THE CITY OF SAN DIEGO

REPORT TO THE CITY COUNCIL

DATE ISSUED: REPORT NO: 13-104

ATTENTION: Infrastructure Committee

SUBJECT: City of San Diego Bridge Program

REFERENCE: None

REQUESTED ACTION:

This is an information item only

BACKGROUND:

There are over three hundred bridges within the City of San Diego that span waters, streets and canyons. A bridge is defined by the Federal Highway Administration as a structure 20 feet or longer providing a passage over a gap or barrier. The Public Works Department has historically been responsible for managing the City's Bridge Program, however, in 2011, Transportation & Storm Water (TSW) Department took over the coordination of this function. The Bridge Program monitors the condition of existing bridges, determines maintenance needs, and seeks funding for needed repairs and improvements. Certain categories of bridges are inspected by Caltrans once every two years. As part of the inspection, Caltrans develops a bridge inspection report detailing the condition of the bridge and needed repairs. Depending on the bridge classification, the City is responsible for repairing portions of the bridge or the entire bridge. To ensure safe operational use of bridges, City staff works closely with Caltrans to monitor the condition of bridges within the public right-of-way, and pursue State/Federal grant funds to address the needed bridge repairs.

Bridge Classification:

Bridges within the City of San Diego are categorized into three categories: 'A' Bridges, 'C' Bridges, and 'M' Bridges.

A Bridges

'A' Bridges are pedestrian and bicycle bridges which cross over an area other than a roadway (i.e. canyons, creeks, and open space). The City has identified twenty-five 'A' bridges and is currently working on updating this inventory. The inspection and maintenance of "A" bridges is the responsibility of the City.

C Bridges

'C' Bridges are either vehicular or pedestrian bridges crossing a City street. There are 142 'C' bridges in the City (126 vehicular bridges and 16 pedestrian bridges). While Caltrans does the biannual scheduled inspection of these bridges, the City is responsible for their maintenance.

M Bridges

'M' Bridges are vehicular or pedestrian bridges carrying a City street crossing over a State road (i.e. freeway). There are 126 'M' bridges identified in the City. 'M' bridges are Caltrans' facilities and Caltrans is responsible for structural repairs of the bridge. The City is only responsible for the maintenance of the bridge surface (i.e. pavement, sidewalk, streetlights, and guardrail).

DISCUSSION:

Inspection of Bridges:

The City is responsible for the inspection of 'A' bridges and Caltrans conducts the inspection of 'C' and 'M' bridges. The City policy is to inspect 'A' bridges on an as needed basis and Caltrans' policy is to inspect 'C' and 'M' bridges once every two years. As part of the inspection, Caltrans develops a bridge inspection report detailing the condition of the bridge and any needed repairs.

While the City is responsible for the maintenance of the 'C" bridges, 'M' bridges are owned by Caltrans and the structural integrity of the bridge is their responsibility. Caltrans notifies the City only if the bridge surface needs repair or maintenance, otherwise, the City does not receive inspection reports on 'M' bridges. Attachment A provides an overview of the City bridge inspection program.

Bridge Rating:

A Bridges:
The City's Bridge Engineer in the Public Works Department conducts a visual inspection on an as needed basis and identifies areas of needed maintenance. After the inspection, the corresponding asset owner is notified about the condition and needed repairs of the bridges.

C Bridges:

Vehicular 'C' Bridges:

A Sufficiency Rating is used in Caltrans inspection reports to evaluate the condition of vehicular 'C' bridges. Sufficiency Ratings include the evaluation of Structural Adequacy and Functionality. If these factors do not meet minimum requirements, a bridge is classified as either "structurally deficient" and/or "functionally obsolete".

Structurally deficient describes a bridge that has one or more structural defects that require attention. The condition of the bridge deck, superstructure, and substructure are all assessed to determine if a bridge is structurally deficient. For example, a bridge with cracks or potholes in the deck or a bridge with exposed rebar and chipping concrete on the columns may be rated as structurally deficient. The fact that a bridge is "structurally deficient" does not imply that it is likely to collapse or that it is unsafe. It means the bridge must be monitored, inspected and maintained.

