

2010-2014 Pedestrian and Bicycle Traffic Count Preliminary Report

Cuba, New Mexico

2014



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Introduction

The Step Into Cuba Alliance (the Alliance) is a broad coalition of local, state and national organizations and individuals working to increase opportunities for physical activity in the Village of Cuba, NM (the Village). A primary goal of the Alliance is to increase the walkability of Cuba to encourage walking as a convenient and low-cost form of physical activity. One of the areas of focus for the Alliance is US Highway 550 (US 550), a four lane, federal highway that bisects the Village and serves as Cuba's main street. The Alliance is also working to make NM 126, leading from US 550 to the Village of Cuba St. Francis of Assisi Park, more pedestrian friendly.

US 550 is a primary route connecting Albuquerque to Northwestern New Mexico and Colorado. In Cuba, US 550 is estimated to have a traffic count of about 8,200 vehicles per day.¹ Cuba's health clinic, post office and other essential services are located on US 550, and the Village of Cuba serves as the commercial center for the area. Residents from within the municipality and the outlying areas visit Cuba regularly to retrieve their mail from the post office (there is no mail delivery service in the Cuba area), shop for food and other necessities, receive medical care, and obtain social services. Many residents of Cuba live within walking distance of the commercial center. Most roadways used by residents to reach services and businesses on US 550 do not have safe sidewalks or walkways. Additionally, on US 550 there are no traffic lights or stop signs, only two crosswalks, and the sidewalks are not continuous. In winter, snow removal from the highway leads to piles of snow on sidewalks and highway shoulders, obstructing pedestrian access.

The Village and the Alliance have been working with the NM Department of Transportation (NMDOT) to explore ways to make US 550 and NM 126 more pedestrian friendly. In 2011, federal funding was obtained and utilized to complete a new section of pedestrian-friendly sidewalks along US 550 on the south end of Cuba. Applications have been approved and funding has been earmarked for additional improvement projects along US 550 and adjoining roadways.

Pedestrian and bicycle traffic counts represent another way in which the Alliance and the Village have focused needed attention on US 550 and its intersecting streets. Faculty and staff from the University of New Mexico Prevention Research Center (UNM PRC), working with an independent transportation planning consultant and pedestrian and bicycle safety expert, organized the counting effort, trained counters and participated in the counting. Community members from the Cuba area contributed to the effort by conducting the counts as volunteers and paid workers.

This report provides data on the use of US 550 and intersecting roads, including NM 126, and the Village of Cuba's St. Francis of Assisi Park by pedestrians, bicyclists and other non-motorized transportation (e.g., skateboarders). Baseline data were collected in 2010, and follow-up data collected in 2011-2014. The repeated counts document changes in non-motorized use following improvements to make the area

¹ Per http://www.mrcog-nm.gov/images/stories/pdf/maps_and_data/traffic_flow/tfm-2013-sandoval.pdf Cf. NMDOT estimate for 2012 of only approx. 4,400 daily vehicles per day at http://dot.state.nm.us/content/dam/nmdot/Data_Management/US_AADT_Listing.pdf

safer and more attractive for pedestrians. Data from the counts have also been submitted to the National Bicycle and Pedestrian Documentation Project, a nationwide effort to create a consistent, uniform collection and analysis system for non-motorized transportation.

Methods

Community members from Cuba, NM, and staff from the UNM PRC counted pedestrians, bicyclists, and other non-motorized traffic travelling along selected roadways and a walking path in the Village of Cuba, New Mexico (pop. 731)², during two, 2-hour time periods (12 noon – 2pm and 5pm – 7pm) on each of three days (Tuesday, Thursday, Saturday) within the following months:

- May & September 2010
- May, July & October 2011
- May, July & September 2012,
- May, July & September 2013, and
- May, July & September 2014.

