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Metro

SYSTEM SAFETY AND OPERATIONS COMMITTEE
SEPTEMBER 19, 2013

SUBJECT: GATE LATCHING SCHEDULE

ACTION: RECEIVE AND FILE

RECOMMENDATION

Receive and file report in response to the July 25, 2013 Amendment to Item 35: Gate Latching Schedule Provided to the Public.

ISSUE

At the July 25, 2013 Metro Board Meeting, Directors Yaroslavsky, O'Connor and Najarian amended Item 35 to request staff report back in 60 days on which of the Expo Phase 1 stations can be gated and provide a financial plan to implement gates at those stations. The second part of the amendment requested that staff report back on criteria for designing at-grade stations to accommodate gates, and what can be modified or changed in Metro's design criteria so that gates are incorporated at all at-grade stations currently under design or in the planning stages.

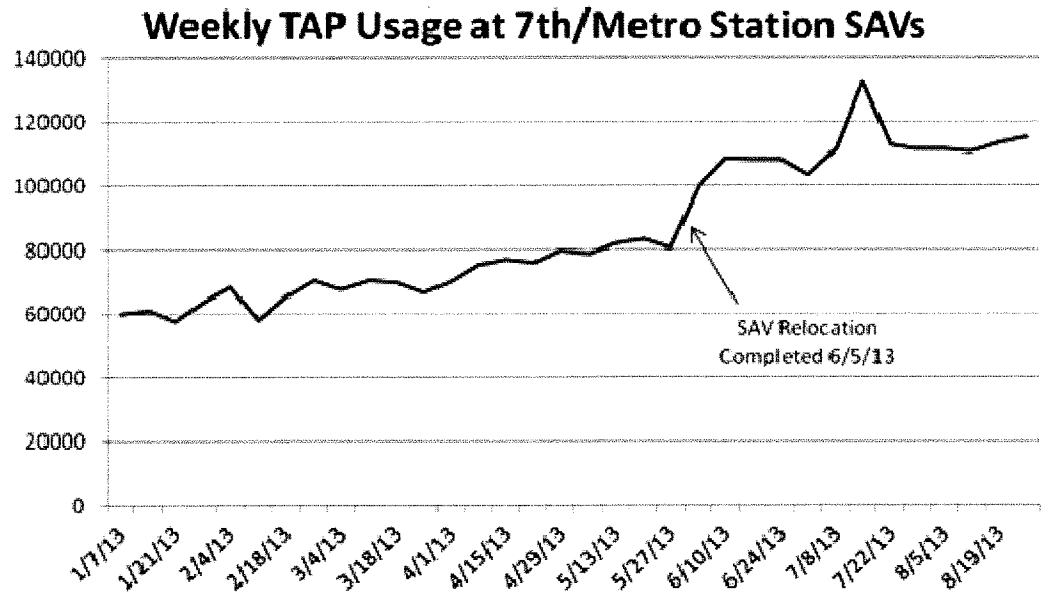
DISCUSSION

Staff performed a preliminary review of the 11 non-gated Expo Phase 1 light rail stations determining which are feasible to gate. The at-grade stations are 1) Pico, 2) 23rd Street, 3) Jefferson, 4) USC Exposition, 5) Vermont, 6) Western, 7) Crenshaw, and 8) Farmdale. The analysis indicates that the inclusion of fare gates on the existing eight at-grade Expo 1 stations would violate an egress requirement of Metro's Fire/Life Safety design criteria and National Fire Protection Association Standards. That requirement calls for half of the exiting capacity at the fare gate arrays to be provided with swing-open type gates. In order to meet the requirement under the proposed design by Engineering, the platform width would need to be widened by about four feet at a minimum. Egress calculations based on passenger volume, may require even more platform width. The analysis is based on the configuration proposed by Engineering to maximize the number of gates in the available space: a single turnstile, an ADA compatible gate, and a swing-open gate.

The three grade-separated stations are La Brea (East and West Plaza), La Cienega (East and West Plaza) and Culver City (East and West Plaza). The three aerial grade-separated stations may have sufficient space to implement the installation of fare gates, but are subject to further analysis to determine if there is sufficient emergency egress (Attachment A).

Staff will engage an engineering consulting firm to perform a detailed engineering analysis and report back to the Board with the results of the analysis. The detailed engineering analysis will consist of an Equipment Quantities Analysis, Queuing Analysis, and Exit Calculations to determine the impact of fare gates on emergency egress. Staff will report back at the January Board meeting with the results of the engineering analysis and staffs final recommendation.

At the eight at-grade stations, staff will assess the possibility of deploying additional Stand Alone Validators (SAV) at station entrances in the "Virtual Gate" configuration if there is insufficient space for the installation of faregates. A "Virtual Gate" configuration typically consists of the deployment of four SAV's between the paid and non-paid areas at the entrance to the platform boarding area forming a "Virtual Gate" line analogous to a fare gate array. The graph below indicates that the deployment of Virtual gates at 7th/Metro have been highly successful. Based on a 12 week average, the SAV usage increased by 48 percent.



