

Regional Transportation Safety Action Plan (RTSAP): Emphasis Areas and Action Items

Improving Safety for all
Modes in Central New Mexico

Part II

Report prepared by Mid-Region Metropolitan Planning Organization (MRMPO), a division of the Mid-Region Council of Governments (MRCOG) with support from Lee Engineering.

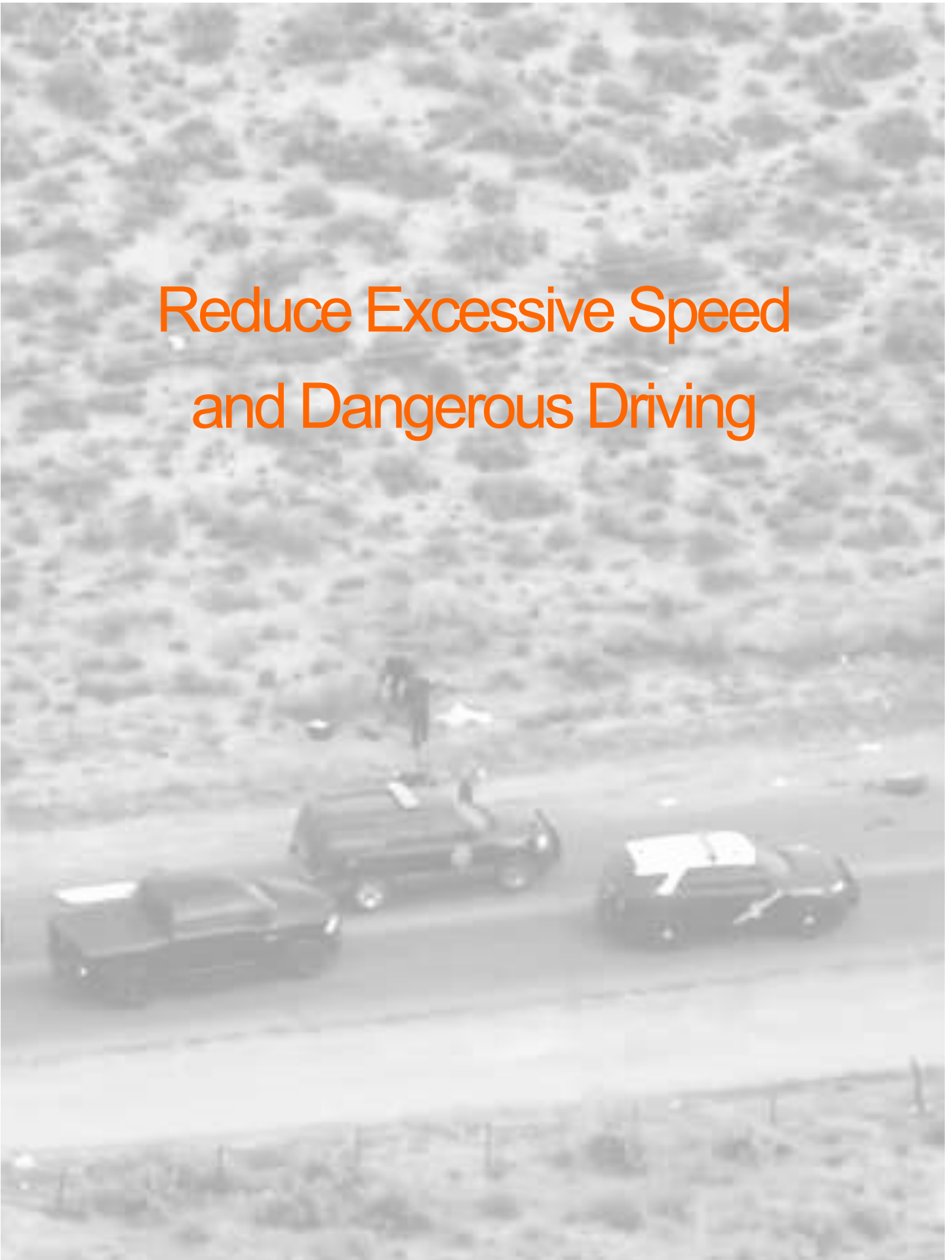


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Reduce Excessive Speed and Dangerous Driving



Reduce Excessive Speed and Dangerous Driving

The vision of this action plan is to reduce crashes that result in injury or death. Therefore, it is important to identify top contributing factors (TCF), which result in the most injuries and deaths. The table aside indicates what percentage of crashes are attributed to each TCF. Crashes that result in fatalities or injuries are separated from the total crashes in order to get a better idea of which types of crashes result in the most deaths or injuries.

Despite being a TCF in only 4.4% of the AMPA's overall crashes between 2011 and 2015, **alcohol/drug involvement was a TCF in 52.9% of the fatal crashes** in the same time period. **Excessive speed is the TCF in 12.6% of fatal crashes in the region despite making up only 7.2% of the total crashes.** Further discussion of alcohol involvement in contributing

Top Contributing Factor (TCF)	Fatal	Injury	Total
Alcohol/Drug Involved	52.9%	6.4%	4.4%
Excessive Speed	12.6%	7.6%	7.2%
Failure to Yield	7.1%	17.2%	12.9%
Pedestrian Error	7.1%	1.2%	0.4%
Driver Inattention	5.3%	26.7%	26.1%
Disregarded Traffic Signal	3.5%	9.3%	6.7%
Missing Data	3.2%	4.7%	11.6%
Improper Driving	2.9%	6.1%	9.3%
Avoid Contact	2.1%	4.1%	3.7%
Drove Left Of Center	1.5%	0.8%	1.1%
Defective Auto Part	0.6%	1.9%	1.8%
Other	0.6%	2.2%	2.6%
Empty Vehicle	0.3%	0.1%	0.1%
Follow Too Close	0.3%	10.8%	10.5%
Improper Overtaking	0.0%	0.5%	1.2%
Pedestrian Error (Bicyclist Error)*	0.0%	0.2%	0.1%
Road Defect	0.0%	0.1%	0.2%
Traffic Control Out	0.0%	0.0%	0.0%

*Police identified a "bicyclist error" as a "pedestrian error."

Yellow highlighted = Dangerous Driving

to crashes is needed, however, this section focuses on another killer—speeding and dangerous driving.

Speed is a factor in nearly one-third of all traffic deaths in the United States (NHTSA). In fact, from 2010 to 2015, 59,374 American lives were lost in crashes related to excessive speed (NHTSA). Speed increases the likelihood of being involved in a crash and it also increases the severity of injuries for those involved in a crash—especially vulnerable roadway users such as pedestrians or bicyclists (National Transportation Safety Board (NTSB), 2017). Based on a 2017 NTSB report on speed limits, the National Committee on Uniform Traffic Control Devices (NCUTCD) as of the writing of this report is currently investigating modifications to the Manual on Uniform Traffic Control Devices (MUTCD) in setting speed limits.

Dangerous Driving

TCF	Fatal	Injury	Total
Dangerous Driving	23.5%	45.4%	38.6%

One way to look at this issue is to

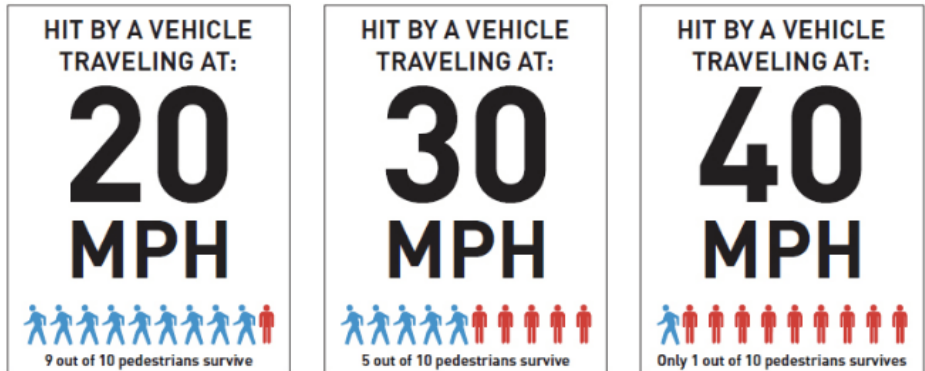
combine several dangerous driving behaviors indicated in the Uniform Crash Report Form to determine how many crashes are caused by dangerous or high risk driving. Excessive speed, failure to yield, disregarded traffic signal (running red lights/stop signs/etc.), following too close, and improper overtaking constitute dangerous driving. **Dangerous Driving is responsible for nearly 40% of all crashes, 45% of all injury crashes, and roughly a quarter of all fatalities. Combine fatalities and all injuries and dangerous driving leads Alcohol/Drug involved by 10% more.** While drugs and/or alcohol are a contributing factor in more than half of all fatal accidents, they are a factor in only 7% of the region's injury crashes. Dangerous driving behavior must also be addressed to lessen crashes that result in injuries.

Pedestrian Error

Pedestrian error is also disproportionately represented in fatal crashes. Pedestrian error is the TCF in 7.1% of fatal crashes, but only accounts for 0.4% of overall crashes. Pedestrian error is a tricky factor because there is some misunderstanding about the laws, which is discussed later in this document. **This statistic demonstrates that when a pedestrian error crash does occur, it is likely to result in death or injury.** On the other hand, there are TCFs that lead to many crashes overall, but few or no fatal crashes. Follow too close, for example, is the TCF in over 10% of total crashes, but accounts for no fatal crashes. The chance for a pedestrian to survive a crash exponentially decrease as vehicle speeds increase as indicated by the graph.

This graphic highlights the need to curb dangerous driving and specifically speeding drivers, which can in turn not only significantly reduce the number of crashes overall, but also increase the survivability if a pedestrian crash does occur.

Further analysis of the “type” of pedestrian crashes shows that vehicles going straight and turning are the most common types. 56% of fatalities occur when vehicles are going straight and 6.3% are when vehicles are turning, with 31% unidentified. **43% of injuries occur when vehicles are going straight , and 32% are turning movements (a much higher proportion than we see for fatalities).**



Source: City of Seattle

Roll Overs and Rural Areas

Another issue that needs to be addressed is that people tend to reach higher speeds on long, high-speed roadways in rural areas, which results in fatal roll overs. **36% of roll over crashes are due to excessive speed** (which outweighs alcohol/drug related at 21%) **and 14% of fatal accidents are roll overs.**

The Uniform Crash Report Form (UCRF)

A trove of data is provided by officers who respond to crashes in the field. For every crash, an officer fills out a Uniform Crash Report form. The Uniform Crash Report form (UCR) helps officers systematically report on the location and cause of crashes. State and local agencies then analyze the data collected by officers in order to identify crash hot spots and their TCF.

TCFs shed light on what factors primarily caused a crash. For example, if a crash was caused by a vehicle vastly exceeding the speed limit, “Excessive Speed” would be indicated as the TCF. The insights gained from this data can be turned into action. If the data reveals that an intersection is dangerous for pedestrians, it can be re-engineered with non-motorized road users in mind. If many crashes occur at a location at night, better street lighting could be installed to improve visibility.

Once the data is processed and agglomerated, only one TCF is attributed to each crash. In instances where multiple contributing factors were recorded by the officer, there is a hierarchy that determines which factor will be recorded in the processed data. For example, if a driver under the influence of alcohol ran a red light and struck another vehicle, the crash will be recorded as “alcohol/drug related” based on the assumption that if alcohol or drugs were not involved, the driver may not have run the red light and struck the other vehicle.

Reduce Excessive Speed and Dangerous Driving

The Dangerousness Factor

The "dangerousness" of a top contributing factor is the sum of the fatal and injury crashes divided by the total crashes in that category.

This measure sheds light on how many crashes attributed to this factor result in a death or injury.

We can gauge different TCFs by their "dangerousness," or how likely they are to result in an injury or death. Pedestrian error is the most dangerous type of crash, but unfortunately these are not always recorded correctly in terms of who is at fault. Nevertheless, out of the 405 pedestrian error crashes recorded in the AMPA between 2011 and 2015, over 90% resulted in death or injury. The second most dangerous type of crash was "Pedestrian Error (Bicyclist error,)" which means the officer documenting the crash placed the

Top Contributing Factors	Fatal+Injury	Total	"Dangerousness"
Pedestrian Error	348	379	91.8%
Pedestrian Error (Bicyclist Error)	67	90	74.4%
Alcohol/Drug Involved	1922	4209	45.7%
Disregarded Traffic Signal	2533	6424	39.4%
Failure to Yield	4669	12368	37.8%
Dangerous Driving	12370	36871	33.5%
Avoid Contact	1111	3501	31.7%
Excessive Speed	2088	6911	30.2%
Defective Auto Part	521	1767	29.5%
Follow Too Close	2932	10050	29.2%
Driver Inattention	7229	24901	29.0%
Other	591	2454	24.1%
Drove Left Of Center	234	1060	22.1%
Improper Driving	1655	8867	18.7%
Empty Vehicle	21	113	18.6%
Road Defect	28	157	17.8%
Traffic Control Out	4	24	16.7%
Improper Overtaking	148	1118	13.2%
Missing Data	1281	11132	11.5%
Total	27382	95561	28.7%

blame on the bicyclist. 75% of the 105 "bicyclist error" crashes resulted in death or injury. **The high incidence of death and injury in these types of crashes underscore the vulnerability of a human body when hit by a vehicle.**

Car Ownership Responsibility

The average car weighs about 4000 pounds and the average person weighs about 180 pounds. A person driving or riding in a car is surrounded by metal and plastic in the event of a crash. A person walking or bicycling does not have any protection if a driver in a car were to hit them. Driving is a daily habit for most people that too quickly becomes a mundane chore and often people forget what a great responsibility it is. Unfortunately, it can be used as a weapon with incidents of road rage or terrorism. This misuse of automobiles is a reminder that driving is a serious activity. Automobiles are powerful tools that if used improperly can, and do, end lives. This is a reminder to the average driver that operating a motor vehicle requires a great deal of responsibility and care.

Pedestrian Behavior

Jan Gehl, a Danish architect renowned for his studies on urban life and walkability, asserts that pedestrians in cities where street design focuses on the efficiency and ease of moving automobiles, often break the rules of the road. Gehl believes that pedestrians in certain cities aren't better behaved than in others as many believe, but that pedestrians in general respect traffic signals in a system that is laid out to meet their needs.

This is particularly true in terms of short waiting periods at lights or safe crossings that are close enough together. They walk according to their instincts of when they find it to be safe. For example, this is a widespread culture in London, where people move across streets whenever they see a pause in the traffic flow. **We see this here in our region as well. Sometimes people find that intersections feel less safe because of all the turning movements and no refuge for them to safely wait when crossing a wide street.** Many pedestrians choose to cross where they can look one way for traffic, stop in the median, and then look the other way.

"A situation is created," says Gehl, "where pedestrians trust their instincts more than traffic signals and choose to walk whenever they find it safe."

The Law for Pedestrians and Drivers in New Mexico

In New Mexico, vehicles must yield the right-of-way to pedestrians crossing a roadway within a crosswalk or an unmarked crosswalk (NCSL, 2016). However, pedestrians may not suddenly leave the curb and enter a crosswalk or unmarked crosswalk into the path of a moving vehicle that is so close the vehicle is unable to yield. Outside of marked or unmarked crosswalks, pedestrians must yield the right-of-way to vehicles. In addition, where traffic control devices are in operation, pedestrians may only cross between two adjacent intersections in a marked or unmarked crosswalk.

An unmarked crosswalk is a portion of a roadway "ordinarily included with the prolongation or connection of the lateral lines of sidewalks at intersections." For example, at the intersection of Central and a residential street such as Aliso. Aliso has sidewalks that continue on both the east and west sides of Aliso, There is no marked crosswalk to cross Aliso, but this would be considered an unmarked crosswalk. An example is also pictured right under "Number 3."

Determining Fault

The section of the law that says "pedestrians may not suddenly leave the curb and enter a crosswalk or unmarked crosswalk into the path of a moving vehicle that is so close the vehicle is unable to yield" seems to be what is primarily used to identify pedestrian error by police officers. Unfortunately, it is not clear if there is an understanding of what an unmarked crosswalk is, and **ultimately this means taking the driver or pedestrian's word on whether they left the curb with adequate time for a driver to stop. When a pedestrian is killed, they cannot tell their side of the story.** In addition, it is not possible to know if the driver was speeding and therefore the pedestrian gauged their time to cross incorrectly. In other states the laws are different. In some cases the driver must stop regardless of where the pedestrian is crossing.

Many Cities have developed distances by which there should be an option for a pedestrian to cross a street because sometimes the length between signalized intersections can be extremely far. The City of Albuquerque is working on setting these distances and currently is looking at 300 to 600 feet depending on the land use density of the area.



Source: Wisconsin Bike Fed

Reduce Excessive Speed and Dangerous Driving

Action Items Summary

This list is a snapshot of the action items in this plan under this emphasis area. These action items are aimed at addressing the reduction of fatal and serious crashes caused by speed and high risk driving in our region. This requires taking a hard look at our designs and policies around reducing speeds, and considering our behaviors and expectations around how the need to go fast is impacting our communities. Far too often, we are focused on increasing speeds or relying on the speed limit signs rather than traffic or speed management strategies and safety issues to guide our priorities. There are other ways to improve traffic flow without putting people's lives in danger. These strategies are not always applicable to highway-like roadways and Interstates, but rather are focused on the major roads that we use daily to get around.

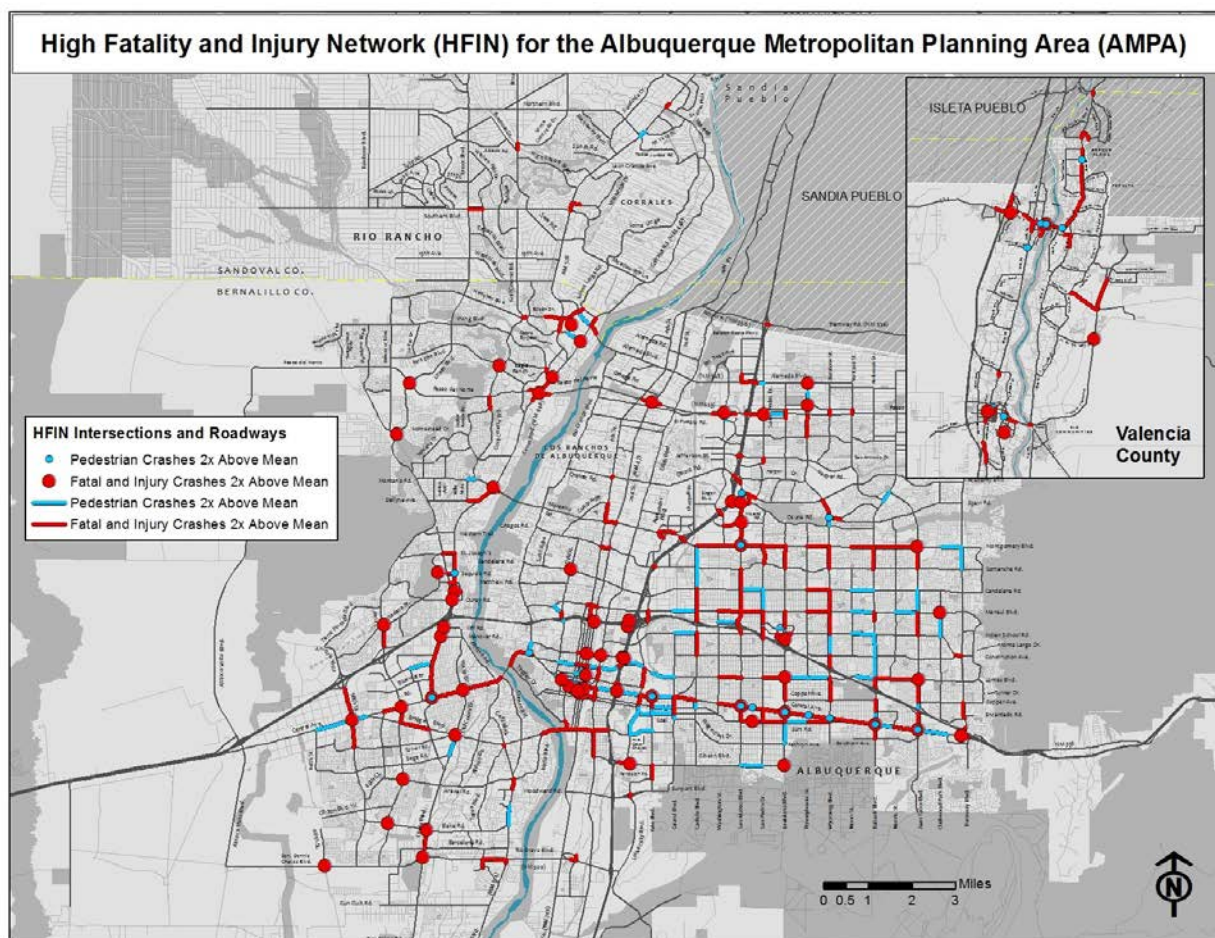
1. **Conduct Prioritized Speed Studies**
2. **Conduct Before and After Crash Studies**
3. **Reevaluate Speed Limit Policies**
4. **Reduce Turning Speeds**
5. **Enhance Speed Feedback Signs**
6. **Utilize ITS for Smart Work Zones**
7. **Expand Safety Zones**
8. **Provide Advanced Signal Timing**
9. **Provide Advanced Detection**
10. **Improve EMS Response Time Grid**
11. **Provide an Aggressive Driving Hotline**

Peter Lagerway, a former federal highway consultant from Toole Design Group, in his work for Tucson, AZ, noted that there are a lot of myths about speed and traffic efficiency. What the data show is that as a driver once you hit 35 mph in an urban area you are not gaining any more mobility. Even though it seems counter-intuitive, drivers can get through just as quickly at slower speeds. How many times have you seen someone speed up through a residential area just to be stopped by a light further down the road? Many of these issues of traffic flow can be addressed with emerging technologies such as smart signalization, which can substantially reduce delays without increasing speeds. In some states this has led to urban areas limiting speeds on all roadways to 30 mph and under.

Reduce Excessive Speed (RS) Actions

CONDUCT PRIORITIZED SPEED STUDIES

Intersections and corridors with the highest severe crash rates have been identified for Large Urban, Small Urban, Rural, and Tribal areas as well as for pedestrians and bicyclists. While several of these locations would be recommended candidates for a Road Safety Audit (RSA), not all locations can be explored through a comprehensive analysis. However, speed studies and analyses should be more quickly completed at these locations. Speed studies should collect existing speed data, review the location for speed limit consistency, and observe the road and land use characteristics to determine appropriate speed limit levels. The data also suggests that in small urban and rural areas that some of the long, straight, Collector roadways may be a good place to start. All speed studies should consider multi-modal needs and requirements. Provided here is a map of the location of high fatal and injury crashes that could be targeted for speed studies. Further analysis can also be taken by MRMPO upon request from a local municipality to isolate speed related crashes.



CONDUCT BEFORE AND AFTER SPEED STUDIES

It is also important to conduct before and after speed studies when doing any sort of roadway reconfiguration. For example, taking a four-lane roadway and restriping for a three-lane roadway with the addition of bicycle lanes, or narrowing travel lanes. Before and after crash studies are also essential with these types of changes to see what sort of changes there are in not only the total amount of crashes, but the type of severe crashes, the modes that are involved, and the top contributing factors.

Reduce Excessive Speed (RS) Actions

REEVALUATE SPEED LIMIT POLICIES

Traditionally in the past, speed limits along roadways have been established based on the 85th percentile, which estimates that 85% of vehicles will not exceed the speed limit. However, this approach accommodates motor vehicles without addressing safety for vulnerable road users. Recently, the Federal Highway Administration (FHWA) has been reassessing this approach and is in the process of updating this methodology. Additionally, the National Transportation Safety Board (NTSB) recommended using alternative approaches to setting speed limits, which include crash history and considering pedestrians and bicyclists. It is recommended that current policies within the AMPA be assessed and recommendations be considered. New policies should consider adjacent road characteristics, adjacent land



As seen on a residential street near Altura Park in Albuquerque.

use intensity and type, pedestrian and bicycle facilities and use, complete streets concepts, and satisfaction of stopping and intersection sight distance requirements per existing local policy and/or the latest AASHTO Green Book methodology. Consideration should also be given to differentiating policy based on Rural, Small Urban, or Large Urban conditions. Additionally, the FHWA recommends using USLIMITS2 as a safety countermeasure. The free, web-based tool is meant to help practitioners establish safe speed limits and can be used for rural to local roads. More info on USLIMITS2 can be found here: <https://safety.fhwa.dot.gov/provencountermeasures/uslimits2/>

What is the 85th percentile rule?

For the last 50 plus years, most public roadways set speed limits based on statute and the 85th percentile rule, which assumes that 85% of drivers will drive at or below the posted speed in free-flowing conditions and 15% of drivers will drive over the posted speed limit. The concept, "Solomon's Curve," was developed in 1964 before we had the level of understanding, data, and analysis that we have today in transportation planning and engineering. The 85th percentile rule also does not incorporate other roadway users such as pedestrians or bicyclists. This approach to setting speed limits was supposed to be for highways, but it ended up being used in cities too.

Over the last 20 years, practitioners and advocates have argued this approach to setting speed limits is outdated and does not work in cities. In a recent 2017 National Transportation Safety Board (NTSB) report, NTSB identified speed as a critical and often overlooked factor in traffic crashes. In response, they provided several recommendations. Namely reforming the 85th percentile rule and using other approaches that include crash history and whether pedestrians and bicyclists are also using the roadway.

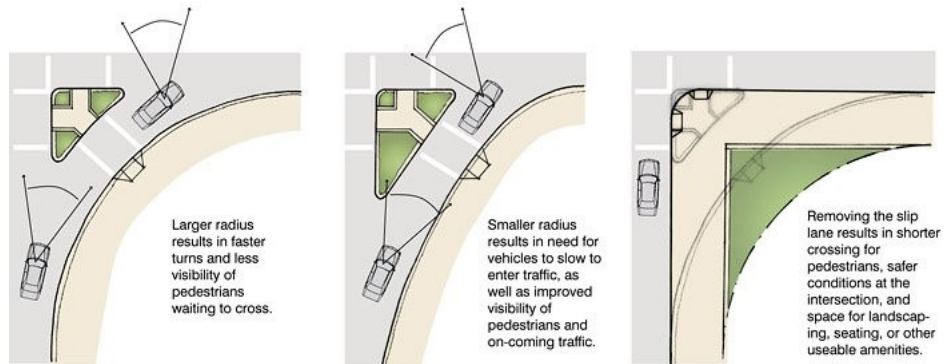
In the past few years a number of Vision Zero cities, in coordination with state government, have decreased city speed limits. In 2014, NYC lowered the default speed limit from 30 mph to 25 mph, unless otherwise posted. In early 2018, Portland, OR, announced a speed reduction from 25 mph to 20 mph on residential streets, which comprise about 70% of the city's streets. There's also an organization called 20's Plenty for Us, which works toward assisting communities with setting mandatory 20mph limit on most roads to create safer and more livable streets. **It is not just the speed limits that need to be lowered though. The design of streets also needs to change. Often, even when the posted speed is lower the roadway design doesn't give the driver any indication that they need to slow down.** This is the difference between design speed and posted speed.

Narrowing travel lanes, vegetation and/or trees along a roadway is another tool to decrease speeding. When travel lanes are wider, drivers feel like they can go faster versus a narrow travel lane, which encourages a driver to go slower.

Reduce Excessive Speed (RS) Actions

REDUCE TURNING SPEEDS

High speed turning movements can be dangerous for through traffic and people crossing the street at intersections. In addition to widening curb radii, particularly in areas of high pedestrian traffic, there are channelized turning movements that could reduce fatalities and injuries by providing an angle that improves visibility for everyone.



Reduce right turn speeds. Remove slip lanes. Source: SF Better Streets

REDUCE RIGHT-TURN SPEEDS

There are many locations throughout the AMPA that incorporate large sweeping channelized right-turn movements under yield control. These types of channelized right-turns tend to increase right-turn operating speeds, which potentially increases pedestrian crash severity - particularly for pedestrians. A review of existing channelized right-turn locations where high crash rates are occurring should be conducted to determine if the channelized right-turn can be modified to encourage slower right-turn speeds.

The FHWA currently recommends a specific channelized right-turn island design that considers safer operations. **Governmental entities throughout the AMPA should consider adopting the FHWA preferred design into their standard drawing and design policies.**



Broadway Boulevard near the Isleta Resort and Casino. Source: Google maps

REDUCE LEFT-TURN SPEEDS

Left turning movements can also be slowed down by extending medians which also provides a refuge for pedestrians. More on these type of interventions, like Pedestrian Safety Islands, are included in some of the pedestrian crossing elements, which can be found later in the document.

Reduce Excessive Speed (RS) Actions

ENHANCE SPEED FEEDBACK (RADAR) SIGNS

Speed feedback signs (SFS) provide drivers with feedback about their speed and the posted speed. When this strategy is paired with enforcement, it can be an effective tactic to reduce speeding vehicles at specific locations. There are both permanent dynamic speed signs and mobile speed trailers that can be deployed at targeted locations. When drivers are disobeying the posted speed, the sign with the radar speed will flash signaling the driver to slow down. Some of these signs also have “slow down” text on them that will flash when a driver is disobeying the speed limit.

UTILIZE ITS APPLICATIONS FOR SMART WORK ZONES

Construction/Work zones present potential hazardous conditions and crashes that can be mitigated with strategies to better manage work zone traffic, improve driver “situational awareness,” and reduce the severity and duration of construction-related congestion to improve safety for motorists and workers. Strategies that help maintain safety include the coordination of roadway construction projects to reduce work zone impacts and the use of advanced technology applications to dynamically manage traffic in the work zone environment. Project management involves coordination within a single project and/or among multiple projects within a corridor, network, or region, and possibly across agency jurisdictions, to minimize the duration of a roadway construction projects, thus reducing that time of the potentially hazardous condition. A second strategy that involves the utilization of ITS devices for queue management and speed management. When this is coupled with traffic information strategies it can reduce queues or manage speeds dynamically.

EXPAND SAFETY ZONES

School Zones are areas within the vicinity of schools and other educational establishments. School zones often incorporate reduced speed limits for certain times of the day. They include road signs, flashing beacons and markings on the street to help signify to drivers of the areas where children and young pedestrians may be crossing at certain times of the day. Sometimes a crossing supervisor is present to assist children and will stop traffic. We have become familiar with and expect School Zones at certain times of day. This type of safety zone could be further extended to other types of land uses. For example, there are Community Centers and Civic Plazas or parks that are busy at certain times of day and could benefit from a similar treatment.



