

GENERAL EXPERIENCE

Currently, our firm employs more than 700 engineers, engineers-in-training, planners, surveyors, scientists, technicians, and support staff. Our transportation team has 85 staff members including bridge engineers, roadway designers, traffic engineers, and transportation planners. Our ability to utilize resources from other offices around the Midwest results in a cost savings for our clients.

Olsson has a long-term history of successfully completing transportation projects in Missouri. These projects have included major roadway and bridge design projects, as well as continuing contracts that have lasted several years. Staff members on our Transportation team are familiar with the funding process, standards, and procedures. We also know MoDOT staff members and know how to work together to best accomplish projects.

PAST PERFORMANCE

Rolling Hills Road Bridge - Columbia, Missouri

The City of Columbia, Missouri, retained Olsson Associates to design a 300-foot, two-span, concrete girder bridge over the north fork of Grindstone Creek. The project includes a geotechnical investigation, a preliminary roadway design, a hydraulic analysis, and a stream assessment. The superstructure will be built for two traffic lanes and pedestrian ways, while the bridge substructure will be provided for the future build out of four lanes.

Bridge No. 0450132

Replacement on Farm Road 45 - Greene County, Missouri

Greene County hired Olsson to replace Bridge No. 0450132 over an unnamed tributary to the Sac River along Farm Road 45. Olsson performed a hydrologic and hydraulic analysis of the site to determine the appropriate sizing. The Olsson team used the information to prepare a preliminary and final roadway and bridge design plans for this replacement.



Colorado Avenue Bridge - Kansas City, Missouri

The new bridge is 41 feet wide and about 374 feet long. It has two 12-foot wide lanes, one to carry traffic in each direction. It has shoulders on each side of the roadway and a 10-foot wide sidewalk on



its southwest side. A hiker/biker trail passes beneath the southeast abutment and a connection from the bridge to the trail will be included. Olsson provided roadway design for street improvements that extended Manchester Road from Colorado Avenue intersection to Coal Mine Road. It included 800 feet with a three-lane typical section;

a designated left-turn lane for northbound traffic on Hardesty at the intersection of Blue Parkway; and a cul-de-sac on Coal Mine Road north of Blue Parkway.

Washington Avenue Viaduct - Sedalia, Missouri

Recent inspections and an evaluation of the current condition of the Washington Avenue viaduct, which crosses the Union Pacific Railroad (UPRR) tracks, forced the City of Sedalia to close the Washington Avenue Bridge to all traffic. The city council then decided to pursue plans to rehabilitate the existing structure. Olsson prepared plans similar to those prepared for work completed in 1989, but improved upon the end product by installing additional substructure members, replacing the asphalt deck with a concrete deck, and by using higher-strength steels and heavier sections to increase the load rating of the repaired structure.



The project finished months ahead of schedule and successfully provided emergency access to the north side of the tracks.

Jackson Drive Extension, from 37th Street to R.D. Mize Road - Independence, Missouri

This project included a 285-foot grade separation bridge over the Kansas City Southern Railroad, a 225-foot bridge over Crackerneck Creek, a 150-foot-long triple nine-foot by nine-foot reinforced concrete box culvert, a 3,000 foot retaining wall, 4,000 feet of 12-inch waterline, and a signal design at Jackson Drive and R.D. Mize Road. The 5,400 linear feet of roadway alignment were field checked to determine the presence of jurisdictional waters that would require coordination with the U.S. Army Corps of Engineers (USACE) and the Missouri Department of Natural Resources (MDNR).

Zora Street Overpass over the Kansas City Southern (KCS) Railway Company Tracks - Joplin, Missouri

Olsson Associates' Rail Services team is providing plan review and construction observation/documentation services for the Zora Street Overpass over the KCS Railway Company's tracks. Olsson provided review of submitted plans to ensure conformance with KCS Railway Company's standard specifications for construction of overhead bridges. This required verifying proper vertical and horizontal clearances and determining whether there was a need for temporary shoring. Olsson's supervision of this project averted a potential derailment situation. The project contractor had excavated too close to the KCS Railway Company's track without installing the required rip-rap protection. The embankment began sloughing off, but as a result of our action, the KCS Railway Company was informed and the contractor remediated the situation to the satisfaction of KCS Railway Company.

