

May 1, 2018

Teton County Wildlife Crossings Master Plan

ACTION SUMMARY

Prepared by



Layout and design by Creative Curiosity

I. INTRODUCTION

The Teton County Wildlife Crossings Master Plan Action Summary reflects the recommendations of the advisory committee at present. Most of the committee members have been active in conversations about wildlife crossings for several years. The committee is comprised of biologists, county engineers and planners, wildlife experts and advocates who are deeply invested in ensuring that the Master Plan is a usable document for future wildlife-vehicle collision mitigation. This group worked to provide local knowledge of locations, the social landscape, and our assessment of future feasibility to develop recommendations.

Ongoing discussions with partners may result in adjustments to the priorities suggested herein. This summary document does not assume any future highway improvement projects, although future project potential and integration opportunities are considered. Also, while locations within Grand Teton National Park may benefit from mitigation consideration, the national park conducts its own wildlife-vehicle mitigation studies and subsequently was not included in this assessment.

II. ACKNOWLEDGMENTS

The Teton County Wildlife Crossings Master Plan is a thorough investigation of mitigation opportunities as prepared by experts at Western Transportation Institute (WTI), to whom we are grateful. This action summary document, resulting from WTI's Master Plan, is the product of engaged local experts including:

Amy Ramage, Project Lead, Teton County • **Chris Colligan**, Greater Yellowstone Coalition

Aly Courtemanch, Wyoming Game and Fish Department • **Gary Fralick**, Wyoming Game and Fish Department

Morgan Graham, Teton Conservation District • **Susan Johnson**, Teton County

Jon Mobeck, Jackson Hole Wildlife Foundation • **Leah Zamesnik**, Jackson Hole Conservation Alliance

III. EXECUTIVE SUMMARY

The Jackson Hole community has created previous assessments of wildlife-vehicle collision mitigation opportunities, but this Master Plan is the most comprehensive assessment, utilizing the best-available science and current local data. However, it intentionally omits variable local conditions from its objective findings. Therefore, it stops short of providing instructions on how its scientific recommendations should be implemented. This advisory committee contributes local knowledge on these matters that can provide professional guidance for our elected officials.

Some key themes emerged from our discussions with Western Transportation Institute and oversight of this contract. First, a heartfelt thank you to Teton County for incurring the costs of this plan and for staff's dedication to see it through to completion. As we are looking into the future and implementation of this plan, it may be necessary to dedicate additional staff time and capacity towards wildlife crossing planning and development.

Second, our committee recognizes that the suggested priorities include significant economic investment that cannot be detailed precisely at this stage. However, WTI has scientifically recommended options that make economic sense over time according to its rigorous cost-benefit analyses. With respect to their cost-benefit analyses, the investment in a given mitigation measure would "pay for itself" in reduced collisions and expense to local residents and our visiting public as detailed within the report. We caution that this document is also a long-term prescriptive approach, and that it should seize local cost-saving opportunities when highway improvements are planned. South 89/191 is a prime example of how integrated wildlife crossings can be a relatively minor expense in the greater context of highway reconstruction.

Wildlife is at the heart of what makes Jackson Hole unique. Consistently, it has been identified as one of our community's highest values (often the highest value). Wildlife is critical for our tourism-based economy and why millions of visitors come to Jackson annually. As a community we have decided through our Comprehensive Planning efforts that wildlife conservation and wildlife crossings are integral to our future. Taking these next steps will pay dividends to the future conditions of Jackson and how we interact as a community with the broader ecosystem. These are practical tools that not only benefit wildlife but also directly benefit human safety and how we interact with and impact the natural world around us in our daily lives.

IV. PRIORITIZATION DECISION MATRIX

The advisory committee developed its own prioritization process to enhance and contextualize the WTI recommendations, which necessarily prioritize measures based solely on the best-available science.

WTI's findings focus exclusively on three variables:



1. Human safety (wildlife vehicle collisions)



2. Biological conservation



3. Cost-benefit analysis of mitigation measures

The advisory committee provided input and supported this initial prioritization process which guides future discussion. The committee's role was to inject local community variables that will affect discussion of how elements of the plan can be implemented. To be clear, this is our attempt to provide a subjective review of individual locations, although we did incorporate and weight the objective rankings provided by WTI on page 81 of the report (See Table 1).