Source: FHWA Methods and Practice for Setting



Source: FHWA Methods and Practice for Setting Speed Limits

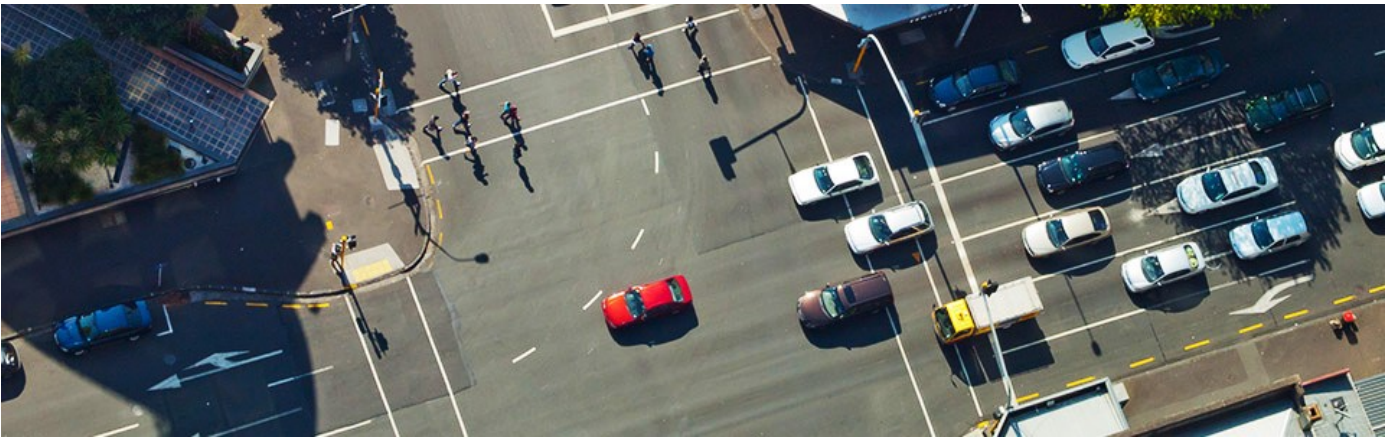


Source: FHWA Methods and Practice for Setting Speed Limits

Reduce Excessive Speed (RS) Actions

PROVIDE ADVANCED SIGNAL TIMING

Research indicates that the majority of roadway crashes occur at intersections, or “points of conflict” as they are commonly referred. At intersections, drivers are faced with a numerous critical, and quick decisions such as directional changes, pedestrians in crosswalks, other vehicles, their opposing movements, abrupt slowdowns, and other unanticipated potential hazards. Significant safety improvements can be made using advanced traffic control installations with the use of systems that utilize sensors and algorithms that adjust signal timing and smooth the flow of traffic. These systems adjust signal timing either “automatically” as in an “adaptive signal system” or manually with operators located in the Traffic Management Control. Those are referred to as “advanced signal systems.” Either way, the resulting smooth traffic flow is paramount to increased safety and improved operations for all modes.



Source: Federal Highway Administration's Center for Accelerating Innovation

PROVIDE ADVANCED DETECTION

Advanced detection should be considered for intersections with high angle and rear end crashes, and one or more approach with speed limits at 40 mph or greater. Advanced detection could be accomplished by video, in pavement loops, or radar to name a few options. However, radar detection currently offers a real-time dilemma zone protection. The dilemma zone is a point at which an approaching vehicle sees a yellow light indication and can neither safely stop nor pass through the intersection without running the red indication. Advanced detection will allow an extension of the all-red transition time to allow an approaching vehicle to clear the intersection before a conflicting green is activated. By eliminating this dilemma zone, the risk for angle and rear-end crashes can be significantly reduced.

IMPROVE EMS RESPONSE TIME GRID

To improve crash response times, it is recommended to develop an EMS response time grid for AMPA participating governmental entities and ultimately identify areas within jurisdictions where response times are much greater than the average response time. Upon identification of slower than average emergency routes, potential mitigation can be brainstormed to bring improved response times that align with the average.

Reduce Excessive Speed (RS) Actions

PROVIDE AN AGGRESSIVE DRIVING HOTLINE

As part of law enforcement efforts, a number could be set up for a motorist to report aggressive drivers. Many law enforcement agencies already have examples of this effort. The Colorado State Patrol has had an Aggressive Driver Program since 1998. Motorists, pedestrians, and bicyclists are encouraged to dial *277 to report aggressive driving, which includes moving violations that put others at risk such as following too closely, improper lane changes, speeding, and passing on the shoulder. Callers are expected to provide a vehicle description, license plate number, location, direction of travel, driver description, and the type of behavior observed. **Currently, the state of New Mexico has a similar effort called Drunk Busters, but it is targeted toward reducing drunk driving.** The state of New Jersey has a similar program for both aggressive and impaired drivers by having citizens call #77.



Source: MD State Highway Administration

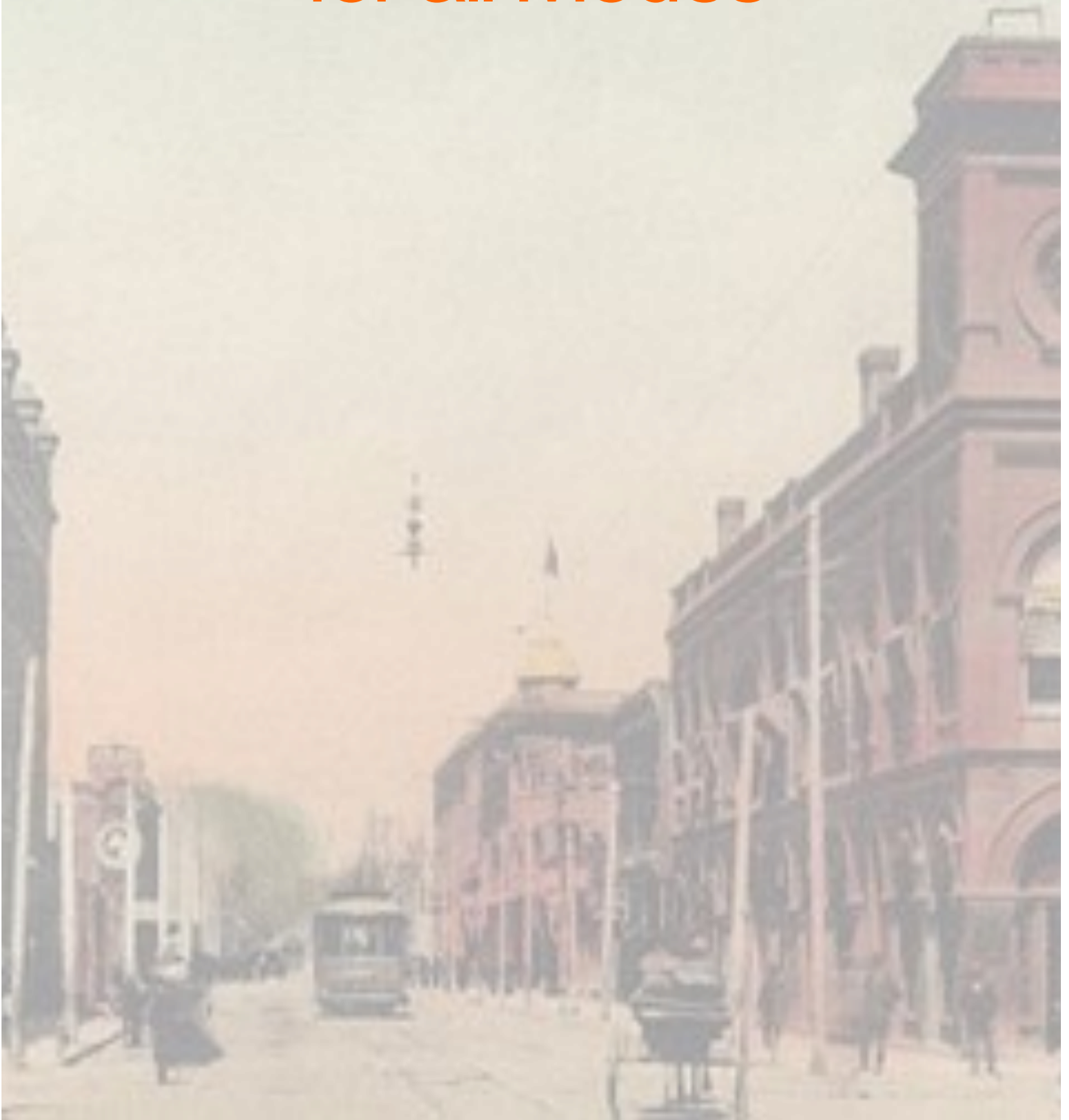


Source: State of New Jersey Dangerous Driving Hotline

Second Street, looking North.

ALBUQU

Design Streets for all Modes

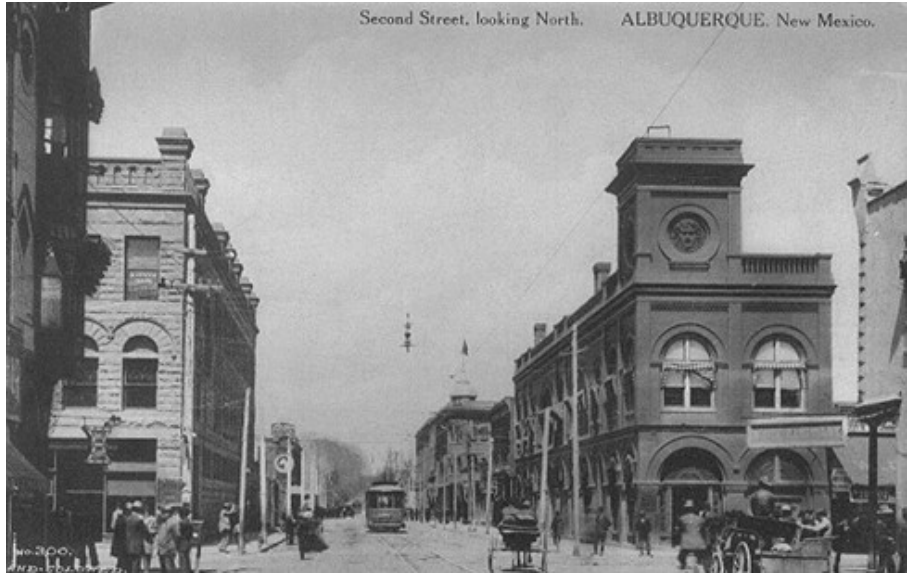


Design Streets for all Modes

Over the last 60 plus years, we have been designing our streets and communities around vehicular traffic and enabling cars to get from point A to point B as easily and quickly as possible. This planning paradigm places cars at the top of the public street hierarchy with vulnerable roadway users at the bottom. There have been numerous repercussions due to this hierarchy, such as a disproportionate impact on pedestrians and bicyclists. It is also worth noting that if it does not feel safe to walk or bicycle, people may be less likely to do so.

The Center for Disease Control and Prevention (CDC) recommends that children and adolescents should have 60 or more minutes of physical activity daily and that adults should do at least 150 minutes a week of moderate-intensity activity (CDC, 2008). Creating safe places for people to walk and bicycle can help communities achieve these recommended minutes of activity.

However, are streets do not feel safe. Streets were not always hostile places. Streets were social – they were places and spaces to do business, meet people, where kids played, and of course, streets served as a connection to walk, bicycle, or take transit to reach a destination. This was true in places like New York City and it was also true in places like Albuquerque.



View of Second Street—ABQ 1908. Source: Chronicle/Alamy Stock Photo



New Transportation Hierarchy. Source: NACTO

In recent years, there has been more acknowledgement and there have been strides in overcoming the car paradigm not only in the United States, but around the world. Traffic injuries rank as the 9th leading cause of death and is projected to rise to the 7th rank by 2030 (WHO Global Road Safety Report, 2015). Traffic deaths and injuries along with other public health issues such as heart disease and stroke or physical activity have demanded that a new approach to community planning be taken. The National Association of City Transportation Officials (NACTO) have been leading a newer approach to street design, which works toward the creation of communities and streets as more livable, walkable, bikeable, and healthy places. This newer hierarchy was originally proposed as the Green Transportation Hierarchy in 1994, and it prioritizes people at the top and cars at the bottom (Li, Han-ru, 1994).

The new street hierarchy also aligns with Vision Zero and the emphasis area to redesign and retool streets for all roadway users of modes and all abilities. **And it makes sense because streets are our largest public space.**

The new paradigm demands transportation to be more effective and efficient with limited resources, while accommodating more capacity safely. The future of transportation will be less reliant on individual vehicle capacity and more reliant on people movement strategies such as roadway management, including access management, improved signalization, frequent and reliable transit, and especially improving infrastructure for the safety of pedestrians and bicyclists.



Woman bicycling at New Mexico State University. Source: Best College Val-

With that revised focus, it is important to make sure that our roadway facilities are safe for not only the most vulnerable modes of travel, but also vulnerable groups such as women and children. Gender is another critical element within the green transportation hierarchy that is often overlooked or not incorporated.

Gender and Move Equity

The design of cities and communities not only play a critical role in personal safety, but also impact the way

that people engage with, move through, and feel their environments. Within the context of transportation, access to transportation options (driving, walking, biking, transit) that are safe and affordable can impact a person's everyday life.

Men and women encounter communities in different ways and have different needs, so design elements such as adequate street and sidewalk lighting, well-surveilled parking, and clear sight lines in public spaces may be important factors for how women choose to move through a community – whether it is walking, biking, driving, or taking transit.

Women (and children) have different design and safety needs than men.

These everyday design details come to light when reviewing data about men and women's transportation use. Women not only walk fewer steps each day than men largely because of personal safety (Shadwell, Talia, 2017), but also women bicycle less than men – women account for 29.1% of bicycle trips vs. 70.9% of men (US Census Bureau, 2011-2015 American Community Survey 5-year estimates). Several studies and research have identified a variety of reasons for this bicycling gap, including, but not limited to a lack of safe bicycle infrastructure, social pressures, complex trip patterns (women are often responsible for domestic chores and shuttling others), and harassment.

Cities that invest in protected or separated bicycle infrastructure experience increases in female ridership. Minneapolis saw an increase in female ridership after investing in protected bicycling infrastructure (Reeves, H. 2012). New York City also saw an increase in female ridership along corridors with protected bike lanes (Teferra, Roha. 2011). Protected or separated bicycling facilities not only provide a safer space for bicyclists, but they also provide more separation from traffic and vehicles, and separation from potential verbal harassment (Clabots, Barbara. 2016). In bicycling, women have been identified as an "indicator species" or barometer for safe bicycling (Baker, Linda. 2016). The same could be true for the everyday design our streets and addressing move equity to achieve gender parity in walking, biking, and transit modes of transportation. By including women's safety concerns in the design of our streets and built environments, everyone wins.

8 to 80 Cities – Age Friendly Design

Another important concept related to designing communities while keeping in mind gender and move equity is also considering children and elderly people. Often this concept is labeled "8 to 80 Cities" and the nonprofit of the same name states that, "If everything we do in our cities is great for an 8-year-old and an 80-year-old, then it will be great for all people."

Children today compared with children in the 1960s is striking—very few children walk or bicycle to school and the number of kids and teens who are overweight has tripled. According to studies, these walking and biking trips have not been replaced by a school bus, but largely travel in private cars. Imagine if streets were safe enough for kids to walk or bicycle to/from school?



Child riding her bike in a protected bike lane demonstration at the first CiQlovía event in Albuquerque in 2014.

Design Streets for all Modes

On the other side of the of the age spectrum, imagine a community that is designed to be adaptable for people as they age. As people age, they may want to remain in their community or be in a community without feeling isolated if they're unable to drive. Design plays a critical role in whether a person is going to walk, bike, or take transit for shopping, medical appointments, or fun. Shade, benches, public restrooms, even pavement, and lighting among other elements will play a critical role in person's mobility as they age. And maybe even more importantly, land use and transportation planning set the foundation for creating these livable communities with needs and amenities safely within walking, biking, or transit distance. And it's critical to start considering these long-term implications now because it's anticipated that in the United States by 2050, there will be more people over the age of 65 than children under 15 (Ortman, Velkoff, & Hogan, 2014). A lot of the design considerations and planning coordination are the same or similar to considerations for move equity, so again, these improvements are beneficial for all people.



A woman and child crossing San Mateo Boulevard. Source:

Complete Streets

Complete streets is a popular approach to working toward a new transportation hierarchy. Complete streets are streets designed for people of all modes and all abilities to move through the community safely.

Within the MRMPO area, the City of Albuquerque, Bernalillo County, and MRMPO have adopted some type of complete streets ordinance or resolution, and the NMDOT has expressed interest in pursuing a statewide policy in the future. Both the City and the County's policies

A Variety of Street Users



Source: NACTO

mean that for major reconstruction or construction of new streets, and minor maintenance, resurfacing, or rehabilitation projects must consider other roadway users such as bicyclists and pedestrians.

The New Mexico Complete Streets Leadership Team (NMCSLT) formed in 2010, works toward improving the health and safety of New Mexicans by increasing active transportation options. NMCSLT is comprised of over 80 transportation and health practitioners and advocates from throughout the state. The group's main goal is to provide resources toward the adoption and implementation of complete streets policies and design standards throughout the state. The team provides letters of support, reviews proposed projects with recommendations to enhance complete streets concepts, and hosts pop-up celebrations of transformative projects among other assistance and awareness efforts offered.

Design Streets for all Modes-Action Items Summary

This list serves as a snapshot of the action items in this plan under this emphasis area. These action items are aimed at addressing the utilization of street design to create streets that are safe and comfortable for everyone. This requires a better balance between motor vehicle traffic flow and providing space for transit systems, pedestrians, and bicycle travel. At some point on a trip we all walk and if we design for the safety of a person walking to their destination, ultimately all modes, including drivers, will reap the safety benefits of fewer deaths and serious life-altering injuries.

1. Develop and Follow Broad Design Principles
2. Implement Innovative Intersection Roadway Geometry
3. Enhance Intersection Crosswalks
4. Utilize Road Diet Treatments
5. Conduct Sight Distance Review
6. Require Case F Sight Distance Review
7. Increase use of Traffic Calming Designs
8. Increase use of Tactical Urbanism
9. Provide Pedestrian and Bicyclist Refuges and Crosswalks
10. Use Local HAWK Signal/Pedestrian Hybrid Beacons
11. Build Wider Sidewalks & Walkways
12. Increase Pedestrian Scale Lighting
13. Enhance Signalization for Pedestrians
14. Increase Pedestrian Signage
15. Enhance Signalization for Bicyclists
16. Expand Separated Bicycle Infrastructure
17. Maintain Road Striping
18. Provide Pedestrian/Bicycle Crossing Gates at Railroads
19. Use FHWA Identified Safety Countermeasures
20. Utilize Crash Modification Factors (CMF) in Local Designs
21. Utilize Four-Way-Stops Where Appropriate

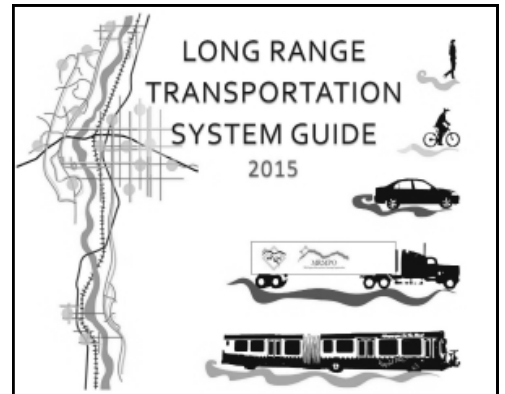
Design is a critical piece of Vision Zero because the design of streets can self-enforce safer behavior. For example, a street designed with street trees, parking on each side, and 10-foot lanes will discourage drivers from speeding. Design in tandem with data-driven traffic enforcement can go a long way.



Design Streets (DS) Actions

DEVELOP AND FOLLOW BROAD DESIGN PRINCIPLES

Utilize the Long Range Transportation System (LRTS) Guide developed by MRMPPO, which incorporates Complete Streets and Context Sensitive Design elements to help with updating development standards and creating broad design principles that put safety first. These broad design principles can help guide decision making processes for new, rehabilitation, or resurfacing and restriping projects. Another example to consider is Chicago's Design Principles. These principles encourage safe speeds and minimize risk to all users. The City of Boston also has a Complete Streets Guidelines tool that, which includes operations issues such as traffic signals and management.



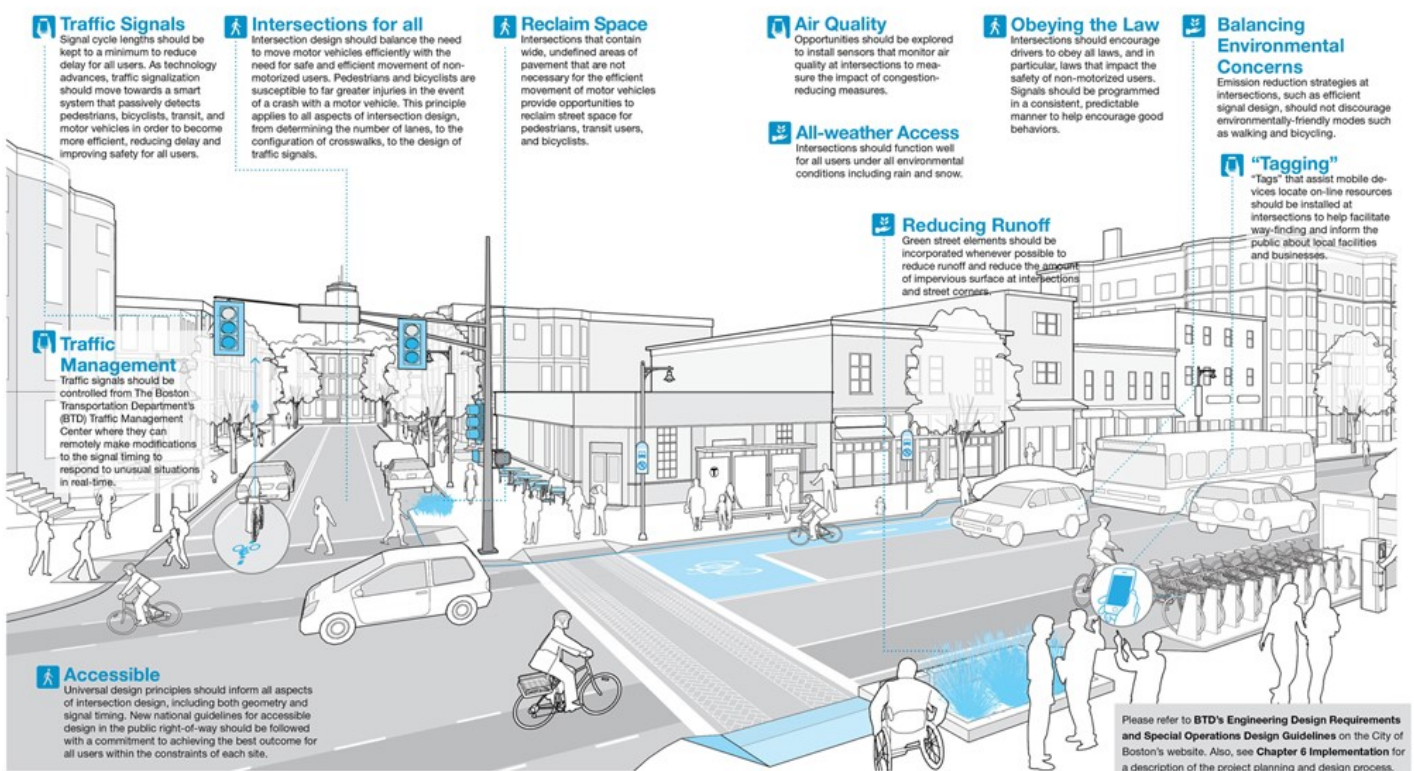
Chicago's Design Principles:

1. Narrow Vehicle Lanes
2. Crossings that Provide Easy Access to Transit
3. Compact Intersections
4. Short Pedestrian Crossings
5. Separated Areas for Vulnerable Roadway Users

Boston's Complete Streets Design Guidelines:

Principles

Source: City of Boston



Design Streets (DS) Actions

IMPLEMENT INNOVATIVE INTERSECTION ROADWAY GEOMETRY

Along with improving safety for all modes, with the challenges of providing needed roadway capacity under limited available funding and right-of-way, new innovative types of intersections have been developed to meet these challenges.

Visibility and predictability are key considerations at intersections. All users should have a clear view of each other so they can safely negotiate the intersection without conflict. Often, designing safe intersections is a challenge because intersections introduce many conflict points between users: motorists are turning, pedestrians of all abilities are crossing the street, buses are unloading passengers, and bicyclists are attempting to negotiate safe crossing. Intersections are places where otherwise good street design breaks down: bike lanes end, pedestrian crosswalks are not provided at logical crossing points, generous curb radii promote high turning speeds and crossing signal do not allow adequate time for slower pedestrians to cross safely. Some types of innovative intersections include, but are not limited to the following:

- Roundabouts
- Continuous Flow Intersections
- J-Turn Intersections

Often innovative geometry does not have enough historical experience for the establishment of standard design practice. It is suggested that the MRMPO expand the section in next Long Range Transportation System Guide to specifically include these types of facilities. Each type of roadway geometry should be researched to see what other regions and states do. Additionally, the FHWA has guides in place such as Roundabouts: An Informational Guide and Alternative Intersections/Interchanges.

MODERN ROUNDABOUTS

Modern roundabouts have been shown to reduce the number of crashes and severity at intersections as compared to signal controlled intersections and they don't require the cost of implementing signalization. FHWA identified roundabouts as proven safety countermeasure with the potential for 82% reduction in severe crashes (two-way stop controlled intersection to a roundabout) and a 78% reduction in severe crashes (signalized intersection to a roundabout) (Highway Safety Manual.) safety improvements are achieved by reducing the number of conflict points at intersec-



Example of a modern roundabout. Source: City of Carmel



Example of a reduced conflict intersection. Source: MNDOT



Example of continuous flow intersection. Source: https://www.youtube.com/watch?v=ff3FGR_mW5Q

Design Streets (DS) Actions

tions, while keeping traffic flowing, which can also increase overall intersection capacity. However, roundabouts also increase walking distance, and blind pedestrians who rely on sound often cannot determine if a motorist is yielding.

ENHANCE INTERSECTION CROSSWALKS

Highly visible marked crosswalks are essential elements of safe crossing and should be provided at all approaches of signalized intersections. Unmarked crosswalks may be appropriate at unsignalized intersections at lower speed, unless they are located near large pedestrian generators such as schools, transit stops, and commercial areas.



Street Improvements in Oakland, CA. Source: City of Oakland

Design Streets (DS) Actions

UTILIZE ROAD DIET TREATMENTS

Road diet treatments are discussed extensively in this document in the Potential Road Diet Candidates section. This type of reconfiguration of roadways is a proven safety tool to not only greatly improve safety for all modes of travel, but also provide more connected facilities for bicyclists and pedestrians.

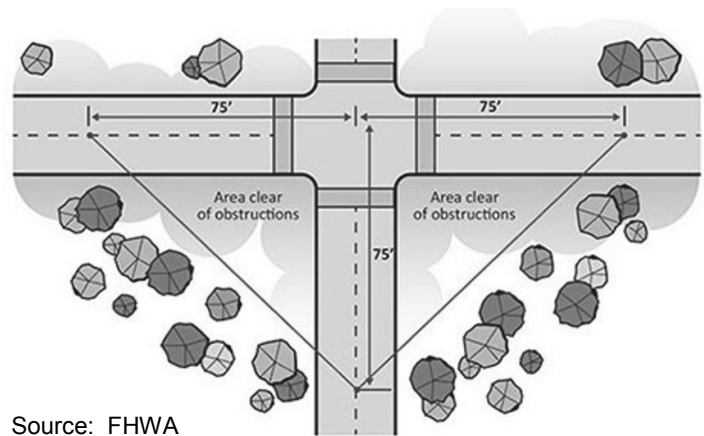
CONDUCT SIGHT DISTANCE REVIEWS

Sight distance is the ability for the driver to see the roadway when approaching an intersection, stopping, or passing. It is important that drivers approaching or departing an intersection have an unobstructed view from shrubbery, poles, traffic control devices, and other line of sight interference. Triangle areas on all four corners are developed to show the area that needs to be clear of obstructions. If these areas are not clear a driver's view of other vehicles and pedestrians is greatly compromised.

Sight distance can also be inhibited by vertical changes in the roadway like when a vehicle is coming up on a hill for example. In these situations transverse rumble strips are sometimes provided as the vehicle approaches to alert the driver that there is a street crossing coming up that they need to be aware of.

REQUIRE CASE F SIGHT DISTANCE REVIEW

Case F sight distance requirements are defined as required sight distance between two permitted left-turning vehicles. Further information and requirements can be found in the AASHTO Green Book. Intersection offset is one of largest factors on the availability of this sight distance. Intersection offset is the lateral position between opposing left-turn pockets. The more negative an offset is, the less sight distance available to left-turning vehicles, and the more positive the more sight distance available. It is recommended that an inventory of intersections with high angle crash rates be collected to identify whether there appears to be a negative or positive offset. Negative offset locations should be candidates for a Case F Sight Distance Analysis. Based on these analyses, recommended mitigation could include the elimination of permitted left-turn phasing or reconstruction of the intersection to create more a positive offset.



Source: FHWA



Rural Valencia County (Rumble strips on hill approach)



Eubank and Chico in Albuquerque. Source: Google maps

Design Streets (DS) Actions

INCREASE USE OF TRAFFIC CALMING DESIGNS LIKE CURB EXTENSIONS

Some of these interventions are not applicable to busier roadways, however they can be used on side streets approaching busier roadways and on busier roadways with the right land use context or in concert with bus stops. Curb extensions narrow the roadway and provide better visibility, and cues to drivers that pedestrians are crossing. They also provide shorter crossing distances and can allocate space to parking and street trees. There are many different kinds in addition to those listed below such as pinch points, bus bulbs, and gateways.

CHICANES

Chicanes are a traffic calming tool in which a series of narrowing and curb extensions (or striping) alternate from one side of the street to the other at mid-block locations. This geometry requires a traveling vehicle to change trajectory left then right, thus reducing operating speeds along the roadway. Ideal chicanes, per the Institute of Transportation Engineers (ITE) Traffic Calming Measures, are recommended to provide shifts of one lane width, deflection angles of 45 degrees, and center islands to prevent drivers from taking a straight line through.

CHOKERS/CLOSURES

Access closures can be one of the more effective ways of restricting cut-through traffic, but often at the cost of restricting local traffic as well. Emergency vehicles also need to be able to traverse the design. However, some of the previously discussed traffic calming options like roundabouts and chicanes can be just as effective without restricting local access and have the added benefit of reducing vehicle speeds and increasing safety.

SPEED HUMPS, TABLES, AND CUSHIONS

Speed humps are vertical changes in the roadway to make drivers aware of slower speeds. These are typically used on low volume and speed roadways. Speed tables and cushions are types of speed humps and can be implemented, for example, along main streets where there are pedestrian crossings, or on side streets intersecting with major busy streets. Their dimensions change depending on the target speed. For more information on some of these types of interventions see the following publications:

- NACTO URBAN STREET GUIDE AND GLOBAL STREET GUIDE
- CITY OF ALBUQUERQUE NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM (NTMP)
- MRMPO's LONG RANGE TRANSPORTATION SYSTEM GUIDE



Street Chicane Santa Fe, NM. Source: NACTO



Street Closure near Park in Palo Alto, CA. Source: NACTO Urban Bikeway Design Guide



Speed Table Source: NACTO

Design Streets (DS) Actions

INCREASE USE OF TACTICAL URBANISM

Tactical urbanism is about utilizing short-term, low-cost interventions in the built environment, which could lead to long-term change. The interventions are about reimagining streets and public spaces. Much of the effort involves using materials such as paint, cones, plastic barriers, and planters to create pedestrian/bicycle “safe areas” in space that otherwise would be empty asphalt or from over-built roadways. Caution should be exercised when planning tactical urban projects. Sometimes the tactical urbanism approach is presented as “do it yourself” striping and signing treatments. Burlington, VT, created a community tactical urbanism guide, which included city approved demonstrations and guidelines for community intervention. Examples of tactical urbanism include, but are not limited to:

PARKLETS/PARQUITOS

A parklet (parquito is the Albuquerque version) is a miniature park or public space that is created out of reclaimed right-of-way such as a parking space. Albuquerque had its first parquito built in August 2014, which created a small seated area from an area that was originally one parking space.

