation and Assessment: Progress will be monitored by acres of grazing land that are provided with adequate livestock water quantity, quality and distribution. Improvement of terrestrial habitat for wildlife and invertebrates will be evaluated by miles of fence modified to be wildlife friendly, acres of grassland with a 10 or more-year agreement through USFWS PFW. Improvement of plant productivity, health and bare ground will be assessed through photo monitoring transects on uplands and photo points of reservoirs, pits, and wetlands.

Ranking/Screening: All existing screening questions will be used with no additional questions.

Ranking:

1. Inadequate livestock water concern will be addressed on all grazing management units on the operation? One grazing management unit? Livestock water will not be addressed on any management units?

2. The applicant is willing to address the resource concern inadequate livestock water on less than 100 acres? 101-1,000 acres? 1,001-5,000 acres? more than 5,000 acres?

3. Project boundary has average pronghorn connectivity value in the extremely high range, high range, medium range, low range, no value range.