

House Joint Memorial 10
Report to the Water and Natural Resources Interim Legislative Committee
June 20, 2012
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House Joint Memorial (HJM) 10 was passed by the New Mexico Legislature in 2011. The memorial was introduced by Representatives Mimi Stewart and Danice Picraux. The purpose of HJM 10 is to encourage the Departments of Transportation (NMDOT) and Game and Fish (NMDGF) and the NM State Police (NMSP) to create a pilot traffic safety project, using existing resources, in an accident-prone area with the goal of reducing collisions between large animals and vehicles. HJM 10 was conceived and written by the Wild Friends Program. It was based on Colorado's House Bill (HB) 1238 Wildlife Crossing Zones Traffic Safety Bill. HB 1238 authorized the Colorado Department of Transportation to implement up to 100 miles of wildlife crossing zones in areas with high rates of wildlife-vehicle collisions. Within these wildlife crossing zones, signage is placed warning motorists of the potential for wildlife crossing the highway, speed limits are reduced, and speeding fines are increased. Speeding fine revenues are directed into a fund which supports the operation and maintenance of the wildlife crossing program. Reducing vehicle speed is an effective way to reduce the potential for dangerous collisions with wildlife, particularly large game animals such as deer and elk. In the United States, animal-vehicle collisions result in over 200 human fatalities, 29,000 human injuries, and \$8 billion in associated costs each year. In New Mexico, 2009 crash data has shown large animal-vehicle collisions account for 19% of all crashes in rural areas (NMDOT 2011).

HJM 10 also requires NMDOT, NMDGF, and NMSP to submit a report describing the pilot project status and recommendations to the appropriate legislative interim committee by June 30, 2012. This document serves as that report and describes the project history, the pilot project description, next steps, and recommendations.

Project History

Meetings between NMDOT, NMDGF, and NMSP to discuss implementation of HJM 10 began in June of 2011. Initial efforts were directed at soliciting recommendations from participating state agencies of highway segments with high rates of large animal-vehicle collisions throughout New Mexico. Because of the relatively high number of large game animal vehicle collisions in New Mexico, numerous recommendations were made by NMDGF and NMSP staff.

After analyzing the highway segments proposed by agency staff, a decision was made by the HJM 10 project team (Team) to conduct a more objective analysis for highways throughout New Mexico using accident report data for animal-vehicle collisions, which is compiled by NMDOT and analyzed by the University of New Mexico's Division of Government Research (DGR).

DGR reported that from 2006 to 2010 in New Mexico, there were 7,028 crashes involving animals. Of these, 11 were fatal and 734 crashes resulted in injuries to motorists. The most common animals struck were deer, involved in 4,010 (57%) of the crashes. Elk and domestic cattle were each involved in 12% of the crashes, and horses were struck 4% of the time (DRG 2011a). Because pronghorn antelope are not considered a large animal by NMDOT and DGR, pronghorn crash data was not included in this analysis, although the Team expects that pronghorn-vehicle collision accident reports would outnumber horse-vehicle accident reports, had they been analyzed. Nationwide research has documented that accident reports represent half or less of actual collisions with large animals, particularly large game animals such as deer and elk, because many of these collisions go unreported.

To identify highway segments with a high rate of large animal-vehicle collisions, DGR identified segments with at least 10 crashes involving large animals from 2006 to 2010. As stated by DGR in their October 2011 report, although none of the resulting highway segments with the most crashes had any of the 11 fatal crashes, it is still reasonable to identify these segments for the wildlife pilot project based upon total reported crashes, because any of the injury crashes could have resulted in fatalities under slightly different circumstances, which could include absence of an airbag or a different type of vehicle.

DGR identified highways that had at least 10 crashes in five years involving large animals, and from those, selected segments with at least five human injury crashes. Fifty-four segments met the criteria of 10 animal crashes in five years. The five road segments that had the highest number of large animal crashes from 2006-2010 and at least 5 human injury crashes are listed below and shown in Figure 1.

1. I-25, Milepost 446 to 460 (83 large animal crashes)
2. U.S. 70, Milepost 276.4 to 294.6 (77 large animal crashes)
3. U.S. 550, Milepost 65.2 to 79.1 (73 large animal crashes)
4. U.S. 64, Milepost 160.4 to 171.7 (60 large animal crashes)
5. U.S. 70, Milepost 235 to 242.1 (56 large animal crashes)

DGR noted that the vast majority of total combined animal-vehicle crashes on these five prioritized highway segments involved deer (216), elk (101), bears (14), and other game animals (4). Only four cows, one horse and two other domestic animals of unknown size were involved in crashes in all segments combined. All 14 crashes involving bears were on I-25 near Raton (DRG 2011b).

