

MAKING STRIDES

IN PEDESTRIAN SAFETY

As walking is becoming an increasingly popular mode of transportation across the nation, Oklahoma is making significant strides in bringing agencies together to make communities and highways safer for pedestrians. The Oklahoma State Transportation Innovation Council (OKSTIC), a task force of public and private transportation stakeholders that spearheads statewide-deployment of innovations, has mobilized efforts to implement Safe Transportation for Every Pedestrian (STEP) in Oklahoma.

The STEP initiative is a national effort to reduce, and ultimately eliminate, pedestrian fatalities by using five safety countermeasures to improve uncontrolled crossing locations, such as mid-block or unsignalized intersections, as outlined by the Federal Highway Administration (FHWA) Every Day Counts (EDC) program. “That means working closely with our stakeholders to develop processes and policies to advance STEP countermeasures,” said FHWA Transportation Specialist Rebecca Crowe, who leads the FHWA EDC STEP deployment team.

“In the past, engineers designed systems to encourage pedestrians to cross at intersections,” said Oklahoma Department of Transportation (ODOT) Assistant Chief Traffic Engineer David



Above: A road diet, Rectangular Rapid Flash Beacon (RRFB) and crosswalk visibility enhancements are STEP countermeasures used in Broken Arrow, Okla.

- An estimated 4 million Americans walked to work in the past week, according to the 2016 US Census Bureau American Community Survey.
- The National Highway Traffic Safety Administration (NHTSA) estimates a pedestrian was killed every 1.5 hours and injured every seven minutes in traffic crashes in 2016.
- Pedestrians account for over 17.5% of all fatalities in motor vehicle traffic crashes. The majority of these deaths occur at uncontrolled crossing locations, such as mid-block or unsignalized intersections, according to FHWA Safety and Design Team Engineer Peter Eun.
- The Oklahoma Highway Safety Office reported 91 pedestrians were killed in Oklahoma in 2016, a 35% increase from 67 in 2007.

Glabas. “What engineers have found is in the right locations, under the right circumstances, and when properly engineered, a mid-block crossing can be safer because there are fewer conflict points and both drivers and pedestrians have a better view of each other. There are no turning vehicles, which allows drivers to be more focused on situations in front of them.”

To highlight the initiative countermeasures, the Oklahoma Local Technical Assistance Program (LTAP) at Oklahoma State University organized classes for local engineers and planners on STEP across the state in Fall 2017. “Lots of agencies in the state are getting on board with STEP, and it’s exciting to see the enthusiasm of our partners,” said ODOT Bicycle and Pedestrian Coordinator Shelby Templin.

After the training sessions, Templin assembled a committee to develop a STEP Action Plan for Implementing Pedestrian Crossing Countermeasures, which is in its final review process. Templin presented a summary of Oklahoma’s progress at a regional Peer Exchange organized by FHWA in Oklahoma City in March 2018. “The document will provide guidance for ODOT employees, as well as for communities who are ready to take the next STEP in pedestrian safety,” said Templin. “By having the plan in place, we would hope to achieve:

- **Improved Safety.** Countermeasures are available that offer proven solutions for reducing pedestrian fatalities at uncontrolled crossing locations.

*Right: Effective placement and design of pedestrian-activated crossing systems like this solar-powered RRFB in Collinsville, Okla. are outlined by FHWA in the **Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations.***



- **Targeted Investment.** By focusing on uncontrolled locations, agencies can address a significant national pedestrian safety problem.
- **Enhanced Quality of Life.** Improving crossing opportunities boosts quality of life for pedestrians of all ages and abilities.



Above: Templin and Tribal, local and state stakeholders discussing pedestrian safety goals in the 2018-2023 Oklahoma Strategic Highway Safety Plan.

THE FIVE STEP COUNTERMEASURES

The following five countermeasures help pedestrians safely cross the road at uncontrolled locations:



Above: Advance warning sign of crosswalk in Collinsville, Okla.

Crosswalk visibility enhancements, such as advance warning signs, crosswalk lighting, enhanced marking and curb extensions, help drivers better detect pedestrians.



Above: Passive pedestrian-activated RRFB in the Rose District of Broken Arrow, Okla. As of June 2018, the cities of Hooker, Midwest City and Moore utilize High Intensity Activated Crosswalk (HAWK) systems. To see how HAWKS work, check out ODOT's video: <https://www.youtube.com/watch?v=IdVOeYOuLfg>

Pedestrian Hybrid Beacons (PHBs) provide a stop control treatment for higher speed multilane roads where pedestrian volumes aren't high enough to warrant a traffic signal. Rectangular Rapid Flash Beacons (RRFBs) are user-actuated LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. Pedestrians activate the devices manually by a push button or passively, through a pedestrian detection system.



