

## SBCAG STAFF REPORT

**SUBJECT:** MAP-21/FAST Act Performance Measures and Targets

**MEETING DATE:** September 20, 2018

**AGENDA ITEM:** 4H

**STAFF CONTACT:** Andrew Orfila, Jared Carvalho

**RECOMMENDATION:**

Approve and accept the MAP-21/FAST Act Performance Measures and State targets.

**DISCUSSION:**

On December 4, 2015, Fixing America's Surface Transportation (FAST) Act was signed into federal law, which provides long-term funding for surface transportation infrastructure planning and investment. The FAST Act continues the National Highway Performance Program (NHPP), which was established under the Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2012.

The NHPP provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to direct investments of Federal-aid funds to achieve a range of performance targets. These targets and their associated performance measures ensure states and MPOs invest resources in transportation projects that collectively make progress toward the achievement of national goals. Performance measures include:

- Fatalities and serious injuries – both number and rate per vehicle mile traveled – on all public roads
- Pavement condition on the Interstate Highway System and remainder of the National Highway System (NHS)
- Performance of the Interstate Highway System and remainder of the NHS
- Bridge condition on the NHS
- Traffic congestion
- On-road mobile source emissions
- Freight movement on the Interstate Highway System

The United States Department of Transportation (USDOT) allows MPOs to support the State targets, establish their own specific numeric targets for all of the performance measures, or any combination thereof. Only the Regional Transportation Plans (RTP) and Transportation Improvement Programs (TIPs) updated on or after May 27, 2018 must include these targets and describe how SBCAG's projects support them. It is presumed that the TIP will only address the targets until after SBCAG's next RTP is adopted in 2021.



The attachments provide a status update of each of the three management measures that SBCAG has been monitoring and discusses the statewide targets that Caltrans has set within each category. Staff is recommending that the Board accept the statewide targets for safety, bridge and pavement, and system performance.

**COMMITTEE REVIEW:**

The Technical Transportation Advisory Committee voted to recommend the SBCAG Board follow the staff recommendation and accept the State's performance targets for safety, bridge and pavement condition, and system performance.

**ATTACHMENTS:**

- A. PM1: HSIP and Safety Target Summary Report
- B. PM2: Bridge and Pavement Summary Report
- C. PM3: System Performance

## ATTACHMENT A PM1: HSIP AND SAFETY TARGETS SUMMARY REPORT

### Process

The Safety PM Final Rule established performance measures in five-year rolling averages. Caltrans is required to establish statewide safety targets annually, beginning in August 2018, for the following calendar year. Caltrans must also coordinate with the MPOs in the State, to the maximum extent practicable, and report targets to FHWA in the HSIP (Highway Safety Improvement Program) report due in August of each year.

Caltrans released draft targets for each of the five safety performance measures in April 2018 and released the final safety targets in August. SBCAG is required to establish targets for the five safety performance measures within 180 days after the State establishes each target. Therefore, SBCAG is required to set targets no later than February 2019. SBCAG can establish targets by either; 1) agreeing to plan and program projects so that they contribute toward the accomplishment of Caltrans' safety target for that performance measure, or 2) committing to a quantifiable target for that performance measure for our metropolitan planning area.

### Met or Made Significant Progress Determination

A State is considered to have met or made significant progress toward meeting its targets when at least four of the five targets are met or the outcome for the performance measure is better than the baseline performance the year prior to the target year. Each year that a State has not met or made significant progress toward meeting its performance targets, it will be required to use the HSIP apportionment only for safety projects and develop a HSIP Implementation Plan. It's important to note that, California currently uses all HSIP funds for safety projects. MPO performance targets will not be evaluated by FHWA and no consistency with the State is required.

### Consultation

Staff attended a number of workshops and webinars hosted by FHWA, National Highway Traffic Safety Administration (NHTSA), Office of Traffic Safety (OTS), and Caltrans to discuss target-setting coordination, training, and the process for setting evidence-based targets for both the State and MPOs. Consultation with the MPOs determined that targets should be established in conjunction with a coordinated, statewide plan – the California Strategic Highway Safety Plan (SHSP).

The five performance measures are shown below and provide a methodological overview.

