CITY OF TORRANCE
INTEROFFICE COMMUNICATION

DATE: 8/1/11

TO: Citizen Development and Enrichment Committee

FROM: Beth Overstreet, Engineering Manager

SUBJECT: **2009 Bridge Inspection Report for Torrance Bridge**

Attached is the 2009 Bridge Inspection Report for the Torrance Bridge. As stated in the addendum to the bridge inspection report, "The bridge is in overall satisfactory condition". Repairing the spalls on the soffit and the columns would remove the structurally deficient status, which is part of the proposed work. Per the American Association of State Highway and Transportation Officials Subcommittee on Public Affairs, "A 'deficient' bridge is one with some maintenance concerns that do not post a safety risk. A 'deficient' bridge typically requires maintenance and repair and eventual rehabilitation or replacement to address deficiencies."

The results of all local bridge inspections state-wide are publicly posted on the Caltrans Website http://www.dot.ca.gov/hq/structur/strmaint/local/sr_local.pdf

Please note that the Sufficiency Rating shown for this particular structure is "-2". According to the Cal Trans Structure Maintenance and Investigations, if a structure does not carry highway traffic, it will not have a sufficiency rating. The "-2" is shown for bridges for this purpose of flagging that this structure does not carry traffic, as the actual value can never be below zero.

Attachment: Bridge Inspection Report

Bridge Inspection Report

Bridge Key: 53C1564 Agency ID: 53C1564 SD/FO Status:N SR: -2

IDENTIFICATION

State 1:	06 California	Struc Num 8:	53C1564
Facility Carried 7:	SPTCO RR	Location 9:	0.1 MI W WESTERN AVE
Rte.(On/Under)5A:	One Route Under	Rte. Signing Prefix 5B:	5 City Street
Level of Service 5C:	0 None of the below	Rte. Number 5D:	0L071
Directional Suffix 5E:	0 N/A (NBI)	% Responsibility :	0
SHD District 2:	District 7	County Code 3:	(53) Los Angeles
Place Code 4:	80000	Kilometer Post 11:	00.0 km
Feature Intersected 6:	TORRANCE BLVD & SPTCO		
Latitude 16:	33d 50' 18"	Longitude 17:	118d 18' 35"
Border Bridge Code 98:	Not Applicable (P)		
Border Bridge Number 99:			

INSPECTION

Frequency 91:	24 months	Inspection Date 90:	09/01/2009	Next Inspection:	09/01/2011
FC Frequency 92A:	NA	FC Inspection Date 93A:	NA	Next FC Inspection:	NA
UW Frequency 92B:	NA	UW Inspection Date 93B:	NA	Next UW Inspection:	NA
SI Frequency 92C:	NA	SI Date 93C:	NA	Next SI:	NA
Element Frequency:	24 months	Element Inspection Date:	09/01/2009	Next Elem. Insp. Due:	09/01/2011

CLASSIFICATION

Defense Highway 100:	0 Not a STRAHNET hwy	Parallel Structure 101:	No || bridge exists
Direction of Traffic 102:	2 2-way traffic	Temporary Structure 103:	Not Applicable (P)
Highway System 104:	0 Not on NHS	NBIS Length 112:	Long Enough
Toll Facility 20:	3 On free road	Functional Class 26:	14 Urban Other Princ
[redacted]			
Owner 22:	27 Railroad		
Custodian 21:	27 Railroad		

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 6

Main Span Material/Design 43A/B:

1 Concrete 04 Tee Beam

Deck Type 107:	1 Concrete-Cast-in-Place
Wearing Surface 108A:	N N/A (no deck (NBI))
Membrane 108B:	N N/A (no deck (NBI))
Deck Protection 108C:	N N/A (no deck (NBI))

CONDITION

Deck 58:	4 Poor	Super 59:	6 Satisfactory	Sub 60:	6 Satisfactory
Culvert 62:	N N/A (NBI)	Channel/Channel Protection 61:		N N/A (NBI)	

AGE AND SERVICE

Year Built 27:	1913	Year Reconstructed 106:	0		
Type of Service on 42A:	2 Railroad				
Type of Service under 42B:	4 Highway-railroad				
Lanes on 28A:	0	Lanes Under 28B:	4	Detour Length 19:	05 km
ADT 29:	30,000	Truck ADT 109:	4 %	Year of ADT 30:	2005

LOAD RATING AND POSTING

Inventory Rating Method 65:	1 LF Load Factor	Operating Rating Method 63:	1 LF Load Factor
Inventory Rating 66:	MS.0	Operating Rating 64:	MS0.0
Design Load 31:	6 Railroad	Posting 70:	Not Applicable (P)
Posting status 41:	Not Applicable (P)		

GEOMETRIC DATA

Length Max Span 48:	10.40 m	Structure Length 49:	46.90 m
Curb/Sdwlk Width L 50A:	0.00 m	Curb/Sidewalk Width R 50B:	0.00 m
Width Curb to Curb 51:	8.00 m	Width Out to Out 52:	0.00 m
Approach Roadway Width 32: (w/ shoulders)	0.00 m	Median 33:	0 No median
Deck Area:	375.00 m²		
Skew 34:	0.00 °	Structure Flared 35:	0 No flare
Minimum Vertical Clearance Over Bridge 53:		99.99 m	
Minimum Vertical Underclearance Reference 54A:		H Hwy beneath struct	
Minimum Vertical Underclearance 54B:		04.20 m	
Minimum Lateral Underclearance Reference R 55A:		H Hwy beneath struct	
Minimum Lateral Undrclearance R 55:		00.30 m	
Minimum Lateral Undrclearance L 56:		00.60 m	