UNM PRC staff and trained community members followed methods established by the National Bicycle and Pedestrian Documentation Project (NBPDP)³, and coinciding with their national count weeks. This included using forms developed by the NBPDP and modified by the UNM PRC team to include presumed age group (i.e., youth, adult, or senior) beginning in September 2010. The trained community members and UNM PRC staff observed non-motorized traffic across six “screenlines” at three locations on or near Cuba’s two major roadways (US 550 and NM 126). As described by the NBPDP (http://bikepeddocumentation.org/index.php/download_file/-/view/9, slide 15), screenline counts are the preferred method used to identify trends in volume and factors influencing walking and biking. Observers counted traffic that moved across a predetermined, finite, visual line (the “screenline”) in order to capture movement by pedestrian and bicycle traffic. The 2010 data established a baseline to use as a reference point for VIVA-Step Into Cuba and other local initiatives interested in increasing non-motorized transportation and physical activity, and improving health in the Village. Follow-up data collected in 2011- 2014 were compared to the baseline data to look for trends over time. The data also provide information on the characteristics of non-motorized transportation use in Cuba by mode (i.e., pedestrian, bicyclist or other), gender, time of day, day of the week, and location.

Prior to the first counts, a transportation planning consultant with bicycle and pedestrian expertise worked with UNM PRC staff to identify locations and screenlines that might best capture general movements by pedestrians, cyclists, and other non-motorized transportation in the Village of Cuba. Six of the seven screenlines chosen in Cuba crossed a roadway and included sidewalk and/or shoulder areas; the seventh crossed a soft-surface trail and included adjacent areas of a park. Individuals participating in the count were trained on-site using NBPDP materials and local maps illustrating the specific screenlines (Appendix 1). Trained counters then used NBPDP forms to count pedestrians, bicyclists, and others crossing each screenline in 15-minute increments within each two-hour period. The count information was recorded by gender and age group. The three sites and seven screenlines originally selected for observation were:

1. US 550 at E. Cordova Ave.: 1A) along US 550 and, 1B) along E. Cordova Ave.
2. US 550 at Miera Rd.: 2A) along US 550, 2B) along Miera Rd., and, 2C) Trujillo St.
(*discontinued*)
3. NM 126 at St. Francis Park: 3A) along NM 126 and, 3B) along the Park Loop Trail

² U.S. Census Bureau. Census 2010 – www.factfinder.census.gov.

³ National Bicycle and Pedestrian Documentation Project – <http://bikepeddocumentation.org/>.

More specific descriptions of the screenlines are provided in Table 1; observation locations and screenlines are also identified on maps and photos in Appendix 1. Screenline 1A was adjusted and screenline 2C (across Trujillo St. east of US 550) was discontinued after the first count.⁴ Resulting data were prepared for submission to NBPDP in a reporting spreadsheet provided by the Project.

Table 1. Locations and screenlines for non-motorized traffic counts, Cuba, NM, 2010-2014.

Loc#	Site #	Screenline	Description of Screenline
1	1	1A	Across US 550 south of Cordova (church to food pantry building; adjusted after 1 st count)
2	1	1B	Across E. Cordova Ave. (food pantry to fence)
3	2	2A	Across US 550 south of Miera Rd. and north of Trujillo St. (on bridge over Rito de Leche)
4	2	2B	Across Miera Rd. west of US 550 (Rito de Leche to utility pole west of McDonald's)
5	3	3A	Across NM 126 west of St. Francis of Assisi Park (space between driveways to fence)
6	3	3B	Across Park Loop Trail - SW corner of St. Francis of Assisi Park (fence to interior of park)

Results

Overall

Through September 2014 a total of 5,059 instances of pedestrian, bicyclist or other non-motorized traffic were tallied crossing the six screenlines in Cuba. Table 2 summarizes these traffic counts by location and year since counting began in May 2010. As illustrated in Figure 1, the two screenlines across US 550 accounted for nearly two-thirds of all observations in 2010-2014.

Table 2. Non-motorized traffic movements counted by year and location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	2010*	2011	2012	2013	2014	TOTAL
1A	Along US 550, s. of Cordova	82	263	343	309	230	1227
1B	Along E. Cordova Ave.	33	104	103	163	136	539
2A	Along US 550 s. of Miera Rd.	313	478	465	253	425	1934
2B	Along Miera Rd.	84	115	198	94	174	665
3A	Along NM 126	38	46	68	58	139	349
3B	Park Loop Trail	49	114	45	71	66	345
	TOTAL	599	1120	1222	948	1170	5059

*In 2010, observations were conducted in May and September only.