Beyond the sites analyzed in the report, we recommend continued monitoring of all roadways. Additionally, we recognize that near-term efforts using an array of tools such as enhanced wildlife advisory signs, speed limit radar feedback units, lighting, and speed limit reductions can provide some minor reductions in wildlife-vehicle collisions, and recommend continuing to use these methods where structures are not yet recommended or feasible. These efforts educate the public about larger wildlife movement and human safety issues and can be useful, particularly on lower volume roadways with speed limits of 45 mph or less. Any short term-mitigation efforts are not intended to be in lieu of considering future long-term crossing mitigation measures. As with all mitigation efforts, the efficacy of any and all site-specific measures should be studied over time. We recognize continued study and monitoring of sites requires continued county resources, including equipment, staff time, and possibly contracts to hire consultants to complete these studies. While this document primarily focuses on terrestrial crossings priorities and opportunities, we strongly recommend that aquatic passages are considered wherever possible, as those mitigation measures may prove very feasible and cost-effective to implement, and will likely be well supported by the public.

BELOW IS AN EXPLANATION OF CRITERIA THAT WE CONSIDERED IN RECOMMENDING PRIORITIES:



Land Security

Land ownership, land under conservation easement, private property considerations, long-term land use considerations, such as development potential



Political Viability

Local community discussions, neighborhood preferences, anticipated community impacts/responses



Key Partner Support

Opportunities for crossings to be integrated with other agency/partner plans



Technical Feasibility

Challenges with mitigating a particular site due to geology, engineering design, topography, etc.



Long-Term Solution

Wildlife movement patterns over time, viable long-term solution even when considering future changes in land ownership



Human Safety Impact

(Refer to Master Plan)



Wildlife Mortality Impact

(Refer to Master Plan)