Functionally Obsolete is a status used to describe a bridge that is no longer functionally adequate for its task. For example, a bridge doesn't have enough lanes to accommodate the traffic flow, or it does not have adequate vertical clearance below the bridge according to current standards. A Functionally Obsolete bridge may be perfectly safe and structurally sound.

A low Sufficiency Rating may be due to structural defects, narrow lanes, or low vertical clearance. On the inspection report, a sufficiency rating of 100 would represent an entirely sufficient bridge and zero would represent an entirely insufficient or deficient bridge. Bridges with a Sufficiency Rating of 50 and below are mandated by the State for rehabilitation or replacement. Bridges with Sufficiency Rating above 50 and below 80 are eligible for federal funding for rehabilitation or replacement. Bridges with Sufficiency Rating above 80 require minor maintenance work.

Pedestrian 'C' Bridges:

Pedestrian 'C' bridges crossing over a City Street or a State facility are also inspected by Caltrans once every two years. Unlike vehicular bridges, pedestrian bridges do not receive a sufficiency rating. Pedestrian bridges do receive a structural evaluation during their inspection. A Structural evaluation includes assessment of the bridge superstructure and substructure. A structural evaluation rating of 9 would represent an excellent structural condition, and zero would represent an entirely structural deficient bridge. Structural Evaluation Rating of 3 and below indicates the bridge requires high priority of repair or replacement. Rating of between 4 and 7 indicates the bridge structural condition is acceptable. Bridges with Structural Evaluation Rating of 7 and above are in excellent structural condition.

M Bridges:

'M' Vehicular and Pedestrian bridges are owned by Caltrans. Caltrans rates the bridges by the same method as 'C' bridges. Caltrans is responsible for the maintenance of the entire bridge except the surface (i.e. pavement, sidewalk, streetlights, and guardrail). The City is notified only if the bridge surface needs maintenance. Otherwise, the City does not receive inspection reports on vehicular and pedestrian 'M' bridges.

Current Bridge Conditions:

A Bridges:

Based on as needed inspections, minor repairs have been identified on Spruce St Bridge. Most of the repairs have been addressed by Street Division staff. All remaining repairs will be done by the end of current fiscal year. At this time, no structural deficiencies are reported for 'A' bridges. The City is in the process of establishing a bridge inspection program to inspect these bridges on regular bases.

C Bridges:

Vehicular 'C' Bridges:

According to the latest Caltrans bridge inspection reports, there are two vehicular 'C' bridges with a Sufficiency Rating below 50. These bridges are Georgia St Bridge over University Ave (classified as structurally deficient) and Laurel Street Bridge over State Route 163 (classified as functionally obsolete). These two bridges are currently being rehabilitated as part of the City's Capital Improvement Program.

There are thirty seven vehicular 'C' bridges within the City of San Diego that have a sufficiency rating above 50 and below 80. Eleven of these bridges are classified as Structurally Deficient due to a poor bridge deck condition. According to Caltrans' bridge inspection reports, these bridges have Structural Evaluation ratings ranging from satisfactory to good. In addition, nine of the thirty two bridges are classified as Functionally Obsolete, because their deck geometry, clearance, or approach roadway alignment does not meet the current standards. There are three bridges being rehabilitated or replaced as part of the City's current Capital Improvement Program. These bridges include El Camino Real Bridge over San Dieguito River, West Mission Bay Drive Bridge over San Diego River, and Voltaire Street Bridge.

Table A summarizes the sufficiency ratings for vehicular 'C' bridges in the City.

Table A

Sufficiency Rating of Vehicular 'C' Bridges			
Sufficiency Rating	**Comments**		
SR	**Category**	**Num. of Bridges**	**Description**
SR≤50 (2 Bridges)	Structurally Deficient	1	Georgia St bridge is being rehab as part of the current CIP
	Functionally Obsolete	1	Laurel St bridge is being rehab as part of the current CIP
50≤SR≤80 (37 Bridges)	Structurally Deficient	11	• Structurally Deficient due to poor bridge deck condition. Bridges have Structural Evaluation ratings ranging from satisfactory to good. • 3 bridges are being replaced/rehab as part of the current CIP. These bridges are: o El Camino Real over San Dieguito River o West Mission Bay Dr Bridge over SD River o Voltaire St Bridge.
	Functionally Obsolete	9	• Functionally Obsolete because of bridge deck geometry, clearance, or approach roadway alignment does not meet the current standard. Bridges have Structural Evaluation ratings ranging from satisfactory to good.
		17	• Neither Structurally Deficient nor Functionally Obsolete. Need minor repairs
SR>80 (87 Bridges)		87	Potential improvements if needed include minor maintenance repair.
Total		**126 Bridges**	

Pedestrian 'C' Bridges:
There are 16 pedestrian 'C' bridges in San Diego. Pedestrian bridges receive a structural evaluation as part of their inspection. According to the latest Caltrans bridge inspection reports, these bridges have structural evaluation ratings ranging from satisfactory to excellent.