⁴ The screenline across US550 south of Cordova was moved closer to Cordova after the first screenline location closer to the post office was found to be capturing significant “temporary” pedestrian activity by motorists using a parking lot to gain access to the post office. The screenline across Trujillo Street was discontinued because it was capturing significant, localized foot traffic by a limited number of individuals walking back and forth between a store and bushes by the creek. These movements were not representative of the type of data we were interested in collecting and we did not want them to skew the results.

Figure 1. Non-motorized traffic movements counted by screenline location, Cuba, NM, 2010-2014.

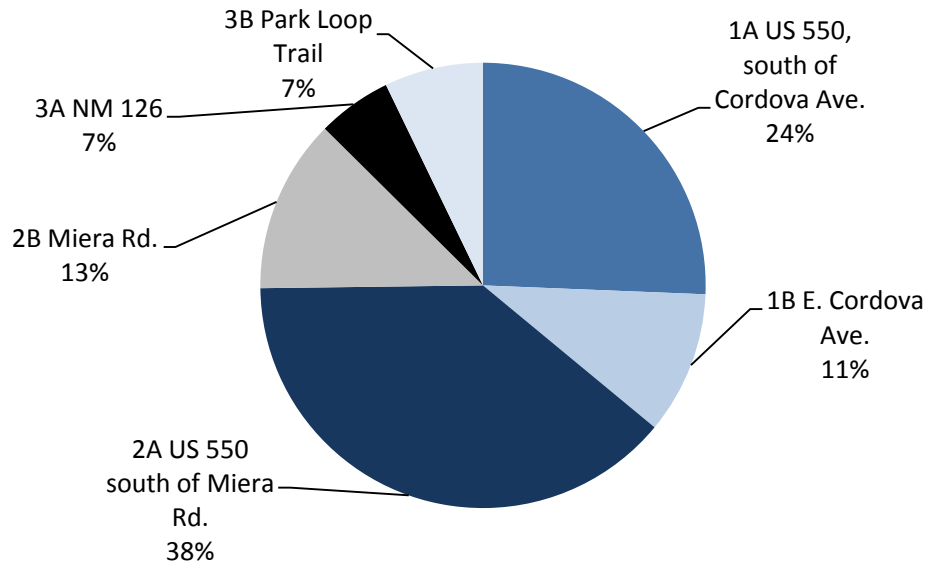


Table 3 provides average counts per two-hour observation period for each location and overall. Table 3 and Figure 2 show an overall increase in non-motorized traffic per 2-hour observation period from 2010 – 2014.

Table 3. Non-motorized traffic movements, per two-hour observation period, by year and location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	2010	2011	2012	2013	2014	Overall
1A	Along US 550, s. of Cordova	6.8	14.6	19.1	17.2	12.8	14.6
1B	Along E. Cordova Ave.	3.0	5.8	5.7	9.1	7.6	6.5
2A	Along US 550, s. of Miera Rd.	26.1	26.6	25.8	14.1	23.6	23.0
2B	Along Miera Rd.	7.0	6.4	11.0	5.2	9.7	7.9
3A	Along NM 126	3.2	2.6	3.8	3.2	7.7	4.2
3B	Park Loop Trail	4.1	6.3	2.5	3.9	3.7	4.1
TOTAL		49.9	62.2	67.9	52.7	65.0	60.2

Note: May 2010 Counts exclude one screenline location (1B) for the first two-hour period because the screenline was changed.

Figure 2. Non-motorized traffic movements (N=5,059) per two-hour observation period by year, Cuba, NM, 2010-2014.

