



Quint Street Bridge

Update on condition and emergency repairs



Presentation Outline

- History of Quint Street Bridge
- Conditions and Inspection/Ratings prior to March 21
- March 21-28 Inspection Findings
- Structural Assessment and Emergency Repairs
- Bridge Replacement Schedule and Coordination with City (SF Board of Supervisors and SFCTA)
- Recommended Board Authorization/Next Steps

Quint Street Bridge History

- Built in 1907 – 107 years old
- Not constructed to current earthquake standards
 - Skew at street crossing compounds seismic activity risk
- Steel construction – fabricated and riveted
- Bridge is in poor condition and requires frequent inspection and measurement of deterioration
- Originally planned for replacement concurrent with the Jerrold Avenue bridge
 - This portion of the project was held up while resolving funding and bridge replacement options acceptable to the community

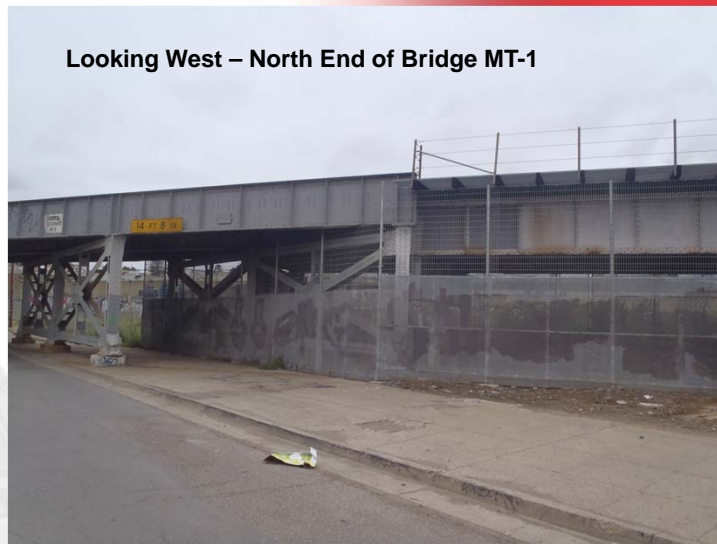
Conditions/Ratings Prior to March 21

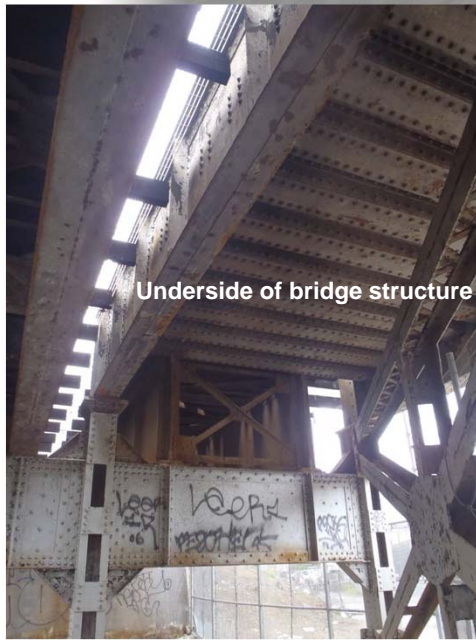
- Level of corrosion, section losses and cracks require monthly inspections
- Freight allowed on MT-1 (NB) to 40 mph. Freight on MT-2 (SB) speed restricted to 10 mph. Commuter service approved on both tracks for maximum authorized speed (79 mph)
- Caltrain engineers trained in bridge inspection monitoring specific high-risk areas of bridge for any changes in condition
- Bridge is safe for operation with known risks of deteriorating conditions – conditions are well documented and the deterioration process predictable

March 21 – 28 Inspection Findings

- Caltrain engineer observes new deteriorating conditions on MT-1
- Slow order for Caltrain passenger service placed on MT-1 for 30 mph maximum speed. Freight prohibited on MT-1. No speed changes to MT-2
- Staff contacts JPB's General Engineering Contractor for bridges/structures and issues emergency work directive to conduct detailed inspection
- Slow order placed on MT-1 for 10 mph for passenger train service. JPB staff and GEC bridge experts confirm conditions and slow order
- Trains are routed via single track in off-peak period on MT-2 to reduce cycles while assessment work continues
- Team notes observed condition is less predictable and requires immediate intervention/emergency repair

