

Crash Analysis Studio

Session 17: Durango, Colorado

Held on June 21, 2024

Session Participants:

- **Anthony Catania**, AIA, NCARB, CNU-A, Founder of AMC Architecture & Design, LLC; architect and urban designer with experience across Washington D.C. and Oklahoma City metro area; holds a Master of Architecture from the University of Notre Dame
- **Nancy Dossdall**, Senior Planner and project manager with experience in land use planning and entitlement; frequent cyclist and local safety enthusiast
- **Richie Fletcher**, Owner of Solo Arts, LLC; former senior partner at Animas Media, LLC; cyclist; Durango community member and former resident of Animas View Drive
- **Chuck Marohn**, President of Strong Towns
- **Tony Harris** (moderator), Action Team Coordinator at Strong Towns

Summary of Crash Event

- The crash occurred at 7:46 p.m. (MT) on September 14, 2023 on Animas View Drive just southwest of United Campground.
- Northbound motorist Olivia Marie Burkhart was driving north in a 1987 Jeep Wrangler when she collided with Katie Marie Siegrist, who was walking northbound along Animas View Drive.
 - Burkhart stated that she didn't see Siegrist until the last second when the collision was already occurring.
 - According to police and media coverage, Burkhart stayed on the scene and was cooperative with law enforcement after the crash.
- The crash report also states the following:
 - This segment of Animas View Drive is not well-lit.
 - The location was wet at the time of the collision because it had been raining earlier in the day.
- Media coverage¹ that included quotes from Commander Shaline indicates the following:
 - Neither drugs nor alcohol were considered to be contributing factors in this crash.
 - Charges were not filed against Burkhart.
 - Siegrist was wearing dark clothing with no flashlight or reflective material.
- The speed limit on Animas View Drive is 25 miles per hour (mph).

¹ [Durango woman hit by car dies from injuries](#), *Durango Herald*, September 2023.

Primary Contributing Factors

There are people walking and cycling along Animas View Drive even though the roadway's infrastructure is dangerous for them. The design of Animas View Drive demonstrates inadequate concern for the safety of pedestrians, cyclists, and other non-motorists that travel outside of privately owned and operated vehicles or automobiles.

Animas View Drive was originally constructed to serve as a rural state highway until the construction of US-550. Animas View Drive was given to the City of Durango to maintain as a local street. Over time, additional residential development, formalized public access to the Animas River and public transit has occurred along this road without any physical design changes to the original rural design of the roadway.

The current design of Animas View Drive features multiple driveways and minimal shoulders, but lacks parking lanes, sidewalks, and bike lanes.² The primary factors identified can be traced back to the conflict between Animas View Drive's historical design as a highway, and more recent expectations that the thoroughfare function as a neighborhood street, especially since reduction of the speed limit to 25 mph in 2021.

Durango city staff have been gathering feedback about Animas View Drive safety concerns through a series of community meetings and via an evaluation contract with planning and engineering firm Toole Design. A memo³ titled *Animas View Dr Safety Evaluation and Recommendations* was released after the nomination of this crash and prior to the studio that listed multiple safety-related conditions and observations.

Session panelists and the *Animas View Dr Safety Evaluation and Recommendations* memo acknowledge that there are inadequate accommodations for pedestrians and cyclists that currently use this road. Design characteristics such as the geometry of Animas View Drive near the crash location includes sharp curves that may limit visibility for motorists and pedestrians alike. The topography of the location paired with the absence of adequate speed management measures heightens risk of injury for motorists and non-motorists alike. Heavy vegetation along the west side of the road may also limit sight lines, particularly as road users are navigating roadway bends or curves. The historic lack of vegetation maintenance in this area was also noted as a factor in media coverage⁴ of this collision.

