

T.3.E.5.

Memorandum Date: August 4, 2008
Order Date: August 20, 2008

TO: Board of County Commissioners

DEPARTMENT: Public Works

PRESENTED BY: Frank Simas
Real Property Manager

AGENDA ITEM TITLE: IN THE MATTER OF REPLACING THE 3 TON WEIGHT LIMIT ON COYOTE CREEK COVERED BRIDGE (STATE BRIDGE ID NO. 39C409) LOCATED AT M.P. 0.1 ON BATTLE CREEK ROAD WITH A 16 TON WEIGHT LIMIT AND CONTINUING THE "NO TRUCK" STATUS OF THE BRIDGE.

I. MOTION

THAT THE ORDER BE APPROVED AUTHORIZING THE REPLACEMENT OF THE 3 TON WEIGHT LIMIT ON COYOTE CREEK COVERED BRIDGE (STATE BRIDGE ID NO. 39C409) LOCATED AT M.P. 0.1 ON BATTLE CREEK ROAD WITH A 16 TON WEIGHT LIMIT AND CONTINUATION OF THE "NO TRUCK" STATUS OF THE BRIDGE.

II. AGENDA ITEM SUMMARY

Permanent repairs were made to the Coyote Creek Covered Bridge in the summer of 2007 and a new load rating completed by CH2M Hill in November, 2007 recommends a 16 ton weight limit.

III. BACKGROUND/IMPLICATIONS OF ACTION

A. Board Action and Other History

Battle Creek Road is located 2 miles south of Crow, running southwest from Territorial Hwy. 4.9 miles to Panther Creek Road. Battle Creek Road is a Rural Local road with an Average Daily Traffic (ADT) of 270 vehicles/day (traffic count from 2002). Coyote Creek Covered Bridge is located on Battle Creek Road at MP 0.10.

Board Order 79-3-14-4 closed the Coyote Creek Covered Bridge to motorized vehicles because the bridge was deficient for the needs of modern traffic, commercial and industrial use. "BRIDGE CLOSED" signs were installed April 2, 1979. When road signs were inventoried on October 29, 1980, "BRIDGE CLOSED" signs had been replaced with "NO TRUCKS" signs and "WEIGHT LIMIT 10 TONS" signs, these signs have remained and have been maintained since.

Board Order 06-6-21-11 awarded a contract to West Coast Contractors for structure repair. Board Order 06-11-8-9 granted temporary closure of Coyote Creek Covered Bridge during construction of said contract and allow the bridge to be re-opened at a weight limit of 3 tons under emergency conditions if area roads are flooded.

In the fall of 2007 bridge repairs were completed and the repaired bridge was load rated by CH2M Hill (summary report attached) with a specific look at school buses used by the Crow-Applegate School District. CH2M Hill recommends the bridge be weight limited and load posted for 16 tons.

B. Policy Issues

Under ORS 810.030, a road authority may impose restrictions on its highways to protect the highway or a section of highway from being unduly damaged and to protect the interest and safety of the general public.

C. Board Goals

This action meets Goal 5 of the adopted Lane County Transportation System Plan (TSP): To promote safe, functional, and well-maintained bridge network in Lane County.

D. Financial and/or Resource Considerations

There will be no significant financial impact to the County.

E. Analysis

Board Order 06-11-8-9 granted temporary closure of Coyote Creek Covered Bridge during construction and imposed a weight limitation of 3 tons on all vehicle types if the bridge needed to be reopened in the event of an emergency if area roads were flooded. Structural repairs to the bridge have been completed and subsequent bridge study and load rating by the engineering firm CH2M Hill suggests loads over the bridge be limited to a maximum of 16 tons.

The bridge has been closed to truck traffic since March, 1979 and CH2M Hill agrees it would be appropriate for the bridge to remain closed to truck traffic. CH2M Hill load rated the buses in the Crow Applegate School District fleet and found that all their buses are under the 16 ton load limit and are approved to use this bridge. The bridge can be used by buses and emergency vehicles under 16 ton gross weight.

With the bridge closed to truck traffic, the out-of-direction travel for a northbound truck on Territorial Highway to westbound on Battle Creek Road is 1.4 miles on a detour route of Territorial Highway to Wolf Creek Road to Coyote Creek Road to Battle Creek Road.