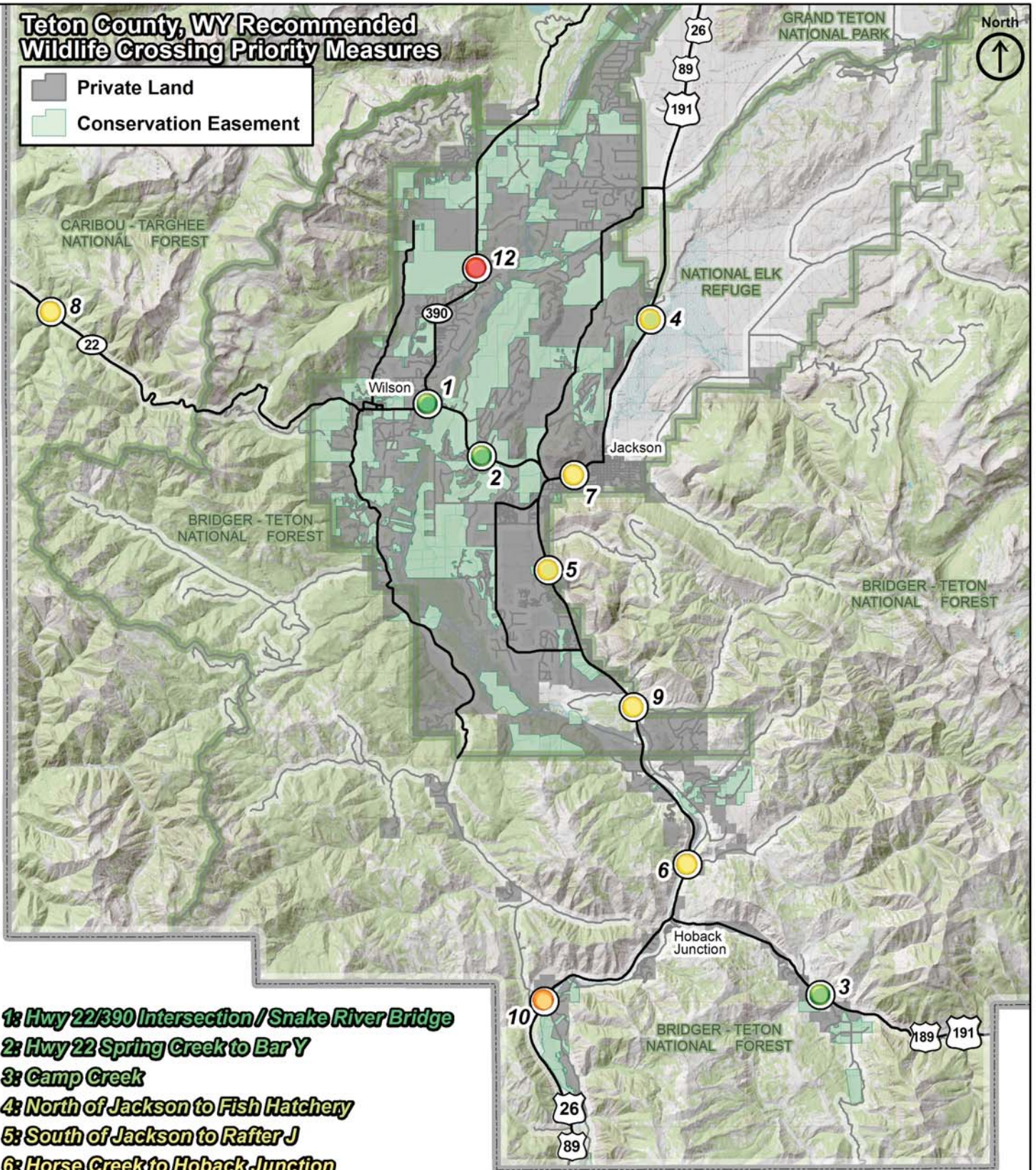


Habitat Connectivity Value

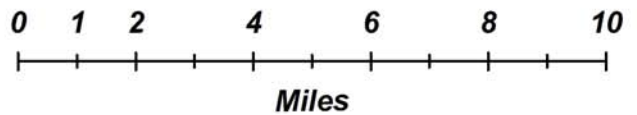
(Refer to Master Plan)

Teton County, WY Recommended Wildlife Crossing Priority Measures

Private Land
 Conservation Easement



- 1: Hwy 22/390 Intersection / Snake River Bridge**
- 2: Hwy 22 Spring Creek to Bar Y**
- 3: Camp Creek**
- 4: North of Jackson to Fish Hatchery**
- 5: South of Jackson to Rafter J**
- 6: Horse Creek to Hoback Junction**
- 7: Broadway**
- 8: Teton Pass West Side**
- 9: Game Creek**
- 10: Dog Creek**
- 11: Blackrock/Togwotee (Not Shown)**
- 12: WY 390**





RECOMMENDED WILDLIFE CROSSING PRIORITY RANKINGS

Site number on map		Land Security	Political Viability	Key Partner Support	Technical Feasibility	Long Term Solution	Master Plan Score*	Avg. Rank
1	Hwy 22/390 Intersection / Snake River Bridge	3	3	3	2	2	9	22
2	Hwy 22 Spring Creek to Bar Y	3	2	2	3	2	9	21
3	Camp Creek (at-grade)	3	2	2	3	1	9	20
3	Camp Creek (long-term)	3	2	2	1	3	9	20
4	North of Jackson to Fish Hatchery	3	3	1	2	3	6	18
5	South of Jackson to Rafter J	3	1	1	2	1	9	17
6	Horse Creek to Hoback Junction	3	3	3	1	3	3	16
7	Broadway (long-term)	1	3	1	1	1	9	16
8	Teton Pass West Side	3	3	2	2	3	3	16
9	Game Creek	2	1	1	1	2	9	16
10	Dog Creek (at-grade)	2	2	2	2	1	6	15
11	Blackrock/Togwotee	3	1	1	1	2	3	11
12	WY 390	1	1	1	1	2	3	9

*Master Plan Score Parameters

1) human safety (wildlife-vehicle collisions)

2) biological conservation

3) cost-benefit analysis of mitigation measures

V. RECOMMENDED PRIORITY MEASURES SUMMARY

GREEN: HIGHEST PRIORITY (RECOMMEND PURSUING NEAREST-TERM IMPLEMENTATION!)

