# Center for Pedestrian and Bicyclist Safety

## Semi-Annual Progress Report

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| Center Director Information: | Nicholas N. Ferenchak, PhD, PE<br>Associate Professor<br>Civil, Construction & Environmental Engineering Department<br>University of New Mexico<br>Phone: 505-277-2722<br>Email: ferenchak@unm.edu |
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# 1. ACCOMPLISHMENTS

## 1.1 What are the major goals of the program?

The goal of the Center for Pedestrian and Bicyclist Safety (CPBS) is to eliminate pedestrian and bicyclist fatalities and serious injuries. CPBS's activities address the Promoting Safety research priority area. Specifically, CPBS addresses the first key challenge under that priority: Vulnerable Users. In addition, CPBS contributes to other Promoting Safety key challenges including Infrastructure, Safety Culture and Behavior, and Rural Transportation Safety.

The primary strategic goal from the **US Department of Transportation (US DOT) Strategic Plan** that CPBS addresses is Safety. According to the US DOT Strategic Plan, safety is the highest priority goal and must be a multimodal effort. In addition, CPBS advances secondary strategic goals of Transformation, Equity, and Climate and Sustainability. CPBS advances these goals through the promotion of safe, comfortable, and accessible pedestrian and bicycle networks that will improve the resilience of the overall transportation system, advance sustainability, and be fair and equitable for all road users.

To meet the above goals, CPBS addresses the following objectives from the **US DOT Research, Development, and Technology (RD&T) Strategic Plan**: Safety Culture and Behavior, Human-Technology Interaction, Safety Design, Safety Data, and Safety Technology. CPBS is led by the University of New Mexico (UNM) in collaboration with consortium members San Diego State University (SDSU), University of California Berkeley (UCB), University of Tennessee Knoxville (UTK), and University of Wisconsin Milwaukee (UWM).

## 1.2. What was accomplished under these goals?

### *Administrative Accomplishments*

Administratively, CPBS closed out all Year 1 research projects except for two projects (23UCB02 and 23UTK01) that had data and IRB delays. Closing out the Year 1 research projects consisted of reviewing, correcting, and finalizing all Year 1 Final Reports, uploading the updated project information to RIP, TRID, and ROSA P databases, updating the CPBS website, uploading all Year 1 data to Zenodo, and submitting all deliverables to US DOT. So that researchers can more easily publish their research in peer-reviewed journals, all but three Year 1 Final Reports (23UNM01, 23UNM03, and 23UWM05) were embargoed until May 31, 2025.

CPBS also uploaded all project information for Year 2 research projects onto RIP and the CPBS website and provided US DOT with all project information for Year 2 research projects.

CPBS amended the main UTC contract with US DOT and subsequently amended all the subcontracts to move the Year 2 money to each university in the consortium. All Year 2 projects are currently in progress.

### *Research Accomplishments*

At UNM, Dr. Zhang organized and led a workshop for 23UNM03 with the Navajo Nation to present the online crash mapping portal. Dr. Zhang's work on the crash portal will continue in Year 2 with 24UNM04, which is currently in the IRB process with data collection expected in early 2025. Findings from 23UNM05 have been incorporated into the Mid-Region Council of Governments' Regional Transportation Safety Action Plan, and Dr. Losada-Rojas shared the report's executive summary with contacts in Raleigh, NC after a request from a CPBS newsletter reader. Dr. Losada-Rojas highlighted CPBS's role in increasing UNM's visibility, resulting in her involvement in three safety-related research proposals with USDOT, NSF STRIVE, and NMDOT.

At UCB, Dr. Griswold received two Statewide Transportation Research Program (STRP) grants and a $500,000 grant to support a task force under California Assembly Bill 251 (2023), focused on mitigating the impact of

increasing vehicle sizes on vulnerable road users. For 24UCB01, a review of hit-and-run literature was completed, and discussions with UTK are ongoing to integrate additional data. For 24UCB02, progress includes a substantial literature review and the creation of a conflict/solution database, with ongoing consultations through a Community Advisory Committee. 24UCB03 is nearing completion of a code for extracting crash report narratives data using Large Language Models.

At UTK, a nationwide analysis of bus stop-related pedestrian fatalities was completed for 23UTK01, with additional datasets identified to support transit-related pedestrian safety analysis. Dr. Cherry used machine learning on Tennessee pedestrian crashes in 23UTK02 to categorize crashes into "high-risk" and "low-risk" groups based on road design and environmental factors. Dr. Cherry also examined the impact of vehicle size and speed on pedestrian safety for 23UTK03, with findings accepted for presentation at the 2025 TRB Annual Meeting. Dr. Khattak explored the role of urban form and demographics in pedestrian and bicycle fatalities, particularly in Disadvantaged Communities (DACs), to guide equitable safety interventions with 23UTK04. The team also evaluated the effectiveness of Pedestrian Automatic Emergency Braking (P-AEB) systems in 24UTK03, with two papers accepted for presentation at the 2025 TRB Annual Meeting.


Figure 1. UWM's Dr. Schneider presenting research from 23UWM04 at WSTLUR in Bogota, Colombia in June 2024.

At UWM, the 23UWM04 and 24UWM01 team led by Dr. Schneider extended their analysis of pedestrian demographic and geographic factors to include bicyclists and additional state data and presented results in Bogota, Colombia for the World Society on Transport and Land Use Research (WSTLUR) conference in June 2024 (**Figure 1**). The UWM team led by Dr. Shi processed and stored vehicle and pedestrian trajectory data from a campus crosswalk for further analysis under 24UWM02. Dr. Qin distributed a survey to state DOT pedestrian and bicycle coordinators for 24UWM03 and led the first workshop for the project. Dr. Schneider developed a mid-block crossing count protocol for 24UWM04 and identified 70 Milwaukee street segments for data collection. Dr. Schneider completed a paper on traffic fatality trends for 23UWM06 that was submitted to the TRB Annual Meeting, and revisions are currently underway based on feedback to focus on trends in pedestrian and bicyclist fatalities.

At SDSU, Dr. Gibbons developed a dataset on bicycle and pedestrian collisions using data from California's Statewide Integrated Traffic Records System (SWITRS), focusing on fatal incidents and predictors like race, road condition, and socio-economic status (SES) for 23SDSU01 and 24SDSU04. The analysis incorporated SES measures from the American Community Survey and other factors such as traffic conditions, driver behavior, and urban design to assess crash risk. Additionally, 23SDSU03 and 23SDSU02 manuscripts were submitted to the TRB Annual Meeting, with 23SDSU01 and 23SDSU03 research findings presented at the Urban Affairs Conference in New York, NY, in April 2024.

### *Technology Transfer Accomplishments*

CPBS sponsored the New Mexico Transportation Safety Summit in August, which brought together NMDOT, tribal, local, and regional public agencies and other transportation safety stakeholders to develop strategies to eliminate traffic related fatalities and serious injuries on all public roadways and for all roadway users in New Mexico. The session had 296 registrants from across the state and CPBS was involved with planning for the event.

CPBS initiated their webinar series during the reporting period by hosting two free public webinars. "Advocating for Bicycle Safety: Strategies for Success at Local, State, and National Levels," was held in May 2024 with 80 attendees and featured speakers from the League of American Bicyclists, CalBike, Two Bikes Knoxville, and BikeABQ. "Demystifying Federal Grants for Street Safety Improvements," took place in July 2024 and had over 50 attendees with speakers from the Federal Highway Administration (FHWA), Charlotte, NC, and Bernalillo County, NM (**Figure 2**). Archived recordings of the webinars can be found on the CPBS Webinars page: https://pedbikesafety.org/webinars


Figure 2. CPBS webinar on safety grants applicable to pedestrian and bicycle enhancements in July 2024.

