

**TETON COUNTY**  
**JH Community Pathways Connector Project**  
**Path 22 Middle Section – Phase 2**  
**DEVELOPMENT IMPACT ANALYSIS**

**Prepared for**

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**1.0 DEVELOPMENT IMPACT ASSESSMENT**

This Development Impact Analysis (DIA) is based on implementing the proposed Path 22 Middle Section Phase 2 Pathway project (The Project) described below on the property discussed and identified in Section 1.2 of the EA, Project Area for the Path 22 Middle Section Phase 2 Pathway project. The purpose of this DIA is to disclose potential effects and impacts to The Project area and identify any possible mitigation measures that could reasonably be implemented and still allow The Project to meet the Purposes and Needs identified in the Environmental Analysis. When referring to figures or photographs the reader is directed to Appendix A and B, respectively, of the EA.

**2.0 PROPOSED DEVELOPMENT**

Teton County and Jackson Hole Community Pathways (TCJHCP) proposed a multi-use path (Path 22) to be used by bicyclists, pedestrians, horses, and other non-motorized activities along Wyoming State Route 22 (SR22), located in Teton County, WY. The Path 22 Middle Section Phase 2 (The Project) comprises a segment extending from the Spring Gulch Rd. intersection to the existing pedestrian tunnel about a third of a mile east across from the Teton Science Schools’ entrance. The Project will also include the construction of a Keystone Block Wall (small blocks stacked), and a safety railing, where necessary.

**2.1 Important Elements of the Proposed Project**

Important elements of the proposed project include the construction of a retaining wall and safety railing that is wildlife-friendly and complies with both Section 5.1.2 of the Teton County LDRs and the regulations set forth by the AASHTO 2010 Bicycle Facilities manual (AASHTO 2010). Eleven individual segments of the block retaining wall are proposed, with a total combined length of 918 ft. The fence (safety railing) will consist of 3 individual segments, totaling 1,250 ft. in length. There have been several substantial design changes regarding the retaining walls, spacing and layout of those walls, and the height and frequency of use of the safety railings in order to provide safety for users and permeability for wildlife particularly large mammals. These are discussed in more detail in Section 3.3.7 of this report.

**2.2 Teton County Required Setbacks**

The Teton County Land Development Regulations prohibit development in protected natural resources and in some cases require development free setbacks from those resources. Specific requirements pertinent to this development are enumerated in the Habitat Impact Assessment section below. However, pathway construction is exempt from observing these setbacks according to Teton County LDRs Section 5.5.1.

**2.3 Habitat Impact Assessment**

Implementation of the proposed project will require filling 0.07 acres of the 0.56 acres of wetland present in The Project area. In addition, there will be minimal impact to existing cover types. The largest impacts will

occur in the ‘Natural and Introduced Grassland’ (HPG) and the ‘Mesic Shrub’ (SSD) cover type areas. However, much of these areas may be revegetated after construction of the pathway is completed. Below is a table that shows each vegetation cover type, the existing acreage, and the proposed acreage that may be impacted.

<b>Table 1. Vegetation Cover Types and Existing Acreage Within the Proposed Project Area and the Proposed Impact from Implementation of The Project.</b>			
<b>Habitat Type</b>	<b>Map Code</b>	<b>Existing Area (acres)</b>	<b>Proposed Impact (acres)</b>
Palustrine Scrub-Shrub Wetland	PSSA	0.56	0.07
Natural and Introduced Grassland	HPG	1.83	1.06
Open Water	NID/NLP	0.0013	0
Agricultural Meadow	NIPI	0.27	0.07
Developed / Disturbed / Landscaped	NRDR	2.69	0.04
Developed / Disturbed / Landscaped	NRDS	0.44	0.04
Developed / Disturbed / Landscaped	NSMT	0.01	0.03
Mixed Tall Shrub	SRB	0.10	0.006
Mesic Shrub	SSD	2.58	1.33
Mesic Tall Shrub	SWL	0.35	0.078
<b>Total</b>		<b>8.83 acres</b>	<b>2.724 acres</b>

