

Executive Summary

On November 9, 2000, Public Law 106-485 was signed directing the Secretary of the Interior (Secretary), acting through the Bureau of Land Management (BLM), to convey all right, title, and interest (excluding mineral interest) in approximately 16,500 acres of public land in Big Horn and Washakie Counties, Wyoming, to the Westside Irrigation District (WID). On agreement by the Secretary and WID, acreage may be added to or subtracted from the land to be conveyed as necessary to satisfy mitigation requirements under National Environmental Policy Act of 1969 (NEPA). The land would be conveyed to the WID following the completion of an environmental analysis in compliance with NEPA.

Under NEPA and Council on Environmental Quality (CEQ) guidance, implementation of Public Law 106-485 and the connected actions of the WID purchasing and developing the land for crop production, fall within the definition of a major federal action and requires the preparation of an Environmental Impact Statement (EIS).

The State of Wyoming Water Development Office (WWDO) is joint lead agency with the BLM for the NEPA process and the development of the EIS. Cooperating agencies are the Boards of Commissioners for Big Horn and Washakie counties.

Proposed Action

Under the Proposed Action Alternative, the BLM would sell to the WID all rights, title and interest in the land identified in Public Law 106-485, except for mineral rights. The BLM would appraise lands following Uniform Appraisal Standards for Federal Land Acquisition (UASFLA) and the WID would be charged the appraised value. The proceeds from the sale would be utilized to acquire land and interests in land in the BLM Worland Field Office that will benefit public recreation, public access, fish and wildlife habitat, or cultural resources.

It is anticipated that once the land is owned by the WID it would then be re-sold to private individuals or institutions for crop production in parcels of 160 acres, up to a maximum of 960 acres per individual, unless a larger parcel is approved by the WID Board. It is important to note that this should be considered a “reasonable foreseeable development” scenario based on best available information. Public Law 106-485 places no restriction on the eventual disposition or use of the land following conveyance to the WID.

Scoping

The BLM conducted a public scoping process from July 19, 2004 to August 19, 2004 with meetings held on August 3 and 4, 2004 in Basin and Worland, Wyoming. A Notice of Intent to prepare an EIS was published in the Federal Register on February 22, 2005 which reopened the scoping period to March 25, 2005. No additional scoping meetings were conducted and comments and information submitted during the original 2004 scoping process were considered and did not have to be resubmitted.

Public Comment Period for the Draft EIS

The Draft Environmental Impact Statement (DEIS) was made available to the public in January, 2008 with a 60 day comment period. A total of 11 comment letters were received. As a result of the comments, the BLM proposed a reduction in the number of conveyed acres to retain a number of cultural resource sites and widen a wildlife migration corridor to the river (see Alternative 3 below.) Some concerns were beyond the scope of this analysis, and may be addressed in a subsequent analysis of the irrigation water diversion structure by the US Army Corps of Engineers as part of their permit process under Section 404 Clean Water Act. Comment letters and responses are provided as Appendix J of this analysis.

Alternatives

No Action Alternative

The No Action Alternative represents the baseline or existing conditions from which to compare the impacts from the alternatives. Under this alternative, the proposed land conveyance and subsequent connected actions would not take place. The BLM would not convey all right, title and interest on the portion of land under consideration to the WID and there would be no connected actions of converting the land to crop production or developing infrastructure to the site for irrigation. The No Action Alternative would not be in compliance with Public Law 106-485.

Alternative 1 – Proposed Action

Under the Proposed Action Alternative, the BLM would sell to the WID all rights, title and interest in the land identified in Public Law 106-485, except for mineral rights.

Alternative 2 –Irrigable Land Alternative

Within the boundaries of the mapped land used in the legislation authorizing the land conveyance, areas exist that are unsuitable for irrigated agriculture. Unsuitable lands include those that occur on steep slopes, have shallow rocky soils unsuitable for tillage, or are highly alkaline (saline) soils and may be only marginally suitable for growing crops. Based on these factors, approximately 80 percent of the land (approximately 9,300 acres) within the Irrigable Land Alternative boundary is considered suitable for irrigation.