At UWM, the team conducted a workshop related to project 24UWM03 at the 2024 Texas Trails and Active Transportation Conference (TTAT) on September 4-6, 2024. The event had approximately 40 participants.

At UCB, Julia Griswold presented the Safe Speeds research project (23UCB01) on July 17, 2024, as part of the New Zealand Speed Management Seminar held at SafeTREC's office. Approximately 15 participants attended, including representatives from the California Department of Transportation (Caltrans) and Abley, a transportation planning and engineering firm from New Zealand. In addition, several UCB research papers were prepared and submitted for presentation at the 2025 TRB Annual Meeting.

At SDSU, the team is preparing presentations for the TRB Annual Meeting in January 2025 for both 23SDSU03 and 23SDSU02 projects. The 23SDSU03 manuscript will be revised and submitted to a transportation journal such as *Accident Analysis & Prevention* or *Transport Policy*. Similarly, the 23SDSU02 manuscript, which evaluates the impacts of bicycle infrastructure in the San Diego region, will be revised based on feedback from the TRB peer review process and submitted to journals such as *Accident Analysis & Prevention* or *Active Travel Studies*.

At UTK, Dr. Asad Khattak delivered several invited talks, including *Transforming Transportation Safety with AI Applications in Computer Vision, Unsupervised Learning, Generative Adversarial Networks, and Stacking* at Florida Atlantic University's Freight Mobility Research Center in September 2024 and *Investigating Vulnerable Road User Safety in Disadvantaged Communities-Application of the Safe Systems Approach* at both the US DOT's Inaugural Future of Transportation Summit in Washington, DC, in July 2024 and the COTA International Conference of Transportation Professionals (CICTP) in Shenzhen, China. Additionally, the Institute of Transportation Engineers (ITE) student chapter at the University of Tennessee Knoxville organized three seminars on transportation topics. These included an introductory presentation on ITE membership, a seminar on perspectives from consultant and agency transportation projects, and a presentation on vulnerable road user safety initiatives in Sevierville, TN.

CPBS's following on LinkedIn and the newsletter mailing list continues to grow. CPBS currently has 1,958 followers on their LinkedIn page and 731 subscribers to the newsletter (distributed monthly). CPBS leadership regularly receives social media content from consortium members and posts relevant research, articles, announcements, and other information on LinkedIn approximately twice per week throughout the current reporting period.

### *Workforce Development Accomplishments*

CPBS collaborated with the New Mexico Local Technical Assistance Program (LTAP) to deliver two professional trainings. Dr. Zhang led a training in April 2024 to showcase the New Mexico Crash Data Mapping Portal developed as part of CPBS projects 23UNM03 and 24UNM04. The training session was attended by 23 professionals from across New Mexico including representatives from the City of Las Cruces, Pueblo of Jemez, Santa Fe MPO, Farmington MPO, Mesilla Valley MPO, North Central NM Economic Development District, NMDOT, Texas Transportation Institute, and the County of Taos. All users reported finding the deliverables user-friendly and participants reported that they planned to use the tool for data summaries for the public, developing and implementing a sign program, reviewing design features against crash outcomes, research projects, and developing a similar tool for Texas.

Figure 3. New Mexico LTAP training organized by CPBS in June 2024.

In June, CPBS presented an LTAP training to 18 professionals from around the state titled "Building Safer Pedestrian and Bicycle Infrastructure: What Does It Really Take?" (**Figure 3**). Presenters included CPBS Director Dr. Ferenchak, former Albuquerque City Councilor Pat Davis, NMDOT, the City of Albuquerque Department of Municipal Development, and the Planning Department from Jemez Pueblo.

Figure 4. CPBS presentation for Homewise in Santa Fe, NM, in June 2024.

CPBS partnered with Homewise, an affordable housing non-profit in Santa Fe, NM, to deliver a 2-hour presentation on the connection between affordable housing and active transportation for all ages and abilities in June 2024 (**Figure 4**). The talk was attended by 19 "Livable Santa Fe" fellowship recipients.

At UNM, two students funded by CPBS graduated during this reporting period. Additionally, TRB Minority Fellow Mauricio Perez supported project 24UNM03 over the summer.

At UWM, Robert Schneider delivered several lectures, including "Safe & Healthy Streets: An Invitation to Advocate for Transportation System Change" at Milwaukee Area Technical College in September 2024 (~10 participants) and at the Medical College of Wisconsin in April 2024 (~60 participants). He also presented "Pedestrian Safety at Night: Illuminating the Problem & Strategies for Safer Streets" at the Wisconsin Department of Transportation Innovation Hour in May 2024.

At UCB, Drs. Griswold and Oum met with the San Francisco County Transportation Authority (SFCTA) on April 2, 2024, to discuss autonomous vehicle safety in the context of pedestrian and bicyclist safety.

### *Educational Accomplishments*

At UNM, Dr. Ferenchak presented at the Albuquerque Public Schools (APS) Vision Zero Seminar in May 2024 to thirty professionals who work to provide APS students with safe mobility options to get to school. Dr. Losada-Rojas represented CPBS at the APS Newcomers Career Fair where she engaged with approximately 20 high school students for 23UNM04.

Figure 5. CPBS Program Manager Ben Garland demonstrates bicycle safety to the Story Riders group in June 2024.

CPBS supported a two-week session of the "Story Riders" program, a cycling initiative for Latino, Indigenous, and POC children and youth in Albuquerque (**Figure 5**). Story Riders integrates STE(A)M and storytelling curriculum through a cultural lens, empowering participants to reconnect with their heritage while learning bicycle safety, maintenance, and the rules of the road. The program hosted twenty students.

Three graduate students from UNM were awarded the Eisenhower Transportation Fellowship for the 2024-2025 school year. They will attend the TRB Annual Meeting and present posters, all of which are related to CPBS research. Ashish Ravi Joshi, a PhD student at UNM, recently received the American Public Transportation Foundation's (APTF) Board Scholarship at the American Public Transportation Association's (APTA) TRANSform Conference in Anaheim, CA. His research is focused on ensuring safe pedestrian and bicyclist access to transit stops and contributed to 23UNM01.

CPBS collaborated with the New Mexico Summer Transportation Institute by organizing three field trips to various transportation facilities in the Albuquerque area, including the Sunport airport, the ABQ Ride transit operations office and maintenance yard, and the Rail Runner passenger train (**Figure 6**). There were twenty high school students from across the US that participated in the program in July 2024.

At UWM, Dr. Shi guided graduate students in the CIV 592 Traffic Control course to use traffic data extracted from surveillance videos from 23UWM07 to design an improved control system for a crosswalk, aligned with MUTCD standards. The proposed design will be presented to the City of Milwaukee and the UWM Police Department for potential real-world deployment. Dr. Schneider introduced the new version of the Pedestrian Level of Traffic Stress (PLTS) methodology (23UWM05) in his Pedestrian and Bicycle Transportation course with guest speakers Sydney Swift and Kyle Nelson. Students applied PLTS to their final intersection redesign projects after reviewing and commenting on the tables.