The Team reviewed each road segment listed above and vetted the segments for characteristics appropriate for the pilot project.

House Joint Memorial 10 Top Road Segments for Large Animal-Vehicle Collisions

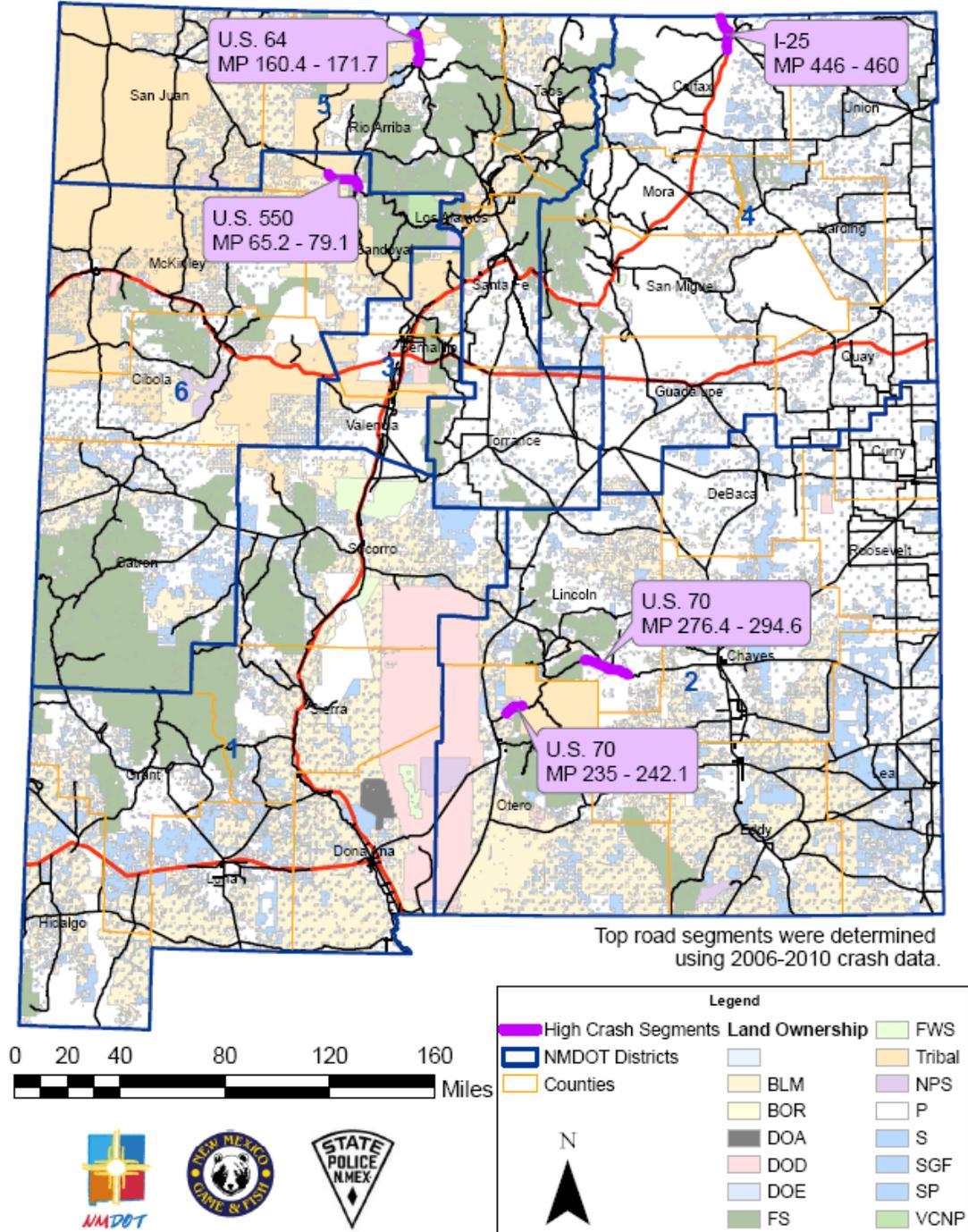


Figure 1. Top Five Road Segments Considered for the HJM 10 Pilot Project

The Team conducted the following decision process to select a pilot project area from the five segments identified above.

