

Wildlife & Roadways

**Joint Transportation, Highways & Military
Affairs Committee
Gillette, WY
May 15, 2019**



The Issue

Roadways through Migratory Corridors, Winter & Home Range



- WYDOT has a long history of effort to minimize wildlife/vehicle crashes
 - Tracking crash data
 - Tracking carcass counts
 - Carcass disposal
 - Fencing (wildlife friendly / livestock containment)
 - Studies / research
 - Animal collaring
 - Animal movements
 - Monitoring mitigation effectiveness

Cooperation with other agencies, associations, and landowners

Total and Wildlife Crashes

2013-2017



Crash Severity	Total Crashes	Wildlife caused	Wildlife Crashes percentage of total
Fatal Injuries	540	6*	1.1%
Injury Crashes	13387	282	2.1%
Property Damage Only Crashes	54882	12275	22.4%

* 5 of the 6 fatal injuries were individuals riding motorcycles

Wildlife Crashes

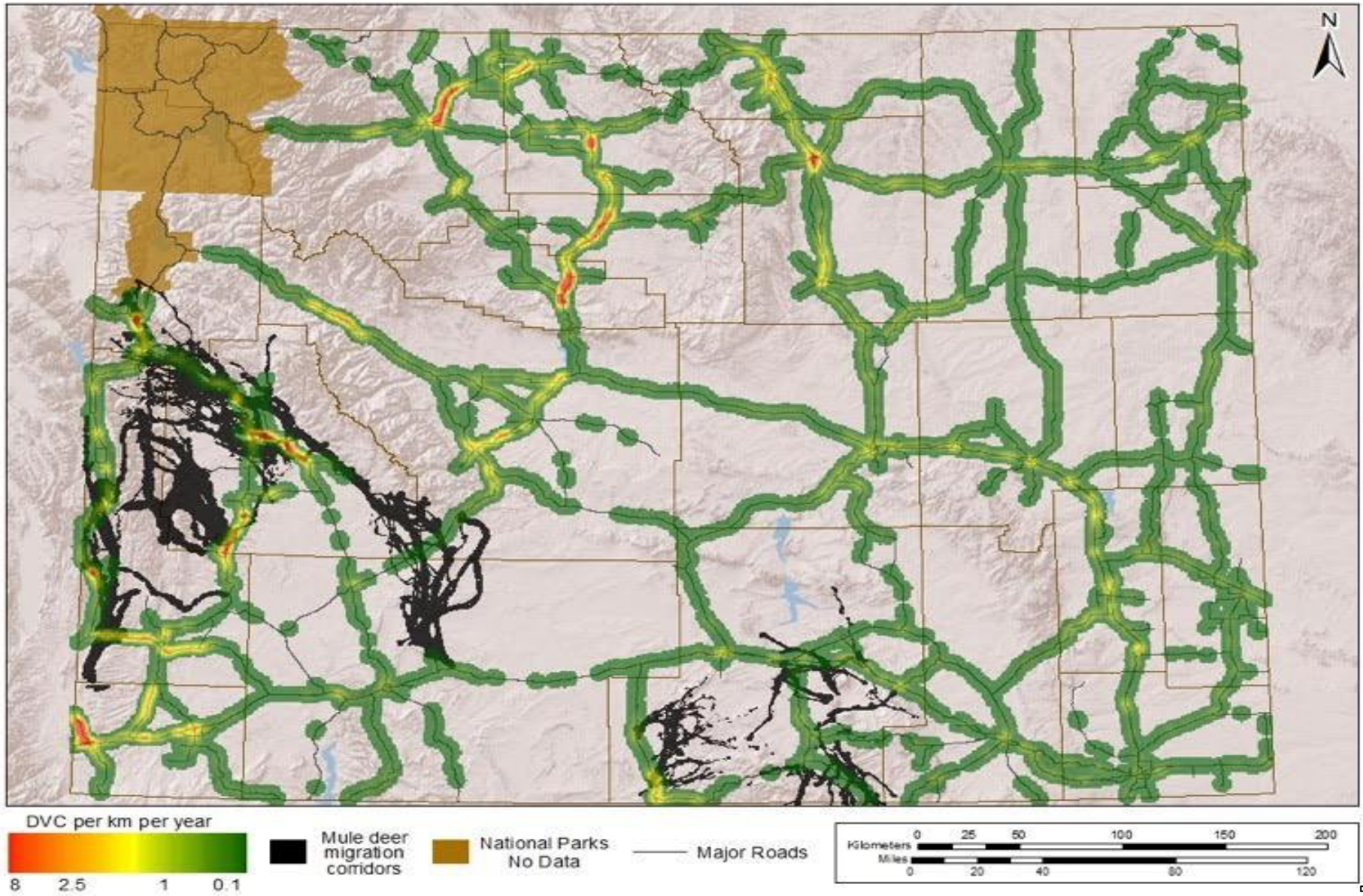
Animal Type



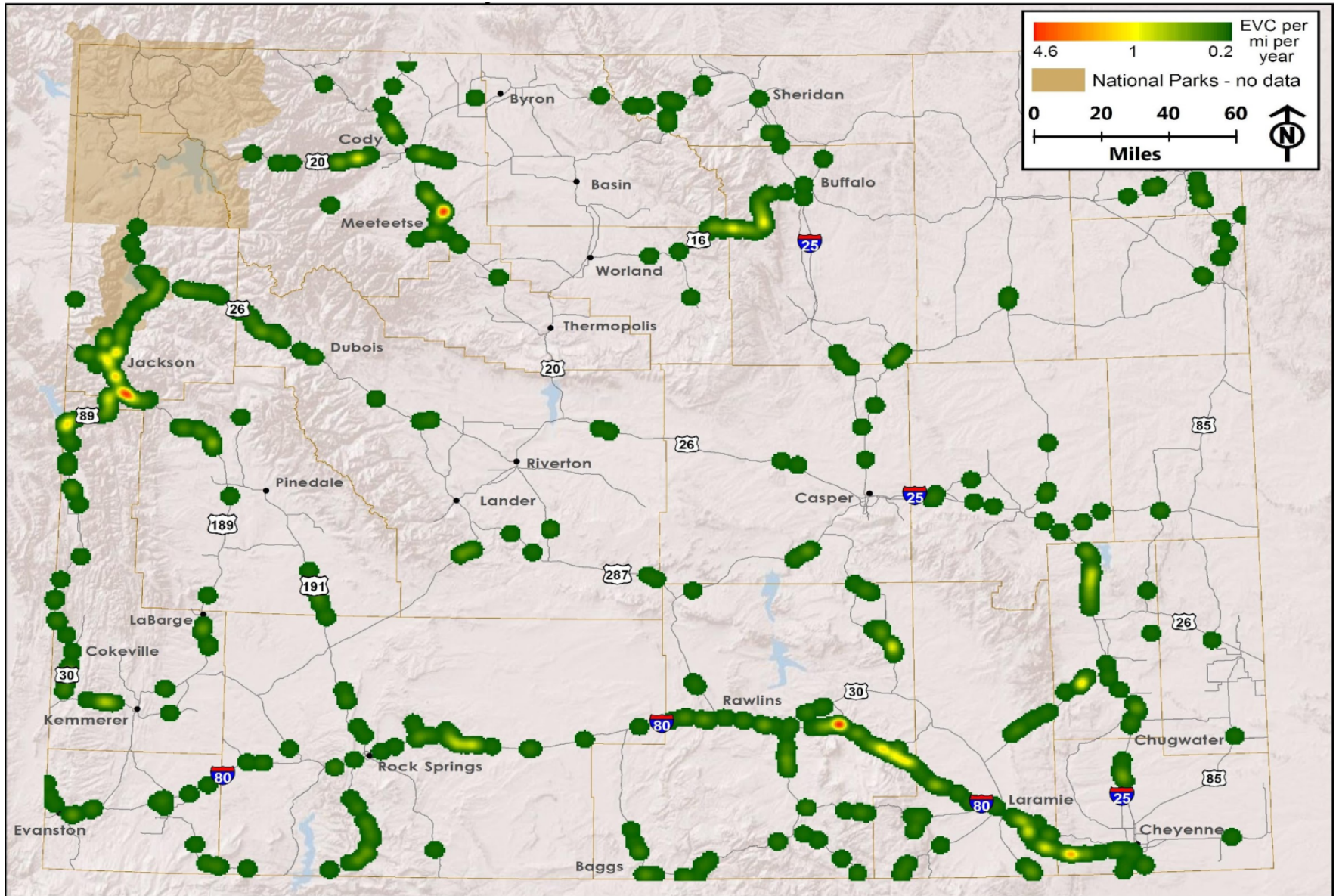
Year	Antelope	Buffalo	Deer	Elk	Moose	Other*
2013	144	8	1,762	108	46	30
2014	119	3	1,868	109	48	24
2015	153	2	2,222	101	40	31
2016	169	2	2,518	102	39	42
2017	227	4	2,439	133	35	39
Totals	812	19	10,809	553	208	166
Avg./year	162	4	2,162	111	42	33

