



# FHWA Fostering Multimodal Connectivity Newsletter

The Federal Highway Administration’s (FHWA’s) *Fostering Multimodal Connectivity Newsletter* provides transportation professionals with real-world examples of how multimodal investments:

- Make our transportation system safer for all people.
- Promote an inclusive and sustainable economy.
- Reduce inequities across our transportation systems and the communities they affect.
- Address the climate crisis by building more resilient transportation systems.
- Support complete trips and mobility innovation.

This newsletter also showcases how FHWA and its partners are improving connectivity, accessibility, equity, safety, and convenience for all transportation users, including equitable transportation options for traditionally underserved communities.

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Please send your article ideas to [Bernadette.Dupont@dot.gov](mailto:Bernadette.Dupont@dot.gov).  
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## Repurposing the Messerall Truss Bridge into a Rail Trail Expansion Project in Crawford County, Pennsylvania

*Don Burden, Cultural Resource Professional, PennDOT*

The Pennsylvania Department of Transportation (PennDOT) and Pennsylvania Department of Resources (DCNR) collaborated to relocate and repurpose the historic Messerall truss bridge on a rail trail expansion project in western Crawford County. DCNR was in the process of extending their Pymatuning State Park Spillway Trail when PennDOT cultural resource staff suggested incorporating the National Register-eligible bridge into a water crossing. Using a combination of State and Federal agency fund sources, including Surface Transportation Block Grant for Transportation Alternatives (STBG-TA) funds from FHWA, PennDOT and DCNR negotiated the Section 106 process and delivered an award-winning metal truss bridge rehabilitation that met the needs of the trail project and preserved an historic resource for Pennsylvanians.

Once common throughout the American landscape, the Messerall truss bridge is one of only two remaining bowstring truss bridges left in Pennsylvania. Built in 1876, by the Wrought Iron Bridge Company of Canton, Ohio, the original bridge spanned 99 feet over Pine Creek in Oil Creek Township, Crawford County. There, it served as a heavily trafficked artery, facilitating movement of the region's oil and timber products between Titusville and Warren roads. By the mid-twentieth century, the connection was bypassed, stranding the iron bridge on an isolated cul-de-sac known as Messerall Road. Given the rarity of these structures, the Messerall truss bridge became a high-priority preservation target among the Commonwealth's remaining inventory of metal truss bridges.



*Figure 1: Messerall Road Bridge at its original location over Pine Creek in Oil Creek Township, Crawford County. (Source: PennDOT)*

One of the unique aspects of metal truss bridges is their adaptability to new uses. They were among the first metal structures built from standardized parts, and they were designed to be shipped to a job site in pieces, where contractors



then assembled the members according to factory specifications. In turn, they can be disassembled and moved to new locations to continue their careers as light vehicle bridges or more commonly as pedestrian and bicycle bridges within a recreational trail system.

While these structures are indeed adaptable to new uses, historic metal truss bridge rehabilitation projects pose numerous challenges—specifically, engineering, the availability of matching materials, fabrication techniques, and qualified craftsmen familiar with historic materials and construction techniques. Despite the best efforts of engineers, the full extent of deterioration is often not known until the bridge members are fully disassembled in a shop and inspected. The wrought iron tubes that comprise Messerall’s twin arches, for example, proved to be in worse shape than initially anticipated, adding additional costs, and requiring considerable ingenuity on the part of the fabricators who had to replicate suitable replacement members. Equally challenging was the reassembly process, which required the installation of thousands of hot rivets—a once common component of iron and steel fabrication that is now practiced by only a few traditional crafts persons.



*Figure 2: A rehabilitated Messerall Road Bridge at its new location over Linesville Creek, on the Pymatuning State Park Spillway Trail. (Source: PennDOT)*

