Safety

11

A. Background

The federal Safe, Accountable, Flexible, and Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU) legislation outlined eight federal planning factors. While Safety was previously grouped with security as one planning factor, it has now been identified as a planning factor on its own (23 CFR 450.306). Safety needs to be integrated into all phases of transportation planning, design, construction, maintenance, and operation.

In the AMPA, although in recent years, there have been traffic related safety improvements and the rates of fatalities and injuries have declined at the national level, in 2005 the rate actually increased. There is still more work to be done.

In 2004, New Mexico's traffic fatality rate per 100 million vehicle miles of travel (VMT) was 2.22. This rate is among the highest in the nation. The national fatality rate was approximately 1.5 for the same year. In 2004, New Mexico records show 17,480 traffic related injuries and 440 fatalities (26.9 fatalities per 100,000 population). The national fatality rate per 100,000 population was 14.6. In addition, the pedestrian fatality rate (fatalities per 100,000 population) for New Mexico is still one of the top five in the nation. New Mexico led the nation in total crashes as well as crash rates (per 100,000 people) for the past ten years.

The traffic safety effort in the AMPA needs to focus on identifying high risk areas and corridors, and develop projects and programs that improve safety in those areas. The assessment needs to integrate behavioral and environmental factors, and include a coordinated approach that aims at education and enforcement, involving public safety agencies and other regional stakeholders. Another integral part of traffic safety should include, but not be limited to, intersection design, signal timing, improved lighting to enhance visibility, truncated domes for blind pedestrians, and refuge islands on medians.

The NMDOT, in partnership with the MPOs, transit operators, and other local and private sector safety stakeholders, has developed a Comprehensive Transportation Safety Plan (CTSP) to fulfill its requirements under SAFETEA-LU (article 23 U.S.C 148).

The plan intends to:

- "Establish safety-related goals, objectives, and performance measures relevant to all modes of transportation, including highways, transit, bicycle and pedestrian, and commercial vehicles;
- Address issues at all levels of jurisdiction with specific attention to local and tribal entities with responsibility for prevention and enforcement
- Identify candidate safety action plans and evaluate their potential benefits, costs, and ability to attain defined performance objectives
- Establish a mechanism for interagency coordination with respect to safety issues and develop the necessary partnership agreements
- Carry out a program of public outreach and education in support of the Comprehensive Transportation Safety Plan
- Provide a strategic implementation plan, including action items which can be incorporated into state, local, and tribal governments plans and programs
- Establish a process for evaluating progress towards the CTSP's goals and objectives and updating the plan to reflect progress or changing needs."

Table 11-1 ▶ AMPA Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	73	69	46	60	248
Injuries	6707	6024	5733	6164	24628
Property Damage	11507	10841	10114	11642	44104
Total	18287	16934	15893	17866	68980

Table 11-2 ▶ AMPA AM Peak Period Crash Data by Severity

	2001	2002	2003	2004	2001-2004
Fatalities	4	11	9	5	29
Injuries	818	731	752	846	3147
Property Damage	1530	1476	1322	1621	5949
Total	2352	2218	2083	2472	9125

Table 11-3 ▶ AMPA PM Peak Period Crash Data by Severity

	2001	2002	2003	2004	2001-2004
Fatalities	19	10	4	10	43
Injuries	2284	2009	1916	2022	8231
Property Damage	3659	3481	3314	3927	14381
Total	5962	5500	5234	5959	22655

The overall goal of the New Mexico CTSP is to reduce the state fatality rate by 20 percent by the year 2010. This means achieving a rate of 1.67 fatalities per 100 million VMT by 2010. This is a goal that the AMPA can work on achieving as part of a regional safety strategy. There are multi-agency and jurisdictional efforts underway that focus on developing safety strategies in which MPO participation is important. These initiatives relate to areas of safety education, training, engineering, and enforcement initiatives.

B. Issues

Incorporating safety in the MTP means:

- Identifying regional safety needs and local "hot spot" problems
- Coordinated and collaborated efforts with regional stakeholders working on safety
- A continuous multi-agency coordination and communication on safety
- Improving safety related methodologies and tools for assessing and predicting potential safety impacts
- Disseminating real-time incident information to motorists
- Implementing design factors in new infrastructure that enhance the safety and extend the life of structures, minimizing construction zone periods
- Improving connectivity of the transportation system, across and between modes, for people and goods at modal transfer points, bikeways that share and cross the roadways, intersections with crosswalks, and railroad crossings
- Improving the accessibility and safety of transit stops and transfer points, and implementing ITS technologies on transit and emergency vehicles
- Exploring and identifying financial resources to fund safety projects and programs

Table 11-4 ▶ AMPA PM Peak Period Crash Data by Severity

Top 20 Intersections by Crash Rate		Crash Rate 2001-2004	Total Crashes 2001-2004
Seven Bar Loop Rd.	Coors Blvd.	6.61	279
Central Avenue	Tramway Blvd.	4.75	193
Sage Rd.	Old Coors Rd.	4.46	88
Bridge Blvd.	Old Coors Rd.	4.04	165
Sequoia Rd.	Ladera Dr.	3.77	45
Ellison Dr.	Coors Blvd. Bypass	3.71	342
Paseo del Norte	Jefferson St.	3.66	413
Montgomery Blvd.	Wyoming Blvd.	3.55	468
Paseo del Norte	Golf Course Dr.	3.46	189
Central Ave.	Yale Blvd.	3.43	188
Irving Blvd.	Coors Blvd.	3.43	373
Central Ave.	Coors Blvd.	3.41	280
Arenal Rd.	Coors Blvd.	3.40	160
Montgomery Blvd.	Carlisle Blvd.	3.36	304
Montgomery Blvd.	Pan American East	3.32	274
Montgomery Blvd.	San Mateo Blvd.	3.31	439
I-40 N Frontage Rd.	6th Street	3.28	94
Central Ave.	98th Street	3.05	120
NM 528/Alameda Blvd.	Corrales Rd.	2.99	244
Comanche Rd.	Pan American East	2.99	164

