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National  
Forest

Ashton / Island  
Park Ranger  
District

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# **Mack's Inn Wastewater Treatment Plant Land Application Expansion Project Environmental Assessment**



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## **SUMMARY**

The Caribou-Targhee National Forest is considering approval of a special use permit application submitted by Fremont County for expansion of the Mack's Inn Waste Water Treatment Facility (WWTF) effluent application system. The purpose of the special use permit application is to gain legal access and rights to install additional effluent application equipment on a 50-acre parcel of NFS lands.

The project area is located on a 50-acre parcel in Township 14 North, Range 43 East, Section 25 just west of and contiguous to the existing WWTF at Township 14 North, Range 44 East, Section 30. The area is within the Ashton/Island Park Ranger District of the Caribou-Targhee National Forest in eastern Idaho. This action is needed because the Mack's Inn WWTF effluent application system is running at 95 percent capacity and treated effluent is being applied at near maximum capacity allowed by the Environmental Protection Agency and the Idaho Department of Environmental Quality (IDEQ).

The proposed action may affect grizzly bear and elk habitat. The application of an additional 24.4 million gallons of water annually over the 50-acre expansion area has the potential to impact ground water quality. The routine monitoring required by IDEQ limits the possibilities of contamination but does not prevent them.

In addition to the proposed action, the Forest Service also evaluated the no action alternative. Under this alternative, the Forest Service would not issue a special use permit to Fremont County for the expansion of the land application area. The site would remain at its current capacity serving approximately 1,250 equivalent users. The no action alternative would hinder any further development of the currently platted subdivisions within the areas of Fremont County serviced by the Mack's Inn WWTF.

Given the purpose and need, the District Ranger will review the alternatives in order to make the following decisions:

1. Whether the proposed action will proceed as proposed, as modified by design features, by an alternative, or not at all.
2. What mitigation measures and monitoring requirements will be required.
3. Whether a Forest Plan amendment is warranted.

## CHAPTER 1 – PURPOSE AND NEED

### DOCUMENT STRUCTURE

The United States Forest Service (Forest Service) has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

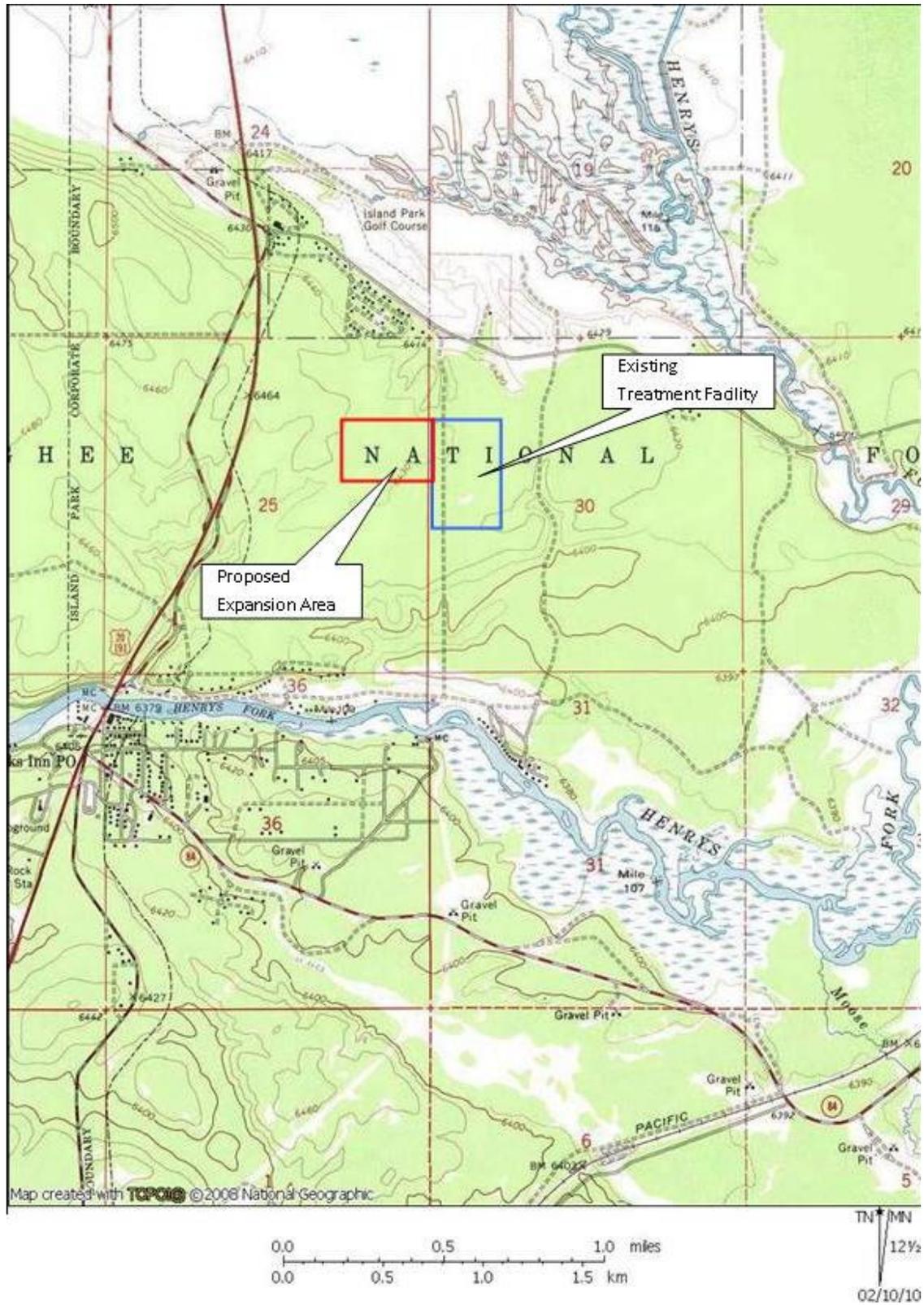
- *Purpose and Need:* This chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This chapter also details how the Forest Service informed the public of the proposal and how the public responded.
- *Alternatives:* This chapter provides a more detailed description of the agency's proposed action. At this time no additional alternatives are being considered. If public scoping identifies other alternatives that also address the purpose and need these may be considered. This discussion also includes possible mitigation measures. Finally, this chapter provides a summary of the environmental consequences associated with the no action and proposed action alternatives.
- *Environmental Consequences:* This chapter describes the environmental effects of implementing the no action and proposed action alternatives. This analysis is organized by resource area; existing conditions are described first followed by the effects of each alternative.
- *Consultation and Coordination:* This section provides a list of preparers and agencies consulted during the development of the EA.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Ashton/Island Park Ranger District Office in Ashton, Idaho.

### BACKGROUND

Fremont County constructed a central wastewater collection and treatment facility on National Forest System (NFS) lands to serve the Mack's Inn/Island Park Village area in 1982. That facility was constructed to mitigate problems of ground and surface water contamination. An additional lagoon cell was constructed in 1989 to increase storage capacity of the wastewater facility. Further modifications were made in 1998 when the snowfluent application towers were installed west of the treatment facility to allow winter application of treated water. In recent years the wastewater effluent application system has been running at 95 percent of capacity during peak use seasons, and is nearing the maximum rates of effluent application allowed by Idaho Department of Environmental Quality (IDEQ). The current wastewater facility is managed under a special use permit administered by the Caribou-Targhee National Forest. The area affected by this special use permit is in management prescription 8.1.

In March 2009 the Ashton/Island Park Ranger District received a request for a special use permit from Fremont County for the expansion of the Mack's Inn Wastewater Treatment Facility (WWTF) land application area (Figures 1 and 2). The existing facility consists of a 2-acre main WWTF and a 58-acre land application area located on land managed by the Forest Service and operated under Special Use Permit ID: ISL1034. The County currently uses an underground irrigation sprinkler system to apply treated water from the Mack's Inn WWTF to 58 acres of land located north of the settling ponds. The Mack's Inn WWTF contains six monitoring wells used for routine sampling to insure compliance with standards and operating conditions regulated by IDEQ.



**Figure 1.** Existing Mack's Inn Wastewater Treatment Facility Location (T14N, R44E, Sec 30) and Proposed Expansion Area (T14N, R43E, Sec 25).



**Figure 2.** Aerial view of project location.

## PURPOSE AND NEED FOR ACTION

The Ashton/Island Park Ranger District is responding to an application submitted by Fremont County to obtain a special use permit for expansion of the Mack's Inn WWTF effluent application system.