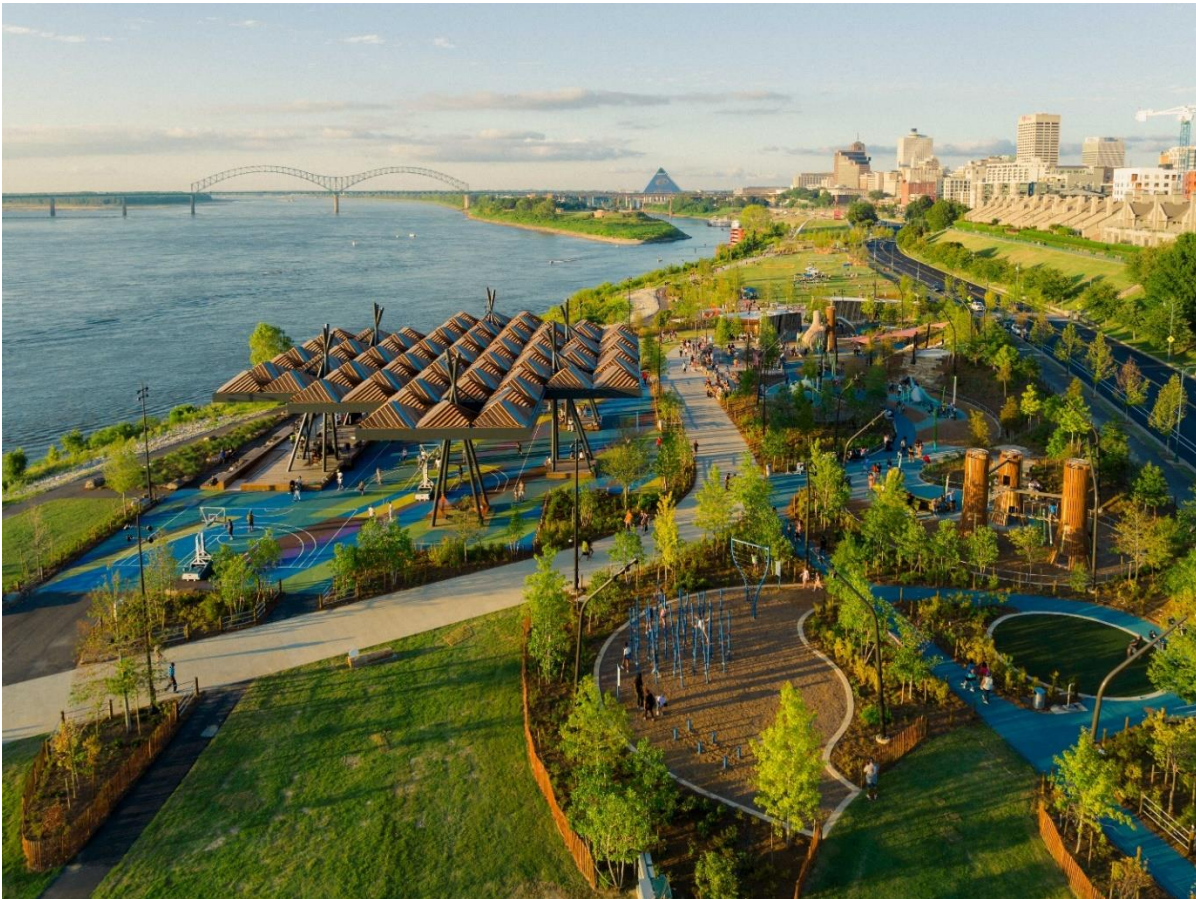
Despite the numerous challenges posed by the rehabilitation process, the positive results have far outweighed the difficulties. While the cost of rehabilitation totaled \$2,247,747, and contemporary bridge installation only necessitating a fraction of that budget, an historic structure such as the truss bridge generates notable public attraction. The public was quick to embrace the project, and the repurposed bridge is now a much beloved community asset and highlight of the trail riding experience. The refurbished historic bridge provides trail users with a unique photo opportunity as well as an educational experience that illustrates the region’s rich industrial heritage. Ultimately, the success of this project was due in large part to a clear vision, tenacity, and patience. Beyond the costs and challenges of working with historic structures, projects like this require commitment and dedication from government agencies and public alike.



## Making Connections on the Memphis Riverfront

*Carol Coletta, President and CEO, Memphis River Parks Partnership*

Memphis, Tennessee boasts five miles of public riverfront parks linked by the River Line walking and biking trail on the banks of the Mississippi River, which opened in 2018. Until recently, the Memphis riverfront was disconnected from local communities and inaccessible due to geographic terrain. In an effort to improve community connections and restore the natural environment, the Memphis River Parks Partnership (MRPP), along with the Mayor's Riverfront Task Force, released the [Memphis Riverfront Concept](#) in 2017 to guide the redevelopment of the Memphis riverfront. Making it safe, easy, and fun to travel between the river parks is critical to giving visitors and locals a vibrant and exciting riverfront experience.



*Figure 3: Aerial view of the many recreational amenities of Tom Lee Park. (Source: Memphis River Parks Partnership)*

The River Line is a key element identified in the [Memphis Riverfront Concept](#), which built on extensive community engagement with comments from more than 4,000 Memphians. The goal of the Riverfront Concept is to create a network of parks that benefit the Memphis community by creating places for residents to connect with each other, linking people and communities, and restoring the natural river environment. Before the construction of the River Line, the river parks were disconnected from one another physically and were not a unified system. The River Line provided the physical connection and included an overhaul of all park signage. More than 15 different types of signs were reduced



to just four types, information was consolidated and updated, and a new distinctive brand was created to help Memphians reframe their mental map of the riverfront.