- Developing and implementing short term strategies that enhance the safety for all users of the transportation system
- Ensuring cooperation and coordination among all agencies in incident management and emergency situations
- Creating policies and designing practices that are consistent with an efficient and safe intermodal transportation network
- Developing an information system for crash data by compiling, consolidating, analyzing, and accessing
- Establishing a long term vision that enhances the safety of all AMPA residents

Comprehensive safety planning involves

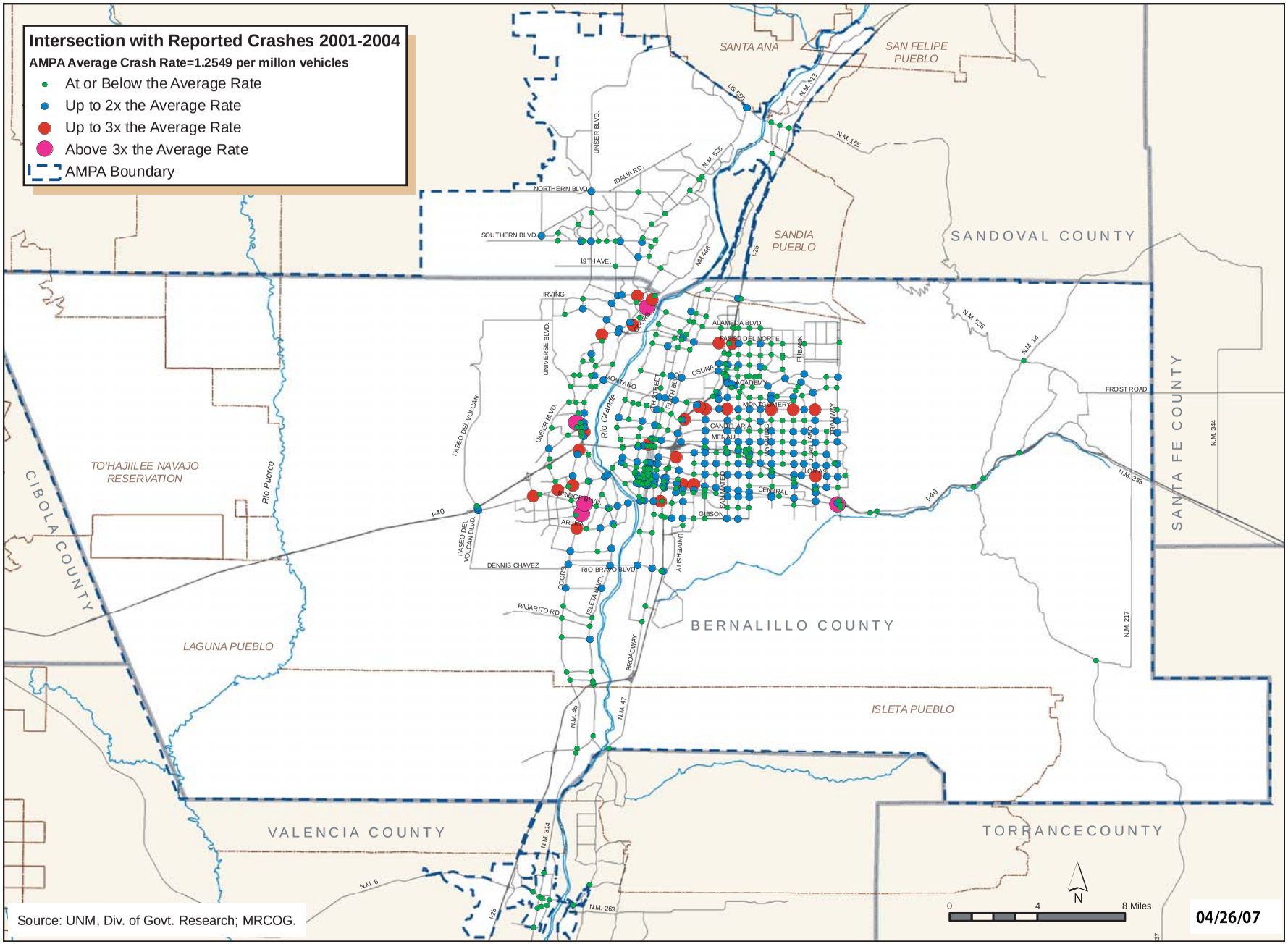
1. minimizing exposure (via an efficient intermodal transportation system),
2. minimizing risk (via functional network),
3. reducing consequences (via efficient emergency management system)

A balance needs to be achieved between these three elements, so that a change in one component of the transportation system does not impose safety problems in another.