Above: Raised crosswalk in Stillwater, Okla.

Raised crosswalks are a traffic-calming technique that can reduce vehicle speeds and encourage drivers to yield to pedestrians.



Left: Pedestrian refuge island at the intersection of Western and Farm roads in Stillwater, Okla. ODOT is considering designs for mid-block refuge islands along Perkins Road (SH-177) in 2019.

Pedestrian refuge islands provide a safer place for pedestrians to stop at the midpoint of a road before crossing the remaining distance, which is particularly helpful for pedestrians with limited mobility.



Above: The City of Tulsa reduced the street to two lanes in a road diet within the Brady Arts District, re-using the space to create angled parking and curb extensions that shorten the distance for pedestrians to cross.



Road diets, which reconfigure a roadway cross-section to safely accommodate all users, can reduce vehicle speeds, cut the number of lanes pedestrians must cross, and create space for new pedestrian facilities.

DOWNTOWN PLACEMAKING

Learn how the STEP countermeasures of road diets, Pedestrian Hybrid Beacons and crosswalk visibility enhancements drive community revitalization and economic development initiatives in Oklahoma: <https://vimeo.com/277314570>.

Right: The downtown road diet in Broken Arrow makes the Rose District a place people want to be.



Safe Transportation for Every Pedestrian (STEP) is part of FHWA's Every Day Counts (EDC) program, which encourages the deployment of innovative underutilized innovations that shorten project delivery, enhance roadway safety, reduce traffic congestion, and improve environmental sustainability.



The City of Norman is guided by “Moving Forward,” their long-range comprehensive transportation plan. “It’s all about building a multi-modal transportation system,” said City of Norman Transportation Engineer Angelo Lombardo. “As far as STEP technologies, we really like the RRFB. It’s a good device to use at many locations, including a few mid-block crossings that we have.”

“We’re also proud of the interchange at Lindsey Street that leads right to the campus of OU,” noted Lombardo. “Here, we’ve added colorized bike lanes, pedestrian refuge islands and curb extensions to create a safer environment for bicyclists and pedestrians.”



Clockwise from left: Crushed glass painted deep green adds friction and makes bike lanes highly-visible along Lindsey Street in Norman, Okla. Walking trails detail history and create a sense of place via trailside public art installations. The 2018 OTEA Spring Meeting included presentations on Complete Streets policies developed for Tulsa and Norman.

Lombardo credited his participation in groups such as the Oklahoma Traffic Engineers Association (OTEA) with providing him the latest information on innovations. “These are the places where I get to network, learn about technology, and get ideas for things we should try in Norman,” he said. “I also find value in reaching out to other safety engineers, such as FHWA Oklahoma Division Safety Engineer Huy Nguyen and the FHWA Resource Center.

Collinsville Public Works Director Craig Stokes recently joined Broken Arrow Assistant City Manager Brent Murphy for a walk in the downtown Rose District to view the city’s improvements. “We’re excited to learn more about what Broken Arrow has done to further enhance their downtown road diet for pedestrians and the community,” said Stokes. “In the city of Collinsville, we strive to maintain the charm of our downtown area. Our main street is State Highway 20, on which ODOT used a road diet.”

Collinsville integrates transportation planning with community development, an approach also employed in Broken Arrow. “We used to pull our car into the garage and stay home. Today, people want to experience the community feeling of the city. Mid-block crossings bring vitality to businesses and create a place for people to stop and meet,” mused Broken Arrow Special Projects Coordinator Farhad K. Daroga.

“People in Oklahoma want to get out and enjoy their community,” concurred ODOT Americans with Disabilities Act

COLLINSVILLE CONTINUED



Above: The City of Collinsville downtown area boasts space for outdoor seating, window shopping and parking thanks to a road diet on Main St.

(ADA) Coordinator Kyle Stevens, who works with communities in Oklahoma to improve pedestrian and ADA facilities. “Traffic slowed by a road diet gives people of all abilities and modes of transportation a better chance of negotiating points of conflict safely.”