The existing treatment facility supports 981.9 equivalent users (1 equivalent user = 450 gallons or 4.5 people at 100 gal/day/person). These equivalent users include both residential and commercial properties. The County is currently permitted to apply 28.3 million gallons per growing season (May 1 thru October 15 [168 days]), which is equivalent to 18 inches/acre per growing season. Currently the spray field is operated for one week out of each month during the growing season using an underground sprinkler system. During the peak use season, the Mack's Inn WWTF effluent application system is running at 95 percent capacity and treated effluent is being applied at near maximum capacity allowed by Environmental Protection Agency (EPA) and IDEQ.

Population trends for the Island Park area are difficult to estimate because the majority of the homes are not year round residences. In 2009 Keller Associates analyzed the population information for the cities closest to the Island Park area (Keller 2009). They reported that populations in the general geographic area have been increasing at a rate of 1.5 percent annually since 1970. They concluded that populations in Fremont County would continue to increase over the next 30 years. A growth rate of 5 percent was

selected for use by the Citizen's Advisory Committee for the Island Park area (Keller 2009) to address infrastructure planning needs including estimating the life expectancy of the WWTF.

Residential and commercial properties which are currently platted for development but have yet to be developed would increase the level of use of the WWTF by 1,000 equivalent users. The treatment facility and settling ponds at the facility have the capacity to handle the increased volume of waste generated by these additional properties. However, the effluent application system is near capacity and thus approaching its limits for meeting the standards established by the EPA and IDEQ. The expansion of the effluent application area would allow the Mack's Inn WWTF to accommodate approximately 1,250 additional equivalent users which would double their current capacity. This expansion would provide for those properties already platted as well as for some additional growth of the community. This would also enable the facility to remain in conformance with the current agency standards.

The proposed project area is within an area managed under prescription 5.1. 3 (a) (timber management) (USFS 1997b p. III-137) as described in the 1997 Revised Forest Plan Targhee National Forest.

### **PROPOSED ACTION**

The action being proposed by Fremont County is to acquire the special use permit needed to develop a 50-acre parcel located west of and contiguous to the existing WWTF. This would allow for the increase in effluent application and maintain standards and requirements issued by the EPA and IDEQ. Two center pivot irrigation units would be installed on the new land application area and treated effluent would be applied in a full circle. The proposed action includes a 500-foot setback from private water sources as required by EPA regulation and installation of a fence to restrict access to the site.

A site specific non-significant forest plan amendment is proposed. The proposed action would change the management prescription area from 5.1.3(a) (timber management) to 8.1 (concentrated development areas) (USFS 1997b p. III-157). This change would be applied to approximately 50 acres where new effluent application area would be located.

### **DECISION FRAMEWORK**

Given the purpose and need, the deciding official will review the proposed action and no action alternatives in order to make the following decisions:

1. Whether the proposed action will proceed as proposed, as modified by design features, by an alternative, or not at all.
2. What mitigation measures and monitoring requirements will be required.
3. Whether a Forest Plan amendment is warranted.

### **PUBLIC INVOLVEMENT**

The proposal was listed in the Schedule of Proposed Actions beginning October 2010. The proposal was provided to the public, to other agencies, and to the Shoshone-Bannock Tribes for comment. In addition, as part of the public involvement process, the Forest Service and Fremont County held an open house meeting on September 8, 2011 at the Fremont County Emergency Medical Services (EMS) Building on Library Road to inform the general public about the proposed expansion. The Caribou-Targhee National Forest is currently seeking the public's comments on this EA.

## **ISSUES**

Issues serve to highlight effects or unintended consequences that may occur from the proposed action and no action alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand. The responsible official approved the following issues to be analyzed in depth in this analysis by the Interdisciplinary Team.

1. Area is currently open to cross country travel by vehicles with a < 50 inch wide wheel base (providing they do not cause resource issues); use of the site for land application may impact recreation use.
2. Various wildlife species use the area; use of the site may result in a loss of habitat connectivity in the corridor adjacent to Henry's Lake Outlet.
3. Potential impacts to ground water quality in the area; use of the site for land application may have impacts on ground water quality.
4. Any issues associated with the Forest Plan amendment and changing from Management Prescription Area 5.1.3(a) to 8.1.

## CHAPTER 2 – ALTERNATIVES

This chapter describes and compares the alternatives considered for the Mack's Inn Wastewater Treatment Expansion Project. It includes a description of the alternatives considered. This section also presents the alternatives in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

### DESCRIPTION OF ALTERNATIVES

#### Alternative 1 – No Action

Under the no action alternative the Forest Service would not issue a special use permit to Fremont County for the expansion of the land application area. The site would remain at its current capacity serving approximately 1,250 equivalent users. This alternative would hinder any further development of currently platted subdivisions within the areas of Fremont County serviced by the Mack's Inn WWTF.

#### Alternative 2 – Proposed Action

Under the proposed action alternative the Forest Service would issue a special use permit to Fremont County for the expansion of the land application area at the Mack's Inn WWTF. The special use permit required for the proposed action would authorize the use of 50 acres of contiguous NFS lands for the expansion. The 50 acres would provide for the installation of two center pivot irrigation units (pivots) to apply the treated wastewater; a 500 foot buffer area between the land application area and residential structures as per IDEQ setback requirements; and a perimeter fence around the land application area to limit trespass in the area (Figure 3).

The perimeter fence constructed around the area used for the pivots would be a three strand smooth wire fence to facilitate wildlife movement through the area. The fence would be let down in late fall to allow winter wildlife passage, prevent damage to the fence associated with snow loads in the winter, and allow access by snowmobiles during snow months. The fence would be put back up in the non-snow months. Signage would be added to the fence during non-snow months to inform the public that the area is used for treated wastewater disposal. This would make the fence visible to the public using the adjacent NFS lands for recreation.

To facilitate installation and operation of the pivots all the trees within the project area would be removed. The trees are primarily lodgepole pine (*Pinus contortus*) with an average age of 30 years. The County would cut the trees and then use a combination of piling the trees and then burning the piles along with some broadcast burning. The County will install erosion and sediment control methods until the site has stabilized. Once cleared, the vegetation communities within the land application area would be routinely maintained using mechanical treatment (i.e., chainsaw or front end loader dependent upon tree size) to prevent interference with the operation of the pivots.

Pivots would be connected to the WWTF via a buried pipeline. The pipeline would connect to a pump located at the treatment facility and be buried in an 18-inch wide trench approximately six feet below ground surface. The pipe would be an 8-inch PVC pipe, that would travel north through the existing land application field for approximately 1,000 feet and then turn west and cross Forest Service Road 338, traveling 1,000 feet west to the first center pivot unit in the land application expansion area. After leaving the first irrigation unit, the pipe would travel the remaining 1,200 feet to the second center pivot unit. An electrical line would also be buried in the trench used for the pipeline to supply electricity to the irrigation systems. The irrigation units would be designed and installed to accommodate future growth. The expansion of the land application area would allow the Mack's Inn WWTP the ability to distribute 24.4 million gallons of treated wastewater through the land application process.