DEMONSTRATION PROJECTS

A demonstration protected bicycle lane, which uses duct tape to delineate the lane and buffer space and some kind of vertical element within the buffer like cones or plungers with pvc pipe placed on top is an example of a demonstration project.

INTERIM PUBLIC PLAZAS

Interim public plazas are pedestrian areas converted from underutilized roadway areas to a park use that can be great for holding art events or farmer’s markets, to name a few example applications. The interim public plazas can be constructed for relatively affordably by using heavy or granite planters to define boundaries and furniture features such as benches and tables. However, no matter the level of amenities, all interim plaza need to satisfy ADA/PROWAG requirements.



Curb extension in Austin, TX. Source: City of Austin



Rainbow crosswalk at the Albuquerque 2017 CiQlovía



Demonstration protected bike lane at the 2017 CiQlovía



Mexico City transformed using tactical urbanism.
Source: NACTO

Design Streets (DS) Actions

PROVIDE PEDESTRIAN AND BICYCLE REFUGES AND CROSSWALKS

PREFERRED PEDESTRIAN RAMPS

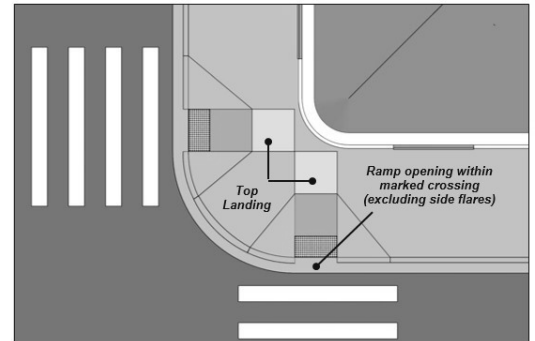
Preferred pedestrian ramp design, per the latest guidance including PROWAG and the latest MUTCD, is the construction of two directional pedestrian ramps as opposed to one ramp for multi-directional crossings. The biggest challenge for one multi-directional ramps are the confusion they often present to pedestrians with vision challenges. Two directional ramps are much clearer in their presentation of desired pedestrian paths. Two directional ramps tend to push crosswalks upstream/downstream of the intersection, which should provide more separation of pedestrians from turning vehicles. Larger municipalities within the AMPA are heading toward this style of design. Therefore, it is important to formalize/standardize this approach to pedestrian ramp design at the Small Urban, Rural, and Tribal level. This design approach is usually included in complete streets design standards and should be included in future designs.

MEDIAN REFUGES

Pedestrian median refuges should be incorporated into designs of larger intersections where pedestrian crossings are long. An inclusion of a median pedestrian refuge will reduce pedestrian exposure to conflicting turning vehicles. Additionally, by providing a pedestrian button within the median refuge, slower pedestrians do not necessarily have to make it across the entire approach in one phase. *Per FHWA's Medians and Pedestrian Crossing Islands in Urban and Suburban Areas*, pedestrian medians may provide the following benefits:

- May reduce pedestrian crashes by 46% and motor vehicle crashes by 39% (FHWA 2014).
- May decrease delays for motorists.
- Allow pedestrians a safe place to stop at the midpoint before crossing the remaining distance.
- Has been shown to reduce speeds of vehicles approaching pedestrian crossings (if no raised median currently exists).
- Will increase access management of vehicles (if no raised median currently exists).
- Provides space for supplemental signage on multi-lane roadways.

FHWA guidance recommends that refuge area should be considered on multi-lane roadways with high speeds and a significant mixture of pedestrians and vehicle traffic (more than 12,000 ADT). Refuge areas should be at least 4 feet wide and preferably 8 feet to accommodate pedestrian comfort and safety.



Two Directional Ramps Source:



Wheelchair user in bicycle lane on MLK

Design Streets (DS) Actions

BICYCLE REFUGE

NACTO has also studied and expanded the application to include opportunities for bicycle refuges. Median refuges for bicycles provide protection and visibility for bicycles to cross vehicle lanes in two stages. This provides bicyclists with the following:

- Bicyclist only need to watch one direction of traffic at a time.
- Bicyclists have a better visual vantage of oncoming traffic
- Vehicles now have a better view of and are aware of bicyclist attempting to cross

Candidate sites should be based on high pedestrian crash rates, and the availability of cross-section width to accommodate a raised median to be at least four (4) feet wide. Candidate locations need not be limited to intersection locations, but should also consider mid-block crossings where high pedestrian crash rates have occurred.

RAISED CROSSWALKS AND BULB-OUTS

We have a high pedestrian fatality rate and often drivers are either unaware or ignore the presence of pedestrians. Therefore, raised crosswalks could be introduced at highly sensitive areas such as schools and community centers, which would provide two primary benefits:

- Increased visibility of crossing pedestrians for vehicle traffic, which can result in a reduced speeds and increased yield compliance.
- Raised crosswalks also act as a speed hump, which would encourage speed reduction within the vicinity of a school or other sensitive area.

Additional mitigations measures may include bulb-outs (also called curb extensions). Bulb-outs provide a shorter crossing distance minimizing the pedestrian's exposure to traffic and increase the presence of the crosswalk within the roadway. Additionally, the bulb-outs effectively narrow the roadway, thus encouraging reduced vehicular speeds along low compliance roads and pedestrian sensitive areas. The CMF Clearinghouse website indicates safety studies show the installation of raised crosswalks can reduce all injury crash type by 30 to 36% and pedestrian/vehicle crashes by 45%.



HAWK signal with median refuge for pedestrians and bicyclists in Tucson, AZ



Raised Mid-Block Crossing Source: NACTO

Design Streets (DS) Actions

ENHANCE MID-BLOCK CROSSINGS

Many uncontrolled crossings present pedestrians with increased exposure and risk for pedestrian/vehicle conflicts, which in turn increases the risk for crashes. Vehicle speeds tend to be higher at midblock locations, which tend to lead to more severe crashes at these locations. A pedestrian hybrid beacon (High Intensity Activated Crosswalk or HAWK) is an option that reduces these mid-block crash risks. Per the FHWA guidance, HAWKs can provide a 69% reduction in pedestrian crashes and a 29% reduction in overall crashes. HAWK signal installations should always be accompanied by a marked crosswalk and should be used at mid-block locations where available gaps to cross are not adequate. The latest MUTCD provides guidance and warrant threshold on when and where a HAWK facility should be constructed.

Also, FHWA identified median and pedestrian crossing islands in urban and suburban areas as a proven safety countermeasure. Raised medians reduce pedestrian crashes by 46% and pedestrian crossing islands reduce pedestrian crashes 56% (FHWA). Additional information and guidance can be found here: http://safety.fhwa.dot.gov/provencountermeasures/ped_medians/

LOCAL HAWK SIGNALS/PEDESTRIAN HYBRID BEACONS

Currently the AMPA has two HAWK facilities in operation: One at Lomas Boulevard and Alvarado Drive and one at Isleta Boulevard and Mcewan Ct/Perry Rd. Our field observations at the Isleta

Boulevard facility indicated that many drivers are not sure how to negotiate these facilities. Further education is needed for motorists on how these facilities operate. Again, high mid-block pedestrian crash locations should be reviewed and a potential candidate list should be made. The most promising locations should be studied and demand data should be collected and compared to MUTCD warrants before recommending the installation of a HAWK. When warrants for a HAWK signal are not satisfied, but pedestrian activity is still prevalent, midblock crossing treatments can include many elements to enhance safety. These could include the following:

- A median refuge to promote two stage pedestrian crossing and to reduce vehicle speeds
- Stop or yield lines in advance of mid-block crossing
- Removal of any visual obstructions at pedestrian crossing entry
- Pedestrian bulb-outs to reduce crossing exposure
- Raised crosswalks at sensitive locations such as near parks or schools

Additionally, FHWA identified pedestrian hybrid beacons as a proven safety countermeasure by providing a 69% reduction in pedestrian crashes, 29% reduction in total crashes, and 15% reduction in serious injury and fatal crashes (FHWA). Additional information can be found here: http://safety.fhwa.dot.gov/provencountermeasures/ped_hybrid_beacon/



New Danish crossing on San Pedro crossing at Summer. It provides an easy and safer way for both bicyclists and pedestrians to cross midblock.



HAWK Signal on Isleta Boulevard in Bernalillo County

Design Streets (DS) Actions

LOCAL LEDS

Currently, there are two of these installations in the AMPA. One located on Sunset Road SE at Yakima Road operated by Bernalillo County and one is at the Los Lunas Rail Runner Station operated by NMDOT. Both were installed to provide pedestrians a safe, non-intrusive, and state of the art crosswalk experience.

BUILD WIDER SIDEWALKS AND WALKWAYS

As business activity increases, it becomes more important to have wide sidewalks for safe movement. Sometimes wider sidewalks are difficult because of a lack of right of way, but some type of buffer between pedestrians and fast moving traffic can also be created by adding planting strips, bicycle lanes, or even paint along the edge of the street that narrows vehicular travel lanes.



New wider sidewalks and pedestrian scale lighting on Central Avenue in Nob Hill added during ART construction

WALKWAYS

FHWA identified walkways as a proven safety countermeasure. Sidewalks can reduce crashes involving pedestrians walking along roadways by 65-89% and paved shoulders can reduce crashes involving pedestrians walking along roadways by 71% (FHWA). Additional information can be found here: <https://safety.fhwa.dot.gov/provencountermeasures/walkways/>

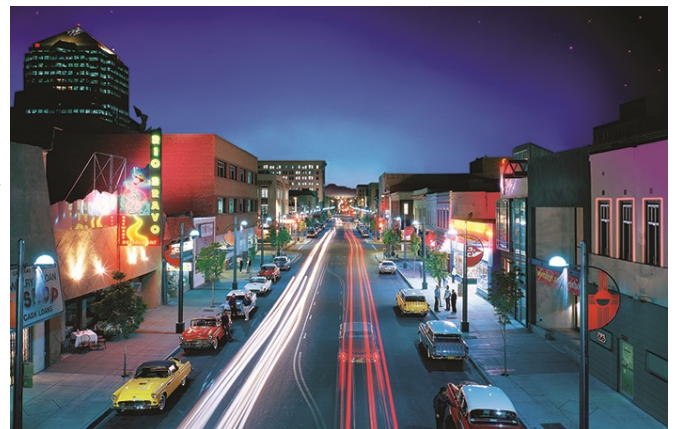
INCREASE PEDESTRIAN-SCALE LIGHTING

As demonstrated in the 2011-2015 crash data, almost 67% of all pedestrian crashes occur under dark “not-lit” or dark “lit” conditions. It is recommended that pedestrian crossing locations and intersections should be reviewed for lighting levels. Specifically, lighting should provide illumination for crosswalks, pedestrian crossing locations, and pedestrian crossing entries. In addition, this report has a map of showing low income communities or families with fewer or no cars per household. It is recommended that local jurisdictions target these areas where they overlap with intersections that have high pedestrian crash rates.

ENHANCE SIGNALIZATION FOR PEDESTRIANS

SIGNALS AND SIGNAL TIMING

Modifications to signal timing can be used to better accommodate pedestrians, transit vehicles or bicyclists. For example, walk signal times can be changed to allow slower walkers, including the elderly, to cross the street in one cycle. Planning for these users requires calculating walks times based on average pedestrian speed of 3.0 to 3.5 mph. Waiting times can also be reduced in high volume pedestrian areas.



Source: New Mexico Mainstreet—Downtown Albuquerque

INSTALL FLASHING YELLOW ARROW

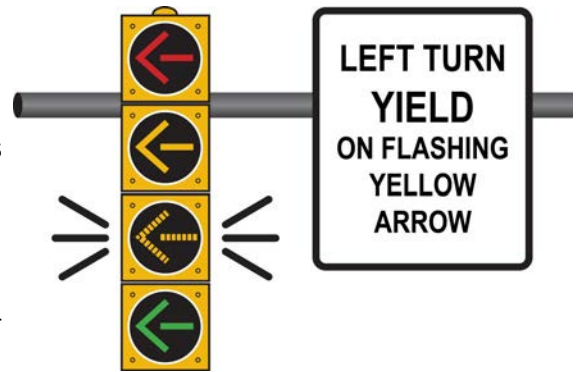
Signalized intersections with permitted left-turns is one of the greatest risks to pedestrians. Permitted left-turn vehicles generally are focused on oncoming traffic to assess and choose a safe gap in traffic to complete their left-turn. However, pedestrian walk phases are usually occurring concurrently with an adjacent permitted left-turn phase. Most of the

Design Streets (DS) Actions

time left-turn vehicles are not watching nor anticipating pedestrians to be in the crosswalk because their attention is drawn to gap acceptance in the oncoming traffic. This tends to lead to either a pedestrian crash or (if the left-turn vehicle does happen to see a pedestrian at the last minute and stops) a vehicular angle crash.

PERMITTED LEFT-TURN PHASING

Many communities are moving from the traditional five-section head to a four-section head with flashing yellow arrow for permitted left-turn phasing. The original impetus for this was to remove the confusion and risk from what is known as the “yellow trap” that arises with the traditional permitted left-turn on “green ball.” However, the use of a flashing yellow arrow can be applied to mitigate the pedestrian-permitted left-turn vehicle conflict described above. Due to the difference in wiring and current controller capabilities for logic programming, the flashing yellow arrow should be programmed to delay the permitted phase for the vehicle if a pedestrian call has been made thereby eliminating the left-turn conflict. If no pedestrian button call is made or the pedestrian crossing phase terminates, the permitted flashing yellow phase can be operated. Eventually, it is likely that the MUTCD will require that all permitted phasing operate with the yellow flashing arrow indication. In the meantime, high pedestrian crash locations, especially involving left-turning vehicles, should be identified as candidate locations for pilot deployments. Before and after studies should be conducted to determine safety and operations impacts.



Source: Virginia Department of Transportation

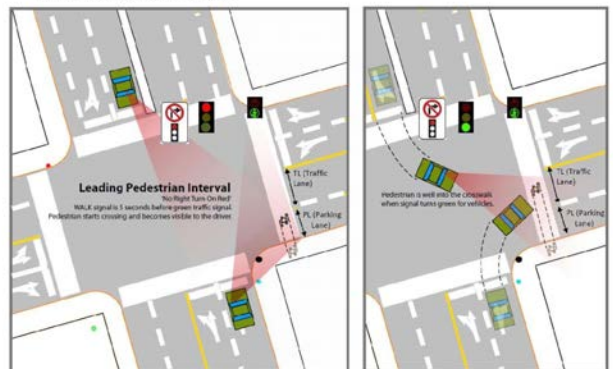
YELLOW CHANGE INTERVALS

Yellow change intervals were identified by FHWA as a proven safety countermeasure, which can result in 36-50% reduction in red light running, 8-14% reduction in total crashes, and 12% reduction in injury crashes (NCHRP Report 731). Yellow change interval is the length of time that the a traffic signal has the yellow indication. Too short of a yellow interval can result in vehicles not having enough time to stop or red light running. Additional guidance on this safety countermeasure can be found here: https://safety.fhwa.dot.gov/provencountermeasures/yellow_xhg_intervals/

PROVIDE LEADING PEDESTRIAN INTERVALS/NO RIGHT TURN ON RED (RTOR)

Another signal design tool that would provide added pedestrian safety and protection at signalized intersection crossings are leading pedestrian intervals (LPIs). LPIs essentially give pedestrians a head start before cars enter an intersection. It gives a pedestrian an opportunity to get into the crosswalk prior to right-turning vehicles entering the crossing area. LPIs can further be augmented by a right-turn arrow, which would restrict right-turns on red to minimize vehicle-pedestrian conflicts. The leading pedestrian interval essentially provides pedestrian visibility for those dangerous right-turn/pedestrian conflicts at signalized intersections. This effort would be relatively inexpensive and should be deployed at signalized locations with heavy pedestrian crossing demands. According to a Transportation Research Board study, Safety Effectiveness of Leading Pedestrian Intervals by a Before-After Study with Comparison Groups, it has been shown that LPI's have reduced pedestrian-vehicle crashes by as much as 60% (FHWA 2017). According to FHWA, LPIs should be implemented in conjunction with no RTOR. Other strategies include part-time no RTOR during busiest times of day with

LPI Operation Source: Transportation Research Board



Design Streets (DS) Actions

high pedestrian volumes. Additional info can also be found here: http://safety.fhwa.dot.gov/provencountermeasures/lead_ped_int/

INCREASE PEDESTRIAN SIGNAGE

PEDESTRIAN YIELD AND RIGHT-OF-WAY

Many drivers disregard pedestrians in the crosswalk. This is an issue that came up in both workshops and was witnessed during field visits. The MUTCD developed several signs that can be deployed to instill in motorists' minds that pedestrians have the right-of-way when crossing the street. The current MUTCD provides a series of signs telling drivers where to yield or stop and per state law, vehicles must yield to or stop for pedestrians in the crosswalk. Additionally, the latest MUTCD has added pedestrian yield signs that directly address conflicts between permitted left-turn and right-turn on red movements. The signs essentially remind the turning vehicles that they must watch for and yield to crossing pedestrians and are designated as R10-15. Variations on this sign include arrows pointing to the left instead of right and the yellow background can be substituted with iridescent yellow.

ENHANCE SIGNALIZATION FOR BICYCLISTS

BICYCLE DETECTION AT SIGNALIZED INTERSECTIONS

Currently, there are very few intersections that provide bicycle detection at signalized intersections. This is a crucial safety issue especially at designated bicycle routes, which encourage bicyclists to cross signalized intersections. Detection at signalized intersections will typically only detect vehicles. However, if a bicyclist is the only vehicle type on an approach, there will not be a detection call sent to the controller for the bicyclist to receive a green light, which could increase risky behavior from a bicyclist such as attempting to cross the intersection without a green phase.

Prioritizing Locations

Initially, it is recommended that bicycle routes be reviewed and locations where routes cross signalized intersections be considered for bicycle detection. At the very least, bicycle

buttons, which allow a bicyclist to push a button to receive the green phase should be installed. It should be noted that if this method is opted for, the bicycle buttons should be signed for bicyclists.



Turning Movements at Central and San Mateo



It's The Law Signage on Central and 8th Street

Design Streets (DS) Actions

It was noted in our field visits that many bicycle buttons were accompanied by pedestrian button signs, which is confusing for bicyclists and pedestrians. Ultimately, the goal would be to eventually have bicycle detections at all signalized locations with bike lane facilities. With the installation of bicycle detection, it is recommended that minimum green times be adjusted for all bicycle calls to allow enough time for a bicyclist to safely clear the intersection. Currently, minimum green times are set to accommodate minimum clearances of drivers in vehicles, which have quicker acceleration and operating speeds than a bicyclist. Bicycle detection can be accommodated by a variety of methods, including video, radar, and loop detection.

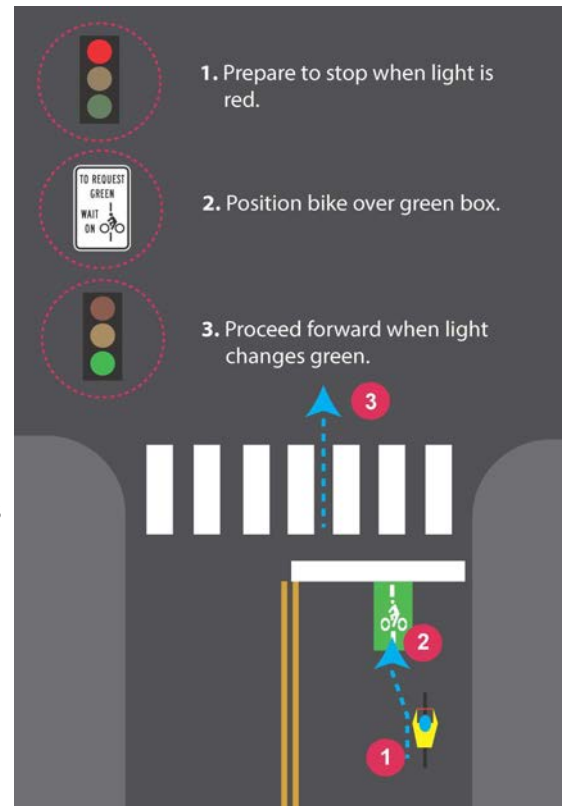
CONDUCT A BICYCLE SIGNAL PILOT PROJECT

Bicycle signals are another option at locations where bicycle routes cross signalized locations. A bicycle signal has a signal indication specifically for bicycles where the green phase would be provided for bicyclists separate from vehicles to avoid right-turn/bicycle conflicts and right-turn on red would be prohibited. Currently, the City of Albuquerque is considering bicycle signals along Zuni Road, which will provide a good initial project where lessons learned should be applied to future deployments. It is recommended that a study be performed identifying potential bicycle signal pilot project candidates. Candidates would ideally be locations with bike routes or bike lanes on the approaches and where higher incidences of bicycle crashes have occurred. In the field, the team reviewed two locations that should benefit greatly from this type of deployment (Indian School/University and Eubank/Chico). An excellent source for designing bicycle signals can be found in the Urban Bikeway Design Guide published by the National Association of City Transportation Officials (NACTO). It should be noted that if bicycle signals are not set to recall, bicycle detection discussed in the previous section should be included in any bicycle signal installation.

EXPAND SEPARATED BICYCLE INFRASTRUCTURE

PROTECTED BICYCLE LANES

Protected bike lanes are quickly becoming the preferred type of bicycle facility because they provide additional comfort and feel safer for all users. They offer additional buffering for bicyclists from vehicular traffic through the use of planters, curbs, parked car areas and/or some type of vertical barrier. With this physical vertical barrier dividing bicyclists and vehicle traffic, crash risks and severity for bicyclists decrease. There are opportunities to plan and implement protected bicycle lanes along corridors where road diet projects are being considered. Therefore, any road diet project should consider including protected bicycle lanes in their design plans, especially along identified bicycle routes. More people are bicycling with the increase of protected bicycle lanes.



Source: City and County of Denver



Bicycle Push Button from Davis, CA. Source: NACTO

Design Streets (DS) Actions

BUFFERED BICYCLE LANES

Bicycle buffers, especially on higher speed facilities, is an opportunity to provide bicyclists with additional separation from fast moving vehicles, thus reducing the risk for vehicle/bicycle conflicts. Providing this type of infrastructure could encourage more people to bicycle. A bicycle buffer was added to an existing bicycle lane on Lead Avenue—this simple addition of striping narrowed the travel lane and can make bicycling here more comfortable. Bicycle buffers are now a common feature of current “best practice” in complete streets design. Additionally, the current Manual on Uniform Traffic Control Devices (MUTCD) allows for buffered bike lanes and guidance for bicycle buffers can also be found in NACTO’s Urban Bikeway Design Guide.

Local Examples

Some bicycle buffers have already been installed at locations within the AMPA. One of the more recent installations was the bicycle striping project constructed along Dr. Martin Luther King Boulevard Jr. from Broadway to I-25. This project included bicycle buffers, bicycle lanes delineated with green “paint,” and bicycle boxes. If separated or protected bicycle lanes are not feasible, buffered bicycle lanes should be considered as a feature to incorporate on future roadway construction. An initial review of high speed corridors with bicycle lanes should be reviewed to identify candidates for the addition of protected or buffered bicycle lanes. Candidate locations should consider the following, per the NACTO Urban Bikeway Design Guide:

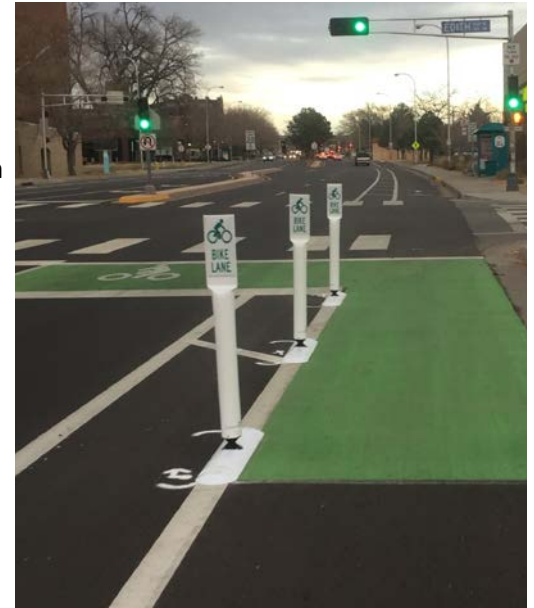
- The location should have standard bike lane markings
- Corridors with high travel speeds, heavy traffic demands, and/or large proportions of truck traffic
- Corridors with extra lanes or lane width
- Corridors that are candidates for road diets

CYCLE TRACKS

Cycle tracks are on-street bicycle facilities that replicate some characteristics and experience of a multi-use trail. The common elements of cycle tracks are the following:

- Provide space exclusively or primarily used for bicycles,
- Separated from motor vehicle travel lanes, parking lanes, and sidewalks,
- Located to the curb-side of the parking (in contrast to bike lanes).

Cycle tracks can vary from one-way to two-way operation and can be divided from vehicular traffic by striped buffers or protected with barriers as will be discussed in the Protected Bicycle Lane strategy section of this report. Often cycle tracks incorporate different pavement color or texture to visually set it apart for adjacent drivers. However, it should be noted that bi-directional cycle tracks are not best practice in urban environments. The Netherlands, Denmark, and



Martin Luther King Jr. Avenue



Protected Bike Lane in Arlington, VA. Source: City of Arlington

Design Streets (DS) Actions

Italy have recommended against bi-directional cycle track. FHWA identifies the two-way bike lane as a practice to be avoided for a number of reasons in their course on Pedestrian and Bicycle Transportation. In some places they are very successful, but they just need to be done carefully with a full review of potential conflicts.

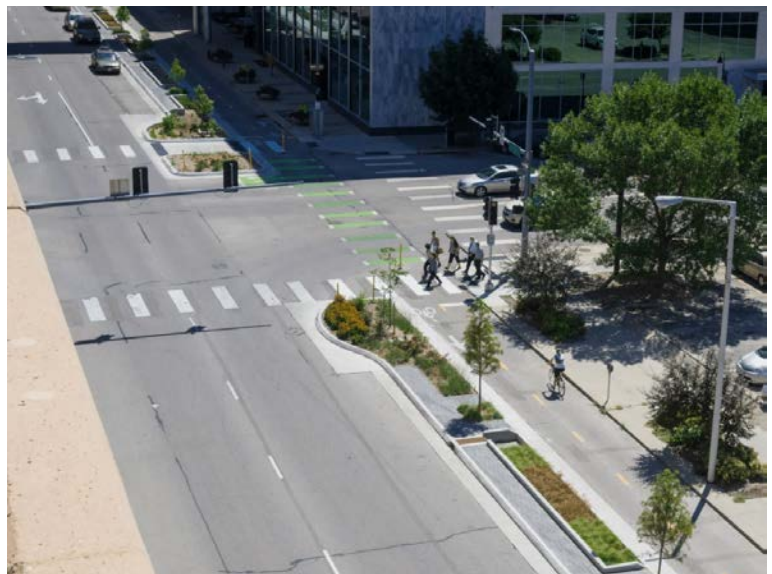
TWO-STAGE TURN QUEUE BOXES AND BIKE BOXES

A bike box helps provide motorists better visibility of bicyclists and it also enables a bicyclist a safer option from turning left within a roadway. A two-stage bike box provides a striped out area (usually with green colored pavement) in front of vehicle stop lines at signalized intersections. This allows a cyclist to cut to the front of the vehicle queue providing greater visibility to motorist and giving them a greater chance of safely traversing the cross-street during the provided green signal phase. Bike boxes have already been successfully deployed in the City of Albuquerque along Martin Luther King Boulevard from I-25 to Broadway Boulevard and at 5th Street and Marquette NW.

Bicycle boxes should be expanded to other roadways with bicycle lanes and high bicycle travel demand. Additionally, some communities have also taken the same bike box idea, but have moved them into the intersection specifically for bicycle left-turn demands. This striping treatment provides cyclists with an area that increases visibility for both vehicles behind



Parking and Bike Share Protected Lane in New York



Two-way cycle track in Lincoln, NE Source: Alta Planning and Design



Bike box Source: NACTO

and oncoming vehicles, so that a safer left-turn maneuver can be made by bicyclists. Additionally, this striping treatment provides bicyclists with a safer area to queue for left-turns. The striping better separates left-turn bicyclists from bicyclist wanting to go straight through the intersections. These types of treatments should be installed at locations where a large left-turn bicycle demand has been documented and roadway speeds limits and vehicle demands are greater.

Design Streets (DS) Actions

PROVIDE PEDESTRIAN/BICYCLE CROSSING GATES AT AT-GRADE RAILROAD CROSSINGS

Crossing gates for vehicular traffic are common at at-grade railroad crossings, but they are less common for pedestrian/bicycle crossings. Just like vehicular crossing arms, pedestrian/bicycle crossing arms are activated and dropped during a train event. Rio Metro recently completed the *NMRX Grade Crossing Pedestrian & Bicyclist Safety Study*, which considers various treatments, including crossing gates, at pedestrian/bicyclist crossings of the New Mexico Rail Runner Express tracks. A copy can be found on Rio Metro's website by following this [link](#) or search for "NMRX Grade Crossing Pedestrian & Bicyclist Safety Study. Safety Devices, Crossing Evaluation Form and Standard Applications Toolbox" at www.riometro.org/



Acequia Trail crossing in Santa Fe Source: Rio Metro

MAINTAIN ROAD STRIPING

When lane and roadway striping is faded, roadway users could have a difficult time staying within their designated lane of traffic or following the rules of the road. Pavement markings and roadway striping also serve as a traffic control device, so ensuring a scheduled maintenance program to maintain this infrastructure is important.