C. Current Conditions

According to the Division of Government Research of the University of New Mexico crash database, nearly 68,980 traffic related crashes occurred between 2001 and 2004 — 36% resulted in injuries, 3.6% resulted in fatalities and the rest resulted in property damage (see Table 11-1). Tables 11-2 and 11-3 show am peak period (6:00 through 9:00) and pm peak period (3:00 through 7:00) crash data by severity with higher fatality numbers occurring during the pm peak period.

Map 11-1 ► 2001-2004 Intersections with Reported Crashes



Map 11-2 ▶ 2001-2004 Intersections with High Crash Rates Involving Injuries and Fatalities

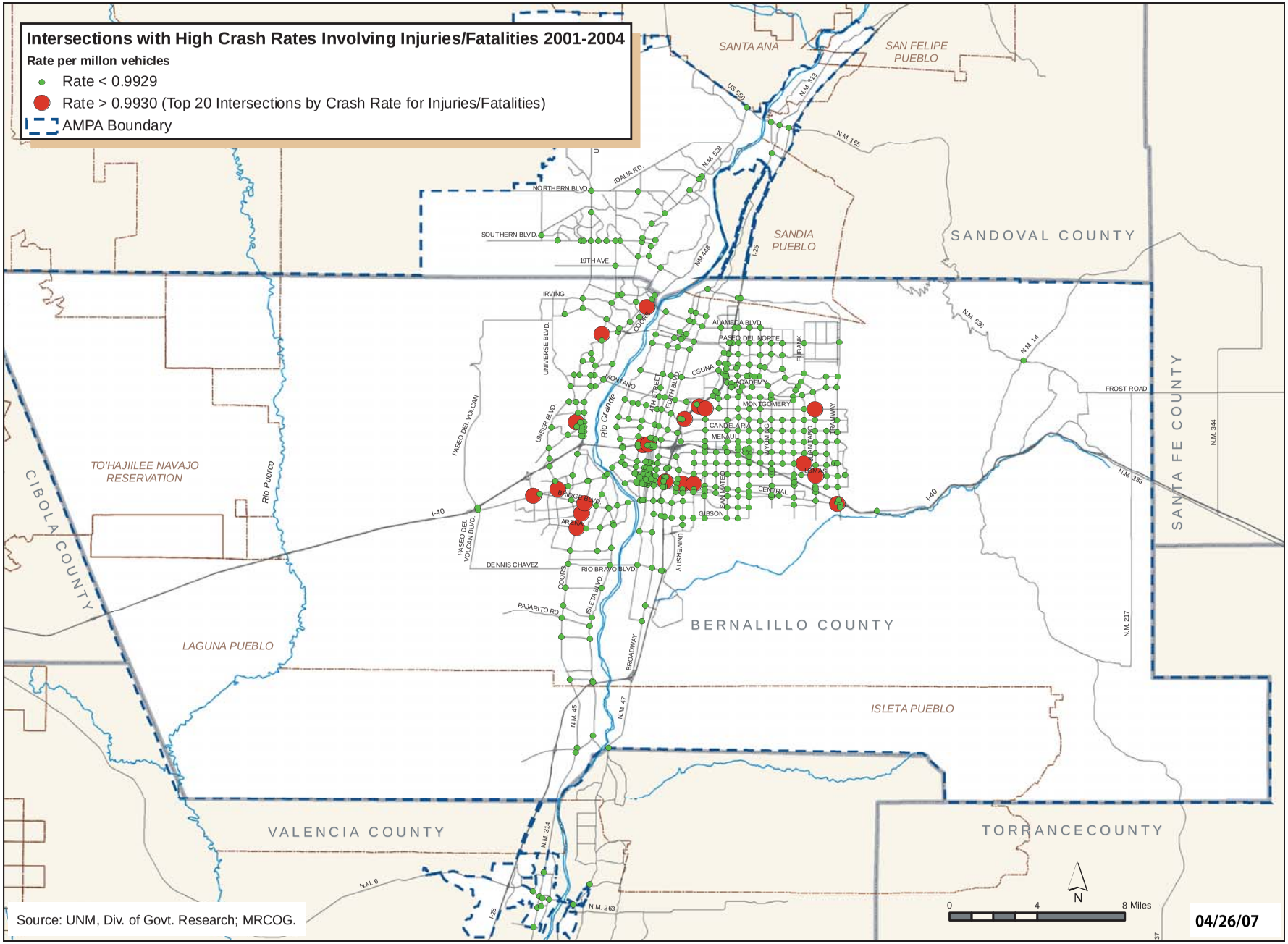


Table 11-5 ▶ Intersections with Highest Fatal Crash Rates and Injuries

Top 20 intersections ranked by injuries & fatal crash rates		Crash Rate 2001-2004	Total Cashes 2001-2004
Seven Bar Loop Rd.	Coors Blvd.	2.16	91
Sage Rd.	Old Coors Rd.	1.77	35
Sequoia Rd.	Ladera Dr.	1.76	21
Bridge Blvd.	Old Coors Rd.	1.61	66
Central Ave.	Tramway Blvd.	1.5	61
Central Ave.	Unser Blvd.	1.39	61
Central Ave.	98th St.	1.37	54
I-40 Frontage Rd.	I-40 Off Ramp	1.27	14
Montgomery Blvd.	Pan American East	1.2	99
Central Ave.	I-25 East Frontage Rd.	1.19	54
Central Ave.	Yale Blvd.	1.11	61
Comanche Rd.	Pan American East	1.11	61
Paseo Del Norte	Golf Course Dr.	1.1	60
Arenal Rd.	Coors Blvd.	1.08	51
I-40 N Frontage Rd.	6th Street	1.08	31
Central Ave.	Girard Blvd.	1.07	68
Montgomery Blvd.	Carlisle Blvd.	1.05	95
Montgomery Blvd.	Juan Tabo Blvd.	1.03	84
Constitution Ave.	Morris St.	1.01	18
Lomas Blvd.	Juan Tabo Blvd.	0.99	91