Coyote Creek Covered Bridge is a one lane bridge with less than legal vertical clearance of 14' 10".

F. Alternatives/Options

1. Move to approve the attached Order authorizing the removal of the 3 ton weight limit, replacing it with a 16 ton weight limit and continue the no truck status of the bridge. Approval would allow the bridge to remain open for most traffic, including school buses from the Crow Applegate School District and emergency vehicles and will maintain the current "no truck" status.
2. Direct Staff otherwise.

IV. TIMING/IMPLEMENTATION

Upon approval of the Order, staff will implement replacing the existing weight limit signs with revised weight limit signs and notify the Crow Applegate School District and emergency service providers of the weight limit.

V. RECOMMENDATION

Option 1.

VI. ATTACHMENTS

Board Order with Attachments A and B
Attachment 1 – Vicinity Map
Attachment 2 – Excerpt from CH2M Hill report

**IN THE BOARD OF COUNTY COMMISSIONERS OF LANE COUNTY
STATE OF OREGON**

ORDER NO.

**(IN THE MATTER OF REPLACING THE
3 TON WEIGHT LIMIT ON COYOTE CREEK
COVERED BRIDGE (STATE BRIDGE ID NO.
39C409) LOCATED AT M.P. 0.1 ON BATTLE
CREEK ROAD WITH A 16 TON WEIGHT
LIMIT AND CONTINUING THE "NO TRUCK"
STATUS OF THE BRIDGE.**

WHEREAS, pursuant to ORS 810.030, the County may impose limits on any weight or dimensions of any vehicle or combination of vehicles to protect any highway or section of highway from being unduly damaged; and

WHEREAS, Board Order 06-6-21-11 awarded Contract No. 05/06-15 to West Coast Contractors for structure repairs to Coyote Creek Covered Bridge; and

WHEREAS, as a result of a bridge assessment the Coyote Creek Covered Bridge was closed to vehicular and pedestrian traffic on October 4, 2006 by the County under authority of the Public Works Director; and

WHEREAS, Board Order 06-11-8-9 confirmed the Public Works Director decision to close the bridge and furthermore ordered that the County Engineer provide temporary strengthening improvements to allow the bridge to be opened under emergency flooding conditions with a weight limit of 3 tons; and

WHEREAS, the repair work included under said contract has now been completed; and

WHEREAS, a report from CH2M Hill completed subsequent to repairs now recommends maximum a load rating of 16 tons and allowing school buses and emergency vehicles up to 16 tons to use the bridge;
NOW THEREFORE

BE IT ORDERED, that the 3 ton weight limit posting on Coyote Creek Covered Bridge (State Bridge ID No. 39C409) located at M.P. 0.1 on Battle Creek Road be replaced with a 16 ton weight limit posting and that the bridge be closed to truck traffic as shown on "Exhibit A" and "Exhibit B".

Dated this _____ day of _____, 2008.

