

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9011



January 27, 1997

Division Administrator
Federal Highway Administration
Colorado Division
555 Zang Street, Room 250
Lakewood, Colorado 80228

Attention: Bridge Engineer

Subject: Extension of two year bridge inspection program

Dear Mr. Greer:

In response to Mr. Gordons' Memorandum dated October 26, 1993, I hereby submit a request to revise our bridge inspection program to inspect certain types of bridges at intervals greater than two years, but with a maximum not to exceed four years. The program will apply to State owned and to City and County owned structures.

The inspection process seems more detailed each year and requires increased man-hours. The following request is intended to allow a savings of time on bridges that are in good condition and have slow deterioration rates.

I feel this request meets all of the requirements of Technical Advisory T 5140.21 dated September 16, 1988 and all of the items described to be checked by D. Densmores' memo of April 13, 1994. I have included all of the items requested in Mr. Greers' draft approval dated 1/8/97.

We would like final approval to use this program on a trial basis for eight years. If revisions are needed we can make adjustments, with your approval, as the program develops. Your favorable reply will allow us to use this program during the 1997 inspections.

Attached is a list of structures slated for this program.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'S. W. Horton', is written over the typed name.

S. W. Horton, P. E.
Staff Bridge Engineer

Attachments

cc: J. E. Siebels
M. L. Best/D. E. Christensen
File

**COLORADO DEPARTMENT OF TRANSPORTATION
CRITERIA FOR FOUR YEAR BRIDGE INSPECTION CYCLE
January 1997**

In an effort to make the bridge inspection program more efficient, the following extension to the two year inspection cycle is established. This program will apply to State, City, and County structures. Structures that do not meet this criteria will remain on the two year cycle. To assure quality control, the Inspection Team Leader, with the Inspection Engineers concurrence, has the authority to establish a reduced cycle for any bridge based on the structural condition.

1. The structures eligible for this program are listed below as coded in the NBIS code manual, Item 43 & 44, Structure Type:

<u>1st DIGIT</u>	<u>2nd & 3rd DIGIT</u>	<u>DESCRIPTION</u>
1,2	01	Slabs
1,2,3,4,5,6	02	Stringer/Multi beam/Girder
1,2,5,6	04	Tee beams
1,2,3,4,5,6	05,06	Box beams/Box girder
1,2	19	Culverts

2. The condition of the following items must be rated 6 or greater:

Item 58 Deck	Item 67 Structural Evaluation
Item 59 Superstructure	Item 68 Deck Geometry
Item 60 Substructure	Item 69 Under Clearances V&H
Item 61 Channel & Channel Protection	Item 71 Waterway Adequacy
Item 62 Culverts	Item 72 Approach Roadway Algn

3. The structure must be capable of carrying Colorado legal loads at the inventory stress level. Item 66, Inventory Rating = HS18 and coded 232 or greater for bridges; or HS15 and coded 227 or greater for concrete culverts under fill.

4. Eligible structures must not require any legal load restrictions. Item 41, Structure Open, Posted, or Closed to Traffic is coded 'A'.

5. The longest span may not exceed 100'; Item 48, Length of Maximum Span.

6. Bridges will not be considered for the four year cycle immediately following construction, reconstruction, or rehabilitation. A routine NBIS inspection must be performed before a bridge qualifies for the four year program. This inspection must be performed at least one year after the construction activity.

7. The structures must possess load path redundancy: i.e. no truss, no two girder systems, and no single cell box girder type structures.

8. The structure must not be scour critical. Item 113, Scour Critical Bridges must be coded 5 or greater.

9. The Average Daily Traffic (ADT), Item 29, must not be over 30,000 and the Average Daily Truck Traffic (ADTT), Item 109, must be less than 3,000. This restriction does not apply to culverts with more than 2 feet of cover.

10. Structures of uncommon or unusual design, or designs where there is little performance history, e.g. segmental bridges, are not included.

11. The age of the structure may not exceed 50 years unless it has been reconstructed within the past 30 years.

The frequency and degree of overloads anticipated on the qualifying structures shall be a consideration at the time of NBIS inspections. Discovery of unusual problems shall be cause for that bridge to revert back to the two year inspection. Bridges with repair histories that indicate a strong probability of future problems will not be included as candidates for the four year NBIS inspection interval, e.g. bridges that get hit often by high loads.

The eligibility of each structure will be reviewed following any revision of applicable inventory and inspection data. History in Colorado indicates very slow deterioration rates because of the dry climate, however, any formerly eligible structures which no longer meet the inspection interval extension criteria will revert back to a maximum two year cycle.

The four year inspection interval is optional, representing a maximum and in no way precludes inspections at lesser intervals. Structures that are eligible for the four year program may, at the discretion of the owner, be inspected at more frequent intervals.



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject: **ACTION:** Colorado Request for 4-year
Inspection Interval for Bridges

Date: JUN 30 1997

From: Acting Chief, Bridge Division
Office of Engineering

Reply to
Attn. of: HNG-33

To: Mr. Vincent F. Schimmoller
Regional Administrator (HRA-08)
Lakewood, CO

Please refer to your June 14 memorandum regarding the Colorado Department of Transportation's (CDOT) request to extend the inspection interval for certain bridges from 2 years to a maximum of 4 years. The current CDOT proposal is a revised version of the proposal previously submitted with your March 14 memorandum.

We have reviewed the CDOT's submission and find that the proposal meets the basic requirements of Technical Advisory T 5140.21 "Revisions to the National Bridge Inspection Standards (NBIS)" for the extended inspection interval. However, two of the structures shown in the State's submission do not comply with the "condition rating" requirements of the proposed criteria. The specific structures are Structure Numbers D-17-m MINOR and C-17-EL.

We consider the CDOT's criteria acceptable for approval subject to the satisfactory resolution of the inconsistencies in the submission. It is requested that your office, in cooperation with the State and Division, ensure that all bridges that do not meet the criteria are removed from the list and are not included under the extended bridge inspection interval. Also, as indicated in the submission structures owned by other governmental agencies within the State are not to be covered by the criteria until the CDOT receives formal documentation that the bridge owners desire to have their bridges covered by the CDOT's criteria.

If there are any questions, please contact the Bridge Division at (202) 366-4617.

C. L. Chambers



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Region 8

ACTION: Colorado Request for 4-year
Inspection Interval for Bridges

Date: July 15, 1997

From: Regional Administrator
Lakewood, CO

Reply to:
Attn. of: HES-08 (620.1.0)

To: Mr. James Daves
Division Administrator (HBR-CO)
Lakewood, CO

In his June 30, 1997 memorandum, Mr. Charles Chambers agrees, with some conditions, that the criteria proposed by the Colorado Department of Transportation for 4-year inspection intervals are acceptable. The conditions to that agreement relate to two bridge records: D-17-m Minor, and C-17-EL. These two bridges do not qualify under the criteria presented in the state's submittal.

The headquarters' record for bridge number D-17-m Minor has a rating of 3 for Item 69 of the National Bridge Inventory (NBI) (Underclearances Vertical & Horizontal).

Their record for bridge number C-17-EL contains ratings of 2 for items 61, 62, and 67 (Channel & Channel Protection, Culverts, and Structural Evaluation).

We would appreciate your assistance in coordinating with the state to remove these two bridges from their listing of those eligible for 4-year inspection.

We would like to explore the possibility of obtaining a copy of the NBI data for the bridges that qualify under the state's criteria. Data in the format required for the annual submittal (fixed field length, 432 character records, ASCII text format) would be adequate.

If you have any questions or wish to discuss this further, please call me at Extension 351.

Terry D. Philbin
Regional Structural Engineer

Attachments