At-Grade Station Design Criteria

Metro Rail Design Criteria currently identifies "Barrier" type configuration for fare gates to be used on grade-separated stations (elevated and underground) and be evaluated for use at at-grade stations where practical. The criteria can be modified to include Barrier type fare gates for all station configurations (elevated, underground and at-

grade). Metro Design Criteria Architectural and Systems Sections 6 and 9 will be modified requiring Fare Gates at future At-Grade Stations.

- **For projects that are currently in the planning stages and have not been advertised for bid**, the updated Design Criteria incorporating fare gates for at-grade stations must be included in the procurement documents.

- **For projects that have been advertised but not yet awarded**, an addendum must be provided for bidders to include the updated Design Criteria requiring fare gates on at-grade stations.

- **For projects that have been awarded and are currently under design or construction,** projects must be evaluated to determine feasibility for incorporation of at-grade fare gates. A change order and contract modification will be required to incorporate Design Criteria that has been revised.

DETERMINATION OF SAFETY IMPACT

The results of the exit calculations should identify the safety impacts, if any, due to the inclusion of faregates. The primary safety consideration is whether sufficient exiting capacity is provided to allow passengers to evacuate the station in a timely manner during an emergency condition. This is a fire/life safety concern and a pre-requisite for allowing fare gates. Established safety standards apply and compliance with the standards will need to be demonstrated.

FINANCIAL IMPACT

A rough order of magnitude (ROM) for equipment and construction cost to implement fare gates at the three grade-separated Expo Line stations is approximately $3,131,677 with an annual maintenance cost of $65,630. A ROM for the deployment of additional SAV's at the eight at-grade stations is $172,614 with an annual operating cost of $141,050. The ROM total for these efforts is approximately $3.5 million.

An annual net increase of approximately $490,000 in revenues is anticipated for latching the grade-separated stations. This represents a net revenue increase of approximately 19%. If revenues remain stable, it will take approximately seven years to pay off the investment.

NEXT STEPS

Staff will provide the results of the Expo Phase 1 detailed engineering analysis to the Board by the January 2014 Board meeting. If the results look favorable, staff will recommend funding approval and will proceed with a solicitation for a cost proposal from the fare collection equipment vendor to determine actual costs and will report back to the Board. Funding for these efforts may come from Homeland Security funds and/or

Prop 1B funds. Staff will continue to explore other funding sources depending on the actual cost.

For other current procurements and projects under construction, staff will identify funding and provide amendments and contract modifications where fare gates are feasible. Staff will modify Design Criteria for planning and design of future projects to include fare gates for at-grade and grade separated stations.

ATTACHMENT

A. Amendment to Item 35: Gate Latching Schedule July 25, 2013
B. Expo Line Phase 1 Gating Analysis

Prepared by: David Sutton, DEO TAP
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Questions: Michelle Stewart, Assistant Administrative Analyst, Operations
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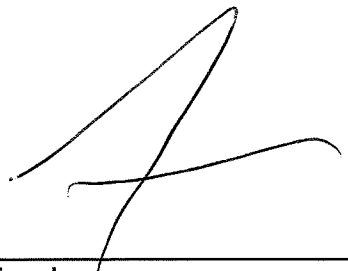
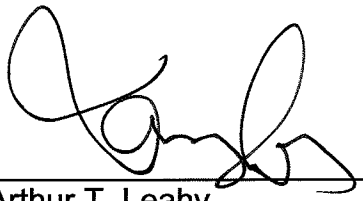


Frank Alejandro
Chief Operations Officer



Arthur T. Leahy
Chief Executive Officer

Motion by Directors Yaroslavsky, O'Connor, and Najarian

Amendment to Item 35

Gate Latching Schedule

July 25, 2013

In addition to providing the public with better communication on the timeline to latch our stations that have gates, it is also important that we provide gates to as many stations as possible. Currently, Expo Phase I does not have gates and Expo Phase II will only have gates at those stations that are elevated; due to current standards of design that do not permit gating at stations that are at-grade.

As we've seen since we implemented gate latching in late June, the system is working smoothly and without incident. Moreover, revenues are up and we are now able to obtain true ridership numbers, where people are going, and where people are coming from, etc.

Our system needs consistency and it's important that all stations, including at-grade stations, be designed to accommodate gates.

WE, THEREFORE, MOVE that staff report back in 60 days on which Expo Phase I stations can be gated and a financial plan to implement installation of gates at those stations; and

WE FURTHER MOVE that staff also report back on criteria for designing at-grade stations to accommodate gates, and what can be modified or changed in our existing criteria so that we can incorporate gates at all at-grade stations currently under design or in the planning stages.

