

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: 55C0628

Bridge Name: San Juan Creek

Year Built: 1997

Facility Carried: Antonio Parkway

The San Juan Creek Bridge at Antonio Parkway is a continuous five span cast-in-place post tension concrete box girder with two column bents and closed end seat abutments supported on driven steel H-piles and CIDH piles. The bridge was widened in 2013.

Caltrans BIR recommendations:

- None
- Although not noted in recommendations, the element inspection report indicates the bridge will qualify for deck treatment since ~68,000 ft² of deck is in condition state 2.

Field Inspection Observations

- Expansion joints and deck drains are full of dirt.
- Sand is piling up on the northeast side of sidewalk.

Maintenance Needs Assessment

BPMP Assessment

- Deck treatment is eligible for funding. However, consider low priority at this time.

General Maintenance – Non-BPMP

- Clean deck drains and remove sand from sidewalk.

Proposed BPMP Construction Costs

- Seal bridge deck ≈ \$200,000
- Estimated Total Construction Cost ≈ \$250,000 (with engineering, traffic control, mobilization and contingency)

Construction Items Not Funded by BPMP

- Unplug deck drains ≈ \$10,000, includes traffic control and assumes pipes clogged

APPENDIX A

Photos and BIR



Photo 1:



Photo 2:



Photo 3:



Photo 4:



Photo 5:



Photo 6:



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0670
Facility Carried: HICKS CANYN HAUL RD
Location : 4.6 MI. SE/O CHAPMAN AVE
City :
Inspection Date : 08/13/2015
Inspection Type
Routine FC Underwater Special Other

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Bridge Inspection Report

STRUCTURE NAME: HICKS CANYON HAUL ROAD OC

CONSTRUCTION INFORMATION

Year Built : 1995 Skew (degrees): 0
Year Widened: N/A No. of Joints : 0
Length (m) : 36.5 No. of Hinges : 0

Structure Description: Simply supported two span PC/PS concrete channel girders (3 each) with a continuous composite CIP concrete deck, and with an RC two column bent, and with RC open end diaphragm abutments, all supported upon driven Class 70C piles.

Span Configuration : (S) 13.0 m, 22.3 m (N) c/c

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=1.00 =>32.4 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT
Operating Rating: RF=1.67 =>54.1 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT
Permit Rating : PGGGG
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.2 m br, 0.7 m sw, 7.3 m, 0.7 m sw, 0.2 m br (E)
Total Width: 9.1 m Net Width: 7.3 m No. of Lanes: 2 Speed: mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 Inches
Rail Code: 1000

Rail Type	Location	Length (ft)	Rail Modifications
Type 26	Right/Left	150	

DESCRIPTION UNDER STRUCTURE

Facility Name	Func Class	Lanes	Horiz Clr (m)	Vert Clr (m)
Santiago Canyon Road	14	2	18.30	4.80

Channel Description: Under span #1 natural with riprap under the structure.

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

The channel was dry during this inspection, and substructure elements were visually inspected. The top did not inspected

INSPECTION COMMENTARY**DECK AND ROADWAY**

The roadway on the structure is closed there is no public access.

SAFE LOAD CAPACITY

A Load Rating Summary Sheet is included with this bridge inspection report. The current rating has been assigned in accordance with SM&I procedures

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each State	Condition	State
							St. 1	St. 2	St. 3 St. 4
15			Top Flange-PS Conc.	2	333	sq.m	333	0	0 0
(15)			There were no significant defects noted.						
511			Deck Wearing Surface-Concrete	2	266	sq.m	266	0	0 0
(16-511)			There were no significant defects noted.						
109			Girder/Beam-PS Conc.	2	105	m	105	0	0 0
(109)			There were no significant defects noted.						
205			Column-RC	2	2	each	2	0	0 0
(205)			There were no significant defects noted.						
215			Abutment-RC	2	24	m	24	0	0 0
(215)			There were no significant defects noted.						
226			Pile-PS Conc.	2	1	ea.	1	0	0 0
(226)			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.						
234			Pier Cap-RC	2	18	m	18	0	0 0
(234)			There were no significant defects noted.						
312			Bearing-Enclosed	2	2	each	2	0	0 0
(312)			There were no significant defects noted.						
331			Railing-RC	2	72	m	72	0	0 0
(331)			There were no significant defects noted.						

WORK RECOMMENDATIONS - NONE

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Inspected By : MT.Zaarour/KD.Henderson

Mikhael T. Zaarour *9/23/15*
Mikhael T. Zaarour (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME- CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0670
 (5) INVENTORY ROUTE (ON/UNDER) - ON 11800000
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED- SANTIAGO CANYON ROAD
 (7) FACILITY CARRIED- HICKS CNYN HAUL RD
 (9) LOCATION- 4.6 MI. SE/O CHAPMAN AVE.
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
 (16) LATITUDE 33 DEG 45 MIN 34.8 SEC
 (17) LONGITUDE 117 DEG 42 MIN 10.15 SEC
 (98) BORDER BRIDGE STATE CODE % SHARE %
 (99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- PRESTRESS CONC
 TYPE- STRINGER/MULTI-BEAM OR GDR CODE 502
 (44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
 TYPE- OTHER/NA CODE 000
 (45) NUMBER OF SPANS IN MAIN UNIT 2
 (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 1995
 (106) YEAR RECONSTRUCTED 0000
 (42) TYPE OF SERVICE: ON- HIGHWAY 1
 UNDER- HIGHWAY W/NO PEDESTF 1
 (28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 02
 (29) AVERAGE DAILY TRAFFIC 1
 (30) YEAR OF ADT 2009 (109) TRUCK ADT 0 %
 (19) BYPASS, DETOUR LENGTH 22 KM

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

(48) LENGTH OF MAXIMUM SPAN 22.6 M
 (49) STRUCTURE LENGTH 36.5 M
 (50) CURB OR SIDEWALK: LEFT 0.7 M RIGHT 0.7 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 7.3 M
 (52) DECK WIDTH OUT TO OUT 9.1 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 7.3 M
 (33) BRIDGE MEDIAN- NO MEDIAN 0
 (34) SKEW 0 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 7.3 M
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
 (54) MIN VERT UNDERCLEAR REF- HIGHWAY 4.87 M
 (55) MIN LAT UNDERCLEAR RT REF- HIGHWAY 3.6 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 = 97.0
 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- LOCAL URBAN 19
 (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 - NOT ON NET 0
 (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 N
 (62) CULVERTS N

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

CODE
 (31) DESIGN LOAD- UNKNOWN 0
 (63) OPERATING RATING METHOD- FIELD EVAL/ENG JUD 0
 (64) OPERATING RATING- 54.1
 (65) INVENTORY RATING METHOD- FIELD EVAL/ENG JUL 0
 (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 6
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL 5
 (71) WATER ADEQUACY N
 (72) APPROACH ROADWAY ALIGNMENT 8
 (36) TRAFFIC SAFETY FEATURES 1000
 (113) SCOUR CRITICAL BRIDGES N

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

CODE
 (75) TYPE OF WORK-
 (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 1
 (115) YEAR OF FUTURE ADT 2035

***** INSPECTIONS *****

(90) INSPECTION DATE 08/15 (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)