

Sherwood Highway 99W Pedestrian Crossing

General Project Description

After Sherwood High School opened in 2020 on the east side of Highway 99W, hundreds of residents relied on at-grade highway crossings to reach the campus, YMCA, and nearby neighborhoods—creating delays and significant safety risks along the high-speed corridor.

In 2021, KPFF began studying a pedestrian and cyclist crossing to support Sherwood's vision for safer multimodal connections and future mixed-use, higher-density growth. Today, the pedestrian bridge allows students and residents to cross the highway more quickly and safely without disrupting traffic.

The bridge reflects strong collaboration among City staff, residents, and project partners. With its distinctive architecture, the five-span signature bridge has become both a vital community connection and a defining symbol of Sherwood.

Completion Date: 9/27/2025

Construction Cost: \$23 | **Total Project Cost:** \$29.5M

5

bridge spans

14ft

wide multimodal path

900ft

of elevated structure

1/3 mile

project length

20

seasonal and holiday
lighting scenes

14in

arch diameter

5°

lean of arches
and railings



1 - Construction Schedule, Management, and Controls

In order to meet the goal of opening the project in time for the first day of the 2025/26 school year, design and construction teams coordinated carefully throughout the duration of the project, ensuring that each schedule change was managed to maintain the final completion deadline. Opening the bridge enabled the school district to reduce the school bus service area, further incentivizing on-time completion so that educational dollars could be focused on higher priorities.

During design and procurement, KPFF secured temporary construction easements from adjacent property owners to supplement the limited public right-of-way. This additional staging space reduced contractor risk, increased construction flexibility, and lowered bid costs by providing bidders with more efficient construction options.

Upfront and effective staging and planning also led to fewer impacts on traffic and a shorter overall project duration. The general contractor on the project, Carter & Company, erected the bridge spans over roadways in just three, 24-hour road closures over three weekends.

Through careful planning and community outreach, project teams delivered a stunning bridge in time for day zero of school; a ribbon cutting ceremony was held on September 27, 2025.



2 - Safety Performance

Prioritizing safety in bridge design and throughout the construction process provided a foundation for creativity and innovation to flourish.

Safety for contractors and the public was of highest priority throughout construction. Aforementioned staging areas enabled contractors to remain close to the project site in fenced yards during construction, while most active work remained within the construction footprint separated from active traffic by existing curbs and sidewalks. Intermittent lane closures were minimized and followed ODOT safety guidelines.

The contractors' combined on-site hours total 41,526. Carter & Co. logged over 27,000 work hours on-site with only one

recordable incident, a sprained ankle, for a lost-time accident rate of 4.81. Teams quickly responded and adjusted to prevent further injuries.

The design team emphasized spaciousness in design to promote comfort, visibility, and capacity for non-motorized users. The project also includes pathway safety lighting along the full length of the bridge and approaches, creating a safe, inviting environment after dark.

Security cameras were installed at numerous points along the bridge structure and underneath the bridge as an additional safety measure. Eight-foot-tall transparent throw barriers with two-inch maximum openings maintain visibility of the surrounding landscape while protecting against objects being thrown from the bridge onto the highway.

Continuous coordination with local agencies and key partners made each of these safety elements possible, resulting in a bridge all active transportation users can enjoy and rely on.



3 - Community Relations

A successful infrastructure project should work with and for the community it serves at every step of the process, from design through construction.

Through early public surveys, and frequent work sessions between the design teams, city council, and the cultural arts commission, KPFF was able to create a

bridge that is quintessentially Sherwood. Early public outreach revealed strong support for both the tied arch design and creative lighting. These community-led inputs determined the final outcome of the crossing, reflecting the goal for the community to know they had contributed to the final design.

Creative use of resources also helped minimize disruptions to residents and businesses. By assembling bridge spans on an adjacent site near their final location and developing a detailed staging and erection plan, the team limited roadway impacts and reduced the overall construction duration. One measurable benefit was the success of the three weekend road closures, each lasting less than 24 hours of the planned 56-hour window. All bridge spans were erected within these windows, and mainline traffic on Highway 99W was uninterrupted for the remainder of the project.

KPFF curated a project team committed to building strong relationships with the community, going the extra mile to provide clear, proactive communication through innovative and cost-effective technology at every stage of the project.