Figure 4: Simplified signage with coherent branding helps wayfinding in the park. (Source: Champions Design)

At the heart of the River Line walking and biking trail is the [reopened and revitalized Tom Lee Park](#), which sits [adjacent to downtown Memphis](#). Tom Lee Park, a \$61 million signature park, opened in September 2023 to an enthusiastic community reception. In its first month of operation, thousands of people have enjoyed the new park with five-star reviews adding to positive national and local headlines. Tom Lee Park is managed on behalf of the city by the Memphis River Parks Partnership.

In addition to its environmental and recreational features, Tom Lee Park serves as a key active transportation link. The River Line runs through Tom Lee Park and was opened in 2018 as the central link in a regional trail system. At the north end, River Line connects to the [Wolf River Greenway](#), a 26-mile paved corridor that will, once completed, stretch east into Shelby County to link the suburb of Germantown to North Memphis and the Mississippi River. It is currently seeking Federal funds to finish a final mile of construction. At the south end, the River Line connects to Big River Crossing and the Big River Trail network, which extends more than 110 miles alongside the Mississippi River on the Arkansas side. Tom Lee Park sits close to downtown Memphis—the north entrance connects to the famous Beale Street Entertainment District, which attracts 7.3 million guests a year. At the same time, 40 percent of children living in poverty in Memphis live within walking or biking distance of the trail in Tom Lee Park, making the trail’s user mix extraordinarily diverse economically.



Figure 5: A rebuilt Riverside Drive and the shared River Line path run alongside Tom Lee Park to provide safer crossings for people of all ages and abilities. (Source: Memphis River Parks Partnership)

As well as north-south connections through the river parks, Memphis River Parks has also invested in east-west connections back to the city and neighborhoods. Tom Lee Park and the riverfront were divided from the city by Riverside Drive, a four-lane high-speed roadway. During park construction Memphis River Parks added pedestrian safety measures to the road, including speed tables, narrower lanes, and signalized crossings to slow traffic and make pedestrian access to the park easier and safer.

Tom Lee Park is separated from downtown Memphis by a steep bluff and an overbuilt four-lane city street with fast-moving traffic. The park's redevelopment includes the Carlisle Cutbank Bluff at the north end of Tom Lee Park, the first Americans with Disabilities Act (ADA)-accessible connection to the riverfront. Nestled among more than 50,000 native grasses and shrubs, the gentle switchback walkway creates a new river access point just six blocks from one of the poorest ZIP codes in Tennessee. At the foot of the bluff, elevated speed tables and new signs help to slow traffic and give pedestrians priority when crossing the street.



*Figure 6: ADA-accessible connection is buttressed by grasses and shrubs native to the Memphis ecosystem.  
(Source: Memphis River Parks Partnership)*

Funding for River Line and Tom Lee Park came from a diverse range of public and private sources. Along with important investments by the city, county, and State, [who put \\$33 million towards the park](#), Tom Lee was built with donations from some of Memphis’ leading corporations and foundations, as well as from many individual donors. Federal funds were included in the project via an \$800,000 Recreational Trails Program grant from the [Tennessee Department of Environment and Conservation](#) and a Congressional “community project” included in the U.S. Army Corps of Engineers budget.



## The Making of the Grand Boulevard: Deep Fork Trail

Sasha Tepedelenova McCrone, Senior Transportation Planner, City of Oklahoma City Planning Department



Figure 7: Oklahoma City is expanding active transport and access to park space with the construction of the Deep Fork Trail. (Source: Oklahoma City Planning Department)

In December 2022, Oklahoma City began construction of the 4.3-mile Deep Fork Trail. Linking Katy Trail on the east of the city to Lake Hefner on the west, the Deep Fork Trail will help connect communities. Interstate 235 runs through downtown Oklahoma City and historically underserved areas. By building a safe passage under the I-235 and I-44 junction, the trail will enable residents living in disconnected neighborhoods to access employment and education opportunities. The trail runs through two census tracts that represent underserved communities.

Oklahoma City's bicycle and pedestrian master plan, "[bikewalkokc](#)," prioritizes the completion of the Grand Boulevard Trail. Closing the loop will ensure an uninterrupted 24-mile bike and pedestrian route, allowing users to reach a number of destinations safely. When finished, the trail will connect over 66,000 residents to 35 regional and neighborhood parks, 17 schools, and 170 transit stops. It will link to a larger city system of over 100 miles of bike lanes and trails, including the crosstown corridors—another integral [bikewalkokc](#) project that improves existing roads to create east-to-west and north-to-south corridors of safe bicycling facilities. Deep Fork Trail is the only piece that remains to be built to complete the Grand Boulevard Trail.