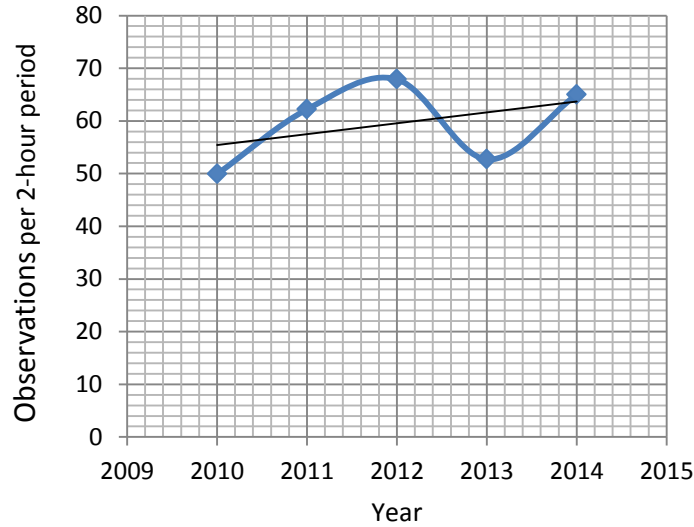
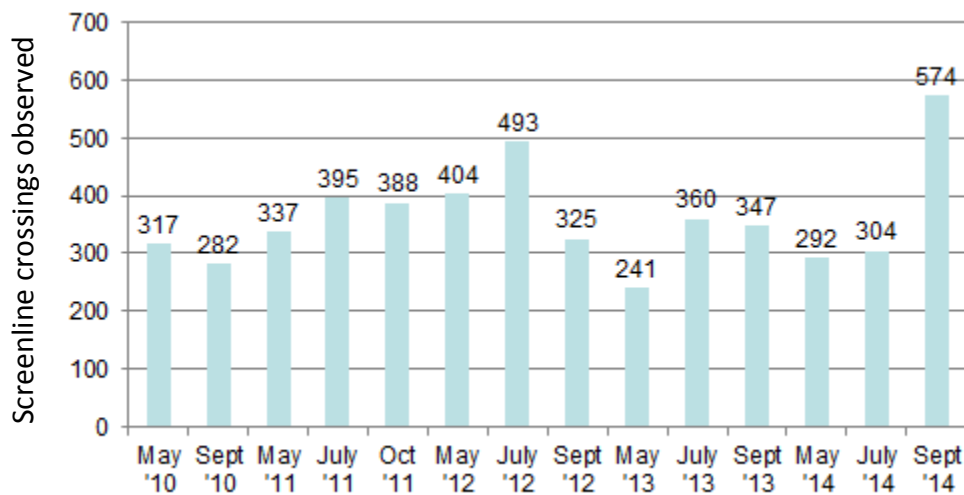


Figure 3 below indicates count levels by month. The six counting periods in September 2014 produced the highest total to date. Up to that point, totals had generally dropped since peaking in July 2012. Inclement weather, including rain and hail, was reported during some of the lowest count periods (e.g., September 2012, May 2013, and May 2014).

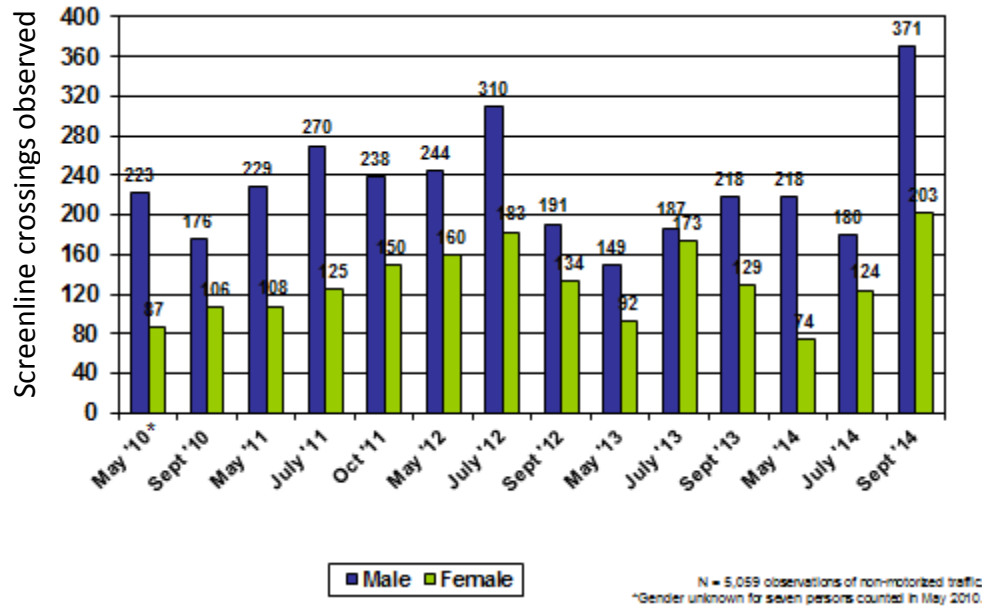
Figure 3. Non-motorized traffic movements (N=5,059) per month, Cuba, NM, 2010-2014.



