

## **C-15**

August 18, 2020

HONORABLE MAYOR AND CITY COUNCIL  
City of Long Beach  
California

### RECOMMENDATION:

Request the City Attorney to prepare an Ordinance establishing the weight limit on the Ravenna Bridge not to exceed 34 tons. (District 3)

### DISCUSSION

City Council approval is requested to set a weight limit not exceed 34 tons on the Ravenna Bridge over the Rivo Alto Canal (Attachment A).

As a result of a recent inspection and load rating analysis (Attachment B) routinely provided by the County of Los Angeles (County), reported bridge ratings have changed for the subject Ravenna Bridge, and weight limits are being imposed as per Code of Federal Regulations Title 23, Part 650 Subpart C – National Bridge Inspection Standards. The recent load rating analysis finds the capacity of the bridge to be less than previously reported due to a more refined analysis of the bridge's structural composition. The maximum allowable loads must now be adjusted based on this analysis. As per Section 35751 (b) of the California Vehicle Code, the City Council is requested to determine and post the weight limit as not to exceed 34 tons based on recommendations from the County for safety considerations, and an Ordinance is required for enforcement purposes.

This matter was reviewed by Deputy City Attorney Amy R. Webber on July 9, 2020 and by Budget Analysis Officer Julissa José-Murray on July 30, 2020.

### TIMING CONSIDERATIONS

City Council action is requested on August 18, 2020, to allow timely implementation of weight limits to preserve the integrity of the bridge.

### FISCAL IMPACT

There is no fiscal or local job impact associated with this recommendation. This recommendation has no staffing impact beyond the normal budgeted scope of duties and is consistent with existing City Council priorities.

HONORABLE MAYOR AND CITY COUNCIL

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SUGGESTED ACTION:

Approve recommendation

Respectfully submitted



ERIC LOPEZ

DIRECTOR OF PUBLIC WORKS

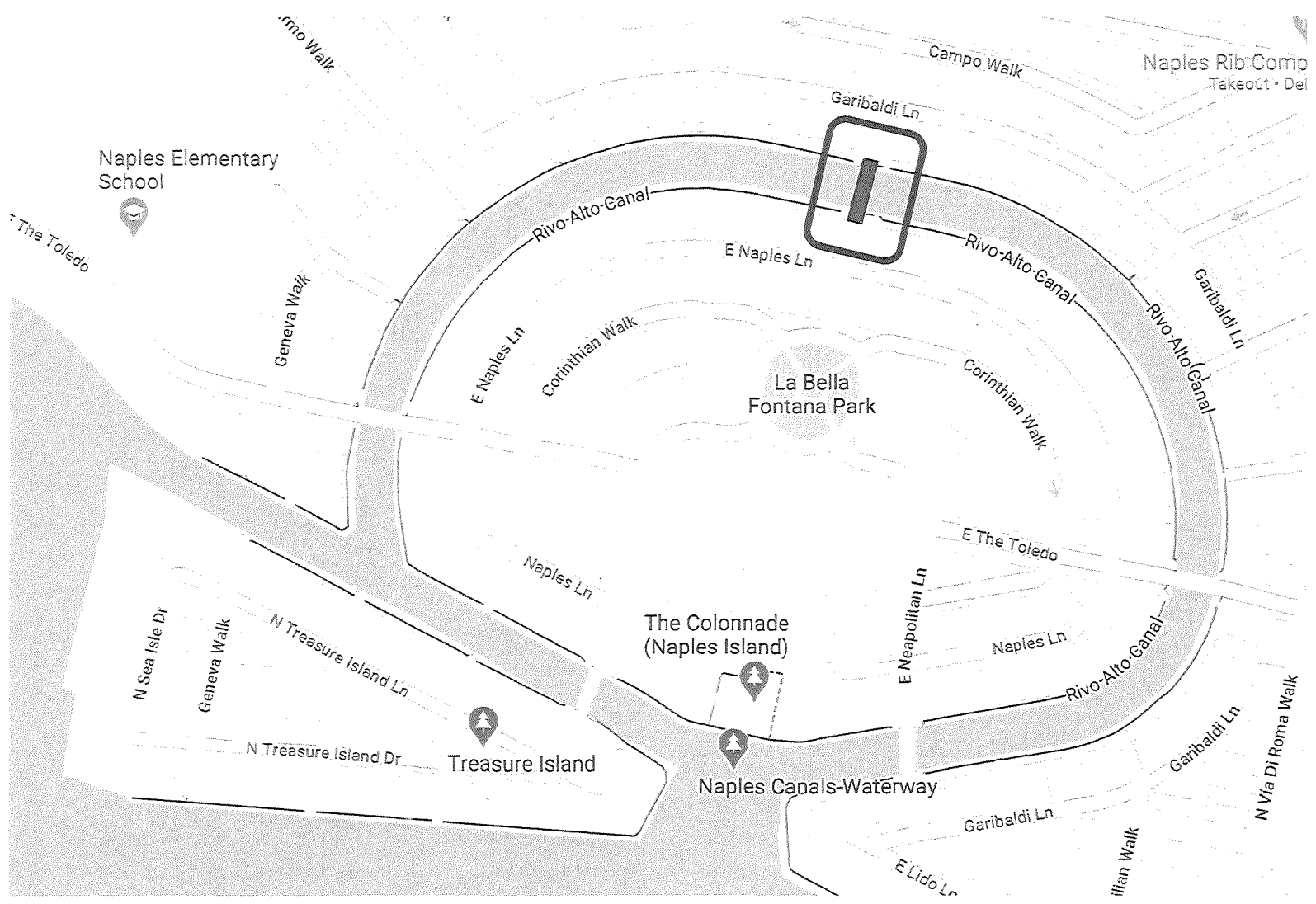
APPROVED:



THOMAS B. MODICA  
CITY MANAGER

ATTACHMENTS: A – MAP OF BRIDGE  
B – LOAD RATING ANALYSIS

# Attachment A – Map of Bridge



## STRUCTURE RATING DATA SHEET

|                           |                  |                    |      |
|---------------------------|------------------|--------------------|------|
| <b>BRIDGE NO:</b>         | 53C0024          | LA County Br. No : | 2945 |
| <b>Facility Carried :</b> | RAVENNA DR       |                    |      |
| <b>Location :</b>         | 0.1MI S/O 2ND ST |                    |      |
| <b>BRIDGE NAME:</b>       | RIVO ALTO CANAL  |                    |      |

**Structural Elements Rated :**

Two Span RC Tee-beam Superstructure

**DESIGN LOADING**

|                | <u>Rating</u><br><u>Factor</u> | <u>Metric</u><br><u>Tons</u> | <u>CRITICAL LOCATION</u> |                        |                         |                 |
|----------------|--------------------------------|------------------------------|--------------------------|------------------------|-------------------------|-----------------|
|                |                                |                              | <u>Structure</u>         | <u>Control Element</u> | <u>Load Action</u>      | <u>Location</u> |
| HS20 Inventory | 0.55                           | <b>17.8</b>                  | Superstructure           | Interior Girder        | Design Shear - Concrete | Span 2 - 8.2%   |
| HS20 Operating | 0.85                           | <b>27.5</b>                  | Superstructure           | Interior Girder        | Design Shear - Concrete | Span 2 - 8.2%   |

**LEGAL RATING**

|                     | <u>Rating</u> | <u>Posting</u><br><u>US Tons</u> | <u>Structure</u> | <u>Control Element</u> | <u>Load Action</u>        | <u>Location</u> |
|---------------------|---------------|----------------------------------|------------------|------------------------|---------------------------|-----------------|
| Type 3 (25T)        | 1.09          | <b>Legal</b>                     | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| Type 3S2 (36T)      | 0.97          | <b>34</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| Type 3-3 (40T)      | 1.08          | <b>Legal</b>                     | Superstructure   | Interior Girder        | Design Flexure - Concrete | Span 1 - 100%   |
| NRL (40T)           | 0.75          | <b>30</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| SHV - SU4 (27T)     | 1.00          | <b>Legal</b>                     | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| SHV - SU5 (31T)     | 0.91          | <b>28</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| SHV - SU6 (34.75T)  | 0.83          | <b>28</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| SHV - SU7 (38.75T)  | 0.82          | <b>31</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| FAST - EV2 (28.75T) | 0.99          | <b>28</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| FAST - EV3 (43T)    | 0.70          | <b>30</b>                        | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |

**PERMIT RATING**

|           | <u>Rating</u> | <u>Permit</u><br><u>Rating</u> | <u>Structure</u> | <u>Control Element</u> | <u>Load Action</u>        | <u>Location</u> |
|-----------|---------------|--------------------------------|------------------|------------------------|---------------------------|-----------------|
| P5 Split  | 0.47          | <b>X</b>                       | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| P7 Split  | 0.47          | <b>X</b>                       | Superstructure   | Interior Girder        | Design Shear - Concrete   | Span 2 - 8.2%   |
| P9 Split  | 0.47          | <b>X</b>                       | Superstructure   | Interior Girder        | Design Flexure - Concrete | Span 1 - 100%   |
| P11 Split | 0.47          | <b>X</b>                       | Superstructure   | Interior Girder        | Design Flexure - Concrete | Span 1 - 100%   |
| P13 Split | 0.47          | <b>X</b>                       | Superstructure   | Interior Girder        | Design Flexure - Concrete | Span 1 - 100%   |

**RELEVANT LOAD RATING INFORMATION****Notes:**

Load rating calculations were completed by Albert Wong on 3/25/2020. Bridge Inspection Report dated 1/22/2019 was used to verify the physical conditions assumed in the above referenced load rating calculations.

|                         |   |                |
|-------------------------|---|----------------|
| Overlay Used in Rating: | None  |                |
| Rating Type:            | Calculated  |                |
| Rating Date:            | 03/25/2020  |                |
| Rating Method:          | 1 (LF Load Factor)                                    | Inventory (65) |
|                         | 1 (LF Load Factor)                                    | Operating (63) |
| Control Rating By:      | Albert Wong   |                |
| Rating Checked By:      | David Chan  |                |
| Analysis Tool:          | BrR 6.7.0 AASHTO                                      |                |
| Rating File Location:   | LA County Department of Public Works, Design Division |                |
| Summary Prepared By:    | Albert Y Wong   |                |
| Summary Date:           | 03/25/2020  |                |