The Grand Boulevard has its roots in the earliest days of the city's history. Oklahoma City grew rapidly to reach its current size of 621 square miles after it was initially settled in a single day during the Land Run of April 22, 1889. In 1910, only three years after Oklahoma became a State, the Oklahoma City Board of Park Commissioners received a visionary document titled [Oklahoma City: A Report on Its Plan for an Outer Parkway, and A Plan for an Interior System of Parks and Boulevards](#). This report provided a plan to develop a rectangular parkway called the [Grand Boulevard](#) that would surround the city and connect to an interior park and boulevard system to meet the city's needs for green space.





The Grand Boulevard Parkway is now completely encircled by the city, and no longer loops around its borders. Parts of the original route have evolved into highways, but Oklahoma City had the foresight to enhance the loop with trails in the form of a linear park. Designed to be long rather than wide, linear parks run along rivers, roads, canals, walls, or highways. Now the city is fulfilling the vision of its early planners by building the last trail link in the Grand Boulevard.

The Deep Fork Trail project is using \$600,000 in Federal funds from the Surface Transportation Block Grant-Transportation Alternatives Set Aside Program and a \$600,000 local match for the design. The project has four construction phases estimated to cost \$18 million using local funds, including [2017 Better Streets Safer City program](#) and 2007 General Obligation Bond dollars.

The Deep Fork Trail uses a minimalistic design concept that aims to create a nature trail that provides a place of respite in the middle of the city. Project managers strive to preserve the mature oak trees, protect wildlife, incorporate native plants and grasses, and use color schemes and materials that support the authentic feel of the trail. The city opted to use surfaces that feature rock and tree bark textures, tree statues, and sandstone bike racks. Artwork by local artists Denise Duong and Gabriel Friedman planned along the trail will showcase an engaging, whimsical design called “Our Dream Shadows.” Tree preservation efforts and challenges with terrain led to increased project costs. Further funding sources were also necessary to address trail amenities.



Figure 8: “Our Dream Shadows.” (Source: Oklahoma City Planning Department)

Phase two of the trail is located between Kelly Avenue and Lincoln Boulevard and traverses a flood plain along Deep Fork Creek. The design includes the construction of a cost-intensive retaining wall and an elevated section featuring a boardwalk. In 2023, the land adjacent to this trail section was auctioned off to the Kirkpatrick Family Fund. The organization purchased 133 acres at NE 50th Street and Lincoln Boulevard for the development of an urban study center



and nature preserve. The Fund has since provided an easement to Oklahoma City to accommodate the trail once construction funding is secured.

The Deep Fork Trail project has received a significant amount of public involvement. As a project included in the City's 2017 GO Bond and sales tax extension programs, it was voted on and approved by residents. The public outreach process included City Council Ward and neighborhood meetings, extensive discussions at City Council meetings, publication in the local Journal of Record, and many newspaper and news reports.



*Figure 9: A completed Deep Fork Trail will allow riders 24 miles of uninterrupted trail access.  
(Source:Oklahoma City Planning Department)*

Oklahoma City strives to identify additional funding sources for construction to complete the two final trail phases. Considering the benefits that the Deep Fork Trail will produce, the City continues to pursue the 1910 vision of its residents enjoying a system of connected green and accessible spaces organized around the Grand Boulevard.

Additional Resources:

1. 1910. Oklahoma City: A Report on Its Plan for an Outer Parkway, and A Plan for an Interior System of Parks and Boulevards, [Dunn 1910 okc forimagi.pdf \(rideok.com\)](#)
2. bikewalkokc, [bikewalkokc | City of OKC](#)
3. The Land Run Historical Marker (<https://www.hmdb.org/>)
4. [Red Ridge \(redridgeokc.org\)](#)



## Growing Healthier, More Equitable Community with a Traffic Garden in Dayton, Kentucky

Wade Johnston, Executive Director, Tri-State Trails

Caitlin Sparks, Communication & Events Manager, Tri-State Trails



Figure 10: Dayton's Traffic Garden brings street markings off-road. (Source: Tri-State Trails)

The community of Dayton, Kentucky is using a traffic garden to provide a small-scale network of urban landscape features for children and other new learners to practice essential walking and biking skills in a dedicated space free from motor vehicles. Traffic gardens, also known as “safety towns” or “traffic playgrounds” bring road and signal designs into an obstacle course-like track where people can play and practice their way through the street safely. These traffic gardens are a holistic and hands-on way to help people learn about how the built environment can facilitate different transportation options. They also provide seasoned road users with a glimpse into the needs and perspectives of those with less experience. This is of particular importance for children in Dayton. The city is small, but densely populated and the Dayton Independent School District does not provide busing options, further emphasizing the importance of providing its roughly 1,000 students a forum for understanding how to best navigate local roads to and from school.