Pedestrians are frequently observed walking in vehicle travel lanes⁵ due to the lack of sidewalks, crosswalks, and general absence of pedestrian infrastructure along Animas View Drive. With an average traffic volume⁶ of 500 vehicles each day, it is likely that motorists and non-motorists who regularly navigate this area may do so without encountering one another;

² [Animas View Drive Improvements | Engage Durango](#)

³ [Animas View Dr Safety Evaluation and Recommendations](#), May 2, 2024.

⁴ [Prioritize 'human life' on Animas View Drive](#), September 29, 2023

⁵ Both a Strong Towns staff contributor and a session panelist noted evidence of this when reviewing visuals from Google Maps.

⁶ [Animas View Drive Neighborhood Meeting](#), May 22, 2024.

normalization of this circumstance may exacerbate danger when road users do interact on Animas View Drive. The City of Durango has documented six injuries and Katie Siegrist's death were all outcomes of the eighteen (18) total crashes reported from Animas View Drive between 2017 and 2023. The city has taken initial efforts by lowering the posted speeds; however, no physical design changes have been made to the roadway while additional developments are still being approved. Safety along this thoroughfare needs to be prioritized to ensure that Siegrist's fatality is the last one experienced on Animas View Drive.

Session participants identified the following as primary factors that contributed to this crash:

- 1. Animas View Drive is a former highway designed to facilitate and prioritize high speed automobile traffic in a manner mismatched with the non-motorist usage, residential developments, and commercial business now present around the thoroughfare.**
 - a. Current roadway design allows approximately six inches to—at most—two feet of space⁷ on either side of Animas View Drive's ten-foot travel lanes; this shoulder width is inadequate for a proper sidewalk, protected pedestrian passage, or protected bike lane.
 - b. Animas View Drive is striped with single white lines on its shoulders and a center double yellow line between its northbound and southbound through traffic lanes.
 - i. Lane striping neither physically narrows lanes nor decreases motorists' perception of available travel area.
 - ii. Some studies have shown that roads with clear lane markings may actually result in travel at higher speeds⁸ due to an increase in drivers' confidence and—in some cases—a false sense of security.
 - c. Terrain to the east of Animas View Drive sharply slopes downward towards the Animas River, leaving minimal shoulder width and guardrail for protecting pedestrians and cyclists from traffic and the terrain from the roadway.
 - d. The Animas River Trail was extended to reach Animas View Drive in 2020 by way of a new trail section that increases the number of non-motorists on Animas View Drive.
 - i. This extension allows users to travel from Dallabetta Park to Preserve and Oxbow Park on a path⁹ that is mostly uninterrupted for eight miles.
 - ii. City-provided data¹⁰ indicates 93% of Durango residents utilize the trail at least once a year; it is reasonable to infer this extension increases pedestrian and cyclist traffic¹¹ flow onto Animas View Drive.

⁷ Toole Design indicates in their report that roadway width varies and is typically between 22 and 24 feet, suggesting that shoulders along some segments of the road may exceed one foot.

⁸ [Module 4: Effects of Traffic Calming Measures on Motor Vehicle Speed and Volume](#), Federal Highway Administration (FHWA)

⁹ [Animas View Trail](#)

¹⁰ ["Durango Officially Opens Animas River Trail North to Oxbow Park,"](#) The Durango Herald, October 27, 2020.

¹¹ Field research may be necessary to determine how much.

- iii. An increase of non-motorist traffic onto a thoroughfare that does not currently treat them as prioritized users increases risk of crashes and injury.

2. Both the documented travel speed and the design speed of Animas View Drive are incompatible with pedestrian—and likely cyclist—traffic.