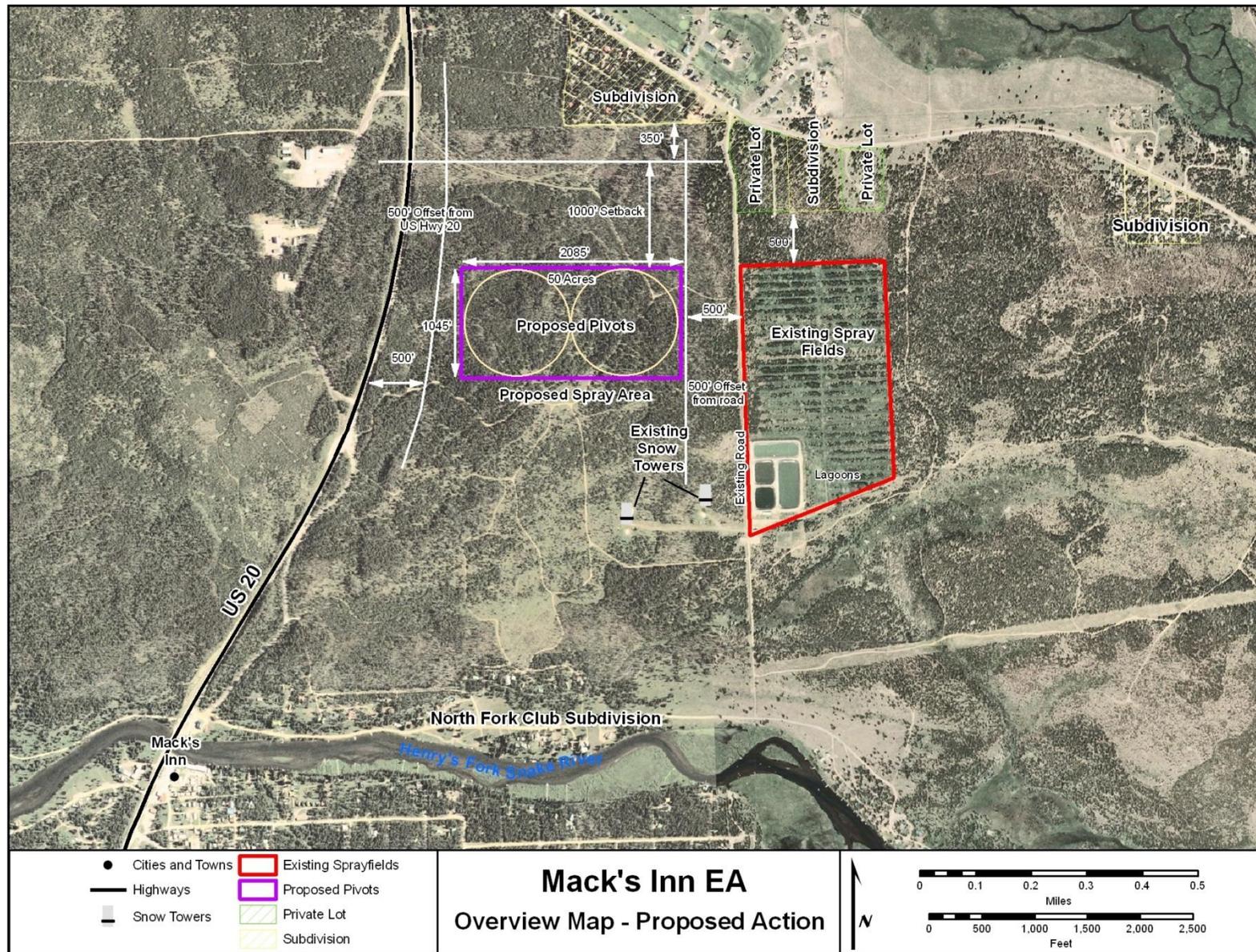


Figure 3. Overview of Proposed Action Alternative.

A site specific forest plan amendment is proposed. The proposed action would change the management prescription area from 5.1.3(a) (timber management) to 8.1 (concentrated development areas) (USFS 1997b p. III-157). This change would be applied to approximately 50 acres where the new effluent application area would be located.

***Design Features Associated with the Proposed Action Alternative***

- The land application expansion site would be designed in such a manner as to comply with all IDEQ standards and requirements. These include but are not limited to maximum hydraulic loading rates, buffer zones, seasons of use, ground water quality, fencing and posting, and odor management.
  - Maximum hydraulic loading rates – 18 inches/acre per growing season.
  - Buffer zones – Distance to public access – 50 feet
    - Distance to inhabited dwellings – 300 feet
    - Distance to streams – 100 feet
    - Distance to private water sources – 500 feet
    - Distance to public water sources – 1,000 feet
    - Single sample maximum total coliform level – 240/100ml.
  - Seasons of use – growing season: May 1 thru October 15 (168 days).
  - Ground water quality – ground water quality shall be in compliance with *Idaho Ground Water Quality Rule* IDAPA 58.01.11 and monitored with existing monitoring wells on site. If necessary new wells will be installed at the request of IDEQ.
  - Sign posting – signs should read “Irrigated with Reclaimed Wastewater – Do Not Drink” or equivalent, to be posted every 500 feet and at each corner of the outer perimeter of the buffer zones of the site.
  - Odor management – the WWTP and other operations associated with the facility shall not create a public health hazard or nuisance conditions, including odors. These facilities shall be managed in accordance with an IDEQ approved Odor Management Plan which shall be submitted to and approved by the Department as a part of the preliminary engineering report described in Section 411 of IDAPA 58.01.16. The Water Environment Federation Guidance referenced in Section 008 of these rules provides guidance for use in developing an odor management plan that is inclusive of the facilities being designed.
- If any historical sites are found during construction, work would be immediately stopped and the Forest Archeologist would be contacted.
- All personnel involved with on the ground implementation of the project must comply with the food storage order, Order Number 04-15-0063, to protect grizzly bears. This order makes food unavailable to grizzly bears.
- Prior to commencement of activities, a nest survey would be conducted to determine if active goshawk nests are present. If nests are present and active, all activities would occur between October and February.

- Any machinery used on site for construction or maintenance will be cleaned of invasive species seed or debris prior to working on site. The site would be monitored and treated for invasive plant species for up to five years following the initiation of the project. .
- Tree removal activities should result in edges which appear natural with irregular lines and shapes to the extent possible.
- Areas where soils are disturbed would be re-seeded to an appropriate native plant mix approved by the Forest Botanist.
- The following Best Management Practices related to sanitation systems would be applicable to the project (U.S. Forest Service 2012):
  - An operation and maintenance plan would be prepared and maintained for the waste treatment and disposal facilities (FSM 7410).
  - Follow-up actions identified during inspections of the facility would be implemented as needed to ensure that the system is working properly.
  - Procedures would be included in the operation and maintenance plan to contain or avoid releases of pollutants in floods or other emergencies.
  - The waste treatment and disposal facilities authorized on NFS lands would be operated and maintained according to applicable regulations and direction.

### **ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY**

Two other alternatives were considered during the planning process, but have not been included in the EA for detailed study. These are described briefly below, along with the rationale for not considering them further.

- Expanding the new land application area to the east of the existing land application area was considered. This alternative was dropped from further consideration because that location is dominated by mature timber stands (ages in excess of 100 yrs) and it represents important big game habitat associated with the Henry's Lake Outlet. This area is also known to be commonly used by grizzly bears which are protected under the Endangered Species Act (ESA). If this alternative were selected, the project would have an adverse affect on grizzly bears.
- Connecting the WWTF to the sprinkler system at the Island Park Golf Course was considered. The connection of the facility to the golf course was assessed in 2007 and it was determined that in order to meet IDEQ Standards for the application of treated water on a golf course the Mack's Inn Sewer Treatment Plant would have to change its treatment methods to a mechanical treatment system. At the time it was determined to be cost prohibitive and remains as such at the current time.

### **COMPARISON OF ALTERNATIVES**

This section provides a summary of the effects of implementing each alternative. Information in Table 1 is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Implementation of the proposed action would result in a Forest Plan amendment to reflect the change in management for the area. Both alternatives follow directions listed in the 1997

Revised Forest Plan Targhee National Forest; however, there would be a shift from management prescription 5.3 (a) (timber management) (USFS 1997b p. III-137) to 8.1 (concentrated development areas) (USFS 1997b p. III-157), for the acreage associated with the proposed action. The proposed action fulfills the request submitted by Fremont County. This would allow the County to expand the land application area to meet IDEQ standards.

The proposed location for the land application area is currently designated as open for cross country motorized travel to vehicles less than 50 inches in width. Installation of the land application area and associated perimeter fence would exclude the 50 acres of land from use by cross country motorized vehicle use in the summer or non-snow months. The fence would be put up soon after snow melt, typically late May or early June. The fence would be taken down the middle of October prior to snow accumulation and would not restrict use during the winter when the system would be dormant. Under the no action alternative there would be no effects to recreation use of the area.

The proposed location for the land application expansion area receives limited use by wildlife species. This site was selected because the timber stand that would be affected is relatively young in comparison to surrounding stands. The young age of the stand and its close proximity to human development causes the area to be less desirable than other areas in close proximity to the WWTF for use by species such as big game (i.e., elk and mule deer) as well as grizzly bear.

The application of an additional 24.4 million gallons of water annually over the 50 acre expansion area has the potential to impact ground water quality. Routine monitoring required by IDEQ limits the possibilities of contamination but does not prevent them. Under the no action alternative, no additional water would be applied to the area and thus there would be no impact on ground water.