Chair
Lane County Board of Commissioners

APPROVED AS TO FORM

Date 8-7-08 lane county



OFFICE OF LEGAL COUNSEL

WEIGHT

LIMIT

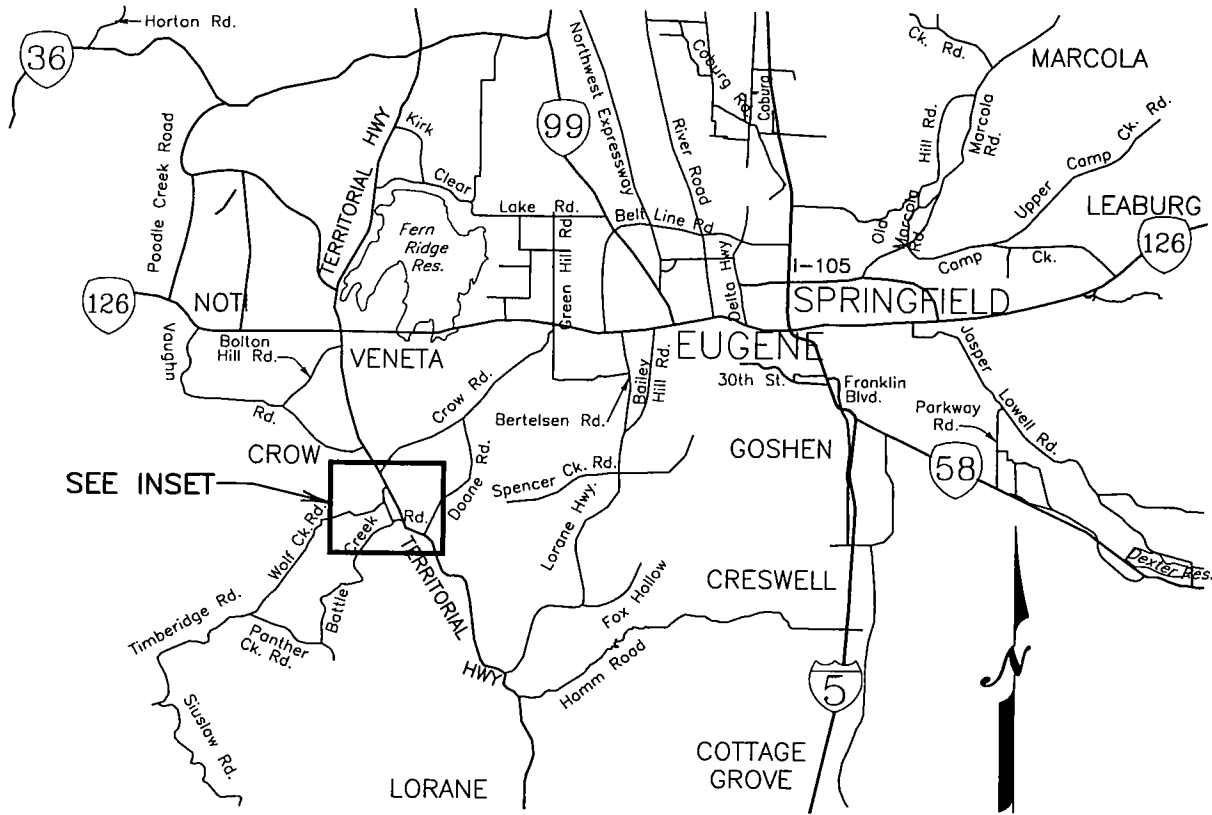
16

TONS

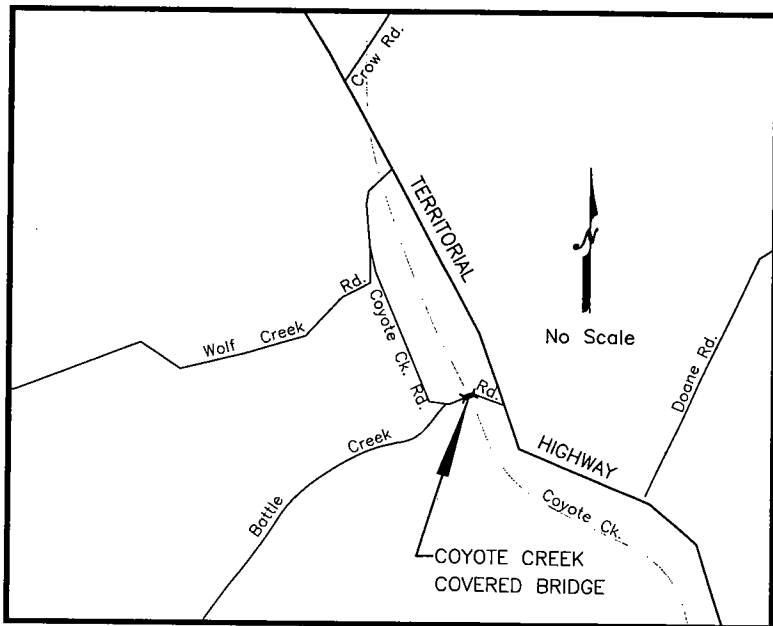
NO

TRUCKS

COYOTE CREEK COVERED BRIDGE



No Scale



INSET



ATTACHMENT 2



November 27, 2007

David L. Brown, P.L.S.
Field Engineering Superintendent
Lane County Public Works
Engineering & Construction Services Division
3040 North Delta Highway
Eugene, OR 97408-1696