Figure 6. High school students tour the Rail Runner locomotive as part of the New Mexico Summer Transportation Institute in July 2024.

At UTK, Dr. Khattak incorporated comprehensive transportation safety concepts, including Vision Zero, emerging technologies, and vulnerable road users, into the CE559: Transportation Safety graduate course. Dr. Cherry also integrated multimodal urban road designs focused on pedestrian and bicycle facilities into his undergraduate courses CE455: Transportation Engineering II and CE456: Transportation Lab II. Several UTK students were awarded scholarships during the last reporting period: Saurav Parajuli received the Billy M. Hart Memorial Scholarship, Nastaran Moradloo received the T. Darcy Sullivan Scholarship, and Zeinab Bayati received the John R. Harper Memorial Scholarship. The ITE Student Chapter at UTK also hosted a table at the TCE College Connect and Welcome Back Celebration.

At UCB, a partial refresh of the course CE C265: Traffic Safety and Injury Control was completed, reaching its highest enrollment of sixteen students. The UCB team also mentored eleven graduate and two undergraduate students in producing CPBS research related to pedestrian and bicyclist safety. SafeTREC's VR Bicycle Simulator was featured at the 10th Annual STEM Exploration Camp hosted by Self-eSTEM, providing an immersive learning experience for BIPOC girls and women (**Figure 7**). Additionally, UCB PhD student Masuma Miti was appointed

as the first UCB CPBS Fellow in Summer 2024 and collaborated on a paper with Jean Doig and Julia Griswold related to 23UCB03, which has been accepted for presentation at the TRB Annual Meeting and submitted to the TRR for further review.

Figure 7. Students try UCB's bicycle simulator at the STEM Exploration Camp in summer 2024.

## 1.3. What opportunities for training and professional development has the program provided?

The CPBS program has provided multiple opportunities for training and professional development. It partnered with Homewise to deliver a presentation on the connection between affordable housing and active transportation to nineteen "Livable Santa Fe" fellows, hosted an NM LTAP in-person workshop with eighteen professionals, hosted an NM LTAP remote training with 23 professionals, supported the New Mexico Transportation Safety Summit with 296 participants, sponsored the "Story Riders" program with twenty students, and has a regular webinar series that has attracted between 50-100 participants each. At UWM, Robert Schneider delivered lectures on transportation system change and pedestrian safety at institutions such as Milwaukee Area Technical College and the Wisconsin Department of Transportation. The other consortium members have hosted training and professional development activities that are detailed above.

## 1.4. How have the results been disseminated?

CPBS's results have been disseminated through various established channels, including the CPBS website, newsletter, and LinkedIn page which now has 1,958 followers. The newsletter, distributed to 731 subscribers, continues to be a key platform for sharing updates. In addition, CPBS produced 10 journal publications, 22 research reports, 7 conference papers, and 16 presentations during this reporting period. Seven websites currently support CPBS objectives. CPBS's work continues to reach broad audiences through these channels, with an ongoing focus on sharing research outcomes and practical applications.

## 1.5. What do you plan to do during the next reporting period to accomplish the goals?

### *Research Plans & Goals*

In general, CPBS is in the middle of Year 2 and will continue working toward the completion of their Year 2 research projects. A few specific research activities that will occur over the next reporting period are detailed below. At SDSU, research will focus on analyzing the correlation between walkability improvements from 2013 to 2020 and pedestrian/bicycle collisions, as well as examining how gentrification impacted collision patterns and severity. At UCB, work will include finalizing data compilation and statistical modeling to identify predictors for hit-and-run incidents (24UCB01), with a focus on pandemic-related trends. At UNM, data collection for 24UNM03 will be completed and a crowdsourcing web application using Volunteered Geographic Information (VGI) will be developed with gamification features to encourage public participation in traffic crash data reporting. An application programming interface (API) will be developed to enable other transportation agencies to create similar web mapping tools as was developed for project 23UNM03. At UTK, the final report for 23UTK01 related to pedestrian and bicyclist safety at bus stops will be submitted while 24UTK01 will conduct preliminary statistical analysis. 24UTK06 will gather data and begin preliminary analysis on safety issues related to shared e-bikes. At UWM, the team will conduct practitioner interviews, revise and submit papers on pedestrian and bicyclist fatality trends, and review abnormal driving behaviors. Manual counts of pedestrian crossings will continue, with possible testing of automated methods, and the Pedestrian Level of Traffic Stress (PLTS) method will undergo further validation.

### *Technology Transfer Plans & Goals*

Dr. Bruce Appleyard will present a webinar in October titled "From Heartbreak to Hope: Advocating for Safer

Streets Through Storytelling" which will include speakers from Vulnerable Road Users New Mexico, Families for Safe Streets, Mindfully Aware Driving Solutions, and It Could Be Me. In November, Drs. Ferenchak and Schneider will present a webinar about Pedestrian Level of Traffic Stress (PLTS) and Bicycle Level of Traffic Stress (BLTS). CPBS will host a webinar in December which will have CPBS Associate Director Dr. Appleyard speaking about his book "Livable Streets 2.0" and Dr. Wesley Marshall from the University of Colorado Denver speaking about his book "Killed by a Traffic Engineer". In December, Dr. Ferenchak will participate in a webinar led by the Association of Pedestrian and Bicycle Professionals (APBP) and will provide the attending practitioners with details on the UTC program and CPBS activities.

CPBS plans to have a strong presence at the TRB Annual Meeting in Washington, DC in January 2025 with a total of 13 presentations coming out of CPBS research projects. In addition, UWM will present their research results at the Southeast Wisconsin Regional Transportation Symposium in October 2024 and the Association of Collegiate Schools of Planning conference in November 2024.

### *Workforce Development Plans & Goals*

CPBS will continue to support the growth of future transportation professionals through the development of coursework (CPBS efforts have been integrated into 13 undergraduate courses and 19 graduate courses) and supporting students (CPBS has supported 10 undergraduate students and 47 graduate students).

At UNM, a New Mexico Local Technical Assistance Program (LTAP) training workshop will be developed to demonstrate the use of visualization tools from 23UNM03 and 24UNM04 and will be scheduled for deployment in May 2025. We also anticipate collaborating on the development of annual workforce development efforts such as the NM Transportation Safety Summit and the in-person LTAP pedestrian and bicyclist safety training.

At UWM, a "walkshop" will be hosted at the Southeast Wisconsin Regional Transportation Symposium in October to highlight recent street projects aimed at improving pedestrian and bicyclist safety around the UWM campus. The event will also showcase new midblock crossing research from project 24UWM04.

### *Education Plans & Goals*

CPBS will continue to integrate pedestrian and bicyclist safety in coursework, including CE558 Transportation Planning Models at UTK for Spring 2025 and CIV 592 Traffic Control and UP 772 Pedestrian and Bicycle Transportation at UWM. UNM will organize an Institute of Transportation Engineers (ITE) Student Leadership Summit (SLS) that will be held in June 2025 in conjunction with the ITE Mountain District Annual Meeting in Santa Fe, NM.