**Table 1.** Comparison of Effects between Alternatives.

<b>Indicator</b>	<b>Alternative 1 No Action</b>	<b>Alternative 2 Proposed Action</b>
Requires an Amendment to the Forest Plan	No	Yes
Impacts to Recreation (motorized travel during non-snow months)	No	Yes
Wildlife	No	Yes
Result in economic impact to County	Yes; greater than Alt 2.	Yes
Ground water quality	No	Potential

The proposed action would require amending the current Forest Plan because of the site specific changes that would occur as a result of expanding the WWTF. Specifically, the proposed project area is within an area managed under prescription 5.3 (a) (timber management) (USFS 1997b p. III-137) as described in the 1997 Revised Forest Plan Targhee National Forest. Installation of the land application system would require a change in management to prescription 8.1 (concentrated development areas) (USFS 1997b p. III-157). This would require a site specific Forest Plan amendment to reflect the change in acres managed under each category. Table 2 presents the standards and guidelines for each prescription which are different to provide a

comparison and identify where changes would occur in management associated with an amendment to the forest plan.

**Table 2.** Differences in Standards and Guidelines for each forest prescription associated with the plan amendment.

<b>Comparison of Management Prescriptions</b>	<b>Timber Management 5.1.3(a)</b>	<b>Concentrated Development Areas 8.1</b>	<b>Changes in Standards and Guides associated with project implementation</b>
Timber Management	Lands included in timber base, no clearcutting is allowed.	Lands are removed from the suitable timber base. They do not contribute to the Allowable Sale Quantity (ASQ).	Remove lands from suitable timber base.
Access	Open for pedestrian, horse/pack stock, mtn. bike/mechanized, Motorized <50"wide, Winter nonmotorized, and snowmachine.	Open for pedestrian, horse/pack stock, mtn. bike/mechanized, Winter nonmotorized, and snowmachine.	Close the land for cross country travel for Motorized vehicles <50"wide. However, the proposed action would not permit cross country travel during the snow free season due to IDEQ requirements which restrict access to the general public.
Fire/fuels	Wildfires will normally be suppressed using control strategies during the fires season. Pre-and post-fire season strategies may include containment, confinement, and control.	All wildfires will be aggressively suppressed.	Increase wildfire suppression efforts.
Recreation – Trails	Motorized trails should be developed using primarily local roads and trails not being actively used for commodity recovery.	Protect existing trails and wherever possible avoid development of trails in or near concentrated development sites. Where feasible move existing trails away from these areas.	Alter trail management.
Recreation – Recreation Opportunity Spectrum (ROS)	Recreation is managed to provide a combination of semi-primitive nonmotorized to roaded natural opportunities.	Semi-primitive nonmotorized to urban.	Alter Recreation – ROS.
Recreation – Visual Quality Objective (VQO)	Generally Partial Retention to Modification.	Generally Partial Retention to Maximum Modification.	Possibly change Recreation – VQO.

<b>Comparison of Management Prescriptions</b>	<b>Timber Management 5.1.3(a)</b>	<b>Concentrated Development Areas 8.1</b>	<b>Changes in Standards and Guides associated with project implementation</b>
Range	Livestock grazing may be allowed on transitory forage produced following timber harvest where and when that use will not conflict with regeneration efforts or other concerns.	No standard and guide for Range	Currently there is not a grazing allotment in this area so grazing is not affected by the proposed plan amendment.

## CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in Table 1 above. Effects considered below include in those to the following:

- Vegetation resources including sensitive, threatened, and endangered plants, noxious weeds, as well as general vegetation
- Wildlife resources including sensitive, threatened, and endangered wildlife species, as well as general wildlife species
- Cultural resources
- Recreational access
- Economic resources
- Water quality and hydrology
- Soils
- Visual Quality

### VEGETATION RESOURCES

#### Existing Conditions

The project area is a forested ecosystem. The overstory within the project area is primarily lodgepole pine, with scattered subalpine fir (*Abies lasiocarpa*) and juvenile quaking aspen (*Populus tremuloides*). The understory includes a mixture of shrub, grasses and forb species. These include snowberry (*Symphoricarpos albus*), pinegrass (*Calamagrostis rubescens*), elk sedge (*Carex garberi*), grouse whortleberry (*Vaccinium scoparium*), lupine (*Lupinus parviflorus*), arrowleaf balsamroot (*Balsamorhiza sagittata*), yarrow (*Achillea millefolium*), and kinnikinnick (*Arctostaphylos uva-ursi*).

The lodgepole pine within the project area regenerated following harvest activities in the early 1970s. The trees within the project area averaged 6-8 inches diameter at breast height (dbh). The understory species appeared to be healthy. Aspen recruitment is sporadic and scattered throughout the project area and the forested habitats surrounding the project area.

No sensitive, rare, threatened or endangered plants or suitable habitat for them exists in the project area. There are no unique or difficult to replace plant communities within the area. Ute ladies'-tresses (*Spiranthes diluvialis*; threatened) and whitebark pine (*Pinus albicaulis*; candidate) are both identified on the U.S. Fish and Wildlife Service (USFWS) species list dated August 17, 2011 for Fremont County, Idaho. Neither of these plants occur in or near the project area, as described in the biological assessment (BA) prepared for this project that is on file at the Ashton/Island Park Ranger District Office.

The project area does not have any invasive plant species present.

#### Environmental Effects

##### *Alternative 1 – No Action*

**Direct and Indirect Effects:** By not issuing the special use permit to Fremont County the proposed wastewater treatment land application expansion would not occur in the project area. This would result in no impacts to vegetation within the project area.

**Alternative 2 – Proposed Action**

**Direct and Indirect Effects:** The installation of the expanded application area would affect vegetation. Expansion of the Mack's Inn wastewater treatment land application area would result in the removal of all of the trees and tall brush species in the 50-acre project area changing a forested setting to a nonforested opening for as long as the facility remains in place.

No noxious or invasive weeds were observed during the environmental survey; however, disturbance activities often increase the risk of invasion of weedy vegetation species. All construction equipment will be washed prior to working on NFS lands in order to remove weed seed and invasive plant debris. Areas where soils are disturbed would be re-seeded to an appropriate native plant mix and monitored for any new weed infestations. Any new infestations would be treated to prevent additional spread or introduction of noxious weeds.

**Cumulative Effects:** No other projects are planned near the project area which would cumulatively impact vegetation resources. Continued maintenance of the new site will keep the trees from reaching maturity in a similar manner as the existing land application site.

**WILDLIFE RESOURCES****Existing Conditions**

Both a BA addressing species protected under the ESA and a biological evaluation (BE) addressing Forest Service special status species have been completed and are on file at the Ashton/Island Park Ranger District Office. These two documents were summarized and combined in a wildlife report which also included information on Forest Service management indicator species (MIS); this report is also on file at the District Office. Two threatened and three candidate wildlife species are described in the BA: Canada lynx (*Lynx canadensis*; threatened), grizzly bear (*Ursus arctos horribilis*; threatened), greater sage-grouse (*Centrocercus urophasianus*; candidate), North American wolverine (*Gulo gulo*; candidate), and yellow-billed cuckoo (*Coccyzus americanus*; candidate). No habitat for Yellowstone Cutthroat Trout is present in the project area, therefore this project will not affect the species or its habitat.

Nineteen Forest Service sensitive species are addressed in the BE. Thirteen species were identified in the Wildlife Report as occurring in habitat types similar to those which are present within the project area.

**Environmental Effects****Alternative 1 – No Action**

**Direct and Indirect Effects:** By not issuing the special use permit to Fremont County the proposed wastewater treatment land application expansion would not occur in the project area. This would result in no impacts to wildlife species.

**Alternative 2 – Proposed Action**

**Direct and Indirect Effects:** Of the 25 species addressed in the Wildlife Report it was determined that implementation of the proposed action has the potential to impact grizzly bear and elk. An individual determination of effects of this project on threatened, endangered and sensitive species is described below for each species or group of species discussed in the wildlife BE, BA, and Wildlife Report in the project file.

## Summary of T&E Species

No critical habitat has been proposed or designated for any listed species anywhere on the Caribou-Targhee National Forest, therefore none would be affected.

Canada Lynx (*Lynx canadensis*): The Mack's Inn wastewater spray field expansion project will be compliant with all management direction for the Canada lynx contained in the Canada Lynx Conservation Assessment and Strategy, the Canada Lynx Conservation Agreement, the Northern Rockies Lynx Management Direction, and the 1997 Revised Forest Plan for the Targhee National Forest. The proposed project area is located within Lynx Analysis Unit (LAU) #4. This LAU has a low but stable density of snowshoe hares and during past surveys (between 1999 and 2001) using hair snare protocol no lynx were detected in the LAU. The LAU exceeds minimum requirements for denning habitat. Even though the risk of impacts are limited it was determined that the proposed land application expansion at the Mack's Inn WWTP MAY AFFECT, but is NOT LIKELY TO ADVERSELY AFFECT Canada lynx.

