# DESIGN BULLETIN #72/2010

## Design Standards/Practice Exception Request Process

**Background**
This Bulletin is issued to inform practitioners of the Department's process for obtaining a Design Standards/Practice Exceptions.

Design Standards/Practice Exceptions are defined as instances where values lower than the minimum standard or a departure from the normal practices is proposed. Design Standards/Practice Exceptions may also include recommendation of values exceeding a standard value (such as a bridge width) or a clear deviation from normal practice.

The intent of Design Standards/Practice Exceptions is to determine, justify and document that good engineering judgment is being exercised.

In order to obtain a Design Standards/Practice Exception, the following process should be followed to ensure that the submitted request is documented. A Design Standards/Practice Exception request must be submitted with project details, rationale and justification to support why the established standard cannot or should not be used.

Design Standards/Practice Exception requests may be approved at either the functional planning or detailed design stages. The approval of all exceptions should be documented for future reference.

**Process and Supporting Documentation**
The following is a list of documentation/information that may be required (if applicable) to support and to justify a Design Standards/Practice Exception request.

- Description and details of the project including the type of project (functional planning, new construction, 3R/4R projects, bridge, pavement surfacing, etc), the location of the project, length and limits of the project including the Km posts, highway service class or level, design speed, posted speed, cross-sections, and other improvements to be considered.

- Site plans, profiles, sketches, detailed drawings, and/or photographs of the Design Standards/Practice Exception and the alternatives considered.

- Current and future projected traffic volumes, growth rate, traffic composition, Turning Movement Diagrams (if applicable).

- Description of the proposed or planned work(s) requiring a Design Standards/Practice Exception.

- Description of the degree to which the standard is being reduced or modified. Provide the values of the current standards or practice and the recommended proposed values that are to be used.

- Information on what impact, if any, the exception may have on other standards or practices.

- Information on implications to future planned improvements to the roadway or corridor that may need to be considered.

- Summary of the current standards/practices that are not being followed and what alternatives were considered and evaluated. Provide detailed rationale and or justification to support the Design Standards/Practice Exception recommendation.

- Supporting documentation (from the consultant, if applicable) may include: identification of constraints, risk evaluation and analysis, costs evaluation, benefit/cost analysis, safety implications, operational implications, etc.

- Cost estimate to build to standard versus Design Standards/Practice Exception. Cost estimates of alternatives.

- Risk evaluation. Assessment of the exposure and risk with respect to traffic volume, location, severity (worst case scenario), duration, etc. The evaluation may involve an assessment beyond the project limits. The evaluation may also include a *Road Safety Audit (RSA).

- Summary of the collision history within the project limits. Address and summarize the safety and operational implication and/or collision experience related to the proposed work(s) for the Design Standard/Practice Exception. Does the exception in the standard significantly impact the safety and or operation in the specific area or the overall project?

- Evaluation and mitigation measures. Description of any proposed mitigations (safety enhancements such as signing, markings, barriers, etc) to reduce the potential impact and/or risk of not meeting the current standards and practices.

* Normally if a Road Safety Audit (RSA) has been completed on a project, this would be submitted together with the Design Standards/Practice Exception Request. In the event that an RSA has not been done and that the Executive Director of TSB feels it is needed to support the Request, an RSA may be ordered. The performance of an RSA at the Design Standards/Practice Exception stage is not the usual practice and can be expected to delay the process beyond the usual response time of three weeks.

In addition, all requests should be submitted with the Design Standards/Practice Exception form.

**Recommendation and Approval**

- If Design Standards/Practice Exception request has been prepared and advanced by a consultant to the Region (or other Project Sponsor), the document should be stamped by the appropriate professional. Depending on the nature of the Design Standards/Practice Exception, an appropriate professional may include areas of other practicing disciplines from other professional associations, societies and/or organizations recognized in the Province of Alberta.

- All requests must be recommended by the Project Sponsor and the Regional Director.

- All requests are to be submitted to Executive Director, Technical Standards Branch (TSB) for approval. Design Standards/Practice Exception requests that pertain to planning or at the planning stage will be redirected to the Executive Director, Planning for consideration. Final approval will be obtained from the Executive Director of TSB.

- Where a consultant requests a Design Exception and it is approved by the department, there is a shared responsibility for the final design as indicated in Section 1.6.1 of the Engineering Consultant Guidelines for Highway and Bridge Projects, Volume 1.

**Requests that may be initiated at the Planning Stage**

Exception requests in the following subject areas that occur at the planning stage may be referred to the Executive Director of Planning for input:

- Planning Horizon
- Functional Classification
- Design Speed
- Interchange configuration
- Interchange spacing and/or weaving distances
- Intersection location spacing from interchange ramp terminals
- Access management
- Traffic Impact Assessments
- Bridge structure widths
- Future planned improvements to the roadway or corridor may need to be considered (e.g. horizontal radius).
- Other jurisdiction or outside requirement request and demands (other Alberta departments, municipalities, counties, public, industries, resources, private developers, political, railways, etc.)
- Compatibility with other road sections
- Reconstruction or retrofit to existing infrastructure/facilities
- Accommodation between interim and future staging
- Safety Rest Area strategic location/spacing
- Noise attenuation

Current information on planning practices in the department is not readily available for some of the subject areas. Please contact the Executive Director of Planning or the Director of Major Capital Planning where clarification is needed.

**Value Engineering (VE)**
AASHTO Transportation Glossary, 4th Edition, 2009, defines Value Engineering as follows: *"An analysis of material, processes, and products in which functions are related to cost and from which a selection may be made for the purpose of achieving the require function at the lowest overall cost consistent with the requirements for performance, reliability, and maintainability."*

The intent of VE is to provide added value while maintaining or improving the performance level and not just to reduce cost. Performance measures may include functionality, safety, operation, maintenance, environmental, construction staging, benefit/cost, etc.

As indicated above, the intent of Design Standards/Practice Exceptions is to determine, justify and document that good engineering judgment is being exercised where the established standard cannot or should not be used.

If applicable, VE may be used to provide rationale and or justification to support a Design Standards/Practice Exception Request.

**Timeframe for Response**
If the Design Standards/Practice Exception application is fully documented (including a rationale, drawings, risk analysis etc as applicable), the normal timeframe for response from Technical Standards Branch is three weeks.

**Dispute Resolution**
In the event that an agreement cannot be reached between the decision of the Executive Director, TSB, and the sponsoring Regional Director on the Design Standards/Practices Exception, then it may be elevated to the Assistant Deputy Minister (ADM) of Transportation and Civil Engineering (TCE) for final decision.

All requests must be fully documented (including the decision of the Executive Director, TSB) and submitted by the sponsoring Regional Director to the ADM of TCE. The Executive Director, TSB should be copied on the request.

**Effective Date:** August 3, 2010.

**Contact**
Contact: Bill Kenny or Peter Mah, Technical Standards Branch, Alberta Transportation.

**Attachment**

1. Design Standards/Practice Exceptions Request Form. Version: August 2, 2010.

The attached Form is available in Microsoft Word format on Alberta Transportation's webpage.

Recommended:

Bill Kenny, P.Eng.
Director,
Design, Project Management and Training
Date 3 AUGUST '10

Approved:

Moh Lali, P.Eng.
Executive Director,
Technical Standards Branch
Date AUGUST 11/10