JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

KIRK T. STEUDLE
DIRECTOR

June 30, 2010

Mr. John D. Niemela, Director
County Road Association of Michigan
P.O. Box 12067
Lansing, Michigan 48901-2067

Mr. Christopher Hackbarth
Legislative Associate
Michigan Municipal League
208 North Capital Avenue, 1st Floor
Lansing, Michigan 48933-1354

Dear Mr. Niemela and Mr. Hackbarth:

AAASHTO Guidelines for Design of Low Volume Local Roads

As we mentioned during the June 2010 County Road Association of Michigan (CRAM) Engineering Committee meeting, the MDOT Engineering Operation Committee (EOC) issued its conditional approval of the use of the AASHTO "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT $\leq$ 400), 2001," at its May 12, 2004 meeting.

A copy of the EOC meeting summary, along with the supporting documents, is attached. Please forward this information on to your members.

If you have any questions, please call Bruce Kadzban at (517) 335-2229 or send an email to: kadzbanb@michigan.gov.

Sincerely,

Rudolph S. Cadena
Local Agency Programs Engineer

Enclosure

cc: B. Wieferich
S. Guerrazzi
B. Kadzban
K. Cooper
M. Harbison

MDOT
Michigan Department of Transportation

ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
MAY 12, 2004 – 10:30 A.M.
UPTRAN CONFERENCE ROOM

Present:	J. Friend C. Roberts T. Fudaly E. Burns	J. Polasek J. D. Culp C. Bleech	B. J. O'Brien R. Safford T. Anderson
Absent:	L. E. Tibbits	M. VanPortFleet	J. W. Reincke
Guests:	M. Bott	M. Harrison	R. Cadena (For M. VanPortFleet)

OLD BUSINESS

1. **Approval of the Minutes of the April 1, 2004, Meeting – J. Friend**

The minutes of the April 1, 2004, meeting were approved.

NEW BUSINESS

1. **AASHTO *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)*, 2001 – R. Cadena**

Several local agencies have requested the use of AASHTO's *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* in the design of selected very low-volume projects. A subcommittee was formed with members from MDOT's Local Agency Programs and the County Road Association of Michigan (CRAM) to discuss acceptance of the guidelines. The subcommittee agreed to the use of the *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* with four modifications. A traffic safety analysis must be signed and sealed by a professional engineer registered in the state of Michigan. (This requirement was agreed to by MDOT, CRAM and the Michigan Municipal League.)

ACTION: Approve the *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* with four modifications, as recommended.

2. **Revision of *Portable Changeable Message Sign Guidelines* – M. Bott**

The current *Portable Changeable Message Sign Guidelines* prohibit the use of safety related messages on idle portable changeable message signs within or near construction zones. The Office of Highway Safety Planning has required the use of portable changeable message signs to display safety related messages. The *Portable Changeable Message Sign Guidelines* have been revised to allow this use. The revisions have also added abbreviations from the *2003 Federal Manual of Uniform Traffic Control Devices* that may be used, and added a list of unacceptable abbreviations.

ACTION: Approve the revisions to the *Portable Changeable Message Sign Guidelines*. The Traffic and Safety Support Area will prepare a Bureau of Highway instructional memorandum to distribute the new guidelines.

3. **Pavement Demonstration Program Plan – B. O'Brien**

State legislation was enacted in 2001 (Public Act 259) that allows the department to conduct pavement demonstration projects. The legislation specifically states, "...the department may conduct not more than four pavement demonstration projects each year to construct and evaluate new methods, materials, or design."

After partnering efforts with industry and input from MDOT leadership, MDOT has developed a plan to meet legislative requirements and demonstrate new pavement designs. A demonstration plan for projects through the construction season of 2005 has been revised as requested, and is being submitted for approval.

ACTION: Approve the revised demonstration project selections as submitted.

4. **New Region Representative – J. Friend**

Mark Chaput, University Region Engineer, will be joining EOC as the new region representative beginning with the July meeting. Thanks to Roger Safford for his work on the committee during this past year.

(Signed Copy on File at C&T)
Brenda O'Brien for Jon W. Reincke, Secretary
Engineering Operations Committee

BJO:kar

cc:

G. J. Jeff	S. Mortel	K. Peters
K. Steudle	D. Jackson	J. Ingle
L. Hank	W. Tansil	J. Steele (FHWA)
EOC Members	D. Wresinski	A. C. Milo (MRBA)
Region Engineers	R. D. Till	G. Bukoski (MRBA)
TSC Managers	D. A. Juntunen	R. J. Risser, Jr. (MCPA)
Assoc. Region Engineers	J. Ruszkowski	D. Hollingsworth (MCA)
T. Kratofil	C. Libiran	J. Becsey (MAPA)
M. DeLong	R. J. Lippert, Jr.	M. Newman (MAA)
B. Kohrman	T. L. Nelson	M. Nystrom (AUC)
J. Shinn	T. Phillips	J. Murner (MRPA)
		R. Brenke (ACEC)

MICHIGAN DEPARTMENT OF TRANSPORTATION
ENGINEERING OPERATIONS COMMITTEE
AGENDA ITEM

Submitted By: Mark Van Port Fleet **Date: 03/25/2004**

Subject/Issue – AASHTO "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)", 2001.