Map 11-1 shows the intersections with the 20 highest crash rates per million vehicles. Crash rates were calculated by dividing the number of crashes at an intersection by the number of vehicles using the intersection. Because the number of vehicles is very large, the crash rates are expressed as crashes per million vehicles passing through an intersection. Intersections with high crash rates are mainly concentrated along Coors Boulevard, Old Coors Road, Montgomery Boulevard and West Central.

Previously, the focus has been on intersections with the highest number of crashes. However, in order assess the risk of crashes, one should also consider also the amount of traffic passing through the intersection.

Table 11-4 compares crash rates to the total number of crashes for the top 20 most dangerous intersections in the AMPA. The intersection of Montgomery Boulevard and Wyoming Boulevard has the highest number of crashes, but only the 5th highest crash rate. Seven Bar Loop Road and Coors Boulevard actually has the highest crash rate.

Map 11-2 shows that intersections with high injury and fatality rates are mostly concentrated along Old Coors Road, Central Avenue, Montgomery Boulevard and Eubank Boulevard.

1. Bicycle Safety

Bicycle crash information is an important factor in assessing bicycle transportation safety. Determining factors are the frequency with which crashes occur at any location, by reviewing crash information over time, and the crash data in relation to the level of motorized activity at any location (the crash rate). Table 11-9 shows the top ten intersections in the AMPA by the number of bicycle crashes and by bicycle crash rate.

Table 11-6 ▶ Bike Crash Data By Severity for AMPA

	2001	2002	2003	2004	2001-2004
Fatalities	3	3	0	1	7
Injuries	115	108	68	136	427
Property Damage	16	22	15	27	80
Total	134	133	83	164	514

Figure 11-1 ▶ Total Bike Crashes

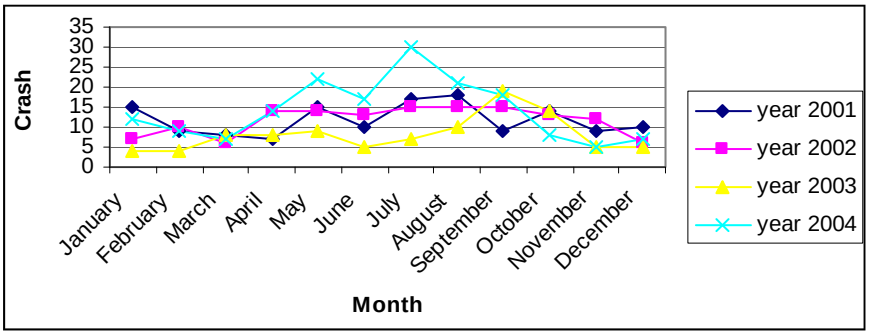


Table 11-7 ▶ AMPA AM Bike Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	0	0	0	0	0
Injuries	14	16	12	24	66
Property Damage	4	5	2	3	14
Total	18	21	14	27	80

Table 11-8 ▶ AMPA PM Bike Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	1	1	0	0	2
Injuries	48	49	28	46	171
Property Damage	4	8	4	9	25
Total	53	58	32	55	198

According to the Division of Government Research of the University of New Mexico crash database, approximately 514 bicycle crashes occurred between 2001 and 2004 (Table 11-6). The average rate for the AMPA was 0.33 per million vehicles for the period of 2001-2004. August and July are the months during which bike crashes occurred with the most frequency during the study period (Figure 11-1). On average, 83% of the bike crashes included personal injury and about 38.5% of them occurred during the PM peak period (which includes end of school traffic).

Bicycle crashes are concentrated along Central Avenue but appear clustered in areas where the analysis is based on crash rates (bicycle crashes per million vehicles). Map 11-3 shows crash rates at various

Table 11-9 ▶ AMPA Bike Crash Data 2001-2004

Top 10 Locations (ranked by number of crashes)	Bike Crashes	Top 10 Locations (ranked by crash rate)	Bike Crash Rate
Lomas Blvd. - Morris	5	Indian School – Constitution	0.1383
Central Blvd. - Girard	4	Lomas Blvd. – Morris	0.1146
Central Blvd. – Louisiana Blvd.	4	Candelaria – Rio Grande Blvd.	0.1108
Central Blvd. – Yale	4	Lomas Blvd. – Chelwood Park	0.0965
Lomas Blvd. – Tennessee	4	Homestead Circle – Taylor Ranch	0.0913
Central Blvd. – Carlisle	4	Burlison Dr. – Louisiana Blvd.	0.0894
Central Blvd. – Stanford	4	Gold Ave. – 3rd St.	0.0739
Central Blvd. – Juan Tabo	3	Central Ave. – Yale Blvd.	0.0731
Central Blvd. – Atrisco	3	Gold Ave. – 5th St.	0.0706
Central Blvd. – Broadway Blvd.	3	Central Ave. – Carlisle Blvd.	0.0696

intersections. Areas with high crash rates are located around UNM campus, downtown Albuquerque, and the area surrounded by Lomas Boulevard, Indian School, Juan Tabo, and Tramway.