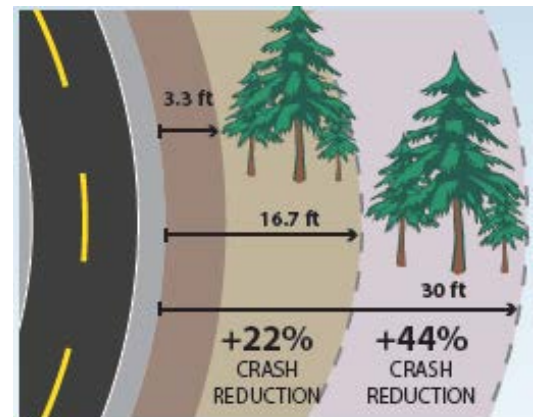
USE FHWA IDENTIFIED SAFETY COUNTERMEASURES

ROADSIDE DESIGN IMPROVEMENTS AT CURVES

FHWA identified safety countermeasures for roads with horizontal curves where data indicated there's a high-risk for roadway departure fatalities. For roadway departure crashes, FHWA recommends creating a clear zone, flattening the side slope, and adding or widening shoulders. Of course, not all roadside hazards can be cleared or removed, so other solutions for interventions at curves include cable barriers, guardrail, and/or concrete barriers. According to FARS, 27% of all fatal crashes occur at curves and 80% of all fatal crashes at curves are roadway departures (Fatality Analysis Reporting System). Additional Information can be found here: https://safety.fhwa.dot.gov/provencountermeasures/roadside_design/

ENHANCED DELINEATION AND FRICTION FOR HORIZONTAL CURVES

Enhanced delineation and friction for horizontal curves is also an FHWA identified proven counter measure to reduce crashes at curves. Chevron signs can reduce nighttime crashes 25% and reduce non-intersection fatal and injury crashes 16% (CMF Clearinghouse). A high friction surface treatment can have a 52% reduction in wet road crashes and a 24% reduction in curve crashes. Additional guidance can be found here: https://safety.fhwa.dot.gov/provencountermeasures/enhanced_delineation/



Clear Zones. Source: FHWA

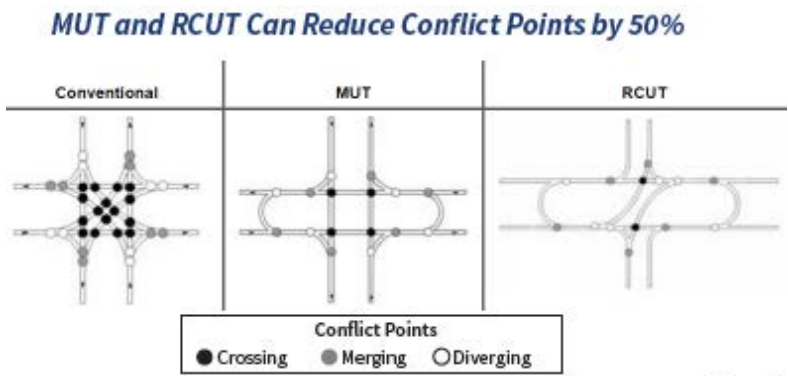
Design Streets (DS) Actions

REDUCED LEFT-TURN CONFLICT INTERSECTIONS

FHWA identified reduced left-turn conflict intersections as a proven safety countermeasure. This countermeasure is a geometric design that simplified how left-turn movements occur to minimize the crash risk. The restricted crossing U-turn (RCUT) can reduce injury and fatal crashes by 54% (Edara et al. 2013). Another option is the median U-turn (MUT), which has a 30% reduction in intersection related injury crash rates (FHWA 2014). Additional information on the design countermeasures can be found here: https://safety.fhwa.dot.gov/provencountermeasures/reduced_left/

LONGITUDINAL RUMBLE STRIPS AND STRIPES

Longitudinal rumble strips and rumble stripes are both an FHWA proven safety countermeasure. Center lined rumble strips can reduce head-on, opposite-direction, and sideswipe fatal and injury crashes 44-64% and shoulder rumble strips can reduce single vehicle, run-off-road fatal and injury crashes by 13-51% (NCHRP Report 641). These design interventions can alert drivers through vibration and sound if a driver is crossing the center travel lane or veering off the side of the road. Additional guidance can be found here: http://safety.fhwa.dot.gov/provencountermeasures/long_rumble_strip/



Source: FHWA

MEDIAN BARRIER

FHWA identified median barriers as a proven safety countermeasure, which can result in 97% reduction in cross-median crashes (NCHRP Report 794). Median barriers are longitudinal barriers such as cable, concrete, or beam guardrails that separate opposing lanes of traffic on a divided highway (FHWA) 2017). Additional information and guidance can be found here: http://safety.fhwa.dot.gov/provencountermeasures/median_barrier/

SAFETYEDGE_{SM}

SafetyEdges_{sm} is an FHWA proven safety countermeasure, which can result in an 11% reduction in fatal and injury crashes (FHWA). This technology shapes the edge of pavement, which eliminates a vertical drop, so that if vehicles veer off the side of a roadway they are able to safely return to the roadway. Additional information and guidance can be found here: http://safety.fhwa.dot.gov/provencountermeasures/safety_edge/

BACKPLATES WITH RETROREFLECTIVE BORDERS

A blackplate can be added to traffic signals to provide enhanced visibility during both the daytime and nighttime. This low-cost intervention is an FHWA identified safety countermeasure, which can result in a 15% reduction in total crashes (CMF Clearinghouse).

SYSTEMIC APPLICATION OF MULTIPLE LOW-COST COUNTERMEASURES AT STOP-CONTROLLED INTERSECTIONS

This is another safety countermeasure identified by FHWA, which can lead to a 10% reduction in injury and fatal crashes and 15% reduction in nighttime crashes (FHWA 2017). These low cost countermeasures include deploying enhanced signing and pavement markings at stop controlled intersections, which is meant to increase driver awareness (FHWA 2017). Additional information can be found here: https://safety.fhwa.dot.gov/provencountermeasures/syst_stop_control/

Design Streets (DS) Actions

UTILIZE CRASH MODIFICATION FACTORS (CMF) IN LOCAL DESIGNS

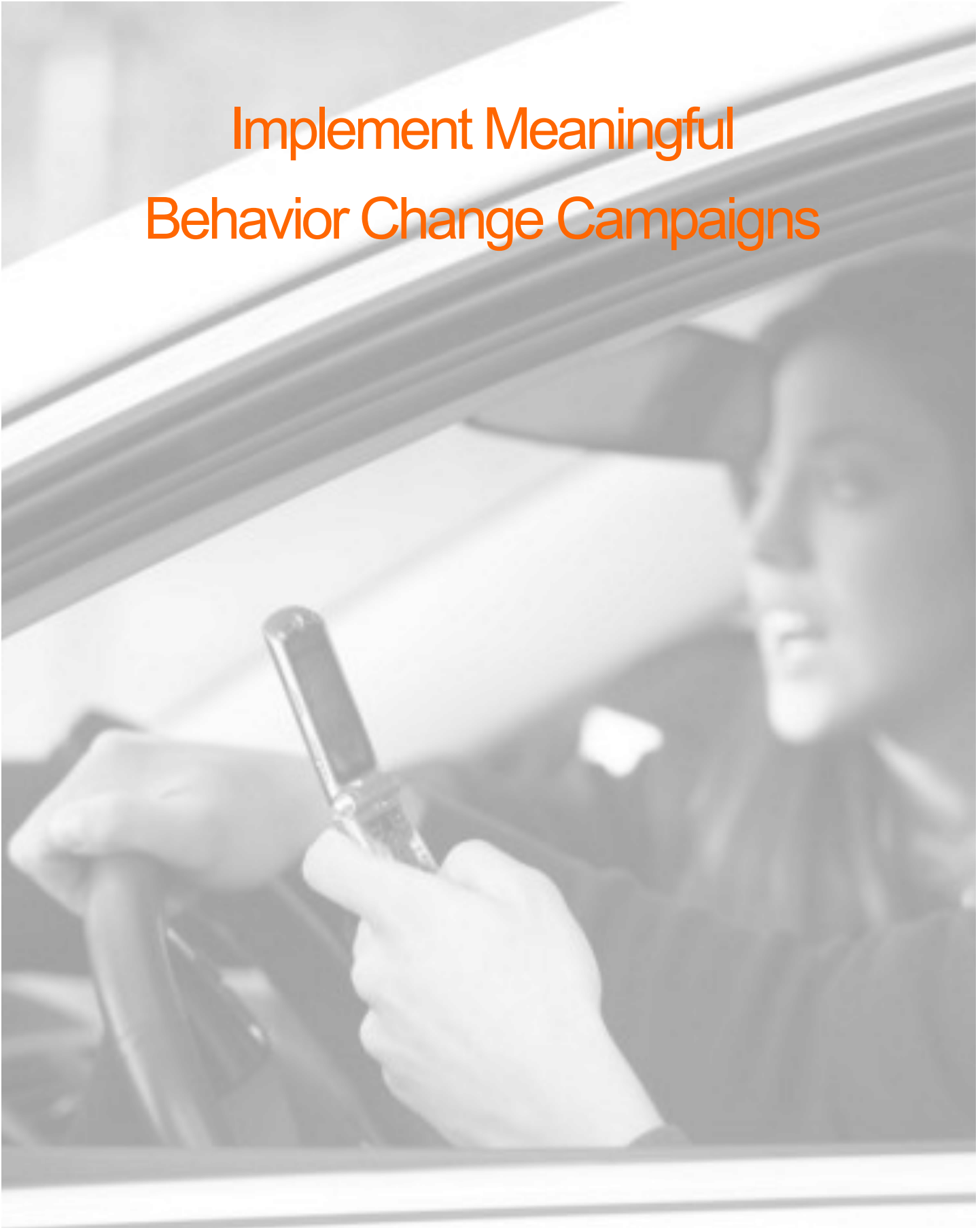
Utilizing crash modification factors (CMF) when redesigning roadways is an easily accessible and proven safety intervention. CMFs are used to compute the reduction of crashes with certain types of design interventions. For example, if an intersection is experiencing a certain type of crash like rear-end or angled crashes, a specific design countermeasure provides a factor by which to multiply the reduction of crashes per year after the redesign. The online portal for this information contains a trove of readily available information for transportation professionals. The CMF Clearinghouse is searchable, continues to add new measures, and also provides trainings and publications. Local agencies can also submit their own studies for inclusion. Here is the link: <http://www.cmfclearinghouse.org/>

UTILIZE FOUR-WAY STOPS WHERE APPROPRIATE

When two intersecting roadways have approximately the same volume of traffic, a four-way stop can be used as a safety intervention. According to FHWA, four-way stops should be used with caution, however, there are circumstances where four-way stops are good candidates (FHWA 2009). Some conditions include locations when there have been at least five (5) crashes at the intersection in a year, the location generates high pedestrian crossing volumes, or there are sight line issues that don't allow one leg of the intersection to see crossing traffic. In some cases, the utilization of four-way stops can also improve the operation of the intersection. One example of safety improvements comes from Philadelphia where signals were replaced with four-way stops at locations where one-way streets converged. Their analysis showed that the stop signs led to a 24% reduction in crashes and that crashes involving pedestrians decreased by 17%. (Simpson, Hummer 2010).



Source: FHWA



Implement Meaningful Behavior Change Campaigns

Implement Meaningful Behavior Change Campaigns

Limiting excessive speed and aggressive driving could go a long way toward reaching zero, but design alone cannot solve this problem. Another critical piece are attitudes and behavior of people on our roadways. Often the media (and crash reports) places the blame on a pedestrian or bicyclist hit by a vehicle -there is an inherent assumption that a pedestrian or a bicyclist in a crash is at fault because they were not where they were supposed to be. However, this idea of “victim blaming” was not always the norm and arose with the last 60 plus years of designing streets for cars and not for people.

As mentioned previously, streets used to be places for people and social encounters – it was also very common for kids to play in the street. When cars were introduced, the public viewed them as death machines because thousands of children and people were being maimed and killed by people driving cars (99 percent invisible, 2013). In the early 20th century, the term “jay” was an insulting term used to identify someone from the country and ignorant of urban niceties (Mangla, Ravi, 2015). However, before there was the stigma associated with the term “jay walking” there were “jay drivers,” which appeared in a 1907 Albuquerque Evening Citizen that read “Jay Drivers Imperil Life Each Hour in Albuquerque” (Mangla, 2015). The derogatory term of “Jaywalking” was coined by Motor-dome, a group of automotive interests, that successfully shifted people’s perceptions that streets were for cars and the people who got in the way were at fault.

It turns out, everyone behaves badly at about the same rate. A recent study in Florida shows that during daytime hours, bicyclists were in compliance with traffic laws 88% of the time and drivers were slightly lower at 85%.

Today, we still hold these attitudes and in turn behavior toward blaming pedestrian and bicycling victims prevails. Many of the observed safety issues that continuously come to the forefront each year are issues related to driver behavior. In MRCOG’s Bike to Work Day Survey Results for both 2016 and 2017, driver behavior (aggressive behavior, inattention, speeding, and running red lights) was identified as the number one reason for feeling that bicycling in Albuquerque was “getting worse.” Similarly, aggressive, distracted, and impaired drivers accounted for a majority of crashes occurring from 2011 – 2015.

Promoting a culture of safety and implementing behavior change campaigns is a Vision Zero emphasis area. This critical piece is meant to alter prevailing driver attitudes and in turn behaviors toward other roadway users – especially pedestrians, bicyclists, and transit riders. Another important facet of behavior campaigns is to focus on younger drivers in order to change future driver attitudes and behavior for years to come.

THE need for vigorous action to prevent more and highway safety has prompted Secretary Hoover to call a conference of representatives of the various agencies interested in checking the steadily increasing in vehicular accidents. The conference will be held in Washington on Dec. 18. It will cover the subject from every angle, including statistics, traffic control, construction and engineering, city planning and zoning, insurance, education and the motor vehicle and public relations.

THE reason of the report is to bring attention to the fact that the automobile is a far more destructive power of destruction than the machine gun. The automobile industry does not seem to be concerned. The reason is the fact that the automobile industry is the only one in the world that is not controlled by the government. The automobile industry is the only one in the world that is not controlled by the government. The automobile industry is the only one in the world that is not controlled by the government.

A conference called by Secretary Hoover for next month will consider the automobile from every angle and highway safety. A conference called by Secretary Hoover for next month will consider the automobile from every angle and highway safety. A conference called by Secretary Hoover for next month will consider the automobile from every angle and highway safety.

Secretary Hoover's Conference Will Suggest Many Ways to Check The Alarming Increase of Automobile Fatalities.—Studying Huge Problem



made known last night by newspaper. The large number of deaths caused by automobiles is the subject of a preliminary report prepared by the Committee on Highway Safety, headed by Secretary Hoover. In this subject the report says in part:

"The accident loss due to these automobiles is 100,000 accidents in which personal injuries are caused every day. The loss of life is also great. The most conservative estimate is that the loss of life is 10,000 per day and average of 100 per day per accident."

"These two facts, applied to 10,000 accidents and 100,000 deaths, indicate that the automobile is a far more destructive power of destruction than the machine gun."

severing them in the actual use of the machine. It is by the use of the machine that the loss of life is so great. The loss of life is so great that the machine is a far more destructive power of destruction than the machine gun. The machine is a far more destructive power of destruction than the machine gun.

"It is usually only when in cases of loss of life that the machine is a far more destructive power of destruction than the machine gun. The machine is a far more destructive power of destruction than the machine gun. The machine is a far more destructive power of destruction than the machine gun."

In events and traffic, however, that would be a sufficient cause who would not such accidents. In fact, the automobile is a far more destructive power of destruction than the machine gun. The machine is a far more destructive power of destruction than the machine gun. The machine is a far more destructive power of destruction than the machine gun.

Source: New York Times, Nov. 23, 1924

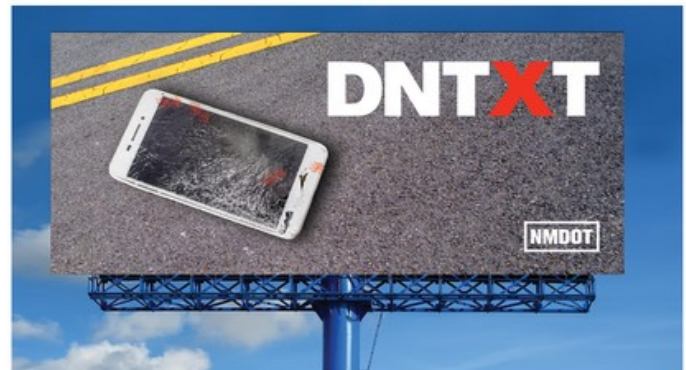
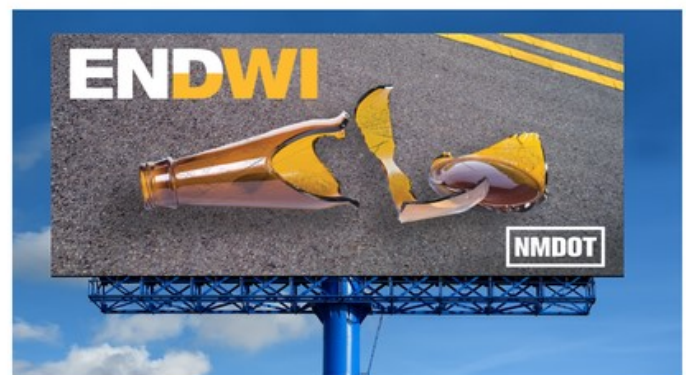
Implement Meaningful Behavior Change Campaigns

American researchers have explored this culture of “victim blaming” when there is a crash involving a pedestrian or a bicyclist. A recent study found that people’s attitudes toward bicyclists can affect what they see. These implicit biases or values and attitudes that people have, but may not be aware of, have an impact on split-second decisions. For example, a driver that bicycles for transportation, may look out for bicyclists on the road. On the other hand, a driver that does not bicycle for transportation and may view that as dangerous behavior, may not look out for bicyclist on the road. There are also implicit (and explicit) attitudes people may have related to gender and/or racial biases. Therefore, people’s attitudes can impact behavior. This is a very simplified explanation of the research, but the key takeaway is it can take time to shift attitudes, but infrastructure improvements that clearly delineate roadway space for different roadway users can help to alleviate tension with other roadway users (Godard, 2017).

Road Safety Campaigns

Research and studies have found that road safety campaigns or public service announcements (PSAs) alone do not have a significant impact on driver attitudes or behavior and do not usually result in a reduction of deaths and injuries. However, a 2004 World Health Organization (WHO) report found that **road safety campaigns intended to change driver behavior were most successful when used in coordination with legislation and law enforcement.** Road safety campaigns working toward increasing seat belt use have been effective such as “Click it or Ticket” and NMDOT’s “ENDWI.” These marketing campaign examples also tied to targeted law enforcement. Other high-profile campaigns that have had an impact, include Superblitz and 100 Days & Nights of Summer traffic safety. Local public comments on this plan indicated a desire for PSAs surrounding the need for drivers to use turn signals, drivers should not change lanes in the middle of intersections, and why safe driving matters.

During two RTSAP workshops with stakeholders, one of the most common themes was that drivers lack a basic understanding of the rules of the road. Specifically, drivers do not understand rights of way for pedestrians and bicyclists and the associated respect for these more vulnerable roadway users.



Source: NMDOT



Source: Chainbreakers in Santa Fe

53% of Fatal Crashes are Alcohol / Drug Involved as the Top Contributing Factor (TCF).

59% of Fatal Pedestrian crashes are Alcohol/Drug Involved and 54% of Fatal Motor Vehicle crashes are Alcohol/Drug Involved.



Source: MN Department of Public Safety.

Young Drivers

Another important facet of behavior campaigns is to focus on younger drivers in order to change future driver attitudes and behavior for years to come. Research has consistently found that **mass media campaigns are more effective when they target specific groups – not targeting the entire population.** In our region, drivers ages 20 to 34 years old are involved in more crashes (including bicycle crashes) than any other age group and males are also more commonly involved in crashes. **This age group accounts for 35.5% of fatal and injury crashes and around 23% of the population (2016 ACS data) in the region.** So, an effective campaign toward behavior of young adults from age 20-34 implemented in conjunction with targeted law enforcement could have the best results.

Alcohol / Drug Involvement

Alcohol / drug involved, as a top contributing factor (TCF), is a serious issue for all modes of travel. **Alcohol or Drug Involved has resulted in 247 people being killed or seriously injured, which is 55% of the fatalities and serious injuries from 2011 to 2015.**

Although, the numbers are slightly higher for alcohol/drug involvement in fatal crashes for pedestrians, pedestrians do

not bear this burden alone. **The percent of alcohol/drug involved fatalities for drivers is only a 5% difference.**

Of total crashes, only 4% are Alcohol/Drug Involved as the TCF, but for fatal crashes they are 53% of the total. The next highest danger for people is dangerous driving, which leads to a quarter of all the fatalities. However, if you look at both fatalities and all types of injuries, Dangerous Driving is the TCF for 69% of crashes and Alcohol/Drug Involved is 59%. As a region, we need to address how to decrease, fatalities in particular, but also the many serious injuries that are a result of this behavior.

NMDOT has had some success and put forward some excellent media campaigns to address this issue. Nevertheless, there is still more we can do.

Traveling by Motorcycle

Another important piece is policy in place to allow for law enforcement to target specific behaviors. For example, the RTSAP data revealed high motorcycle crashes with **3% of crashes involving a motorcycle and 24% of fatal and serious injury crashes involved a motorcycle, yet only 0.4% use motorcycles to travel to work.** New Mexico does not have a universal motorcycle helmet law, which would require that all motorcycle riders and their passengers wear a helmet when riding. Any targeted campaign toward decreasing motorcycle crashes and fatal and serious injuries would need to consider policy as well.

Implement Meaningful Behavior Change

Action Items Summary

This list is a snapshot of the action items in this plan under this emphasis area. Behaviors are difficult to change and need to be done in concert with other tactics, yet our society has implemented successful behavior change campaigns. For example, we have seen substantial changes in seatbelt use and significant reduction in the number of people smoking cigarettes despite their addictive qualities. Generally speaking, fewer people engage in drinking and driving and are well aware of the consequences. Other behaviors between pedestrian and bicyclists and drivers can also change. And, more people can learn the rules of the road for all modes of travel. Our understanding of the different types of streets such as roundabouts, bicycle boulevards, pedestrian crossing signals, and shared roads may be slow to change, but has evolved over the last 10 years as we see more of this type of infrastructure. Once upon a time, shared streets were the norm. These action items are geared toward educating our youth and providing a more comprehensive understanding of all modes of travel and their legal rights. Importantly, these strategies rely on plain old common sense and courtesy around the responsibility of driving a car or riding a bike in our largest public space—our roadways.

1. **Provide Road Safety Education at Primary Schools**
2. **Replicate City of Albuquerque Educational Programs**
3. **Develop Roadway Safety Community Centers**
4. **Continue to Develop Multimedia Education Materials**
5. **Promote Pledges around Not Driving Distracted**
6. **Expand Driver Education**
7. **Provide a Multi-Modal Approach to Education**
8. **Expand Public Awareness Campaigns**
9. **Conduct Public Information Meetings on Safety Interventions**
10. **Continue to Develop Educational Materials to Address Impaired Driving**
11. **Develop Educational Materials to Address Speeding**
12. **Develop Educational Materials to Address Speeding**
13. **Continue Ignition Interlock Programs**
14. **Enhance License Revocation and Suspension**
15. **Introduce Safe Driver Apps**
16. **Adopt the Move Over It's the Law Campaign**

Behavior Campaigns (BC) Actions

PROVIDE ROAD SAFETY EDUCATION AT PRIMARY SCHOOLS

Deploying education programs at elementary and middle schools can instill at an early age the importance of pedestrian and bicycle safety. It can help to raise awareness of other roadway users and ideally when these elementary and middle schoolers start driving, they will have a better understanding and respect for people walking, biking, or taking transit. The early education program should also incentivize children to remind parents of the presence of pedestrians and bicyclist in the area. One idea that came from the RTSAP research is to make a game for kids. For example, while children are riding in cars, have them count the number of pedestrians or bicyclists they see. This will train children to look for those types of roadway users. Similar successful approaches have been made in the past related to seatbelt compliance. Additionally, public comment on this plan recommended identifying potential “ambassadors” or survivors of serious crashes that would be willing to visit schools to share their experience. For example, people severely impacted by crashes such as family members of a person killed in a crash or a person who survived a crash could have an impact on school age kids and stress the consequences.

REPLICATE CITY OF ALBUQUERQUE BICYCLE EDUCATION PROGRAMS

The City of Albuquerque has some excellent education programs and materials that could easily be replicated in other entities. These are simple and effective methods to introduce rules of the roadway and make learning about how to be safe fun. Some of these programs are described here:

Bike Rodeo

This free program will teach children how to “drive” their bike through hands-on experience. The lessons learned will help children avoid injuries and follow the rules of the road. This Program provides bikes, helmets, props, and signs.

To participate, organizations must provide at least 15 children, a smooth surface (ex: parking lot or basketball court), and adult supervision. The Bike Rodeo is appropriate for children going into 3rd grade through 6th grade. The Bike Rodeo usually begins with a 45-minute safety presentation. Then, the children are assigned to small groups. Each group will rotate through a 45-minute course outside.

Walk This Way

This program will teach youth how to safely walk through their neighborhoods. The program consists of a 45-minute presentation and is most appropriate for 1st and 2nd graders. Participants must provide a location, preferably a classroom setting, a DVD, TV, and at least 10 children.

Pump it Up

A large number of youth are not able to ride their bikes because their bikes have a flat tire. Pump it Up is a hands on demonstration and practice session that teaches youth how to change a flat tire. This program is most appropriate for middle school youth. Any group interested in hosting any of the above programs can call 505-768-BIKE or 768-5328 for more information.



Source: City of Albuquerque

Behavior Campaigns (BC) Actions

The Walking School Bus

The Walking School Bus is a joint program with the City of Albuquerque and Albuquerque Public Schools. Selected schools are targeted by Albuquerque Public Schools (APS) and the City of Albuquerque helps educate and train both youth and staff on safe walking. The City also assists in the launch of the selected schools' first walking school bus.

DEVELOP ROADWAY SAFETY COMMUNITY CENTERS

Another example that could be added to other community centers is the Esperanza Bicycle Safety Education Center (EBSEC). For senior centers it may be that pedestrian safety is highlighted and seniors are guided on group walks around town to learn more about safety habits. There are many opportunities for expanding on these issues and bringing awareness to what constitutes a safe street design and safe behavior.

This center is located on Central near Old Coors and offers a variety of classes for kids and adults. The Earn-a-Bike program allows members of the community to earn a refurbished bicycle for transportation and recreation. All of these bicycles have been donated to Esperanza by the community and are refurbished by the staff and volunteers of the bicycle center. They include the following courses and programs:

Family Earn-a-Bike

Family Earn-a-Bike allows parents and their children to earn refurbished bicycles. If a parent would like to bicycle with their children to run errands to ride to school, this is a great opportunity.

Build-a-Bike

This program is meant for children 8-13 years old. Children learn to build their own bicycle during a week long class. They will also learn bicycle safety and rules of the road.

Esperanza Cycling Club

This program is for elementary or middle school aged children who have a bicycle, but is in disrepair. It's an opportunity to attend the Walk-In Bicycle Clinic, and staff will help get the bicycle up and running.



Source: City of Albuquerque

Walk-In Bicycle Clinic

Walk-In Bicycle Clinic at the Esperanza Bicycle Safety Education Center is the time when the center is open to the public. During these hours, you can bring in your bicycle to get it back in running shape. The shop will provide you with the use of a repair stand and the needed tools, but you perform the work yourself. If the repair requires more mechanical expertise than you are comfortable performing, the friendly staff at Esperanza will be on hand to offer guidance.

Part 1—City Cycling

Learn to cycle safely in Albuquerque for fitness, commuting, or recreation. Topics include the rights and responsibilities of road users, traffic laws, tips for comfortable riding, and much more.

Part 2—Roadside Maintenance

In this class, staff and participants will discuss and practice flat tire repair and prevention, simple brake and shifting fixes, and other common roadside repairs to get you back on the road quickly.

Behavior Campaigns (BC) Actions

VA Earn-a-Bike

Veterans that are interested in receiving a bicycle are eligible for this program and can earn a bike through a class at the VA Recreation Hall.

Holiday Earn-a-Bike

This program is the same as the earn-a-bike program, but offer during the holidays.

CONTINUE TO DEVELOP MULTI-MEDIA EDUCATION MATERIALS

As shown in the data analysis section, over half of all fatal crashes involved in the AMPA are either alcohol or drug related impairment. NMDOT has already made great strides in tackling this problem from a state-wide perspective with a series of public service announcements via billboard, radio, and television advertisements. This approach along with targeted enforcement can be effective and serve the AMPA in the future. In moving forward, the entities within the AMPA should continue to work with the NMDOT to develop materials and strategies focused on our most vulnerable and impressionable groups of our driving population such as younger drivers, which account for a high proportion of crashes. This continued focus on educating young drivers will help reduce future impaired drivers and hopefully increase the stigma of driving while impaired with future driving generations.



Source: NHTSA

PROMOTE PLEDGES AROUND NOT DRIVING DISTRACTED

Support state, local, and AMPA agency initiatives to implement pledge campaigns that support the elimination of distracted driving. This program is especially needed to combat cellphone use such as talking or texting while driving. These types of campaigns could be especially effective with younger drivers to develop good driving habits at an earlier age. Older drivers should not be ignored, but pledge campaigns may be less effective for these age groups because their driving habits may be harder to change.

EXPAND DRIVER EDUCATION

DEFENSIVE DRIVING COURSES AND ANGER MANAGEMENT EDUCATION

Aggressive driving is often the result of “road rage” or an emotional response to other drivers, bicyclists, or pedestrians using a roadway. Anger management education and education about the rules of the road, and different roadway users should be implemented and required for repeat offenders of aggressive driving and related behaviors, including but not limited to speeding, improper overtaking, red light running, or following too close. This anger management perspective should also be added to the existing defensive driver class program in an effort to not just educate drivers on the rules of the road, but maybe change attitudes toward driving. This approach along with a more driver courtesy/etiquette approach to driver’s education for new drivers could help establish better driver attitudes early.

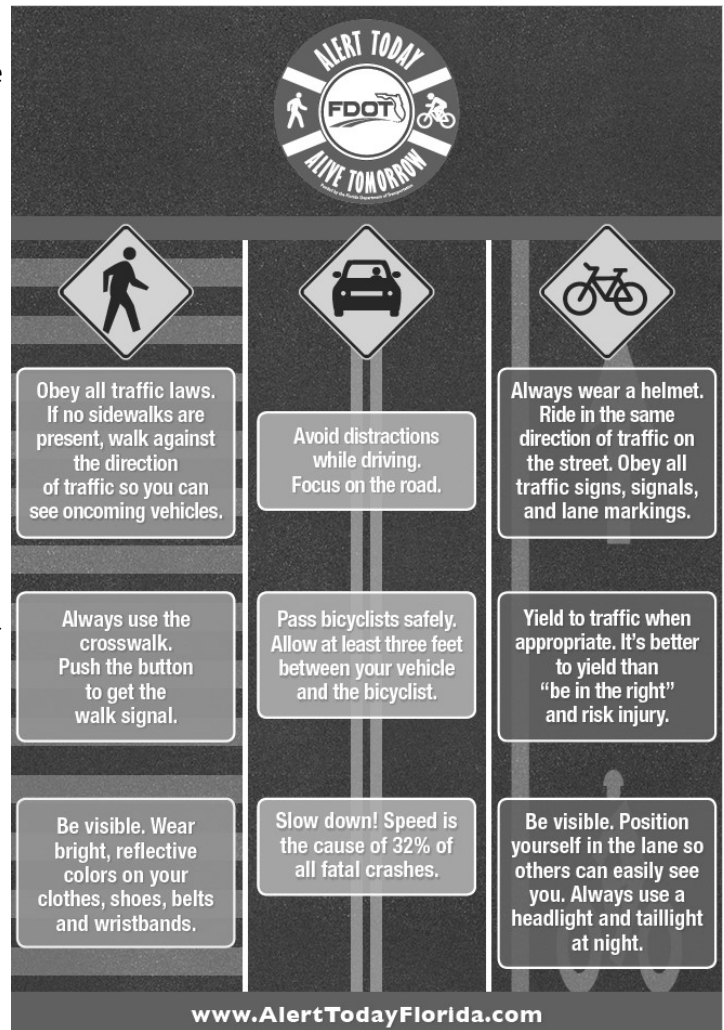
Behavior Campaigns (BC) Actions

PROVIDE A MULTI-MODAL APPROACH TO EDUCATION

Most driver's education is focused on vehicular rules of the road, but few courses reference other roadway users such as pedestrians, bicyclists, or transit riders. A greater focus should be dedicated to understanding the rules and rights of the road for other modes of travel and their interaction with drivers. This would extend from inclusion of pedestrian and bicycle rules of the road in future driver's education manuals to also ensuring the driver's test includes questions and assessments on a driver's knowledge of other modes of transportation. Currently, drivers under the age of 18 must complete a driver's education course that includes 30 hours of classroom lessons and seven (7) hours of behind-the-wheel training or 56 hours of classroom training if no behind-the-wheel training. Expansion of driver's education requirements should include the following:

- Require behind-the-wheel training and eliminate the classroom only option.
- Increase course discussion of pedestrian, bicycle, and transit modes of travel and their "rules of the road."
- Introduce a class topic focusing on driver etiquette and addressing anger management within the driving context.
- Increase requirements of driver proficiency prior to the allowance of taking the driver's test.
- Include topics that cover new or unusual traffic control or lane geometry that a driver may encounter on the streets such as roundabouts, HAWK signal operations, back in angled parking, flashing yellow arrows, railroad crossing turn restriction lights to name a few.
- Require field exercises in which participants must operate a bicycle and learn bicycling and pedestrian rules of the road.

