

Orange County Bridge Review Summary

Dokken Engineering performed a field review of the Orange County bridge listed below in April 2017 to identify maintenance activities eligible for Caltrans' Bridge Preventive Maintenance Program (BPMP), dated December 2015, funding. Additional maintenance activities, if present, not eligible for BPMP funding were also noted. Maintenance recommendations, if noted in the most recent Caltrans Bridge Inspection Report (BIR), were confirmed.

Bridge Number: 55C0103

Bridge Name: Santa Ana River

Year Built: 1979

Facility Carried: Mailton-Victoria

The Santa Ana River Channel Bridge at Hamilton Victoria is a continuous 7 span cast-in-place reinforced concrete box girder bridge with pier wall and open end diaphragm abutments supported on concrete piles.

Caltrans BIR recommendations:

- None

Field Inspection Observations

- None

Maintenance Needs Assessment

BPMP Assessment

- N/A – No eligible maintenance activities

General Maintenance – Non-BPMP

- None

Proposed BPMP Construction Costs

- N/A

Construction Items Not Funded by BPMP

- N/A

APPENDIX A

BIR



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0103
Facility Carried: HAMILTON-VICTORIA
Location : 0.15 MI E/O BROOKHURST S
City :
Inspection Date : 12/09/2014
Inspection Type
Routine FC Underwater Special Other
☒

Bridge Inspection Report

STRUCTURE NAME: SANTA ANA RIVER (HAMILTON AVE)

CONSTRUCTION INFORMATION

Year Built : 1979 Skew (degrees): 16
Year Widened: 1992 No. of Joints : 3
Length (m) : 194 No. of Hinges : 1

Structure Description: Continuous 7 span CIP/RC box girder (9 cells) with RC piers and RC open end diaphragm abutments, all supported upon concrete piles.

Span Configuration : (W) 24.4 m, 3 @ 28.8 m, 24.8 m, 28.6 m, 28.2 m (E)

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: MS-18+MOD OR HS-20+MOD
Inventory Rating: RF=1.00 =>32.4 metric tons Calculation Method: ASSIGNED (LFD)
Operating Rating: RF=1.67 =>54.1 metric tons Calculation Method: ASSIGNED (LFD)
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (N) 0.3 m br, 1.5 m sw, 23.8 m, 1.5 m sw, 0.3 m br (S)

Total Width: 27.4 m Net Width: 23.8 m No. of Lanes: 4 Speed: 45 mph
Min. Vertical Clearance: Unimpaired

Rail Code: 1000

Rail Type	Location	Length (ft)	Rail Modifications
Type 11	Right	448	
Type 26	Right/Left	828	

DESCRIPTION UNDER STRUCTURE

Channel Description: Santa Ana River: Sandy bottom with grouted rock slopes through the site.
Greenville-Banning: Sandy bottom with RC vertical walls.

NOTICE

The bridge inspection condition assessment used for this inspection is based on the American Association of State Highway and Transportation Officials (AASHTO) Bridge Element Inspection Manual 2013 as defined in Moving Ahead for Progress in the 21st Century (MAP-21) federal law. The new element inspection methodology may result in changes to related condition and appraisal ratings on the bridge without significant physical changes at the bridge.

The element condition information contained in this report represents the current condition of the bridge based on the most recent routine and special inspections. Some of the notes presented below may be from an inspection that occurred prior to the date noted in this report. Refer to the Scope and Access section of this inspection report for a description of which portions of the bridge were inspected on this date.

INSPECTION COMMENTARY

SCOPE AND ACCESS

There was 3 ft of deep water in the river under span #2 to span #5, these spans were inspected from the side. All other elements were visually inspected.

INSPECTION COMMENTARY**REVISIONS**

The bridge name was revised to include the road carried name.

Old name: SANTA ANA RIVER.

New name: SANTA ANA RIVER (HAMILTON AVE).

SAFE LOAD CAPACITY

A load Rating Summary sheet was in BIRIS. This load rating was assigned in accordance with current SM&I procedures.

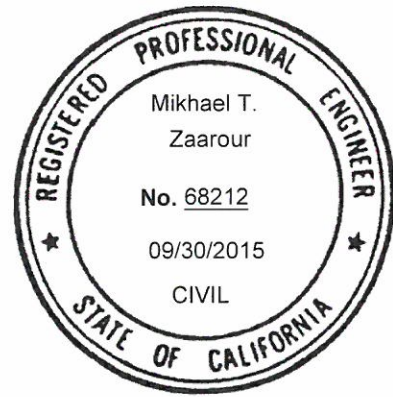
ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Element Description	Env	Total Qty	Units	Qty in each Condition	State		
						St. 1	St. 2	St. 3	St. 4
16		Top Flange-RC	2	5335	sq.m	5335	0	0	0
	521	Concrete Coat. (Meth/Paint/Seal)	2	2450	sq.m	2450	0	0	0
(16)									
There were no significant defects noted.									
(16-521)									
There were no significant defects noted.									
105		Box Girder-RC	2	390	m	390	0	0	0
(105)									
There were no significant defects noted.									
210		Pier Wall-RC	2	180	m	180	0	0	0
(210)									
There were no significant defects noted.									
215		Abutment-RC	2	60	m	60	0	0	0
(215)									
There were no significant defects noted.									
227		Pile-RC	2	1	ea.	1	0	0	0
(227)									
The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.									
302		Joint-Compression Seal	2	87	m	27	60	0	0
	2320	Seal Adhesion (Joints)	2	60		0	60	0	0
(302-2320)									
The joint seals are lost adhesion and dirt were filled in between the rubber and the concrete.									
331		Railing-RC	2	252	m	252	0	0	0
(331)									
There were no significant defects noted.									
333		Railing-Other	2	136	m	136	0	0	0
(333)									
There were no significant defects noted.									