### **3.0 Federally Listed Species, Unique Resources, and Required Disclosures**

#### **3.1 Threatened, Endangered, and Candidate Species**

One of the species of special concern that is potentially existing on or near The Project area is the yellow-billed cuckoo (*Coccyzus americanus*), listed as a Threatened species. However, the species primary habitat, cottonwood riparian, does not exist within The Project area (Remlinger 2016). In addition, the gray wolf (*Canis lupis*) (Experimental Population, Non-essential) and the grizzly bear (*Ursus arctos horribilis*) (Threatened) may pass through The Project area; however, because the entire Project area lies within a previously disturbed area in the Right-of-Way/Easement (ROW/Easement), there is no appropriate habitat present for either species. No other threatened, endangered or candidate species listed by the U.S. Fish and Wildlife Service are present on the proposed project site (see Table 1, Section 6.10 of EA). The Project area lies entirely within the ROW/EASEMENT of SR22 (WYDOT), so impact from construction of the pathway is unlikely to affect any potential Threatened, Endangered, or Candidate species, since the area is already heavily disturbed and does not provide suitable habitat for these species.

## 3.2 Hydrology

### 3.2.1 Surface Hydrology

Waters of the US (WOTUS) are present (Remlinger and Smith 2015) in The Project area, which is part of the Spring Creek-Snake River Sub-watershed (HUC 12-170401030504) (USGS 2015). Naturally-occurring surface water features include Spring Creek (originating from spring seeps flowing from the base of East and West Gros Ventre Buttes) and three constructed irrigation ditches (Spring Creek Ditch, Badger Ditch, and Stephen Adams Ditch) (Figure 5). The Gros Ventre River flooding and recharge may contribute to Spring Creek flows (Alder 2016). The Spring Creek Ditch is a primary irrigation ditch that diverts water from the Gros Ventre River to irrigate pastures and meadows between East and West Gros Ventre Butte. South of the property, a return ditch flows west from Stephen Adams Ditch to Spring Creek Ditch.

All water features flow north to south and enter the property through culverts running under SR22 from the Mead Ranch on the north side of the highway (Greenwood Mapping, Inc. 2016). These water features have existed for over a century, remaining mostly undisturbed according to aerial photographs dating back to 1945 (Alder 2016).

In an October 2011 wetland delineation, Alder Environmental observed water table and saturation levels in 16-inch soil pits as well as surface drainage and ground water present in the irrigation ditch. During the March 2015 and 2016 field work, Alder did not observe these primary wetland hydrology indicators. However, surface and groundwater (estimated to be <12" deep) exists in areas directly adjacent to Spring Creek Ditch and Spring Creek and low lying natural wetland hydrology area to the east of Spring Creek. These wetlands are likely attributed to a combination of natural and irrigation induced hydrology. Wetlands adjacent to Badger Ditch, and Stephen Adams Ditch are a result of irrigation practices (Alder 2016).

The increase in impervious surface from the proposed pathways will result in minimal surface water impacts due to storm water runoff. Furthermore, non-motorized vehicles have less impact on water quality than motorized vehicles. The green space between the pathway and highway will help to reduce storm water runoff. Storm water will be contained within 150 ft. of Spring Creek during the construction of the pathway (Remlinger and Smith 2015). In addition, installing material and means to control surface runoff will have a positive effect on the hydrology of downstream resources such as Spring Creek, Flat Creek and the Snake River.

### 3.2.2 Floodplain

The section of Spring Creek that runs through this property is located within the 100-year floodplain (Zone AE). There will be no impacts to this floodplain (Remlinger and Smith 2015).

### 3.2.3 Wetlands

Approximately 24,393 square ft. (0.56 acres) of Scrub-Shrub Wetland (PSSE) is present within the proposed project area (Figure 5, Figure 6). Hydrology associated with this wetland is supplied primarily by flood irrigation and existing ditches. Part of this wetland area includes a “Natural Wetland Hydrology Area” which is influenced mainly by the natural hydrology associated with Spring Creek (Alder 2016). Wetlands adjacent to Spring Creek are likely attributed to a combination of natural and irrigation induced hydrology. Wetlands adjacent to Badger Ditch, and Stephen Adams Ditch are a result of irrigation practices (Alder 2016). Approximately 0.07 acres of wetland will be filled (as defined by the USACE) in order to implement the project. The full text of the Aquatic Resource Inventory Report (Alder 2016) for The Project area is found in Appendix D.

### 3.2.4 Groundwater

The extensive efforts to control and protect groundwater at and below this site is one of the main concerns of The Project. Adding more top soil, general cover, run-off control, (BMPs, find details in TCJHCP Plans) and other efforts described for the proposed project (i.e. seed mix, erosion control) are all designed to protect groundwater quality and protect downstream resources such as Spring Creek, the Snake River, and the aquifers of Teton County.