*Other includes bighorn sheep, bears (grizzly and black), wolves, coyotes, etc.

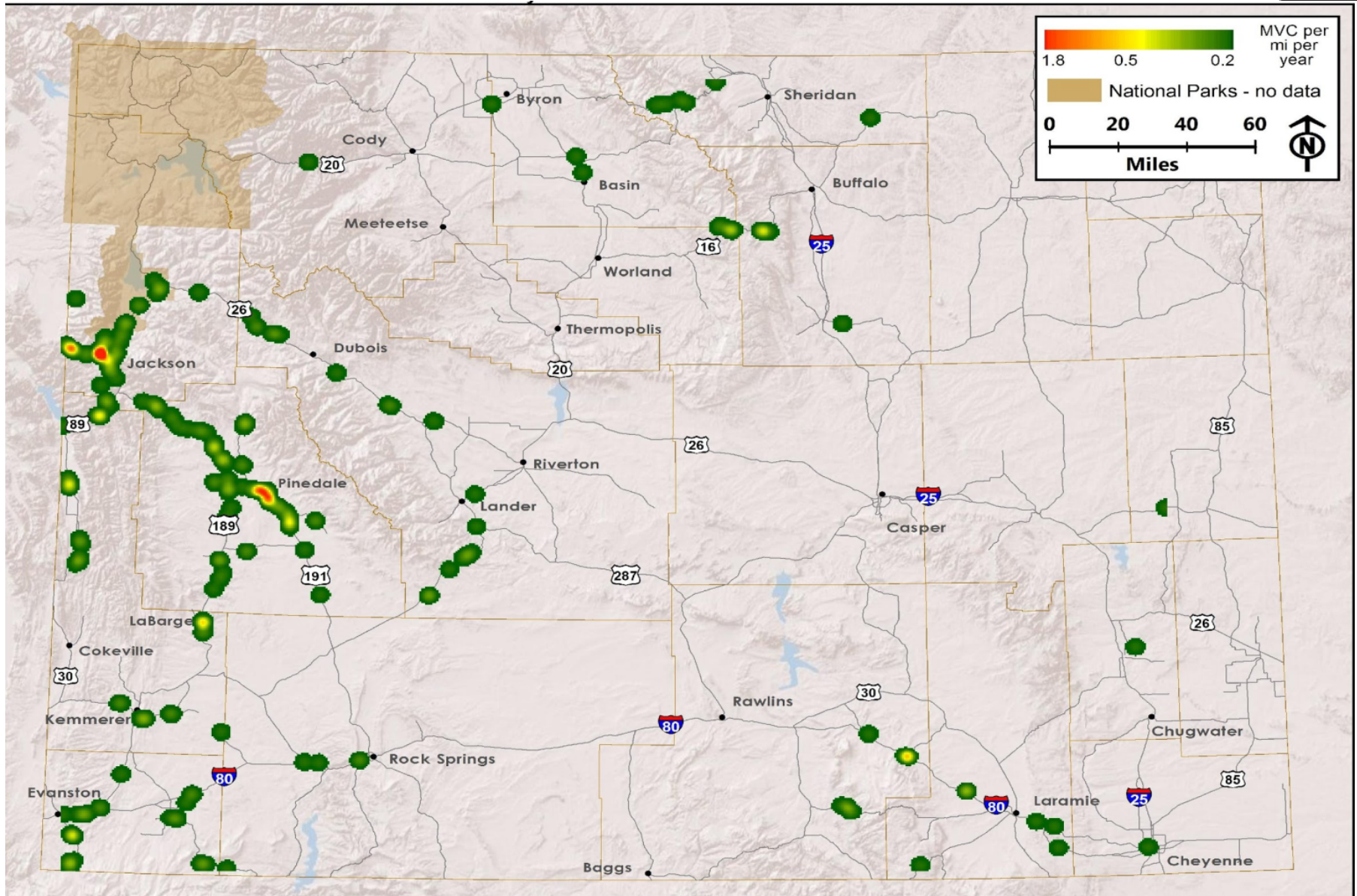
Deer Vehicle Collision (DVC) Map



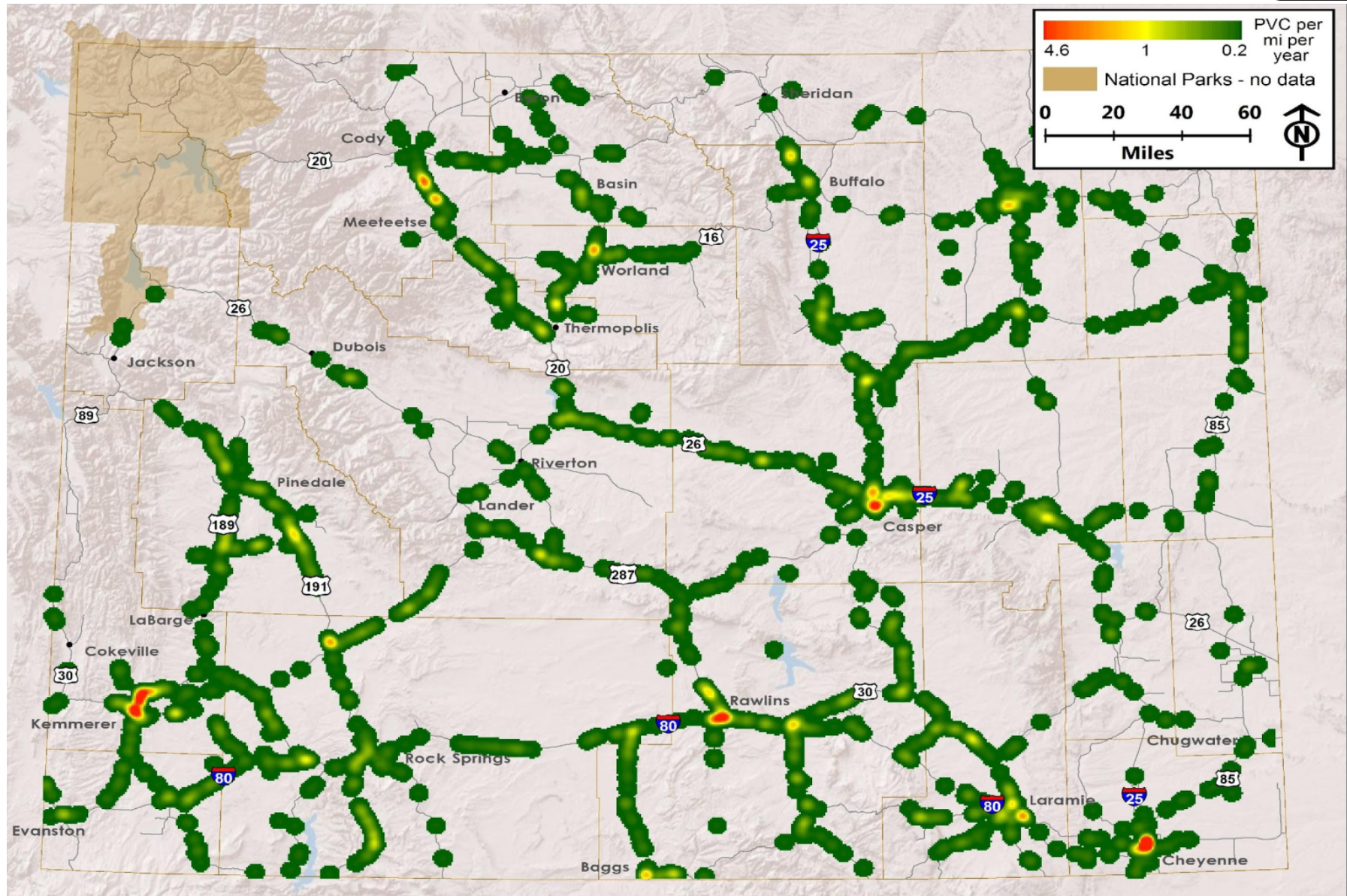
Elk Vehicle Collision (EVC) Map



Moose Vehicle Collision (MVC) Map



Pronghorn Vehicle Collision (PVC) Map



Accomplishments

Highway and Airport Improvements



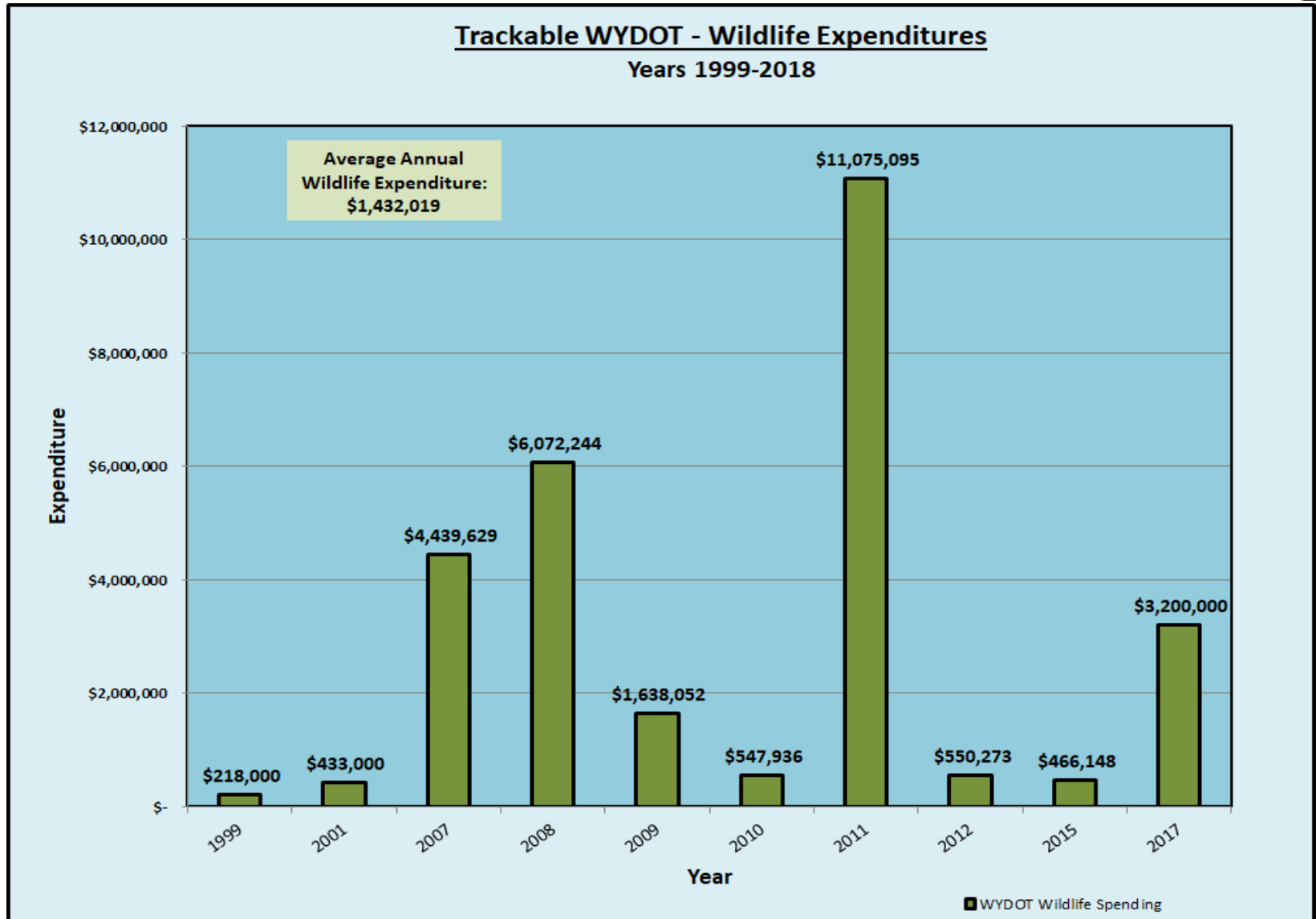
- Since 1999, WYDOT trackable wildlife expenditures = \$1.6M/yr
 - Highway Improvements = \$1,432,019
 - Airport Improvements = \$ 212,679

- Construction investment through 2017 = \$32,403,553:
 - Highway Improvements = \$28,640,377
 - Airport Improvements = \$ 3,828,225

- Future projects:
 - Highway Improvements, 2019 and 2023 = \$8,000,000
 - Airport Improvements, 2019 through 2024 = \$4,800,000

- Transportation/Wildlife related research
 - Highway Related = \$1,844,000 (See Appendix C)
 - Value represents only State Planning and Research Funds (SPNR) and no project funds
 - Airport Related = \$1,487,000