The I-25 segment near Raton was determined not to be an ideal location for the pilot project because it is an Interstate segment. It was determined that it would be difficult to slow driving speeds significantly on an interstate highway with wildlife crossing signage to reduce large animal crash rates. In addition, this segment includes Raton Pass, which already has wildlife crossing signage. This highway segment should be considered in the future for opportunities to reduce the potential for primarily black bear-vehicle collisions by constructing limited fencing to force bears to cross the interstate using existing culverts and underpasses.

U.S. 70 from milepost 276.4 to 294.6 (essentially Ruidoso Downs to Hondo) was previously designated as a safety corridor by NMDOT and the route has been reconstructed to address safety issues. Therefore, it was determined by the Team that this highway segment is not an ideal location for the pilot project because safety measures are currently being implemented.

U.S. 550 has recently been nominated as a safety corridor by the State Police and the communities of Counselor and Nageezi due to alcohol-related accidents north of Cuba. NMDOT, NMSP and the affected county sheriffs' departments have agreed to increase patrols to reduce speeding and DUI activity on this highway segment. The Team felt that this segment is not an optimal location for the wildlife pilot project because increased enforcement is being implemented to reduce DUI-related collisions, and it would therefore be difficult to assess the effectiveness of wildlife-related mitigation strategies such as wildlife crossing signs and warning lights. The additional patrols and awareness campaigns, although positive activities, would complicate the data analysis by introducing confounding variables along the road segment. As a result, it would be difficult to discern the effectiveness of the wildlife pilot project separately from other safety-related activities.

U.S. 64 from milepost 160.4 to 171.7 (Tierra Amarilla to Chama), and U.S. 70 from milepost 235 to 242.1 (essentially Tularosa to Bent) were identified as promising locations for the pilot project. As a result, NMDOT and NMDGF prioritized these remaining road segments based on the number of large animal collisions that have occurred from 2006-2010 (Table 1).

Table 1. Prioritized List of Remaining Road Segments

Road Number	Mileposts	No. of Collisions	NMDOT District	District Engineer
U.S. 64	160.4-171.7	60	District 5	Miguel Gabaldon
U.S. 70	235-242.1	56	District 2	Gary Shubert

Because the U.S. 64 segment has a greater number of animal-vehicle collisions, NMDOT District 5 was approached first and invited to participate in the pilot project. District 5 agreed to participate in the pilot study and volunteered to provide signage and vegetation

management with the NMDOT right-of-way to improve the site distance along the corridor.