1. Several Local communities have asked to use the guidelines to allow less intrusive construction on their local roadways.
2. MDOT submitted an affirmative vote to AASHTO for Michigan to adopt these standards in 2001.
3. A subcommittee was formed with the members of MDOT Local Agency Programs and the Members of the County Road Association of Michigan (CRAM) to discuss possible modifications to accepting the book.

Issue Statement – A review of the AASHTO "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)", 2001 was completed by the above committee members. A meeting was held to discuss specific issues with the book and determine the best practices currently being used by the counties. The purpose of the meeting was to determine if this book should be adopted for use in Michigan and if adopted if there are any items that should be exempt for the State of Michigan.

Major Issue(s) – The four major concerns of the subcommittee were the addition of advisory speed signs, no stop control at intersections, use of one-lane bridges and the elimination of shielding traffic barriers at structures.

All four were related to the safety of the roadway. Both MDOT and CRAM agreed not to adopt these specific items from the book.

Local citizens may have concerns with the modifications as they could lead to more intrusive construction in some cases. The local road agencies recommend the modifications and had concern that the language in the guide contained some unacceptable safety risks.

4. **Background** – This issue has not previously been submitted to the Engineering Operations Committee. Most MDOT roadways would not be affected and this is primarily a local issue. Two current projects (Wilbur Road in Washtenaw County and District 5 Road in Dickenson County) have the local residents or the county engineering staff requesting MDOT or the FHWA to allow the local county to relax their current standards to meet the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)". Allowance would result in a less intrusive construction project.

CRAM approved the use of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)" with four modifications. The modifications are more restrictive than the guide, but deemed appropriate for adequate safety. Modifications are provided as follows:

1. A traffic safety analysis documentation must be signed and sealed by a Professional Engineer registered in the State of Michigan and include the following information:

    a. If the proposed work increases the travel speed (i.e., paving existing gravel road), then a County/City wide traffic and geometric review would be required which compares the proposed project location with another of a similar nature in the same or adjacent county.

    b. Current traffic counts and supporting data along with a 20 year traffic projection show the road will continue to less than 400 vehicles per day for the foreseeable future.

2. The committee supports the adoption of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)" with the following four exceptions:

Addition of Advisory Speed Signs

On page 25 of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)", the following condition is found: "Horizontal curve design criteria for new construction of roads in each of these six categories are presented below." The committee is proposing adding the following language immediately after the previous sentence. "*If the design speed of the new project can not meet the current posted or prima fascia speed, traffic signs must be placed advising motorists of the advisory speed for the next XX miles.*"

Intersections with no Control (Case A)

On page 44 of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)", the following condition is found: "For intersections not controlled by yield signs, stop signs, or traffic signals, the driver of a vehicle approaching the intersection must be able to see potentially conflicting vehicles on intersecting approaches in sufficient time for the approaching driver to safely stop before reaching the intersection". The committee is proposing adding the following language immediately after the previous sentence. "*Stop control should be used on most intersecting roadways. New construction projects which include work on the roadway where intersections exist should include stop or yield signs. Intersections with no control should only be followed for roads which are signed less than 35 mph or where the roads are in subdivisions carrying low traffic volumes. Stop or yield signs are required when the roadway is posted (or prima fascia) for speeds greater than 35 mph. The ingress and egress connections to the main roads from the subdivisions should have stop control included regardless of the posted speed.*"

Use of One-Lane Bridges

On page 21 of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤400)" indicates, for new construction, "One lane bridges may be provided on single-lane roads and on two-lane roads with ADT less than 100 veh/day where the designer finds that a one-lane bridge can operate effectively". The committee is proposing restating this as follows: "one lane bridges may be provided on single-lane roads and on two-lane roads *when the 50-year projected ADT (the expected life of the bridge rehabilitation is required) is* less than 100 veh/day

..." This would generally be the case if the bridge serviced a limited area bounded by a natural barrier (such as a bridge to an island or a bridge that connected a subdivision to the main road with no other outlet).

On page 21 of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤400)" indicates "Where an existing bridge needs replacement for structural reasons, but there is no evidence of a site specific safety problem, the replacement bridge can be constructed with the same width as the existing bridge; this criterion applies to bridges that are reconstructed on the same alignment and bridges that are reconstructed on a more favorable alignment." The committee is proposing the following addition after the preceding sentence "*For new construction, an existing two-lane bridge will not be replaced with a one-lane bridge. When an existing, one lane bridge needs replacement for structural reasons, the replacement structure may be a one lane bridge if there are no safety issues at the site and the 50-year projected ADT is less than 100 veh/day.*"

Elimination of Shielding Traffic Barriers at Structures

On page 49 of the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤400)" there is statement which reads "Where provision of a clear zone is not practical, none is required." The committee is proposing this change to the wording: "Where provision of a clear zone is not practical, none is required *except in the vicinity of a bridge.*"

Elimination of the shielding of traffic barriers should not be considered in the vicinity of a bridge. Further information on this issue is available in AASHTO's Roadside Design Guide. The bridge railings should have protection for the approach end of the structure. If someone hits the end of the bridge with their vehicle, they may end up under the structure which may either cause death or injury to themselves or others. In addition, if the bridge is damaged by the impact with a vehicle, it may fail in the near future causing an injury to another vehicle's occupant. The committee is not willing to allow this type of catastrophic occurrence.

Recommendations(s) – Approve the "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤ 400)" with the four modifications for immediate use.

April 1, 2004