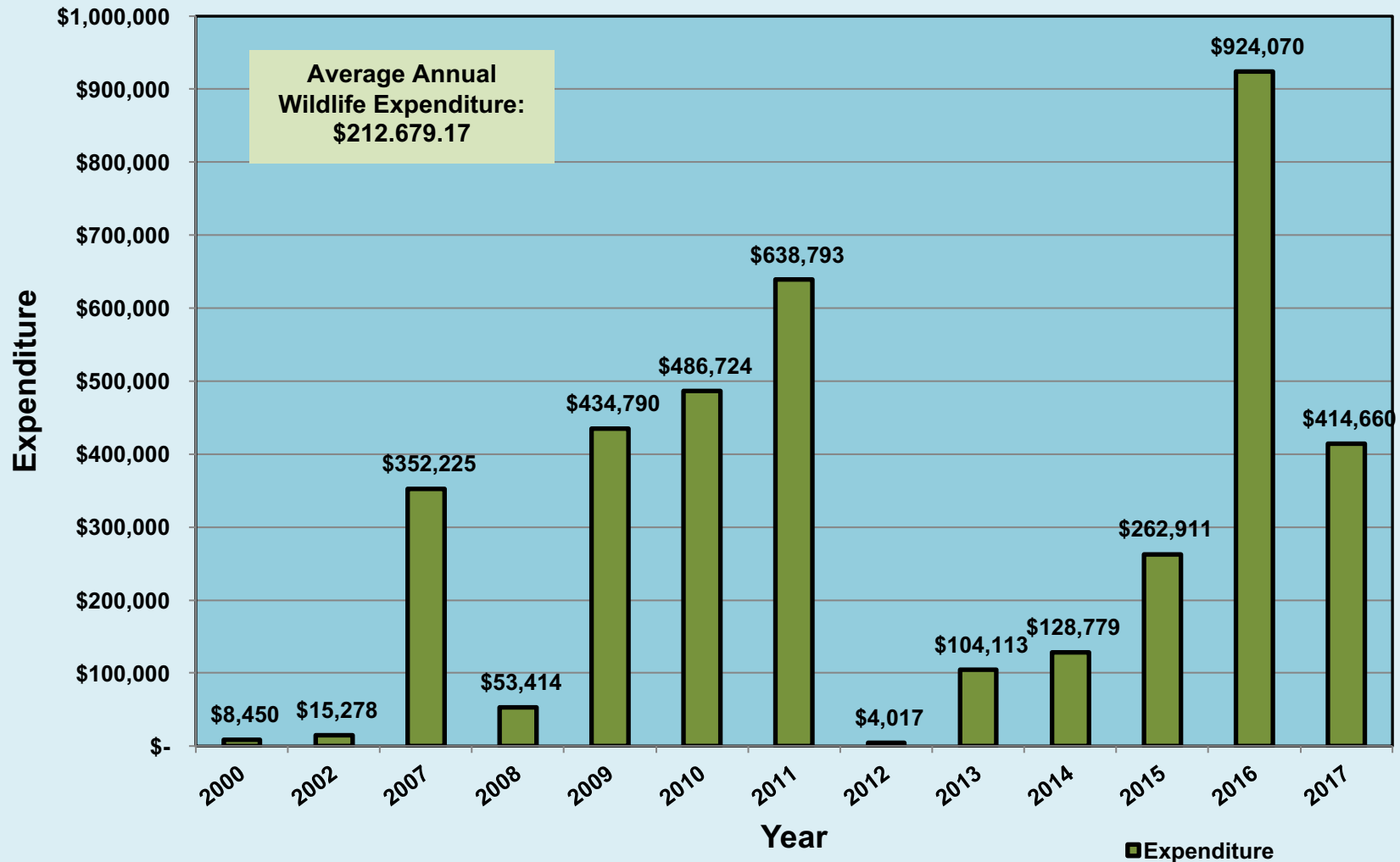
Highway / Wildlife Construction Expenditures



Airport Wildlife Construction Expenditures



**Estimated WYDOT Trackable Wildlife Expenditures
Years 2000-2017**



Accomplishments



- Large crossing structures
 - Trappers Point
 - Underpasses and overpasses \approx \$ 11M
 - Nugget Canyon
 - Underpasses \approx \$ 5M
 - Togwotee Pass
 - Underpasses \approx \$ 6M
 - Jackson South
 - Underpasses \approx \$ 3.2M
- Typically includes 8-foot deer fencing