## 3.3 Wildlife

In general wildlife are usually most affected over the long term by the loss of habitat, particularly important habitat unique to a species such as a nest site that is consistently used or habitat that provides crucial life history requirements such as movement to/from important seasonal ranges. The Path 22 Middle Section Phase 2 Project is located within habitat that is generally not particularly rare or vital, that has a lengthy history of human disturbances, and that is located entirely within the Right-of-Way/Easement (ROW/Easement) on SR22. According to the WYGF analysis of the Path 22 East Segment which is adjacent to the Path 22 Middle Section, there will be no impacts to Threatened and Endangered Species (T&E) from the implementation of the East segment of the pathway project. Similarly, based on maps and habitat descriptions from the USFWS websites, there are no T&E species present within The Project area. In addition, no cliffs, old large trees, or sufficient sagebrush are present, which eliminates any potential habitat for T&E species such as prairie dogs and sage grouse. The USFWS concluded that the East segment of the proposed pathway project is in accordance with the Endangered Species Act (WYDOT 2013). Based on observations of the habitat, juxtaposition of the Middle Segment project area, and knowledge of T&E species in Teton County; Pioneer concluded that the habitat is similar for The Project area and that no impact to T&E species listed under provisions of the Endangered Species Act (1973, as amended) would occur.

There is potential for certain migratory birds to be present or utilize some of the trees on site, in which case a registered biologist will survey the area before any construction begins to make certain that no active nests of listed migratory birds are found within the project area in order to avoid impacts to those species.

There is also a concern that the scrub-shrub wetland located at the eastern portion of The Project area

will be negatively impacted during construction, resulting in a loss of 0.07 acres of wetland. This impact may result in a loss of habitat for certain aquatic species. Other than this potential impact, the site does not have extensive value as wildlife habitat because of the absence of aquatic, riparian, woodland, and other diverse habitats. More detail on these subjects is given below.

### 3.3.1 Bald Eagle

Provisions to protect bald eagle nests within 660 ft. of a proposed development are included in the LDRs for Teton County. Operation of the proposed project will not result in additional long term impacts to bald eagles. Figure 7 depicts the known bald eagle occurrences and nests in the vicinity of the proposed project. There are four areas of known occurrence within The Project area, and one nest south of the proposed project area on High School Butte (Patla 2016). Individuals foraging in The Project area could be disturbed by the construction noise associated with development of The Project; however, these effects would be temporary and would affect few individuals.

### 3.3.2 Peregrine Falcon

American peregrine falcon (*Falco peregrinus anatum*) nests and or its habitat is not located in The Project area or vicinity. Therefore, the proposed project will not result in impacts to the American peregrine falcon.

### 3.3.3 Snake River Fine-spotted Cutthroat Trout

Snake River fine-spotted cutthroat trout (*Oncorhynchus clarkii behnkei*) are protected under the Teton County LDRs. Specifically, trout spawning areas are included in the Natural Resource Overlay as Crucial Habitat. The proposed Middle Section Phase 2 Pathway intersects with Spring Creek, a 14.0 mile long tributary to the Snake River, at the confluence of SR22 and Spring Creek. Trout are known to inhabit this section of Spring Creek, and it is highly likely that this section of Spring Creek also provides trout spawning areas (WGFD 2015). Neither Spring Creek nor the likely present trout population will be affected by development of the proposed pathway.

### 3.3.4 Trumpeter Swan

Trumpeter Swans (*Cygnus buccinators*) are protected under the Teton County Land Development Regulations. The NRO specifically lists trumpeter swan nests and winter habitat as essential to the survival of the species. Typical trumpeter swan foraging habitat is generally restricted to shallow, freshwater marshes, ponds, lakes, and infrequently slow moving rivers, though they may occasionally be found in fields and other upland habitats (Slater 2006).

The Project area is used as a migration (flight) path for trumpeter swans moving from the wetlands on the National Elk Refuge to the open water wetlands located along Flat Creek, Spring Gulch and the Gros Ventre River corridor (Long 2015). The Wyoming Wetlands Society (WWS) posits that power lines pose a potential issue and encourage that any power lines in the area be buried (WWS 2015). No new

powerlines as a result of this project are proposed.