Under the Irrigable Land Alternative, the BLM would sell to the WID all rights, title and interest in the selected lands, except for mineral rights, amounting to approximately 11,576 acres. Some lands not suitable for irrigation are included for support of infrastructure, and to avoid creating small isolated tracts.

The lands to be conveyed are delineated into two areas, determined by topography and the configuration of a hypothetical irrigation system. Under this alternative, the areas could be conveyed at once, or they could be conveyed and developed in separate phases. A phased conveyance may be determined by such factors as the level of interest in acquiring and developing lands as expressed by potential irrigators, and by the amount of funding available to the WID at the time of the conveyance.

Alternative 3 – BLM Preferred Alternative – Reduced Irrigable Acres Alternative

Based on further analysis and comments received on the Draft EIS, the BLM proposed a reduction in the conveyed acres to address several concerns. . A parcel was identified along the Washakie -Bighorn county line that contains cultural resource sites and is important for wildlife migration; a second parcel along the southeastern boundary in Washakie County was identified as a gravel source for Wyoming Department of Transportation (WYDOT) and contains a closed landfill ; and a total of four parcels located along the southern and western Alternative 2 boundary in Washakie County contain cultural resource sites. In an attempt to reduce potential impacts on cultural and natural resources, and WYDOT operations, the identified parcels were removed from consideration.

Under the Reduced Irrigable Acres Alternative, the BLM would sell to the WID all rights, title and interest in the selected lands, except for mineral rights, amounting to approximately 9,740 acres of which 8,280 acres would be irrigable. As under Alternative 2, some lands not suitable for irrigation are included for support of infrastructure and to avoid creating small isolated tracts.

Environmental Impacts

Geology and Soils

Previous studies utilized crop rotations of malt barley, sugar beets, alfalfa, and pasture to calculate an estimated average soil loss of 4.1 tons per acre per year. Based on these calculations it is estimated that 38,130 tons per year of soil would be lost if all 9,300 irrigable acres were irrigated under Alternatives 1 or 2, while 33,940 tons per year of soil would be lost if the 8,280 irrigable acres were irrigated under Alternative 3. However, these numbers may be reduced due to the grading of sloping fans, swales, and drainages into the surrounding terraces that would be required to render the area irrigable.

Water Resources

Impacts to surface hydrology were modeled based on a hypothetical irrigation system using the Bighorn River as a source of water. The total water demand for crop production during an irrigation season is estimated to be 18,600 acre-feet per year for 9,300 acres under Alternatives 1 or 2, and 17,444 acres-feet per year for 8,280 acres under Alternative 3. The results determined there is ample water in the Bighorn River to meet the future requirements associated with the WID Project.

Degradation of water quality in the Bighorn River in the form of increased sediment load, total dissolved solids, and pesticide residues caused by the additional return flows are estimated to be proportional to the percentage of land added to agricultural production. This would translate to an approximate 10 percent increase of water degradation above the current conditions resulting from flood irrigation practices in the entire watershed. Implementation of sprinkler irrigation would reduce the percent increase of water degradation to only two percent as there is less return flow associated with sprinkler irrigation as compared to flood irrigation.

Minimal impacts are anticipated to groundwater. Potential impacts were evaluated by extrapolating analysis conducted previously by the Department of Interior. The analysis included a mass balance assessment of ground water quality considering the effect of trace constituents/metallic elements, pesticides, and nitrate. Iron was the only element to exceed Environmental Protection Agency (EPA) standards. It is suggested that a baseline for groundwater quality be established as part of the Section 404 permit (water diversion) analysis (to be performed by ACoE at a later date), due to the presence of shallow (less than 50 feet in depth) domestic wells in the area. Additionally, it is suggested that a suite of up-gradient monitoring wells be installed as the precise recharge characteristics and overall ground water flow regime is unknown.