# 2. PARTICIPANTS & COLLABORATING ORGANIZATIONS

## 2.1. What organizations have been involved as partners?

### 2.1. New Partners

CPBS established new partnerships with 13 organizations and continued partnerships with 36 others. These partnerships support a wide variety of CPBS activities including providing data (e.g., MRCOG) and in-kind support (e.g., NMDOT) for research projects, supporting CPBS educational efforts (e.g., Knoxville Police Department), and supporting workforce development activities (e.g., NM LTAP). New partnerships established during the reporting period are listed below:

| Name | Location | Support |
|---|---|---|
| Albuquerque Public Schools | Albuquerque, NM | Collaborating with APS Vision Zero for Youth Initiative |

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| Bernalillo County | Bernalillo, NM | Contributed to CPBS's July webinar |
| California Department of Motor Vehicles | Sacramento, CA | Providing vehicle registration data for UCB projects; Collaborating on AV research |
| California Office of Traffic Safety | Elk Grove, CA | Financial support for graduate level safety courses |
| City of Charlotte | Charlotte, NC | Contributed to CPBS's July webinar |
| City of Milwaukee - Department of Public Works | Milwaukee, WI | Supported video data collection for project 24UWM04 |
| Muse Community + Design | Chicago, IL | Collaborating on community input and dissemination for 24UWM05 |
| Rutland E-bike Lending Library | Rutland, VT | Assisting in the recruitment of focus group participants for 23UCB04 |
| Safe Streets Research & Consulting | Portland, OR | Collaborating on community input and dissemination for 24UWM05 |
| Tennessee Department of Safety and Homeland Security | Nashville, TN | Tennessee police crash data for 24UTK02 |
| UC Berkeley Institute of Transportation Studies | Berkeley, CA | STRP research grants; Collaborating on CTC research project |
| UC Davis Institute of Transportation Studies | Davis, CA | Collaborator on CTC research project |
| UC Irvine Institute of Transportation Studies | Irvine, CA | Collaborator on CTC research project |

## 2.2. Ongoing Partners

| **Name** | **Location** | **Support** |
|---|---|---|
| AAA Foundation for Traffic Safety | Washington, DC | Serving on CPBS Advisory Committee |
| Association of Pedestrian and Bicyclist Professionals (APBP) | Lexington, KY | CPBS will present at an APBP webinar in December 2024 regarding the UTC program |
| BikeABQ | Albuquerque, NM | BikeABQ presented at CPBS's May webinar |
| Bike Walk Knoxville | Knoxville, TN | UTK's CTR sponsored the TN Bike Summit; presented at CPBS's May webinar |
| CalBike | Sacramento, CA | CalBike presented at CPBS's May webinar |
| California Department of Public Health | Sacramento, CA | Collaborative research for UCB projects |
| California Transportation Commission | Sacramento, CA | Provided data and report revisions for ATP project; Cost share for vehicle weights and VRU safety project |
| Caltrans | Sacramento, CA | In-kind match for several UCB projects |

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| Center of Southwest Culture – Story Riders | Albuquerque, NM | CPBS supported educational program |
| Centers for Disease Control & Prevention (CDC) | Atlanta, GA | Providing data for UTK projects |
| The Centre for Active Transportation | Toronto, Canada | Shared focus group advertisement with past participants |
| City of Albuquerque | Albuquerque, NM | Provided roadway data for 23UNM04; contributed to June LTAP workshop |
| Council of University Transportation Centers (CUTC) | Missoula, MT | CPBS joined CUTC and attends regular meetings |
| Federal Highway Administration (FHWA) | Washington, DC | Supporting UNM educational efforts through internal Eisenhower Fellowship; contributed to July webinar |
| Institute of Transportation Engineers (ITE) | Washington, DC | Serving on CPBS Advisory Committee |
| Insurance Institute for Highway Safety (IIHS) | Arlington, VA | Collaborative research and providing data for UTK projects |
| Knoxville Police Department | Knoxville, TN | Programmatic educational support for UTK |
| League of American Bicyclists | Washington, DC | LAB presented at CPBS's May webinar. |
| Mid-Region Council of Governments (MRCOG) | Albuquerque, NM | Providing infrastructure data and staff support for 23UNM05 |
| New Mexico Community Data Collaborative | Silver City, NM | Promote web map implementation with local communities for 23UNM03 |
| New Mexico DOT | Santa Fe, NM | $120k annual cost share, personnel exchange, and data for 23UNM01; contributed to June LTAP workshop |
| New Mexico Local Technical Assistance Program (LTAP) | Albuquerque, NM | Staff time for organization and implementation of tech. transfer and workforce development events |
| New Mexico MainStreet | Santa Fe, NM | Information for case studies for 23UNM01 |
| Oak Ridge National Laboratory | Oak Ridge, TN | Simulating Vulnerable Road User crashes |
| People for Bikes | Boulder, CO | Data, policy support, tech. transfer |
| Pueblo of Jemez | Jemez Pueblo, NM | Sheri Bozic provided tribal/rural perspective for June LTAP workforce development event |
| Sandia National Laboratories | Albuquerque, NM | Participant recruitment through Commuter Bike Program for 23UNM04 |
| Tennessee DOT | Nashville, TN | Providing data for UTK projects |
| Transportation Research Board (TRB) | Washington, DC | Support for 2 UNM students to attend TRB Annual meeting to present their research |

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|---|---|---|
| Two Bikes Knoxville | Knoxville, TN | Workforce development; contributed to CPBS's May webinar |
| UNM Engineering Student Success Center | Albuquerque, NM | CPBS organized local field trips for the NM Summer Transportation Institute K-12 education program |
| UNM Lobo Bike Shop | Albuquerque, NM | Provided facilities and bike equipment and assisted with recruitment for 23UNM04 and 24UNM03 |
| UWM Police Department | Milwaukee, WI | Live-streaming surveillance camera video |
| Vision Zero Network | San Francisco, CA | Collaborative research for UCB projects |
| WeGo Transit Agency | Nashville, TN | Collaborative research and providing data for UTK projects |
| Wisconsin DOT | Madison, WI | Collaborative research for 23UWM04; In-kind support for project 24UWM01 |

### 2.2. Have other collaborators or contacts been involved?

In addition to the established partnerships detailed in the table above, other CPBS partnerships are in the exploratory phase. Nascent CPBS partnerships are detailed in the table below:

| Name | Location | Support |
|---|---|---|
| City of Manteca | Manteca, CA | Organizing workforce development workshop with Caltrans on safe speeds |
| Milwaukee County DOT | Milwaukee, WI | Exploring collaboration opportunities |
| Southeastern Wisconsin Regional Planning Commission | Waukesha, WI | Exploring collaboration opportunities |
| University of Aveiro | Aveiro, Portugal | UTK developed and submitted a joint research proposal |

Over the next reporting period, CPBS members will continue to develop the above partnerships to help further the goals of the center. While many of the partnerships detailed above were institution-specific partnerships tied to specific research projects, CPBS will also pursue center-wide collaborations that will support center-wide efforts that CPBS is currently developing.

