



Spanning Today's

BRIDGE CHALLENGES

As local and state agencies struggle to find the funds to ensure the safety of thousands of America's bridges, it's become increasingly critical to identify practical, cost-effective solutions that don't compromise quality.

Founded by former MPO directors over 30 years ago, Lochmueller Group specializes in infrastructure design for local and state agencies throughout the Midwest.

We understand the challenges facing clients today and continually strive to maximize overall client benefit at every stage of a project's life. Our ability to move projects from planning through construction inspection allow us to better understand and appreciate how early decisions can have long-term impacts.



EVALUATION & SCOPE DEVELOPMENT

The best time to maximize savings is before a project starts.

As planners, as well as designers, we appreciate that the short-and long-term needs driving projects are unique and can change over time due to economic, demographic, technical, environmental, or other dynamic conditions. In an era where officials and taxpayers have little tolerance for additional funding due to unanticipated needs, we find that investing a little more to gain a thorough assessment of current conditions and goals before design begins, yields big dividends in saving time and money later on. One recent study determined that making minor changes to vertical clearance during a deck replacement project eliminated the need for a \$40M new interchange on an adjacent project.

Lochmueller Group's diverse in-house expertise that includes design, environmental, traffic, right-of-way, constructability, and public outreach specialists enables us to take a holistic approach in evaluating all dimensions of a project. This includes access and economic development impacts, environmental permitting considerations for both the natural and human environments, and traffic concerns.

We work with clients to help them determine the best funding alternatives and resources including:

- » Federal Aid Bridge Replacement & Rehabilitation Funds
- » Transportation Enhancement Funds
- » Historic Structures Preservation Funds
- » Major Bridge Funds
- » Capital Improvement Funds
- » Economic Development Funds
- » Tax Increment Financing

SAFETY INSPECTION SERVICES

Maximizing safety involves setting priorities.

Lochmueller Group's staff of structural engineers routinely provides inspections for compliance with National Bridge Inspection Standards for safety. Not only do these inspections identify structures with critical needs, but they can also provide a valuable tool for clients to use in planning resource allocation for bridge improvements. Lochmueller Group experts can provide guidance on how to prioritize projects and leverage limited budgets.

In addition to inspections, Lochmueller Group's staff can perform a Load Rating to determine if a reduced load restriction is required. We can then perform Load Ratings for bridges, once necessary repairs have been completed, to determine if the load restrictions can be lifted.



DESIGN

Different project types pose different challenges.

With hundreds of bridge design projects under our belt, Lochmueller Group understands that different types of projects require different approaches to maximize value and minimize disruptions. With offices throughout the Midwest, our design staff shares their knowledge of what new approaches and materials various states are using and how they work.

- » **Rehabilitations & Widening:** Lochmueller Group has provided design for a wide variety of rehabilitations from simple overlays to complex rehabilitation of historic structures. We understand the need to balance immediate needs with life-cycle costs to maximize your return on investment. We recognize the importance of looking at not only what needs to be rehabilitated, but why. Is deterioration simply due to age or are other factors contributing to early failure?

While impacts to environmental resources and utilities may be less than with new structures, major rehabilitations can pose challenges with regard to levels of deterioration that remain undetectable until rehabilitation begins. This is particularly true in the cases of historic bridges. Having provided construction inspection, as well as design on numerous steel truss, arch spandrel and other types of historic structures, Lochmueller Group staff knows what sort of problems to anticipate and how to solve them.

- » **Bridge Replacements:** Bridge replacements are often easier than rehabilitations as designers don't have to accommodate existing components. Instead, replacements are more likely to pose challenges such as the need for additional right-of-way, environmental and utility impacts, and more complex maintenance of traffic. Since Lochmueller Group's design staff works hand-in-hand with in-house experts in each of these areas, they have become adept recognizing opportunities to lessen impacts and reduce costs.
- » **New Alignment:** Bridges on new alignment involve many of the same challenges as reconstructions, but with larger impacts. Our designers are recognized for their ability to tackle the complexities that go with new alignment structures. Whether it's designing in karst terrain, concerns of local stakeholders, or impacts to waterways or threatened and endangered species, we know how to anticipate and resolve issues and build consensus if needed.



CONSTRUCTION PHASE SERVICES

It pays to understand what works best in the field.

Lochmueller Group's in-house staff of resident engineers and construction inspectors provides a resource to designers in terms of constructability and understanding of how contractors view designs. They are well acquainted with the most cost-efficient approaches to construction and with what works best in the field, as well as on paper. Our expertise is available to provide insights to changing material and labor costs and construction phasing.



SERVICES

- » Bridge Replacement
- » Bridge Rehabilitation
- » Bridges on New Alignment
- » Historic Bridge Rehabilitation
- » Overpasses & Interchanges
- » Retaining Walls
- » Drainage Structures
- » Pedestrian Bridges
- » Railroad Bridges
- » Bridge Inspection
- » Load Ratings



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