

Human Environment Digest

June 11, 2020

Welcome to the Federal Highway Administration (FHWA) Office of Human Environment biweekly email digest. This digest shares the latest information from a range of Federal and non-Federal sources, addressing transportation and its relationship to the human environment. Through this information exchange, FHWA hopes to foster dialogue at all levels and continue to further the state of the practice on these important topics in support of safety; infrastructure, including accelerated project delivery, access to jobs, and community revitalization; technology and design innovation; and accountability, including, data-driven decisions and performance-based planning.

For more information on any of these topics, see the FHWA Related Links on the sidebar.

Click [here](#) to manage your subscriptions.

*The information provided in this mailing does not necessarily reflect the view of the Federal Highway Administration or the U.S. Department of Transportation.



Safety

Research Highlights Safety Assessment Framework for Proactive Safety Monitoring of Vulnerable Road Users

The *Mineta Transportation Institute* at *San Jose University* released a [research report](#) outlining a safety assessment framework for vulnerable road users. Researchers developed an intersection safety monitoring system that proactively evaluates the safety of vulnerable road users using video data at intersections with high crash rates in San Diego, California. The system evaluates safety using detection models that track moving objects, speed, direction of travel and other factors to identify near-crash events. Findings also suggest that automated safety evaluations can be performed to proactively identify critical events.

User Guide Outlines Network Design Attributes to Support Road Safety

An international transportation research group released a [user guide](#) that outlines road design attributes to help reduce crashes and injuries at cross-sections and intersections. It recommends a range of treatments to improve safety on a network or corridor basis including rural freeways and urban local access roads. The guide discusses a network design procedure for road safety, outlining the level of safety risk associated with various road network characteristic such as traffic type and volume, speed limits, road curvature, and other design considerations.

Research Examines Interactions Between Pedestrians and Automated Vehicles to Improve Safety

The *Safety Through Disruption National University Transportation Center* at *Virginia Tech Transportation Institute* released a [report](#) analyzing the interaction between pedestrians and drivers. Researchers compared the behaviors of human drivers and automated vehicles (AV) in order to assess the safety implications of each context. The report explains that current AV models do not take communication between drivers and pedestrians into account, such as when a driver hand signals a pedestrian to cross. Researchers examined these varied interactions at crosswalks, and translated the data into a model that mimics human driver behavior which can then be used to safely support AV programming and decision making.



Infrastructure

PBIC Information Brief Analyzes Bicycling Rates in Schools

The *Pedestrian and Bicycle Information Center* released an [information brief](#) analyzing factors associated with high rates of students bicycling to school. Researchers compared bicycling rates in schools in Santa Clara County, California and assessed factors that promote active transportation related to bicycle parking, road infrastructure, school policy, building orientation, traffic calming, school zoning, grant funding, and staff capacity. The findings suggest that bicycle parking supply, school policies that promote bicycling, and participation in grant programs contribute to higher rates of bicycling in schools.

Research Analyzes Connections between Built Environment and Neighborhood Resident Quality of Life

The *Journal of the American Planning Association* published a [research article](#) analyzing the impacts of neighborhood walkability, access to transit, and access to parks on residents' quality of life in Phoenix, Arizona. Researchers surveyed residents to determine how built environment elements and their interconnections influence overall life satisfaction. Respondents who expressed higher life satisfaction were those satisfied with the number of neighborhood parks and lived in generally more walkable neighborhoods. The article explains that satisfaction with parks is linked with other benefits including increased social connection, interaction with nature, and opportunities for physical activity.



Innovation

Colorado DOT Enhances Public Engagement with Virtual Public Involvement

The *Colorado Department of Transportation* (CDOT) is optimizing its [public engagement processes](#) with virtual public involvement (VPI) tools as part of its 2045 Statewide transportation plan. CDOT gathered input from residents using virtual and traditional methods to ensure balanced participation from all demographics. Staff deployed a variety of outreach methods to engage with residents and identify transportation system improvement including online surveys, telephone town halls, online mapping, social media engagement, and informational booths at community events and farmers markets. CDOT's VPI strategies align with the *Federal Highway Administration's Every Day Counts-5 Virtual Public Involvement* initiative, which supports agencies' efforts to engage the public more effectively by supplementing face-to-face information sharing with technology.