1. GREATER HWY 22/390 INTERSECTION/SNAKE RIVER BRIDGE

This site is for multiple structures in and around the greater intersection and bridge area.

OPPORTUNITIES:

- ✓ Potential integration with WYDOT work that is programmed/scheduled
- ✓ Land Security (BLM adjacent, favorable feedback from adjacent private land, conservation easements)
- ✓ Favorable terrain for underpasses
- ✓ Known WVC hotspot
- ✓ Public support likely
- ✓ Multi-species benefits (primarily moose location, but also other ungulates and small mammals)
- ✓ Could be developed as good example for public/private cooperation and cost sharing



Rendering of potential underpass near Hwy 22/390 intersection (looking southerly)

CHALLENGES:

- ✗ Fencing limitations
- ✗ High recreation use area – may be opportunity also for public engagement and buy-in
- ✗ Impacts to scenic views
- ✗ Expensive due to multiple installations/locations

2. HWY 22 SPRING CREEK TO BAR Y

OPPORTUNITIES:

- ✓ Known Wildlife movement corridor for elk, deer and moose
- ✓ Known collision area
- ✓ Favorable terrain for overpass
- ✓ Part of land under conservation easement
- ✓ Known support, cooperative landowners for potential easements for structure for portions of project near Bar Y
- ✓ High visibility location
- ✓ WYDOT PELS study identified this general location



Rendering of potential overpass on Hwy 22 near Coyote Canyon/Bar Y area (looking westerly)

CHALLENGES:

- ✗ Fencing
- ✗ Immediate area residential density
- ✗ Additional easements need to be secured
- ✗ Unknown landowner support for Spring Creek area
- ✗ Potential scenic impacts from fence and structure
- ✗ Public support less certain in high visibility location
- ✗ Hwy 22 is highest volume road in county (challenge and opportunity)

3. **CAMP CREEK (HOBACK JUNCTION TO MOUTH OF HOBACK CANYON)**

OPPORTUNITIES:

- ✓ Land security (public lands adjacent)
- ✓ Known multi-species wildlife movement (bighorn sheep, elk, rare carnivores, small mammals)
- ✓ Known wildlife-vehicle collision hotspot
- ✓ Public support likely
- ✓ Terrain somewhat suitable for structural solutions and at-grade solutions



Rendering of potential overpass on US 189 Camp Creek area (looking westerly)

CHALLENGES:

- ✗ Extended zone to mitigate effectively
- ✗ Know landslide area / difficult geology for structures
- ✗ WYDOT's future plans for reconstruction are not certain
- ✗ At-grade solutions experimental – unknown effectiveness
- ✗ Multiple mitigation measures likely required in this area

At-grade solutions are proposed as an option in the Master Plan, although structures are more preferred. These and other near-term measures (lighting/signage) should be considered. In the long-term, a structural solution is more likely to significantly reduce wildlife mortalities in this area.

YELLOW: MEDIUM PRIORITY SITES (NEED MORE WORK/DISCUSSIONS!)

4. NORTH OF JACKSON TO FISH HATCHERY

OPPORTUNITIES:

- ✓ Land Security (Federal Ownership)
- ✓ High Visibility Location
- ✓ Public Support Likely
- ✓ Fencing Already Exists on East Side of Highway
- ✓ Restore habitat connectivity
- ✓ Could potentially lower high collision numbers near Gros Ventre Junction in GTNP
- ✓ National Elk Refuge has already completed a separate study in this area



Rendering of overpass North of Jackson on US 89 (looking northerly)

CHALLENGES:

- ✗ Lower Volume Conflict Zone
- ✗ Short distance Elk Migration
- ✗ Potential for private lands / agricultural conflicts
- ✗ Re-routing due to elk pushed north to Gros Ventre River due to Refuge fencing
- ✗ Potential to move mule deer onto refuge
- ✗ Potential for Gros Ventre and Teton big horn sheep herds to mingle – disease transmission
- ✗ Potential for elk to move off Refuge onto private lands
- ✗ Scenic concerns with additional fencing
- ✗ Needs significant further discussions with National Elk Refuge, Grand Teton National Park and Wyoming Game and Fish personnel to vet the complexities of this site

There are a few locations between Jackson and Fish Hatchery Hill where crossing structures could be implemented. The exact location needs further vetting.