U.S. Highway 69 Arma Connection (KDOT) | Arma,

Kansas The U.S. Highway 69 (U.S. 69) Arma Connection project in Crawford County represents the last section of highway between Pittsburg and Kansas City to be designed into four lanes. The project is a six-mile-long expressway and has one bridge structure over a creek. The design will provide a twin structure for the new northbound lanes and will utilize the existing bridge for the southbound lanes. Work also includes performing the hydraulic and drainage analysis to size the structure. Practical improvement philosophy will be used during the design process.



***Connector 1 Bridge over 50 Hwy - Lee's Summit, Missouri** Located just to the north of the I-470/50 Hwy intersection, the bridge connects Blue Parkway to Pryor Road. The structure is new construction to carry traffic from I-470 to a nearby retail park. The improvements included a new bridge, roadway, and MSE walls. The bridge is a 2-lane, 1,163-foot long bridge over the 4-lane 50 Hwy and two transition ramps. The structure is a 3 unit, 11 span, P/S concrete girder bridge with two column intermediate bents and two integral abutments with dead man anchors.

***Connector 2 Bridge over 50 Hwy - Lee's Summit, Missouri** Located just to the south of the I-470/50 Hwy intersection, the bridge connects Blue Parkway to Pryor Road. The structure is new construction to carry traffic from I-470 to a nearby retail park. The improvements included a new bridge, roadway, and MSE walls. The bridge is a 2-lane, 1,255-foot long bridge over the 4-lane 50 Hwy and two transition ramps. The structure is a 3 unit, 11 span, P/S concrete girder bridge with two column intermediate bents and two integral abutments with dead man anchors.

***Lake Taneycomo Bridge – Route 76 - Branson, Missouri** The structure is a 2-lane, 3-unit bridge with the main span consisting of a 194-foot/194-foot two span plate girder section with a concrete deck. The two approach spans are multi-span structures with P/S concrete girders. The substructure includes multi-column bents on drilled shafts for the intermediate bents and pile supported abutments. The new structure works in conjunction with the existing 7 span, open spandrel arch concrete bridge. The new bridge takes traffic directly from the Branson Landing district across Lake Taneycomo and greatly reduces the traffic count on the aging existing bridge.

***Osage River Bridge - Tuscumbia, Missouri** This structure included three units (2 span, 3 span, 2 span) and P/S concrete approach spans with a three span steel plate girder mainspan. It was designed on a horizontal curve with two column interior bents. Abutments with deadman anchors were designed. The size is 28'-6" wide and 972'-10" long over Osage River. This project required MoDOT coordination.

***Pryor Road Bridge - Lee's Summit, Missouri** This bridge design included a four span, P/S concrete spans with five column interior bents. The bridge is 102'-2" wide by 392'-6" long over Interstate 470. The project required MoDOT coordination.

Tudor Road and Bridge - Lee's Summit, Missouri

Olsson Associates was selected by the City of Lee's Summit to provide a complete spectrum of engineering services including preliminary design, final design, and railroad coordination. Tudor Road, from Douglas Street to Ward Road, was expanded to a new four-lane divided section. It includes a 10-foot multi-use path on the south side and a five-foot sidewalk on the north side. The design includes a new bridge over UPRR tracks with MSE walls, a signal at Douglas Street, a new intersection at Main Street, and a new intersection with Sloan Street. Our UPRR representatives gained approval, performed a field check with UPRR representatives, and provided C&M agreement coordination.

PERSONNEL

ERIC FALK, PE | PROJECT MANAGER Eric is a bridge structural engineer with more than seven years of experience in all aspects of bridge design. This design experience includes precast prestressed concrete girder, welded steel plate girder, rolled beam, continuous haunched slab, and reinforced concrete box culvert design, along with construction administration. He has coordinated projects with municipalities, counties, departments of transportation, and contractors.

SHANE HENNESSEY, PE | QUALITY CONTROL/QUALITY ASSURANCE Shane leads Olsson Associates' Bridge/Structural team. He is a registered professional engineer with over 15 years of structural engineering experience working with a variety of public and private infrastructure related (bridge, railroad, power, telecommunications, precast, and building structures) projects. His engineering duties have involved: investigating and analyzing alternatives, preparing cost estimates, performing structural analysis and design, preparing specifications and contract documents, providing quality control reviews, and providing construction engineering and inspection services. His work has received recognition by a variety of national and local professional organizations.