Grizzly Bear (*Ursus arctos horribilis*): This project will be compliant with all management direction for the grizzly bear contained in the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area and the 1997 Revised Forest Plan for the Targhee National Forest. The proposed project would not occur within the Primary Conservation Area (PCA). However, the project area is located within the Henry's Lake BMU, Subunit #1. The project area is located within an area of the BMU which, due to the density of human development, discourages grizzly bear presence and factors contributing to their presence. Grizzly bears heavily use the area encompassing the project area along the Henry's Fork in the Mack's Inn area as an east-west movement corridor, and several collared grizzlies have traveled directly through the project area. The project would remove the area within the land application expansion field from open cross country travel which would help to reduce disturbance in the area. However, the project area falls within non-secure habitat (within 500 meters of open roads). The increased human activity during the removal of trees would open up the treed habitat reducing security cover which would have an impact on grizzly bears. The installation of the perimeter fence would restrict movement of individuals through the 50-acre project area causing them to go around the perimeter. Nonetheless, due to the close proximity to human development and existing disturbances these impacts are anticipated to be negligible. Therefore, it is determined that this project MAY AFFECT, but is NOT LIKELY TO ADVERSELY AFFECT the grizzly bear.

Greater Sage-Grouse (*Centrocercus urophasianus*): There is no suitable habitat for the greater sage-grouse within or adjacent to the proposed project area. The implementation of the proposed project would have no direct or indirect effects to the greater sage-grouse; therefore it is determined that this project will have NO EFFECT on the greater sage-grouse.

North American Wolverine (*Gulo gulo luscus*): This project would have no direct or indirect effects to the wolverine because the project area is currently not considered wolverine habitat due to the lack of alpine habitat with persistent spring snow. The project area is not within the potential home range of a female or male wolverine, and the project will not impact the habitat of their prey. There have been no documented wolverines near the proposed project area; therefore it is determined that this project will have NO EFFECT on wolverines.

Yellow-billed Cuckoo (*Coccyzus americanus*): The Yellow-billed Cuckoo is a candidate species. Yellow-billed Cuckoos are neotropical migrants that breed in low-elevation (less than 6600 feet) cottonwood forests with a dense understory in southern Idaho. Population declines have been

severe in the West and the bird is now considered rare (IDFG, 2005). There is no habitat for this species on the Ashton-Island Park ranger district. Therefore, it is my determination that this project will have **no effect** on the Yellow-billed Cuckoo.

### **Summary of Forest Service Sensitive Species and Management Indicator Species**

Trumpeter Swan (*Cygnus buccinator*): The proposed project area does not contain any open water habitat. The closest open water habitat is located approximately ½ mile south of the project area along the Henry's Fork of the Snake River. This area is included in the annual winter survey area for trumpeter swans at the Big Springs/North Fork/Mack's Inn stretch. The construction activities associated with the expansion of the spray field would not occur during the winter months. Therefore it is determined that this project will have NO IMPACT on trumpeter swans.

Common Loon (*Gavia immer*): There is no designated breeding or brood rearing habitat for the common loon within or near the project area (USFS 2006, USFS 1997a). Therefore, it is determined that this project will have NO IMPACT on the common loon.

Harlequin Duck (*Histrionicus histrionicus*): There is no nesting or brood rearing habitat for the harlequin duck within or near the project area (USFS 1997a). Therefore, it is determined that this project will have NO IMPACT on the harlequin duck.

Northern Goshawk (*Accipiter gentilis*): Territories for northern goshawk are typically centered on the most recently active nest. The 1997 Revised Forest Plan for the Targhee National Forest considers a northern goshawk territory to be 6,000 acres, which encompasses, approximately, lands within a 1.7 mile radius of the nest. The nearest goshawk nest area and set of incidental sightings is almost 4.5 miles to the southeast. Activities anticipated with this project will not disrupt known nesting, fledging, or foraging home ranges of northern goshawk in the District. Therefore, it is determined that this project May Impact Individuals or Habitat, But Will Not Likely Contribute to a Trend Towards Federal Listing or Loss of Viability to the Population or Species on the northern goshawk.

American Peregrine Falcon (*Falco peregrinus anatum*): In 2007 a peregrine falcon nest was discovered in the Thirsty Creek area approximately 3.5 miles northeast of the project area (Moulton 2009). This nest has had unknown productivity in both 2007 and 2008 (Moulton 2009). The 1997 Revised Forest Plan for the Targhee National Forest standards prohibit the use of herbicides and pesticides, which cause eggshell thinning, within 15 miles of a known peregrine falcon nest (USFS 1997a). Only Forest Service approved herbicides would be used during vegetation management at the project site. It is determined that this project will have NO IMPACT on the peregrine falcon.

Bald Eagle (*Haliaeetus leucocephalus*): Multiple bald eagle territories are located relatively nearby the project area (Lucky Dog, Flat Rock, and Coffee Pot). The nearest nest territories to the project are Lucky Dog and Flat Rock both of which are just over 2 miles east and west of the project area; therefore the project area lies inside of its Zone III Home Range (2.5 mile radius from a bald eagle nest) of both territories. This nest territory was occupied, but reproductively inactive in 2009. The next closest nest territory is Flat Rock which is over 2 miles west of the spray field expansion project area and also within the Zone III Home Range.

The following Standards (S) and Guidelines (G) from the 1997 Revised Forest Plan apply to the proposed project:

1. Management within Home Ranges (Zone III) (S) (USFS 1997a, p.III-19). Zone III includes "...all potential foraging habitat within a 4 km (2½ mi) radius of the nest. Areas within the 4 km (2½ mi) radius of the nest that do not include potential foraging habitat may be excluded" (BLM 2003).

Response: The project area does not contain foraging habitat for bald eagles.

2. Herbicides and pesticides (S) (USFS 1997a, p.III-19).

Response: Only herbicides approved by the Forest Service will be used during vegetation management as needed within the project area.

3. Recreation activities and developments (G) (USFS 1997a, p.III-19).

Response: Recreation activities within the project area would be decreased by fencing the spray field as per IDEQ requirements. This would impact the open cross country off-road vehicle travel in the area which would lessen the potential for any possible conflict with bald eagle activity.

It is determined that this project will have NO IMPACT to the bald eagle. This determination is based on the lack of available nest sites within or adjacent to the project area due to tree size and the season of construction is outside of nesting season and before wintering season when the general geographic area may experience the presence of bald eagles.

Forest Owls: Forest owls on the Targhee National Forest include flammulated (*Otus flammeolus*), boreal (*Aegolius funereus*), and great gray owls (*Strix nebulosa*).

The young lodgepole pine habitat within the project area does not provide suitable nesting habitats for the flammulated owl. This is coupled with the scarce presence of individuals; the nearest documented sighting occurred 18 years ago over 4miles away in the Upper Coffee Pot Campground area. There are no foreseeable projects that may affect habitat in the area for this species. Therefore, it is determined that this project will have NO IMPACT on flammulated owls.

The lodgepole pine habitat which dominates the project area is not boreal owl nesting habitat, though these habitat types can be used as a part of individuals home range (i.e., roosting and foraging) (Hayward and Verner 1994). No known boreal owls have been sighted incidentally in the project area. Cumulative effects in the area include disturbance from hunting, fishing, hiking, snowmobiling, and other recreational activities, as well as existing roads. There are no foreseeable projects in the area that would affect habitat for this species. Therefore, it is determined that this project will have NO IMPACT on boreal owls.

The lodgepole pine found within the project area is potential great gray owl nesting habitat; however there are very few snags present within the parcel and no stick nests were observed during the July 2010 biological survey of the area. The project area is not within either active or historic potential great gray owl territory and no nest stands have been identified anywhere in or adjacent to the project area. After the removal of the trees in the project area, the clearing of the project area would provide potential foraging area for the great gray owl.

The ability of the Island Park area to support great gray owl has not changed from pre-settlement times, so potential great gray owl populations are stable on the Targhee National Forest (USFS

2006b). Great gray owls are relatively adaptable to habitat alteration, perhaps due to their use of openings for foraging. Project activities are not anticipated to affect great gray owl.

Cumulative effects in the area include disturbance from hunting, fishing, hiking, snowmobiling, and other recreational activities, as well as existing roads. There are no foreseeable projects in the area that would affect habitat for this species. Therefore, it is determined that this project will have NO IMPACT on great gray owls.