Subject: Coyote Creek Covered Bridge Load Posting

Dave,

In a discussion this morning with Bob Wilson concerning the load posting of the Coyote Covered Bridge, we concluded it would be appropriate for the bridge to remain closed to truck traffic and be load posted for 16 tons. The heaviest school bus used by the Crow-Applegate School District in this evaluation is 31,680 GVWR (just under 16 tons). For the load configuration and weight of this bus, the bridge has an operating rating of 1.00, that is, the load capacity rating of the bridge coincidentally matches the weight of the bus very closely. The remaining Crow-Applegate District buses evaluated weighed less than 16 tons.

For the bridge to be closed to truck traffic, the existing "No Trucks" signage should remain in place. Consideration could also be given to providing advance signage prohibiting trucks from using the bridge.

Sincerely,

A handwritten signature in black ink, appearing to read "Kelly B. Freeman".

Kelly B. Freeman, P.E.
CH2M HILL

Cc: Bill Morgan/Lane County Engineer
Bob Wilson/Lane County
Lwin Hwee/CH2M HILL



November 26, 2007

David L. Brown, P.L.S.
Field Engineering Superintendent
Lane County Public Works
Engineering & Construction Services Division
3040 North Delta Highway
Eugene, OR 97408-1696

Subject: Coyote Creek Covered Bridge Load Rating and As-Constructed Drawings

Dave,

Please find attached the load rating for the Coyote Creek Covered Bridge and as-constructed drawings. The load rating includes an ODOT format summary sheet which identifies the applicable Inventory and Operating load ratings for the Oregon legal loads and for the Crow-Applegate School District Buses. Oregon permit vehicles were not evaluated, since the heavy weights of these vehicles precludes them from being allowed to use this bridge.

The results of the load rating show the Coyote Covered Bridge is adequate for school buses used by the Crow-Applegate School District. The identifications of the school buses are listed below for your consideration. The load rating calculations for the school buses were also evaluated with the inclusion of a design snow load of 25 pounds per square foot on the roof of the main span house. The bridge has insufficient capacity to support the school buses and the full design snow load. However, for your evaluation in determining the closure of the bridge, the bridge capacity is adequate for school buses and up to 8 pounds per square foot (8.0psf) of snow on the roof without reducing the operating rating load factors to less than 1.0.

The following are school buses with their VIN number and load and axle configurations as provided by the County:

Bus #	VIN	GAWR Front (lb)	GAWR Rear (lb)	Axle Spacing (ft)
3	1T79N4B22P1114734	11000	19000	17.5
4	1T7HN4829V1147407	11360	19000	17.5
5	1T79N4B2XS1124968	11360	20000	17.5
6	1T75NRB26W1162234	11360	20320	17.5
9	1GDK6P1P7MV500964	7500	18080	21.17
12	1T79N4B21124969	11360	20000	17.5

Bus #12 was not evaluated because the weights and axle spacing are identical to Bus #5.

Sincerely,



Kelly B. Freeman, P.E.
CH2M HILL

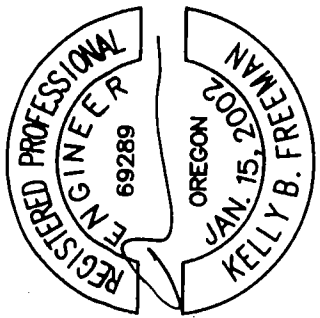
Bill Morgan
Cc: ~~Sonny Chickering~~ / Lane County Engineer
Bob Wilson / Lane County
Lwin Hwee / CH2M HILL



OREGON D.O.T. BRIDGE SECTION

LOAD RATING SUMMARY REPORT (PAGE 1)

For local agency bridges. Latest Revision 2/10/2006



EXPIRATION DATE: 31 DEC 2007

BRIDGE DATA...

BRIDGE #: 39C409 NBI FEATURE: Coyote Creek
 BRIDGE NAME: Coyote Creek Bridge
 HIGHWAY NAME: Battle Creek Rd.
 REGION: 2 DIST: 05 COUNTY: Lane
 YEAR BUILT: 1922 DESIGN LOADING: NA OWNER: County Highway Agency
 SPAN DESC: 60' covered timber truss with timber approach spans
 OTHER DESC: 18-5W-32

LOAD RATING ENGINEER DATA...