Collinsville recently installed new sidewalks, crosswalks and two RRFBs under a Safe Routes to School project and ODOT’s Transportation Alternative Program. “The Cherokee Nation was instrumental in helping us pull together surveys and data to make this project happen,” said Collinsville City Manager Pam Polk. “With the rapid growth of our school district and the reality that so many of our children have to walk to school, we had to find a solution to keep the kids safe.”

STEP IN OKLAHOMA

To read profiles of Oklahoma City, Tulsa, Stillwater and Broken Arrow, visit: <https://spark.adobe.com/page/EqJNxlh4nmGjL/>



Above: Roadside plaza in Collinsville.

To download or view photos of pedestrian enhancements and STEP countermeasures used in Oklahoma, visit: <https://www.flickr.com/photos/karlajs/albums>



Above: A solar-powered RRFB in Collinsville, Okla. creates a safer crossing between homes, schools, after school activities and businesses. Below: The Tulsa 31st street road diet calms traffic and provides safe bike lanes to and from The Gathering Place, a community center to begin construction in 2019.



STEPPING INTO OKLAHOMA'S FUTURE



Above: Pawnee Nation Transportation Director Chris McCray looking across State Highway 18 where it bisects the reserve.

A host of future ODOT projects will feature pedestrian improvements, according to ODOT ADA Coordinator Kyle Stevens. As he assists communities with planning for ADA accommodations, Stevens believes education is key, which is why he makes a point to meet with communities across the state, in person. “Implementing STEP and the ADA are about following the Golden Rule,” said Stevens. “Think about what is necessary to have for yourself, or for a family member if they are disabled, or if walking were their only option. Any one of us could become a part of the disabled community at any time.”

On the horizon in Oklahoma are a road diet, ADA project, pedestrian hybrid beacon, and a pedestrian refuge island on State Highway 128 in Heavener,

Okla. The cities of Mountain View and Chattanooga will add curb extensions.

State Highway 56 in Okmulgee will undergo a road diet as will 11th Street in

Tulsa, which is historic State Highway Route 66.

Other streets in Tulsa slated for changes include a road diet on 3rd Street downtown and on Lewis and Harvard Avenues, both to include bike lanes. The

City of Owasso is planning a road diet on 116th with bike lanes, and the City of Broken Arrow will have a road diet on Pecan Street with bike lanes.

Pawnee Nation Transportation Director Chris McCray will address pedestrian safety concerns on State Highway 18 with the



Above: The planned road diet for Route 66 through Tulsa, Okla. will add bike lines and pedestrian enhancements while increasing visibility and access to local businesses like Soul City Gastropub.

Tribal government’s First Street safety project, funded by the Pawnee Nation, FHWA safety funds, the Federal Tribal Transportation Program, Housing and Urban Development (HUD) and the City of Pawnee. Pawnee Nation will incorporate pedestrian-activated traffic devices, lighting, and advanced warning signage to enhance the visibility of pedestrians as they cross the highway that separates the community from services, schools and jobs. “We have a Tribal housing area on one side of the highway,” said McCray, “and we need a safe way for folks to cross over to get the services they need at the Pawnee Tribal Complex.”



Left: Photo of “Bull Elk” by sculptor Jay Hylton courtesy Elk City government.

Broad improvements, including a diverging diamond interchange and a bridge replacement, are planned for I-40 and State Highway 6 in Elk City, according to ODOT Roadway Design Engineer Michael Sharkness, who noted the following will begin construction in 2019:

- Pedestrian refuge islands. A total of 6 islands with at-grade sidewalks protected by curbed, raised islands. An island at either end of the bridge, with parapet protection beginning on the islands and running across the structure. An island in each quadrant of the interchange.

- The off-ramps are signal-controlled, with RRFBs. Ramps and sidewalks throughout the project are ADA compliant.
- The on-ramps are unsignalized. Crosswalks in these locations are to be equipped with RRFBs to draw motorists’ attention to pedestrians.
- There has been extensive lighting added throughout the interchange area, both for motorists and for pedestrians.

“We even had a group of local business leaders and community members help us decide on the bridge aesthetics,” said Elk City treasurer Elesia Church, who also serves on the Southwest Oklahoma Regional Transportation Planning Organization. Elk City is also preparing to make several pedestrian enhancements downtown, including curb extensions, overhead lighting, increased crosswalk signing and marking, and streetscape designs. “Elk City’s 3rd Street ties into Route 66,” said Church, “so we want to make this a place where people want to stop and spend some time. The highway improvements and the downtown improvements help us to continue to be the progressive city we want to be.”

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