The proposed project is not expected to negatively impact trumpeter swans. There are no known active trumpeter swan nests in The Project area. Individuals foraging in The Project area could be disturbed by the noise associated with The Project construction activities; however, these effects would be temporary and would affect few individuals.

### 3.3.5 Moose

The Teton County Land Development Regulations provide provisions to protect crucial moose winter range. Although there is no Crucial Moose Winter Range habitat within The Project area, seasonal ranges for both spring/summer/fall and winter/yearlong ranges are present. Moose use in The Project area is expected to be minimal with occasional foraging along the edges and possibly in the willow patch along the eastern portion of the property (Campbell 2015).

### 3.3.6 Elk

The Teton County Land Development Regulations provide provisions to protect crucial elk winter range and migration corridors. Spring/Summer/Fall Seasonal Elk Range is located in the vicinity of The Project area and about 886 ft. (0.17 miles) to the west of the property on the Teton Science School property. The majority of The Project consists of elk parturition area with the exception of the section east of Spring Creek (Figure 7b) (Wyoming Game & Fish Department 2015). The property to the south of the proposed pathways (Poodle Ranch) includes migration corridors for elk (Younkin 2015). Elk use in The Project vicinity is believed to be less than mule deer with movement between neighboring buttes to the north and west of the property, West Gros Ventre Butte (WGVB), East Gros Ventre Butte (EGVB) and Poodle Ranch fields and High School Hill (HSH) to the south. This general area is also often referred to as Vogel's Hill or the south end of West Butte. However, elk are not expected to be directly harmed under implementation of the proposed project. Individual elk foraging in The Project area could be disturbed by noise associated with construction of the proposed project; however, these effects would be temporary and would affect few individuals.

The proposed project would neither help nor hinder numbers of wintering elk in the vicinity because the relative amount of habitat affected is very small. There will be no change to existing conditions regarding collisions of large mammals with vehicles. The inconsequential effect on elk habitat occurs at a very small scale compared to those that operate on entire herd units. Thus, the contribution of the proposed project toward the population objective is insignificant. Construction of a specially designed Keystone Block Wall (stacked interlocking small blocks as opposed to gabion baskets) is proposed in order to reduce the presence of obstacles. In addition, the walls will be staggered with openings throughout, in order to avoid continuous stretches. The Project will utilize the existing ROW/Easement area directly adjacent to SR22 which will not be expanded. The number of retaining walls and railings have been minimized, as well as their proposed height to allow safe movement corridors for elk (and mule deer) corridors. Segment 6, for example, has been redesigned to provide more wildlife movement through

the retaining wall (Figure 9A-L).

### 3.3.7 Mule Deer

The Teton County Land Development Regulations provide provisions to protect crucial mule deer winter range and movement corridors. The majority of The Project Area includes Spring/Summer/Fall Seasonal Mule Deer Range. The eastern section of the property north of SR22 and adjacent to East Gros Ventre Butte includes crucial winter mule deer range (Figure 7c) (Wyoming Game & Fish Department 2015). The Poodle Ranch south of SR22 also provides crucial winter/yearlong range for mule deer (Younkin 2015). During the winter and early spring months, mule deer congregate on EGVB and HSH (Alder 2011). However, the developed/disturbed cover type and the general activities associated with being located in the ROW combine to make The Project site poor quality habitat.

According to wildlife-vehicle collision data, from 1976-1981, 12 mule deer have been killed on SR22 between Spring Gulch Road and the SR22/US89 intersection (Alder 2011). In the following years from 1980 to 2012, nine mule deer and two elk have been killed along SR22 from the Spring Gulch Road intersection to just south of the Poodle Ranch entrance (Campbell 2015). The property contains similar habitat to this adjacent Pathway 22 East section, where mule deer cross the highway. However, the density and growth of wetland shrubs may inhibit and in some areas possibly prohibit the crossing of ungulates into the southern habitat (Campbell 2015). During a site visit in March, 2016, Pioneer Environmental identified mule deer scat in the wetlands on the western section of the property.

According to the plans for the proposed pathway, the retaining wall will consist of segmented/terraced sections of keystone block to avoid continuous stretches. The wall heights have been minimized (Keystone Retaining Wall Systems 2016). The proposed railing will be a 42" high wooden 2-rail fence, intended to meet wildlife friendly design with the bottom rail at least 18" above the ground (Teton County 2016) (Figure 8). Campbell (2015) advised that installing continuous 70-foot length of retaining wall and continuous 320-foot length of pedestrian railing within the Pathway 22 East section would "result in adverse impacts to Teton County protected wildlife species that do not exceed a negligible threshold level." As a result, the proposal was revised to break up the lengths of the retaining wall and safety railings, allowing for wildlife to pass through. The designs and layout of each wall section are found in Appendix A Figure 9 (A-L).