Primary Cavity Nesters: Primary cavity nesters on the Targhee National Forest include: red-naped sapsucker (*Sphyrapicus nuchalis*), Williamson's sapsucker (*Sphyrapicus thyroideus*), Lewis's woodpecker (*Melanerpes lewis*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), American three-toed woodpecker (*Picoides dorsalis*), black-backed woodpecker (*Picoides arcticus*), and northern flicker (*Colaptes auratus*). Though all eight species are considered MIS, only the American three-toed woodpecker is a Forest Service sensitive species. These species use a variety of forest habitat types from aspen to spruce-fir forests. These species predominantly utilize forests that are recently burned, insect infested, and/or composed of mature to over-mature stands.

The project area is associated with an area which was replanted with lodgepole pine trees following an extensive bark beetle infestation in the late 1960s which resulted in the loss of large areas of lodgepole pine stands in the Island Park area. Occasional natural disturbance, attrition, and wind throw may create random snags throughout the project area, but likely not in concentrations which would attract American three-toed woodpecker. American three-toed woodpeckers are tolerant of human activity; therefore disturbance due to activity at the project site is unlikely to affect possible local individuals (Leonard 2001). Project activities are not anticipated to affect American three-toed woodpeckers and cumulative effects to the American three-toed woodpecker population on the forest has been favorable (pine beetle outbreak, blister rust infections, Willow Creek fire of 2008). Therefore, it is determined that this project will have NO IMPACT on the American three-toed woodpecker.

The proposed project will not alter or remove any existing snags therefore, both snag availability and timber management is adequate for habitat for cavity nesting wildlife.

The proposed project will not alter any primary cavity nesting species habitat. The trees within the project area are smaller diameter trees which were replanted following the large bark beetle infestation in the late 1960s and early 1970s and have not reached a diameter preferred for nesting cavities. The removal of the trees within the project area would remove potential future habitat; however, it would not result in the forest not meeting snag requirement and biological potential standards for cavity nesters. There are no foreseeable projects in the area that would compound the impact to habitat for these species.

Migratory Birds: For a project analysis, only those migratory birds on one of the aforementioned USFWS lists that primarily breed in the habitat types found in and adjacent to the project area are discussed below (Idaho PIF 2000). The choices of habitat types found in the Idaho Bird Conservation Plan are as follows: alpine, high-elevation mixed conifer forest, low-elevation mixed conifer forest, lodgepole pine, cedar and hemlock forest, ponderosa pine forest, juniper/pinyon/mountain mahogany, aspen, mountain brush, sagebrush/salt desert scrub, grassland, non-riverine wetlands (marshes/lakes/ponds), riparian, and cliffs/rock outcrops/talus (Idaho PIF 2000 p.15).

Only migratory birds that primarily breed in lodgepole pine habitat would need to be analyzed for the Mack's Inn Wastewater Treatment Plant Land Application Expansion Project. Because none of the aforementioned 14 migratory birds use lodgepole pine as their primary breeding habitat, no migratory bird species are analyzed specifically for this project.

Columbian Sharp-Tailed Grouse (*Tympanuchus phasianellus columbianus*): Upon completion of the field assessment in July 2010 there was no suitable habitat present within the project area for Columbian sharp-tailed grouse lekking, nesting, brooding, or wintering. There are no known or designated Columbian sharp-tailed grouse leks or key habitat within 5 miles of the proposed project site (IDFG CDC 2009). There are no foreseeable projects in the area that would affect habitat for this species. Therefore this project will have NO IMPACT on Columbian sharp-tailed grouse.

Boreal Toad (*Anaxyrus boreas boreas*): There are no documented occurrences of boreal toads within a 3 mile radius of the project area. The existing lagoons located at the existing WWTF have the potential to support amphibian habitat, however, the routine maintenance of the facility would likely disturb individuals at this location. The application of treated water within the project area would result in increased moisture levels in the area however the removal of trees and downed logs within the path of the irrigation system would also remove cover habitat, making the area less suitable for boreal toads. Therefore this project will have NO IMPACT on boreal toads.

Columbia Spotted Frog (*Rana luteiventris*): The project area does not contain any suitable habitat for the Columbia spotted frog. Therefore this project will have NO IMPACT on the Columbia spotted frog.

Spotted Bat (*Euderma maculatum*): No suitable spotted bat habitat occurs in the project area. There are no foreseeable cumulative effects from any other projects. This project will have NO IMPACT on spotted bats.

Townsend's Western Big-Eared Bat (*Plecotus townsendii pallescens*): There are no suitable maternal roosts or winter hibernacula in or adjacent to the project area, though some trees in the project area could provide single night roosting. The removal of these trees within the project area would remove potential nightly roost sites; however, it would also open potential foraging areas. Ample number of trees would remain around the facility which could act as nightly roost sites. There are no foreseeable cumulative effects from any other projects. Therefore, this project will have NO IMPACT on Townsend's western big-eared bats.

Red Squirrel (*Tamiasciurus hudsonicus*): The removal of trees within the project area would remove foraging areas available to the red squirrel. However, a 500 foot buffer zone would be maintained between the land application area and any future developments protecting this habitat for the squirrels. Trees within the buffer zone would remain in place and not be removed under the installation and operation of the facility unless they pose a risk to human safety or operation of the facility. The project will have NO DETRIMENTAL IMPACT on red squirrel populations in the area.

Pygmy Rabbit (*Brachylagus idahoensis*): There is no suitable habitat within or adjacent to the project area. This project will have NO IMPACT on pygmy rabbits

American Marten (*Martes americana*): The young age of the forested stands within the project area are at a younger age class than those commonly used by the American marten. Therefore,

due to the lack of existing habitat and the proximity to human activity, this project will NOT LIKELY ADVERSELY IMPACT the American marten.

Fisher (*Martes pennanti*): Though the project area provides mesic, forested riparian habitat, it does not provide high canopy closure, large diameter trees, or hard packed snow that fisher require. These habitat characteristics are lacking in the project area and there are no known nearby fisher populations. Therefore this project will have NO IMPACT on fishers.

Gray Wolf (*Canis lupus*): The project area falls within the current home range of the Henry's Lake pack territory. Recent sightings (2009 and 2010) identify wolf activity within 1.5 miles of the project area. The project will not impact denning or rendezvous habitat. Any wolves that may be using the area should not be negatively affected by the human activities associated with the project. Therefore, this project is NOT LIKELY TO JEOPARDIZE THE CONTINUED EXISTENCE of the gray wolf.

Elk (*Cervus elaphus*): Hunting and other forms of recreation will continue throughout the Island Park area. This will continue to have impacts on elk populations in the area. The impacts from recreation should be lessened by creating more secure area closures.

The project area is inside Watershed 008 (Henry's Fork Headwaters), which had an Elk Habitat Effectiveness (EHE) of 0.57 as of the 1997 Revised Forest Plan for the Targhee National Forest (USFS 1997b). The average EHE for the Targhee National Forest was 0.57. Cross-country travel restrictions and road closures for habitat security identified in the 1997 Revised Forest Plan were implemented beginning in 1998, changing the motorized access density in Watershed 008 from 2.56 mi/mi<sup>2</sup> prior to 1997 to 1.15 mi/mi<sup>2</sup> in 2004 (USFS 2006). This improved the EHE from that listed in the 1997 Revised Forest Plan for this watershed to 0.62 in 2004 (USFS 2006).

Hunter densities supplied by the Idaho Department of Fish and Game (IDFG) were figured when there was a general bull season. The high hunter density coupled with a high motorized access density resulted in an estimated 95 percent Elk Vulnerability (EV) prior to 1997. As of 2005, the EV dropped to 40 percent for this watershed, far below the 89 percent threshold set by the Forest Service and IDFG (USFS 1997a).

The project area serves mostly as migratory habitat as elk move between their wintering grounds in the Ashton-St. Anthony valley area to their summer habitat in the mountains surrounding Island Park and Yellowstone National Park. Clearing and construction of the irrigation system would take place in the late summer months before migration occurs and when elk are not using the area. Motorized access is the main factor that the Forest Service can control for both EHE and EV. Project implementation would remove cross country motorized activity during non-snow months in the project area by the installation of the perimeter fence. However, this would not exclude elk from entering the project area. The majority of the migration activity occurs east of the project in areas which contain mature lodgepole pine habitats closer to the Henry's Fork outlet. Impacts to elk are anticipated to be limited to seasonal migration periods. Due to the levels of development in close proximity to the project area, no negative impacts are anticipated to elk as a result of project implementation.