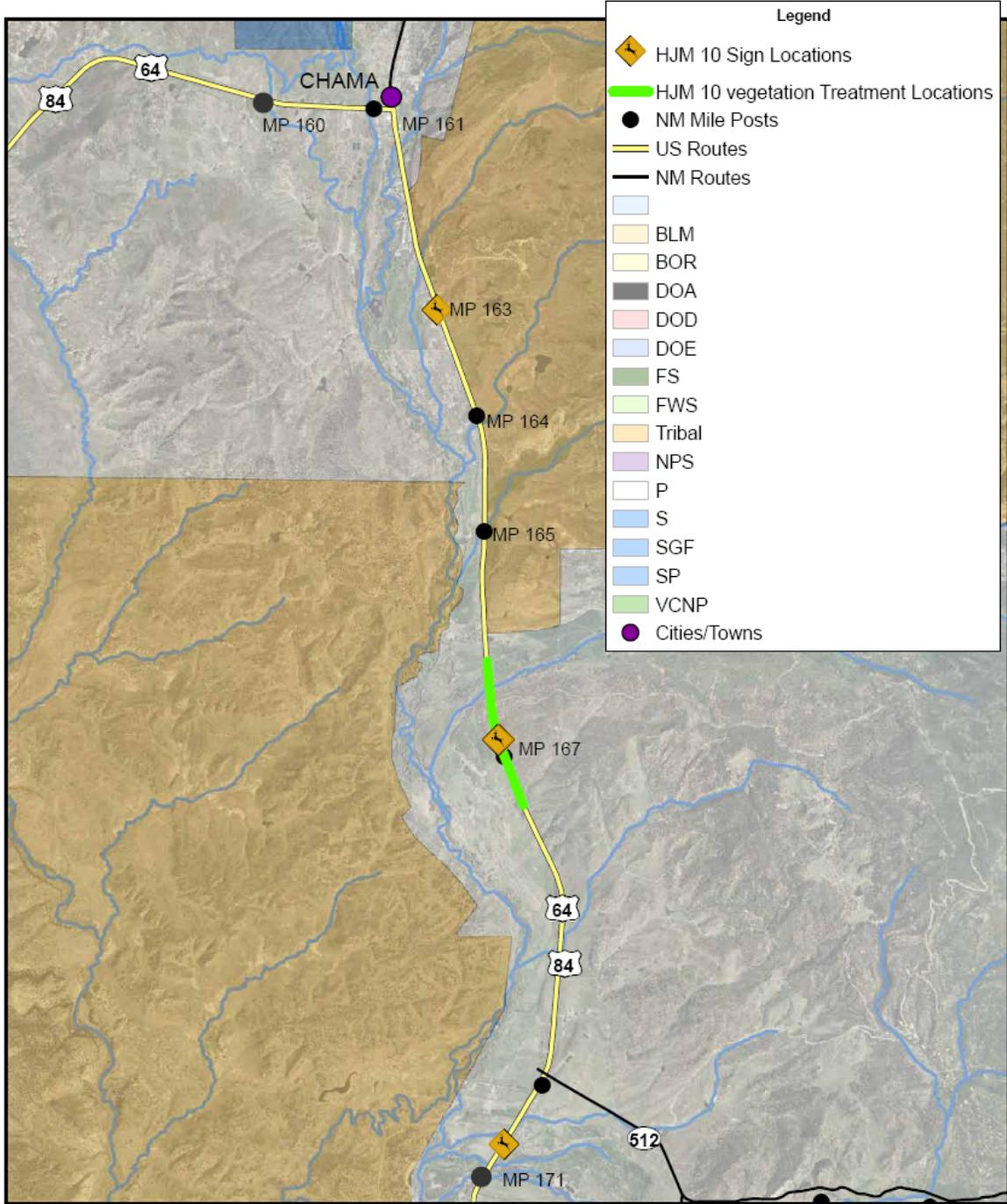
On May 23, 2012, NMDOT and NMDGF completed a site visit at the U.S. 64 segment between milepost 160.4 and 171.7. As part of the site visit, the Team used the large animal-vehicle collision data, broken down by milepost, to determine the specific locations of the pilot project components. The attendees of the site visit included:

- Ruben Garcia, D-5 Traffic Engineer
- Blake Roxlau, NMDOT Environmental Program Manager
- Robert Livingston, NMDGF
- Mark Watson, NMDGF and HJM 10 project team
- Coleman Burnett, NMDOT and HJM 10 project team

U.S. 64 Pilot Project Description

As a result of the field inspection, NMDOT District 5 committed to installing two sets of signs with flashing lights and implementing vegetation management treatments at key locations in the project area (Figure 2). All four signs will consist of a yellow warning sign with an elk crossing symbol. The supplemental signs at all four locations will have the words “Next 4 Miles” below the larger sign. Two flashing lights will be installed with each sign. The first wildlife crossing sign facing southbound traffic on U.S. 64 will be located at milepost 163.0. The first sign facing northbound traffic on U.S. 64 will be located at approximately milepost 170.7, north of the Rio Brazos bridge and just past the intersection of County Road 334. The second set of signs and flashing lights will be located halfway between 163.0 and 170.7 on both the northbound and southbound directions of travel. The flashing lights will be timed to turn on at dusk and turn off at dawn. The sign locations and flasher schedule is based on the collision data which shows most collisions occur in dark conditions between milepost 163 and 170.

Vegetation management, such as tree trimming and tree removal, will occur within the NMDOT right-of-way between mileposts 166.15 and 167.6 on both sides of U.S. 64. Vegetation removal and limbing within the pilot project area will provide motorists with increased site distance, allowing drivers to observe animals within the right-of-way and initiate braking sooner, reducing the potential for collisions. NMDOT engineers have documented decreased large game animal-vehicle collisions using this mitigation strategy in other areas of New Mexico. Small, scrub oak trees will be completely removed from the NMDOT right-of-way. District 5 will investigate the possibility of using herbicides to treat oak stumps to prevent re-spouting. Willows not located in clearly defined drainages will be completely removed from the NMDOT right-of-way. Juniper and piñon trees will be trimmed to remove all branches between the ground and the height of six feet as measured on the trees. Cottonwood trees will not be trimmed or removed. To avoid impacts to wetlands, no vegetation will be removed from drainage areas.



