

Smart Streets Sentinel Act

New Mexico should invest in smart infrastructure for the City of Albuquerque via The Smart Sentinel Streets initiative to create a data-driven, unbiased safety-net for Albuquerque's pedestrians, students and professionals by integrating Pavegen Kinetic Tiles, Piezoelectric Road Sensors, Acoustic AI technology, and Reactive LED Roadway Strips. This project transforms Central Avenue and critical areas of the International District as safe "Sentinel Zones" for the community, especially youth and families. By investing in smart infrastructure for the City of Albuquerque, legislators can work towards eliminating hit-and-runs and pedestrian fatalities while also addressing the dangers and damages of street racing.

Passing the Smart Sentinel Streets Act Would

1. Direct Protection of New Mexico's Most Vulnerable Youth:

- New Mexico has the highest population pedestrian fatality rate in the nation, and the International District and Central Avenue near the University of New Mexico are the deadliest hotspots for children and families who rely on walking for their daily transit.

Source: www.dot.nm.gov/blog/2025/07/21/new-mexico-sees-decline-in-pedestrian-fatalities-in-2024/

2. Instant, Unbiased, Lifesaving Response:

- Acoustic AI eliminates the reporting gap in hit-and-runs by instantly notifying the Real Time Crime Center (RTCC) of a collision; this ensures help arrives faster, especially where a human witness is absent.

3. Proactive Deterrence Through Visual Warning:

- LED systems with an ability to light up the road when speed limits are breached provides an immediate deterrent to street racers along Central Avenue, alerting other drivers and vulnerable pedestrians even miles ahead of an approaching high speed or reckless driver.

4. Reclaiming Albuquerque from Street Racing:

- Data confirms Central Avenue is the 2nd deadliest road in the nation, largely because of the "street racing" and high-speed transit that occurs in the three-mile stretch through the International District. Piezoelectric sensors harvest this high-speed kinetic energy to power off-grid safety signals, turning the "cost of crime" into a sustainable resource for community protection.

5. Safeguarding the Medical and Professional Workforce:

This legislation creates "Sentinel Safety Zones" to protect medical professionals at UNMH—such as Nurse Alec Montoya, who was killed by a high-speed driver in 2025—and local business owners who are disproportionately at risk during late-night and early-morning shifts.

Data

Technology

- A study in the *Journal of Safety Research* indicates that reducing emergency response time by just **1 to 2 minutes** can increase the survival rate of a pedestrian in a high-speed collision by up to **10%**. Acoustic AI eliminates the "human reporting lag," which is critical in hit-and-runs where the perpetrator flees and the victim is incapacitated. Source: [Effects of Emergency Medical Service Response Time on Survival Rate of Out-of-Hospital Cardiac Arrest Patients: a 5-Year Retrospective Study - PMC](#) / [Association Between Emergency Medical Service Response Time and Motor Vehicle Crash Mortality in the United States - PMC](#) / [2025 SafeTREC Traffic Safety Facts: Emergency Medical Services | Safe Transportation Research and Education Center](#)
- The Federal Highway Administration (FHWA) notes that LED-enhanced crosswalk visibility (like RRFBs) can lead to a 47% reduction in pedestrian crashes. Nighttime intersection lighting alone can reduce pedestrian-injury crashes source: [EDC-7: Nighttime Visibility for Safety | Federal Highway Administration](#)
- Change Research polling found that 89% of Albuquerque residents believe leveraging technology for crime detection would improve public safety.
- Albuquerque's Vision Zero data highlights that Bernalillo County accounts for over 50% of New Mexico's pedestrian deaths. Specifically, a three-mile stretch of Central Avenue (San Mateo to Eubank) has seen over 40 deaths source: [New Mexico tops nation in pedestrian deaths for eighth consecutive year - nm.news](#)

Children, Youth & Families

- Approximately 25–30% of the International District population is under 18, compared to a lower city-wide average. The International District also has a high concentration of "zero-vehicle households": Many of these children live in "zero-vehicle households" (where up to 73% of transit users lack a car). This forces young children and their families to navigate Central Avenue and Louisiana Boulevard on foot for basic needs, not just for school. Source: [B25044: TENURE BY VEHICLES AVAILABLE - Census Bureau Table / The Transit Equity Movement Wins Their Biggest Zero Fare Victory Yet - Inequality.org](#)
- The **2020 Road Safety Audit (RSA)** for Louisiana Blvd (a major artery in the International District) noted that the high volume of pedestrians is a direct result of the neighborhood's high transit dependency and lower car ownership rates. It identified that these "vulnerable road users" are forced to cross wide, high-speed lanes to reach essential services and bus stops. Source: [cabq.gov/vision-zero/documents/louisiana-blvd-safe-streets-outreach_final.pdf](#)
- The most lethal window for minor pedestrians occurs during the afternoon peak between 2 PM – 6 PM, where school dismissal overlaps with rush hour and declining visibility (dusk). This crisis is further intensified by late-night and weekend "Street Racing" along Central Avenue, which contributes to the fact that 77% of all pedestrian deaths occur during dark or low-light conditions. Source: [Pedestrian Traffic Fatalities by State - 2024 Data - 7.10.25.pdf](#)

