METROPOLITAN
TRANSPORTATION
COMMISSION

Agenda Item 3
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Memorandum

TO: Regional Advisory Working Group DATE: March 30, 2018

FR: Dave Vautin

RE: 2020 and 2022 Congestion Mitigation and Air Quality (CMAQ) Performance Targets – Potential Options

The Moving Ahead for Progress in the 21st Century Act (MAP-21) transformed the policy and programmatic framework for surface transportation investments by establishing new requirements for performance management to ensure the most efficient investment of Federal transportation funds. To implement MAP-21 and the Fixing America's Surface Transportation (FAST) Act, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have established a Transportation Performance Management program to provide a framework to support improved investment decision-making by focusing on national transportation goals, increasing the accountability and transparency of the Federal highway programs, and establishing performance-based planning and programming.

Between April 2016 and January 2017, federal agencies finalized all performance management rules to fulfill MAP-21 and FAST Act requirements. The rules established 29 transportation performance measures covering the following federal goal areas: Safety; Infrastructure Condition; System Reliability; Freight Movement and Economic Vitality; Congestion Reduction; and Environmental Sustainability. While most targets set by state Department of Transportations (DOTs), Metropolitan Planning Organizations (MPOs), and transit agencies under the federally-required framework simply need to be coordinated between agencies, targets for congestion and mode shift are required to be fully consistent between the state DOT and the MPO, and they are required to be set for specifically-identified urbanized areas.

For this first round of target-setting, Caltrans and MTC are responsible for setting targets categorized as related to the Congestion Mitigation and Air Quality (CMAQ) program for year 2020 and year 2022 (both two- and four-year targets); these targets relate to the Congestion Reduction and Environmental Sustainability goals above. While MPO targets for CMAQ are not required to be finalized until November, Caltrans has a late May deadline from FHWA to identify these targets. After that point, MTC will not have any flexibility to modify urbanized area targets. As staff works collaboratively with Caltrans to agree upon targets by the May deadline, we are seeking feedback from partners, stakeholders, and the public on potential target options.

CMAQ Performance Measures Final Rule

What are the CMAQ performance measures?
The final rule from FHWA established three performance measures to assess performance for congestion reduction and environmental quality, which are required for regions receiving CMAQ funding:

1. Annual hours of peak-hour excessive delay per capita by urbanized area [targets 27(a) through 27(e)]
2. Percent of non-SOV travel by urbanized area [targets 28(a) through 28(e)]

3. Total emissions reductions from CMAQ-funded projects by pollutant [targets 29(a) through 29(e)]

What are the CMAQ target requirements?
State DOTs and MPOs must set two-year and four-year numerical targets every four years for each CMAQ measure to comply with the regulation. As noted above, unlike most other targets, the state DOT and MPO targets for each urbanized area must be fully consistent. MPOs will report progress on these measures in future Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs), as well as through a new CMAQ Performance Plan requirement. FHWA will review MPO performance as part of the triennial review process.

CMAQ Targets – Peak-Hour Excessive Delay (Traffic Congestion)
While Caltrans has not calculated the baseline 2017 congestion data for the San Francisco-Oakland and San Jose UAs, staff is looking for input on the **directionality** and **magnitude** of changes in peak-hour excessive delay between today and 2020/2022. Given the lack of data, staff has provided a trendline dataset from Vital Signs for a similar indicator as a point of reference (see **Figure 1**). Two options are currently being considered:

1. **Aspirational target:** set 2022 target to slightly reduce traffic congestion compared to baseline conditions *(likely to be the preferred approach from Caltrans)*
2. **Achievable target:** set 2022 target based on the existing trendline for traffic congestion

CMAQ Targets – Non-SOV Mode Share (Commuting)
For non-single-occupant vehicle mode share, staff has developed two options and is looking for feedback on which one would be most appropriate to advocate for in the target coordination process with Caltrans. As shown in **Table 1** and **Figure 2**, the two options under consideration are:

1. **Base on linear trend:** use data from the last four years specific to each urbanized area to identify 2020 and 2022 non-SOV mode share targets
2. **Align with Plan Bay Area 2040 target:** apply a consistent +1 percentage point target for 2020 and +2 percentage points target for 2022 to roughly align with the +10 percentage point mode shift target by year 2040 *(board-adopted target from Plan Bay Area 2040)*

CMAQ Targets – Emissions Reductions from CMAQ-Funded Projects
For emissions reductions, staff has identified a potential approach, merging three datasets together to develop a realistic future forecast for emissions reductions associated with CMAQ-funded projects. Future performance has been estimated through 2022, incorporating data related to:

- Past CMAQ project delivery & emissions reductions from the CMAQ Public Access System
- Upcoming projects in current Transportation Improvement Program project pipeline
- Expected emissions rates from a cleaner fleet from the EMFAC 2017 emissions model

Refer to **Table 1** for the list of proposed emission reduction targets; staff is looking for feedback on whether any modifications or further considerations should be incorporated into this approach.