Bighorn sheep (*Ovis canadensis*): The project area is not suitable summer or winter habitat for bighorn sheep. Therefore this project will have NO IMPACT on bighorn sheep.

## CULTURAL RESOURCES

### Existing Conditions

The cultural resource site survey for the area of potential effect (APE) was completed on July 12, 2010 and reviewed by the Forest Archeologist. No historical sites were found. Concurrence of the no effect from the State Historic Preservation Office was given on February 17, 2012.

The APE is comprised of an undeveloped parcel of public land administered by the U.S. Forest Service and is located in the Ashton/Island Park Ranger District of the Caribou-Targhee National Forest in Fremont County, Idaho. The APE is located on flat, wooded terrain just north of the Henry's Fork River. The objective of the cultural resource inventory was to identify and evaluate cultural properties within the project's APE in accordance with 36 CFR 800.

Information pertaining to prehistoric cultures and European-American activities was researched.

All areas were examined using pedestrian transects spaced no more than 30 m apart. Ground visibility in open areas was approximately 10 to 30 percent due to vegetation.

### Environmental Effects

#### *Alternative 1 – No Action*

**Direct and Indirect Effects:** Under the no action alternative a special use permit would not be granted to Fremont County for the expansion of the land application system. By not installing the land application expansion the Mack's Inn WWTF would continue to operate at near capacity. The adjacent 50 acres would not be disturbed so there would be opportunity to disturb any subsurface artifacts.

#### *Alternative 2 – Proposed Action*

**Direct and Indirect Effects:** No historic sites were discovered during the archaeological site survey. Under Conclusions and Recommendations in the Archaeological and Historical Survey Report - Archaeological Survey of Idaho any discovery of historical sites during the construction process would require halting of the project and consulting with the Forest Archeologist to determine how to proceed.

**Cumulative Effects:** No other projects are planned near the project area which would cumulatively impact historic sites.

## RECREATIONAL ACCESS

### Existing Conditions

The area associated with the proposed land application expansion is currently designated as open for cross country travel for all vehicles with a wheel base less than 50 inches in width, two-wheeled vehicles, hikers, and horseback riders during the summer months with all trails and roads open to all licensed vehicles. Cross country travel for vehicles with a wheel base wider than 50 inches is prohibited in the proposed project area. The area is open for cross country snow travel between the months of November 1 to June 1. A groomed snowmobile trail passes through the area of the expansion.

The project area is within IDFG Game Management Unit (GMU) 61 which provides opportunity for open and controlled hunts for big game species (elk, deer, bear, lion, and moose) as well as

multiple upland bird species and waterfowl. However, due to the close proximity to residential properties the area is anticipated to receive very little use by hunters.

## **Environmental Effects**

### ***Alternative 1 – No Action***

**Direct and Indirect Effects:** Under the no action alternative recreation use of the project area would continue. Use by ATVs and snowmobiles in the 50 acres would continue and use would not be impacted in anyway associated with this project.

### ***Alternative 2 – Proposed Action***

**Direct and Indirect Effects:** The development of the project area would remove the 50 acres of NFS lands from the areas designated as open for motorized cross country travel during non-snow months. It is anticipated that new motorized routes would be reestablished by ATV users along the outside edges of the application field, beyond the boundary fence. The exclusion of motorized and non-motorized cross-country travel in this area during the snow-free season would result in a reduction of available acres of open terrain. A section of groomed snowmobile trail would be closed; an alternative route would be groomed in its place.

**Cumulative Effects:** The Forest Service is currently updating the travel management plan for the Island Park area. As part of this process, ATV trails would be constructed and a number of user-created motorized trails are under consideration for closure. The 50-acres that would be closed to motorized vehicle use under this project could add to the total number of acres closed if the project area itself is not within one of the areas being considered for closure. The current WWTP has restricted ATV use within the 60-acres occupied by the main WWTF and the land application area. The expansion proposed in this project would further restrict ATV use in an additional 50 acres.

## **ECONOMIC IMPACTS**

### **Existing Conditions**

In 2009 Keller and Associates developed a *Fremont County Wastewater Facilities Planning Study, Environmental Information Document* which assessed the need for action associated with Fremont County's WWTF in the Island Park area (i.e., Mack's Inn WWTF and Last Chance Water Treatment Facilities). Following this assessment Fremont County selected Alternative 1- No Action, which called for modification of the existing facilities rather than development of a new larger facility or additional smaller facilities as was proposed in Alternative 2-5. This alternative was selected due to minimal fee increase that would be required for County residence. The other alternative would have resulted in a substantial fee increase. No specific dollar figure was provided for comparison of the alternative within the Keller Associates planning study.

## **Environmental Effects**

### ***Alternative 1 – No Action***

**Direct and Indirect Effects:** Under the no action alternative a special use permit would not be granted to Fremont County for the expansion of the land application system. By not installing the land application expansion the Mack's Inn WWTF would continue to operate at near capacity which would limit the development of the residential and commercial properties which are

currently platted for development. This in turn would impact the economic growth of the community by restricting development.

Development of previously platted residential and commercial properties could occur if one of the additional alternatives identified in Keller Associates planning study, or an additional alternative is developed which would allow for the treatment of wastewater associated with these developments. Implementation of one of the additional alternatives presented by Keller Associates was determined to increase the cost of implementation, resulting in an increased cost to County residence through property taxes or other collection means (i.e., levies or grants).

### ***Alternative 2 – Proposed Action***

**Direct and Indirect Effects:** Implementation of the proposed action would not result in an immediate increase in user fees. An increase in user fees may occur over time however Keller Associates planning study did not present an exact percentage of increase. This alternative was chosen because it would have the least amount of increase to private residence and commercial businesses. The ability of the WWTF to accommodate increased growth in the area would increase the tax base of the County by allowing the currently platted sites to be developed.

**Cumulative Effects:** Development of the platted residential and commercial properties within the Island Park Area which is serviced by the Mack's Inn WWTF would have a cumulative economic impact on the area. Without the expansion of the land application facility development of these platted properties may be restricted. However, the development of these properties would aid in reducing the cost associated with increased taxes by spreading the total cost over more users.

## **WATER QUALITY AND HYDROLOGY**

### **Existing Condition**

Ground water levels in the project area vary by season being shallower in the spring and early summer associated with snow melt and deeper in the late summer and fall months. During the spring and early summer ground water levels may rise as high as 12 inches above to 24 inches below ground surface, but is most often approximately 20-40 feet below ground surface. Most domestic wells within a 1 mile radius of the Mack's Inn WWTF are bored to a depth of 75 to 150 feet dependent upon geologic conditions. The rate of development in the Island Park Area by both residential and commercial developments has raised concern of potential shallow ground water and surface water degradation due to the installation of individual septic systems at these locations.

No surface water bodies are present within the proposed project area. The closest open surface water is the four storage lagoons located within the bounds of the existing water treatment facility. The closest flowing surface water is the Henry's Fork located approximately 0.75 miles south of the project area.

IDEQ is currently the governing agency which has issued a permit to Fremont County for the operation of the existing WWTF. Under the operation permit, facility personnel are required to monitor and collect samples on a daily, weekly, monthly, and annual basis. Daily monitoring is required to assess the volume of water being treated (wastewater) and the volume of supplemental irrigation water being applied on the land application areas (snowfluent and existing land application area). A weekly sample is collected to test for total coliform within the

treated water. A monthly sample is collected to test for pH, nitrate, nitrite, nitrogen, total phosphorus, total dissolved solids (TDS), and Total Kjeldahl Nitrogen (TKN). An annual report is generated discussing the hydraulic management unit which includes acres, calculations of nitrogen and phosphorus applied in pounds per acre (lbs/acre) per year, and hydraulic loading associated with number of gallons/year applied through land application. An annual soil sample is collected to monitor the chemical properties of the soils within the treatment facility and a ground water sample is collected from the six monitoring wells located around the WWTF. These monitoring and sampling practices aid the County in remaining in compliance with state and federal water quality standards. If at any time levels of chemical properties within a water sample are found to be outside of the allowable range the facility manager takes immediate corrective actions to bring levels within acceptable standards.

## **Environmental Effects**

### ***Alternative 1 – No Action***

**Direct and Indirect Effects:** The facility would continue to operate at its current level under the no action alternative. Once the facility has reached capacity the County would be required to take actions which would lessen the flows to the facility or develop an additional facility to handle the excess wastewater. Implementation of this alternative is not anticipated to impact ground water or surface water quality in association with the operation of the treatment facility, due to the tight regulation imposed by IDEQ associated with the operation permit. However, if the facility is running at capacity and development continues, allowing individual septic systems to be installed would increase the risk of a degradation of water quality.