Air Quality

Increased emissions would primarily be generated from the use of farming equipment. Due to topography of the area and the prevailing atmospheric conditions the potential increase in emissions would readily dissipate to a level that is insignificant under all three action alternatives. The potential increase in fugitive dust and vehicle emissions are anticipated to occur at levels that are insignificant and would not result in an adverse effect to the region.

Vegetation

The conversion to cropland associated with Alternatives 1 and 2 would result in a permanent loss of approximately 9,300 acres of Wyoming big sagebrush or 0.62 percent of this plant community within the Bighorn Basin. Under Alternative 3, the loss would be reduced to 8,280 acres or 0.55 percent of this plant community within the Bighorn Basin. Under any of the action alternatives the loss would not likely result in a significant impact to the Wyoming big sagebrush plant community.

Wildlife

On March 23, 2010, the USFWS listed the greater sage-grouse as candidate pursuant to the ESA (50 Code of Federal Regulations Part 17). The sage-grouse will remain a candidate species until it is either removed from candidate status because listing is no longer warranted or when a proposed listing regulation is published (USFWS et al. 2010). The BLM have conducted aerial and ground surveys for both winter sage-grouse concentrations and breeding habitat (leks) periodically since the late 1970s and more intensively within the last 5 years. There have been no significant findings. Sage grouse are not expected to occur in the project area and no impacts to sage grouse from the project are anticipated. Conversion to cropland under all three alternatives

would result in a loss of crucial winter/yearlong habitat for pronghorn antelope and mule deer, as well as parturition range for pronghorn antelope. The pronghorn antelope herd unit that occupies the project area would lose an estimated 3.5 percent of the total crucial winter/yearlong habitat available to the herd under Alternatives 1 and 2 as a result of the conversion, while under Alternative 3 an estimated 2.8 percent would be lost. Additionally, the pronghorn antelope would lose approximately 0.3 percent of the total winter/yearlong range available in the unit and approximately 14.6 percent of the available parturition range under Alternatives 1 and 2. Alternative 3 the loss of winter/yearlong range would be the same as for Alternatives 1 and 2, but the parturition range loss would be slightly less at 14.2 percent. At the present time, parturition range is not considered a limiting resource such that it controls the capacity of the area to support pronghorn antelope. It is unknown if the loss of 14.6 or 14.2 percent of the identified parturition range would result in a change in this condition. Mule deer would lose approximately 1.6 percent of the total crucial winter/yearlong habitat available in the region under Alternatives 1 and 2, and only 1.3 percent under Alternative 3. Mule deer and white-tailed deer would both lose yearlong habitat equaling 1.5 percent and 0.1 percent, respectively, of the total available yearlong habitat under Alternatives 1 and 2. Alternative 3 would result slightly less loss of mule deer yearlong habitat, 1.2 percent, while the white-tailed deer yearlong habitat loss is estimated to be the same at 0.1 percent. It is difficult to predict the impact to a herd due to a partial loss of crucial winter habitat. However, it is anticipated that over the long term, there would be a reduction in population based on the reduction in carrying capacity during a severe winter when available crucial winter range limits the number of surviving individuals. The loss of crucial winter range reduces the capacity of the herd unit to support animals and therefore, over the long term, the population size of the herd would be expected to decline.

All alternatives will result in a loss of public ownership and multiple use management of these seasonal ranges. Due to the greater number of acres conveyed in Alternative 1, there will be a greater loss associated with Alternative 1. Alternatives 2 and 3 contain no additional acres of seasonal ranges other than those considered for conversion to cropland, therefore the percentages for Alternatives 2 and 3 did not change. The noticeable differences between Alternatives 1, 2 and 3 regarding loss of seasonal range management occurs in the pronghorn antelope crucial winter/yearlong range (4.7 percent, 3.5 percent, and 2.8 percent loss, respectively), pronghorn antelope parturition (28.7 percent, 14.6 percent, and 14.2 percent, respectively), and mule deer crucial winter/yearlong (2.4 percent, 1.6 percent, and 1.3 percent, respectively). The other seasonal ranges showed 0.5 percent or less difference between the alternatives.