WORK RECOMMENDATIONS - NONE

Team Leader : Mikhael T. Zaarour
Report Author : Mikhael T. Zaarour
Inspected By : MT.Zaarour/KD.Henderson

Mikhael T. Zaarour 12/15/14
Mikhael T. Zaarour (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME- CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0103
 (5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED- SANTA ANA RIVER
 (7) FACILITY CARRIED- HAMILTON-VICTORIA
 (9) LOCATION- 0.15 MI E/O BROOKHURST ST
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE
 (16) LATITUDE 33 DEG 39 MIN 02.35 SEC
 (17) LONGITUDE 117 DEG 57 MIN 05.81 SEC
 (98) BORDER BRIDGE STATE CODE % SHARE %
 (99) BORDER BRIDGE STRUCTURE NUMBER

***** STRUCTURE TYPE AND MATERIAL *****

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
 TYPE- TEE BEAM CODE 204
 (44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
 TYPE- OTHER/NA CODE 000
 (45) NUMBER OF SPANS IN MAIN UNIT 7
 (46) NUMBER OF APPROACH SPANS 0
 (107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
 (108) WEARING SURFACE / PROTECTIVE SYSTEM:
 A) TYPE OF WEARING SURFACE- NONE CODE 0
 B) TYPE OF MEMBRANE- NONE CODE 0
 C) TYPE OF DECK PROTECTION- NONE CODE 0

***** AGE AND SERVICE *****

(27) YEAR BUILT 1979
 (106) YEAR RECONSTRUCTED 1992
 (42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
 UNDER- WATERWAY 5
 (28) LANES:ON STRUCTURE 04 UNDER STRUCTURE 00
 (29) AVERAGE DAILY TRAFFIC 30000
 (30) YEAR OF ADT 2010 (109) TRUCK ADT 2 %
 (19) BYPASS, DETOUR LENGTH 5 KM

***** GEOMETRIC DATA *****

(48) LENGTH OF MAXIMUM SPAN 28.8 M
 (49) STRUCTURE LENGTH 194.0 M
 (50) CURB OR SIDEWALK: LEFT 1.5 M RIGHT 1.5 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 23.8 M
 (52) DECK WIDTH OUT TO OUT 27.4 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 24.0 M
 (33) BRIDGE MEDIAN- NO MEDIAN 0
 (34) SKEW 16 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 23.8 M
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
 (54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
 (55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
 (56) MIN LAT UNDERCLEAR LT 0.0 M

***** NAVIGATION DATA *****

(38) NAVIGATION CONTROL- NOT APPLICABLE CODE N
 (111) PIER PROTECTION- CODE
 (39) NAVIGATION VERTICAL CLEARANCE 0.0 M
 (116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
 (40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

***** SUFFICIENCY RATING *****

SUFFICIENCY RATING = 91.0
 STATUS
 HEALTH INDEX 100.0
 PAINT CONDITION INDEX = N/A

***** CLASSIFICATION ***** CODE

(112) NBIS BRIDGE LENGTH- YES Y
 (104) HIGHWAY SYSTEM- NOT ON NHS 0
 (26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
 (100) DEFENSE HIGHWAY- NOT STRAHNET 0
 (101) PARALLEL STRUCTURE- NONE EXISTS N
 (102) DIRECTION OF TRAFFIC- 2 WAY 2
 (103) TEMPORARY STRUCTURE-
 (105) FED.LANDS HWY- NOT APPLICABLE 0
 (110) DESIGNATED NATIONAL NETWORK - PART OF NET 1
 (20) TOLL- ON FREE ROAD 3
 (21) MAINTAIN- COUNTY HIGHWAY AGENCY 02
 (22) OWNER- COUNTY HIGHWAY AGENCY 02
 (37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

***** CONDITION ***** CODE

(58) DECK 8
 (59) SUPERSTRUCTURE 8
 (60) SUBSTRUCTURE 8
 (61) CHANNEL & CHANNEL PROTECTION 9
 (62) CULVERTS N

***** LOAD RATING AND POSTING ***** CODE

(31) DESIGN LOAD- MS-18+MOD OR HS-20+MOD 6
 (63) OPERATING RATING METHOD- ASSIGNED (LFD) A
 (64) OPERATING RATING- 54.1
 (65) INVENTORY RATING METHOD- ASSIGNED (LFD) A
 (66) INVENTORY RATING- 32.4
 (70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
 (41) STRUCTURE OPEN, POSTED OR CLOSED- A
 DESCRIPTION- OPEN, NO RESTRICTION

***** APPRAISAL ***** CODE

(67) STRUCTURAL EVALUATION 8
 (68) DECK GEOMETRY 9
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 9
 (72) APPROACH ROADWAY ALIGNMENT 8
 (36) TRAFFIC SAFETY FEATURES 1000
 (113) SCOUR CRITICAL BRIDGES 8

***** PROPOSED IMPROVEMENTS *****

(75) TYPE OF WORK- CODE
 (76) LENGTH OF STRUCTURE IMPROVEMENT M
 (94) BRIDGE IMPROVEMENT COST
 (95) ROADWAY IMPROVEMENT COST
 (96) TOTAL PROJECT COST
 (97) YEAR OF IMPROVEMENT COST ESTIMATE
 (114) FUTURE ADT 49459
 (115) YEAR OF FUTURE ADT 2031

***** INSPECTIONS *****

(90) INSPECTION DATE 12/14 (91) FREQUENCY 48 MO
 (92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
 A) FRACTURE CRIT DETAIL- NO MO A)
 B) UNDERWATER INSP- NO MO B)
 C) OTHER SPECIAL INSP- NO MO C)