Trappers Point Overpass



Nugget Canyon



Togwotee Pass – Buried Bridge



Togwotee Pass – Underpass



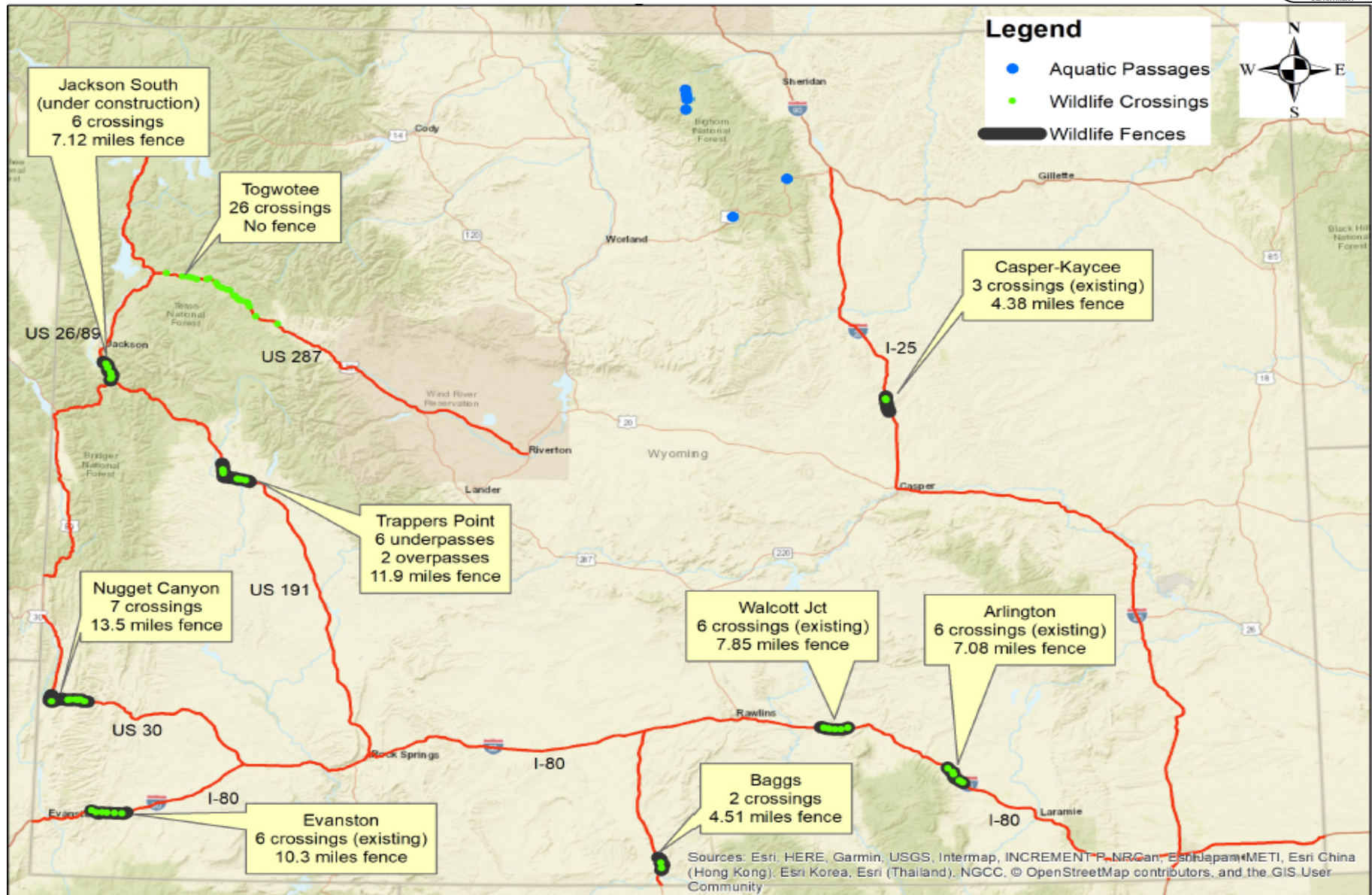
Togwotee Pass - Buffalo Fork Bridge



Nugget Canyon - Deer Fence



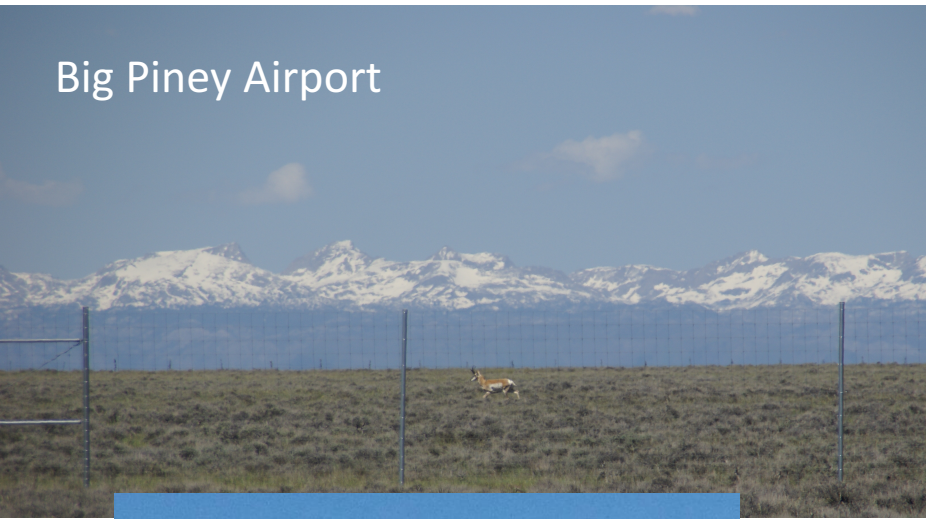
Wildlife Crossings/8 ft. Fence Locations



Airport - Wildlife Fence



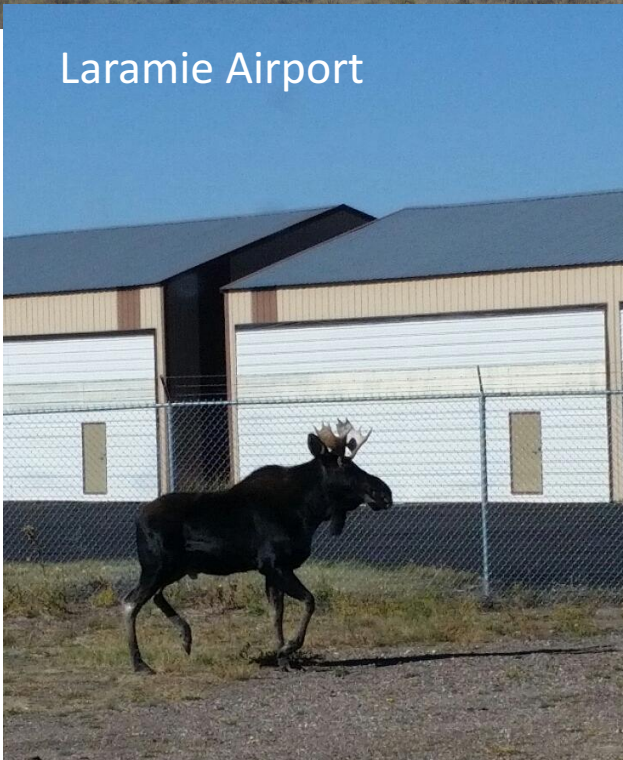
Big Piney Airport



Hot Springs County Airport



Laramie Airport



Jackson Airport



Accomplishments

(often non-trackable costs)



- Upsizing culverts (fish, amphibians, and small animals)
 - fish ladders, gravel base
 - i.e. 30" culvert vs. 24" culvert
- Deer Delineators / Reflectors
- Barn Roof versus Flat Slope dirt section
- Mowing tall brush in the Right-of-Way
- Dynamic Message Signs

Other Wildlife / Fishery Work



Fish Ladder / Resting Pools (US16)



Testing for Openness Ratio (US 30)



Wyoming Toad Barrier
(CR 422 - Pahlow Road)

APR 3 2004



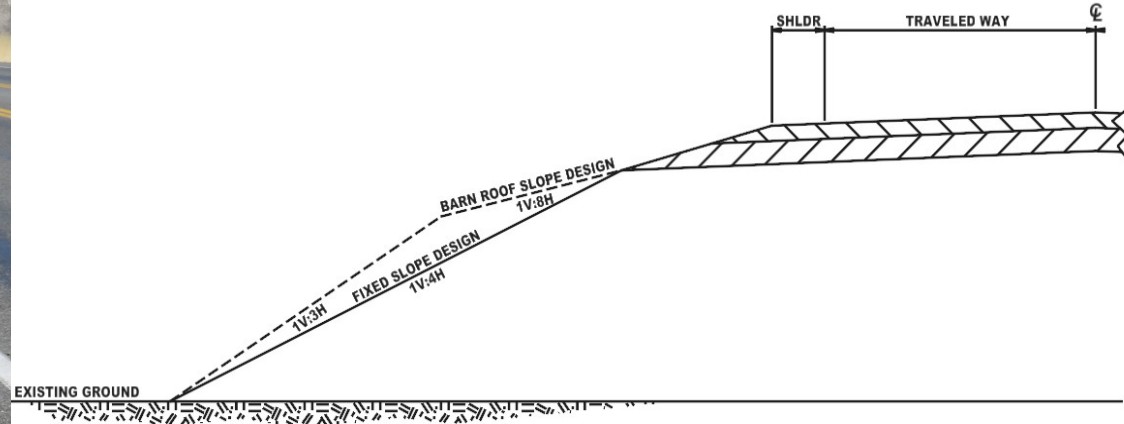
Deer Delineator/Reflector (US 20)

Other Wildlife Work



Big Horn Sheep and Signage
US 14/16/20

Earthwork Design Options



Tall Brush Removal (WY 789)

Accomplishments

(often non-trackable costs)



- Reduced nighttime speed limits (called Dual Speed Limits)
- Advisory signs (some w/LED lights)
- Timing Restrictions – winter range, mating seasons, nesting, etc.
- Non-palatable vegetation species
- Media messaging

Other Wildlife Work



LED Lighted Signage – WY 120



Dual Speed Limits – US 191

Wildlife Signage – US 14/16/20



Estimated Wildlife Project Costs



- Deer Fence ≈ \$ 200,000 per mile (both sides of roadway)
 - Includes exit ramps, end/brace panels, gates, cattle guards
- Crossing Structure (0 ft to 6 ft grade raise)
 - Box culvert - \$ 675,000 to \$ 950,000
 - Maintenance/Inspection - \$ 1,400/yr
 - Bridge - \$ 900,000 to \$ 1,200,000
 - Maintenance/Inspection - \$ 17,500/yr
 - Overpass - \$ 3M to \$ 7M
 - Maintenance/Inspection - \$ 4,000/yr
- Roadway (0 ft to 6 ft grade raise)
 - \$ 300,000 to \$ 600,000 per location
 - Does not include detour and traffic control costs



- October 2016 – WYDOT and WGFD met to address traveler safety, wildlife mortality and wildlife movement issues related to highways
- April 2017 – Wyoming's Wildlife & Roadway Summit brought WYDOT, WGFD, local government, elected officials, non governmental organizations (NGOs) and members of the public together
 - Key issues
 - Traveler safety
 - Wildlife mortality
 - Barriers to habitat and migration
 - Key obstacle
 - Funding

Wildlife Summit

Recommended objectives



1. Improve and maintain communication and cooperation among WYDOT, WGFD, NGOs and other stakeholders.
2. Prioritize issues/concerns and mitigations at the District/Region and Statewide level.
3. Develop public support and seek funding sources to implement priority mitigation projects.
4. Address research/monitoring needs to better understand the relationships between roadways and wildlife and assess mitigation effectiveness.
5. Enhance public outreach and education to minimize wildlife-vehicle collisions to improve motorist safety.