## 3. OUTPUTS

The following lists highlight the outputs generated during the reporting period.

| Performance Measure | Count | Performance Measure | Count |
|---|---|---|---|
| Journal publications | 10 | Presentations | 16 |
| Books/non-periodicals | 0 | Websites | 7 |
| Research reports | 22 | New methods | 1 |
| Policy papers | 0 | Inventions | 0 |
| Conference papers | 7 | Other products | 0 |

## 3.1. Publications, conference papers, and presentations

### *Journal publications*

1. SDSU: Gibbons, J. R., Appleyard, B., Ahangarfabrik, N., & Honey, M. The Intersection of Race and Class: Neighborhood Socio-Economic Status and Fatal Pedestrian and Bicycle Collisions by Race/Ethnicity. *Transportation Research Interdisciplinary Perspectives.* (Under Review)
2. UCB: Miti, M. M., Doig, J., & Griswold, J. Bicycle Crash Incidents in San Francisco Before, During and After COVID-19. *Transportation Research Record*. (Invited for Revision)
3. UNM: Chaves Lasso, Y. T., Ferenchak, N. N., Lin, Y., & Losada-Rojas L. L. Statistical and Spatial Analysis of Pedestrian and Bicyclist Crashes on Arterial Roads. *Accident Analysis and Prevention*. (Under Review)
4. UNM: Ferenchak, N. N., Janson, B. N., & Marshall, W. E. Estimating Lives Saved and Serious Injuries Reduced by Bicycle Helmet Use in Colorado, 2006-2014. *International Journal of Injury Control and Safety Promotion.* (Invited for Revision)
5. UNM: Ferenchak, N. N., & Marshall, W. E. The Impact of Low-Stress Bicycle Facilities on Bicycle Commuting. *Nature Cities*. (Under Review)
6. UNM: Ferenchak, N. N., Rodriguez, O. S., Losada-Rojas, L. L., Schneider, R. J., & Gu, X. Longitudinal Geographic/Demographic Shifts in U.S. Bicyclist Fatalities 2001-2020. *Journal of Planning Education and Research*. (Invited for Revision)
7. UNM: Joshi, A. R., Ferenchak, N. N., & Losada-Rojas, L. L. Bus Rapid Transit as Arterial Corridor Traffic Calming: The Relationship Between Transit Infrastructure and Motor Vehicle Operating Speeds. *Traffic Injury Prevention,* 1-9. (Published)
8. UTK: Neshagaran, A., Cherry, C. R., & Sanders, R. L. Safety Insights from E-Scooter Rider and Bicyclist Behavior Observations in Two US Cities. *Transportation Research Record*. (Under Review)
9. UTK: Patwary, A. L., & Khattak, A. Endogeneity of Pedestrian Survival Time and Emergency Medical Service Response Time: Variations Across Disadvantaged and Non-Disadvantaged Communities. *Accident Analysis & Prevention*, 208, 107799. https://doi.org/10.1016/j.aap.2024.107799. (Published)
10. UTK: Patwary, A. L., & Khattak, A. Exploring How Urban Form, Demographics, and Disadvantaged Communities Are Linked with Pedestrian and Bicycle Safety. *Journal of Transportation Safety and Security.* (Invited for Revision)

### *Books or other non-periodical, one-time publications*

Nothing to Report

### *Research reports*

1. 23SDSU01: Gibbons, J., Appleyard, B., Honey, M., Ahangarfabrik, N., Carbajal, M., & Cooksy, W. (2024). Urban demographic shift of pedestrian and bicyclist collisions, equity, and police enforcement. CPBS Final Report. [under embargo]
2. 23SDSU02: Appleyard, B., Honey, M., Ahangarfabrik, N., Carbajal, M., Cooksy, W., Crist, K., & Swayne, M. (2024). Before and after safety evaluation of California's and San Diego's active transportation projects. CPBS Final Report. [under embargo]
3. 23SDSU03: Appleyard, B., Pande, A., Gibbons, J., Tanvir, S., Honey, M., Palmer, N., & Carbajal, M. (2024). Safety evaluation of turning maneuvers at California intersections. CPBS Final Report. [under embargo]
4. 23UCB01: Hsu, C. K., Tsao, M., Griswold, J. B., Schneider, R. J., Bigham, J. M., & Moran, M. E. (2024). A context-sensitive street classification framework for speed limit setting. CPBS Final Report. [under embargo]

5. 23UCB03: Mahdinia, I., Stahl, A., Hirandas, L., Oum, S., Griswold, J. (2024). Understanding pedestrian and bicyclist safety trends in the post-pandemic era. CPBS Final Report. [under embargo]
6. 23UCB04: Shaheen, S., Schmidt, B., & Cohen, A. (2024). Bike lending in North America: Understanding business models, user acceptance, social equity, and public safety. CPBS Final Report. [under embargo]
7. UCB: Mahdinia, I., Griswold, J. B., Unda, R., Sohrabi, S., & Grembek, O. (2024). Evaluate the safety effects of adopting a stop-as-yield law for cyclists in California. https://escholarship.org/uc/item/64h2s9cj
8. 23UNM01: Ferenchak, N. N. (2024). Countermeasures to improve pedestrian safety on arterials. New Mexico Department of Transportation. NMDOT Final Report. R922070.
9. 23UNM01: Ferenchak, N. N. (2024). NMDOT pedestrian safety on arterials. CPBS Final Report. https://doi.org/10.21949/rv7f-7b06
10. 23UNM02: Ferenchak, N. N. (2024). Pedestrian vs. bicyclist fatality patterns of geographic/demographic shift. CPBS Final Report. [under embargo]
11. 23UNM03: Zhang, S., Eshelman, T. A., Sinclair, L. L., & Ferenchak, N. N. (2024). Enhancing collaboration through web-based visualization and analysis of traffic crash data. CPBS Final Report. https://doi.org/10.21949/qz45-3057
12. 23UNM04: Losada-Rojas, L. L., & Habib, K. (2024). Understanding external factors and workload's impact on cyclist safety. CPBS Final Report. [under embargo]
13. 23UNM05: Losada-Rojas, L. L., Chaves, Y., & Ferenchak, N. N. (2024). Exploring the role of arterial roads' characteristics on pedestrian and cyclist crashes. CPBS Final Report. [under embargo]
14. 23UTK02: Cherry, C. R., & Parajuli, S. (2024). Untangling the growing pedestrian safety problem on urban arterials. CPBS Final Report. [under embargo]
15. 23UTK03: Cherry, C. R., Parajuli, S., & Barnhart, K. (2024). How much pedestrian harm can we attribute to larger vehicles in the fleet? CPBS Final Report. [under embargo]
16. 23UTK04: Khattak, A., & Bayati, Z. (2024). The role of urban form, demographics, and disadvantaged communities in pedestrian and bicycle safety. CPBS Final Report. [under embargo]
17. 23UWM02: Qin, X., Schneider, R., Sayed, M. A., & Vajari, M. A. (2024). Integrating non-motorist facility data into comprehensive road safety assessment. CPBS Final Report. [under embargo]
18. 23UWM03: Qin, X., Schneider, R., Li, Y., & Vajari, M. A. (2024). Exploring the impact of funding for unconventional data collection on vulnerable road user (VRU) safety improvements, Phase I. CPBS Final Report. [under embargo]
19. 23UWM04: Schneider, R. J., Gu, X., Nelson, K., & Ferenchak, N. N. (2024). Geographic and time-of-day shifts in pedestrian crashes by injury severity level. CPBS Final Report. [under embargo]
20. 23UWM05: Swift, S., Schneider, R. J., & Nelson, K. (2024). Pedestrian level of traffic stress. CPBS Final Report. https://doi.org/10.21949/7say-9423
21. 23UWM06: Schneider, R. J., Barbee, H., Nelson, K., & Gu, X. (2024). What policy and budget choices yield the greatest decreases in pedestrian & bicyclist fatality rates? CPBS Final Report. [under embargo]
22. 23UWM07: Shen, D., Shi, X., & Qin, X. (2024). Multiple-vehicle trajectory planning framework considering vulnerable road users. CPBS Final Report. [under embargo]