Rules of the road and types of traffic control can change over the course of an adult driver's life. Since rules and traffic control can change, a refresher course should be offered and possibly required on a periodic basis as a contingency for driver's license renewal. This will ensure that drivers are aware of rule changes and new types of traffic control like roundabouts. This sort of training would also be good for local entity's driving courses for their fleet and for commercial driving licenses.



Source: AlertTodayFlorida.com

Behavior Campaigns (BC) Actions

EXPAND PUBLIC AWARENESS CAMPAIGNS

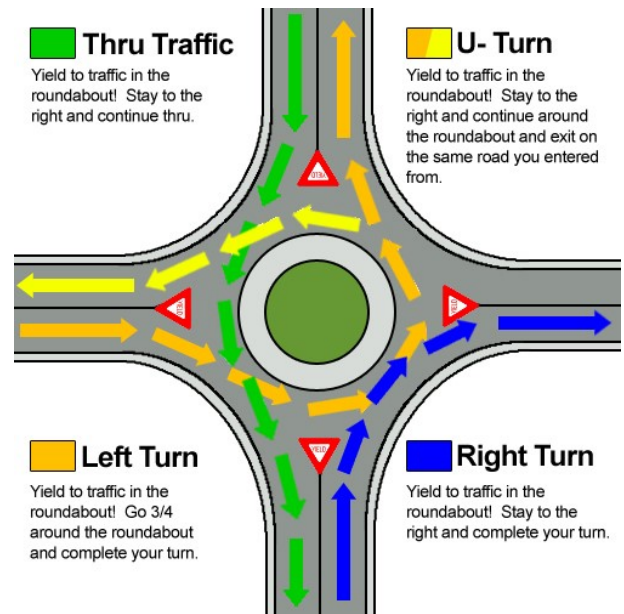
Efforts should continue to provide brochures and educational material addressing vehicle, pedestrian, and bicycle safety. Methods of disseminating public awareness can range from demonstrations, brochures, social media messaging, and advertising. Awareness campaigns should focus on pedestrian and bicycle right-of-way and rules of the road. Additionally, some campaigns can be much more focused. For example, how to traverse a roundabout, or how a HAWK signal operates. Some campaigns to consider include:

- Increasing motorcycle helmet use
- Preventing wrong-way bicycle riding
- How to use roundabouts
- How to use HAWK signals
- Pedestrian right-of-way laws

CONDUCT PUBLIC INFORMATION MEETINGS ON SAFETY INTERVENTIONS

Resistance and misunderstanding from the general public can present challenges to achieving safety focused design features in projects. Often the reason for this resistance is due to lack of understanding and communication of the safety value of certain design features. The most common example is the conflict between constructing raised medians, promoting access management, and the public or adjacent property owner's desire for more and convenient access. We can do a better job of describing the safety and operation benefits these types of design features offer. Public information meetings should dedicate a good proportion of the presentation to helping the public understand the reason behind certain design features. Also, efforts to go to neighborhood association meetings or existing community events may make a greater impact and reach more people.

A great tool to accomplishing this goal is utilizing FHWA sources such pamphlets and reports that are geared toward informing the public. FHWA has material ranging from the benefit of raised medians to more innovative intersections such as roundabouts, continuous flow intersections, and diverging diamond interchanges. The relatively new Highway Safety Manual offers the designer and project managers with quantifiable safety benefits in terms of the number of crashes expected to be reduced by a given design feature. These approaches will better convey to the public that there is real quantifiable reason behind design safety features and hopefully the public will ultimately support safer design implementations.



Source: South Carolina Department of Transportation

Speeding endangers everyone on the road; it killed 9,557 people in 2015. We all know the frustrations of modern life and juggling a busy schedule, but speed limits are there to protect you and others on the road. Speed also affects your safety even when you're driving the speed limit, but too fast for road conditions. For example, driving too fast for conditions such as during bad weather when a road is under repair or in an area at night that isn't well lit.

Speeding endangers not only the life of the speeder, but all of the people on the road around them and law enforcement personnel. It is a problem we all need to help solve. NHTSA provides guides and toolkits to help spread the message about safe driving, including tips on what you can do if you encounter an aggressive driver on the road. (NHTSA)

Behavior Campaigns (BC) Actions

CONTINUE TO DEVELOP EDUCATIONAL MATERIALS TO ADDRESS IMPAIRED DRIVERS

As shown in the data analysis section, over half of all fatal crashes involved are either alcohol or drug impairment. NMDOT has already made great strides in tackling this problem from a state-wide perspective with a series of effective public service announcements via billboard, radio, and television advertisements. This approach will continue to be effective and serve the AMPA in the future. In moving forward, the entities within the AMPA should continue to work with the NMDOT and develop materials and strategies focused on our most vulnerable and impressionable portions of our driving population, meaning younger drivers. This continued focus on educating young drivers will impact the potential for future impaired drivers and hopefully increase the stigma of driving while impaired with future driving generations.



Source: Delaware Department of Transportation



Source: Maryland Ignition Interlock Program

DEVELOP EDUCATIONAL MATERIALS TO ADDRESS SPEEDING

As is evident nationally, and also clearly shown by regional data, there is a need to educate drivers about speeding and dangerous driving and the impact that this behavior is having on our communities. NHTSA provides information on many different types of risky driving including drowsy driving, distracted driving, and speeding. Their website offers several materials that can be used to provide guidance on this type of educational campaign. Speeding is also more common among males and younger drivers. In fact, according to NHTSA, up to age 34, almost twice as many males die in speeding crashes than females.

CONTINUE IGNITION INTERLOCK PROGRAMS

The Ignition Interlock Law went into effect on June 17, 2005, in New Mexico. It mandates an ignition interlock license and the installation of the device for anyone in the state of New Mexico convicted of a DWI. This includes first time DWI offenders. Once installed in the vehicle driven by the offender, he or she must blow into the ignition interlock device every time to start the vehicle. If the offender has had any alcohol, the device will record the driver's blood alcohol content. The ignition interlock prevents the vehicle from starting if it registers a BAC greater than .025, thus preventing a person from driving intoxicated. For the DWI offender, the only way to drive legally is to get an ignition interlock license, proof of insurance, and to get a device installed. If that person is caught driving a vehicle without an interlock device, the penalty is the same as driving while revoked.

- New Mexico Department of Public Safety

Behavior Campaigns (BC) Actions

ENHANCE LICENSE REVOCATION AND SUSPENSION

Unfortunately, often the offender only gets a misdemeanor and the courts are so overrun that there is not enough follow up on whether they received their interlock device. A felony is issued after the 4th time a driver gets a DWI. This issue is very complex and will require changes in all sorts of judicial systems in the State of New Mexico.

Boston's Safest Driver is a smartphone app developed in partnership with The City of Boston's Vision Zero Task Force, The Mayor's Office of New Urban Mechanics and Cambridge Mobile Telematics. The app provides you helpful feedback on your driving based upon five metrics: speed, acceleration, braking, cornering, and phone distraction.

- City of Boston



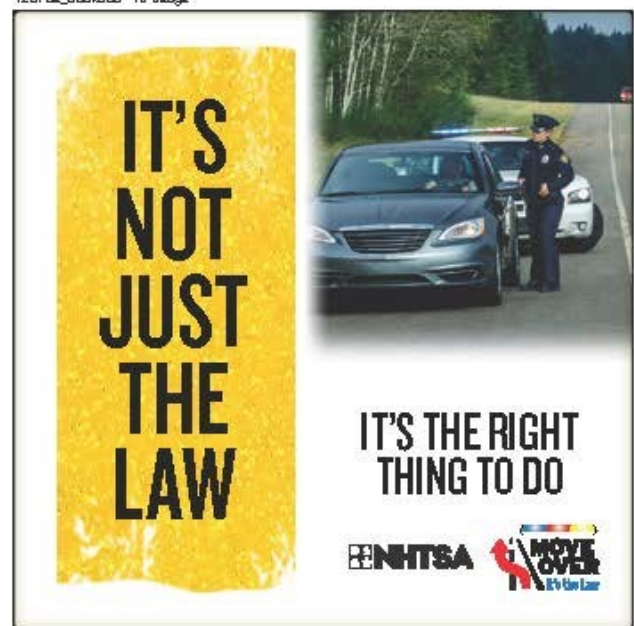
Source: City of Boston

INTRODUCE SAFE DRIVER APPS

Some communities have used mobile apps in an innovative way to promote safer driving habits. For example, the City of Boston deployed a Safest Driver App where users log trips and are scored based on their driving habits such as cell phone usage. The app offers a further incentive by allowing users to compete with other app users including friends and family. A similar application could be deployed in the AMPA region. The app could also include weekly goals and achievements. App costs could be offset by allowing local businesses and restaurants to advertise through the app and also offer coupons or special offers to drivers that accomplish various achievements and goals. As younger and more technically savvy users begin to be a more prevalent representative of the driver populace, this type of app approach could see even greater acceptance and effectiveness.

ADOPT THE MOVE OVER IT'S THE LAW CAMPAIGN

The National Highway Traffic Safety Administration (NHTSA) created a new campaign called "Move Over. It's the Law" The campaign was created in response to increase fatalities of officers in the line of duty stepping out on the side of the road to investigate a crash or to do a traffic stop (Traffic Safety Marketing). Situations where crashes occur along busy high-speed roadways can also impact emergency personnel and other drivers that may need to pull over. Pulling over after a crash and/or slowing vehicle speeds while passing a crash is the right thing to do and it's the law.





REPORTING DEPARTMENT																																							
☐ ON PRIVATE PROPERTY		☐ FATAL INJURY		PROPERTY DAMAGE ONLY		☐ UNDER \$500		☐ \$500 OR MORE		☐ HIT AND RUN		Case Number:																											
CRASH DATE (MM/DD/YY)						MILITARY TIME		CITY OCCURRED IN				COUNTY		NMDOT:		CAD Num:																							
Sun		M		Tu		W		Th		F		S		OCCURRED ON: (Route No. or Name)				AT INTERSECTION WITH:				TRIBAL LAND?																	
☐		☐		☐		☐		☐		☐		☐										☐ Yes ☐ No																	
OTHER LOCATION		☐ FEET		☐ MILES		N		NE		NW		S		SE		SW		E		W		PERMANENT LANDMARK - COUNTY LINE - INTERSECTION - MILEPOST				LAT:		LONG:											
☐ On Roadway		☐ Off Roadway		CRASH CLASSIFICATION		☐ Overturned		☐ Other N-Col		☐ Pedestrian		☐ Other Vehicle		☐ Vehicle on Other Rdwy		☐ Parked Vehicle		☐ Fixed Object		☐ Other Object		ANALYSIS CODE:																	
VEHICLE NO. HEADED		1		N		NE		NW		S		SE		SW		E		W		On:		Left Scene of Crash		Posted Speed		Safe Speed													
☐ Yes		☐ No																																					
Driver's Full Name (Last, First, Middle)										Address																													
Driver's License Number										State		Type		Status		Restrictions		Endorsements		Expires		Interlock		City/State		Zip Code		Phone											
Date of Birth - M/D/YR										Occupation		Seat Pos.		Age		Sex (M/F)		Race		Injury Code		CP Code		CP Used Property		Airbag Deploy		Ejected		EMS #		Med Trans							
Occupant's Name (Last, First, Middle)										Occupant's Address (City, State, Zip)																													
Vehicle Yr.										Vehicle Make		Color		Body Style		Cargo Body Type		Vehicle Use (1)		Vehicle Use (2)		Towed?		Damage Severity		Extent													
License Yr.										State		License Plate Number		VIN								☐ Yes ☐ No		☐ Heavy ☐ Moderate ☐ Slight ☐ None ☐ Unknown ☐ All Areas		☐ Disabled ☐ Functional ☐ Appearance ☐ Property ☐ Fire ☐ None													
DOT #										Interstate Carrier Code		Towed By		Towed To								Towed due to disabling damage?																	
Number of Axles										Vehicle Weight Rating/Gross Combination Weight Rating		HazMat Placard		HazMat Placard 4 digit #		OR		HazMat Name		AND		1 digit #		Hazmat Released?															
Carrier's Name										Carrier's Address																													
Owner's Name										Owner's Company Name										Owner's Address		Owner's Zip		Owner's Telephone															
Insured By: (Name of Company)										Policy Number										Trailer or Towed Vehicles (1)		Type		Year		Make		License Yr.		License State		License Number							
Trailer or Towed Vehicles (2)										Type		Year		Make		License Yr.		License State		License Number		Trailer or Towed Vehicles (3)		Type		Year		Make		License Yr.		License State		License Number					
Vehicle No. HEADED										2		N		NE		NW		S		SE		SW		E		W		On:		Left Scene of Crash		Posted Speed		Safe Speed					
☐ Yes ☐ No																																							
Driver's Full Name (Last, First, Middle)										Address																													
Driver's License Number										State		Type		Status		Restrictions		Endorsements		Expires		Interlock		City/State		Zip Code		Phone											
Date of Birth - M/D/YR										Occupation		Seat Pos.		Age		Sex (M/F)		Race		Injury Code		CP Code		CP Used Property		Airbag Deploy		Ejected		EMS #		Med Trans							
Occupant's Name (Last, First, Middle)										Occupant's Address (City, State, Zip)																													
Vehicle Yr.										Vehicle Make		Color		Body Style		Cargo Body Type		Vehicle Use (1)		Vehicle Use (2)		Towed?		Damage Severity		Extent													
License Yr.										State		License Plate Number		VIN								☐ Yes ☐ No		☐ Heavy ☐ Moderate ☐ Slight ☐ None ☐ Unknown ☐ All Areas		☐ Disabled ☐ Functional ☐ Appearance ☐ Property ☐ Fire ☐ None													
DOT										Interstate Carrier Code		Towed By		Towed To								Towed due to disabling damage?																	
Number of Axles										Vehicle Weight Rating/Gross Combination Weight Rating		HazMat Placard		HazMat Placard 4 digit #		OR		HazMat Name		AND		1 digit #		Hazmat Released?															
Carrier's Name										Carrier's Address																													
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Trailer or Towed Vehicles (2)										Type		Year		Make		License Yr.		License State		License Number		Trailer or Towed Vehicles (3)		Type		Year		Make		License Yr.		License State		License Number					

Expand Data Collection and
Roadway Management

Action Items

Expand Data Collection and Roadway Management

Strategic plans and RTSAP focus areas depend greatly on the detail and quality of the crash data. However, other datasets are needed to tell the complete story and enable a better understanding of how to make improvements. Quality data is the key to targeting and evaluating specific safety improvements, and it's also essential to tracking progress to improvements in our built environments.

Data collection should always be an evolving process with the goal of collecting more detailed and accurate data every year to develop a better picture of driving behavior and safety risks.

The following sections detail some areas to evolve data collection for better and more focused strategic action plans in the future.

Quality Data

The accuracy of this plan and the resulting impact of the action items depends greatly on the detail and quality of the crash data. However, other datasets are also needed to tell the complete story, and enable a better understanding of how to make improvements. Quality data is the key to targeting and evaluating specific safety improvements, and it's also essential to tracking progress to improvements in our built environments. Data collection should always be an evolving process with the goal of collecting more detailed and accurate data every year to develop a better picture of driving behavior and safety risks.

Crash Data

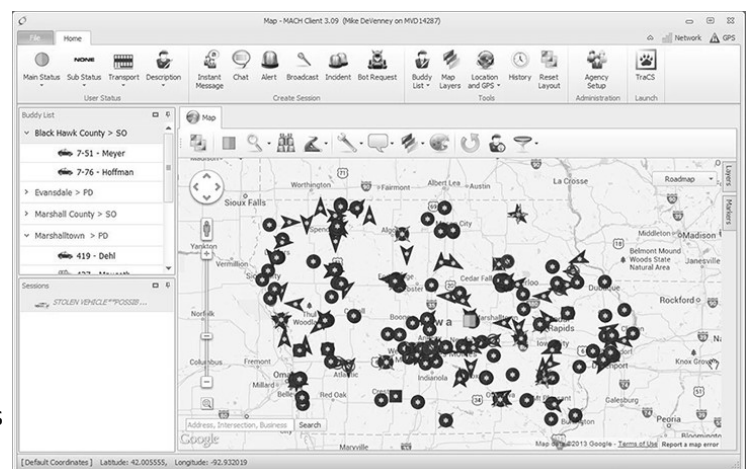
MRCOG obtains and analyzes crash data to assist member agencies and the public with understanding crash information and transportation planning issues confronting the AMPA region. This task results in a number of processes and products on safety issues, the analysis for different studies and Metropolitan Transportation Plan implementation, and the development of projects for the Transportation Improvement Program.

Accurate and Timely

Having accurate and up-to-date crash data is a critical component to identify improvements. In New Mexico, the percentage of crash reports, including private property crashes, received via an electronic database TraCS (a software that the NMDOT and local Law Enforcement Agencies or LEAs use to collect and process crash data) transfer was 11% for the 2015 crash year, 40% for 2016, and is currently 53% for preliminary 2017 data. So, there has been a very large improvement in the collection of crash data digitally, which allows for the data to be more accurate and processed sooner. More police departments have started to submit their information via this system such as the Rio Rancho Police Department, Albuquerque Police Department, New Mexico State Police, and Bernalillo County Sheriff's Office.



Source: TraCS. L-Tron Corporation.



Source: IOWA DOT

Expand Data Collection and Roadway Management

UNM Annual Reports

The UNM Department of Geospatial and Population Studies Traffic Research Unit provides community reports annually that show crash data statistics by counties, cities, and the State of New Mexico. Their geo-coding ability has increased substantially over the years with the latest 2016 crashes having a 99% capture. The NMDOT and LEAs are still working on implementing a GIS-module in TraCS which will enable officers to more easily provide location coordinates. Unfortunately, at this point, the data is usually two (2) years behind. There is no one agency at fault for this, but rather it is a monumental task that includes scrubbing out any personal data and requires significant coordination among many agencies. Nevertheless, the ability to have current crash data quickly means better safety intervention strategies and better designed transportation projects.

Traffic Counts

MRCOG collects traffic counts at all major roads in Bernalillo, Valencia, Torrance, Sandoval and southern Santa Fe counties. The resulting traffic data is used to support various transportation planning activities, and to produce annual Traffic Flow Maps of the Albuquerque- and outlying rural areas.

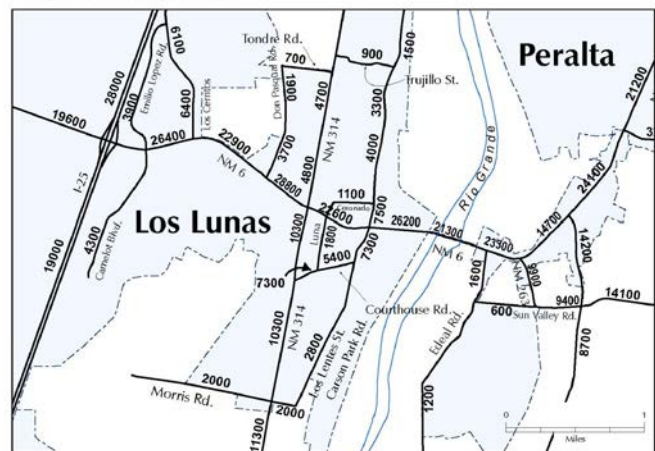
Most traffic counts are performed using portable traffic monitoring devices with rubber tubes that stretch across the roadway (pneumonic tube counters). Devices are placed at a location for 48 hours. Counters are set out on Mondays or Tuesdays and picked up on Wednesdays or Thursdays. All major roads are counted once every three years. Growth factors applied in the intervening years and seasonal factors are applied based on the time the count was taken.

Traffic Count Maps & Reports

There are three types of traffic flow data available online and three different general ways to access these data. The data available includes:

1. **Average Weekday Traffic (AWDT):** this is an annual average for Monday-Friday traffic
2. **Average Daily Traffic (ADT):** this is an annual daily average taking into account all seven days of the week
3. **Observed traffic counts:** this is the raw counts that have not had seasonal and growth factors applied to create an annual average. These counts include directional and peak hour information

Inset for Los Lunas



Traffic counts for Los Lunas. Source: MRCOG

Expand Data Collection and Roadway Management

Non-motorized Counts Program

Accurately capturing pedestrian and bicyclist data is vital to improving safety in our region. Sometimes this can be a difficult task because people walking or biking do not always move predictably. There are also other important factors like weather, safety perception, and quality of the infrastructure that could impact a person's decision to walk or bicycle. Based on these facts, collecting substantial non-motorized count data for these modes to enable a rate calculation is impossible. However, despite these difficulties, collecting data on walking and biking is essential to getting a better understanding of the region's safety issues and providing targeted improvements.



Bicycle and Pedestrian counter along the Bosque Trail

MRMPO already has a counts program for vehicular travel and produces annual traffic flow maps for the region as previously discussed. We are currently working toward building out a non-motorized count program through short duration counts, permanent counters, and utilizing Strava data to supplement each type of count. MRMPO manages seven (7) permanent counters on different trails throughout the Albuquerque metro area. These permanent counters collect both pedestrian and bicyclist activity and provide crucial data for these activities on the trail network. Short duration counts are collected via a video screen line approach based on national best practices, which include data collected from May through September, one weekday (Tuesday, Wednesday, or Thursday) at peak AM and PM hours, and one weekend (Saturday or Sunday) from 11am-1pm. All pedestrians and bicyclists passing a designated line are counted (an approach similar to tube counts for motor vehicles). MRMPO typically collects short duration counts for projects that are specifically meant to enhance bicyclist and/or pedestrian activity. For example, for the addition of a new bicycle lane, MRMPO would collect counts before a bicycle lane was added and after a bicycle lane was added on a roadway.

Strava Metro Data

Each year MRMPO purchases bicycling and pedestrian data from Strava Metro. People can track their cycling, walking, and running activity with a Strava application on a smart phone or with a GPS device. Users record their speed and route. Strava removes all identifying information from the users and aggregates the data to a linear street and trail map. Strava trips provide a small segment of the total usage of the total trips taken by the walking and cycling community. Also, they are biased due to people choosing to use Strava, an application that helps to measure fitness and compare cycling speeds and distances. However, this information is helpful to show the relative usage on streets and trails for this segment of the population. Also, Strava data can be correlated with permanent count data to provide estimate counts for the entire system.

Expand Data Collection and Roadway Management

Bike Share Data

Albuquerque's bike share started in downtown as a pilot program called BICI, an abbreviated form of the Spanish word for bicycle – bicicleta. DowntownABQ MainStreet Initiative and the Mid-Region Council of Governments (MRCOG) started the program and used Zagster to provide the shared bikes. The pilot program launched on May 15, 2015, with 75 bicycles and 15 stations. Since the pilot, the program has moved under the management of the Rio Metro Regional Transit District to expand and grow the program beyond downtown. The new program will launch as Pace Bike Share with 250 bicycles/50 stations in spring 2018. The bike share program collects trip, trip duration, gender, zip code, and importantly GPS data on routes riders take. This dataset will be useful in future bicycle planning efforts as planners gain a better understanding of exactly where riders are bicycling and in turn where limited funding should be dedicated to expanding and improving connections among existing bicycling facilities. The pilot program had over 10,000 trips taken by over 2,400 people.

According to the 2014 MRCOG travel survey, 32% of all bicycle trips in the region are taken by women. However, for the pilot bike share program from May 15, 2015 to May 15, 2017, 53% of bike share riders from the AMPA were women. Perhaps bike share can be a tool to reaching gender parity in bicycling in our region because women have been identified as indicator for a safe, bicycle-friendly community. Pace Bike Share will be collecting and monitoring this type of data, which will be useful in future evaluation of bicycling friendliness and improvement in our region.

Bike to Work Day Data

Each year, MRCOG partners with the City and other local entities to plan and implement a Bike to Work Day (BTWD) event. BTWD celebrates and encourages people to try commuting by bicycle for the day. The event occurs as part of a national campaign called National Bike Month, which occurs annually in May. Albuquerque's event features about 13 cycle stops where riders can stop on their way to work to meet other bicycle commuters, receive free bicycle safety promotional materials, and take MRCOG's BTWD survey, which gauges bicyclist's opinions about bicycling in Albuquerque. The survey was designed to examine public perception of Albuquerque's bicycle-friendliness. It helps understand bicyclist need and gather general information about bicycling in the greater Albuquerque area. The information is used to help understand how to make Albuquerque a more bicycle-friendly community. The BTWD serves as a snapshot in time to track changes.



Pilot bike share data from May 15, 2015—January 14, 2018. Source: Zagster

Expand Data Collection and Roadway Management

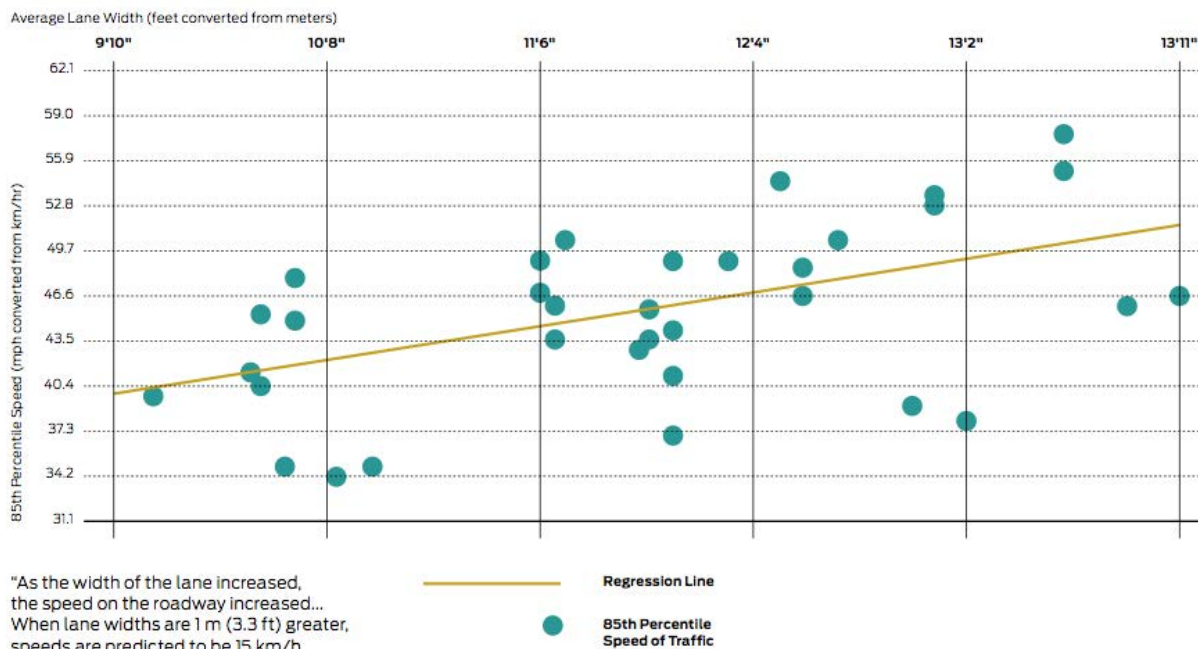
Speed Data

A particular helpful addition to data collection would be speed data. This type of data could be prioritized in areas of high risk crash locations. One way to do this is by developing a Speed Management Program that focuses on larger roadways and includes measures such as signal coordination, reducing travel lane width, speed feedback signs, speed enforcement corridors, and raised intersections, to name a few.

According to a Best Practices in Arterial Speed Management report developed by the City of Pasadena:

Speed management is a multi-disciplinary approach to controlling speeds using enforcement, design, and technology applications. Speed management should reflect the needs of multiple modes and respond to the street's surroundings. The benefits of speed management are safer roads with fewer incidents and less severe injuries. Speed management techniques can be used regardless of the posted speed. While "traffic calming" is a type of speed management usually used on local residential streets, speed management can be used on all types of streets, including arterials or state highways, for safety benefits, to provide a more consistent speed throughout a corridor, or to decrease the number of speed violators .

Wider travel lanes are correlated with higher vehicle speeds.



As travel lanes increase in width, driver speed increases. As travel lane width decreases, speed decreases. Source: NACTO

Expand Data Collection and Roadway Management Action Items Summary

This list is a snapshot of the action items in this plan under this emphasis area. Without quality data, we are not able to be accurate and comprehensive in our analyses. This includes not just crash data, but traffic counts for all modes, and being able to do some predictive modeling. In addition, there are many software tools and methodologies that can be refined and improved upon. As we continue to expand the amount and accuracy of our data we will be able to better target the areas in most need and the best types of interventions.

- 
- 1. Improve Spatial Tracking of Crashes**
 - 2. Improve Acquisition and Timeliness of Crash Records**
 - 3. Better Define Intersection Boundaries**
 - 4. Expand Traffic Counts for all Modes**
 - 5. Adopt 2010 Highway Safety Manual Methodology**
 - 6. Implement use of Crash Diagram Software**
 - 7. Continue use of Online Maps of Crash Data**
 - 8. Employ Active Traffic Management**
 - 9. Expand Courtesy Patrols**
 - 10. Use Intelligent Transportation Systems (ITS) Devices**
 - 11. Expand Traveler Information**
 - 12. Enhance Emergency/Incident Management**
 - 13. Provide Additional Data Augmentation**

Data Collection (DC) Actions

IMPROVE SPATIAL TRACKING OF CRASHES

Currently, crash reports tend to document the nearest intersection or mile post of where the crash occurred. Ideally, these crashes would be located by coordinates, so that the data would document the location within an intersection or segment. It was mentioned at our second workshop session that a system for officers to geo-locate crashes using a map interface was in the process of being implemented. This deployment will go a long way in identifying crashes in relation to roadway characteristics such as proximity to a bus stop or turnout, and differentiation between which approaches to an intersection a crash occurred on. In turn, targeted approach designs should be isolated and assessed for safety improvements.

IMPROVE ACQUISITION AND TIMELINESS OF CRASH RECORDS

Expand on TraCS software capabilities that the NMDOT and Local Law Enforcement agencies are using, and encourage the process to continue to be streamlined for consistency and as current as possible data.