Water to be used for irrigation of the conveyed land would be from currently unappropriated water from the Bighorn River estimated at 18,600 acre-feet per year, with a maximum monthly depletion of approximately 5,000 acre-feet per month (83 cubic feet per second (cfs)) during July under Alternatives 1 and 2. Alternative 3 would require less water resulting in a water demand of approximately 17,444 acre-feet per year, with a maximum monthly depletion of approximately 4,400 acre-feet per month (74 cfs) during July. These depletions are not measurable losses as they will occur during the growing season when there are large fluctuations already occurring within the river. The fish populations that occur in the Bighorn River exist within the already fluctuating water levels. The additional depletions to the WID lands will not result in a measurable change in water volume in the river over existing conditions. It is not expected that

fish in the Bighorn River would be impacted by a reduction in water volumes greater than the existing conditions.

There is potential for individual fish, primarily young-of-the-year and downstream migrants, to be pulled into the water intake valves of the pumps that would be located in the Bighorn River. However, it is standard practice to equip intake valves associated with irrigation systems with screens to minimize the amount of debris and aquatic life that enters the system.

Wetlands that have been identified within the project area were all within the boundaries of Alternative 1. No wetlands occurred within the Alternative 2 or 3 boundaries. Direct impacts to these wetlands would not occur as the wetlands are outside of the identified irrigable land. Indirect impacts to these wetlands would potentially result from changes in runoff patterns, contaminants in the runoff, and migration of chemicals utilized in crop production. However, chemicals and pesticides utilized in crop production are not expected to result in a significant impact to the return flow therefore, it is not anticipated that these chemicals will impact the wetlands. Activities associated with the reclamation of high saline soils could potentially result in selenium accumulation in wetlands.

No impacts are anticipated to threatened, endangered, or special status species.

Land Use

There are six grazing allotments that would be affected by the conversion of land ownership. The conversion of native land to cropland would considerably reduce the viability of three of these grazing allotments under Alternatives 1 and 2, while Alternative 3 reduces the viability of two grazing allotments. There are 29 rights-of-way (use authorizations) which may be impacted by this land conveyance. Prior to the time of any land conveyance, existing holders of the rights-of-way would be offered a series of options including maintaining the current terms and conditions of the existing rights-of-ways negotiating an easement with patentee, submitting an application to the BLM to amend the rights-of-ways to a term of perpetuity or to a perpetual easement.

Socioeconomics

The project under all three alternatives would have a modest positive impact on area employment and population. Construction of a water delivery system for the irrigable lands would create some new jobs, as approximately 35 construction workers would be employed for a period of six months, and 15 of the 35 jobs would last another six months. These employment opportunities are, however, unlikely to have any significant impacts upon area population.

Irrigation of project lands would increase employment opportunities in several sectors of the local economy. Alternatives 1 and 2 would support up to 118 additional local jobs resulting in approximately \$3.23 million in earnings generated annually, with an average wage of \$27,400 annually. Alternative 3 would support an estimated 105 additional local jobs, which would generate approximately \$2.88 million annually, with an average wage of \$27,400 annually.

The \$19 million in materials and equipment for Alternatives 1 and 2 would generate about \$950,000 in additional sales and use tax revenue during construction. Alternative 3 would result in an estimated \$18 million in materials and equipment which would generate approximately \$900,000 in additional sales and use tax revenue during construction. The project will have a long-term positive impact on sales and use taxes in the area due to increased purchases of equipment, materials, and supplies for farming an additional 9,300 or 8,280 acres of land. Purchased materials alone, such as fertilizer, pesticides, and seed, can range from \$25 per acre for alfalfa to over \$200 per acre for sugar beets. Assuming an average expenditure of \$75 per acre on taxable items means that sales tax revenues would increase by about \$35,000 annually for Alternatives 1 and 2, while Alternative 3 would increase sales tax revenues by about \$31,050 annually. Alternatives 1 and 2 would increase the assessed valuation of irrigated land in the area from about \$13.5 million to \$14.3 million, while Alternative 3 would result in an estimated increase from \$13.5 million to \$14.2 million.