Gender

September 2014 produced the highest counts to date for both males and females. While males consistently have higher counts compared with females, females rose steadily as a percentage of all traffic, from 32% in 2010 to 34% in 2011, 39% in 2012, and 42% in 2013. In 2014, the share of females decreased to 34%.

Figure 4. Non-motorized traffic movements counted per month, by gender, Cuba, NM, 2010-2014.

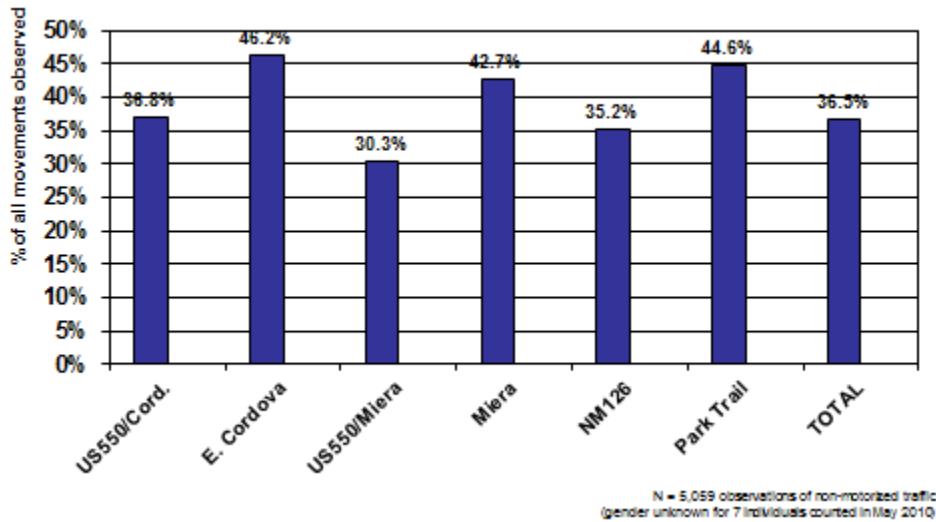


Females account for 36.5% of all traffic counted in 2010-2014. As indicated in Table 4 and Figure 5, females represent close to half of traffic along E. Cordova (46.2%) as well as on the Park Loop Trail (44.6%) and along Miera Rd. (42.7%). Females account for the lowest share of traffic along US 550 south of Miera Rd. (30.3%).

Table 4. Gender of non-motorized traffic movements observed, by screenline location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	Male	Female	Unknown	Total
1A	Along US 550, s. of Cordova	773	452	2	1227
1B	Along E. Cordova Ave.	290	249	0	539
2A	Along US 550 s. of Miera Rd.	1345	586	3	1934
2B	Along Miera Rd.	379	284	2	665
3A	Along NM 126	226	123	0	349
3B	Park Loop Trail	191	154	0	345
	TOTAL	3204	1848	7	5059

Figure 5. Females as a percentage of all non-motorized traffic movements, by screenline location, Cuba, NM, 2010-2014.