Individual mule deer foraging in The Project area could be disturbed by noise associated with implementation of the propose project; however, these effects would be temporary and would affect few individuals. No restrictions in implementing the construction or operation of the proposed project are required.

### 3.3.8 Migratory Birds

The Migratory Bird Treaty Act (1916, as amended) makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the

parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. The migratory bird species protected by the Act are listed in 50 CFR 10.13. Species that were observed within The Project area include the American dipper (*Cinclus mexicanus*), also known as the water ouzel, which was seen at a site visit in March, 2016 (Pioneer). This species is an indicator of good environmental health, and feeds on macro-invertebrates and small fish. Also present on site are juncos, sparrows, and robins, which are often found by roadsides and areas of disturbance (Audubon 2016).

The lack of shrubs, brush, and trees largely limits the nesting species to ground nesting birds, and does not provide suitable habitat for any listed Threatened or Endangered species. The Project area offers very little in the form of nesting structure, foraging habitat, or other important life cycle requisites for migratory birds. The loss of roughly 0.10 acres of scrub-shrub wetland is important; however, this area has been affected and previously disturbed because of its location within the ROW/EASEMENT. This area has been impacted by previous activities such as soil removal and contains non-native species. The species affected by the loss of approximately 0.07 acres of scrub-shrub wetland would mostly be species such as the American dipper, sparrows, and robins – species that utilize aquatic resources.

These species will need to either be protected by spatial or temporal avoidance during the nesting season (April 1-August 15) or the area needs to be 'cleared' by a qualified biologist so that it can be verified that there are no nests within the construction area or they are sufficiently avoided. This only applies to areas with appropriate habitat, not the entire project area, which is mostly developed. The purpose is to avoid 'taking' of migratory birds as defined by the Migratory Bird Treaty Act (as amended).

### 3.3.9 Amphibians

There are two sources of permanent water on-site, including Spring Creek, located at the eastern portion of The Project site, and an agricultural ditch which crosses under The Project area through an existing culvert and then continues parallel to SR22. Although a small amount of aquatic habitat is present within the actual Project area, it is covered by an existing culvert. The Project will utilize this culvert and construct the pathway on top of it, to avoid any fill within Spring Creek or the ditch. Although it is possible for amphibians such as the Columbia Spotted Frog (*Rana luteiventris*) to be found at the site, The Project is unlikely to affect these species or habitat. These species and similar species are likely present downstream of The Project area, in which case it is encouraged that BMPs are followed carefully during construction in order to reduce any potential impact downstream.

The 0.07 acre of scrub-shrub wetland habitat potentially contains amphibians within the eastern portion of the proposed Project area. No significant impacts to this species group are anticipated with the implementation of the proposed Project.

### 3.3.10 Bears

North of SR22, and directly north of The Project area, Bear Conflict Priority Area 1 (Figure 7d) is present.

South of SR22 and The Project area, Bear Conflict Priority Area 2 is present. About half of The Project Area lies within the Bear Conflict Priority Area 1, and the other half within the Bear Conflict Priority Area 2. Black bears are commonly seen on adjacent National Forest Service (NFS) land as well as the valley floor. No reports of grizzly bear within The Project area were found; however, there is always a potential for grizzly bears to occasionally wander through an area on the edges of their normal range if attracted by food during years when natural foods are scarce. The grizzly bear has been expanding its known distribution during the past few years (WYGF 2015).

Black bears are common throughout Teton County. The potential for The Project area to be visited by black bears is largely dependent on how available food is at the site, which will be mostly non-existent. However, The Project will adhere to the regulations for activities within Bear Conflict Priority Area 1 and Bear Conflict Priority Area 2 (Figure 7d). No direct effects to grizzly bears are expected as a result of the proposed Project because they currently are rare in the area and their known occupation areas are located outside the surrounding Project area.

### 3.3.11 Wildlife Feeding

Section 5.1.3 of the LDRs prohibits knowingly or intentionally feeding or providing feed attractants to wildlife. There are no areas located on The Project site that would serve as an attractant to wildlife.