2. Pedestrian Safety

Pedestrian crash information is an important factor in assessing pedestrian transportation safety. Determining factors are the frequency with which crashes occur at any location, by reviewing crash information over time, and the crash data in relation to the level of motorized activity at any location (the crash rate). Table 11-13 shows the top ten intersections in the Albuquerque Metropolitan Planning area by the number of pedestrian crashes as well as by pedestrian crash rates.

A study of Albuquerque's pedestrian crashes by the University Of New Mexico Department Of Emergency Medicine for the period from 1991 to 2001 found that:

- The Albuquerque pedestrian fatality rate was 3.03 deaths per 100,000 people
- Pedestrian crashes involved adults in approximately (57%), elderly (8%), and children less than 18 year of age (35%)
- Most pedestrian crashes involved males (66%)
- Alcohol is a contributing factor on the part of pedestrian (28%), driver (18%), or both (8%)
- For most pedestrian crashes, the fault is undetermined (83%), motorist (16%), or pedestrian (1%)
- Most pedestrian crashes occurred on residential streets (45%), non intersection areas (27%), major intersections (25%), and interstate (3%)

According to the Division of Government Research of the University of New Mexico crash database, approximately 679 pedestrian crashes were recorded between 2001 and 2004 (Table 11-10). The average crash rate for the AMPA was 0.036 per million vehicles for the 2001-2004. August, November and January are months in which pedestrian crashes occurred with the highest frequency (Figure 11-2). On average, approximately 82.3% of the pedestrian crashes included personal injury and about 29.2% of them occurred during the PM peak period.

Pedestrian crashes concentrate along Central Avenue but are clustered in areas when the analysis is based on crash rates. Map 11-4 shows crash rates at intersections for the metropolitan planning area. Areas with high crash rates are located around UNM campus, downtown Albuquerque, and the area surrounded by Lomas Boulevard, Indian School, Juan Tabo, and Tramway.

1 Albuquerque Pedestrian Crash Report. The University of New Mexico, Department of Emergency Medicine, Center for Injury Prevention, Research, and Education.