In early 2023, local nonprofit Tri-State Trails partnered with the Kentucky Transportation Cabinet's Office of Highway Safety to secure a \$25,000 National Road Safety Foundation grant from the Governor's Highway Safety Association to implement the traffic garden project in Dayton. After months of engagement with the city, Dayton Independent Schools, and with children and families from Lincoln Elementary, [officials cut the ribbon on the Dayton traffic garden in October](#). The traffic garden features a site-specific, colorful design that includes intersections with crosswalks, roundabouts, bike lanes, railroad crossings, a bus station, and bike parking—all streetscape features found in Dayton and across Greater Cincinnati.



Partnering with city government, the city park board, the school district, and local advocates was critical to the project's success and helped mitigate pitfalls. Dayton Independent Schools provided key insights for identifying the best site for the traffic garden, at a public park just yards from the district's elementary, middle, and high schools and an existing regional multi-use trail, Riverfront Commons. Teachers also introduced the concept and facilitated surveys on traffic safety for students and parents, both demonstrating need and engaging residents in the process. To ensure the safety, durability, and quality of the traffic garden, the Dayton Park Board and the City of Dayton contracted concrete repairs to ready the site, and Tri-State Trails worked with [Discover Traffic Gardens](#) to finalize the design. Finally, Tri-State Trails facilitated a donation of twelve bikes to the school district for ongoing use at the traffic garden and other educational and recreational programming.

To ensure the Dayton Traffic Garden's ongoing positive impact, Tri-State Trails provided the school district with classroom science, technology, engineering, and mathematics (STEM) kits for teachers to incorporate the traffic garden into their curriculum. As the park also serves as the elementary schools' outdoor recreation area, students are encountering the traffic garden on a daily basis. Early anecdotal reports from the elementary school already indicate high interest and engagement from young students. To encourage expanded participation, the school district has since used separate recreation grant funding to purchase ten additional bikes for its fleet.



Figure 11: Classroom STEM kits introduce children to roadways. (Source: Tri-State Trails)

Tri-State Trails hopes the Dayton Traffic Garden, the first of its kind in Northern Kentucky, will help the community continue to prioritize safety and accessibility and inspire healthier and more equitable communities across the region. As more local governments expand their trail and bikeway networks, traffic gardens can play an increasingly important role in teaching vulnerable road users how to engage safely with pedestrian and cycling infrastructure.



## Announcements/New Resources

The Federal Highway Administration has released the following:

- [Active Transportation Infrastructure Investment Grant Program \(ATIIP\)](#) FY23 Notice of Funding Opportunity is available, closes June 17, 2024.
- [Proven Safety Countermeasures in Rural Communities](#) to mitigate rural roadway incidents.
- [Safe Systems Approach Video](#) highlighting the philosophy behind the Safe System Approach.
- [Equity in Roadway Safety Webinar Series.](#)
- [March/April Innovator issue highlighting active transportation safety measures.](#)

The U.S. Department of Transportation has released the following:

- [Safe Streets and Roads for All: FY24 Notice of Funding Opportunity](#) is available. Multiple deadlines: Planning and Demonstration Grants close April 4, May 16, and August 29, 2024; Implementation Grants close May 16, 2024.
- [U.S. DOT Multimodal Project Discretionary Grant Program:](#) 2025-2026 Notice of Funding Opportunity; open now, closes May 6, 2024.
- [U.S. DOT Website for Active Transportation](#) collecting policy, goals, information, and funding opportunities related to walking, biking, and rolling. U.S. DOT's goal is to increase active transportation trips by 50 percent from 2020 levels by 2026.
- [Reconnecting Communities & Neighborhoods Grant Program FY23 Awards.](#)
- [Strengthening Mobility and Revolutionizing Transportation \(SMART\) Grant Projects FY23 Awards.](#)
- [The 2023 update of the U.S. DOT Equity Action Plan.](#) The updates to the Equity Action Plan highlight efforts the U.S. DOT is undertaking to address key disparities, including disproportionately high traffic fatality rates among African American and Tribal communities, as well as high transportation insecurity and cost burdens experienced by low-income households and rural communities.
- [2023 Progress report on the National Roadway Safety Strategy.](#)