Prioritize Issues/Concerns

Mitigations at the District/Region and Statewide level

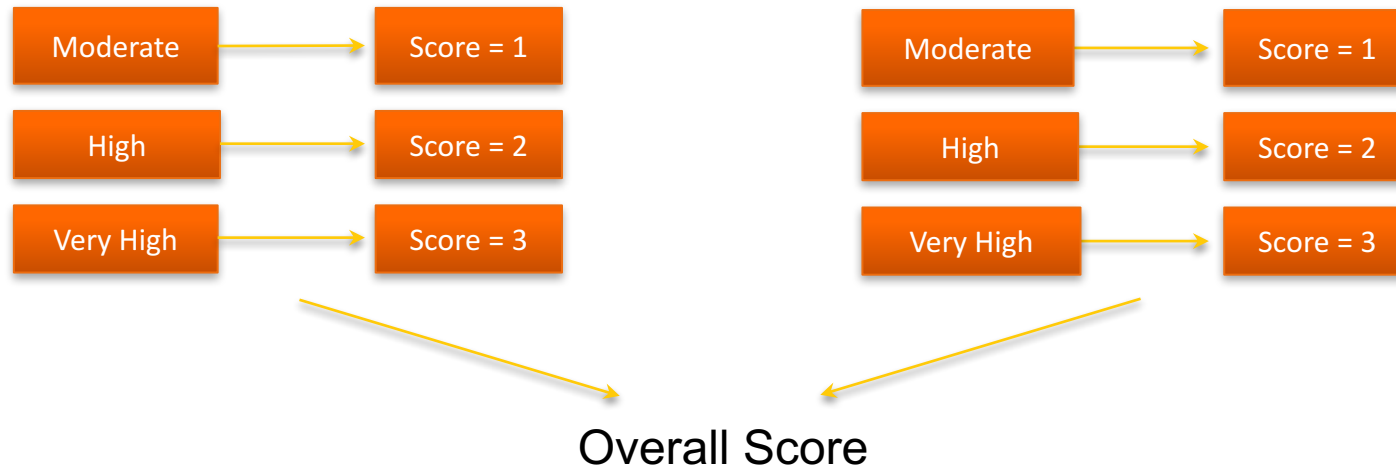


1. The Wyoming Wildlife Roadway Initiative Implementation Team (WWRIIT) was formed.
 - WYDOT, WGFD, BLM, Wyoming Wildlife Federation, The Nature Conservancy, University of Wyoming Wildlife Migration Initiative representatives
2. WYDOT Districts and WGFD Regions worked on refining project sites and ranked (high, medium or low priority) into local or statewide solutions.
3. The WWRIIT used the projects ranked as high to develop a statewide priority.

Human Safety Concerns + Wildlife Concerns = Overall Score

Human safety -
fatalities crashes

Wildlife - migration
winter range



- Over 240 sites identified for need
 - Local and statewide combined
- 41 statewide high priority sites (Appendix A)
 - Short term (DMS, vegetation treatment)
 - Long term (Under/Overpass, fencing) solutions
- 10 Statewide top priorities
- High priority sites provided to WYDOT
- The entire list remains active

Top Ten Identified Projects



Project Number	Road	MP Start	MP End	Length (Miles)	Description	Estimated Cost	Score	Crash History (Average per year)	Carcass History (Average per year)
1	US-20-26	48	73	26	Dubois (Stoney point to Dinwoody) (mule deer and sheep)	\$21M to \$26M	75	28.8	139
2	I-80	249	256	8	Halleck Ridge (mule deer and elk)	\$27M	70	2	24.8
3	US-189	77	105	29	Dry Piney (mule deer and pronghorn)	\$12M to \$36.5M	70	17.2	124.4
4	WY-120	50	67	18	North of Meeteetse (mule deer, elk, pronghorn)	\$19M to \$25M	65	18.6	44.2
5	US-14A	2	5	4	Cody (mule deer)	\$1M	60	10	31
6	US-189	2	30	29	Kemmerer Hwy (mule deer and pronghorn)	\$31M to \$41M	55	15.6	88.6
7	I-90	81	105	25	Powder River (mule deer)	\$30M to \$37M	50	38.6	62.4
8	WY-28	28	34	7	Sweetwater (pronghorn and mule deer)	\$10M to \$14M	50	0.2	1.6
9	I-25	255	270	16	Kaycee to Buffalo (mule deer)	\$27M to \$31M	40	9	55.2
10	WY-487	59	68	10	Bates Hole (mule deer, pronghorn)	\$14.5 to \$17.5M	25	2	12.4

