

Director of Technical Services Comment



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Michigan's highway network is an essential element of our transportation infrastructure and its quality is critical to our economic growth and our ability to compete in the world marketplace. According to the 2004 TRIP Report, "Michigan's roads rank as the 3rd worst in the nation." The Construction Quality Partnership (CQP) is a concept developed to enhance construction quality, address the need for current and future personnel skills and to produce training and skills that will ultimately enhance value to the taxpayers of Michigan.

In the past our transportation system was constructed with a one size fits all specification by a low bid contractor. Quality was a result of the inherent over-design of the one size fits all specification and the ability of the DOT to enforce it. Under the present low bid system, there is little room for innovation and creativity. Now, in an effort to rebuild the transportation system under tight budget constraints, we are relying on more efficient designs and specifications utilizing a more efficient pool of design, construction and inspection personnel. Project development personnel and contractors are being required to take on more and more responsibility for insuring quality, but there have only been relatively minor changes in the way the project operations are conducted and little organized training. In order to minimize the risks and avoid potential early failures, a complete education process is urgently needed. Unfortunately, the

Construction Quality Partnership

costs of voluntary participation in personnel training may make those contractors who choose to participate less competitive under the current low bid system. MDOT has been experimenting with warranties and end-product inspection as a potential solution to the problem. Warranties do in fact draw attention to better quality, as they should; the CQP is intended to be the vehicle that delivers higher quality.

During the warranty debates between MDOT and industry, it has become apparent that there are concerns with the amount of risk being applied to each party involved in the overall development and construction of projects. Under the CQP concept, all parties, including MDOT staff, consultants and contractors will be required to accept responsibility for their portions of each project.

The goal of the CQP is to radically change the way we all think about quality by shifting the focus from end-product inspection and post-construction warranties to continual quality process control at all stages of a project. CQP deals with construction quality, not just contractor quality. Total quality improvement can be achieved through contractor certification, inspector certification and improved agency processes. The ultimate goal of the CQP is to improve Michigan's transportation infrastructure by having the right people building the right fix.

The key to success of the CQP is involving all parties in the training. With the increased use of inexperienced people, providing training to the contractor, agency and consultants will help elevate the knowledge of those involved in the construction process. For design, MDOT and consultants would receive training that would include scoping (selection of the right fix) and preparation of plans. For bidding, MDOT and contractors would receive training that

would include putting together clearly understood bid documents and provide clear understanding of the bid processes. For construction, MDOT, consultants and contractors would receive training that would include best practices for achieving quality results. Total quality improvement can only be attained with the involvement of all parties.

The idea behind CQP is to provide training to everyone involved in a transportation construction project. Improved quality will be attained through having certified people performing, managing and inspecting the work. Initially, CQP will serve as a training program for both owner agency and contractor personnel. Three separate levels of training have been identified; corporate/executive management, project engineering/management and labor/inspection force. The competitive nature of the low-bid process is maintained because all bidders would be required to train their personnel. The vision of the CQP starts with scoping the ap-

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appropriate fix-type for a project and using state-of-the-art designs and specifications. During construction, practices must reflect the fact that operations – handling, placing, and caring for the materials – may have as great an effect on performance as the individual material's quality. Through state-of-the-art personnel training in project development, construction and inspection, we will provide the traveling public with a higher quality transportation system at a lower cost.

Once personnel training programs are in place for all phases of project delivery, certification requirements will be established. Contractors and consultants seeking contracts on transportation projects in Michigan will be required to be quality certified as part of their prequalification. As in all certification programs, there needs to be an accountability system. An organization responsible for training, testing and auditing program compliance would be established. Contractors and consultants will continually need to meet the standards of the program in order to preserve their prequalification.

The final segment is a follow up to the actual production operation. A review of the design, constructability and quality of each project will be conducted. Specific recommendations for future designs and specifications will be developed for incorporation into future projects. The goal of CQP is to be a full cycle process control, including: planning, design, specifications, material selection, construction, testing, corrective/preventative action, project acceptance and innovation. The key to success is to make sure that everyone working on Michigan transportation projects is properly equipped and qualified to deliver the right fix with high quality products. The measure of success of this program will be shown through fewer incidents of early failures, increased confidence of agencies in the industry, a more positive public perception and ultimately, cost savings to Michigan taxpayers.

You may ask, why do this? With the emphasis on total quality, the agency and contractor can deliver an improved transportation product to the taxpayers of Michigan. Through the use of certified designers, contractors and inspectors, risk is reduced for everyone. If we can deliver the fixes as expected, the public will then have a positive perception of the overall transportation construction industry.

At this point, CQP is in its infancy. As you can imagine, the CQP will take several years to fully develop. The thought is to start with developing training for pavement construction. A CQP executive steering committee has been formed that includes members from all industry groups, MDOT, FHWA, CRAM and MML. Technical advisory groups have been formed to start development of training, look at administrative and legal issues, and to review MDOT's design mix of fixes. It is hoped that through the use of CQP, we can improve on Michigan's "3rd worst" ranking nationally.

If you have any thoughts or questions regarding this exciting development, please feel free to give me a call.

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