Portland's Vision Zero Action Plan includes five actions related to crash data:

1. Regularly cross-check trauma data from the Oregon Health Authority against Oregon Department of Transportation crash data to identify demographic patterns (age, race/ethnicity), geographic patterns, and misreporting or under-reporting of serious injury crashes
2. Improve timeliness of deadly and serious crash data processing and reporting
3. Include review of traffic crash data, equity data, and traffic safety performance at monthly Portland Bureau of Transportation and Portland Police Bureau Traffic Division meetings
4. Secure increased funding and personnel to staff timely investigation of deadly crashes
5. Improve data collection on speed, impairment, and distraction at serious and deadly crashes

Note: PBOT uses the Oregon Department of Transportation's definition of "serious injury," also called "incapacitating" or "major" injury: A non-fatal injury that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred.

(Portland Bureau of Transportation)

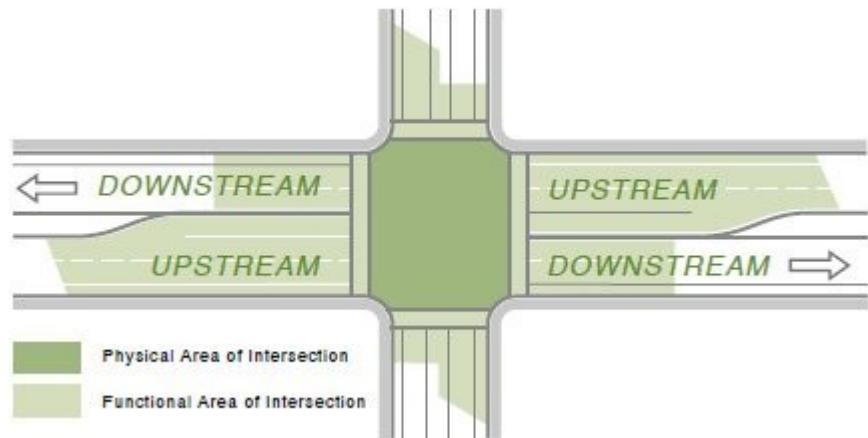
POLICE TRAFFIC CRASH REPORT										PAGE 1	OF 2
POLICE INCIDENT / CASE NUMBER 74638746		CRASH DATE 07/05/2015		DAY OF WEEK M T W T H F S S	CRASH TIME 1:00 PM	POLICE NOTIFIED AM PM	POLICE ARRIVAL AM PM	DMV FILE NUMBER			
COUNTY		ROAD ON WHICH CRASH OCCURRED					MILE POST		DMV CODE		
☐ WITHIN _____ FEET ☐ NEAR _____ MILES		OF NEAREST INTERSECTING ROAD		☐ WITHIN _____ FEET ☐ NEAR _____ MILES		OF NEAREST CITY / TOWN					
☐ PROPERTY DAMAGE		☐ PUBLIC PROPERTY DAMAGE		☐ INJURY		☐ FATAL		☐ HAZARDOUS MATERIALS		☐ HIT AND RUN	
☐ PHOTOS TAKEN		☐ TRAIN R.R.		☐ TRUCK / BUS							
UNIT #	NAME (LAST, FIRST, MIDDLE) PUBLIC JOHN Q			DRIVER LICENSE NUMBER F 345-678-9012		STATE	SEX	RACE	DOB 07/19/67		
ADDRESS	354 VAN BUREN STREET PANAMA CITY FL 33521					HOME PHONE () () ()					
VEHICLE OWNER	VEHICLE TOWED BY: ☐ SAME ☐ UNKNOWN					WORK PHONE () () ()					
INSURANCE COMPANY	ALLSTATE INS. CO.					INSURANCE POLICY NUMBER D617963240925					
VEHICLE IDENTIFICATION NUMBER (VIN)	1MEFM66L8XK606095		LICENSE PLATE NUMBER 148QEW		STATE	YEAR	MAKE	MODEL / STYLE	COLOR TAN		
VEHICLE TOWED BY:	TO:		DRIVER TAKEN BY:		TO:		INJURY:		☐ NONE ☐ POSSIBLE ☐ MINOR ☐ SERIOUS ☐ FATAL		
VEHICLE DAMAGE		DAMAGE ESTIMATE		☐ ROLLOVER ☐ UNDERCARR ☐ TOTALLED ☐ UNKNOWN		EQUIPMENT:		☐ NO EQUIP USED ☐ LAP ONLY ☐ LAP / SEATBELT ☐ CHILD REST. SEAT ☐ AIR BAG-DEPLOYED ☐ AIR BAG-NOT DEPLOYED			
ACTION / ARREST / CITES											
SUSPECT NAME	JAXA					IN CUSTODY		☐ YES ☐ NO			
ADDRESS	OTHER INFORMATION:										
SEX	RACE	DOB	HT	WT	HAIR	EYES	LOCAL ID				
UNIT #	NAME (LAST, FIRST, MIDDLE) PUBLIC JOHN Q			DRIVER LICENSE NUMBER F 324-567-8910		STATE	SEX	RACE	DOB 05/31/72		
ADDRESS	899 N E 164 TERR NO MIAMI BCH FL 33152					HOME PHONE () () ()					
VEHICLE OWNER	VEHICLE TOWED BY: ☐ SAME ☐ UNKNOWN					WORK PHONE () () ()					
INSURANCE COMPANY	NONE					INSURANCE POLICY NUMBER					

Example Police Traffic Crash Report Source: Advanced Public Safety

Data Collection (DC) Actions

BETTER DEFINE INTERSECTION BOUNDARIES

Currently, crashes at intersections are defined as occurring within a 200-foot circle of the center of the intersection of two roadways. However, depending on the classification of crossing roads, the influence of an intersection can range from 200 feet for two local streets crossing or up to 800 feet or more for two arterials crossing each other. The influence area of an intersection is also dependent on spacing. For



Source: FHWA

example, block spacing is much smaller within the central business district compared to suburban areas. It is recommended that the definition of intersections within the data set be redefined based on road classification and intersection spacing prior to the next strategic plan.

EXPAND TRAFFIC COUNTS FOR ALL MODES

MRCOG collects traffic counts at all major roads in Bernalillo, Valencia, Torrance, Sandoval and southern Santa Fe counties. The resulting traffic data is used to support various transportation planning activities, and to produce annual Traffic Flow Maps of the Albuquerque urban area and outlying rural areas.

Most traffic counts are performed using portable traffic monitoring devices with rubber tubes that stretch across the roadway (pneumonic tube counters). Devices are placed at a location for 48 hours. Counters are set out on Mondays or Tuesdays and picked up on Wednesdays or Thursdays. All major roads are counted once every three years. Growth factors applied in the intervening years and seasonal factors are applied based on the time the count was taken.



Setting up Traffic Count Tubes Source: City of Moreno Valley

There are three types of traffic flow data available online and three different general ways to access these data. The data available includes:

1. **Average Weekday Traffic (AWDT):** this is an annual average for Monday-Friday traffic
2. **Average Daily Traffic (ADT):** this is an annual daily average taking into account all seven days of the week
3. **Observed traffic counts:** this is the raw counts that have not had seasonal and growth factors applied to create an annual average. These counts include directional and peak hour information.

Data Collection (DC) Actions

BICYCLE AND PEDESTRIAN DEMAND DATA

Pedestrian demands should be monitored and counted at signalized intersections. If bicycle detection becomes more commonplace at signalized intersections, bicyclist demand should also be counted as well. Currently, the City of Albuquerque is conducting a series of pilot projects implementing these automated traffic management systems with the deployment of additional detection and the use of traffic management software. If these deployments become more commonplace, MRCOG should coordinate with the City of Albuquerque to share this data, including pedestrian and bicycle demands. This effort would be expanded if other entities such as Bernalillo County and the City of Rio Rancho start adopting automated traffic management.

In smaller entities it may be appropriate to utilize temporary mounted cameras in certain locations, like main streets, where small municipalities have or are expecting more multi-modal traffic, or are planning on doing a project that includes new pedestrian and bicycle facilities.



Staff mounting a video counter

ADOPT 2010 HIGHWAY SAFETY MANUAL METHODOLOGY

With the publication of the 2010 Highway Safety Manual (HSM), governmental jurisdictions and engineering professionals now have the beginnings of a tool to predict crash rates based on traffic demand and roadway condition inputs. Safety improvements are assessed quantitatively using research-based crash modification/reduction factors, which ultimately predict the reduction or increase in crash occurrences on a given facility. It should be noted that the predictive method of the 2010 Highway Safety Manual is based on crash data collected in the original pilot states, which may not be as directly representative of crash rates in AMPA. Therefore, it is also recommended that AMPA governmental entities develop local crash rate research for specific types of traffic control and roadway facilities. This data would then be input into the 2010 HSM methodology to augment the predictive model to produce more locally representative crash rates.

IMPLEMENT THE USE OF CRASH DIAGRAM SOFTWARE

For some of the intersections with high crash rates a lot of information can be gleaned from analyzing the typical attributes that come from geo-coded crash data, however, a more detailed analysis of the locations of crashes around an intersections, including what leg of the intersection they were on, what direction the person or vehicle was travelling, and other descriptions that can usually only be found in the written report can be very eye-opening as to what issues need attention in a specific case.

There are several different types of programs to collect, animate, and/or review a traffic crash that will enable a better understanding of what happened in a crash. As mentioned previously in the document, crash locations are often attributed to the nearest intersection or roadway link, which means that by the time the crash data is received by MRMPO or the local entity for further analysis, some of the detailed information is lost.

Data Collection (DC) Actions

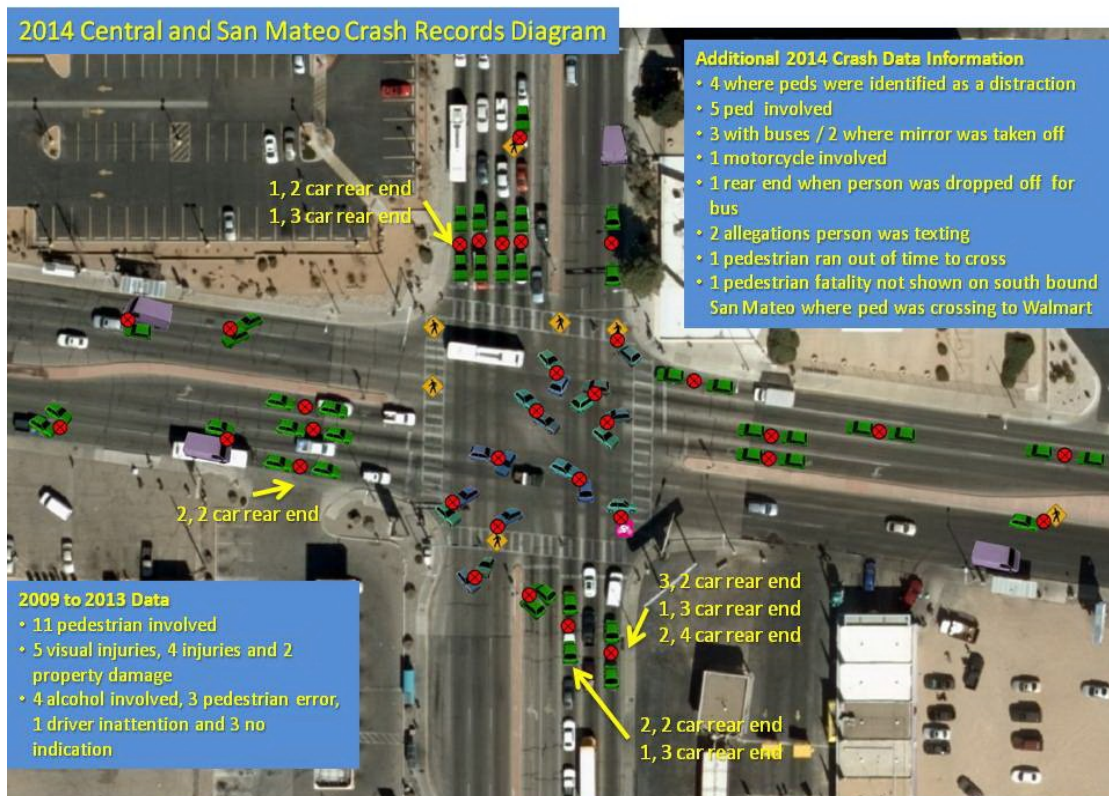
Having the time to review paper records, or automating the process of diagraming more information about the context surrounding the crash event can be of great support to designing interventions in specific cases. Once this detailed information is identified, counter measures can be implemented, and the expected crash modification can be calculated.

CONTINUE USE OF ONLINE MAPS FOR CRASH DATA AWARENESS

MRMPO has migrated to online interactive maps to review crash data for the region for their last annual safety report. Using this type of interface for providing information to local agencies and the public seems to be well-received and is a task that should continue to highlight the latest data available. As MRMPO develops a more robust online portal, some of this data will be able to be queried and downloaded.

EMPLOY ACTIVE TRAFFIC MANAGEMENT

This strategy involves the utilization of various tactics and tools available to roadway operators, which can smooth or “even out” the flow of traffic and in turn reduce the likelihood of crashes that can result from excessive or a mix of speeds.



Crash diagram for the Central and San Mateo Road Safety Audit created in ArcGIS using details from paper crash records for the intersection.

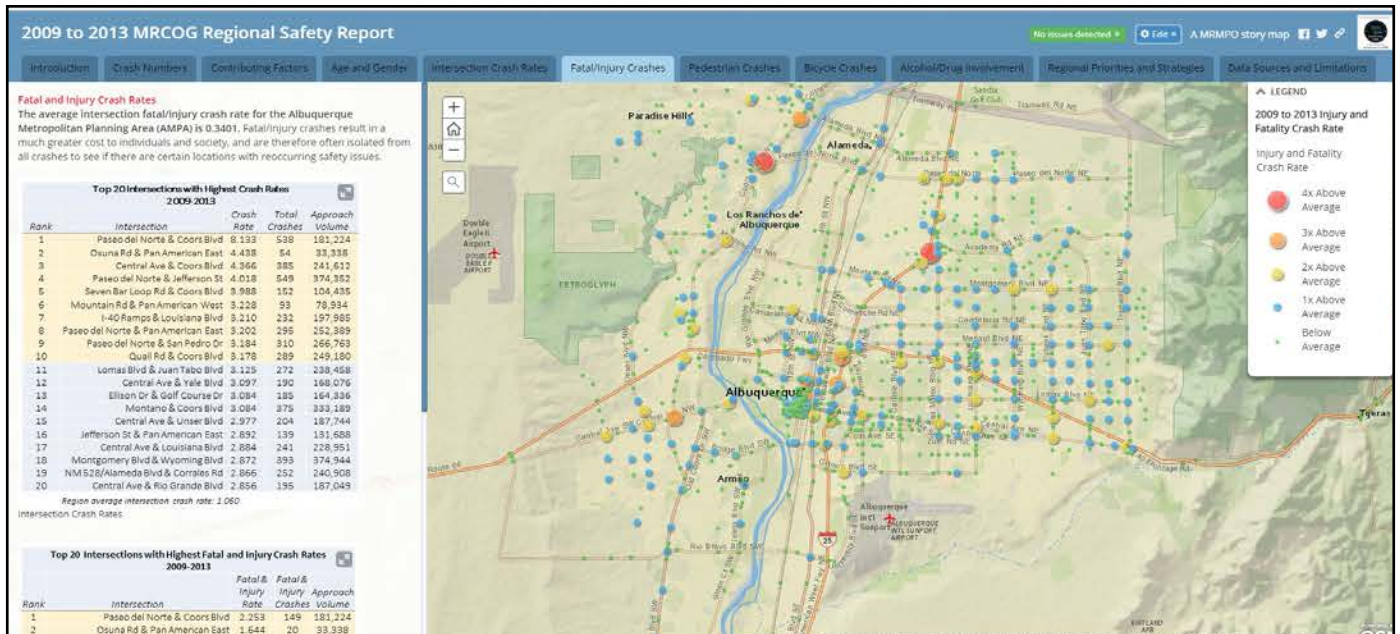
A crash modification factor (CMF) is used to compute the expected number of crashes after implementing a countermeasure on a road or intersection. The Crash Modification Factors Clearinghouse provides a searchable online database of CMFs along with guidance and resources on using CMFs in road safety practice. It also provides guidance to researchers on best practices for developing high quality CMFs. <http://www.cmfclearinghouse.org/>

Roadway Management (RM) Actions

Common management strategies involve the utilization of advanced technologies such as roadway sensors for vehicle detection and CCTV cameras that support the monitoring of travel conditions, and the use of real-time traffic signal control capability to remotely adjust signal timing. These types of activities are typically conducted by staff/roadway managers at centralized “Traffic Management Centers” (TMCs).

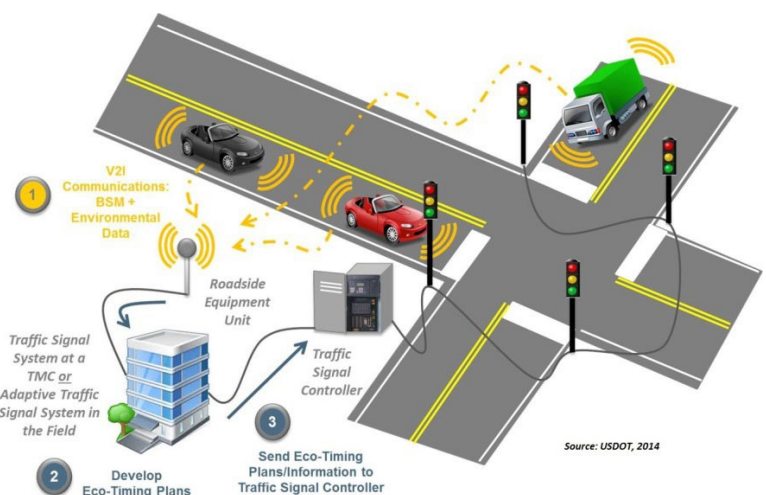
EXPAND COURTESY PATROLS

Currently, NMDOT District three (3) maintains a courtesy patrol on several Albuquerque Metropolitan Area freeways including I-25, I-40, and Paseo del Norte. Trucks equipped with bumper-push guard for the clearing of stalled vehicles,



Source: MRCOG

emergency/flashing lights with lane-closed/arrow flip-up boards, tools and supplies for minor repairs, and a small supply of fuel/fluids to offer assistance to stranded motorists. The patrols are integrated into the NMDOT ITS Bureau's TMC operations and dispatch, and currently operate Monday through Friday from 6:00 AM to 6:45 PM. In addition to the roadside assistance, patrols are also dispatched by TMC staff and are keyed in to law enforcement dispatch to provide critical support of “Incident Command” with coordinated traffic control during crash/incidents, thus improving traffic flow, reducing backups, and protection/cleanup of the crash site. Further benefits that arise from the service include the reduction of secondary crashes (crashes that result from the initial crash) and quicker crash-clean up and resumption of normal traffic flow. Other AMPA participating jurisdictions could look into the viability of this sort of program on other high speed and/or heavily traveled corridors in the area.



Source: USDOT (2014)

Roadway Management (RM) Actions

Any agency wanting to provide a courtesy patrol could coordinate with the NMDOT to discuss lessons learned and the best ways of starting this type of program.

USE INTELLIGENT TRANSPORTATION SYSTEM (ITS) DEVICES

Management strategies for improved traffic flow and safety rely heavily on devices that depend on advanced technologies that collect roadway data and support the processing and dissemination of information to travelers are part of Intelligent Transportation Systems (ITS). Devices used for data collection, include roadway sensors for speed and volume use radar/wifi/inductance loops, weather stations with advanced temperature, moisture, and wind recording equipment. Devices used to convey pertinent messages to travelers, include Roadside “dynamic message signs”, or DMS, “511” traveler phone messaging system, and real-time travel apps on mobile devices.



Source: NMDOT

EXPAND TRAVELER INFORMATION

Traveler Information refers to the strategy that alerts travelers of “downstream” travel conditions and potential hazards that could present perilous travel conditions, which could result in a crash(es). Roadway conditions such as congestion and/or slow speeds, construction activities, adverse weather conditions, hazards such as icy roads or bridges, etc. can result in crashes. Therefore, it is critical for a safe transportation system to employ an extensive program using ITS devices and mechanisms mentioned above that provide this information “real time” that travelers can use for informed trip decision making.



Source: New Mexico Courtesy Patrol Sign

Roadway Management (RM) Actions

ENHANCE EMERGENCY/INCIDENT MANAGEMENT

The quicker emergency vehicles can get to an incident, or the degree to which first-responders efforts are coordinated and “informed” at the scene of a crash or incident can be deciding factors in the impact and severity of crashes. Robust Emergency and Incident Management Plans will improve the response to such events, drastically improving safety on the roadway. Key elements include those mentioned above, and in particular, include agency coordination, shared traveler and responder information, courtesy patrols, and ITS devices with staffed TMCs for both roadway and first responders all working in sync for an effective and integrated management plan.



New Mexico Roads Number Source:

PROVIDE ADDITIONAL DATA AUGMENTATION

It is recommended that the following data be collected and added to the next analysis:

- Existing Lighting Infrastructure Maps (at the time of this report data was in the process of being attained but was delayed by non-disclosure agreement needs)
- Bus Turn-outs
- Auxiliary Lane Presence
- Channelized Island Presence
- Left-turn Phasing Types at Signalized Intersections
- Definition of Corridor Boundaries
- Driveways
- Intelligent lane control signs (ILCS)

By no means is the above list fully comprehensive, but were noted during the process of this study. It is understood that some of the data above could take much time and resources to develop. Never the less, this information should provide a great return in the form of better targeted strategies.

ASTA

Ensure Strong Policy and Funding Mechanisms

Ensure Strong Policy and Funding Mechanisms

Most of the roadway network in the AMPA was built after WWII when designing around the needs of the automobile became the norm. Many policies that have been used since the postwar period, such as designing roadway infrastructure to meet projected peak hour demand have created a singular focus on auto level of service to the detriment of road safety and pedestrian, bike, and transit level of service. It is important to reevaluate our policies that govern how we design streets and how to measure the success of those streets. Policy is a cornerstone component to Vision Zero and ensuring streets are safe for everyone.

Forecasting Traffic

Long term planning often relies on travel demand models. Large infrastructure projects, especially those receiving federal funding, are designed not to meet current travel demand, but future demand. Modern travel demand models have become mathematically sophisticated and well-respected. However, the travel demand forecasts still only represent an estimate of future conditions. To make those estimates, models typically assume traffic grows steadily over time, especially as the number of jobs increases, even if traffic growth is at odds with city policy or recent trends.

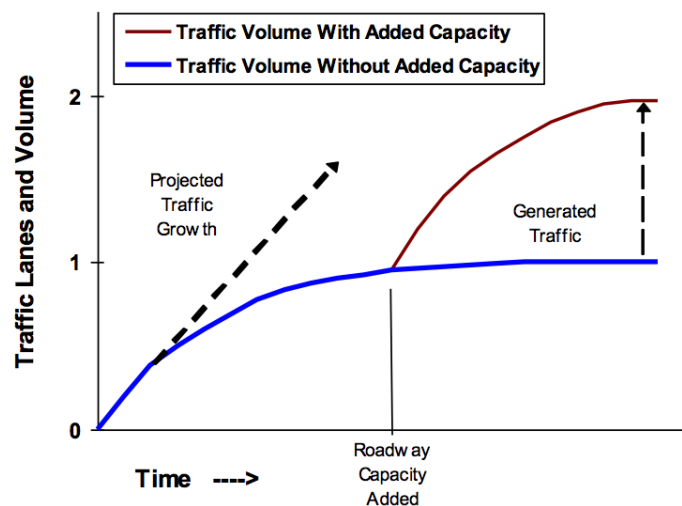
Induced Demand

Transportation professionals have begun to understand the phenomenon of induced demand. Travel model projections project steady growth in traffic, but traffic congestion tends to reach an equilibrium. When congestion delays become severe, travelers will forego some peak period trips, either making the trips at a less congested hour, or foregoing it altogether. When traffic capacity is expanded to meet future demand forecasts, rather than satisfy demand comfortably until the forecast year is reached, travelers who would not otherwise travel at the peak hour, or who use parallel facilities, are pulled to the new capacity until it is filled. The roadway designed to meet the travel demand in 20 years ends up being congested in 10 (NACTO Urban Street Design Guide).

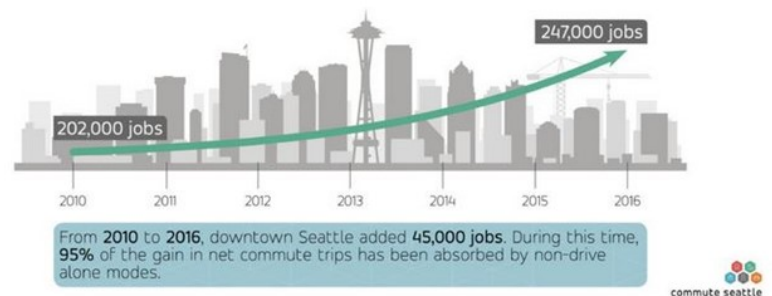
Seattle Story

The City of Seattle proved that a growth in jobs does not necessarily mean a growth in traffic, if other transportation options exist. Between 2010 and 2016, downtown Seattle added 45,000 jobs, but reduced the share of overall commuters coming to downtown by single occupant vehicle by 5%. Over 40,000 of the new commutes to downtown Seattle were absorbed by transit and non-motorized modes.

How Road Capacity Expansion Generates Traffic



Source: Victoria Transport Policy Institute



Because the drive alone rate is going down
35% in 2010 to 30% in 2016

Downtown roads have only absorbed

2,255 single occupant vehicle trips daily.

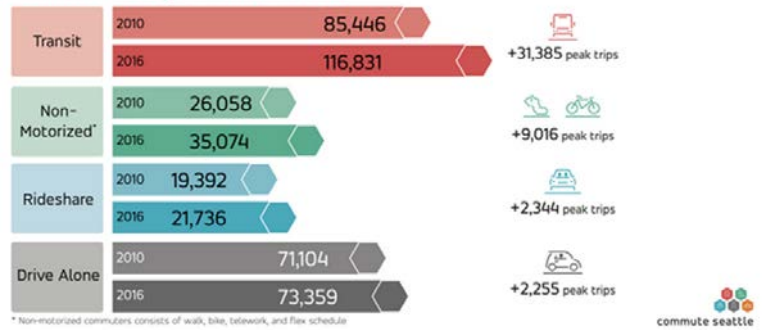


Source: Commute Seattle

Ensure Strong Policy and Funding Mechanisms

It may be time to rethink the role of travel models when it comes to designing our infrastructure. Traffic growth, after all, is not an unstoppable force of nature. The decisions we make now can influence how people choose to move in the future. Providing more travel options can reduce our reliance on automobiles. This may be worthwhile in a growing and increasingly congested region for many reasons—including safety.

Downtown Daily Commute Trends



Design Hour

Historically, roadways have been designed to meet the needs of peak hour traffic congestion. While this can relieve peak hour traffic congestion, it often results in underutilization and speeding at off peak times. A street that is designed solely to relieve peak hour vehicle congestion can also lead to an unsafe and unattractive environment for pedestrians and cyclists at all hours of the day. It is important to also consider other performance measures, especially in urban contexts where bicyclists and pedestrians are expected.

A Local Example of Level of Service (LOS)

The portion of Central Avenue that runs through downtown Albuquerque is one of the most congested segments of road in the city. Despite average peak hour speeds below the 25 mph speed limit, Central Avenue through downtown Albuquerque is one of the best places to be a pedestrian or open a restaurant. Tramway Boulevard, on the other hand is one of the least congested streets in the region, but it is not a street a pedestrian would like to stroll on without a highly separated path and isn't a place where businesses thrive. However, when only considering vehicle level of service (LOS), a rating system or set of measures to evaluate roadways and intersections, Central through downtown appears to be a failing street, in need of intervention, while Tramway appears to be a success. Does that mean that Central Avenue through downtown should be made to look more like Tramway Boulevard? The answer is the need to take into consideration the current and expected land use context when we are designing our streets. LOS A, B, or in comes examples C may not always be the goal.



Central Avenue in Albuquerque



Tramway in Albuquerque Source: alpsroads.net

Ensuring Strong Policy and Funding Mechanisms

MRMPO LRTS and Land Use Context

The Long Range Transportation System Guide or LRTS, developed as part of the Metropolitan Transportation Plan for the AMPA, states that when designing a roadway, a transportation planner must take the land use context into consideration. This is a new concept for many transportation professionals who for many years used the same approach when designing arterials, whether their context was suburban or urban. The LRTS guide simplifies character areas into 5 categories: (1) activity centers, (2) urban, (3) suburban, (4) rural, and (5) rural main streets. A map of the region is included in LRTS that indicates where these different character areas are, and design principles for each character area are given. For example, the priority for activity centers is accessibility for all modes, with an increased emphasis on pedestrian comfort.

MRMPO Long Range Roadway System

The LRTS guide not only designates character areas, but a Long Range Roadway System (LRRS) for the region's future. The LRRS is akin to current FHWA functional classification, but it is an aspirational network, that demonstrates how the region's transportation network is envisioned to function in 2040 and beyond. The LRRS moves beyond typical FHWA functional classification systems by considering the character of the roadway and the role it plays in the regional system.

Principal arterials, for example, are split into community principal arterials (CPA) and regional principal arterials (RPA). The focus of regional principal arterials is to move auto and freight traffic through the region. RPAs typically have more lanes, higher speeds, and better access management. RPAs do not host many destinations or economic activity, focusing instead on moving traffic. CPAs on the other hand, include many destinations and economic activity. For that reason, CPAs have lower speeds and fewer lanes than RPAs. CPAs do not prioritize one mode over another, instead trying to balance the needs of all road users through strategies like slowing traffic and improving walking and bicycling facilities. Higher levels of congestion are acceptable on CPAs in comparison to RPAs because the function of a CPA is to help people access destinations, while RPAs move people across the region.

CHAPTER 5: ROADWAY DESIGN GUIDELINES

TABLE 5.5: COMMUNITY PRINCIPAL ARTERIAL

ROW RANGE: 96'-130'

Character Area	ACTIVITY CENTER	URBAN	SUBURBAN	RURAL	MAIN STREET
Examples	Central Ave	Osuna & Jefferson	Southern Blvd	Isleta Blvd	4 th St at Guadalupe Plaza
STREETSIDE MINIMUMS (ONE SIDE)					
Landscape buffer	7' (tree well)	6'	6'	8'-14' paved shoulder (both sides) and/or an 8-10' multi-use trail with a 5' buffer	6' (tree well)
Clear Sidewalk width	10'	10'	6'		6'
Building Shy Zone (ingress/egress)*	2'	2'	2'		-
Streetside Width (for one side only)	19'	18'	14'		12'
BIKEWAYS (ONE SIDE)					
Multi-Use Path	See Long Range Bikeway System			8'-14' paved shoulder (both sides) and/or an 8'-10' multi-use trail with a 5' buffer from the roadway	Consider a barrier protected bicycle lane/cycle track. Otherwise use a minimum 5' shoulder or bike lane.
Multi-Use Path Outside Buffer	N/A	5'	5'		
Multi-Use Path Inside Buffer	N/A	3'	3'		
Paved Multi-Use Path Width	N/A	10'-14'	10'-14'		
Barrier Protected Bicycle Lane (Cycle Track)	See NACTO Urban Bikeway Design Guide for Cycle Tracks. Barrier protected cycle tracks may be considered in lieu of a multi-purpose trail as long as the roadway has sidewalks that meet the streetside minimums above.				
Bicycle Lane (widths do not include gutter pan)	Posted Speed 30 mph or lower: 5' bicycle lane (min 13' for combined parallel parking and bike lane.) Posted Speed 35 mph: 6' bicycle lane Posted Speed >40 mph: 7' bicycle lane with 3' striped buffer				
TRANSIT					
Dedicated Bus Lane	See Long Range Transit System: Include 24' for bus rapid transit routes.				
ROADWAY					
Maximum Number of Through Lanes	2-4	2-4	4	2-4	2-4
Desired Operating Speed	25-30 MPH	30-35 MPH	35-40 MPH	30-40 MPH	25-30 MPH
Lane Width	10'-11'	10'-11'	10'-12'	10'-12'	10'-11'
Outside Lane Width (heavy vehicles)	12'	12'	12'	12'	12'
Parallel Parking	7'-8'	7'-8'	-	-	7'-8'
Median/Center Turn Lane	6'-18'	6'-18'	6'-18'	6'-18'	6'-18'

*Include 2' if buildings, walls, or other vertical structures are planned adjacent to public ROW. Please see Building Shy Zone in Section 6.1.