Age Groups

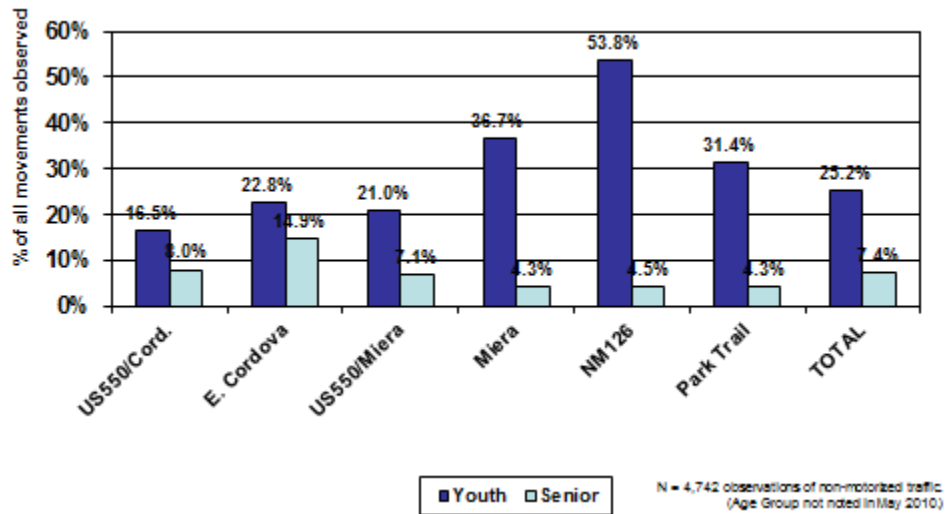
Individuals tallied as “Youth” (presumed under 18 years of age) comprised one-quarter (25.2%) of all traffic counted in 2010-2014. Youth represented over half of traffic counted along NM 126, and nearly one-third of counts on Miera Rd. and the Park Loop Trail (Figure 6). The highest overall number of youth tallied (369) was on US 550 south of Miera Rd.

Older adults tallied as ‘seniors’ (presumed over 65 years of age) accounted for 7.4% of all traffic counted in the five-year period, with the highest proportion along E. Cordova and the lowest along Miera Rd., NM 126, and the Park Loop Trail, each just over four percent (see Table 5 and Figure 6). The highest overall number of seniors tallied (124) was on US 550 south of Miera Rd.

Table 5. Presumptive age group of non-motorized traffic movements observed, by screenline location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	Child/Youth	Adult	Senior	Total
1A	Along US 550, s. of Cordova	196	895	95	1186
1B	Along E. Cordova Ave.	119	326	78	523
2A	Along US 550 s. of Miera Rd.	369	1260	124	1753
2B	Along Miera Rd.	228	367	27	622
3A	Along NM 126	179	139	15	333
3B	Park Loop Trail	102	209	14	325
	TOTAL	1193	3196	353	4742

Figure 6. Presumptive age group: youth (<18) and seniors (>65) as a percentage of all non-motorized traffic movements, by screenline location, Cuba, NM, 2010-2014.



Traffic Type

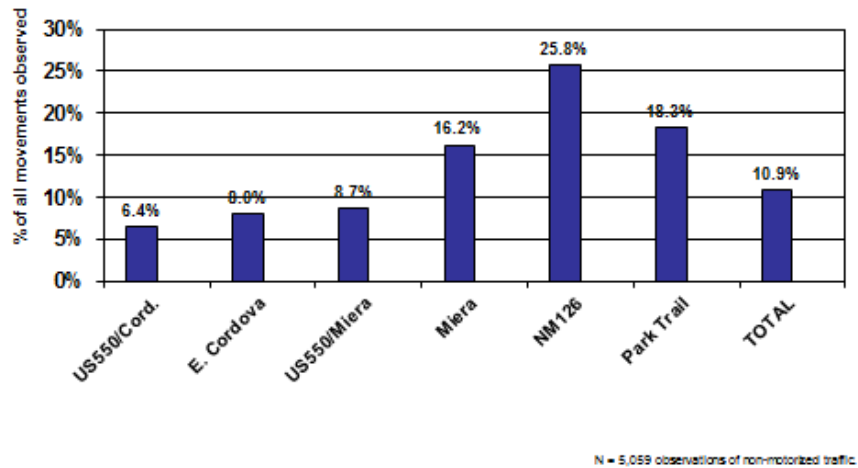
Nearly 90 percent of non-motorized traffic counted consisted of pedestrians. Bicyclists and other non-pedestrians (e.g., individuals riding skateboards, roller blades, or non-motorized scooters) accounted for just over one-tenth (10.9%) of all non-motorized traffic counted in 2010-2014 (see Table 6 and Figure 7).

Bicyclists and other non-pedestrians have their highest share of non-motorized traffic along NM 126, the Park Loop Trail, and Miera Rd., and their lowest share along US 550. The highest actual number of “bicyclists and others,” however, was observed along US 550 south of Miera Rd., where the total number of bicyclists observed (N=140), is close to double that of the next location. The “other” category – primarily skateboarders per observers’ notes – also has its most significant presence here and on Miera Rd., with 28 observations at each location (Table 6).

