Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

Metro

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TO: BOARD OF DIRECTORS

THROUGH: ARTHUR T. LEAHY
CHIEF EXECUTIVE OFFICER

FROM: BRYAN PENNINGTON
EXECUTIVE DIRECTOR, ENGINEERING AND CONSTRUCTION

SUBJECT: REMEDIAL MEASURES FOR METRO GOLDLINE BRIDGE STRUCTURES - 101 BRIDGE AND CHINATOWN STATION AERIAL GUIDEWAY (C1092)

ISSUE

This report is to update the Metro Board of Directors on the status of the repairs needed for the Gold Line 101 Bridge and Chinatown aerial structure. Observations made recently by Metro Facilities Maintenance and inspection made by Metro Engineering concluded that the structures were safe but repairs were needed. Because there were no load bearing structural damages observed to the bridges, it was safe to continue operations without any interruption. However, to protect the public from potential falling of concrete spalls, a repair is required. CEO Art Leahy authorized the use of "Remedial Measures for Metro Gold Line Bridge Structures" to allow a streamlined procurement of the required repairs.

DISCUSSION

Staff initiated an investigation and inspected the damaged areas along the Metro Gold Line alignment. The investigation focused on two areas of the alignment. The first was abutment 10 which supports the Metro Gold Line guideway just south of the 101 Freeway. The second location was along the guideway at Chinatown Station where, adjacent to a guideway movement joint, anchors supporting a post of the emergency guardrail had created minor damage to the concrete.

On April 11, Metro Engineering and Facilities Maintenance visited the site of the reported spalling concrete at the 101 bridge. As seen in the photo to the right, the concrete curb on the abutment was being crushed by the curb on the bridge which was pushing on the abutment. The movement exceeded the width of the as constructed gap at the movement joint. Once the bridge closed the joint gap, further movement caused distress between the curb on the abutment and the curb on the bridge causing the additional strain. It is believed that a wider gap between the abutment and the bridge curbs would eliminate the problem, and a design has been developed to provide for this wider gap.

During the field visit it was also observed that the joint seal at the abutment was not properly installed, causing water leakage, which in turn caused surface corrosion of the abutment rebars. The design for the repair work will provide for the removal and replacement of the joint seal.

The first step was to ensure public safety. Loose and spalling concrete was removed mechanically to eliminate any potential hazard due to falling concrete for any persons below the damaged area. As seen in the photo to the right the loose concrete plates have been removed eliminating the hazard. However, the reinforcement is now exposed and requires remediation before further corrosion proceeds.

At the Chinatown station, spalling has again occurred but for a different reason. The area of distress occurs at the anchorage support of a guardrail fence along the edge of the elevated guideway. The damage is occurring adjacent to a movement joint. The long sections of concrete guideway girders are interrupted and joints are provided to allow movement between these long segments. The guardrail fence that is supported on the guideway is also provided with slip joints (sleeves in the guardrail) to

accommodate that movement. However, in this instance, the guardrail joints and the movement joints were not coordinated and do not occur at the same location as intended. The result is that when the Guideway Bridge moves, the stress is transferred to the guardrail. The guardrail responds by trying to resist the movement of the guideway and surface damage to the concrete has occurred. The weakest part of the guardrail is its connection at the post base. There the anchors are again causing spalling and local cracking to the concrete.

As seen in the photo to the right, spalling at the post base is caused by the guardrail trying (and failing) to resist the movement of the guideway bridge across the movement joint.

Present status (as of May 5, 2014)
During the last two weeks Metro Engineering has developed the design for the repairs of the structures and a solicitation for a Design Bid Build Contact (C1092) was prepared to remediate the spalling and cracking observed at both the 101 Bridge site and at the Chinatown Station site.

A streamlined procurement process was authorized by CEO Art Leahy who signed a "Remedial Measures" for the repairs. On April 25, 2014 the solicitation package was transmitted to six (6) contractors inviting them to bid the job. A site field visit was held with the potentials bidders on May 1st 2014 to perform a job walk and introduce the Scope of Work. Following the job walk, a brief question and answer period took place.

NEXT STEPS

Qualifications and bids are due on May 12, 2014. The project schedule calls for a week for the Evaluation, Award and NTP given on May 19, 2014 with a five (5) week construction period leading to a completion date of June 6, 2014.