Economy & Equity

- The financial toll of injuries in New Mexico now exceeds \$4 billion annually. For fatal crashes specifically, the comprehensive cost (including medical and lost productivity) for a single "K-level" (fatal) crash is estimated at \$15.9 million in 2024 dollars.

Source: highways.dot.gov/sites/fhwa.dot.gov/files/2025-10/CrashCostFactSheet_508_OCT2025.pdf

- Pedestrian fatality rates in census tracts with median incomes between \$15,000 and \$25,000 are four times higher than in wealthier areas. In Albuquerque, the International District (which falls into this bracket) is disproportionately affected. Source: [Dangerous by Design - Smart Growth America](#)
- Local New Mexico data confirms that Bernalillo County (home to the ID) accounts for nearly 50% of all pedestrian deaths in the state, with the International District being a primary "hotspot" where minority populations are disproportionately impacted. Native Americans are killed at 4x and Black/Hispanic individuals at 2x the rate of white pedestrians and Hispanic pedestrians are killed at a rate approximately 22% to 25% higher than white pedestrians. Source: [Hispanic pedestrians are killed at a rate approximately 22% to 25% higher than white pedestrians.](#) Source: ghsa.org/sites/default/files/2025-01/race_2021.pdf / [Dangerous by Design - Smart Growth America](#)

Why Now?

- Every sixty seconds of delay in medical response following a high-speed collision reduces a pedestrian's survival probability by 10%; automated detection eliminates the "witness-dependency" that often leaves victims incapacitated and unaided.
- Without "Sentinel" technology, hit-and-run perpetrators in the International District have a high probability of evading justice due to the "low-light, no-witness" nature of Central Avenue collisions.
- Illegal street racing exerts extreme mechanical stress on asphalt not designed for high-torque acceleration, accelerating the formation of potholes and "alligator cracking" that damages the vehicles of law-abiding commuters.
- While a single fatal crash costs \$15.9 million, the cumulative annual toll of road injuries in New Mexico exceeds \$4 billion, a figure that dwarfs the one-time investment required for Smart Sentinel infrastructure.
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- Transitioning from "reactive" policing to "proactive" infrastructure creates a digital footprint of high-speed events, signaling to reckless drivers that they are entering a zone where "getting away with it" is no longer an option.

Counterpoints

Q1: Is this just more surveillance? Are we tracking citizens' movements via these sensors?

A1: "No. Unlike facial recognition, Acoustic AI and kinetic sensors are data anonymous. They detect *vibrations, sounds, and speeds*—not identities. This is about physical safety, not digital policing.

Q2: Central Avenue is a high-traffic zone. Will this tech break under the weight of semi-trucks?

A2: The sensors used are industrial-grade piezoelectric materials designed for highways. Furthermore, by using funds from the SB 177 RD&D Fund, we are treating this as a 'living laboratory' to prove New Mexico's infrastructure can handle extreme conditions.

Q3: Why spend so much on expensive tech when we could just hire more police?

A3: Human enforcement cannot be everywhere 24/7. The LED warning system provides instant deterrence miles ahead of a racer, and Acoustic AI aids response time, when police presence alone cannot match in the 'lethal window' of 2 PM – 6 PM.

Legislative Advocacy Plan

Phase 1: Grassroots & Community Surveying "Sentinel Voices"

This phase involves collecting data in the form of a survey from Residents of the International District as well as from Businesses and Nonprofits who serve the International District and Downtown communities; to gain insight into the best ways to address public safety, particularly regarding road and pedestrian safety. The following are link to sample survey questions:

- ★ [Student and Resident Survey](#)
- ★ [Community Leadership, Non-profit & Business/Professionals Survey](#)

Phase 2: Legislative Networking & Consultation

This phase involves facilitating discourse with State and City Legislative Leadership. The following is a List of potential future champions of this policy proposal and reasons why they may be supportive and/or interested. Additionally, I have provided the titles of relevant Interim Legislative Committees for this policy recommendation:

- Transportation Infrastructure Revenue Subcommittee
- Courts, Corrections & Justice (CCJ)

- Science, Technology & Telecommunications

Legislative Champions & Strategic Partners

Representative Janelle Anyanonu (D - District 19)

Role: Primary House Sponsor / International District Representative.