### *Policy papers*

Nothing to Report

### *Conference papers*

1. 23SDSU01: Gibbons, J. R., Appleyard, B., Ahangarfabrik, N., & Honey, M. *Navigating urban dynamics: Understanding the intersection of built environment and demographic factors in bicycle and pedestrian collisions.* Presented at the International Conference on Urban Affairs, New York, NY.
2. 24UTK03: Bayati Z., A. Khattak. *Shedding Light on Safety: Comparing the Collision Likelihood and Impact Severity of Pedestrian Crash Avoidance Systems Across Day and Night Conditions*. To be presented at the Transportation Research Board 104th Annual Meeting, TRBAM-25-03034, Washington, DC.
3. 24UTK03: Bayati Z., A. Khattak, & N. Moradloo. *Day and Night Performance Differences in Detection and Deceleration by Pedestrian Automatic Emergency Braking Systems*. To be presented at the Transportation Research Board 104th Annual Meeting, TRBAM-25-03794, Washington, DC.
4. 23UTK03: Parajuli S., K. Barnhart, & C. Cherry. *Pedestrian Safety: Speed Limit vs Vehicles*. To be presented at the Transportation Research Board 104th Annual Meeting, TRBAM-25-04527, Washington, DC.
5. UTK: Usman S., A. Khattak. *Beyond the Conventional: Exploring Pedestrian Safety on Interstates with Bayesian and Machine Learning Models*. To be presented at the Transportation Research Board 104th Annual Meeting, TRBAM-25-03146, Washington, DC.
6. 23UTK01: Usman S., M. Adeel, C. Brakewood, & A. Khattak. *A Safety Analysis of Vulnerable Road Users in Transit Bus Collisions: Insights from the National Transit Database*. To be presented at the Transportation Research Board 104th Annual Meeting, TRBAM-25-03608, Washington, DC.
7. 24UWM04: Schneider, R. J., Gu, X., Nelson, K., & Ferenchak, N. *Neighborhood-level shifts in US fatal and severe pedestrian crashes during the 2010s.* Presented at the World Society of Transport and Land Use Research Symposium, Bogota, Colombia.

### *Presentations*

1. SDSU: Gibbons, J., Appleyard, B., Ahangarfabrik, N., & Honey, M. (2024, April 25). *Navigating urban dynamics: Understanding the intersection of built environment and demographic factors in bicycle and pedestrian collisions*. International Conference on Urban Affairs, New York, NY.
2. SDSU: Appleyard, B., Ahangarfabrik, N., Honey, M., Carbajal, M., and Gibbons, J. (2024, April 25). *Livable and just streets: Socioeconomic disparities of right turn on red collisions for pedestrians and bicyclists*. International Conference on Urban Affairs, New York, NY.
3. UCB: Griswold, J. (2024, June 11). *Approaches to speed management* [Panelist]. Presented at the California Office of Traffic Safety (OTS) Traffic Safety Law Enforcement Forum, San Francisco, CA.
4. UCB: Oum, S. (2024, June 11). *How can data help law enforcement* [Panelist]. Presented at the OTS Traffic Safety Law Enforcement Forum, San Francisco, CA.
5. UCB: Griswold, J. (2024, August 6). *Statewide active transportation database*. Presented virtually at the SHSP Q3 Pedestrian & Bicyclists Challenge Area Meeting.
6. UCB: Oum, S. (2024, August 13). *TIMS: Making California crash data easily accessible*. Presented at the Association of Transportation Safety Information Professionals (ATSIP) 2024 Traffic Records Forum, San Diego, CA.
7. UCB: Griswold, J. (2024, August 15). *SafeTREC and transportation safety: A year in review*. Presented at the SafeTREC Seminar Series.
8. UNM: Chavez Lasso Y., Ferenchak N.N. & Losada-Rojas L.L. (2024, June 15-18). *Exploring the role of arterial road characteristics on pedestrian and bicyclist crashes.* ASCE International Conference on Transportation & Development (ICTD). Atlanta, GA. (~70 participants)

9. UNM: Chavez Lasso Y., Ferenchak N.N. & Losada-Rojas L.L. (2024, June 22-26). *Exploring the role of arterial road characteristics on pedestrian and bicyclist crashes.* TRB 2nd International Conference and Peer Exchange on Roadside Safety. Orlando, FL. (~50 participants)
10. UNM: Rawson J., Ferenchak N.N., Habib K. & Losada-Rojas L.L. (2024, July 15-18). *Understanding Naturalistic Cyclist Stress and Mental Workload: A Human Factor Analysis.* TRB Conference on Advancing Transportation Equity, Baltimore, MD. (~20 participants)


Figure 8. Dr. Losada-Rojas presents the results of her CPBS research.

11. UNM: Joshi, A. R., & Ferenchak, N. N. (2024, July 15-18). *Unveiling transit decisions: Exploring the influence of user personas on mode choice and equity in public transportation*. TRB Conference on Advancing Transportation Equity, Baltimore, MD. (~20 participants)
12. UNM: Zhang, S. (2024, August 27-28). *Online crash mapping portal.* New Mexico Transportation Safety Summit. Albuquerque, NM.
13. UWM: Schneider, R. (2024, June 17-19). *Neighborhood-level shifts in US fatal and severe pedestrian crashes during the 2010s*. World Society on Transport and Land Use Research Conference, Bogota, Colombia. (~30 participants)
14. UWM: Schneider, R. (2024, May). *Pedestrian Safety at Night: Illuminating the Problem & Strategies for Safer Streets*. Wisconsin Department of Transportation Innovation Hour. (~50 participants)
15. UWM: Li, Y. (2024, September 4-6). *Shift from traditional data sources to emerging data sources in active transportation: Opportunities, challenges, and organizational behavior change*. Texas Trails and Active Transportation Conference, Austin, TX. (~40 participants)
16. UWM: Shi, T. (2024, July). *Large Model for Automated Vehicle Impacts Analysis and Evaluation*. Automated Road Transportation Symposium, San Diego, CA. (23UWM07 and 24UWM02)

## 3.2. Website(s) or other internet site(s)

1. 23UCB01: Safe Speeds Toolkit (2,711 views during reporting period): https://safetrec.berkeley.edu/tools/california-safe-speeds-toolkit
2. UNM: Center for Pedestrian and Bicyclist Safety: https://www.pedbikesafety.org
3. 23UNM03 and 24UNM04: Crash Data Mapping Portal: https://crash-mapping.edacnm.org/
4. UTK: Center for Transportation Research (CTR): https://ctr.utk.edu/

5. UTK: CTR has an online training program named the Tennessee Transportation Assistance Program (TTAP): https://ttap.utk.edu/resource/web_training.php
6. UTK: ITE Student Chapter: https://tesp.utk.edu/ite/
7. UWM: Institute for Physical Infrastructure and Transportation: https://uwm.edu/ipit/project/

### 3.3. New methodologies, technologies, or techniques

UWM developed a new methodology for measuring pedestrian networks known as Pedestrian Level of Traffic Stress (PLTS) for 23UWM05.

### 3.4. Inventions, patents, and/or licenses

Nothing to Report

### 3.5. Other products

Nothing to Report

## 4. OUTCOMES

### 4.1. Event participation

CPBS's research, education, technology transfer, and workforce development efforts have been translated into several events, which have engaged numerous transportation students and professionals. These events and their reach are detailed below.