Map 11-3 ▶ 2001-2004 Bicycle Crash Rates at Intersections

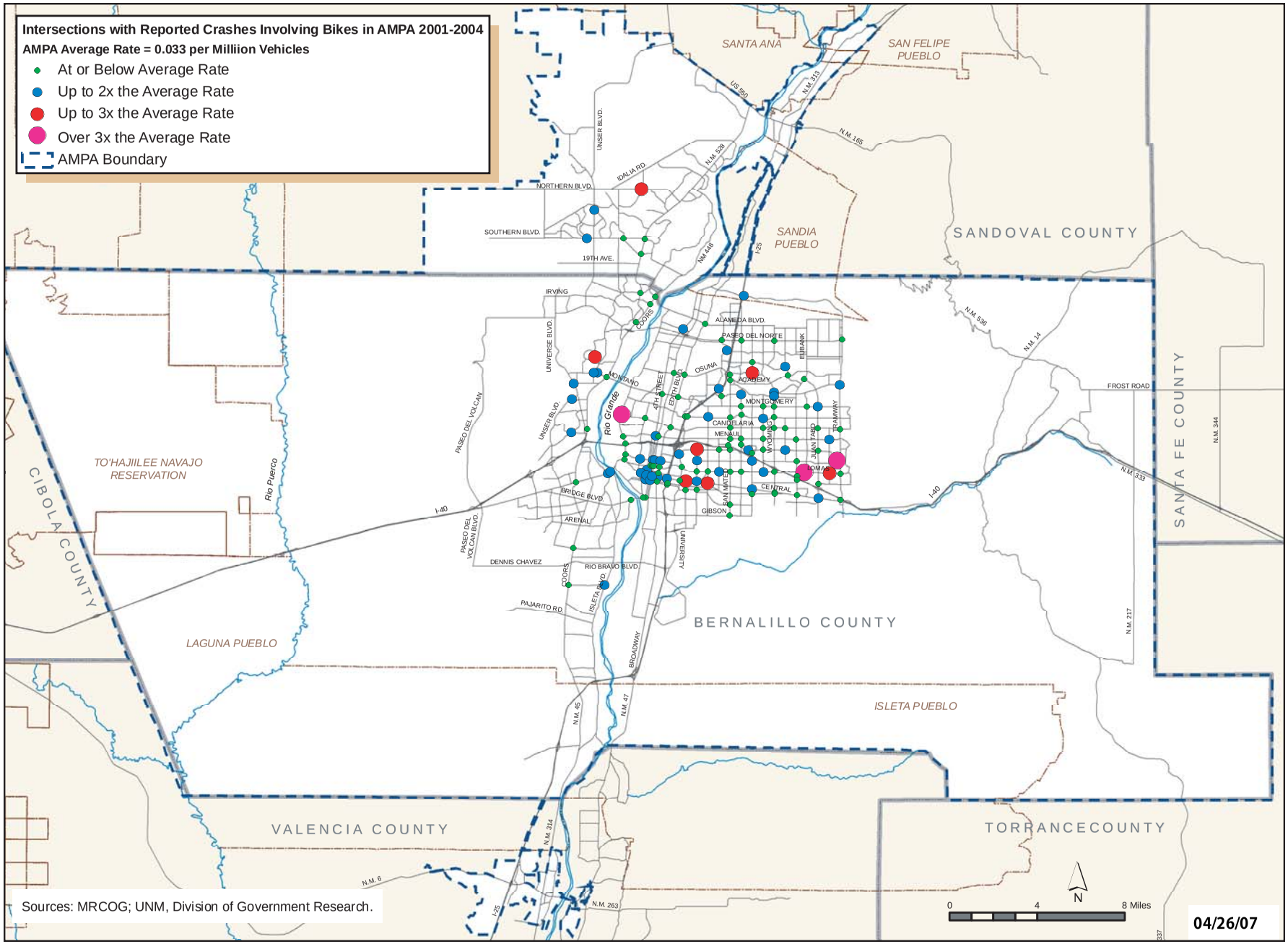


Table 11-10 ▶ AMPA Pedestrian Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	25	15	16	10	66
Injuries	166	127	117	149	559
Property Damage	13	17	11	13	54
Total	204	159	144	172	679

Figure 11-2 ▶ Pedestrian Crashes

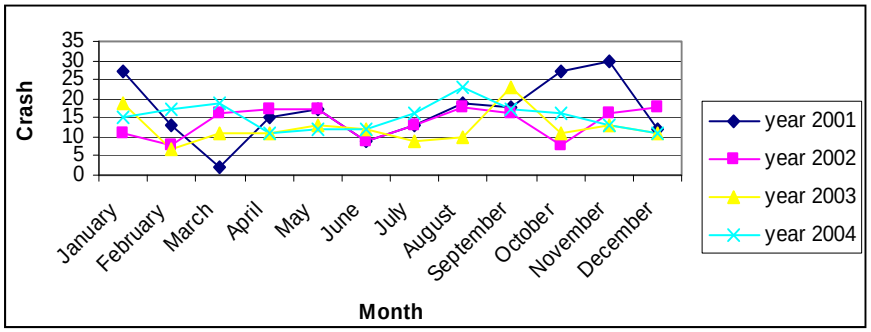


Table 11-11 ▶ AMPA AM Pedestrian Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	2	1	4	0	7
Injuries	19	16	17	12	64
Property Damage	2	0	1	4	7
Total	23	17	22	16	78

Table 11-12 ▶ AMPA PM Pedestrian Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	1	2	2	3	8
Injuries	46	39	36	55	176
Property Damage	1	4	6	3	14
Total	48	45	44	61	198

3. Truck Crashes

Truck crash is categorized as "Heavy Truck Involvement" in the NMTSB database. Map 11-5 shows intersections with high crash rates involving Heavy Trucks. The map also highlights the top 20 locations with the highest crash rates. This information is relevant when identifying safety strategies that target high priority areas.

4. Transit Safety

The following information regarding transit safety has been provided mainly by ABQRide, the transit provider for the City of Albuquerque and some areas of Bernalillo County. Table 11-16 shows "accidents," and "incidents". Incidents may include very minor accidents (the definition is based on a dollar amount of damage)

Table 11-13 ▶ Top 10 Pedestrian Crash Locations, 2004

Top 10 Locations (ranked by number of crashes)	Pedestrian Crashes	Top 10 Locations (ranked by crash rate)	Pedestrian Crash Rates
Central Blvd. - San Mateo Blvd.	14	Central Blvd. – San Pedro.	0.1502
Central Blvd. – San Pedro	11	Central Ave. – San Mateo Blvd.	0.1402
Montgomery Blvd. – San Mateo Blvd.	9	Central Ave. – Yale	0.1279
Central Blvd. – Louisiana Blvd.	8	Coal – 2nd Street.	0.1094
Central Blvd. – Wyoming Blvd.	7	Sage – Old Coors	0.1014
Central Blvd. – Yale	7	Matthew Blvd. – 12th Street	0.1002
Central Blvd. – Pennsylvania	6	Tramway Rd. – Tramway East ramp.	0.0971
Central Blvd. – Atrisco	5	Central Ave. – Louisiana Blvd.	0.0958
Central Blvd. – Coors Blvd.	5	Gun Club. – Coors Blvd.	0.0932
Highland Ave. – San Mateo Blvd.	5	Copper Ave. – 3rd Street.	0.0923

Table 11-14 ▶ AMPA Heavy Truck Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	5	5	5	2	17
Injuries	137	107	126	134	504
Property Damage	521	365	384	445	1715
Total	663	477	515	581	2236