- The Number of Fatalities: This safety performance target in one of the three that are done in coordination with OTS. The last available year with finalized data is 2016 from FARS. From 2016 to 2020 a reduction of 3 percent is applied to these years. The same reduction of approximately 108 fatalities is applied in a straight line fashion. The five-year rolling average in 2019 is **3,445.4**.
- The Fatality Rate. The fatality rate in is annual number of fatalities divided by 100 million vehicle miles traveled. From 2016 to 2020, the Average Annual Daily Traffic (AADT) volumes are increased one percent per year. This safety target is also done in conjunction OTS. The five-year rolling average is **0.995**.
- The Number of Serious Injuries. From 2016 to 2020 a 1.5 percent reduction is applied to each year. As with the number of fatalities a constant value of approximately 198 serious

injuries is applied to these years in a straight line fashion. This target is also done in coordination with OTS. The five-year rolling average is **12,688.1**

- The Serious Injury Rate. As with the number of fatalities, the AADT is increased one percent per year. The five-year rolling average is **3.661**.
- Non-Motorized (Pedestrians and Bicyclists): This target is the addition of fatalities and serious injuries for non-motorized traffic (bicyclists and pedestrians). A reduction (in a straight line fashion) is applied to each year from 2016 to 2020. For fatalities the reduction is 3 percent and for serious injuries the reduction is 1.5 percent. The five-year rolling average is **3,949.8**.

Caltrans is proposing to submit the above 2019 SPMTs to the Federal Highway Administration by August 31, 2019.

Table 1 shows the revised targets for 2019, along with the 2018 state targets for comparison. SBCAG adopted the 2018 statewide safety targets at its meeting in September 2017.

**Table 1: Safety Performance Targets for California**

Safety Performance Measures (CA)	Five Year Moving Average Targets	
	2018	2019
Number of Fatalities (FARS)	3,590.8	3,445.4
Rate of Fatalities per 100 Million VMT (FARS & HPMS)	1.029	0.995
Number of Serious Injuries (SWITRS)	12,823.4	12,688.1
Rate of Serious Injuries per 100 Million VMT (SWITRS & HPMS)	3.831	3.661
Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries (Bicycles and Pedestrians) (FARS & SWITRS)	4,271.1	3,949.8

Recommendation

Agree to the Caltrans statewide safety targets for 2019.

**ATTACHMENT B**  
**PM2: Pavement and Bridge Condition on the National Highway System**

Process

The Pavement and Bridge PM Final Rule established performance measures for pavement and bridge conditions on the National Highway System. Caltrans set 2- and 4-year statewide targets on May 20, 2018. SBCAG is required to establish pavement and bridge condition performance measure targets within 180 days after the State establishes each target (November 20, 2018). Federal regulation allows SBCAG to accept the statewide targets or establish its own regional 4-year target.

Met or Made Significant Progress Determination

The statewide NHS targets for pavement and bridges for the 2- and 4-year periods were developed based on State and MPO/RTPA estimated conditions. If the region chooses to set its own target, the State and regional agencies would be required to meet their individual condition targets used in establishing the statewide weighted average NHS 2- and 4-year targets. There is no penalty for achieving a condition that is better than the agency established target. Federal regulation requires that the State develop an improvement plan if California does not achieve the established 2- and 4-year targets.

Consultation

Staff participated in two webinars hosted by Caltrans to discuss target-setting coordination and the development of the Transportation Asset Management Plan. Caltrans provided the regions with extensive bridge and pavement condition data on the NHS, including National Bridge Inventory data and Highway Performance Monitoring data in GIS format. SBCAG staff was able to verify this information and provide input to assist Caltrans in setting the 2- and 4-year statewide targets. The information provided by SBCAG and all other MPOs/RTPAs was combined with targets for the state-owned NHS to develop the results shown in Table 2 below. Statewide targets were calculated using a quantity weighted approach that considers Caltrans and regional agency condition expectations in statewide aggregate targets.

**Table 2**  
**Bridge and Pavement Performance Targets**

Pavement and Bridge PMs	FHWA 1 <sup>st</sup> Performance Period			
	2-Year NHS Targets (1/1/2018 – 12/31/2019)		4-Year NHS Targets (1/1/2020 – 12/31/2021)	
	Good	Poor	Good	Poor
Pavements on the NHS (Non-Interstate)	28.2%	7.3%	29.2%	7.2%
Bridges on the NHS	69.1%	4.6%	70.5%	4.4%

*Source: Caltrans Division of Transportation Asset Management*

Tables 3 and 4 illustrate the pavement and bridge data for the state highways and regions throughout the state and the aggregation in developing the statewide targets.

Recommendation

Agree to the Caltrans statewide pavement and bridge targets for 2019.