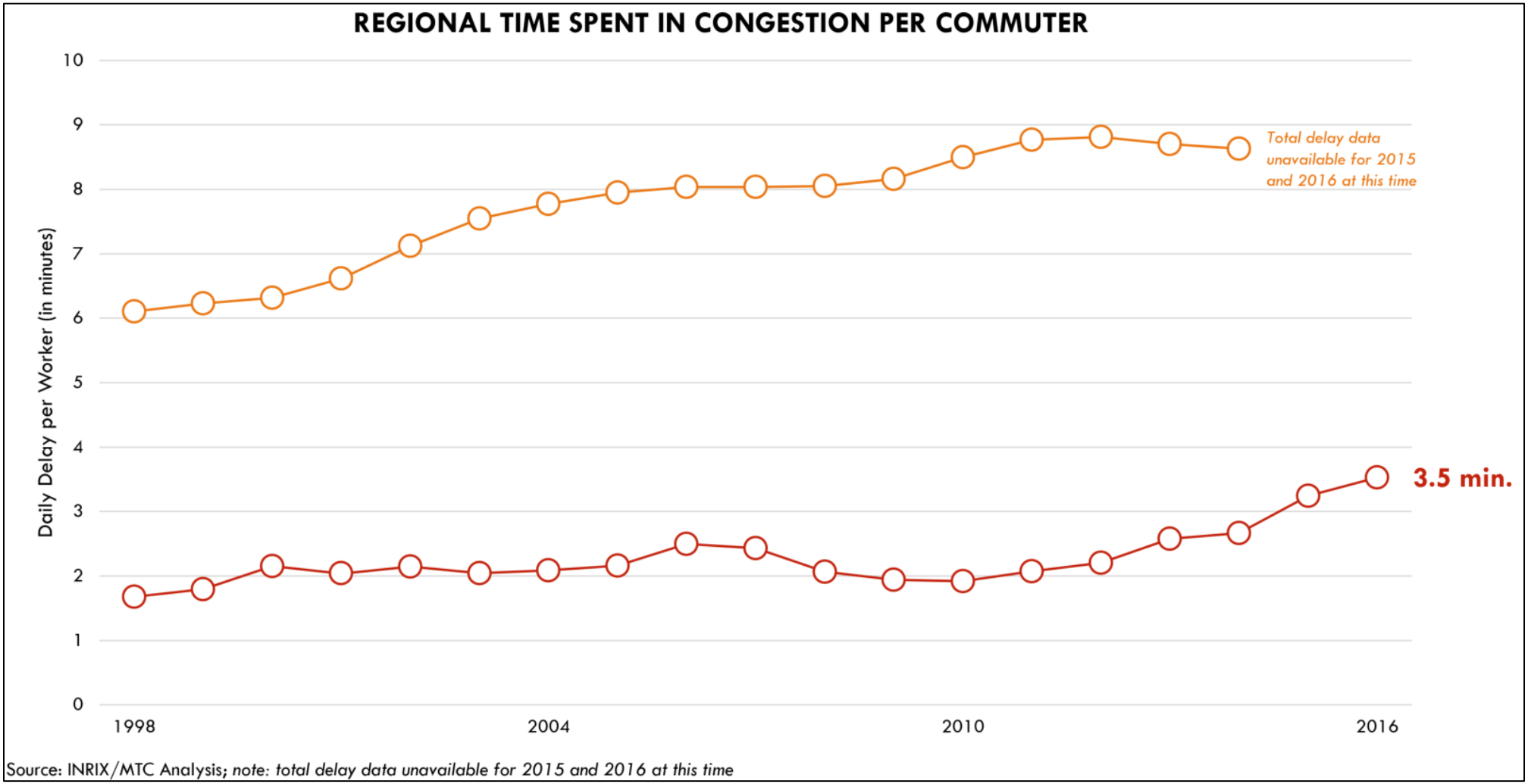
Next Steps
Given that Caltrans is only providing a brief 14-day formal comment period for MPOs during the month of May, staff is looking for feedback and guidance from stakeholders and the public by **April 17** on the approaches above. This will assist with the coordination process with Caltrans in April, and staff will return to RAWG in May to seek feedback on specific targets for CMAQ following that consultation. Finally, staff will provide a federal performance update to the MTC Planning Committee later this spring addressing both CMAQ and transit asset management targets.