Committees: Vice Chair, Commerce & Economic Development; Courts, Corrections & Justice.

The Strategy: This is her home district. She is the champion for the families living in the "Sentinel Zone."

Email: janelle.anyanonu@nmlegis.gov

Senator Harold Pope Jr. (D - District 23)

Role: Primary Senate Sponsor / Public Safety Tech Lead.

Committees: Health & Public Affairs; Science, Technology & Telecommunications.

The Strategy: Focus on his desire to modernize policing and infrastructure using AI.

Email: harold.popejr@nmlegis.gov

Representative Marianna Anaya (D - District 18)

Role: Workforce & Student Safety Advocate.

Committees: House Health & Human Services.

The Strategy: Focus on protecting UNMH medical staff (the Alec Montoya Case) and UNM students.

Email: marianna.anaya@nmlegis.gov

Senator Heather Berghmans (D - District 15)

Role: Innovation Funding Specialist.

Committees: Vice Chair, Science & Tech; Advisory, Transportation Infrastructure.

The Strategy: She is the gatekeeper for **SB 177 Innovation Funds**.

Email: heather.berghmans@nmlegis.gov

Senator Antoinette Sedillo Lopez (D - District 16)

Role: Equity & Justice Champion.

Committees: Vice Chair, Conservation; Courts, Corrections & Justice.

The Strategy: Focus on the "Zero-Vehicle Household" data and environmental justice in the ID.

Email: a.sedillolopez@nmlegis.gov

Representative Yanira Gurrola (D - District 16)

Role: Education & Clean Energy Advocate.

Committees: Energy & Natural Resources; Science & Tech.

The Strategy: Use the Piezoelectric (clean energy) and "Child Safety" angles.

Email: yanira.gurrola@nmlegis.gov

Bipartisan Allies: Sen. Bill Sharer (R) & Sen. Anthony Thornton (R)

The Strategy: Pitch to Sharer on "Energy Independence" and Thornton on "Law & Order/Street Racing Deterrence."

Emails: bill@williamsharer.com | anthony.thornton@nmlegis.gov

Phase 3: Budget & Cost Benefit Analysis

The final phase of introducing this policy recommendation includes meeting with the Senate Budget Committee to gain insight on the cost benefit analysis of passing this type of legislation. Presently, this policy proposal aligns with Senate Bill 2 and Senate Bil 177. The following is an example of this legislation could be integrated:

The Smart Sentinel Streets Act transforms Albuquerque's most lethal transit corridors into "Smart Safety Zones." By integrating Pavegen Kinetic Tiles, Piezoelectric Road Sensors, and Acoustic AI, this act creates an unbiased, self-powering safety net. This initiative leverages the \$300M Innovation Transfers (SB 177) and \$1.5B Highway Bond (SB 2) to eliminate hit-and-runs and deter street racing through reactive, data-driven infrastructure.

1. SB 177: Futureproofing via Applied AI & Energy

- **The Innovation Hub (Section 6):** Prioritizes the **\$25 Million** allocation for the *Advanced Energy Industry Innovation Hub* to design and prototype "Solar-Kinetic Sentinel Nodes"—off-grid units that harvest energy from foot traffic and vibration to power safety signals.
- **The RD&D Fund (Section 2):** Utilizes the **\$111 Million Research, Development, and Deployment Fund** to transition **Acoustic AI "Sentinel" sensors** from the lab to Central Avenue. This fulfills the state's mandate to lead in AI-integrated public safety and Quantum-ready sensor deployment.

2. SB 2: Modernizing the Definition of "Highway Projects"

- **Bond Accessibility:** Expands the definition of "Highway Projects" to include **Smart Pavement (Pavegen)** and **Digital Safety Sentinels**. As a "Regionally Significant Corridor," Central Avenue becomes eligible for the **\$1.5 Billion** bond issuance for physical installation and hardware.
- **Maintenance Sustainability:** Directs a percentage of the new **EV Surcharge and Registration Fee revenue** created by SB 2 toward a dedicated "Sentinel Maintenance Fund" to ensure the long-term technical health and software updates of the corridor.

Additional Notes

I want to express my sincere gratitude for the constructive feedback I've received throughout this cohort. Based on those insights, I have made the strategic decision to refocus my policy recommendation exclusively on Safe Streets and Pedestrian Safety. While the technical scope has narrowed, the impact is greater: we are creating a data-driven safety net for New Mexico's most vulnerable populations, specifically the children and families in "Zero-Vehicle Households" who have no choice but to navigate our deadliest corridors on foot. I am eager to begin the next phase of data collection and to begin identifying and consulting with the legislative champions listed in this proposal.