- a. Animas View Drive is described by the City of Durango as a rural road with no pedestrian or cyclist facilities¹².
- b. The speed limit on Animas View Drive was reduced from 35 mph to 25 mph in 2021 and remains at 25 mph to this day.
 - i. Best practices of highway designers when Animas View Drive was constructed would have used a designated design speed for the intended use of the highway that was equal or exceed the posted speed limit.
 - 1. The original posted speed limit was 35 mph
 - 2. No physical design changes have been made to Animas View Drive since the speed was lowered from the original 35 mph posted limit.
- c. Drivers continue to exceed the posted speed limit.
 - i. The Durango Police Department conducted a volume and speed count for six days between September 26, 2023 and October 2, 2023 near 900 Animas View Drive.
 - ii. This study found the following:
 - 1. Vehicles were traveling at an average speed of 26 mph.
 - 2. 85% of drivers were traveling at or below 36 mph.
 - 3. Average traffic volume totaled 519 vehicles a day.
 - iii. For the purposes of this studio, Strong Towns reviewed the data collected between 5 p.m. and 10 p.m on each day of the study and noted the following:
 - 1. Of the 669 cars tracked during these times, 83% of them were found to be traveling over the speed limit.
 - 2. From this sample, 20% of drivers were found to be traveling at or above 36 mph; 85% of drivers were calculated to be traveling at or below the 36 mph to 40 mph range referenced by the Police Department.
 - iv. Analysis of this sample suggests that speeding on Animas View Drive may be a more frequent occurrence during the evening hours.
 - v. By design, vehicle travel speeds on Animas View Drive subject non-motorist users—including pedestrians, public transit riders, and cyclists—as well as motorists to substantive danger.

2. Animas View Drive is under-engineered for complexity and over-engineered for high-speed travel.

¹² [Animas View Drive Neighborhood Meeting](#), May 22, 2024.

- a. Of the 669 drivers tracked between 5 p.m. and 10 p.m. on the days of the speed study, 131 traveled at or beyond 36 mph. This data distribution may suggest that this space communicates to motorists excessive speeding is a low-risk behavior in this environment.
- b. The city of Durango reported an average daily volume of 519 automobiles along Animas View Drive. This volume is too high to treat Animas View Drive as a sleepy residential street, but too low to treat it as the highway-style road that it has been designed as.
- c. There are no stop signs along Animas View Drive to regulate and slow traffic; this likely influences drivers' behavior and makes them more prone to speeding.
- d. Animas View Drive is a redundant road for those that do not live or work along the thoroughfare; northbound and southbound travel can be successfully completed without ever leaving Main Avenue (Route 550).

3. Pedestrian infrastructure essentials necessary for safe non-motorist navigation are absent along Animas View Drive.

- a. With no sidewalks, pedestrians are commonly sighted walking on the shoulders or in the traffic lanes designated for vehicles; this may be more common near multi-family housing units and trolley stops.
 - i. Overgrown vegetation may also cause pedestrians to navigate on the roadway rather than the shoulder in certain locations along Animas View Drive.
- b. The absence of stop signs and cross streets along Animas View Drive logically leads to the absence of marked crosswalks.

4. Aspects of the built environment limit visibility along Animas View Drive; this limited visibility is compounded during darker hours.

- a. Streetlights are largely absent from Animas View Drive, with the exception of one streetlight near the scene of the accident.
 - i. Despite a decade of ownership disputes between the City of Durango and La Plata County¹³, this streetlight was repaired after the collision occurred.
- b. Existing artificial light sources that do exist along Animas View Drive appear to cause more glare for road users—especially drivers—than adequate illumination of pedestrians, cyclists, or other non-motorists.
- c. [Sun graphs for Durango](#) indicate the sun set at 7:20 p.m. on the day of the collision; the occurrence of the crash 26 minutes after sunset may have significantly impaired motorist sightlines and the visibility of pedestrians.

5. Motorists and pedestrians traveling during rainy weather in dark conditions along Animas View Drive may be at heightened risk of a crash due to a combination of environmental conditions and road design factors.

- a. The crash report indicated that Animas View Drive was wet during the collision due to rain that day.

¹³ [“Set Aside Differences. Fix streetlight,”](#) The Durango Herald, October 29, 2023.