### 3.3.12 Wildlife Friendly Fencing

Section 5.1.2 of the LDRs require any new fencing to be wildlife friendly and allow for free and easy movement of wildlife. This DIA recommends that the objectives and management responsibilities of the WYGF be used to determine what if any fencing should be allowed or included pending the results of constructing the proposed pathway on SR22. Approximately 1,250 ft. of fence/safety railing is to be constructed along the proposed pathway. This railing is necessary in order to comply with standards set forth in the AASHTO 2010 Bicycle Facilities manual. The height of the retaining wall segments will not be any higher than 8 ft. In the three separate areas where the additional safety railing is required, the height of the 2-rail fence/safety railing will not exceed 42" high. The proposed retaining wall and safety railing designs are in compliance with Section 5.1.2 of the LDRs.

## 3.4 Wildlife Impact Summary

Below is a table with the species present at or near The Project site, as well as any proposed impacts, short term or long term, and their intensity level.

<b>Species</b>	<b>Impact (yes/no)</b>	<b>Short/Long Term</b>	<b>Intensity of Impact</b>
Bald Eagle	No	None	None

**Table 2. DIA. Wildlife Impact Table.\***

Species	Impact (yes/no)	Short/Long Term	Intensity of Impact
Peregrine Falcon	No	None	None
Snake River Fine-Spotted Cutthroat Trout	Yes	Short	Minor
Trumpeter Swan	No	None	None
Moose	No	None	None
Elk	Yes	Short	Minor
Mule Deer	Yes	Short	Minor
Gray Wolf	No	None	None
Yellow-Billed Cuckoo	No	None	None
Migratory Birds	Yes	Short term habitat loss	Minor
Amphibians	No	None	None
Bears	No	None	None

\*Assumes that The Project is implemented with the design and operation plans as described in the Path 22 Middle Section Phase 2 Pathway Project, timing restrictions are enforced per the USFS agreement on federal land, mitigation measures noted below are implemented.

## 4.0 Natural Resource Overlay and Other Affected Resources

The purpose of the Natural Resources Overlay (NRO) is to provide protection to critical winter habitat and migration routes that are essential for survival of the elk, mule deer, moose, and trumpeter swans; nesting habitat that is essential to the survival of the bald eagle and trumpeter swan; and, spawning areas that are essential to the survival of the cutthroat trout. The eastern portion of The Project site is within the NRO (Figure 2). This portion of the property is mapped in the NRO because it provides crucial winter habitat for mule deer. The proposed Project will not change the existing land uses on the property. The proposed pathway is to be constructed within the ROW/EASEMENT. Implementation of the proposed Project would continue these uses for pedestrian and bike traffic within these areas and would not constitute changes in conditions or activities.

### 4.1 Short-Term Impacts

**Air Quality:** the construction activities related to the proposed development will cause a short-term

impact on air quality in The Project vicinity. During construction, the area will be re-graded and paved. Exposed soil could contribute to an increase in the dust particulates in the local air column. This impact will be short-term. The effects would last only as long as the estimated construction period. Impacts from fugitive dust can be minimized with best management practices such as treatment of haul roads, stockpiles and active work areas with a dust suppressant, and vegetation of soil stockpiles. Over time, the construction of the proposed bike path may actually help to improve air quality, as it will provide an opportunity for more non-motorized modes of transportation.

**Construction Noise:** Excavation, grading, paving, and general noise associated with the construction phases of The Project will be present over the several months of construction planned. The Project site is located a substantial distance (>0.25 mile) from persons/businesses that might be able to hear the noise. Ambient noise levels during construction are generally below 60 dbH on the A-Scale which is normal for construction activities. The site is not located near any noise-sensitive sites with the exception of the Teton Science Schools. Once construction is completed this short-term impact will cease.

**Surface Water Runoff/Storm Water:** there will be a short-term increase in surface water runoff during construction and prior to control elements being installed. This will be a short-term impact and will be controlled under provisions of the WDEQ required Storm Water Plan for the site.

## 4.2 Long-Term Impacts

**Habitat Loss:** There will be a permanent loss of 0.07 acres of shrub-scrub wetland habitat cover type as a result of the implementation of this Project.