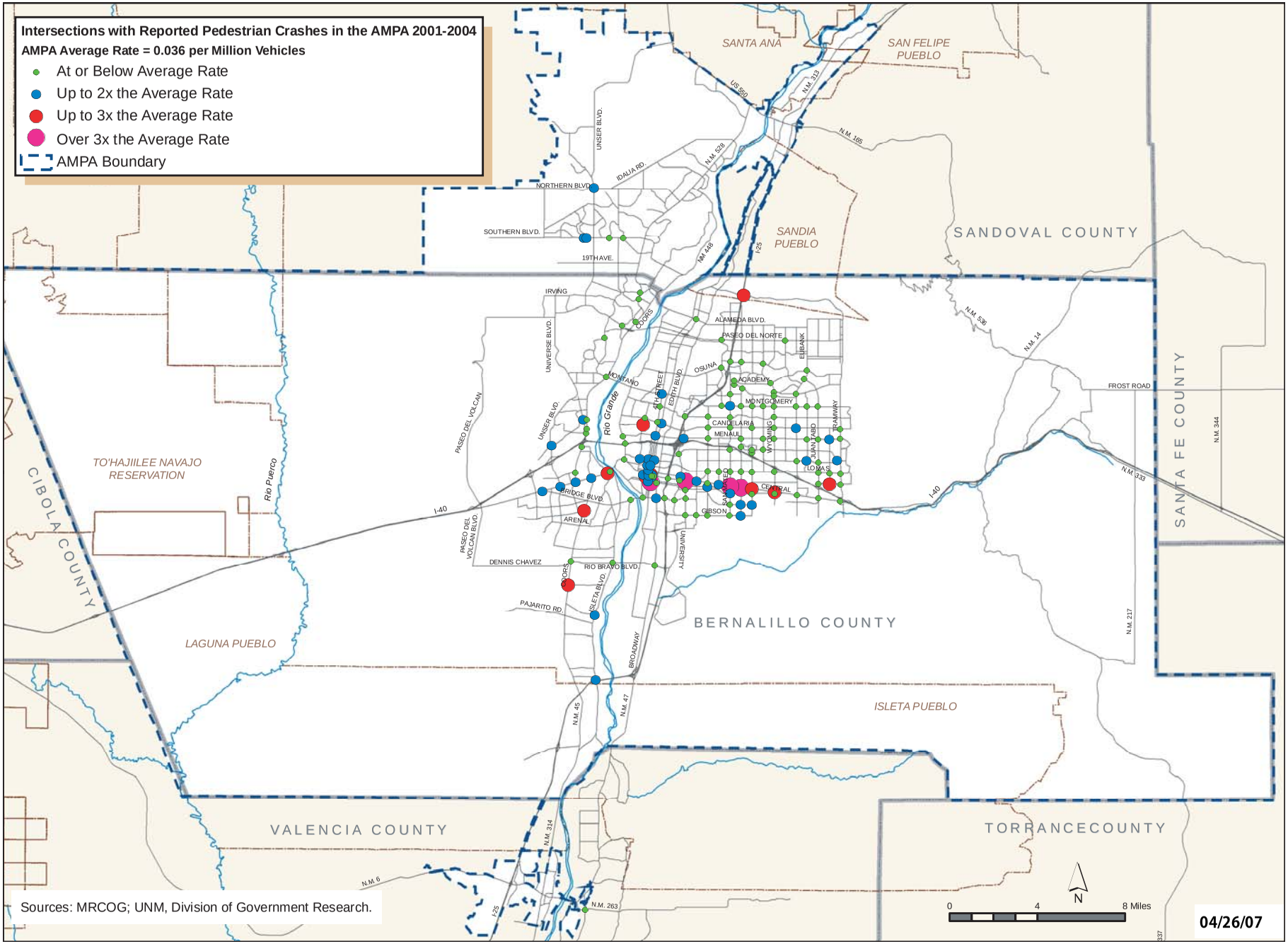
Table 11-15 ▶ AMPA AM Heavy Truck Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	1	3	1	0	5
Injuries	28	25	37	41	131
Property Damage	112	79	115	107	413
Total	141	107	153	148	548

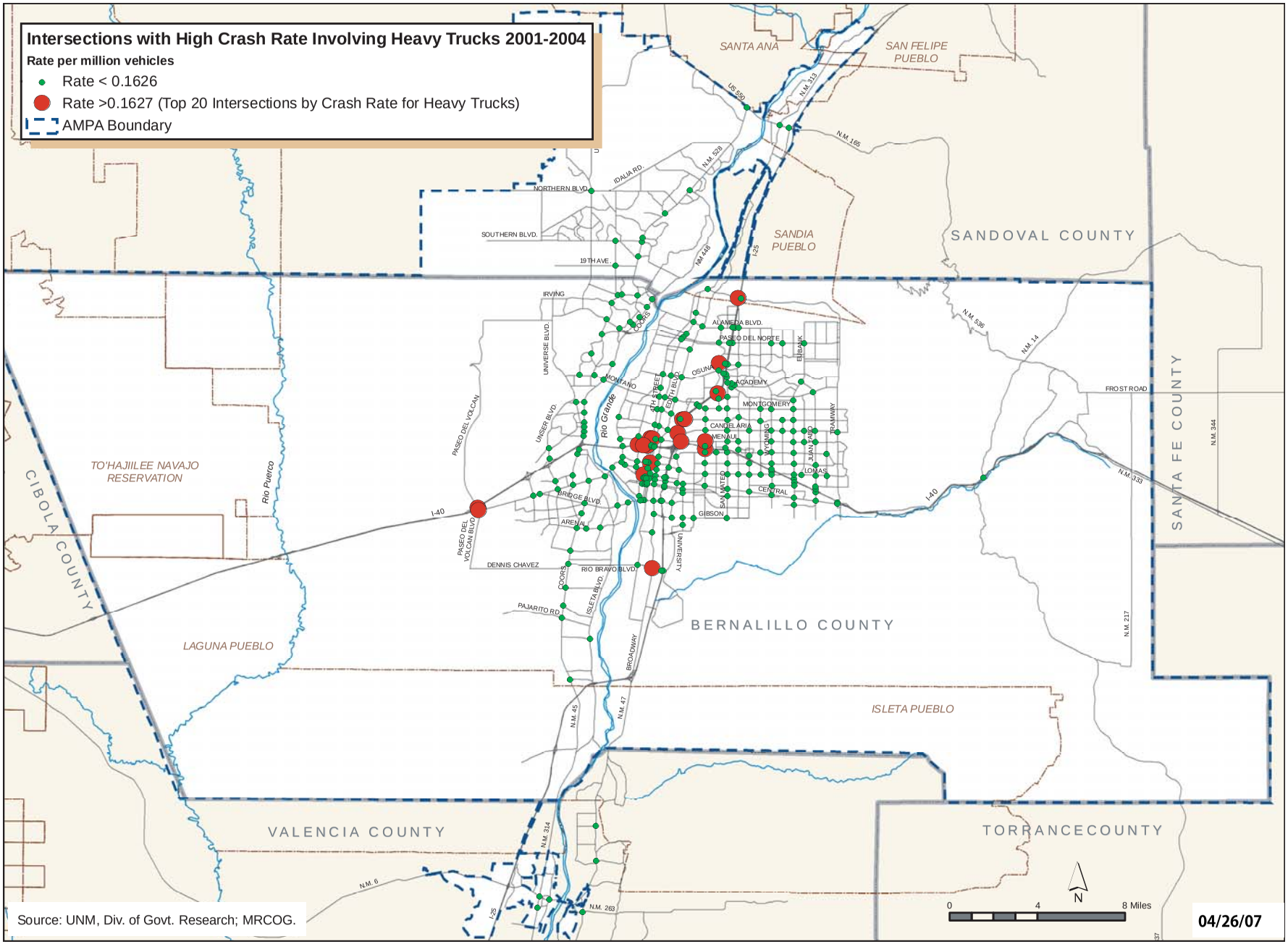
Table 11-16 ▶ AMPA PM Heavy Truck Crash Data By Severity