57 LONG RANGE TRANSPORTATION SYSTEM GUIDELINES

Source: MRMPO LRTS Guide

Ensure Strong Policy and Funding Mechanisms

Funding Sources

Better safety policies ensure transportation infrastructure is designed with all roadway users' safety in mind. However, policies alone cannot change infrastructure. Funding sources need to be identified to implement safety initiatives that could make a difference. Unfortunately, sources of funding are limited and there are many regional infrastructure needs. Below are some of funding sources and technical assistance available for safety projects in the AMPA.

Project Prioritization Process (PPP)

The Project Prioritization Process (PPP) is the method MRMPO uses to evaluate projects from member agencies seeking federal funding for transportation projects. MRMPO's member agency include local governments within the Albuquerque Metropolitan Planning Area. These include the cities, towns and counties within the AMPA. The PPP is a quantitative method that uses data to evaluate and compare projects proposed for inclusion in the Transportation Improvement Program (TIP). The TIP is a short-term plan that programs federal transportation dollars for local projects. The TIP sets the schedule for the region's transportation improvements over the next 6 years and is updated biennially. With limited federal funding available to projects in the AMPA, the PPP is how we "put our money where our mouth is," in terms of funding projects that align with MRMPO's guiding principles and Preferred Scenario as laid out in the Metropolitan Transportation Plan.

In the 2016 PPP, projects that incorporated safety features gained more points. Projects addressing safety issues at one of the 20 most dangerous intersections as identified in MRCOG's annual safety report received additional points. The PPP is updated every two years to aid the TIP project selection process. In its next incarnation, the points available to safety projects can be expanded to ensure safety enhancing projects are prioritized for federal funds. The safety strategies laid out in this document will inform the PPP's safety strategies, ensuring points are awarded for proven safety measures.

Federal Highway Administration (FHWA) Pedestrian and Bicycle Safety Focus States and Cities

Since 2004, FHWA's safety office has been focusing extra resources on the cities and states with the highest pedestrian fatalities and/or fatality rates. Albuquerque is a focus city and New Mexico is a focus state. Since the program began, FHWA personnel collaborated with local transportation professionals to create two pedestrian and bicycle road safety audits (RSAs). One RSA was performed on the West Central Avenue corridor, while the other was focused on the Central and San Mateo intersection, the region's second most dangerous intersection for bicyclists and pedestrians. Some of the suggestions from the Central and San Mateo RSA were incorporated into the Albuquerque Rapid Transit project.



Southwest corner of Central and San Mateo

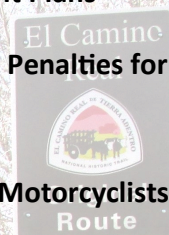
Ensure Strong Policy and Funding Mechanisms

Action Items Summary

This list is a snapshot of the action items in this plan under this emphasis area. Policy often comes first and should help drive funding decisions. In our region, for example, we have passed some Complete Streets policies that have resulted in changes in design practice and have influence on funding decisions. Bringing to light the values that are important to us as a community through policy, and then backing that up by how we prioritize our funding decisions are key to creating communities that are safe for everyone. In addition, policies, plans, and programs help understand the many tools that impact safety that we might not have otherwise considered such as access management plans and Safe Routes programs.

1. **Adopt Vision Zero with Task Force**
2. **Establish a public rights-of-way (PROWAG) Implementation Committee**
3. **Prioritize Safety into All Projects and Programs**
4. **Prioritize Fast Tracking Safety Projects**
5. **Utilize Subarea Assessments**
6. **Implement Complete Streets Concepts**
7. **Collaboration with Community Based Organizations**
8. **Form on-going relationship with law enforcement**
9. **Develop additional policy between Tribal governments and NMDOT**

10. **Encourage Projects that Develop Incident Diver-
sion Plans**
11. **Improve Visibility of Bicyclists and Pedestrians**
12. **Provide Road Safety Audit Standards and Process**
13. **Establish Guidance for Small Urban and Rural Safe-
ty Actions**
14. **Support the NMDOT 2016 Strategic Highway Safe-
ty Plan (SHSP)**
15. **Expand Safe Routes Programs**
16. **Expand School Pick Up/Drop Off Planning and Co-
ordination**
17. **Support NMDOT Safety Targets**
18. **Develop Access Management Plans**
19. **Provide Better Tracking and Penalties for Repeat
Offenders**
20. **Pass State Helmet Laws for Motorcyclists**
21. **Support Auto Insurance Related Strategies**
22. **Local Road Safety Campaigns**
23. **Improve Pavement Condition and Maintenance
For Pedestrian and Bicycle Facilities**
24. **Add Road Safety Impact Assessments to the TIA
Process**



Policy and Funding (PF) Strategies

ADOPT VISION ZERO WITH TASK FORCE

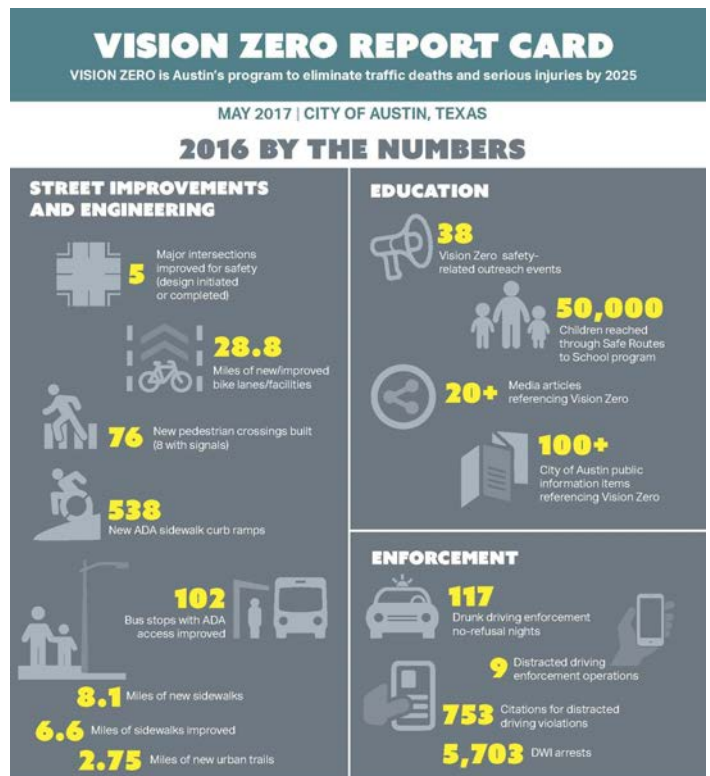
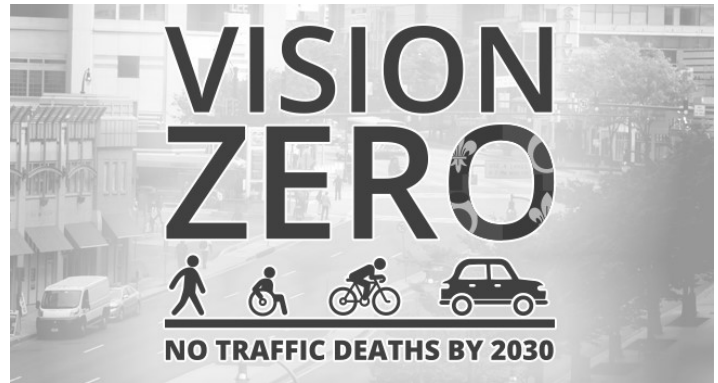
The only way to really make strides with a Vision Zero policy is to have decision makers who would like to champion this concept and who can help get it both adopted and implemented. Once this policy goal is adopted, then a Task Force should be set up or existing committees should take on creating succinct action items to accomplish in the first five years based on this plan. Potential task force members include, but are not limited to: planners, engineers, law enforcement, community health practitioners, local elected officials, community members, and members of the disabled community.

As shown in this document, with the commitment to this goal, success can be had. Austin, TX, for example has had some success with their Vision Zero campaign, which includes a task force, a website dedicated to the effort that includes short educational brochures, a report card, and personal actions that people can take on to improve roadway safety.

According to the City of Austin's 2016-2018 Action Plan:

Eliminating traffic deaths and serious injuries will require long-term efforts. This plan articulates an ambitious two-year strategy to begin reducing traffic deaths as Austin works toward the goal of zero deaths and serious injuries by 2025. The actions in this plan should be evaluated and refined on an on-going basis. The plan is underpinned by several key principles:

1. Traffic deaths and injuries are a preventable, public health issue. Any traffic death is too many.
2. People will make mistakes; the transportation system should be designed so those mistakes aren't fatal.
3. Safety is the primary consideration in transportation decision-making.
4. Traffic safety solutions must be addressed holistically, through:
 - Education and culture change,
 - Enforcement and prosecution, and
 - Land use, planning, and transportation engineering.



VISION ZERO
Help Austin reach zero traffic deaths
All data included in this first annual report card is sourced from the Vision Zero Annual Report 2016, available online at AustinTexas.gov/VisionZero.

Source: City of Austin

Policy and Funding (PF) Strategies

ESTABLISHING A PROWAG IMPLEMENTATION COMMITTEE

Generally, larger entities such as the NMDOT and the City of Albuquerque require or are starting to require Public Rights-of-Way Accessibility Guidelines (PROWAG). Similar to the New Mexico Complete Streets Leadership Team, a committee of AMPA planning area entity representatives, engineers, and planners should be assembled to meet on a regular basis with an expressed role of getting all planning area entities to comply with PROWAG standards on upcoming projects. Additionally, this committee should discuss strategies for upgrading existing infrastructure at locations that are not likely to have upcoming reconstruction projects in the near future.

PRIORITIZE SAFETY INTO ALL PROJECTS AND PROGRAMS

As mentioned earlier in this document, MRMPO uses a Project Prioritization Process (PPP) to prioritize regional projects and to make decisions about programming federal funding. This process provides a quantitative assessment based on broader transportation goals. This process is continually being updated and is a framework that can be used for local capital funding programs as well.

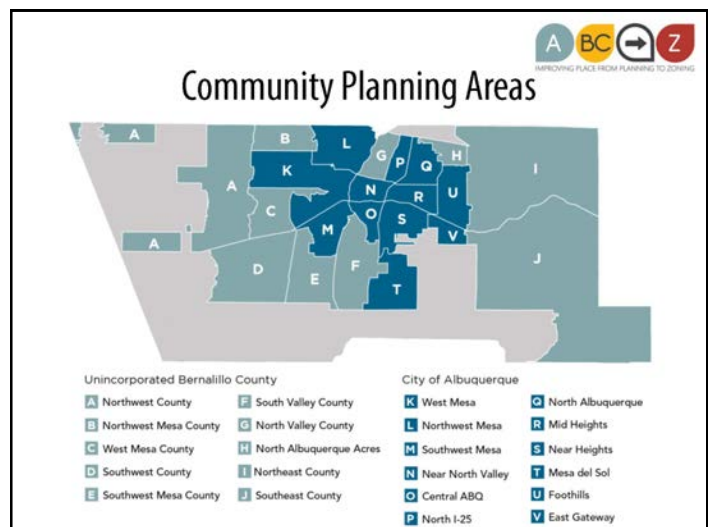
In order to ensure that future projects incorporate multi-modal safety considerations, funding for future design and construction projects should be conditional on whether that particular project incorporates complete streets and safety analyses that impact design considerations from the project inception all the way to final walkthrough.

PRIORITIZE FAST TRACKING SAFETY PROJECTS

During the two stakeholder workshops, attendees identified the slow implementation of safety projects as a challenge. When projects are not implemented in a timely manner, safety concerns and effective safety measures are not easily quantified. It is recommended that AMPA entities put a greater policy priority on safety projects. This prioritization strategy should include setting specific implementation schedules, streamlining the identification of road safety audit candidates, and developing the ability to quickly assemble a safety audit and design team. Equity should also be a prioritized factor in this decision-making process.

UTILIZE SUBAREA ASSESSMENTS

Sometimes looking at smaller area geographies can provide better insight into where changes should be made to improve safety in our communities. As the local entities develop planning area assessment like the Community Planning Areas identified in the Albuquerque and Bernalillo County Comprehensive Plan, these geographies can be used to assess locations and types of crashes that are more common within these subareas. For Small Urban and Rural areas this may just be a more focused crash data assessment within their jurisdictional boundaries, which MRMPO would be able to help develop. As these assessments are made, it is important to continue to look at current census data to make sure that communities with lower income or lack of mobility options are addressed.



Source: City of Albuquerque ABC to Z

Policy and Funding (PF) Actions

IMPLEMENT COMPLETE STREETS CONCEPTS

The New Mexico Complete Streets Leadership Team should be used as a resource to help facilitate and coordinate the development of complete streets policies for Small Urban, Tribal, and Rural areas. Lessons and experience learned in the development of the City of Albuquerque, Bernalillo County policies, and the MRCOG resolution should be applied in the development of Small Urban, Tribal, and Rural policies. The overall goal of these policies will be to not “over design” roadways (this tends to increase operating speeds), but rather to incorporate a context sensitive approach that improves safety and connectivity for all modes.

COLLABORATION WITH COMMUNITY BASED ORGANIZATIONS

The AMPA would benefit from the development of a strong regional community based organization to advocate for the traffic safety needs of vulnerable user groups, including, but not limited to low income, disabled, and families low car ownership. The group would be non-governmental and ideally work to increase and improve travel safety and provide equitable mobility for all people.

FORM ON-GOING RELATIONSHIP WITH LAW ENFORCEMENT

Law enforcement is a critical component to implementing the emphasis areas outlined in the RTSAP and improving travel safety for all people in our region. Law enforcement buy-in is critical to ensure a collaborative effort to build and improve upon with law enforcement. The following serves as a preliminary list of areas to improve coordination and collaboration with law enforcement.

- Creating a channel of communication (having direct contacts)
- Providing timely exchange of information—sharing crash data and data analysis to identify dangerous locations or hotspot crash locations.
- Ensuring there is always an invitation for their participation and input in meetings, events, or trainings
- Tailoring law enforcement training with their direct input
- Provide law enforcement training language

DEVELOP ADDITIONAL POLICY BETWEEN TRIBAL GOVERNMENTS AND NMDOT

Agency stakeholders identified communication between Tribal Governments and NMDOT as a barrier. These issues were centered around safety issues that occur along NMDOT right-of-way, which is adjacent to Tribal land. Some issues reported included burning tumble weeds and fences damaged by crashes, which result in animals getting out. One recommendation identified to address these concerns included a cooperative policy among the different agencies to outline expectations and responses to potential problems.



Source: NM Complete Streets Leadership Team

Policy and Funding (PF) Actions

ENCOURAGE PROJECTS THAT DEVELOP INCIDENT DIVERSION PLANS

Often when crashes occur on freeway facilities, the risk for secondary crashes increase significantly due to increased congestion and driver inattention to emergency/crash vehicles present in the roadway. Currently, there is plenty of existing ITS infrastructure, including a network of dynamic message signs, a roadway information application, and a traffic management center that identify crash incidents on the freeway system and warn users of these incidents. However, when these incidents occur there needs to be diversion timing plans that can be activated on adjacent surface streets. The frontage road system that would then be able to efficiently accommodate diverted traffic patterns until incidents can be cleared and the freeway facility has been returned to free flow.

IMPROVE VISIBILITY OF BICYCLISTS AND PEDESTRIANS

Today's best practices recommend bicyclists use both bicycle lights and high visibility clothing to enhance prominence for people bicycling on the road. Additionally, it is recommended bicyclists use a front white light not only after sunset and before sunrise, but at all hours of bicycling to enhance visibility and safety. Also, a back red light can enhance visibility for bicyclists from behind.

The City of Albuquerque ordinance on bicycle equipment (§ 8-3-3-24) requires bicyclists to operate a white light on the front of a bicycle after sunset and prior to sunrise or in low light conditions, which can be visible from at least 500 feet from the front. It also requires a rear red reflector that is visible for at least 300 feet from the rear. There is no policy for pedestrians to carry lights or wear high visibility clothing when walking, but wearing a reflective safety vest during periods of darkness or reduced visibility could help them be seen better as well.

Public comment to this plan recommended utilizing dual sized reflectors that have a blinking light, which can be pinned to jackets or clothing. They dangle from the clothing to provide better visibility of a pedestrian or a bicyclists. In Scandinavia, large companies and banks distribute these items with their advertising. Similar products are distributed by the City of Albuquerque at Bike to Work Day. Perhaps this item could be considered for future events. (Source: 4imprint.com)



Source: Pennsylvania Department of Transportation

Each year at the City of Albuquerque's Bike to Work Day event, high visibility reflective gear such as ankle and wristbands, and vests are given away for free to encourage people to use and be seen when walking or biking. Of course, it's not possible to force all pedestrians and bicyclists to wear high visibility clothing, and most of the literature on this topic suggests that behaving predictably when walking or bicycling, educating drivers to expect and respect pedestrians and bicyclists (Look for Me), and targeted enforcement of poor driver behavior, are the best strategies to make an impact for the safety of these more vulnerable roadway users. Nevertheless, educating people about how to make themselves more visible, reminding, and encouraging them to do so can certainly help.

Policy and Funding (PF) Actions

PROVIDE ROAD SAFETY AUDIT STANDARDS AND PROCESS

Road Safety Audit programs are currently one of the avenues for local governmental entities to establish safety projects and/or safety project funding through programs like the Highway Safety Improvement Program (HSIP). Often local entities, especially the more rural or small urban entities, do not know the process or necessarily what constitutes a high crash location that warrants a Road Safety Audit. Efforts to standardize the RSA standards process should include the following:

- Crash data standards to determine and prioritize RSA candidates including providing crash diagrams developed from crash reports.
- Standardized application for RSA funds to include crash history, current intersection conditions, and traffic demands.
- Prioritization methodology to determine which locations get priority.



Dan Burden leads a group through a road safety review on Constitution and San Pedro in Albuquerque.

Road safety audits were also identified by the FHWA as a proven safety countermeasure with a 10-60% reduction in total crashes (FHWA). Additional information can be found here:

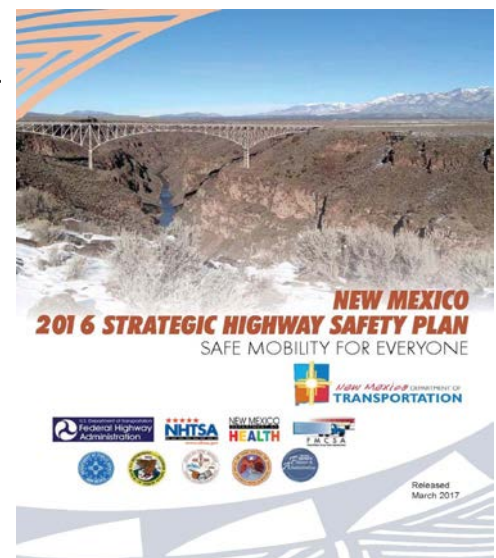
https://safety.fhwa.dot.gov/provencountermeasures/road_safety_audit/

ESTABLISH GUIDANCE FOR SMALL URBAN AND RURAL LOCAL ENTITY SAFETY ACTIONS

One way to help assess safety in smaller and rural communities is to provide them with guidance on how to develop their own safety action plans. MRCOG should develop procedures and performance measures consistent with safety action initiatives on the State and MPO level that local governments could use to develop their own action plans.

SUPPORT THE 2016 NMDOT SHSP

The NMDOT New Mexico 2016 Strategic Highway Safety Plan (NMDOT SHSP) has strategies related to rural areas, tribal areas, motorcyclists, and interaction with wildlife on the roadways that are supported by this plan, and some strategies which may be more suitable for the Small Urban and Rural areas considering many of the long, straight, roadways that can often induce high speeding and roll over crashes. This plan supports the NMDOT SHSP and should be used in concert with its strategies.



Source: NMDOT

Policy and Funding (PF) Actions

EXPAND SAFE ROUTES PROGRAMS

SAFE ROUTES TO SCHOOL

In the past, the FHWA had supported the safe routes to school program (SRTS), which assesses existing pedestrian facilities and routes at area schools by conducting a comprehensive safety audit. There is opportunity to expand and grow this program. Initially, candidate locations could be determined based on public feedback and crash data indicating high pedestrian crash locations. The most promising candidate locations would then be scheduled for a safety audit resulting in a final report with safety recommendations. Similar to road safety audits, it is important to assemble an audit team that represents a wide variety of perspectives, including law enforcement, engineers, planners, school administrators, parents, and local government representation. Based on the completed audit study, safety improvement projects can be developed and funded to improve pedestrian and bicycle safety.



Source: Safety Routes to Schools National Partnership



Source: NRPA

SAFE ROUTE TO PARKS

The National Recreation and Park Association (NRPA) has a campaign called Safe Routes to Parks. The campaign is meant to implement policy and program strategies to create safe and equitable access to parks. NRPA created a resource guide for professionals to implement this framework. Additional information and the guide can be downloaded here: <http://www.nrpa.org/Safe-Routes-To-Parks/>

SAFE ROUTES TO COMMUNITY CENTERS

Community centers are also places where improving walking and biking to these destinations, and infrastructure at these destinations for those driving there, could be improved by looking at PROWAG standards and placing a priority on fulfilling ADA requirements around these locations. Providing well connected bicycle and sidewalk infrastructure to these locations is essential for local community access and safety.

EXPAND SCHOOL PICK-UP/DROP-OFF PLANNING AND COORDINATION

Unfortunately, planning for school pick-up and drop-off operations at schools are often an after thought in the design and construction of new school facilities. Many problems arise through the lack of proper planning for these types of operations, including extensive queues that encroach on adjacent intersections, improper location of pedestrian crossings, lack of on/off-site connectivity to pedestrian facilities, poor separation between bus and parent vehicle traffic, and unsafe turn conflict areas between parents entering and exiting the school drop-off/pick-up area. Greater planning requirements and cooperation should be in place when new schools are designed, preferably involving urban planners and traffic engineers. Additionally, existing programs such as SRTS, or a new program should be developed to review and assess drop-off/pick-up operations at existing schools. This program could be similar to a Road Safety Audit (RSA).

An RSA team could include the school district, local government, engineering professional, and urban planning representatives who will participate in a field review of the site with the goal of producing a final report documenting safety issues and recommended mitigation measures to improve operations.

Policy and Funding (PF) Actions

SUPPORT NMDOT SAFETY TARGETS

The RTSAP is meant to confirm and ensure that local agencies and MRMPO are working toward shared goals set by NMDOT's safety targets. NMDOT's targets include the following:

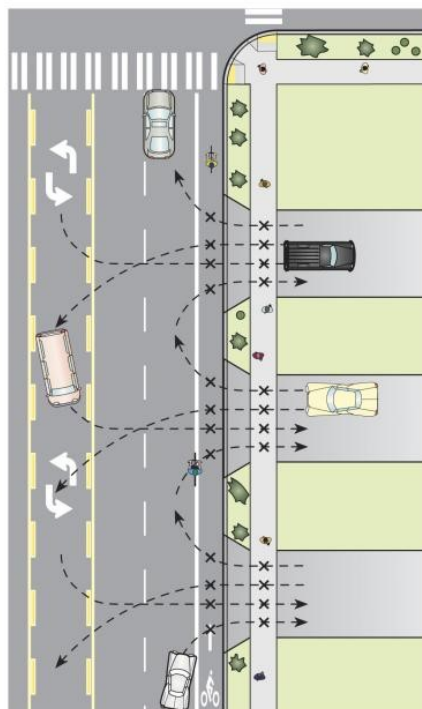
1. Limit the increase in total fatalities to 6.4% from 342.2 in 2015 to 364.1 by December 31, 2018 (FARS; 5-year averages).
2. Decrease the number of serious injuries by 15.6% from 1,445.0 in 2015 to 1,219.4 by December 31, 2018. Limit the increase in the fatality rate to .31% from 1.326 in 2015 to 1.330 by December 31, 2018.
3. Decrease the rate of serious injuries from 5.597 in 2015 to 4.456 by December 31, 2018.
4. Limit the increase in non-motorized fatalities and non-motorized serious injuries to 228 by December 31, 2018.

DEVELOP ACCESS MANAGEMENT PLANS

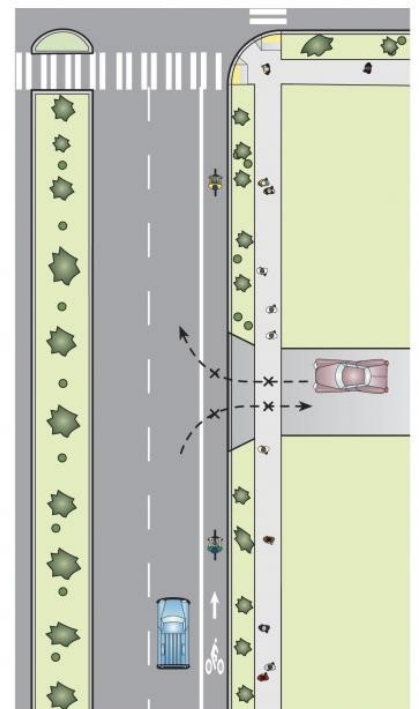
Source: ODOT, Draft Intro

Although not evident on the surface, poor access management has been shown to lead to increased aggressive driving and large speed differentials on corridors and at intersections. Poor access management includes poorly spaced access points, too many access points, misaligned driveways and streets, and unwarranted or poorly spaced signal control. It is best to combine access points that are controlled and limited through a corridor. This does several things that lead to safer driving and a safer environment for pedestrians and bicyclists:

- 1) Fewer conflict points and fewer opportunities for vehicles to vie for position on the roadway facility
- 2) Driveways located too close to intersections tend to adversely affect the operations at that intersection
- 3) The more access points a facility has, the greater the observed speed differentials
- 4) Poorly aligned driveways increase conflicts, operation complexity, and violate driver expectations
- 5) Unwarranted and poorly spaced traffic signals usually lead to increased rear end crashes, congestion, and sometimes greater crash severities with increased high-speed angle incidences



Uncontrolled accesses create 8 potential conflict points at every driveway.



A raised median and consolidating driveways reduce conflict points.

Source: Oregon Department of Transportation

Policy and Funding (PF) Actions

NMDOT, City of Albuquerque, City of Rio Rancho, and Bernalillo County have some sort of access management policy, but many Small Urban and Rural entities do not. Therefore, good access management practice should be made policy in the Small Urban and Rural sections of the AMPA. A reassessment of the current access management policies in the Large Urban areas, including comparing them to current best practices would be warranted as well.

A good starting point may be picking a High Fatal and Injury Corridor and applying an access plan to that corridor. A good reference for developing a modern access management policy is the Transportation Research Board (TRB) is published Access Management Manual and the NCHRP Report 548, A Guidebook for Including Access Management in Transportation.

PROVIDE BETTER TRACKING AND GREATER PENALTIES FOR REPEAT OFFENDERS

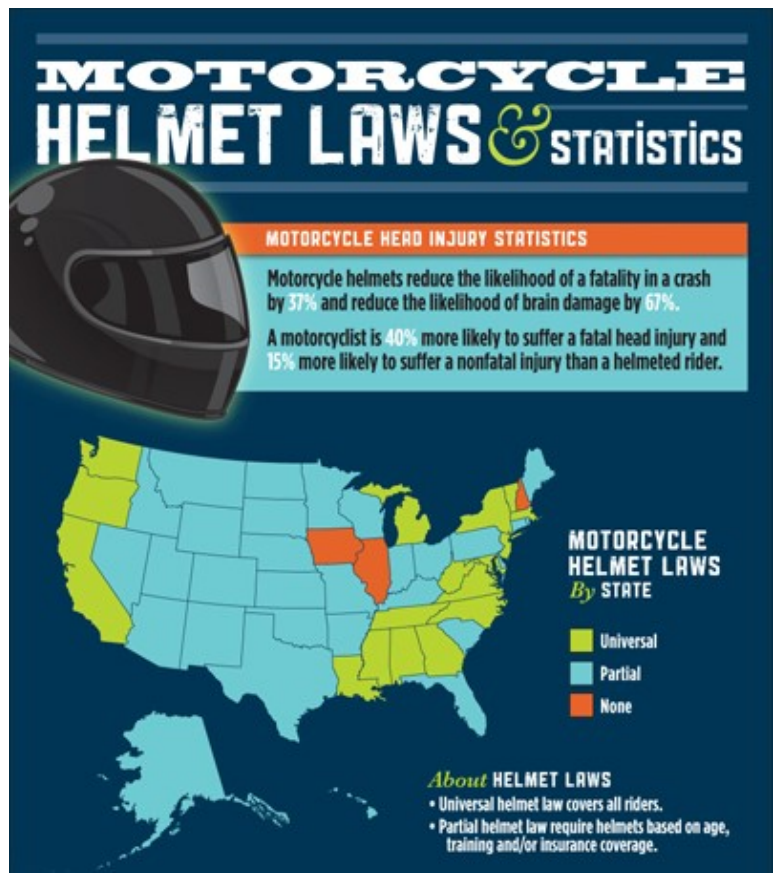
New Mexico's laws related to the strength of repercussions of driving while intoxicated are ranked 29th in the country by an assessment done by Wallet Hub comparing all 50 states (Wallet Hub 2017). Reviewing this analysis, New Mexico has opportunities to be more stringent when it comes to penalties for drunk driving. These include not waiting until the 4th offense before it is considered a felony or before revoking a person's license for a lifetime, increasing the fines with 1st and 2nd offenses, including protection against child endangerment, and increasing the use of alcohol abuse treatment services (ENDWI 2017). There should be a greater effort in identifying repeat offenders involved in impaired driving. This effort is recommended not only to assist law enforcement, but also to ensure data was included in the crash report and crash data. Future safety studies and actions plans could measure and assess how many crashes involve repeat offenders, which would allow for more focused safety strategies. This strategy was also suggested in the 2016 NMDOT Highway Safety Plan.

PASS STATE HELMET LAWS FOR MOTORCYCLISTS

New Mexico does not have a universal helmet law, which is a law that requires all motorcyclists to wear a helmet. New Mexico's law only requires motorcyclists 17 and younger to wear a helmet.