**Scenic Resources:** There will be no long-term impact on scenic resources with the implementation of this Project.

### 4.2.1 Other Projects/Activities within the Vicinity

There are no other known projects or activities in the vicinity of the proposed pathway Project; however, there are potential impacts to habitats within the NRO, within ½-mile radius of The Project area. These habitats include: Bear Conflict Priority Area 1, Bear Conflict Priority Area 2, Crucial Elk Winter Range, Elk Migration Corridors, Spring/Summer/Fall Seasonal Elk Range, Spring/Summer/Fall Seasonal Mule Deer Range, Crucial Winter Mule Deer Range, and Crucial Winter/Yearlong Range for Mule Deer (Wyoming Game & Fish Department 2015).

## 5.0 MITIGATION

### 5.1 Conceptual Habitat Enhancement Plan

A detailed habitat mitigation plan including maintenance plan, monitoring plan and financial surety will be included with the final development plan submittal to the Teton County Planning Department. Provided in this section is a conceptual plan that outlines project impacts, required mitigation, and

mitigation type and location. This document provides expected vegetation and wetland impacts as a result of the proposed development. Future grading and erosion control plans will refine the vegetation and wetland impacts with minimization in mind. The detailed mitigation plan will provide information regarding mitigation implementation such as amount of top soil, types and amount of seed and plant material and irrigation plan. In addition to 2:1 habitat mitigation, the Path 22 Middle Section Phase 2 Pathway Project includes additional project mitigating measures outlined in The Project Implementation Section below.

Section 5.2.1.E of the LDRs requires that habitat impacts to the NRO must first be minimized and second be mitigated for on a 2:1 basis. JH Community Pathways is proposing off-site, out-of-kind mitigation within a parcel owned by the Town of Jackson located at Karns Meadow Park and encumbered by a conservation easement held by the Jackson Hole Land Trust. On-site mitigation is not being considered for two reasons:

- 1) Additional tall shrubs within the highway ROW/EASEMENT may attract ungulates near the roadway, and
- 2) The ROW/EASEMENT is susceptible to future construction disturbances from activities such as highway maintenance and widening.

The proposed mitigation site is an expansion of the existing, but not yet constructed, mitigation site for the START Bus Maintenance and Transit Facility (Figure 10). The applicant has successfully minimized impacts to the greatest extent practical; however, 3,113 sq. ft. (.07 acre) of scrub-shrub wetland habitat will be impacted with implementation of The Project.

This mitigation plan proposes to provide a minimum of 6,226 sf (0.14 ac) of mesic tall shrub vegetative cover type (Teton County Ordinal Ranking 8) near the Path 22 project in Karns Meadow Park. The mesic tall shrub vegetative cover type will substitute for the wildlife habitat cover and food supply component of the irrigation induced scrub-shrub wetland cover type.

The impacted scrub-shrub wetland is a mono-culture of *Salix exigua* (narrowleaf willow). The proposed tall shrub habitat enhancement will provide a diversity of native riparian and wetland shrubs. The wetland hydrology component will not be a focus of the mitigation site, as the hydrology of the impact site is considered “artificial.” The Karns Meadow Park is a preferred location for tall shrub habitat enhancements due to its contiguous habitat component, protection from development and known ungulate use (moose and mule deer) as well as other wildlife species such as song birds, trumpeter swans and bald eagles (Alder 2016).

Although it is not anticipated that project impacts will be greater than disclosed in this analysis, if unexpected impacts are required, this conceptual plan demonstrates that a larger than required mitigation area is available on site. The exact location of the required mitigation within the 6,226 sq. ft. (.14 ac) area will be determined with the development of the grading and erosion control plan (Alder

2016).

## **5.2 Project Implementation Recommendations**

The following measures are suggested in order to reduce impacts to wildlife and are not intended to be in any order of importance.

### **Migratory Birds**

- To ensure compliance with the Migratory Bird Treaty Act and to avoid the taking of a migratory bird nest, development in grassland and/or sagebrush habitat should be avoided during the nesting season (April 1 – August 15); or, prior to development a qualified wildlife biologist shall survey the area for any occurrence of migratory bird nests.

### **Ungulates**

- Reduce noise during crepuscular periods (dawn and dusk) if possible during the migration period (December 1 – May 30) in order to facilitate ungulates an opportunity to traverse The Project site when going to/from NFS land and wildlife habitat to the west.
- Keep external lighting to a minimum especially during December 1 – May 31 in order to allow wildlife passage through the site during crepuscular and nocturnal periods.
- The county shall consult with and adhere to all state and federal wildlife agencies in the use of fencing or other management practices on site.