	2001	2002	2003	2004	2001-2004
Fatalities	2	0	1	0	3
Injuries	33	30	32	38	133
Property Damage	113	86	83	97	379
Total	148	116	116	135	515

Map 11-4 ► 2001-2004 Pedestrian Crash Rates at Intersections



Map 11-5 ► 2001-2004 Heavy Truck Crash Rate



events that disrupt service (like unruly passengers) any event that result in someone being transported for medical attention (ABQRide reports that most of the accidents have no injuries)

5. Commuter Rail Safety

The New Mexico Rail Runner Express (NMRX) has prepared a "Passenger Train Emergency Preparedness Plan" to comply with federal regulations 49 CFR 239. This plan is intended to meet all federal requirements designed to prevent, prepare, mitigate, respond to and recover from an emergency involving or affecting the operation of the commuter rail services. The Plan was approved on June, 2006 by all relevant participants to the Plan: the New Mexico Rail Runner Express (NMRX), Herzog Transit Services, Inc. (HTSI), and BNSF Rail Company.

The plan outlines regulatory responsibilities and response procedures to be followed when an emergency occurs. Emergency scenarios may include: passenger or employee totality, derailment or collision, evacuation of a passenger train, fatality at a grade crossing, security situation (e.g., bomb threat, tampering, hostage situation, suspicious package or substance, Improvised Explosive Devise - IED's), storms or other natural events (earthquake, washout, or high winds), release of hazardous materials along or adjacent to the right-of-way, fires, on-board or burning on or adjacent to the right-of-way.

In addition, MRCOG has implemented a series of initiatives to address safety concerns. The initiatives are directed to educate future riders of all ages and to encourage open communication with local residents and businesses located near Rail Runner tracks. Some of the implemented initiatives include visits to businesses in the vicinity of stations, distribution of Rail Runner schedules, fate facts, and address questions and concerns regarding the Rail Runner.

Operation Lifesaver is a nationwide, non-profit, public awareness program with a mission to end collisions, fatalities, and injuries at highway rail grade crossings and on railroad property. Rail Runner staff are certified Operation Lifesaver presenters. Youth Safety Presentation is a safety program that targets school-aged children and teens. Schools located near railroad tracks are especially targeted.

Future safety initiatives considered include new Rail Runner safety pamphlets for adults and children, television and radio commercials, public and news media events, key chains and other items with reflectors, special safety incentives for passengers, and the creation of a safety month dedicated to safety issues and outreach.

6. Equestrian Safety

The equestrian map included in Appendix F is a first effort by MRCOG to identify where equestrian activities occur. Identifying potential locations with safety concerns is crucial. Situations to be aware of include potential safety conflicts at equestrian access points, potential conflicts between equestrians and other modes of transportation (bridges, equestrian trail crossings, rail road crossings, motorized and non-motorized traffic).

2 The Passenger Train Emergency Preparedness rule was promulgated by the Federal Railroad Administration (FRA). Additional FRA emergency preparedness requirements are contained in CFR Sections 220.13, Reporting Emergencies and 220.47, Emergency Radio Transmissions; 223.9(d), emergency window marking; and Part 238: emergency window exit, lighting, doors, communication, and exit/access marking.

Table 11-17 ▶ AMPA Pedestrian Crash Data 2001-2004

		Incidents			Accidents			All Events	
Year	Events	Hour Lost	Miles Lost	Events	Hours Lost	Miles Lost	Events	Hours Lost	Miles Lost
2001	276			175			451		
2002	388			247			635		
2003									
2004									
2005	76	69:23	1137.88	121	133:00	2181.19	197	202:23	3319.07
2006	75	69:15	1111.87	129	156:14	2521.52	204	225.29	3633.39