ROSS BARRON, PE | BRIDGE DESIGN ENGINEER Ross is a civil engineer specializing in bridge design, load rating, and field inspection. His experience also includes construction inspection to ensure construction contract compliance, contract administration, and completing both Caltrans and FWHA project audits. Ross possesses excellent analytical and research skills and has a commitment to clear communication and presentation. While working for the National Bridge Research Organization, Ross aided in developing systems and creating a cataloging process for the Nebraska Department of Roads to electronically evaluate and track current bridge conditions and loading capacities.



KEN JENNISON, PE | BRIDGE DESIGN ENGINEER Ken is a Senior Structural Engineer and leads Olsson's railroad bridge team. He is a leader in the bridge industry with 35 years in railroad bridge engineering, most of this time with the BNSF Railway. Prior to joining Olsson, he provided the overall direction, review and approval of an annual bridge construction budget of between \$75 & \$100 million. While at BNSF Ken was responsible for over 13,600 railroad bridges. Ken's expertise in resolving problems related to construction and fabrication issues are qualities that will assist in facilitating the successful completion of this project.



KEARA PHILLIPS-BERLIN, PE | BRIDGE DESIGN ENGINEER Keara is a bridge engineer with seven years of experience with the design and detailing of various structures. She has worked primarily to develop final bridge and structural plans for Oklahoma Department of Transportation contracts, but has also worked in design and plan development for counties. She specializes in structural design of drainage structures, including open trenches, RCBs, junction boxes, manhole access, trench drains, headwalls; structural design of retaining walls; structural design of bridge superstructure and substructure; working knowledge of federal design codes: AASHTO LRFD, IBC; and field inspection for bridge rehabilitation projects



CHAD JOHNSON, PE, CFM | HYDROLOGY AND HYDRAULICS Chad has 14 years of experience in the areas of water resources, land planning, and geotechnical engineering. Chad is a key member of Olsson's Water Resources Team and has led efforts on preliminary



engineering studies, FEMA floodplain studies, and permitting, and preparation of construction documents. He has provided lead design and project management for a number of storm-water improvements, hydrological/hydraulic studies, and BMP practices. His project experience includes KDOT U.S. 69 Arma, KDOT Bourbon County Bridge, and KDOT On-Call Dam Inspections.

FAMILIARITY/CAPABILITY

Our firm has provided consulting services to more than 30 projects for the Missouri Department of Transportation, and, we have worked on countless projects that required MoDOT and federal coordination. We also employ two former MoDOT employees, including one who served as a district engineer for more than 20 years. These employees have a unique insight into MoDOT policies and procedures and know the MoDOT staff members so we know who to go to for information.

Olsson has a strong relationship with the railroad companies and is uniquely positioned to design railroad grade separations. A member of the Olsson team, Ken Jennison is also extremely familiar with grade separations since he wrote the UPRR/BNSF Guidelines for Railroad Grade Separation Projects. These relationships, combined with successful past projects gives Olsson a leg up on the competition. Overall, our team has more than 70 years of bridge design experience in structures ranging from simple span loading bridges to multi-span, multi-unit major river crossings.

We will communicate continuously with the team to ensure successful progress and production. We will communicate routinely with MoDOT to keep everyone informed to identify issues early, if they arise, and exceed expectations.

ACCESSIBILITY

Olsson Associates has 24 offices across the Midwest, including offices in Kansas, Missouri, Oklahoma, Iowa, Nebraska, Colorado, and Arizona. These offices include all of our disciplines.

FIRM OVERVIEW

John Olsson started Olsson Associates in 1956 on the ideals of passion, innovation, and creativity. But he realized he couldn't do it alone. Working with others was critical to his success and today, that collaborative spirit is still at the core of Olsson Associates.

We know that how we work together makes the difference in the solutions we deliver. We're more than a company of individuals; we're a team of problem solvers. We see problems as opportunities for creativity. The process of finding the right answer is different for every client and every project. This idea of collaboration affects how we think, act, and work as a team. It means we're able to uncover what works best, balancing each client's unique needs along the way.

Ideal collaboration means communicating what works, what doesn't, and what might. Combining our fresh approach with our technical expertise, we're able to look at projects and our clients' needs from all angles. And, in coming up with collaborative solutions, everyone comes out ahead. We challenge ourselves to continually solve problems in new ways and, in doing so, our clients become a part of a unique process in which they've been able to realize more from their budgets and other resources.