APPRAISAL

Bridge Rail 36A:	N N/A or not required	Approach Rail 36C:	N N/A or not required
Transition 36B:	N N/A or not required	Approach Rail Ends 36D:	N N/A or not required
Str. Evaluation 67:	N	Deck Geometry 68:	N Not applicable (NBI)
Underclearance, Vertical and Horizontal 69:		3 Intolerable - Correct	
Waterway Adequacy 71:	N Not applicable	Approach Alignment 72:	N
Scour Critical 113:	N Not Over Waterway		

PROPOSED IMPROVEMENTS

Bridge Cost 94:	Unknown	Type of Work 75:	Unknown (P)
Roadway Cost 95:	Unknown	Length of Improvment 76:	
Total Cost 96:	Unknown	Future ADT 114:	36,000
Year of Cost Estimate 97:	Unknown	Year of Future ADT 115:	2025

NAVIGATION DATA

Navigation Control 38:	N NA-no waterway		
Vertical Clearance 39:	0.00 m	Horizontal Clearance 40:	0.00 m
Pier Protection 111:	Not Applicable (P)	Lift Bridge Vertical Clearance 116:	

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
2	12/2	Bare Concrete Deck	sq.m.	375	100 %	375	0 %	0	0 %	0	0 %	0	0 %	0
2	110/2	R/Conc Open Girder	m.	185	99 %	184	1 %	1	0 %	0	0 %	0	0 %	0
2	205/2	R/Conc Column	ea.	10	50 %	5	30 %	3	20 %	2	0 %	0	0 %	0
2	215/2	R/Conc Abutment	m.	20	100 %	20	0 %	0	0 %	0	0 %	0	0 %	0
2	234/2	R/Conc Cap	m.	49	94 %	46	6 %	3	0 %	0	0 %	0	0 %	0
2	359/2	Soffit Smart Flag	ea.	1	0 %	0	0 %	0	0 %	0	100 %	1	0 %	0

Bridge Inspection Report

Str Unit	Elem/Env	Description	Element Notes
2	12/2	Concrete Deck - Bare	
2	110/2	Reinforced Conc Open Girder/Beal	
2	205/2	Reinforced Conc Column or Pile Ex	
2	215/2	Reinforced Conc Abutment	
2	234/2	Reinforced Conc Cap	
2	359/2	Soffit of Concrete Deck or Slab	

BRIDGE NOTES

The bridge is assumed to run from south to north.
The bridge was photographed for the files on 09/26/05.
Bridge jurisdiction is 100% City of Torrance.
LA County Bridge #2482.

PAST INSPECTION

Inspection Date: 09/01/2009 Type: 1 Regular NBI

Inspector: AGRAJEDA Pontis User Key: AGRAJEDA - Antonio Grajeda

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

AGRAJEDA inspection comments -
Structure 53C1564 -
DATE 09/01/2009

SEE ADDENDUM TO BRIDGE INSPECTION REPORT.

INSPECTOR WORK CANDIDATES

REGISTERED PROFESSIONAL ENGINEER
RODOLFO RIVERA
C 69995
EXP. 04-30-10
CIVIL
STATE OF CALIFORNIA

ADDENDUM TO BRIDGE INSPECTION REPORT:

St. Br. No.: 53C-1564
LA County Br. No. #2482 **Date of Inspection: 9/01/09**

CONDITION OF STRUCTURE:

The bridge was inspected according to the 2008 First Edition of The Manual for Bridge Evaluation and related FHWA reports. Items observed during the visual inspection that appear to affect the condition of the bridge are listed below.

The bridge is in overall satisfactory condition.

The bridge is Structurally Deficient (SD) because the Deck is in poor condition

Provide Recommendations repairing the spalls on the soffit and columns of the bridge would remove the SD status.

All previous statements were verified by field inspection. (09/01/09)

Deck

A 0.3m diameter superficial spall exists in the deck soffit of span 6.
(For record only)

Superstructure

There is a minor spall in the lower flange of girder 3, span 2. (8/31/01)
(For record only)

Substructure

Bent 4

There is a 150mm wide by 0.6m long area of delamination in the north face of column 2, bent 4. (09/01/09)

The north face of column 1 (bent 4) has a large (0.3m X 0.3m X 102mm) spall with exposed rebar and minor section loss. (3/19/96)

Bent 6
There is a 200 mm diameter superficial spall near the base of column 1, bent 6. (9/12/07)

There is a 0.6 m long by 0.3 m wide area of delamination near the base of column 2, bent 6. (9/12/07)

A large horizontal crack exists in the west face of column 1 and the east face of column 2 of bent 6 up to 2mm wide, and appears to be at the cold joint of the column to arch girder. (11/10/99)

St. Br. No.: 53C-1564
LA County Br. No. #2482 Date of Inspection: 9/12/07

CONDITION OF STRUCTURE

Bent 6 continued

A 2mm crack exists in soffit of the arch, between columns 1 & 2 of bent 6. (11/10/99) (Typical in bent 4, 5 and 6)

There are random cracks in the southwest wingwall up to 0.50mm wide. (8/31/01)

Miscellaneous

Vegetation growth on the bridge prevents a thorough inspection of every element. (Vine like vegetation attached to structure) (11/10/99)

SIGNS:

The minimum vertical clearance (measured along the right hand side of lane 2 eastbound) was found to be 13 ft. 9 in. The bridge is currently posted 12 ft. 7 in.

Substructure

Repair the spalls in the reinforced concrete columns.

Epoxy inject the cracks in bents 4, 5 and 6.

Miscellaneous

Replace the missing clearance sign.

WORK RECOMMENDED:

Post the correct vertical clearance over eastbound lanes.

Do the work listed under **"WORK NOT DONE."**