#### *Research Events*

During this reporting period, CPBS team members participated in numerous research presentations, as detailed in Sections 1.2 and 3.1. In addition to those research events, CPBS Assistant Director Dr. Losada-Rojas and Program Manager Ben Garland represented CPBS at the CUTC Annual Meeting in June 2024 in South Padre Island, TX. Dr. Ferenchak presented CPBS research seminars at Utah State University in April 2024 and Oregon State University in September 2024, engaging with approximately 20 students each time. CPBS has also delivered two webinars and has developed three more for the upcoming months.

#### *Education Events*

Three UNM students were selected as fellows for the Dwight David Eisenhower Transportation Fellowship Program (DDETFP) supported by FHWA. The fellowship will support the UNM undergraduate and graduate students, all of whom are engaged with CPBS projects. Dr. Ferenchak is leading UNM's local Eisenhower program. UNM will also mentor two students through the TRB Minority Fellowship in 2024 and have the students present their CPBS-related research at the 2025 TRB Annual Meeting.

CPBS activities are also integrated into students' lives through student organizations. At UTK, PhD student Latif Patwary is serving as the vice president of the ITE student chapter. At UNM, Dr. Nick Ferenchak is serving as the Faculty Advisor of the ITE student chapter and the president, vice president, and treasurer are all students being supported by CPBS. UNM students will be organizing an ITE Student Leadership Summit during the next reporting period. Dr. Shi at UWM is serving as the Faculty Advisor for their ITE student chapter.

#### *Workforce Development Events*

In addition to the events detailed in Section 1.2, UCB continues to deliver their Safe Speeds Toolkit to establish evidence-based, online educational resources which support Safe Speeds decision making in California. CPBS

consortium members will continue to collaborate with public agencies and technical assistance programs to disseminate their research to the professional workforce.

## 4.2. Popular press

CPBS researchers appeared in a variety of news publications from across the country, showing that CPBS's work has wide reach and relevance. Media citations referring to CPBS or its efforts from the last reporting period are below:

1. CBS58. (May 2024). "Urban planners talk city streets after reckless driving death of 50-year-old Milwaukee veteran." By Bryant McCray. https://www.cbs58.com/news/urban-planners-talk-city-streets-after-reckless-driving-death-of-50-year-old-milwaukee-veteran
2. Government Market News. (August 2024). "Bus rapid transit can improve road safety, study shows" By Keaton Peters. https://govmarketnews.com/bus-rapid-transit-can-improve-road-safety-study-shows/
3. Houston Public Media. (June 2024). "'Not surprising' — experts react to report showing fewer crashes on Houston's 11th Street after redesign." By Dominic Anthony Walsh. https://www.houstonpublicmedia.org/articles/news/transportation/2024/06/24/491610/houston-11th-street-redesign-fewer-crashes-report/
4. Kansas City Beacon. (July 2024). "Half of KC's traffic deaths in the last two years happened on these 10 streets." By Tackett, L. https://thebeaconnews.org/stories/2024/07/08/kansas-city-car-crashes-data-dive/
5. KUNM. (June 2024). "Let's Talk NM: Bicycle Safety." By Kaveh Mowahed. https://www.kunm.org/show/lets-talk-new-mexico/2024-06-02/lets-talk-about-bicycling-safely
6. National Geographic. (May 2024). "E-bikes are good for the environment – but what about your health?" By Daryl Austin. https://www.nationalgeographic.com/premium/article/e-bikes-popular-health-benefits-heart-muscles
7. UC Berkeley College of Engineering. (May 2024). "New & noteworthy: Julia Griswold appointed as SafeTREC Director." *Berkeley Engineer*. https://engineering.berkeley.edu/news/2024/05/new-noteworthy-13/
8. Wisconsin Public Radio. (September 2024). "How 'traffic calming' measures can help Wisconsin cities reduce speeding and make main streets easier to navigate." By Lorin Cox. https://www.wpr.org/news/how-traffic-calming-measures-can-help-wisconsin-cities-reduce-speeding-and-make-main-streets-easier-to-navigate

## 4.3. CPBS's reach

In addition to the direct references to CPBS research and other efforts that are listed above, there are indirect measures of CPBS's reach such as visits to the CPBS website and newsletter recipients. Such indirect measures of reach are detailed in the table below:

| Performance Measure | Previous Reporting Periods | | Current Reporting Period (4/1/2024 to 9/30/2024) | | Next Reporting Period |
|---|---|---|---|---|---|
| | 6/1/2023 to 9/30/2023 | 10/1/2023 to 3/31/2024 | Actual | Target | Target |
| Visitors to CPBS website | 353 | 637 | 1,443 | 500 | 1,500 |
| Page visits on CPBS website | 1,164 | 2,822 | 5,374 | 1,500 | 5,000 |
| Project views on CPBS website | n/a | n/a | 1,583 | n/a | 2,000 |
| LinkedIn followers | 514 | 875 | 1,958 | 1,000 | 2,500 |
| Newsletter subscribers | 662 | 696 | 731 | 700 | 750 |
| Media mentions | 16 | 18 | 8 | 15 | 15 |

# 5. IMPACTS

## 5.1. What is the impact on the effectiveness of the transportation system?

SDSU submitted their CPBS Right Turn On Red (RTOR) report from 23SDSU03 to staff of the California State Senate which will be used to inform statewide policy on RTOR. Since California is considering banning RTOR movements, analyses provided by CPBS research could inform targeted interventions, help allocate resources more efficiently, and foster evidence-based decision-making to address socioeconomic disparities caused by RTOR maneuvers, which would enhance overall community well-being.

Crash mapping research from 23UNM03 has raised awareness about road safety, particularly among Native American communities, by providing access to crash data. The platforms developed through the research project are now live and serve as educational tools in schools and communities, promoting responsible road behaviors.

CPBS's impact was recognized in the form of several awards. Dr. Ferenchak was awarded UNM Department of Civil, Construction & Environmental Engineering Stamm Award for Outstanding Research in May 2024 and the UNM School of Engineering Early Career Research Excellence Award in April 2024. UNM PhD student Ashish Joshi was awarded the American Public Transportation Foundation Scholarship in August 2024 for his work related to 23UNM01 and pedestrian bicyclist access to bus stops.

US DOT will benefit from the deep analysis of the equitable transportation community data undertaken by CPBS in projects such as 23SDSU01, 23UCB03, 23UNM02, 23UTK04, and 23UWM04. The US DOT can then model pedestrian and bicycle safety programs using the CPBS work on disadvantaged communities, on arterials, associated with transit, and form partnerships with other relevant entities such as the Governor's Highway Safety Program and State DOTs.

The CPBS team also developed a proposal to develop and validate a methodology for utilizing existing pedestrian traffic signal actuations to estimate safety-related exposure. The proposal was submitted to FHWA and was led by Utah State University with UNM, UCB, and UTK collaborating.

## 5.2. What is the impact of technology transfer on industry and government entities, on the adoption of new practices, or on research outcomes which have led to initiating a start-up company?