### **Bears**

- The only types of waste that will be left outside include construction materials, which are not considered attractants to bears.
- The Path 22 Middle Section Phase 2 Pathway Project will adhere to the Teton County LDRs as they apply to avoiding the attraction of bears.

## **5.3 Water Quality and Resources**

- Monitor the site during construction for leaching and runoff, which could affect cutthroat trout and other wildlife associated with downstream water resources.
- Pay special attention to controlling runoff and erosion during the construction phases of The Project, continue this effort until the site is revegetated and surface runoff is fully controlled.

## **5.4 Noxious Weed Control**

- Prepare a noxious weed control plan and follow that plan, especially during the construction phases when bare soil may be present.
- Follow the Best Management Practices regarding the washing of equipment that is being brought onto the site in order to avoid spreading noxious weeds and creating competition for native cover types.
- Make certain that yearly or bi-yearly monitoring/reporting by qualified workers is part of the Noxious

Weed Plan.

## 5.5 Air Quality

- Reduce fugitive dust during construction by treatment of haul roads, watering as appropriate, and keeping speeds of construction vehicles below 10 mph.

## 6.0 CONCLUSION

The proposed Path 22 Middle Section Phase 2 Pathway Project does not have any viable off-site alternatives or significantly different configurations. The purposes and needs for The Project are well established and viable. The habitat enhancement plan also proposes sufficient mitigation for the loss of scrub-shrub and mesic tall grass vegetation cover types from the implementation of The Project.

## 7.0 REFERENCES

American Association of State Highway and Transportation Officials (AASHTO). 2010. Guide for the Development of Bicycle Facilities. <http://nacto.org/wp-content/uploads/2011/03/AASHTO-Guide-for-the-Development-of-Bicycle-Facilities-1999.pdf>. Accessed 5 May 2016.

Alder Environmental, LLC. 2011. Pathway Deer Movement Design Guidelines & Wildlife Highway Crossing Identification. Jackson, WY: Alder Watershed Consulting, LLC.

Alder Environmental, LLC. March 14, 2016. Aquatic Resources Inventory: Wetland Delineation and Surface Waters, WY State Highway 22 Right-of-Way, Teton County, WY.

Audubon. 2016. <https://www.audubon.org/bird-guide>. Retrieved March 2016.

Campbell, Tom. 2015. Wildlife Review, Pathway 22 East Phase 2 Amended GEC Project Area. Jackson, WY: Biota Research & Consulting Inc.

Greenwood Mapping, Inc. 2016. Teton County Map Server. February 23. <http://maps.greenwoodmap.com/tetonwy/mapserver/map>.

Keystone Retaining Wall Systems. 2016. Compac Unit - Straight Face Details. Minneapolis, MN: Keystone Retaining Wall Systems, Inc.

Remlinger, Brian. 2013. JH Community Pathway WY HWY 22/ US HWY89 Pathway Connector Project. Wetland Delineation Data Compilation, Jackson, WY: Alder Environmental, LCC.

Remlinger, Brian, and Megan Smith. 2015. NEPA Categorical Exclusion Follow Up per June 22, 2015

Settlement Agreement. Jackson, WY: Alder Environmental, LLC.

Slater, G.L. 2006 (In Golder Associates 2013). Trumpeter Swan (*Cygnus buccinator*): A technical conservation assessment. [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Region. <http://www.fs.fed.us/r2/projects/scp/assessments/trumpeterswan.pdf>. Accessed February 18, 2016.

Teton County. 2016. *Path22 Middle Section Phase 2*. TS3, Jackson, WY: Teton County Engineering and Pathways.

USGS. 2015. The National Map Viewer. November 18. <http://viewer.nationalmap.gov/viewer/>.

Wyoming Game & Fish Department. 2015. Big Game GIS Data. Accessed March 8, 2016. <https://wgfd.wyo.gov/Wildlife-in-Wyoming/Geospatial-Data/Big-Game-GIS-Data>.

Wyoming Game and Fish Department. 2015. Fish Division Progress Report: Jackson Region Aquatic Habitat and Fisheries Management, Calendar Years 2014 and 2015.

Wyoming Wetlands Society. Trumpeter Swans. Accessed March 15, 2016. <http://wyomingwetlandssociety.org/swans.php>

Younkin, Brenda. 2015. Re: P22 East/Poodle Ranch NEPA Categorical Exclusion Follow Up. Jackson, WY: Y2Y Consultants, LLC.