Table 3

California 2016 Pavement Conditions (NHS)  
Target Calculator Tool

Jurisdiction	2016 Lane Miles (LM)	2016 Pavement Condition (%)		2 Year Pavement Condition Targets					4 Year Pavement Condition Targets					% Impact to Statewide Lane Miles
		Good(G)	Poor(P)	2019 Lane Miles	Good (LM)	% Target (G)	Poor (LM)	% Target (P)	2021 Lane Miles	Good (LM)	% Target (G)	Poor (LM)	% Target (P)	
State Interstate NHS	14,159	47.9%	3.1%	14,159	6,381	45.1%	490	3.5%	14,159	6,303	44.5%	544	3.8%	25.2%
Non-Interstate NHS	22,490	43.5%	2.5%	22,490	10,584	47.1%	678	3.0%	22,490	11,100	49.4%	787	3.5%	40.1%
Other Non-Interstate NHS	54	16.7%	1.9%	54	9	16.7%	1	1.9%	54	9	16.7%	1	1.9%	0.1%
Local**	19,373	4.6%	12.5%	19,447	1,250	6.4%	2,385	12.3%	19,614	1,483	7.6%	2,265	11.5%	34.5%
Butte (BCAG)	69	7.3%	12.6%	69	14	20.3%	9	12.6%	69	14	20.3%	9	12.6%	0.1%
Fresno (FCOG)	479	13.4%	4.2%	479	67	13.9%	20	4.1%	479	107	22.4%	19	3.9%	0.9%
Glenn CTC	6	9.7%	0.0%	6	1	9.7%	-	0.0%	6	1	9.7%	-	0.0%	0.0%
Humboldt CAG	35	100.0%	0.0%	35	35	100.0%	-	0.0%	35	35	100.0%	-	0.0%	0.1%
Kern (KCOG)	586	19.3%	4.1%	586	176	30.0%	29	5.0%	586	182	31.0%	23	4.0%	1.0%
Kings (KCOG)	35	16.2%	0.0%	35	6	16.2%	-	0.0%	35	6	16.2%	-	0.0%	0.1%
Lassen CTC	8	100.0%	0.0%	8	8	100.0%	-	0.0%	8	7	92.8%	-	0.0%	0.0%
Madera (MCTC)	3	0.0%	0.0%	3	-	0.0%	-	0.0%	3	-	0.0%	-	0.0%	0.0%
Merced (MCAG)	87	2.1%	15.2%	87	2	2.1%	13	15.2%	87	2	2.1%	13	15.2%	0.2%
Metropolitan (MTC)	2,995	1.7%	11.1%	2,995	200	6.7%	333	11.1%	2,995	225	7.5%	333	11.1%	5.3%
Monterey (AMBAG)	218	7.6%	8.1%	218	17	7.6%	18	8.1%	231	30	13.0%	18	7.6%	0.4%
Sacramento (SACOG)	1,149	3.2%	14.4%	1,149	37	3.2%	166	14.4%	1,149	50	4.4%	164	14.3%	2.0%
San Diego (SANDAG)	991	2.1%	8.8%	991	21	2.1%	87	8.8%	1,015	45	4.4%	89	8.8%	1.8%
San Joaquin (SJCOG)	545	7.1%	6.8%	548	40	7.2%	36	6.6%	548	50	9.0%	26	4.8%	1.0%
San Luis Obispo (SLOCOG)	43	10.4%	11.5%	39	16	41.9%	2	6.1%	39	15	39.6%	3	7.4%	0.1%
Santa Barbara (SBCAG)	131	3.8%	7.9%	131	11	8.4%	11	8.4%	131	11	8.4%	15	11.4%	0.2%
Southern California (SCAG)	11,658	3.7%	14.4%	11,718	468	4.0%	1,620	13.8%	11,840	553	4.7%	1,509	12.7%	20.8%
Shasta (SRTA)	9	13.3%	15.5%	9	8	91.1%	1	8.9%	9	9	100.0%	-	0.0%	0.0%
Stanislaus (StancoG)	219	13.2%	13.2%	219	93	42.5%	38	17.4%	219	96	43.8%	39	17.8%	0.4%
Tahoe (TMPO)	5	97.1%	0.0%	5	5	97.1%	-	0.0%	5	5	97.1%	-	0.0%	0.0%
Tulare (TCAG)	102	14.2%	2.0%	117	27	23.1%	2	1.7%	125	41	32.8%	5	4.0%	0.2%
Grand Total NHS	56,075	30.4%	6.1%	56,150	18,224	32.5%	3,554	6.3%	56,317	18,895	33.6%	3,597	6.4%	100.0%
2018 TAMP Total NHS	56,075	30.4%	6.1%											
Grand Total Non-Interstate NHS	41,917			41,991	11,843	28.2%	3,064	7.3%	42,158	12,592	29.9%	3,053	7.2%	
2018 TAMP Total Non-I NHS	41,917	25.5%	7.1%											
Grand Total Interstate NHS	14,159	47.9%	3.1%		6,381	45.1%	490	3.5%	14,159	6,303	44.5%	544	3.8%	