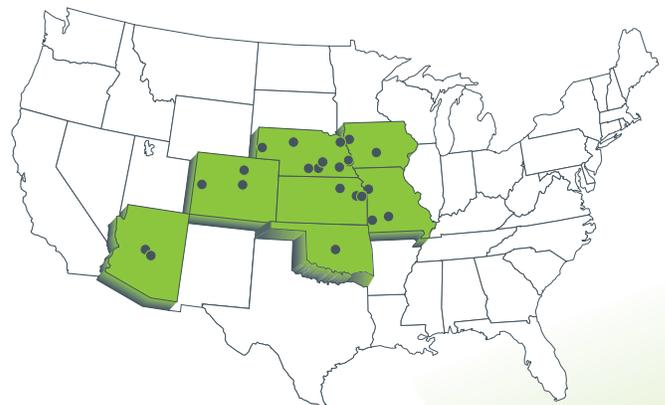
Olsson Associates offers airport consulting, automation and technology, civil engineering, community consulting, construction observation, environmental, GIS, intelligent transportation systems, land development, landscape architecture, mapping, mechanical/electrical/fire protection, power electrical, specialty lighting, structural, surveying, traffic, transportation, urban planning and design, water resources, geotechnical/materials testing, water/wastewater services.

Our firm employs more than 700 staff members, including professional engineers, engineers-in-training, registered landscape architects, registered land surveyors, professional planners and designers, scientists, and support staff made up of highly trained technical personnel with broad experience in all phases of engineering design and construction phase services.

Engineering News Record ranks Olsson Associates as one of the top 500 design firms in the United States. We attribute this to our emphasis on ideal collaboration, and we strive to see that these values become evident when you work with any of our staff. We work hard to provide excellent engineering, surveying, and sciences work to clients of all sizes throughout the United States.



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Our team will analyze the situation and develop cost-effective alternatives and then, with the clients' input, we will design a structurally sound and aesthetically pleasing structure.

We have experience with a wide range of bridge structure types, including steel girders, prestressed concrete girders, and concrete slab bridges. Better yet, we are backed by a national team of engineering, design, and technical experts in disciplines that often come into play in bridge and overpass design. These disciplines include geotechnical services, roadway design, surveying, hydrology and hydraulics, landscape architecture, lighting, and environmental sciences.

Olsson Associates offers full-range solutions for any of your bridge or overpass design needs.

bridge types

Vehicular

Pedestrian

Railroad

capabilities

Studies

Design Renovation/Rehabilitation

Aesthetic Enhancements

Historic Structures

crossings

Water

Railroad

Roadway

materials

Steel

Reinforced Concrete

Prestressed Concrete

Timber

additional services

Landscape Architecture

Geotechnical

Hydrology and Hydraulics

Railroad Design

Permitting

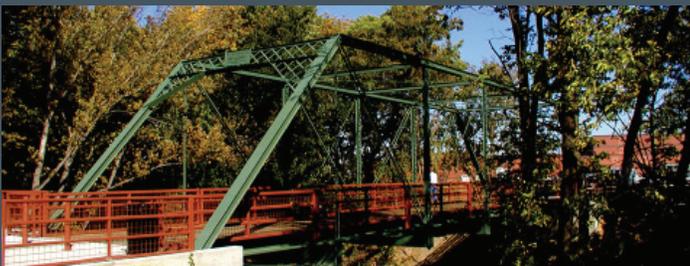
Environmental Sciences

Lighting

Construction Phase Services

Survey

Every structure begins with a sound design and a clear vision. We strive to combine technically sound principles with innovative concepts. Our knowledge is tempered by experience and grounded in reality. Our creative solutions will go beyond your expectations.



BUILDING STRUCTURAL | SERVICES

Our wide range of resources and engineering services allows Olsson Associates to better serve each client by coordinating the wide range of expertise involved in every project. With resources including mechanical/electrical, land development, water/wastewater, transportation, landscape architecture, power electrical, environmental services, water resources, and surveying, Olsson is able to offer a full-range solution to any type of structural need.

Commercial/Retail Buildings
Manufacturing/Industrial Facilities
Schools
Hospitals
Churches
Airport Hangers
Residential Facilities

additional services

Building Renovation/Rehabilitation
Deep and Shallow Foundations
Retaining Walls
Water/Wastewater Structures
Pools
Building Inspections
Forensic Investigations

Every structure begins with a sound design and a thorough vision. We strive to combine technically sound principles with innovative concepts. Our knowledge is tempered by experience and is grounded in reality, allowing us to come up with creative solutions that go beyond client expectations.