CPBS projects have begun directly impacting government entities. For instance, the mayor of Glendale, CA reached out to Dr. Ferenchak regarding bike network development related to 23UNM02. In addition, CPBS directors, PIs, and staff are impacting government entities – and having their research implemented – through involvement on committees such as:

1. Dr. Cherry (UTK): Member, City of Knoxville Vision Zero Working Group
2. Dr. Ferenchak (UNM): Technical Team, MRCOG's *Regional Transportation Safety Action Plan*
3. Dr. Ferenchak (UNM): Member, NMDOT Pedestrian Safety Task Force
4. Ben Garland (UNM): Member, City of Albuquerque's Transit Advisory Board
5. Ben Garland (UNM): Member, City of Albuquerque's Complete Streets Committee
6. Ben Garland (UNM): Member, Mid-Region Council of Governments' Active Transportation Committee
7. Dr. Griswold (UCB): Member, California Walk & Bike Technical Advisory Committee
8. Dr. Griswold (UCB): Member, FHWA Bicycle and Pedestrian Data Collection Handbook Working Group
9. Liza Lutzker (UCB): Member, City of Berkeley's Transportation and Infrastructure Commission
10. Dr. Qin (UWM): Member, Wisconsin Automated Vehicle External (WAVE) Advisory Committee
11. Dr. Qin (UWM): Member, WisDOT Traffic Record Coordinating Committee

12. Dr. Schneider (UWM): Member, WisDOT Non-Driver Advisory Committee

## 5.3. What is the impact on the body of scientific knowledge?

CPBS's leadership in committees throughout the scientific community makes them well prepared to have a significant impact on that community. CPBS researchers are members, research coordinators, and chairs of many TRB committees and subcommittees, NCHRP/BTSCRP/TCRP project panels, and other technical committees.

A list of CPBS directors and PIs and their leadership roles on TRB committees and subcommittees is listed below:

1. Dr. Brakewood (UTK): Chair, Committee on Public Transportation Marketing and Fare Policy (AP030)
2. Dr. Cherry (UTK): Member, Committee on Developing Countries (AME40)
3. Dr. Ferenchak (UNM): Committee Research Coordinator, Member, Pedestrian Committee (ACH10)
4. Dr. Ferenchak (UNM): Member, Bicycle Transportation Committee (ACH20)
5. Dr. Khattak (UTK): Member, Committee on Traveler Behavior and Values (AEP30)
6. Dr. Losada-Rojas (UNM): Member, Committee on Traveler Behavior and Values (AEP30)
7. Dr. Losada-Rojas (UNM): Committee Research Coordinator, Transportation and Heath Committee (AME70)
8. Dr. Losada-Rojas (UNM): Member, Public Transportation Planning and Development (AP025)
9. Dr. Qin (UWM): Chair, Committee on Safety Performance Analysis (ACS20)
10. Dr. Qin (UWM): Chair, Subcommittee on Safety Analytical Methods (ACS20(1))
11. Dr. Shaheen (UCB): TRB Executive Committee
12. Dr. Shi (UWM): Member, Emerging Technologies in Network Modeling Subcommittee (AEP40(4))
13. Dr. Zhang (UNM): Member, Committee on Geospatial Data Acquisition Technologies (AKD70)
14. Dr. Zhang (UNM): Member, Committee on Geographic Information Science (AED40)

CPBS researchers also serve on various other technical committees, which span a variety of topics across the transportation field. This involvement will help expand CPBS's impact beyond the discipline of active mobility:

1. Dr. Cherry (UTK): Chair, SAE Micromobility Committee
2. Dr. Ferenchak (UNM): CPBS and UNM representative on Council of University Transportation Centers (CUTC)
3. Dr. Qin (UWM): Panel, NCHRP 07-36 Guide for Self-Explaining Roads in Context of Safe System Approach
4. Dr. Qin (UWM): Panel, NCHRP 22-84 Development of Crash Prediction Models for Short-Term Durations
5. Dr. Shi (UWM): Co-Chair, IEEE Emerging Transportation Technology Testing (ET3) Technical Committee

CPBS's directors and PIs also serve on the editorial boards of many academic journals which expand CPBS's impact on the body of scientific knowledge:

1. Dr. Brakewood (UTK): Associate Editor, Journal of Public Transportation
2. Dr. Cherry (UTK): Associate Editor, Transportation Research Part D
3. Dr. Cherry (UTK): Associate Editor, Journal of Cycling and Micromobility Research
4. Dr. Cherry (UTK): Associate Editor, Journal of Sustainable Transportation
5. Dr. Khattak (UTK): Editor-in-Chief, Journal of Intelligent Transportation Systems
6. Dr. Khattak (UTK): Associate Editor, International Journal of Sustainable Transportation
7. Dr. Khattak (UTK): Special Adviser, Journal of Transportation Safety & Security
8. Dr. Khattak (UTK): Advisory Board Member, Analytic Methods in Accident Research
9. Dr. Losada-Rojas (UNM): Editorial Board, International Journal of Transportation Science and Technology
10. Dr. Qin (UWM): Associate Editor, Urban Lifeline
11. Dr. Qin (UWM): Associate Editor, Journal of Transportation Safety & Security
12. Dr. Qin (UWM): Handling Editor, Transportation Research Record
13. Dr. Qin (UWM): Editorial Board, Accident Analysis and Prevention
14. Dr. Schneider (UWM): Editor, Journal of Transport and Land Use
15. Dr. Shaheen (UCB): Editorial Board Member, Transport Reviews

16. Dr. Shaheen (UCB): Editorial Board Member, Communications in Transportation Research
17. Dr. Shaheen (UCB): Associate Editor, Travel Behavior and Society
18. Dr. Shaheen (UCB): Editorial Board Member, Sustainability Journal
19. Dr. Shaheen (UCB): Editorial Board Member, Environmental Research: Infrastructure and Sustainability
20. Dr. Shaheen (UCB): Associate Editor, Transportation Research Part A
21. Dr. Shaheen (UCB): Associate Editor, Transportation Research Record
22. Dr. Shaheen (UCB): Editorial Board Member, Transportation Research Part D
23. Dr. Shaheen (UCB): Editorial Board Member, Case Studies on Transport Policy
24. Dr. Shaheen (UCB): Editorial Board Member, International Journal of Sustainable Transportation

### 5.4. What is the impact on transportation workforce development?

During this reporting period, CPBS made significant strides in workforce development through various educational and professional engagement activities. CPBS partnered with Homewise to deliver a presentation on the connection between affordable housing and active transportation, reaching 19 fellows in Santa Fe, NM. UNM also reached 40 participants through two LTAP workshops and four CPBS-funded UNM students graduated. UWM's Robert Schneider delivered multiple lectures on pedestrian and bicyclist safety to students and professionals at institutions such as Milwaukee Area Technical College and the Wisconsin Department of Transportation. UCB discussed autonomous vehicle safety with the San Francisco County Transportation Authority, highlighting the ongoing focus on pedestrian and bicyclist protection in evolving transportation systems. These initiatives underscore CPBS's efforts to foster development within the transportation workforce.

## 6. CHANGES/PROBLEMS

### 6.1. Changes in approach and reasons for change

Nothing to Report

### 6.2. Actual or anticipated problems or delays and actions or plans to resolve them

Year 1 research projects 23UCB02 and 23UTK01 were delayed because of data acquisition and IRB issues. CPBS is in communication with the PIs and the final research reports should be submitted during the next reporting period.

### 6.3. Changes that have a significant impact on expenditures

Grant spending was lower than expected in Year 1 because several students were unable to register for their studies. CPBS is in communication with those consortium members to ensure that spending gets back on track.

### 6.4. Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards

Nothing to Report

### 6.5. Change of primary performance site location from that originally proposed

Nothing to Report

## 7. SPECIAL REPORTING REQUIREMENTS

There are no special reporting requirements to note. The SF425 financial reporting requirement will be met by separate reports.