- b. Rain on the day of the crash increased the stopping distance necessary for the motorist to not hit this pedestrian.
 - i. A typical [80-foot stopping distance on a dry road doubles](#) to approximately 160 feet on a wet road.
 - ii. Regardless of familiarity with the area, the motorist may have still lacked the knowledge to recognize and act upon a stopping distance that is double what is usually required.
- c. Rain during the evening hours, roadway curves, overgrown vegetation, and glare from artificial lights likely decreased visibility to a dangerously low level.

Recommendations

The City of Durango and Toole Design have reported on multiple safety improvements that have been implemented along Animas View Drive since the crash occurred. Durango staff indicate orange flags on speed limit signs have been replaced; these are presumably intended to capture motorist attention and encourage them to drive slower. The singular streetlight near United Campground has also been repaired, and flashing “Pedestrian & Bicycle in Road” signs have been installed. City officials reported that adding painted sharrows¹⁴ to the road, brush clearing, and installing additional street lighting are actions currently underway.

Community representatives and city officials may benefit from meeting to discuss the value of having Animas View Drive open to through traffic, and the utility of automated speed enforcement as a method to discourage speeding. If only local residents and business patrons are permitted to use Animas View Drive, this may reduce traffic volume and—in turn—decrease the likelihood of random occurrence crashes. Locals may also ask law enforcement to limit their dependence on speed cameras as a traffic management tool. Since cameras only cover specific areas, drivers often learn to slow down only at camera locations; enforcement consistency is also a recurring concern with automated tools.¹⁵ All involved parties will benefit from continuing to develop a shared vision of what the future of Animas View Drive as a residential street looks like.

There are multiple ways to address these factors and minimize the likelihood of future collisions, fatalities, and traumatic injuries. Along Animas View Drive, the following practices should be adopted.

Immediate:

1. The Durango City Council should agree and provide direction and guidance to municipal staff that the vision for Animas View Drive is to be a low volume, slow speed, local neighborhood street with a design priority of safety above all other design priorities. This should be memorialized through a resolution to this effect and shared throughout the community and with state and regional transportation agencies.

¹⁴ Shared-lane markings

¹⁵ [The Arguments for Speed Cameras...and Why They Don't Hold Up](#), Strong Towns, September 18, 2023.

2. Install stop signs at existing intersections along Animas View Drive; potential installation sites may include the main entrance to United Campground and at locations alongside the trolley stops.
3. Stripe crosswalks across Animas View Drive at the locations with newly installed stop signs to increase pedestrian usability and heighten their visibility to motorists.
4. Explore temporary lighting options with a focus at intersections, trolley stops, and locations identified with high pedestrian activity. This may include the following:
 - a. Utilize existing poles on both private and public properties.
 - b. Work with property owners to add lights to poles and buildings on private property.
5. Conduct a traffic study to assess the feasibility of introducing an additional intersection on Animas View Drive to create another connection point for through traffic to access Route 550.
6. Assess the possibility of defining one side of the street and shoulder into pedestrian areas that could be delineated using temporary curbs or railroad ties to create physical separation between automobile and new pedestrian paths.
 - a. Wherever feasible, execute this street and shoulder definition to support physical separation between automobiles and pedestrians.
7. Study the possibility of converting Animas View Drive into a yield street, which is also described as an edge lane road or an advisory shoulder.
 - a. A yield street is ideal for low volume streets where there are contained widths and there is the need to serve pedestrians, bicyclists, and motor vehicle traffic.
 - b. Yield streets can be implemented at scale and with limited budgets; they increase driver awareness and result in travel at slower and safer speeds.
8. Begin planning and exploring policy recommendations for safer non-motorist transportation networks that serve as alternatives to Animas View Drive for pedestrians and cyclists.
 - a. Explore the possibility of extending the Animas River Trail further north along the railroad tracks
 - b. Assess the feasibility of connecting existing pedestrian routes between existing developments.
 - c. Explore requirements for future developments to contribute to the broader pedestrian network and adjacent developments.
 - d. Identify any temporary measures that would result in increased pedestrian connectivity.
9. Study the possibility of adding additional connections between Animas View Drive and the highway, even if these connections are limited to right-in and right-out. This would provide the opportunity for fewer through trips on the full length of Animas View Drive at a lower cost than more elaborate and expensive design solutions.
10. Form an interdisciplinary team of staff from multiple departments to act as rapid responders¹⁶ to automobile collisions. The members of this team should include representation from Community Development, Public Works, and the Police Department.