SUPPORT AUTO INSURANCE RELATED STRATEGIES

This is another strategy that mirrors suggested actions from the 2016 NMDOT Highway Safety Plan. This strategy would allow insurance companies to reduce paid claims if distracted driving is identified as the primary cause of the crash. It would put more personal financial responsibility on drivers for distracted driving incidences. It would also require a identification of crash cause for police enforcement to ensure that distracted driving is truly the cause of the crash. Often distracted driving is a catch all or general description of a crash cause.



Source: McIntyre Law, P.C.

more detailed

Policy and Funding (PF) Actions

TRACKING SAFE DRIVER BEHAVIOR

Another strategy already in use by All State Car Insurance is the reduction of car insurance cost if the driver meets specific requirements in safe driving behavior. All State provides an app called Drivewise that tracks driving movements such as going over 80 mph, hard breaking, and driving at late hours. If the driver meets these requirements throughout a reporting period, they can earn points and/or cash back rewards for safe driving.

LOCAL ROAD SAFETY PLANS

Local road safety plans (LRSP) are a safety countermeasure identified by FHWA. They “provides a framework for identifying, analyzing, and prioritizing roadway safety improvements on local roads ,” (FHWA 2017) and can be a tool to reduce fatalities, serious injuries, and crashes. Local roads experience 3x the fatality rate of the Interstate Highway System, so the LRSP can be a useful tool to address and improve local road safety for all roadway users. Additional information can be found here: https://safety.fhwa.dot.gov/provencountermeasures/local_road/



Source: Allstate

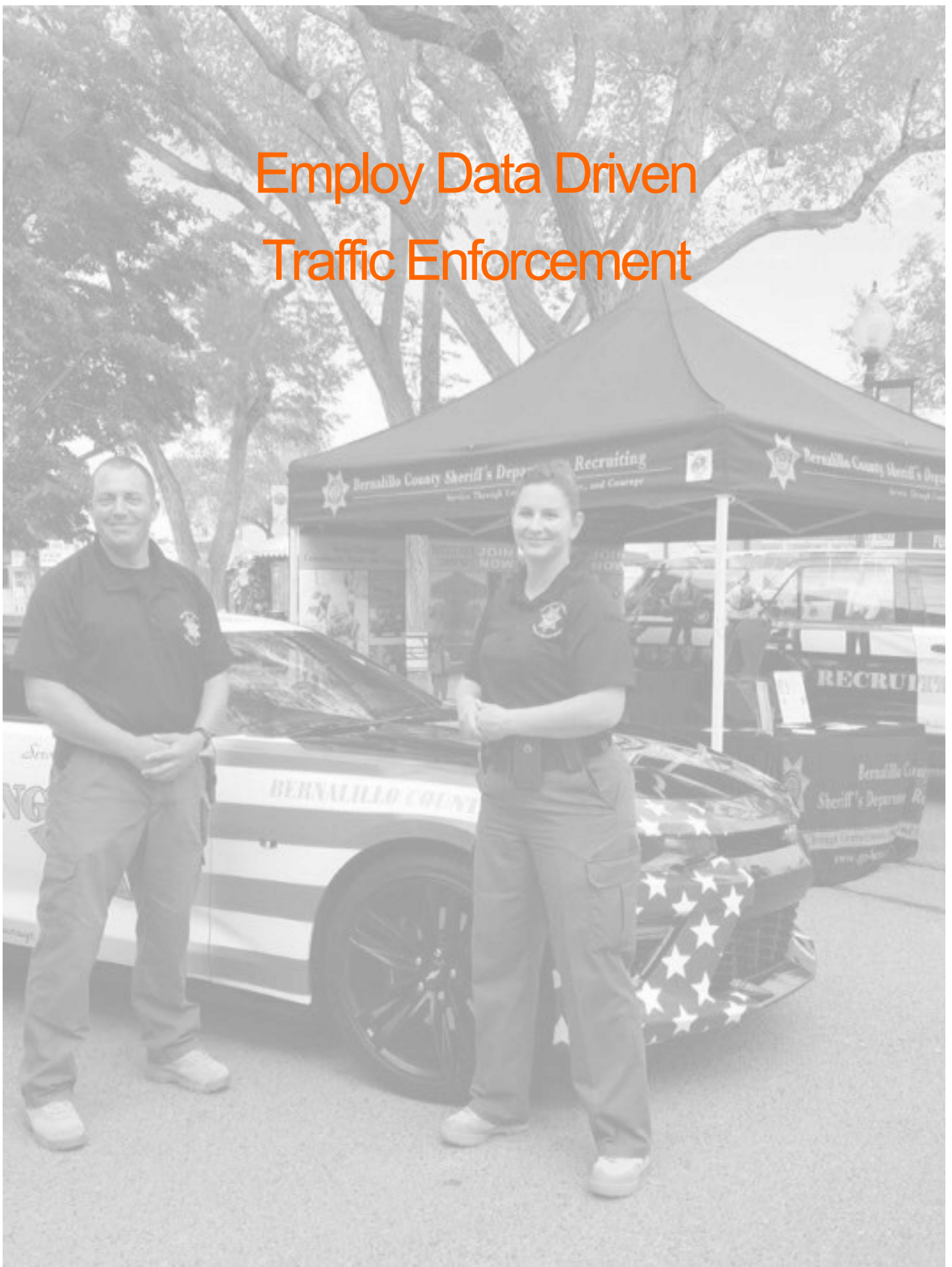
IMPROVE PAVEMENT CONDITION AND MAINTENANCE FOR PEDESTRIAN AND BICYCLE FACILITIES

Pedestrians and bicyclists encounter issues with pavement, sidewalk condition, and obstructions that can have serious consequences on their mobility. This can occur often with construction activities where pedestrians and bicyclists are not provided an alternative safe route. Since bicyclists are riding near the side of the road, they tend to come across more issues related to debris and cracking and uneven surfaces. On shared use trails both pedestrians and bicyclists may encounter hanging branches or vegetation that hinders their line of sight. Developing a maintenance plan for improving these issues that are more clearly built into local agency practices can be a good first step. These types of maintenance issue may require removing debris or trimming back vegetation more often along certain routes or changing policy on how to apply new asphalt on roadways, so that the edges are better covered (FHWA 2006).

ADDING ROAD SAFETY IMPACT ASSESSMENTS TO THE TIA PROCESS

In the European Union, local agencies conduct Road Safety Impact Assessments (RIA) as a part of their regular TIAs, which occur with new development or a change in roadway design. RIAs do not replace Road Safety Audits, rather they are a way to expand a traditional TIA to include an investigation of crash history at a location to include any patterns in the collisions, to review issues such as roadway alignment, existing or potential for excessive speeding with added capacity, and opportunities for improving pedestrian access or access to public transportation (Transport Infrastructure Ireland 2016).

Employ Data Driven Traffic Enforcement



Employ Data Driven Traffic Enforcement

While traffic enforcement has always been an important aspect of safety actions plans, Vision Zero goals specifically work to develop and empower traffic enforcement with data driven information that will allow law enforcement to allocate limited resources to efforts that will be most effective and responsive to prevailing safety conditions. **This will require not only continued coordination with law enforcement, but also continued evolution of data collection to better inform safety needs and solutions.**

Stronger and more targeted law enforcement to combat dangerous driving behavior has potential to greatly impact and reduce the frequency of fatalities and serious injuries in our roadways. It is not possible for law enforcement to be in all places where illegal and/or dangerous driving behavior is occurring. Utilizing a data driven approach enables law enforcement to target key issue areas to work toward improvement and employ intelligent transportation system

options in places where law enforcement cannot be. Distracted driving accounted for almost 30% of all identified factors for injury crashes in AMPA from 2011 to 2015. With the availability and connectivity that smart phones offer drivers, the opportunity for distracted driving has increased especially with regard to texting and talking on the phone. Therefore, a focus on trying to discourage this driver behavior is paramount.

Alcohol / Drug Involved Crashes

Based on existing data, 53% of fatal crashes involved alcohol or drugs, so as a region we need to address the best strategies to tackle this issue. Alcohol and/or drug involved crashes can be analyzed to see if the frequency of crashes has any sort of pattern geographically. From this information, law enforcement can make decisions about where to place officers, check points, or automated enforcement devices. For alcohol or drug involved crashes, many of the high frequency intersections occur on the Paseo del Norte, Coors Boulevard Corridor, Central Avenue, Montgomery Boulevard, and at access points to I-40 and I-25. In fact, the intersection with the greatest frequency occurs at the Paseo del Norte Boulevard and Coors Boulevard intersection. Further information on types of interventions and high risk areas for alcohol involved crashes is provided in the detailed action items.



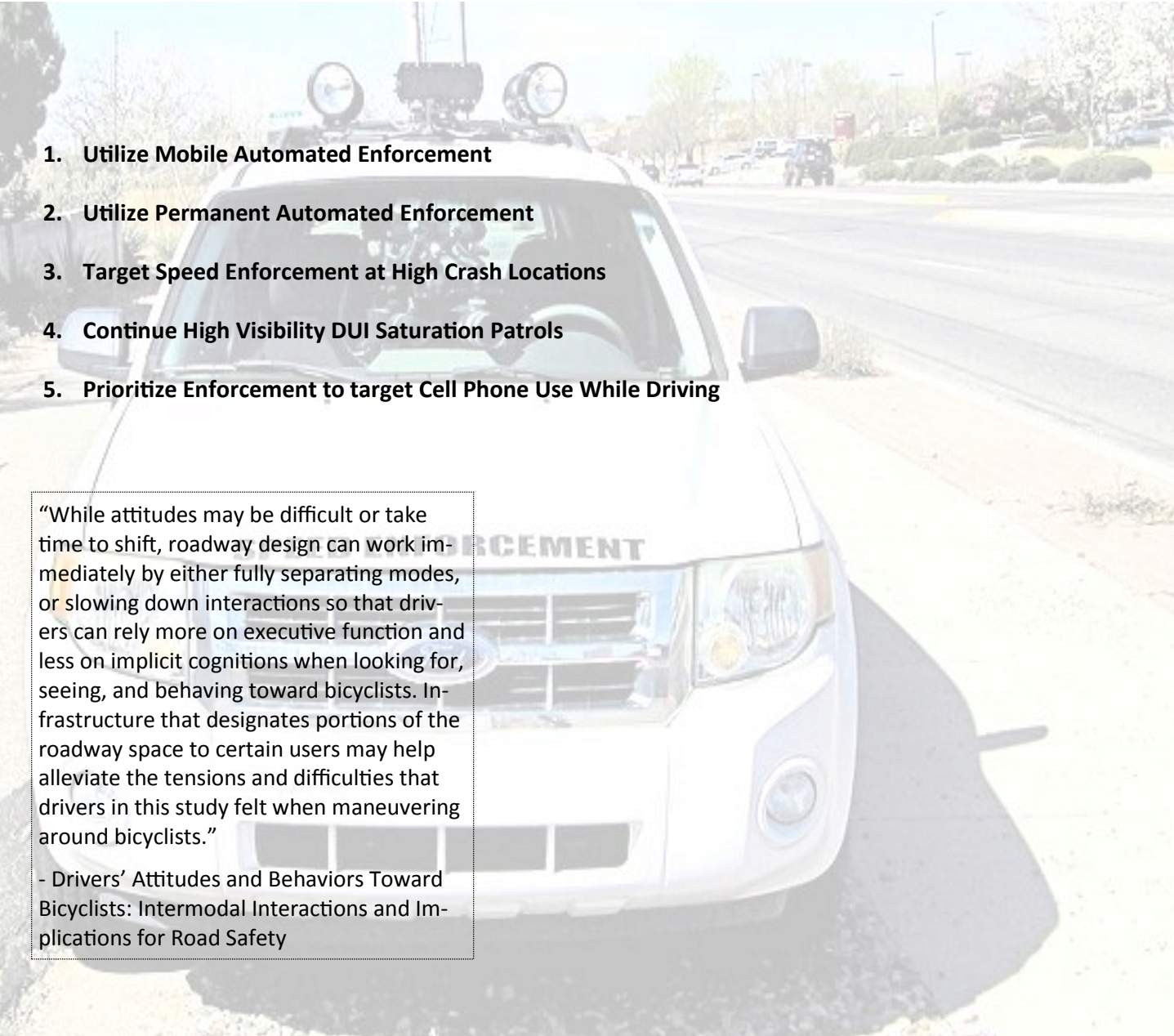
Source: Bernalillo County District Attorney's Office

Source: Bernalillo County District Attorney's Office

Employ Data Driven Traffic Enforcement

Action Items Summary

This list is a snapshot of the action items in this plan under this emphasis area. Our police force does not have the capacity to be everywhere all the time. With new technologies and focused enforcement efforts, the job of making sure we are all driving safely can be improved. Certain types of interventions are far more effective than others and understanding what the data is telling us in order to target our efforts can make a world of difference in the safety of our roadways.

- 
1. **Utilize Mobile Automated Enforcement**
 2. **Utilize Permanent Automated Enforcement**
 3. **Target Speed Enforcement at High Crash Locations**
 4. **Continue High Visibility DUI Saturation Patrols**
 5. **Prioritize Enforcement to target Cell Phone Use While Driving**

“While attitudes may be difficult or take time to shift, roadway design can work immediately by either fully separating modes, or slowing down interactions so that drivers can rely more on executive function and less on implicit cognitions when looking for, seeing, and behaving toward bicyclists. Infrastructure that designates portions of the roadway space to certain users may help alleviate the tensions and difficulties that drivers in this study felt when maneuvering around bicyclists.”

- Drivers’ Attitudes and Behaviors Toward Bicyclists: Intermodal Interactions and Implications for Road Safety

Traffic Enforcement (TE) Actions

UTILIZE MOBILE AUTOMATED ENFORCEMENT

Currently, the City of Rio Rancho deploys mobile automated speed enforcement vans at various focus locations throughout the City. A similar approach should be deployed in other parts of the AMPA. Mobile deployments have the advantage of potentially covering more ground and implementing speed enforcement at known trouble spots. More permanent deployments of automated enforcement should be deployed at high risk locations



Source: City of Denver

like signalized intersection with high crash rates, school zones, or higher speed facilities. Enforcement should also include red light compliance in addition to speed compliance. Another advantage to mobile automated enforcement is their deployment into temporary conditions, such as construction zones, where speed is important to keep in check. Additionally, there have been recent studies and testing on the use of artificial intelligence to detect reckless driving behavior and also drivers texting while driving. These tools could be potential tools further utilized in the future as they become more common and robust.

UTILIZE PERMANENT AUTOMATED ENFORCEMENT

The City of Albuquerque deployed permanent automated enforcement in the past, but it was considered controversial and unpopular with the general public. However, the 2010 Highway Safety Manual indicated that automated enforcement reduced crash occurrences as much as 16% for angle injury crashes and 26% for right-angle/left-turn opposite direction crashes. These successful reductions and potential benefits outweigh reasons to not use automated enforcement, especially as enforcement agencies face staffing and budget challenges now and in



Source: Walk Denver

the future. Even with fully-funded and well-staffed police departments, it is not economically viable nor realistic to expect police officers to be present at all high-risk crash locations all the same time.

Traffic Enforcement (TE) Actions

TARGET SPEED ENFORCEMENT AT HIGH CRASH LOCATIONS

Encourage AMPA agencies to focus enforcement on high risk behavior such as red light running, speed enforcement, and failure to yield right-of-way at high crash locations. Enforcement should focus on violations that tend to lead to fatal and serious injury and/or pedestrian and bicycle crashes. Deployments should also utilize automated enforcement.

CONTINUE HIGH VISIBILITY DUI SATURATION PATROLS

Many enforcement agencies within the AMPA already deploy saturation patrols at high risk locations and especially during holidays when impaired driving tends to increase. Continued use and expansion of this strategy is recommended not only for the AMPA, but also in smaller urban areas, such as Belen, Los Lunas, etc. Continued purchase of saturation patrols, including law enforcement processing vans, would allow local agencies to expand these patrols. One way to make decisions on where to set up patrols is to look at the data to see if there are more frequent crashes at certain locations than others that involved drinking while driving.



Source: KRQE

Maps are provided here to show segments of roadways that have a higher than average number of incidents where alcohol/drug involved is the top contributing factor. These maps are a starting point to provide some information and guidance on what can be created with existing data to help guide decision making. They should be used in concert with police agency knowledge of their local area's concerns.

PRIORITIZE ENFORCEMENT OF CELL PHONE USE WHILE DRIVING

The state of New Mexico as well as many cities within the AMPA currently have distracted driving laws where citations will be issued. In Albuquerque and Rio Rancho, cell phone citations are \$100 for the first offense and \$200 for subsequent offenses. This amount may need to be reviewed to see if is effective and serves as the right deterrent.

Vulnerable Users and Locations

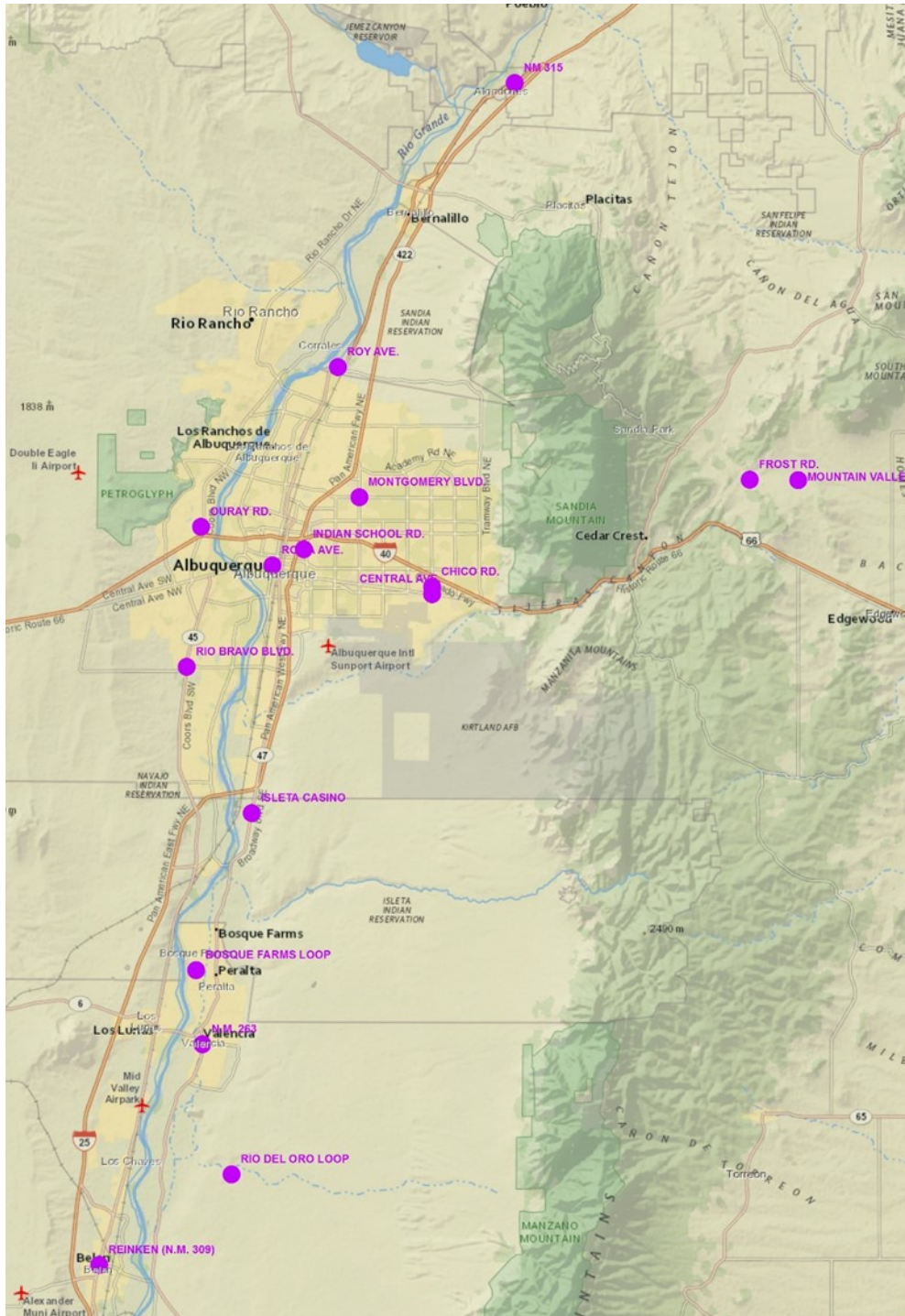
Cell phone enforcement areas should be identified with regular enforcement in locations where our most vulnerable road users are walking or biking, which include school zones, work zones, and high-speed facilities.



A man checks his cell phone while waiting at a stop light—a common occurrence on all our streets.

Field Visits in the AMPA

A group of engineers and planners from the project team visited high crash locations. The field team identified issues that could be corrected and addressed through short-term and long-term strategies. Some locations require more long-term corrections, but many interventions identified were simple fixes that could also apply to other similar roadways and intersections. The strategies identified from the field visits have been incorporated into the action items, and are discussed in further detail in the Appendix. Of course, before doing any changes to these locations, there should be further investigation into the safety issues identified. In some cases, pulling the paper traffic records would be beneficial to identify specific improvements.



Field Visit Locations

Large Urban

- Roma Ave and 4th Street
- Ouray Road and West Frontage Road
- Rio Bravo and Coors

Pedestrian Focused

- Eubank and Central Avenue
- Montgomery and San Mateo

Bicycle Focused

- Eubank Boulevard and Chico Road
- Indian School Road and University Boulevard

Small Urban Areas

- NM 263 and NM 247 (Los Lunas)
- Reinken Ave and Main Street (Belen)

Rural Locations

- Bosque Loop and McNew Rd
- Rio Del Oro Loop and Manzano Expressway
- Frost Road and Mountain Valley
- Frost Road and Vallecitos

Tribal Locations

- Isleta Casino and NM 47 (Isleta Pueblo)
- NM 315 and NM 313 (San Felipe Pueblo)
- Roy and NM 313 (Roundabout in Pueblo of Sandia Village)

Corridor

- Isleta from Goff to El Centro Familiar

Thank You! How You Can Help!

Thanks to the Project Management Team and Stakeholders Group for their guidance in the development of this safety action plan. A special thanks to Lee Engineering for providing roadway design expertise and leading field visits, and Planning Technologies for crash data analysis.

Led by the Project Management Team, a Stakeholders Group was created to identify safety needs along with safety implementation strategies for the region. The primary objective of this group was to provide a broad view of transportation safety from the standpoints of a wide variety of user groups. The Regional Transportation Safety Action Plan is the result of the combined efforts of member agencies of the Mid-Region Council of Governments, including the New Mexico Department of Transportation (NMDOT), and support from the Bernalillo County Sheriff Department, and the New Mexico Complete Streets Leadership Team.



We're all human and we all make mistakes, so please remember that we're all in this together! Treat others on the roadway like they are your family and be mindful of everyone. We need your help to make this plan a success and improve the safety of our communities. Each person is responsible for their own actions and can do their part.

- ⇒ Follow the rules of the road—drive the speed limit, do not text (or talk) and drive, do not drive while impaired, and watch out for pedestrians and bicyclists.
- ⇒ Be visible and predictable.

We can help prevent loss of life. None of us are replaceable.

Check out this website for more information:

<https://www.mrcog-nm.gov/255/Safety-Analysis>

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Summary of Action Items

#	Action Item	Emphasis Area
1	Conduct Prioritized Speed Studies	Excessive Speed and Dangerous Driving
2	Conduct Before and After Crash Studies	Excessive Speed and Dangerous Driving
3	Reevaluate Speed Limit Policies	Excessive Speed and Dangerous Driving
4	Reduce Turning Speeds	Excessive Speed and Dangerous Driving
5	Enhance Speed Feedback Signs	Excessive Speed and Dangerous Driving
6	Utilize ITS for Smart Work Zones	Excessive Speed and Dangerous Driving
7	Expand Safety Zones	Excessive Speed and Dangerous Driving
8	Provide Advanced Signal Timing	Excessive Speed and Dangerous Driving
9	Provide Advance Detection	Excessive Speed and Dangerous Driving
10	Improve EMS Response Time Grid	Excessive Speed and Dangerous Driving
11	Provide an Aggressive Driving Hotline	Excessive Speed and Dangerous Driving
1	Develop and Follow Broad Design Principles	Designing Streets for all Modes
2	Implement Innovative Intersection Roadway Geometry	Designing Streets for all Modes
3	Enhance Intersection Crosswalks	Designing Streets for all Modes
4	Utilize Road Diet Treatments	Designing Streets for all Modes
5	Conduct Sight Distance Review	Designing Streets for all Modes
6	Require Case F Sight Distance Review	Designing Streets for all Modes
7	Increase use of Traffic Calming Designs	Designing Streets for all Modes
8	Increase use of Tactical Urbanism	Designing Streets for all Modes
9	Provide Pedestrian and Bicyclist Refuges and Crosswalks	Designing Streets for all Modes
10	Use Local HAWK Signal/Pedestrian Hybrid Beacons	Designing Streets for all Modes
11	Build Wider Sidewalks & Walkways	Designing Streets for all Modes
12	Increase Pedestrian Scale Lighting	Designing Streets for all Modes
13	Enhance Signalization for Pedestrians	Designing Streets for all Modes
14	Increase Pedestrian Signage	Designing Streets for all Modes
15	Enhance Signalization for Bicyclists	Designing Streets for all Modes
16	Expand Separated Bicycle Infrastructure	Designing Streets for all Modes
17	Maintain Road Stripping	Designing Streets for all Modes
18	Provide Pedestrian/Bicycle Crossing Gates at Railroads	Designing Streets for all Modes
19	Use FHWA Identified Safety Countermeasures	Designing Streets for all Modes
20	Utilize Crash Modification Factors (CMF) in Local Designs	Designing Streets for all Modes
21	Utilize Four-Way-Stops Where Appropriate	Designing Streets for all Modes
1	Provide Road Safety Education at Primary Schools	Meaningful Behavior Change
2	Replicate City of Albuquerque Educational Programs	Meaningful Behavior Change
3	Develop Roadway Safety Community Centers	Meaningful Behavior Change
4	Continue to Develop Multimedia Education Materials	Meaningful Behavior Change
5	Promote Pledges around Not Driving Distracted	Meaningful Behavior Change
6	Expand Driver Education	Meaningful Behavior Change
7	Provide a Multi-Modal Approach to Education	Meaningful Behavior Change
8	Expand Public Awareness Campaigns	Meaningful Behavior Change
9	Conduct Public Information Meetings on Safety Interventions	Meaningful Behavior Change
10	Continue to Develop Educational Materials to Address Impaired Driving	Meaningful Behavior Change
11	Develop Educational Materials to Address Speeding	Meaningful Behavior Change
12	Develop Educational Materials to Address Speeding	Meaningful Behavior Change
13	Continue Ignition Interlock Programs	Meaningful Behavior Change
14	Enhance License Revocation and Suspension	Meaningful Behavior Change
15	Introduce Safe Driver Apps	Meaningful Behavior Change
16	Adopt the Move Over It's the Law Campaign	Meaningful Behavior Change

Summary of Action Items

#	Action Item	Emphasis Area
1	Improve Spatial Tracking of Crashes	Data Collection and Roadway Mangement
2	Improve Acquisition and Timeliness of Crash Records	Data Collection and Roadway Mangement
3	Better Define Intersection Boundaries	Data Collection and Roadway Mangement
4	Expand Traffic Counts for all Modes	Data Collection and Roadway Mangement
5	Adopt 2010 Highway Safety Manual Methodology	Data Collection and Roadway Mangement
6	Implement use of Crash Diagram Software	Data Collection and Roadway Mangement
7	Continue use of Online Maps of Crash Data	Data Collection and Roadway Mangement
8	Employ Active Traffic Management	Data Collection and Roadway Mangement
9	Expand Courtesy Patrols	Data Collection and Roadway Mangement
10	Use Intelligent Transportation Systems (ITS) Devices	Data Collection and Roadway Mangement
11	Expand Traveler Information	Data Collection and Roadway Mangement
12	Enhance Emergency/Incident Management	Data Collection and Roadway Mangement
13	Provide Additional Data Augmentation	Data Collection and Roadway Mangement
1	Adopt Vision Zero with Task Force	Policy and Funding Mechanisms
2	Establish a public rights-of-way (PROWAG) Implementation Committee	Policy and Funding Mechanisms
3	Prioritize Safety into All Projects and Programs	Policy and Funding Mechanisms
4	Prioritize Fast Tracking Safety Projects	Policy and Funding Mechanisms
5	Utilize Subarea Assessments	Policy and Funding Mechanisms
6	Implement Complete Streets Concepts	Policy and Funding Mechanisms
7	Collaboration with Community Based Organizations	Policy and Funding Mechanisms
8	Form on-going relationship with law enforcement	Policy and Funding Mechanisms
9	Develop additional policy between Tribal governments and NMDOT	Policy and Funding Mechanisms
10	Encourage Projects that Develop Incident Diversion Plans	Policy and Funding Mechanisms
11	Improve Visibility of Bicyclists and Pedestrians	Policy and Funding Mechanisms
12	Provide Road Safety Audit Standards and Process	Policy and Funding Mechanisms
13	Establish Guidance for Small Urban and Rural Safety Actions	Policy and Funding Mechanisms
14	Support the NMDOT 2016 Strategic Highway Safety Plan (SHSP)	Policy and Funding Mechanisms
15	Expand Safe Routes Programs	Policy and Funding Mechanisms
16	Expand School Pick Up/Drop Off Planning and Coordination	Policy and Funding Mechanisms
17	Support NMDOT Safety Targets	Policy and Funding Mechanisms
18	Develop Access Management Plans	Policy and Funding Mechanisms
19	Provide Better Tracking and Penalties for Repeat Offenders	Policy and Funding Mechanisms
20	Pass State Helmet Laws for Motorcyclists	Policy and Funding Mechanisms
21	Support Auto Insurance Related Strategies	Policy and Funding Mechanisms
22	Local Road Safety Campaigns	Policy and Funding Mechanisms
23	Improve Pavement Condition and Maintenance For Pedestrian and Bicycle Facilities	Policy and Funding Mechanisms
24	Add Road Safety Impact Assessments to the TIA Process	Policy and Funding Mechanisms
1	Utilize Mobile Automated Enforcement	Traffic Enforcement
2	Utilize Permanent Automated Enforcement	Traffic Enforcement
3	Target Speed Enforcement at High Crash Locations	Traffic Enforcement
4	Continue High Visibility DUI Saturation Patrols	Traffic Enforcement
5	Prioritize Enforcement to target Cell Phone Use While Driving	Traffic Enforcement



A Little about the MPO

Metropolitan Planning Organizations (MPOs) are required by federal law for all urbanized areas with populations greater than 50,000. MPO's are responsible for carrying out metropolitan transportation plans and programs. The MPO for the AMPA is the Mid-Region Metropolitan Planning Organization (MRMPO). The Metropolitan Transportation Board, composed of local elected leaders, sets policy for transportation issues in the urban area. MRMPO's transportation planning data and forecasts are used by local and state agencies to develop and complete transportation projects. MRMPO uses the information for the urban area to develop a regional 20-year long-range transportation plan, the Metropolitan Transportation Plan (MTP), and the short-term Transportation Improvement Program (TIP). The MTP and the TIP are the tools for bringing federal transportation funds to the metropolitan area. It is the hope of MRCOG's that this Regional Safety Action Plan will help encourage funds to be spent on priority locations and strategies which focus on safety.