Looking West – North End of Bridge MT-1





Underside of bridge structure



Floor beam corrosion and section loss





MT-1 Broken Flange and Bulging Web

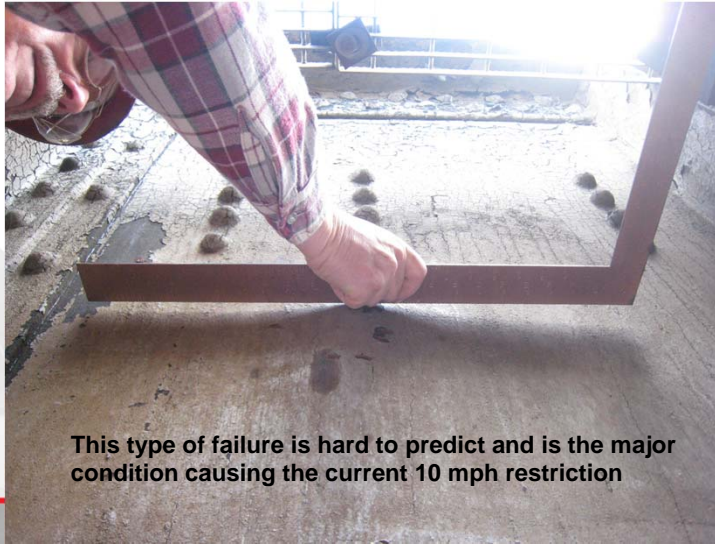
Location – closest to centerline north end MT-1



MT -1 Broken Bottom Flange at Bearing



MT-1 Web Plate Bulging at Bearing - Front



MT-1 Web Plate Bulging at Bearing - Back



MT-1 Bearing Stiffeners Corroded at Bottom



MT-1 Corrosion at Web & Floor Beam Connections



MT-1 Rust Hole at Web & Floor Beam



Emergency Inspection and Repairs

- HDR and staff continue assessment of entire structure to confirm all current conditions and bridge rating
- HDR and staff working on design options to implement an emergency repair for the MT-1 web buckling condition
- Probable repair will be to “sandwich” this beam with steel on each side, with drilled/bolted connections. The steel and structure are not suitable for a welded design solution
- If this emergency repair is successful, MT-1 may be rated for 30 mph for passenger service until bridge is replaced. Freight restrictions will remain in place

Bridge Replacement Schedule

- Current design option selected in coordination with City and SFCTA is to close Quint Street and construct a earth berm and remove bridge.
- SFCTA is proposing to acquire excess Union Pacific land west of Caltrain to construct a connector road between Quint and Jerrold Street
- Community preference has been to construct the connector road before the street closure and JPB's bridge project. Issues around the land acquisition and environmental clearance have delayed the connector road
- JPB staff has been in close touch with SF officials to express concerns with any further delays based on the current bridge condition
- The final approval/action to allow the JPB to close Quint is pending processing by SF real estate and a final hearing by the SF Board of Supervisors
- Based on these new conditions, the bridge project must proceed in advance of the connector road, which would be constructed after the JPB's work is complete

Recommended Board Action

- The assessment findings of the bridge condition constitute an emergency condition that requires immediate action
- Staff recommends the Board declare an emergency and authorize the JPB to repair and take other immediate actions required to address an emergency (Board Resolution)
- A complete estimate of repair cost is not yet known. Based on the current known conditions, the emergency repair and related costs should not exceed \$100,000
- Staff will update the Board as the repair process including schedule and cost are known.



Next Steps

- JPB staff will expedite the emergency repairs to reduce risk and improve the bridge rating for MT-1 passenger service
- JPB staff will work with the City and SFCTA to expedite the final street closure approval process
- JPB staff will immediately begin the final design of the berm option and prepare the project for bid
- JPB staff and our GEC will perform more frequent bridge inspections and update the Board on any new conditions
- Staff will work with City and stakeholders to communicate the need to proceed immediately with the bridge project