¹⁶ For more information on rapid response models, see [Pedestrian Safety Gets Big Boost From New Cincinnati Initiative](#) (January 2023).

- a. This team should convene following a serious crash and be responsible for documenting factors that contribute to crashes as demonstrated in this Crash Analysis Studio. These findings should be shared with the elected leadership and the public.
- b. Grant this team agency to immediately implement short term or temporary physical improvements to the street that respond to the contributing factors of the crash. These should be quick build projects undertaken with available resources that can be deployed in a matter of days. Specific to this crash, charge the team with the authority to implement the immediate recommendations from this report, including but not limited to:
 - i. Implementation of additional three-way stop intersections.
 - ii. Striping crosswalks.
 - iii. Installing pedestrian shoulders.

Near Term (within the next 12 months):

11. Memorialize and adopt any findings and long-term recommendations identified by the newly formed interdisciplinary rapid responders team. These recommendations should be included in when discussing plans and future public and private investments with transportation, transit, development and maintenance for or adjacent to Animas View Drive.
12. Install permanent street lighting to fully illuminate pedestrians and cyclists without creating more glare for motorists.
13. Adopt necessary policy plans and implement recommended ordinances for safer non-motorist transportation networks that serve as alternatives to Animas View Drive for pedestrians and cyclists. This would include both public connections like the Animas River Trail and private connections between existing developments.
14. Construct any temporary measures that would result in increased pedestrian connectivity between developments wherever possible.
15. Begin converting Animas View Drive into a yield street with narrower shared travel lanes and clearly delineated pedestrian areas using resources available such as paint and signs.
16. Engineer and budget any feasible connections between Animas View Drive and Route 550 that provide drivers the opportunity for fewer through trips on the full length of Animas View Drive.

Long Term and Systematic:

17. Extend the Animas River Trail further north along the railroad tracks.
18. Build any additional connections between Animas View Drive and Route 550 that provide the opportunity for fewer through trips on the full length of Animas View Drive.

Concluding Statement

The goal of the Crash Analysis Studio is to transform the common knowledge around the cause of automobile crashes. This approach acknowledges and recognizes that there are many

factors that contribute to a crash and that streets like Animas View Drive have been designed and built in a way that makes them dangerous for even the most careful drivers.

Animas View Drive was originally constructed to serve as a rural state highway that prioritizes traffic flow at high speeds; this design emphasis jeopardizes both motorist and non-motorist safety and usability within communities throughout Colorado and in locations across North America.

The city of Durango has acknowledged that Animas View Drive is a dangerous street prone to a high number of crashes and these concerns have resulted in the death of Katie Marie Siegrist. However, this acknowledged concern has not resulted in any physical changes to the design of Animas View Drive which could prevent a second person from dying on this dangerous street.

Durango has the power to improve Animas View Drive. Real traffic safety requires a total systems approach that cannot be delegated to a single person or small group of professionals. As outlined in this report, Durango has the power to quickly and cheaply deploy temporary measures that would make Animas View Drive substantially safer for all users. These quick build projects will include contributions from across city departments; this approach can be applied to respond to other dangerous streets in the city.

This Crash Analysis Studio session focused on a crash that occurred on September 14, 2023 on Animas View Drive just southwest of United Campground; this session is a demonstration of an approach that can be applied at scale across North America. By evaluating the numerous factors that contribute to a crash, we believe that designers, decision-makers, and the general public can move beyond the current approach, which seeks only to assign blame to involved parties, to a model where cities recognize their power to make their streets safer.