Table 1. Draft CMAQ Target Baselines and Target-Setting Options for 2020 and 2022

ID	Measure	Baseline *(draft)*	Option 1 2020	Option 1 2022	Option 2 2020	Option 2 2022
27(a)	Annual hours of peak-hour excessive delay per capita (San Francisco-Oakland UA)	TBD*	*Not required to set 2-year target this cycle*	**Aspirational target TBD** (small reduction in delay)	*Not required to set 2-year target this cycle*	**Achievable target TBD** (continued growth in delay)
27(b)	Annual hours of peak-hour excessive delay per capita (San Jose UA)	TBD*	*Not required to set 2-year target this cycle*	**Aspirational target TBD** (small reduction in delay)	*Not required to set 2-year target this cycle*	**Achievable target TBD** (continued growth in delay)
27(c) 27(d) 27(e)	*Annual hours of peak-hour excessive delay per capita (Concord UA, Santa Rosa UA, and Antioch UA)*	*n/a*	*Not required to set 2-year or 4-year targets this cycle*			
28(a)	Percent of non-single-occupant vehicle (SOV) travel (San Francisco-Oakland UA)	**44.3%** (2018 metric) (2012-16)	**45.5%** (+1.2%)	**46.7%** (+2.4%)	**45.3%** (+1.0%)	**46.3%** (+2.0%)
28(b)	Percent of non-single-occupant vehicle (SOV) travel (San Jose UA)	**24.5%** (2018 metric) (2012-16)	**25.1%** (+0.6%)	**25.7%** (+1.2%)	**25.5%** (+1.0%)	**26.5%** (+2.0%)
28(c) 28(d) 28(e)	*Percent of non-single-occupant vehicle (SOV) travel (Concord UA, Santa Rosa UA, and Antioch UA)*	*n/a*	*Not required to set 2-year or 4-year targets this cycle*			
29(a)	Total emissions reductions from CMAQ-funded projects (Fine particulate matter – PM2.5)	**95.2 kg/day** (FFY 2014-17)	**56.1 kg/day** (2-yr. period)	**112.7 kg/day** (4-yr. period)	*n/a*	*n/a*
29(b)	Total emissions reductions from CMAQ-funded projects (Particulate matter – PM10)	**135.4 kg/day** (FFY 2014-17)	**80.0 kg/day** (2-yr. period)	**160.5 kg/day** (4-yr. period)	*n/a*	*n/a*
29(c)	Total emissions reductions from CMAQ-funded projects (Carbon monoxide – CO**)	**15,501.4 kg/day** (FFY 2014-17)	**6,442.9 kg/day** (2-yr. period**)	**11,885.5 kg/day** (4-yr. period**)	*n/a*	*n/a*
29(d)	Total emissions reductions from CMAQ-funded projects (Volatile organic compounds – VOCs)	**2,248.9 kg/day** (FFY 2014-17)	**771.4 kg/day** (2-yr. period)	**1,344.7 kg/day** (4-yr. period)	*n/a*	*n/a*
29(e)	Total emissions reductions from CMAQ-funded projects (Nitrogen oxide - NOx)	**2,179.7 kg/day** (FFY 2014-17)	**814.2 kg/day** (2-yr. period)	**1,441.83 kg/day** (4-yr. period)	*n/a*	*n/a*

* = Awaiting baseline data from Caltrans related to targets 27(a) and 27(b); expected sometime in mid-April.
** = Target 29(c) may not be required once the San Francisco Bay Area's maintenance period for carbon monoxide ends later this year.

Figure 1. Congested Delay Trendline from Vital Signs *(for reference purposes only; source: INRIX/MTC)*



Note: *While the peak-hour excessive delay (PHED) measure selected by FHWA is similar in some respects to the per-commuter congested delay used in Vital Signs, there are some key differences. PHED includes congestion on all NHS facilities, including arterials, while the current Vital Signs dataset only captures freeway delay. Furthermore, PHED focuses solely on delay during the peak hour and it uses a variable threshold for delay to account for lower speed limits on arterials.*

Note: *In the trendline graph above, congested delay reflects per-commuter delays when speeds drop below 35 mph on freeways, whereas total delay reflects per-commuter delays for any slowdowns below the posted speed limit.*

Figure 2. Non-SOV Mode Share Trendlines *(source: U.S. Census Bureau/American Community Survey; commute trips only)*