The project team faced the essential challenge of communicating a wide range of design options while demonstrating how construction over three active roadways would minimize impacts. KPFF's engineering team printed physical 3D models of the bridge and approaches using an in-house 3D printer at no additional cost to the project. These tactile models were very popular among City staff and key partners, and the results were highly effective. The models helped the public and key partners quickly grasp the entire project's scale, as well as aesthetic and architectural design features

and planned construction sequence, thereby reducing confusion and unifying understanding.

KPFF also used 3D CAD drafting software (Revit) to create the bridge contract plans instead of traditional 2D drafting methods. This 3D software allowed project teams to virtually “walk” across, under, and around the bridge to validate design decisions and find potential conflicts that are easy to miss in typical 2D drawings. KPFF’s 3D model was also provided to bidders in an online, read-only format, which helped them better understand the complex geometry of the bridges, approach ramps, and piers.

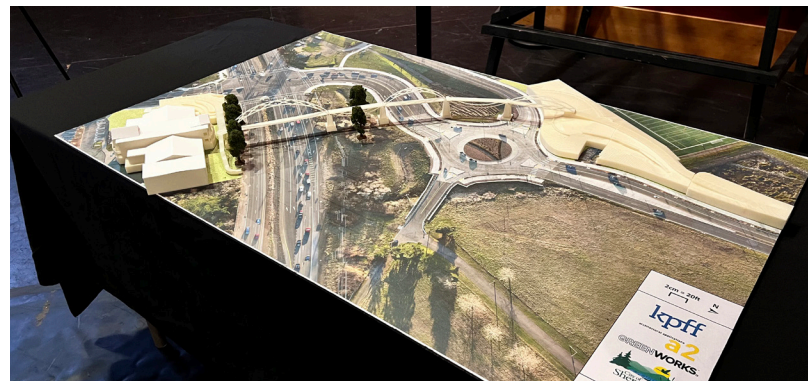
This led to more accurate and consistent bids and reduced the potential for change orders and construction delays. It also had the added benefit of allowing teams to efficiently create a limitless number of renderings from the perspective of bridge users to communicate design and lighting options to stakeholders and in public outreach.



Using cost-effective technology to create a shared vision for the bridge was an immeasurable design strategy that enabled the project’s success.

Public outreach efforts culminated with the successful on-time bridge opening. Dedicated tours were provided for the City Council, Police Department, and

School District representatives the day before opening, offering an opportunity to preview the bridge and participate in a Q&A session. After opening to bicycle and pedestrian traffic on the first day of school, work continued on site restoration and related improvements until the grand opening at the end of September 2025. City officials have celebrated the project’s successful delivery on schedule and under budget, as well as its lower-than-anticipated construction traffic impacts—all contributing to a strong sense of community pride in the project.



4 - Community Need

The bridge was designed to address the needs of the community by providing a safe, reliable, and convenient connection across Sherwood’s busiest transportation corridor. Project teams responded to this challenge by providing a grade-separated crossing that allows people of all ages and abilities to travel between neighborhoods, schools, recreational facilities, and future development areas without interacting with high-speed traffic.

The completed bridge delivers measurable community benefits. Residents now have a safer and more direct route between key destinations, reducing dependence on at-grade crossings while improving access to schools, recreation, and local trail networks.

The project opened in time for the 2025–26 school year, enabling the school district to reduce its bus service area and focus educational resources on higher priorities. The bridge’s successful delivery on time and under budget, combined with lower-than-anticipated traffic impacts during construction, has created a new landmark that reflects Sherwood’s commitment to safety, connectivity, and quality public infrastructure.

5 - Environmental Protections

The bridge is located near wetlands, and special attention was paid to maintain existing ecology before and after construction by keeping the limits of work outside of all wetland boundaries. The project includes stormwater detention and treatment, with a large basin prominently located along the east approach ramp. KPFF also removed invasive species from the bridge site before planting 165 new trees and 7,5000 shrubs selected to limit the need for irrigation and restore and preserve the natural area in and around the project site.

An often-overlooked benefit of pedestrian bridges is the increased access to nature and the alternative transportation options made available to the community, ultimately reducing environmental damage to the surrounding environment. The bridge not only provides expansive views, but the active community use of the bridge suggests those who may have previously chosen vehicular travel modes are using the bridge via local trail networks for recreation and to get to school and/or the local YMCA on the opposite sides of the highway.

The resulting bridge represents the values of Sherwood to build a more resilient, sustainable community.

6 - Sustainable Practices

The selected bridge type uses less than half of the steel tonnage of the all-girder bridge option that was considered during the alternatives analysis phase. This decision reduced project costs while avoiding over 300 metric tons of embodied carbon emissions.