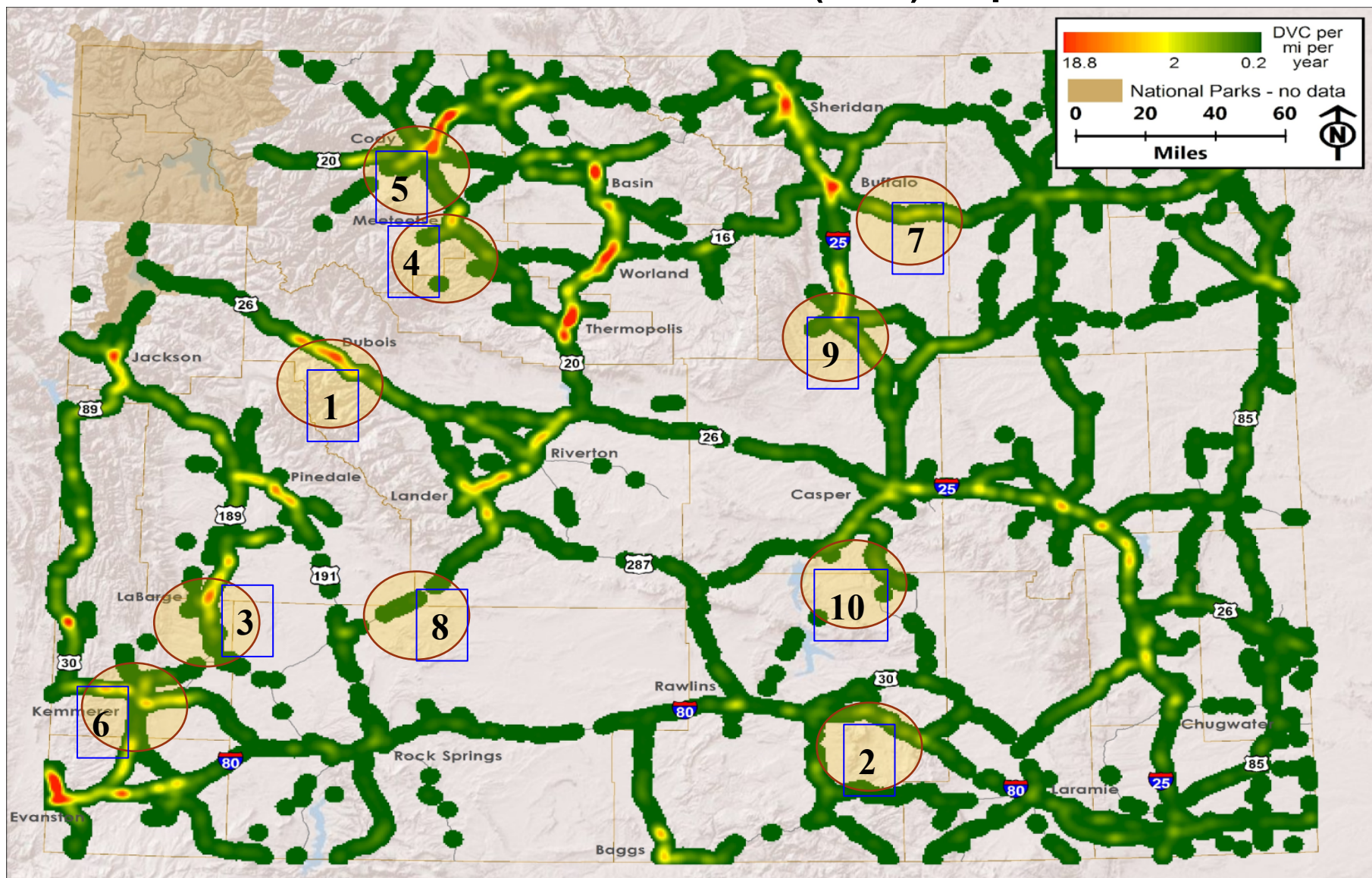
Total Estimated Cost

\$197.5M to \$256M (2019 dollars)

**See Appendix B for project specific information*

Top 10 Projects

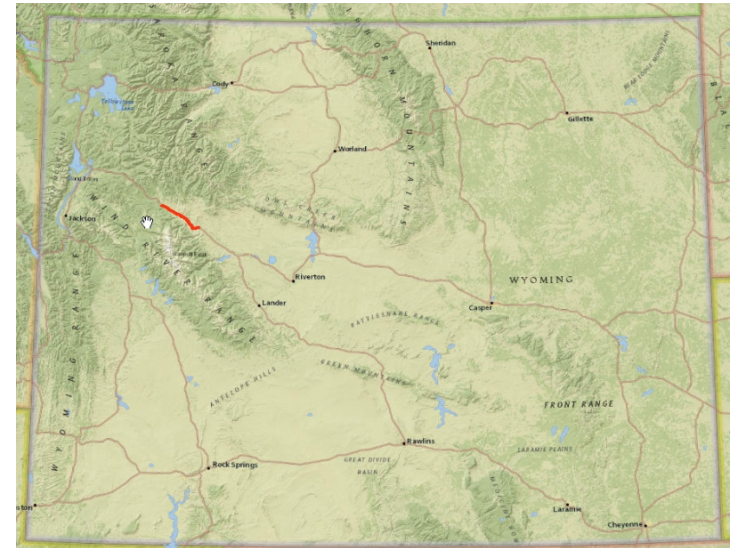
Deer Vehicle Collision (DVC) Map



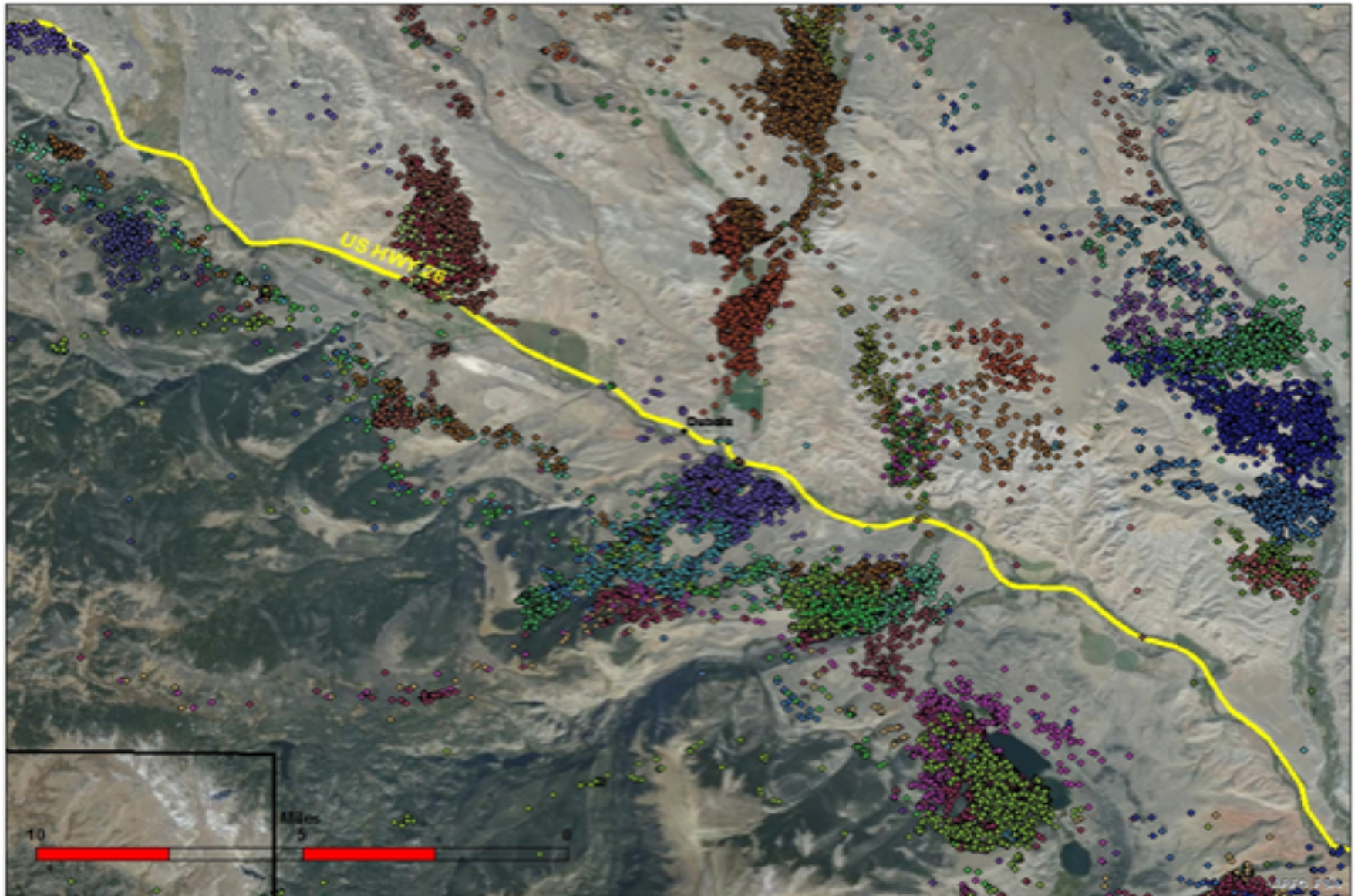
WWRIIT – Project No. 1



- Dubois – Stoney Point to Dinwoody
- US-26/287 mileposts 48 to 73
- Mule deer and bighorn sheep
- Phase 1: Variable messaging signs to encourage motorists to slow down - \$115,000.00 – Underway
- Phase 2: Seasonal dual speed limits
 - 5 sets of dual speed limit signs
 - Permanent messaging signs
 - Estimated cost = \$750,000
- Phase 3: Wildlife crossings/fence
 - Under or overpass structures
 - Estimated cost is \$21 to \$26 million