5. SOUTH OF JACKSON TO RAFTER J

OPPORTUNITIES

- ✓ Known wildlife-vehicle collision hotspot
- ✓ Known deer movement and elk migration area
- ✓ Land secure on east side and portions of west side – federal and conservation easement on Valley Springs Ranch (Teton County owned parcel)
- ✓ Connect fencing with new fencing being constructed to the south
- ✓ Fencing could be constructed below highway for less scenic impacts
- ✓ Realize larger conservation gains (connectivity) by extending existing South 89 mitigation work from south to north

CHALLENGES

- ✗ Potential negative impact funneling wildlife onto private agricultural parcels creating conflict with domestic animals and wildlife
- ✗ Concerns from adjacent livestock operator/property owner
- ✗ Long term land use could become significantly more developed on west side

In recent years – especially during high snowfall winters – this stretch has been extremely problematic for wildlife crossing (high volumes of wildlife-vehicle collisions). Recently installed advisory signage may help raise awareness of wildlife crossing, but the high speed road is best suited for structural mitigation.

6. HORSE CREEK TO HOBACK JUNCTION

OPPORTUNITIES

- ✓ Road section currently under WYDOT design process
- ✓ Known wildlife-vehicle collision hotspot
- ✓ Favorable terrain for structural mitigation
- ✓ Site planning already conducted in first phase of the South 89 re-construction project
- ✓ Known migration area

CHALLENGES

- ✗ Short Window of Opportunity (Current Work)
- ✗ Funding challenge?
- ✗ Geology/landslide area

This site was initially included in the South 89 re-construction project, but it may be omitted as funding for the entire project is stretched thin.

7. BROADWAY (FLAT CREEK BRIDGE NEAR 5-WAY TO HIGH SCHOOL ROAD)

OPPORTUNITIES

- ✓ Very high volume of wildlife-vehicle collisions
- ✓ Known wildlife-vehicle collision hotspot (precise crossing area known)
- ✓ High visibility location
- ✓ Some fencing could occur behind commercial parcels
- ✓ Add sensitive street lighting on north side
- ✓ Important habitat connectivity from south facing hillside to riparian area

CHALLENGES

- ✗ Private land ownership; long-term development uncertainty
- ✗ Commercial frontage
- ✗ Complex fencing situation due to numerous access points
- ✗ Long-term wildlife movement uncertainty

- ✗ Challenging terrain
- ✗ Costly land acquisition

A variety of non-structure mitigation measures have been introduced on this comparatively slow-speed road (30 mph – 40 mph) where traffic volumes are high. Those near-term measures (speed limit reduction, enhanced advisory signage, fixed radar feedback signs) should be monitored as the above opportunities and challenges are considered.

8. TETON PASS WEST SIDE

OPPORTUNITIES

- ✓ Land security (federal ownership)
- ✓ Likely public support
- ✓ Multi-jurisdictional cooperation
- ✓ Favorable terrain for crossing structure
- ✓ Known moose movement area
- ✓ Fencing feasible for long stretches

CHALLENGES

- ✗ Dispersed area to mitigate
- ✗ Multi-State/Jurisdictional integration could increase time to implement

The Teton Pass west side WY22 and ID33 include a long stretch of comparatively high-speed roadway that is a challenge to mitigate effectively without structures.

9. GAME CREEK

OPPORTUNITIES

- ✓ Best options have been evaluated and implemented
- ✓ High wildlife use and WVC's
- ✓ Land security (public land options)

CHALLENGES

- ✗ Complex location, feasibility, ongoing construction with existing design, cost, agency support

Game Creek is currently being mitigated to allow fish passage and small mammal movement. A large mammal simple span bridge is being constructed to the north near the transfer station. Another structure is being built to the south at the Flat Creek bridge that will permit moose movement. Continue monitoring this site to ensure that elk movement through this mitigated area is occurring effectively. WYDOT's Wildlife Advisory Committee that was involved in the South 89 reconstruction is confident in the mitigation being built.