**House Joint Memorial 10 Project Area
 US 64 MP 160.4 to 171.6**

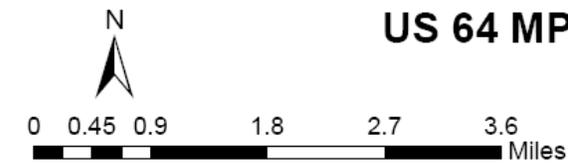


Figure 2. U.S. 64 Pilot Project Map

Next Steps

The next step for the HJM 10 pilot project is implementation. Sign installation and vegetation management activities are planned for fiscal year 2013 by NMDOT District 5. The NMDOT Environmental Bureau will need to complete the environmental certification process for the project prior to implementation. This is scheduled for summer 2012.

NMDOT and NMDGF will also continue to work with NMSP District 7 to investigate the need for and capability of NMSP to increase patrols to reduce speeding within the pilot project area.

Monitoring is an important component of the pilot project. Post-treatment monitoring, will allow the Team to determine whether the pilot project is successful in reducing large animal-vehicle collisions. NMDGF and NMDOT plan to meet annually for two years post-treatment to review large animal-vehicle collision data provided by NMDOT Traffic Safety Division to assess the effectiveness of the wildlife safety zone pilot project mitigation strategies. An experimental, comparative approach will be taken using U.S. 64 as the initial treatment, with results (i.e., decreased, increased or no perceived change of large animal-vehicle collisions) compared with 1) increased enforcement on U.S. 550 (but no wildlife crossing signage or vegetation control); and 2) U.S. 70 (mileposts 235 to 242.1) as a control, with no mitigation actions taken. In addition, the project team will track costs for project implementation, maintenance requirements, and perceptions of the staff involved at the implementation level (i.e., NMDOT district maintenance staff, local NMDGF conservation, and NMSP patrol officers).

Recommendations

The following is a set of recommendations developed by the Team that highlight ideas and existing programs that were considered during the pilot project planning stage:

1. We recommend that the New Mexico State Legislature consider implementing a wildlife corridor speeding law, similar to HB1238 passed by Colorado in 2011. Colorado DOT has identified 100 miles of wildlife crossing zones where nighttime speeds were reduced to 55 mph during migration season (September through May). Speeding fines are doubled in these designated areas along Colorado roadways (Figure 3). Team members concluded that implementing a double fine zone for speeding within a wildlife safety zone and directing those revenues into a project operation and maintenance fund would not be possible without action by the New Mexico State Legislature.



Figure 3. Example signage for Colorado Wildlife Crossing Zones

2. NMDGF and NMDOT should consider re-convening the Critical Mass Workshop, which was originally convened in 2003 as a result of the 2003 Wild Friends' House Joint Memorial 3. House Joint Memorial 3 directed NMDOT and NMDGF to work together to reduce the potential for wildlife-vehicle collisions on New Mexico highways. A second follow-up workshop is recommended to update the Priority Highway Segments list and map that was generated in 2003, which identified high risk areas for large game animal-vehicle collisions throughout New Mexico (Figure 4). More recent large game animal-vehicle collision accident report data should be used to identify highway segments with high rates of collisions for possible mitigation as construction activities occur.
3. NMDOT Districts should investigate funding sources from the U.S. Department of Transportation Federal Highway Administration to implement wildlife crossing Best Management Practices along road segments that have proven to have a high number of large game animal-vehicle collisions.
4. Additional wildlife-vehicle collision mitigation strategies for other high-risk highway segments in New Mexico should be implemented opportunistically as highway improvement projects are implemented and monitoring should be conducted to determine effectiveness of mitigation strategies.
5. For future analyses of large animal and/or large game animal-vehicle collisions rates, NMDOT and DGR should consider categorizing and analyzing pronghorn antelope as a large animal/game animal.