Table 6. Pedestrians, bicyclists, and other non-motorized traffic movements observed, by screenline location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	Pedestrians	Bicyclists	Others	Total
1A	Along US 550, s. of Cordova	1148	64	15	1227
1B	Along E. Cordova Ave.	496	35	8	539
2A	Along US 550 s. of Miera Rd.	1766	140	28	1934
2B	Along Miera Rd.	557	80	28	665
3A	Along NM 126	259	82	8	349
3B	Park Loop Trail	282	55	8	345
	TOTAL	4508	456	95	5059

Figure 7. Bicyclists and others as a percentage of all non-motorized traffic movements, by screenline location, Cuba, NM, 2010-2014.

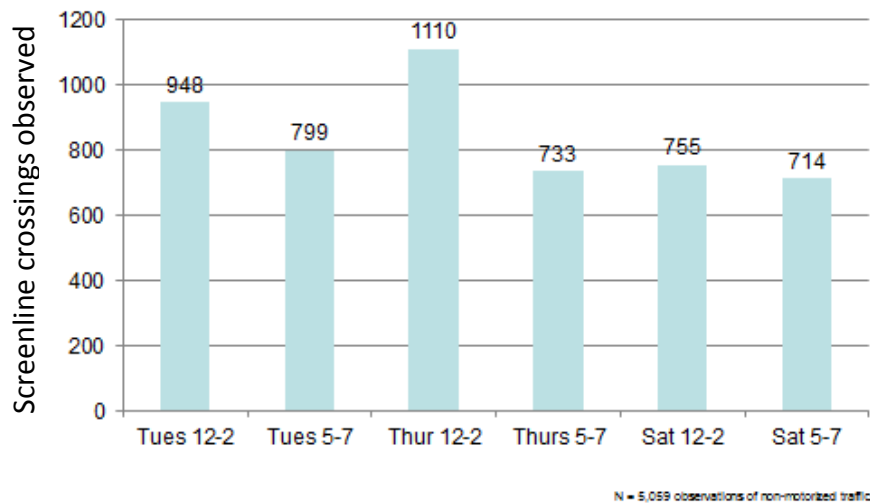


The “other” category increased substantially in 2014. In September 2014 alone, 46 “others” were observed – primarily skateboarders coming out in the evening.

Time of day and day of week

Among the six two-hour time periods during which observations were made each week of data collection since 2010, weekday mid-day counts were the highest and Saturday counts, along with Thursday evenings, were the lowest (see Figure 8 and Tables 7 and 8). Counts taken between 12 and 2 pm comprised 55.6% of all counts, including roughly two-thirds of those along US 550 south of Cordova (69.7%) and along E. Cordova (67.7%). Most non-motorized traffic observed on the Park Loop Trail (80.3%) and on NM 126 (71.9%) occurred during the early evening observation period (5-7 pm). The distribution was split more evenly along Miera Rd. (49.0% during 12-2 pm) and US 550 south of Miera Rd. (56.9% during 12-2 pm).

Figure 8. Non-motorized traffic movements by day of week and time of day, Cuba, NM, 2010-2014.



Saturday tallies were the lowest of the three days, representing 29.0% of the total, and Thursday tallies the highest at 36.4% of the total (see Table 8). Saturday counts were over one-third of the total on Miera Rd. and along US 550 south of Miera Rd., but were a markedly lower share of the observations along US 550 south of Cordova (21.8%) and on the Park Loop Trail (22.9%).

Table 7. Time of day and day of week of non-motorized traffic movements observed, by screenline location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	Tues 12-2	Tues 5-7	Thurs 12-2	Thurs 5-7	Sat 12-2	Sat 5-7	Total
1A	Along US 550, s. of Cordova	263	157	418	122	174	93	1227
1B	Along E Cordova Ave.	98	51	168	56	99	67	539
2A	Along US 550 s. of Miera Rd.	398	282	389	252	314	299	1934
2B	Along Miera Rd.	137	113	88	96	101	130	665
3A	Along NM 126	28	82	37	89	33	80	349
3B	Park Loop Trail	24	114	10	118	34	45	345
TOTAL		948	799	1110	733	755	714	5059

Table 8. Proportional representation of non-motorized traffic by time of day and day of week, by screenline location, Cuba, NM, 2010-2014.