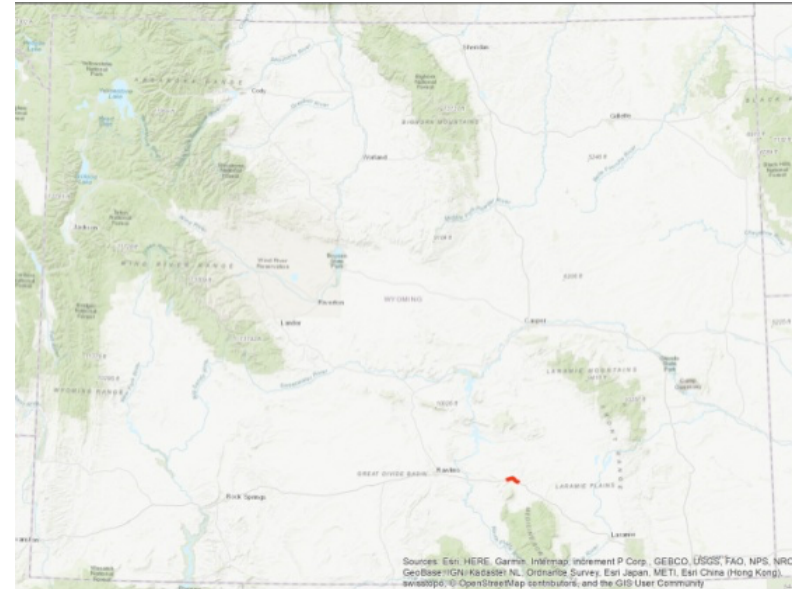
WWRIIT – Project No. 1



WWRIIT – Project No. 2



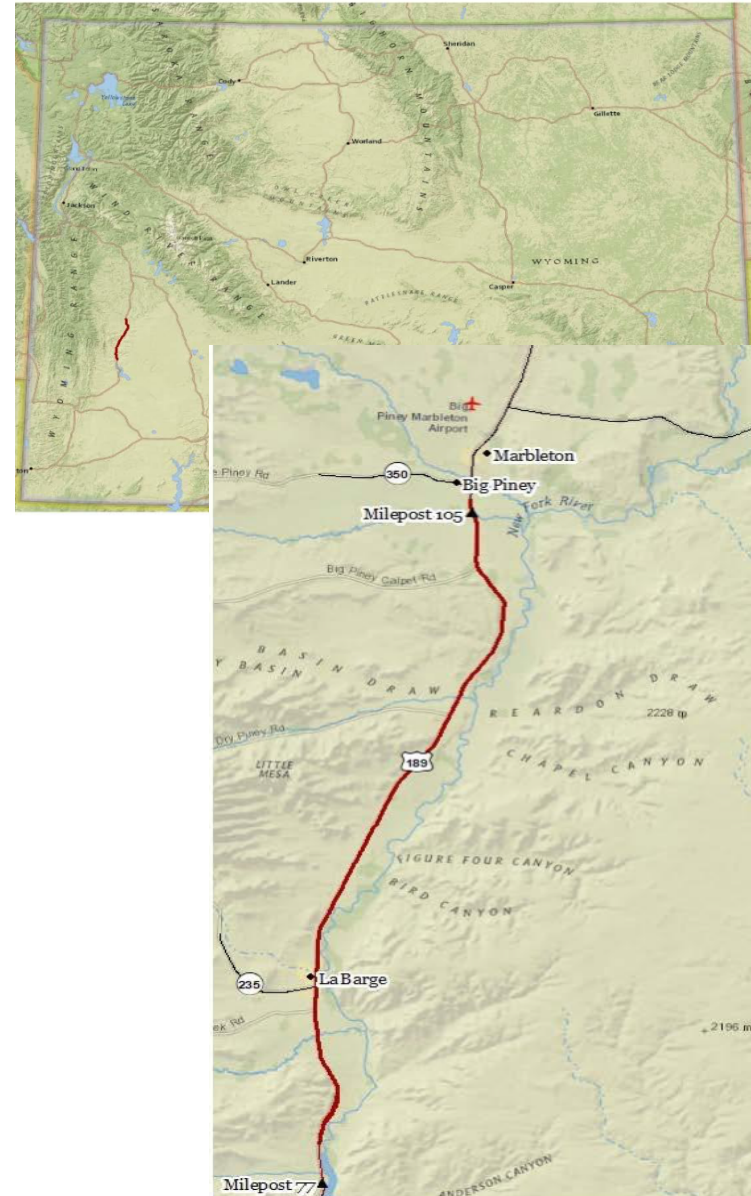
- Halleck Ridge
- I-80 Laramie - Walcott Junction: Reference Marker 249-256
- Mule deer and elk
- Construct 3 overpass structures and fencing
 - Estimated cost is \$27M
 - Spans over both lanes of I-80
 - Securing consultant to help determine preferred crossing locations



WWRIIT – Project No. 3



- Dry Piney
- US-189 La Barge to Big Piney: Reference Marker 77 to 105
- Mule deer and pronghorn
- Phase 1: 1 Underpass
 - Estimated cost = \$2.0 - \$2.5M (RM 86 - 90)
- Phase 2: 4-8 Additional underpasses and fencing
 - Estimated cost = \$9 - \$17M (RM 77 – 86)
- Phase 3: 4-8 Additional underpasses and fencing
 - Estimated cost = \$9 - \$1M (RM 90 – 105)



- For wildlife crossing projects, WYDOT uses 8 ft deer fence to funnel animals to structure
- For roadway projects, WYDOT uses a 45" fence to contain cattle and sheep
 - Working with WGFD to develop a 42" fence option
 - By WGFD request with landowner / lessee approval
 - Reaching out to bordering states for experience with 42" fences

- Leverage funding from multiple entities
 - Private or Non Governmental Organization (NGO)
 - Counties
 - WGFD existing funds or grant funds
 - WYDOT existing funds or grant funds
 - State General Fund Appropriation
- WYDOT Options
 - Wildlife Conservation Fund – current balance = \$108,600
 - Reallocating Existing Transportation Funds
 - Better Utilizing Investments to Leverage Development (BUILD)
 - Infrastructure for Rebuilding America (INFRA) – requires a “freight” aspect
- County Option through WYDOT
 - Transportation Alternative Program (TAP)
- See Appendix D – For other Potential Mitigation Funding Sources

- WYDOT currently invests an average of \$1.6M /yr in infrastructure at airports and along highways to mitigate wildlife vehicle collisions
- WYDOT can increase it's investment to mitigate wildlife vehicle collisions with the understanding that the increased expenditure will delay other planned highway and airport improvement projects shown in the State Transportation Improvement Plan (STIP)

Next Steps



- Continue work with the WWRIIT
- Continue work with WGFD on projects and funding opportunities
- Continue work with NGOs for funding development
- Increase efforts to identify possible grants to fund projects
- Program projects in WYDOT State Transportation Improvement Plan (STIP)
- Begin studies and/or design on selected priority wildlife projects

Question and Answer