RED: LOWEST PRIORITY SITES (KNOWN SITES OF CONCERN THAT SHOULD BE MONITORED)

10. DOG CREEK (SOUTH HWY 89)

OPPORTUNITIES

- ✓ Land ownership (public land) on one side of highway
- ✓ Terrain suitable for at-grade crossing opportunities

CHALLENGES

- ✗ No near-term planned construction (reconstruction completed in 2005)
- ✗ Land security (future development likely in nearby area)
- ✗ Limited feasibility of structures; little fluctuation in highway grades; grade of highway makes underpasses challenging
- ✗ High volume of high-speed traffic during commute times
- ✗ Concentrated crossing site near feedground

U.S. Highway 26/89 in the Snake River Canyon was completed in 2005. At-grade crossings with animal detection systems may be of interest in the future. Seasonal mobile digital message signs and other education efforts are encouraged.

11. BLACKROCK/TOGWOTEE

OPPORTUNITIES

- ✓ Very few beyond what was implemented
- ✓ Land security (public land)
- ✓ Important habitat connectivity area

CHALLENGES

- ✗ Recently reconstructed in 2012; no future re-construction planned
- ✗ Dispersed wildlife movements
- ✗ Low wildlife-vehicle collisions
- ✗ Probable high costs due to length of mitigation corridor

Togwotee Pass reconstruction finished in 2012 for the 38-mile corridor, addressing key locations for wildlife movement with "passive" structures (no wildlife funnel fencing). This was in part due to the length of the corridor and number of crossings, but also because of lower traffic volumes and low wildlife vehicle collision data and cost/difficulty of fence maintenance. Continue monitoring WVC's, traffic volume and the effectiveness of current mitigation/education measures.

12. WY 390

This is intended to address the remainder of Hwy 390 north of the greater Hwy 22/390 intersection area which is recommended for mitigation in Site 1.

OPPORTUNITIES

- ✓ Slow-speed roadway conducive to at-grade, non-structure measures
- ✓ Future potential for non-fenced underpass structures
- ✓ Monitoring of WVCs to evaluate effectiveness of non-structure mitigation measures on slow-speed highways
- ✓ Strong local neighborhood support of reduced speeds

CHALLENGES

- ✗ Land security (many private landowners)
- ✗ WVC hotspot for moose in first mile from intersection with WY22
- ✗ Few obvious locations for crossing structures
- ✗ Fencing difficult due to multiple egress points along road
- ✗ Public/political support uncertain
- ✗ High volume of traffic; potential movement barrier

Lowered nighttime speed limits, fixed radar feedback signs, and mobile digital message signs are in place along this stretch. WVCs on this roadway are low compared to other major valley highways. Continue monitoring and education efforts.

LET'S GET TO WORK – MASTER PLAN IMPLEMENTATION

All of these individual sites will require more extensive research into feasibility as they are explored in earnest. The committee can begin to assist in vigorously gathering information on all aspects of advancing the top "Green" priority sites. Preliminary planning, engineering and cost estimating are the next steps.

Capitalizing on opportunities to move projects along with partners where mutual goals can be met is most beneficial when people in the community are in frequent contact with potential project partners such as WYDOT.

The committee, and the organizations and agencies represented, are working to educate the public about the severity of the wildlife-vehicle collision problem, the diminishment of habitat and landscape connectivity, and the threats to human safety that wildlife on roadways can pose.

Committee members, organizations and agencies will continue to work together to ensure that opportunities to integrate wildlife crossings within larger highway construction plans are seized. The committee also remains dedicated to pursuing local funding opportunities and other creative funding sources to help implement this Master Plan. This could take many forms, from seeking public-private partnerships and pursuing local philanthropy, to seeking opportunities to fund crossings through our local special purpose excise tax (SPET). Wildlife crossings should be considered as one of the highest community priorities, as identified in the Comprehensive Plan.

We look forward to taking the plan and making it happen, to make a real difference in our community.