Loc.	Description of Movement	12-2	5-7	Tues	Thurs	Sat.
1A	Along US 550, s. of Cordova	69.7%	30.3%	34.2%	44.0%	21.8%
1B	Along E. Cordova Ave.	67.7%	32.3%	27.6%	41.6%	30.8%
2A	Along US 550 s. of Miera Rd.	56.9%	43.1%	35.2%	33.1%	31.7%
2B	Along Miera Rd.	49.0%	51.0%	37.6%	27.7%	34.7%
3A	Along NM 126	28.1%	71.9%	31.5%	36.1%	32.4%
3B	Park Loop Trail	19.7%	80.3%	40.0%	37.1%	22.9%
TOTAL		55.6%	44.4%	34.5%	36.4%	29.0%

Trends over time, overall, and across locations

A consistent rise was observed in total annual counts from 2010-2012. The number of observed counts dropped in 2013, and rose again in 2014. Trends over time are subject to wide fluctuations. Data in May 2013 included two of the lowest totals across all six screenlines for a two-hour time period (N = 23 and N=24) while July 2013 saw the highest total count ever made up to that date during a two-hour period (N = 130). After below-average counts in May and July of 2014, September 2014 had a record high count of 574 observations including the highest counts ever made along NM 126 (N=108) and the highest counts along US 550 since observations at these locations peaked in July 2012.

US 550 pedestrian traffic still dominates the data, but pedestrians, bicyclists, and others on US 550 side streets (E. Cordova and Miera St.), and on NM 126 have also become more substantial in 2013-14.

Limitations

Several limitations could affect the results. Changes in two screenline locations following the initial counts necessitated some data being dropped from use. Also, the low numbers associated with counts in small rural communities create variability in the data. As a result, community events or inclement weather during a single observation period can substantially affect observed movements, either increasing or decreasing, depending on the event. Having multiple observations over multiple years with staggered days and multiple time periods helps to minimize the effect.

Summary

In 2010 the UNM PRC began measuring the pedestrian activity in the Village of Cuba in order to assess the effects of local efforts to promote physical activity by increasing and enhancing access to places for physical activity as well as other evidence-based strategies. The idea was to conduct a baseline measurement of non-motorized transportation along the main streets of Cuba, including US Highway 550 and NM route 126. This pedestrian count was repeated each year following the methods and protocols described by the National Bicycle and Pedestrian Documentation Project (NBPDP). The purpose was to provide useful data about the effectiveness of the VIVA- Step Into Cuba project and other local initiatives encouraging people to be more physically active.

Trained observers counted non-motorized transportation of all forms, including pedestrians, cyclists and others (e.g., skateboarders), at six locations identified by an independent transportation planning consultant. The consultant established “screenlines” in these locations to best capture general movements by pedestrians, cyclists, and other non-motorized transportation in the Village of Cuba. The same expert trained the UNM PRC staff and local volunteers using NBPDP techniques. The counters collected data on numbers of each type of non-motorized transportation they observed, along with some basic information about each person counted (sex, age group, time of day, day of week, location). After two one-week observation periods in 2010, the pedestrian count was repeated three times each year from 2011 to 2014.

Overall, non-motorized transportation has increased over the five-year period. Women were found to walk less than men overall, but the percentage of walkers that were female steadily increased each year from 32% in 2010 to 42% in 2013, before settling to 34% in 2014. Weekday mid-day observation periods reported higher numbers of walkers than weekends or evenings. Youth (under age 18) were observed in 25.2% of all non-motorized traffic from 2010-2014, and seniors were observed in 7.4%. Nearly ninety percent of the non-motorized traffic was pedestrian traffic, with bicycles and others making up 10.1%. “Others” – primarily male youth on skateboards – represented a small percentage of the counts (approximately one percent) each year until 2014, when they rose to five percent of all non-motorized traffic observed. There was a general decline in overall counts in 2013, and a rise in 2014 primarily due to the highest counts to date in September 2014. September’s total of 574 observations of non-motorized traffic brings the total number of observations made in Cuba, NM since 2010 to 5,059.