In addition, high quality materials such as stainless steel for the bridge railings were chosen as opposed to typical carbon steel with applied coatings; not only is stainless steel historically more weather resistant, it reduces the burden of future bridge maintenance.

As a bicycle and pedestrian bridge planned with trail network connectivity and future higher-density land uses nearby, the project also enables greater multimodal connectivity across Sherwood, relieving roadway traffic congestion and vehicular delays associated with the existing at-grade crossing.



7 - Unusual Accomplishments - Site Constraints

In response to the specific constraints of the project site—multiple roadways, and a curved path to connect existing trails—the team developed a distinctive alternating high and inverted arch design that is unique to Sherwood.

Above-deck arches were placed above roadways to provide required vertical clearances, and down-turned, below-deck arches were placed in other spans where vertical clearances did not govern. Alternating the truss orientation helped create a signature structure without sacrificing efficiency.



In addition, the assembly of simple-span trusses into a unique form demonstrated a cost-effective approach that can be replicated on future projects.

The low bidder ultimately pursued a hybrid fabrication approach, where the above-deck arch spans were assembled in the on-site staging yards and the inverted arches were fully assembled in the fabrication shop and delivered to the site just-in-time for erection. The flexibility enabled by the segmented design and provision of staging yards outside of the right-of-way enabled this creative solution that the contractor successfully executed.

Despite smooth weather conditions and proactive scheduling, existing overhead utilities at the project site proved to be the toughest challenge to executing the project on time and under budget. The sequence of raising the transmission lines and undergrounding the power distribution and communication lines posed a significant threat to the bridge span erection. By collaborating with PGE and franchise utilities, power distribution and communication lines were relocated into a joint utility trench just before the bridge span erection sequence.

To expedite the overhead transmission relocation, PGE installed a temporary shoe fly to shift the lines out of the crane's working clearance needed to set the first bridge span. The team then relocated the lines back to their original alignment on new, taller poles in time to install the next bridge span just two weeks later.



8 - Additional Considerations

In collaboration with the Sherwood Cultural Arts Commission and City Council, color-changing architectural lighting runs the length of the bridge with dynamic programmable patterns.

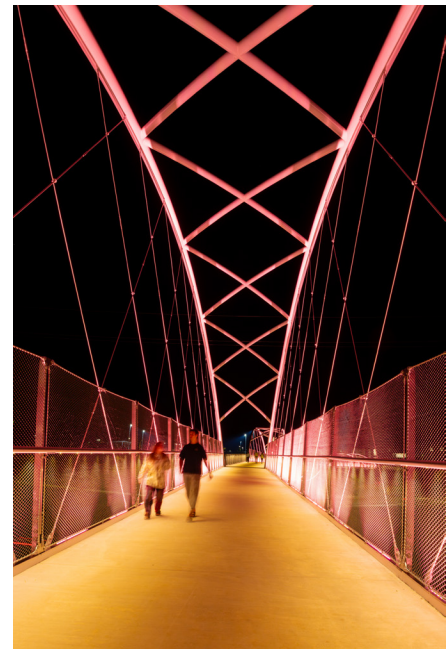
Over 200 architectural light fixtures showcase twenty different artist-designed scenes to celebrate seasons, holidays, and local events. Additionally, railing-integrated pathway lighting fixtures achieve more than double the target minimum lighting levels, making the bridge accessible for evening commuters. Not only does this lighting provide interest to drivers on the highway but also highlights the benefits of an experiential design approach; the bridge is already drawing hundreds of locals to cross each night.

The inclusion of belvederes as visual and functional breaks is also an innovative design solution that enhances safety as cyclists and pedestrians can pause to gather themselves or take in the views without impeding pedestrian traffic. Locals are already making use of the belvederes, suggesting a strong user benefit from this feature.



Four years in the making, the Portland-based design team dedicated over 27,000 hours to engineering, inspections, architecture, construction management, and other design services to make this bridge a reality.

The bridge is now a beacon for highway travelers and a destination for locals. KPFF is thrilled to see the community enjoying the bridge day and night in a variety of active transportation modes.



115
tons of rebar

155
tons of steel

2,000
cubic yards of concrete

2,400
linear feet of custom stainless
steel railings

165
new trees

7,500
new shrubs

214
color changing light fixtures

Project Partners

This project was achieved through the collaboration and support of many, including:



architectural applications



biella
LIGHTING DESIGN

GREENWORKS.TM



CARTER & COMPANY, INC.