### ***Alternative 2 – Proposed Action***

**Direct and Indirect Effects:** The installation of the land application expansion would require some soil disturbance in association with the installation of the supply pipeline. Best management practices associated with heavy equipment operation (i.e., fuel storage, fueling procedures, spill prevention/clean-up kits present, and proper functioning of machinery) would be implemented to prevent spills which have the potential to impact water quality. As with the existing land application practice, the expansion area would fall under the same regulatory requirements which require daily, weekly, monthly, and annual monitoring, sampling, and reporting to IDEQ. The monitoring wells down-gradient of the snowfluent field are used to assess ground water quality in the area. These wells will be used to monitor water quality for the new land application site. Additional wells are not anticipated but could be requested by IDEQ if water quality concerns become an issue with population growth in the area and concomitant increases in wastewater application.

The increased land application rates associated with the expansion would allow the facility to better serve the platted developments in the project area. A WWTF which could support more development would likely reduce the number of new individual septic systems within undeveloped platted parcels reducing the risk of surface and shallow groundwater degradation.

The distance between the proposed land application expansion area and the Henry's Fork would prohibit any contamination of that surface water in association with the installation and operation of the facility.

**Cumulative Effects:** No other projects are planned near the project area which would cumulatively impact water quality or the hydrology of the area.

## SOILS

### Existing Conditions

The general soil map unit in the Mack's Inn area shows Bootjack-Chickreek soils which are "very deep, nearly level, poorly drained soils formed in alluvium" (USDA NRCS 2011). Soils in the project area consist of ABLA/VASC, CARU Koffgo-PICO Perfa association, 2 to 30 percent slopes, which have a very limited filtering capacity (USDA NRCS 2011).

### Environmental Effects

#### *Alternative 1 – No Action*

**Direct and Indirect Effects:** Under the no action alternative the soils in the project area would not be affected.

#### *Alternative 2 – Proposed Action*

**Direct and Indirect Effects:** The installation of the land application expansion would require some soil disturbance in association with the installation of the supply pipeline. No more than 15% of the soils in the project area are anticipated to be detrimentally disturbed. Clearing the site of vegetation with heavy equipment would also result in some soil compaction on the 50-acre site. Best management practices associated with heavy equipment operation (i.e., fuel storage, fueling procedures, spill prevention/clean-up kits present, and proper functioning of machinery) would be implemented to prevent contamination of soils and potential run-off of contaminants offsite.

Treated wastewater effluent would be sprayed onto the soils from the center pivot systems. Most of the wastewater would evaporate from the soil or transpire from grasses and forbs on the site. Any remaining water would percolate into the groundwater system. Water quality monitoring wells, described in the Water Quality section above, would be used to detect any contaminated waters in the groundwater system and allow corrective measures to occur. It should be noted that there are water quality sampling steps that take place before treated effluent is allowed to enter the center pivot system.

**Cumulative Effects:** No other projects are planned near the project area which would cumulatively impact soils. The current WWTP has previously impacted 60 acres of soils. The expansion proposed in this project would impact an additional 50 acres of soils in the area.

## VISUAL QUALITY

### Existing Conditions

The landscape of the project area is relatively flat and dominated by forested vegetation comprised primarily of lodgepole pine with scattered subalpine fir and juvenile quaking aspen. US-20, a major north-south travel corridor for visitors to Yellowstone National Park, Island Park, Harriman State Park, and other locations, runs north-south about ¼ mile west of the project area. Several homes are located approximately ¼ mile north of the project area. The Henrys Fork of the Snake River is located over ½ mile south of the project area. Forested NFS lands lie between each of these locations and the proposed project area.

The proposed project is subject to the perceptions of the following three distinct viewer groups: motorists, residents, and recreationists. Motorists are those persons who would view the project

from a moving vehicle and may be drivers or passengers. Views of a project site from a roadway are typically limited and of short-duration for motorists. Residents are people whose homes and/or property are in close proximity to, and have a view of, the proposed project site or a portion of a site. The individual sensitivity of residents to aesthetics and changes within a viewshed is highly variable. Recreationists are members of the community or the general public who use the recreational resources available within or adjacent to the proposed project site. Like residents, recreational users are highly sensitive to the visual character of the area since most are drawn to the area by an appreciation of its scenic nature.

For the purposes of determining effects of the proposed project, US-20, the homes north of the project area, and the Henry's Fork south of the project area are identified as viewpoints from which a representative group (i.e., residents, recreationists, or motorists) could view the project site.

The Mack's Inn WWTF is within an area designated as a Partial Retention to Modification, Visual Quality Objective (VQO). VQO's are described in the Forest Plan as a measurable goal for the management of visual resources; used to measure the amount of visual contrast with the natural landscape caused by human activity. Partial Retention VQO's are defined as areas where "human activity may be evident but must remain subordinate to the characteristic landscape" (USFS 1997). Modification VQO's are areas where "human activity may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. The activity should appear as a natural occurrence when viewed in foreground or middleground" (USFS 1997). Partial Retention would apply to those areas that would be considered to be in the foreground – generally considered to be ¼ mile away – from major roads, trails, or water ways.

## **Environmental Effects**

### ***Alternative 1 – No Action***

**Direct and Indirect Effects:** Under the No Action Alternative, the expanded land application facility would not be constructed. In the absence of construction, there would be no effect to vegetation or scenic resources. Overall scenic views on the site as viewed from the highway and surrounding areas would remain the same. The VQO's for the project area would not be impacted.

### ***Alternative 2 – Proposed Action***

**Direct and Indirect Effects:** During implementation, short-term visual impacts could result from the presence of equipment, materials, and work crews. Expansion of the Mack's Inn WWT land application area would result in the removal of all of the trees and tall brush species in the 50-acre project area changing a forested setting to a nonforested opening for as long as the facility remains in place. Once cleared, the vegetation communities within the land application area would be routinely maintained using mechanical treatment (i.e., chainsaw or front end loader dependent upon tree size) to prevent interference with the operation of the pivots. Construction equipment and the cleared vegetation as well as the pivot system would present a contrast to the surrounding area.

The proposed tree removal and installation of the center pivot irrigation structure would be within the mixed Partial Retention to Modification VQO's. Viewpoints within the foreground include the access road to the Mack's Inn WWTF and adjacent residential areas. Middleground

vantage points would be areas such as Highway 20, and the Henry's Fork River. It is anticipated that the irrigation system would not be visible from a background vantage point.

The dense stands of lodge pole pine which would exist within the buffer zones required by IDEQ would limit the visual impact to the general public in the foreground and middleground views. A buffer zone of 300 feet from inhabited dwellings which is vegetated by lodgepole pine forest aids in blocking the view of the project area from the residential properties. A narrow buffer zone of 50 feet from public access (i.e., unnamed access road to the Mack's Inn WWTF) would limit the visibility of the cleared area associated with the proposed expansion area. Because of intervening forested vegetation in the foreground of the project area, the expansion would in large part not be visible to residents, recreationists, or motorists. There may be a few locations along US-20 where gaps in forest cover allowed a partial line of site to the project area. In these instances, views of the project site from the roadway would be limited and of short-duration for motorists due to distance and screening provided by vegetation.

Standard construction-related BMPs would be used to minimize dust generated during construction and disturbed areas would be stabilized as soon as practicable after construction. In addition, the edges of the tree removal area would be feathered to replicate a natural opening with irregular lines to the extent possible. Therefore, the visual impacts due to the project would be minor.

**Cumulative Effects:** No other projects are planned near the project area which would cumulatively impact visual quality. The current WWTP has previously impacted 60 acres of trees. The expansion proposed in this project would impact an additional 50 acres of trees in the area.

## **CHAPTER 4 – CONSULTATION AND COORDINATION**

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this EA:

### **ID TEAM MEMBERS**

Bill Davis, Recreation Program Manager

Sabrina Derusseau, Wildlife Biologist

Ali Abusaidi, Archeologist

Kara Green, Soil Scientist

Brad Higginson, Hydrologist

Rose Lehman, Botanist

### **FEDERAL, STATE, AND LOCAL AGENCIES**

Fremont County

Idaho Department of Water Resources

Idaho Department of Fish and Game

U.S. Fish and Wildlife Service

### **TRIBES**

Shoshone-Bannock Tribes

### **OTHERS**

The Draft EA will be sent to a subset of Ashton/Island Park Ranger District mailing list. The complete list is in the project file

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