RATING DATE: 11/20/07 FIRM: CH2M HILL ENGINEER: Kelly Freeman CALCULATION BOOK: _____

LATEST INSPECTION DATA...

INSP. DATE: 10/10/07 DECK: _____ ADTT: 0 YEAR of ADT (2 digits): 04 A.C. DEPTH, INCHES: 0.0
 CONDITION RATINGS → SUPERSTR.: _____ IMPACT ASSESSMENT (Elem. 325): WEAR SURFACE (Elem. 326): _____

RATING DATA...

LRFD FACTORS: IMPACT 1+I: 1.00 OPERATING: HS %L: 1.00 DISTRIB. FACTORS: Operational Status (Item 41):
 LOAD FACTOR LOAD RATINGS FOR N.B.I.: INVENTORY: HS OPER. CODE: (2+ions): 213 Single Lane: 11.7 Bridge Posting Status (Item 70):
 SECTIONS EVALUATED: 12 INVENTORY CODE: (2+ions): 213 Multiple Lanes: 221 Temporary Status (Item 103): 1
 COMMENTS: Snow load on the timber structure should be considered in decisions to close the route to bus or other traffic. Snow load not included in r

LOAD:	← 1st rating control →		← 2nd rating control →		R.F.	Limit State or V	+/-M	CONTROLLING... MEMBER	DESCR	LOCATION	DESCR	LOCATH
	R.F.	State	or V	MEMBER								
DESIGN & LEGAL VEHICLES HS20 (72K) TYPE 3 (50K) TYPE 3S2 MAX (80K) TYPE 3-3 (80K) AASHTO LANE LOAD	0.77	Ser	Ser	Stringers	0.78	Ser	Truss	Truss	Diagonal	Int	Beam	
	0.68	Ser	Ser	Truss	0.82	Ser	Truss	Truss				
	0.77	Ser	Ser	Stringers	0.80	Ser	Truss	Truss				
PERMIT VEHICLES, MULTIPLE LANE, FULL IMPACT	1.14	Ser	Ser	Stringers	1.27	Ser	Truss	Truss				
	1.12	Ser	Ser	Stringers	1.25	Ser	Truss	Truss				
	1.03	Ser	Ser	Stringers	1.15	Ser	Stringers	Stringers				Truss
	1.00	Ser	Ser	Stringers	1.12	Ser	Stringers	Stringers				Truss
CROW-APPLIGATE SCHOOL DISTRICT BUSES VIN 1779N4B22P114734 (#3) 30.00K VIN 177HN4829V147407 (#4) 30.36K VIN 1779N4B2X51124968 (#5) 31.36K VIN 1775N9RB26W1162234 (#6) 31.68K VIN 1GDK6P1P7M/500964 (#9) 25.58K	1.40	Ser	Ser	Stringers	1.48	Ser	Truss	Truss				