Table B summarizes the structural evaluation of the pedestrian 'C' bridges.

Table B

Structural Condition of Pedestrian 'C' Bridges	
Category	Num. of Bridges
Satisfactory	2
Good	12
Excellent	2
Total	**16 Bridges**

M Bridges:

Vehicular and Pedestrian 'M' bridges are owned and maintained by Caltrans except for the surface of the bridge. Caltrans is responsible for monitoring the condition of vehicular and pedestrian 'M' bridges and the City is notified only if the surface of a vehicular or pedestrian 'M' bridge needs maintenance or repair. There are currently no roadway surfaces on vehicular or pedestrian 'M' bridges within the City on record needing maintenance or repair.

FUNDING:

As the bridges continue to age and traffic demand continues to increase, having sufficient funding for the replacement and rehabilitation of aging bridges requires a consistent source of funding.

A Bridges:

Funding for 'A' bridges currently competes with other City wide transportation infrastructure. There are no State or Federal grants available to maintain 'A' bridges, therefore, the City seeks funding from similar sources used for CIP infrastructure.

C Bridges:

City staff works closely with Caltrans to pursue State/Federal grant funds to address needed bridge repairs. The City applies yearly for two major grants, the Local Highway Bridge Program (HBP) and Bridge Preventive Maintenance Program (BPMP). HBP provides

funding for rehabilitation or replacement of public highway bridges. BPMP provides funding for preventive maintenance works. The federal reimbursement rate is 88.53% of the project costs including preliminary engineering, right of way, and construction costs. The City is responsible for the remaining 11.47% of the project cost. The grant matches are typically funded with Transnet funds. Staff continues to coordinate closely with Caltrans and the Federal Highway Administration to ensure funding is allocated to the most critical bridges in San Diego.

To date, the funding the City is receiving from State and Federal grants is adequate to maintain the existing vehicular and pedestrian 'C' bridges within the acceptable sufficiency and structural rating ranges.

However, a challenge the City faces is Caltrans High Cost Project Policy. This policy applies to projects that cost over $20 million and is enforced on our larger bridge projects. The policy applies to federally funded transportation projects with costs in excess of $20 million. Local agencies are required to commit Advance Construction funds in the full amount and that agency would then be reimbursed with federal funds on an annual basis, as approved. The key caveat to this requirement is that the federal funds will be authorized annually and that there is some level of risk that the agency may not be fully reimbursed if the funding is not available. The City Charter requires us to certify full funding of the construction phase and thus this policy places the City in a situation of fully financing the project up front with limited commitment of getting reimbursed. The City Charter can only be modified by a vote of electorate, and not by the Mayor of San Diego or the San Diego City Council. Adherence to this policy could require the City to encumber millions of dollars in secure local funds or be precluded from undertaking larger federally funded transportation projects. Currently, there are three active projects that may be affected: West Mission Bay Bridge, El Camino Real Bridge and Laurel Street Bridge. Public Works Department has been working closely with Caltrans on each project separately to try to find ways to address this issue and move each project into construction phase.

M Bridges:

There are currently no roadway surfaces on vehicular or pedestrian "M" bridges within the City on record needing maintenance or repair. However, when repairs are needed in the future, the City will apply the Local Highway Bridge Program (HBP) grant to address the needed repairs.

FISCAL CONSIDERATIONS:

This is for information only. There are no fiscal considerations related to this report.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

None

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

As bridge candidates are developed into a CIP, the projects will provide community outreach efforts from concept planning through design and construction.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

The stakeholders are City of San Diego, FHWA, and Caltrans

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Attachment A: Overview of the City Bridge Inspection Program

Attachment A