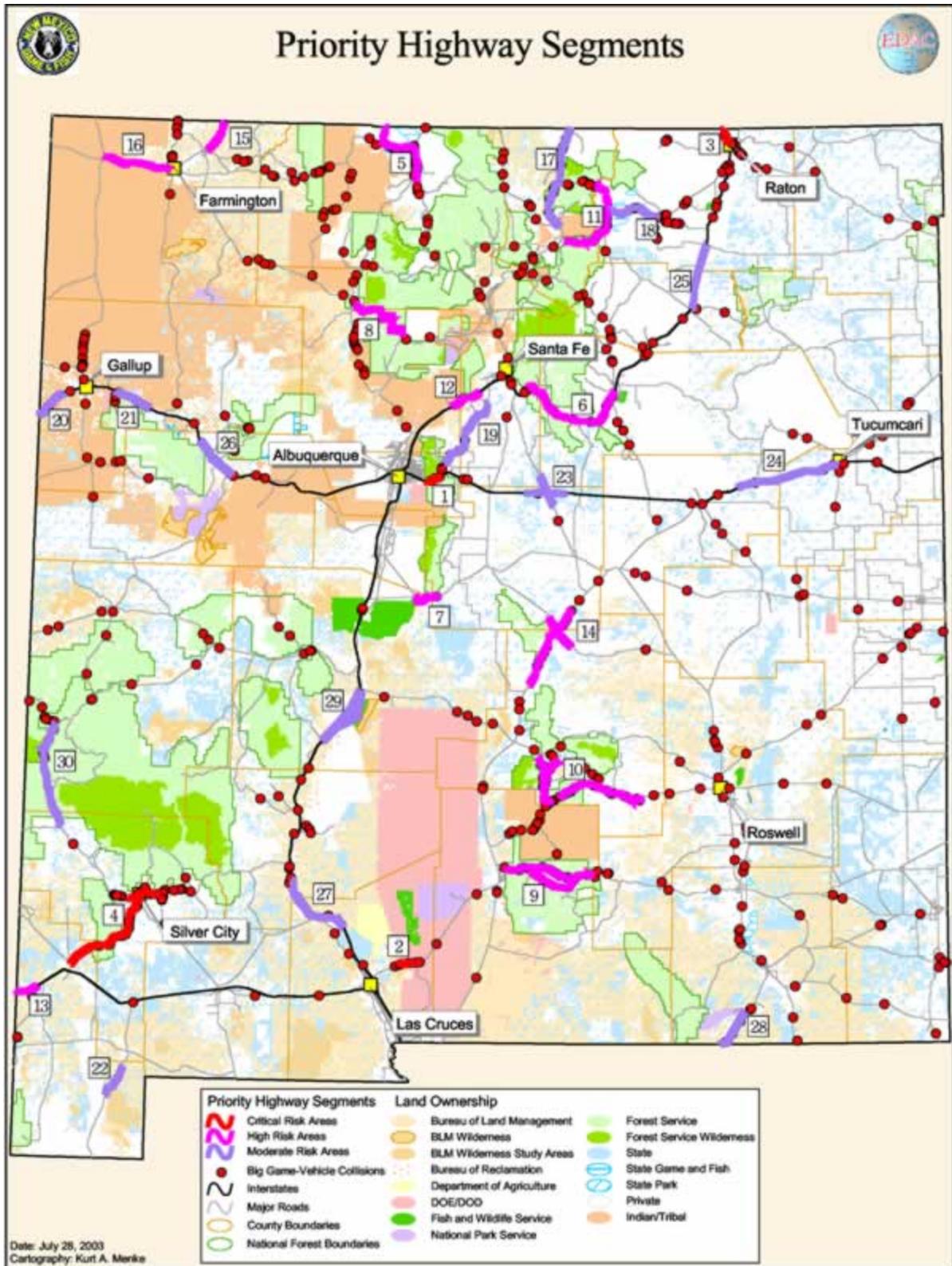


Figure 4. Priority Highway Segments Mapped by 2003 Critical Mass Workshop

In conclusion, the HJM 10 Team appreciates the opportunity to implement HJM 10 to reduce the potential for large animal-vehicle collisions in New Mexico. Questions regarding this report should be directed to:

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References

DGR. 2011a. Crashes Involving Large Animals. October 12, 2011 Memorandum Report from Keith Smith, DGR Research Scientist. Produced for NMDOT Traffic Safety Bureau. Contract number C05407.

DGR. 2011b. Crashes Involving Large Animals – Version Two. October 24, 2011 Memorandum Report from Keith Smith, DGR Research Scientist. Produced for NMDOT Traffic Safety Bureau. Contract number C05407.

New Mexico Department of Transportation. 2011. New Mexico Traffic Crash Information. Produced by the Division of Government Research. University of New Mexico. Contract number C05407. Distributed in compliance with NM Statute 66-7-214.