**OREGON D.O.T. BRIDGE SECTION
LOAD RATING WORKSHEET (PAGE 2)**

RATING DATE: 11/20/2007

BRIDGE NO: 39C409
BRIDGE NAME: Coyote Creek Bridge

	1st	2nd	3rd	4th	5th	6th	7th	8th
SECTION EVALUATED LRFD Brass .OUT File Name: FORCE TYPE (+/-M or V): PHI (Resistance Factor): MEMBER (eg. Int. girder): SPAN (eg. 1 of 4): LOCATION (eg. 0.1L): AASHTO Impact (I-1) P/S Only:	Truss	Truss Diagonal Ext Bearing	Truss Diagonal Ext Bearing	Truss Diagonal Int Bearing	Truss Diagonal Int Bearing	Bot Chord Splice Tension	Bot Chord Splice Bearing	Bot Chord Splice Shear
NBI RATINGS (HS20 VEHICLE) INVENTORY (HS20) OPERATING (HS20)	0.54 Ser 0.90 Ser	0.38 Ser 0.63 Ser	2.16 Ser 3.60 Ser	0.35 Ser 0.58 Ser	2.15 Ser 3.58 Ser	3.05 Ser 5.08 Ser	5.59 Ser 9.32 Ser	3.97 Ser 6.62 Ser
DESIGN & LEGAL VEHICLES HS20 (72K) TYPE 3 (50K) TYPE 3S2 MAX (80K) TYPE 3-3 (80K) AASHTO LANE LOAD	0.78 Ser 0.68 Ser 0.80 Ser	1.04 Ser 0.91 Ser 1.06 Ser	4.30 Ser 3.75 Ser 4.38 Ser	0.82 Ser 0.82 Ser 0.81 Ser	3.99 Ser 3.99 Ser 3.93 Ser	5.82 Ser 4.97 Ser 5.83 Ser	10.38 Ser 8.87 Ser 10.39 Ser	7.47 Ser 6.38 Ser 7.48 Ser
PERMIT VEHICLES, MULTIPLE LANES, FULL IMPACT								
PERMIT VEHICLES, SINGLE LANE, FULL IMPACT VIN #3 (30.0K) VIN #4 (30.36K) VIN #5 (31.36K) VIN #6 (31.68K) VIN #9 (25.58K)	1.27 Ser 1.25 Ser 1.21 Ser 1.19 Ser 1.48 Ser	1.69 Ser 1.68 Ser 1.61 Ser 1.60 Ser 1.98 Ser	6.97 Ser 6.91 Ser 6.66 Ser 6.58 Ser 8.15 Ser	1.31 Ser 1.30 Ser 1.25 Ser 1.24 Ser 1.53 Ser	6.36 Ser 6.32 Ser 6.07 Ser 5.99 Ser 7.42 Ser	9.82 Ser 9.75 Ser 9.36 Ser 9.24 Ser 11.43 Ser	17.50 Ser 17.38 Ser 16.68 Ser 16.47 Ser 20.36 Ser	12.59 Ser 12.51 Ser 12.01 Ser 11.85 Ser 14.65 Ser
PERMIT VEHICLES, SINGLE LANE, 10% IMPACT								

OREGON D.O.T. BRIDGE SECTION

LOAD RATING WORKSHEET (PAGE 3)

BRIDGE NO: 39C409
BRIDGE NAME: Coyote Creek Bridge

RATING DATE: 11/20/2007

	9th	10th	11th	12th	13th	14th	15th	16th
SECTION EVALUATED								
LRFD Brass OUT File Name:								
FORCE TYPE (+/-M or V):								
PHI (Resistance Factor):								
MEMBER (eg. Int. girder):								
SPAN (eg. 1 of 4):								
LOCATION (eg. 0.1L):								
AASHTO Impact (1+1) P/S Only:								
NBI RATINGS (HS20 VEHICLE)								
INVENTORY (HS20)	0.90 Ser	0.56 Ser	0.50 Ser	0.94 Ser				
OPERATING (HS20)	1.50 Ser	0.93 Ser	0.83 Ser	1.57 Ser				
DESIGN & LEGAL VEHICLES								
HS20 (72K)								
TYPE 3 (50K)	2.26 Ser	0.92 Ser	0.77 Ser	1.57 Ser				
TYPE 3S2 MAX (80K)	2.26 Ser	1.08 Ser	0.94 Ser	1.52 Ser				
TYPE 3-3 (80K)	2.26 Ser	0.92 Ser	0.77 Ser	1.38 Ser				
AASHTO LANE LOAD								
PERMIT VEHICLES, MULTIPLE LANES, FULL IMPACT								
PERMIT VEHICLES, SINGLE LANE, FULL IMPACT								
VIN #3 (30.0K)	2.03 Ser	1.27 Ser	1.14 Ser	2.44 Ser				
VIN #4 (30.36K)	2.00 Ser	1.25 Ser	1.12 Ser	2.44 Ser				
VIN #5 (31.36K)	1.84 Ser	1.15 Ser	1.03 Ser	2.44 Ser				
VIN #6 (31.68K)	1.79 Ser	1.12 Ser	1.00 Ser	2.28 Ser				
VIN #9 (25.58K)	2.50 Ser	1.56 Ser	1.40 Ser	2.56 Ser				
PERMIT VEHICLES, SINGLE LANE, 10% IMPACT								