PBIC Report Examines Implications of Automated Driving Systems Near School Zones

The *Pedestrian Bicycling and Information Center* released a [report](#) discussing key issues and research priorities associated with deploying automated driving systems (ADS) around schools. The research notes that school zones are complex environments that have varying traffic conditions and procedures, including frequent interaction between motorists and pedestrians. The report summarizes ADS deployment challenges related to policy, infrastructure, and education, as well as outlining recommendations for operators and local stakeholders to improve pedestrian safety.

Report Outlines Mobility Data Sharing Practices for Communities and Providers

A national transportation research group released a [report](#) on the current practices and policy issues related to mobility data sharing and analysis. It highlights the importance of access to data and provides an overview of key concepts for communities and mobility operators, including shared micromobility services, such as electric scooter share systems. The report explains that access to mobility data can help determine performance towards equity goals, including whether services are available in neighborhoods underserved by public transit. It adds that improved data sharing systems can leverage project evaluation, help identify the need for expanded services in priority areas, and inform new or improved policies.

Research Explores Role of Urban Air Mobility

The *Institute of Transportation Studies* at the *University of California, Berkeley* published a [report](#) analyzing innovations in urban transportation and discussing the role of air transport, or urban air mobility, in moving goods and people across an urban area. It examines whether air transport is a viable alternative for large-scale hub-door and door-door operations. The study compared the potential for electric air travel with gasoline road travel based on three metrics including en route travel time, fuel cost, and carbon dioxide emissions. The results for passenger movement as well as consolidated and unconsolidated movement of goods indicate that air transport is generally more efficient in terms of time, fuel cost, and emissions, particularly for longer distances. The research highlights the potential for automated aircraft to improve quality of life by reducing travel time and providing enhanced access to jobs and services.

Webinar Discusses Implications of Automated Vehicles

A national transportation advocacy group hosted a [webinar](#) on the implications of implementing automated vehicles, including user benefits and costs, and impacts to travel demand, safety, road design, parking, and public transit supply. It also outlines projections related to deployment and policy recommendations.



Accountability

FHWA Publishes Transportation Performance Management/ Performance-Based Planning and Programming Implementation Workshop Interim Report

The *Federal Highway Administration* (FHWA) published a [report](#) summarizing the 2019 Transportation Performance Management (TPM)/Performance-Based Planning and Programming (PBPP) Implementation Workshop Series, which highlights common themes, noteworthy practices, and challenges faced by State departments of transportation, metropolitan planning organizations, and transit operators in implementing Federal TPM and PBPP requirements. The series covered a wide range of performance management topics, including: target setting; coordination and collaboration practices among the various agency types; integrating PBPP into long-range State transportation plans, metropolitan transportation plans, statewide transportation improvement plans, and transportation improvement plans; performance monitoring and reporting; system performance reporting; and techniques for communicating the requirements and benefits of TPM and PBPP to the public, elected officials, and other stakeholders. For more information on the report, please contact James Garland (FHWA Office of Planning) at James.Garland@dot.gov or Harlan Miller (FHWA Office of Planning) at Harlan.Miller@dot.gov.

Research Discusses Data-Driven Safety Measure Target Setting in Virginia

The *Transportation Research Record: Journal of the Transportation Research Board* published a [research article](#) discussing the Virginia Department of Transportation's (VDOT's) process for developing robust, data-driven safety targets in order to enhance performance measures and better assess fatalities on public roadways in Virginia. VDOT's safety target setting aligns with the *Federal Highway Administration's Safety Performance Management Final Rule*, in support of the [Highway Safety Improvement Program](#), which requires States to establish and report annual safety targets. VDOT refined its target setting procedures by developing prediction models for estimating fatalities and serious injuries—including nonmotorized fatalities and serious injuries—then validating the models with the most recent data.

TRB Centennial Paper Discusses Pedestrian Research Needs

The *Transportation Research Board's Standing Technical Committee on Pedestrians* released a [centennial paper](#) highlighting key pedestrian-related research efforts and priorities, including how pedestrian research topics have evolved over the last 50 years. The paper discusses research needs related to pedestrian safety studies, walkability and roadway design studies, pedestrian travel and the built environment, and pedestrian transportation guidebooks. In addition, it notes the importance of studying pedestrian interactions with emerging technologies such as automated vehicles and powered micromobility devices.