ATTACHMENT B

EXPO LINE Station	Physical Description	Current Fare Gate Status	Fare Gate Placement	TVM Placement	Comments
Pico North	At grade center platform, on East side of street	Not gated	Not recommended	Entrance area, North end of platform	Shared with Blue Line. Recommend addition of 1 SAV to fill out virtual gate SAV line to total of 4 SAVs
Pico North	At grade center platform, on East side of street	Not gated	Not recommended	Entrance area, South end of platform	Shared with Blue Line. Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs
23rd Street - North	At grade center platform, on East side of street	Not gated	Not recommended	Entrance area, North end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
23rd Street - South	At grade center platform, on East side of street	Not gated	Not recommended	Entrance area, South end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
Jefferson – WB Platform	At grade side platform, on East side of street	Not gated	Not recommended	Entrance area, South end of platform	Recommend addition of 2 more SAVs to fill out virtual gate SAV line to total of 4 SAVs. Note: Separate CN already planned to install 2nd SAV.
Jefferson – EB Platform	At grade side platform, on East side of street	Not gated	Not recommended	Entrance area, South end of platform	Recommend addition of 2 more SAVs to fill out virtual gate SAV line to total of 4 SAVs. Note: Separate CN already planned to install 2nd SAV.
USC/Expo – WB Platform	At grade side platform, in middle of street	Not gated	Not recommended	Entrance area, West end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.

Metro Expo Line Gating Analysis
September 6, 2013

EXPO LINE Station	Physical Description	Current Fare Gate Status	Fare Gate Placement	TVM Placement	Comments
USC/Expo – EB Platform	At grade side platform, in middle of street	Not gated	Not recommended	Entrance area, West end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
Vermont – WB Platform	At grade side platform, in middle of street	Not gated	Not recommended	Entrance area, East end of platform	Recommend addition of 3 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
Vermont – EB Platform	At grade side platform, in middle of street	Not gated	Not recommended	Remote Ticketing areas, Two opposite East and West ends of platform on South side of Street; One opposite West end of platform on North side of street	SAVs already at the 2 virtual gate positions at top stairs on East end of platform, and the 2 positions at top of ramp on the West end of platform.
Western – WB Platform	At grade side platform, in middle of street	Not gated	Not recommended	Entrance area, East end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
Western – EB Platform	At grade side platform, in middle of street	Not gated	Not recommended	Entrance areas, West end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
Crenshaw – WB Platform	At grade side platform, on South side of street	Not gated	Not recommended	Entrance area, West end of platform	Recommend addition of 2 SAVs to fill out virtual gate SAV line to total of 4 SAVs.
Crenshaw – EB Platform	At grade side platform, on South side of street	Not gated	Not recommended	Entrance areas, East end of platform	Recommend addition of 1 SAV to fill out virtual gate SAV line to total of 4 SAVs.
Farmdale – WB Platform	At grade side platform, on South side of street	Not gated	Not recommended	Remote Ticketing area opposite West end of platform on North side of street	SAVs already at the 2 virtual gate positions at top of platform entrance stairs and the 2 positions on the parallel ramp.

EXPO LINE Station	Physical Description	Current Fare Gate Status	Fare Gate Placement	TVM Placement	Comments
Farmdale – EB Platform	At grade side platform, on South side of street	Not gated	Not recommended	Remote Ticketing Area opposite East end of platform on same side of street	SAVs already at the 2 virtual gate positions at platform entrance
La Brea – East Plaza	Grade separated station, with entrance plazas below on either side of street below	Not gated	Recommended. Possible location for two fare barriers on plaza, one on North side and one on South side of base of stairs and elevator	Entrance Plaza by base of stairs and elevator	
La Brea – West Plaza	Grade separated station, with entrance plazas below on either side of street below	Not gated	Recommended. Possible location for two fare barriers on plaza, one on North side and one on South side of base of stairs and elevator	Entrance Plaza by base of stairs and elevator	
La Cienega – East Plaza	Grade separated station, with entrance plazas below on either side of street below	Not gated	Recommended. Possible location for two fare barriers on plaza, one on North side and one on South side of base of stairs and elevator	Entrance Plaza by base of stairs and elevator	
La Cienega – West Plaza	Grade separated station, with entrance plazas below on either side of street below	Not gated	Recommended. Possible location for two fare barriers on plaza, one on North side and one on South side of base of stairs and elevator	Entrance Plaza by base of stairs and elevator	

EXPO LINE Station	Physical Description	Current Fare Gate Status	Fare Gate Placement	TVM Placement	Comments
Culver City – East Plaza	Grade separated station, with entrance plazas below on either end of station	Not gated	Recommended. Possible location for two fare barriers on plaza, one on North side and one on South side of base of stairs and elevator	Entrance Plaza by base of stairs and elevator	
Culver City – West Plaza	Grade separated station, with entrance plazas below on either end of station	Not gated	Recommended. Possible location for two fare barriers on plaza, one on North side and one on South side of base of stairs and elevator	Entrance Plaza by base of stairs and elevator	