Assuming that water delivery system costs would be financed by the Wyoming Water Development Commission (WWDC) over 20 years at four percent interest, and land and irrigation system costs would be financed at market rates, the resulting annual costs for Alternative 1 range from \$255 to \$261 per acre, which exceeds the estimated annual return of \$194 per acre. Under Alternative 2 the annual costs range from \$250 to \$256 per acre, this still exceeds the estimated annual return of \$194 per acre. Alternative 3 annual costs range from \$249 to \$255 per acre, exceeding the estimated annual return of \$194 per acre. These results indicate that the financial viability of the project is dependent upon either obtaining more favorable funding terms than are currently available from the WWDC or private sources, or possibly diversifying into higher valued specialty crops that could support the capital and operating costs of the project.

Cultural and Paleontological Resources

Under all three alternatives the conveyance of ownership from public to private represents an irretrievable resource commitment. Once the land is conveyed, the significant cultural resources will not be afforded any protection by the federal government. In order to mitigate this adverse effect, a data recovery plan will be designed and implemented to mitigate the impact caused by the land conveyance.

Alternative 1 would result in a total of 437 cultural sites, of which 44 are eligible for the National Register of Historic Places (NRHP), potentially being affected by the land conveyance. Alternative 2 would potentially adversely affect a total of 305 cultural sites, of which 22 are eligible for NRHP, as a result of the connected actions associated with the land conveyance. Alternative 3 would potentially adversely affect a total of 206 cultural sites, of which two are eligible for NRHP as a result of the connected actions associated with the land conveyance.

Alternative 1 proposes to convey 9,735 acres of surface exposed Willwood Formation, which is noted for being rich in paleontological resources. The land that is converted to cropland would directly impact this resource through farming practices. Alternative 2 proposes to convey 6,105 acres of Willwood Formation surface exposure, while Alternative 3 would convey approximately 5,128 acres of surface exposure.

Recreational Resources

Two critical recreation resource values associated with this area; remoteness and scenery, would be altered due to any of the three alternatives. The number of human encounters will likely increase due to the increase of farming activity in the area. However, oil field development and nearby agriculture have already altered this area from a natural state. The conversion to more agricultural fields associated with Alternative 1 or 2 in the area will reduce the feeling of solitude and influence the viewing of scenery. Under Alternative 3 the effect to the viewing of scenery would be slightly reduced.

Access to the Bighorn River will not be altered by this project. The only activity associated with the project that will occur adjacent to the Bighorn River is the creation of two diversion points. It is estimated that the area required for constructing the pumps and necessary facilities will be five acres for both diversion locations. Therefore, the project will only affect an estimated ten acres along the Bighorn River in relation to public access for fishing and hunting.

The hunting area for pronghorn antelope and mule deer that includes the project area consists of 720,000 and 620,000 acres respectively and provides seasonal range for pronghorn antelope, mule deer and white tailed deer according to information from the Wyoming Game and Fish Department (WGFD). The amount of animals that are actually harvested off the project area is unknown, but is considered very small. Therefore, based on the size of the hunt area and the number of animals that utilize that area, it is anticipated that the land conveyance and conversion to cropland would not have a significant impact on big game hunting activities around the project area.

The land conveyance and connected actions will likely result in an increase in upland game bird-hunting opportunities as species such as ring-necked pheasant and Hungarian partridge invade the new croplands. The availability of this hunting opportunity to the general public will be based largely on the willingness of the WID and the new landowners to accommodate hunting on private lands.