\*\*Red indicates MPOs responses to Caltrans

Note: 1) Highlighted yellow indicates the NHS Interstate and Non-Interstate NHS 2 and 4-Year Pavement Targets

2) Distributed missing Lane Miles from HPMS based on proportion of inventory owned. Excludes bridge lane miles and State Highway System lane miles

Source: Caltrans Division of Transportation Asset Management

Table 4

California 2017 NBI Bridge Conditions (NHS) as of 8-15-2017  
Target Calculator Tool

Jurisdiction**	Number of Bridges	Deck Area (SF)	2017 Bridge Health (%)		2 Year Bridge Condition Targets					4 Year Bridge Condition Targets					% Impact to Statewide Deck Area
			Good(G)	Poor(P)	2019 Deck Area	Good (SF)	% Target (G)	Poor (SF)	% Target (P)	2021 Deck Area	Good (SF)	% Target (G)	Poor (SF)	% Target (P)	
State	9,196	210,774,774	69.4%	3.7%	210,774,774	151,918,378	72.1%	7,416,201	3.5%	210,774,774	154,642,877	73.4%	7,235,488	3.4%	90.0%
Local	1,629	23,511,109			23,503,769	9,895,180	42.1%	3,362,179	14.3%	23,506,522	10,420,181	44.3%	3,102,017	13.2%	10.0%
Butte (BCAG)	7	40,085	23.3%	0.0%	40,085	9,322	23.3%	-	0.0%	40,085	9,322	23.3%	-	0.0%	0.0%
Fresno (FCOG)	33	389,427	31.2%	0.8%	389,427	132,031	33.9%	3,321	0.9%	389,427	130,846	33.6%	3,272	0.8%	0.2%
Humboldt CAG	2	5,113	0.0%	0.0%	5,113	-	0.0%	-	0.0%	5,113	-	0.0%	-	0.0%	0.0%
Kern (KCOG)	70	859,612	63.2%	4.9%	859,612	575,940	67.0%	42,981	5.0%	859,612	558,748	65.0%	42,981	5.0%	0.4%
Merced (MCAJ)	10	52,958	33.3%	1.7%	52,958	17,653	33.3%	893	1.7%	52,958	17,653	33.3%	893	1.7%	0.0%
Metropolitan (MTC)	288	4,641,759	45.6%	20.9%	4,641,759	2,117,924	45.6%	971,639	20.9%	4,641,759	2,117,924	45.6%	971,639	20.9%	2.0%
Monterey (AMBAG)	11	121,969	11.1%	0.0%	121,969	13,577	11.1%	-	0.0%	121,969	13,577	11.1%	-	0.0%	0.1%
Sacramento (SACOG)	97	1,272,986	51.9%	3.5%	1,272,986	661,840	52.0%	44,767	3.5%	1,272,986	661,840	52.0%	44,767	3.5%	0.5%
San Diego (SANDAG)	68	1,265,363	33.7%	20.6%	1,265,363	426,427	33.7%	260,766	20.6%	1,265,363	451,735	35.7%	248,011	19.6%	0.5%
San Joaquin (SJCOC)	33	539,939	77.8%	9.8%	539,939	420,169	77.8%	53,044	9.8%	539,939	420,169	77.8%	53,044	9.8%	0.2%
San Luis Obispo (SLOCOC)	5	33,497	0.0%	0.0%	32,888	13,468	41.0%	-	0.0%	32,888	16,738	50.9%	-	0.0%	0.0%
Santa Barbara (SBCAG)	27	167,659	48.1%	18.2%	159,552	77,555	48.6%	26,812	16.8%	159,552	104,258	65.3%	109	0.1%	0.1%
Southern California (SCAG)	963	13,766,178	36.1%	14.8%	13,767,555	5,216,634	37.9%	1,930,324	14.0%	13,770,308	5,706,841	41.4%	1,709,669	12.4%	5.9%
Shasta (SRTA)	3	133,860	94.1%	0.0%	133,860	133,860	100.0%	-	0.0%	133,860	133,860	100.0%	-	0.0%	0.1%
Stanislaus (StanCOG)	9	188,185	24.6%	14.7%	188,185	46,264	24.6%	27,631	14.7%	188,185	44,154	23.5%	27,631	14.7%	0.1%
Tulare (TCAG)	3	32,518	100.0%	0.0%	32,518	32,518	100.0%	-	0.0%	32,518	32,518	100.0%	-	0.0%	0.0%
Grand Total NHS Bridges**	10,825	234,285,883	66.5%	4.8%	234,278,543	161,813,558	69.1%	10,778,380	4.6%	234,281,296	165,063,058	70.5%	10,337,505	4.4%	100.0%

\*\* Red indicates MPO responses to Caltrans

Note: Highlighted yellow are the 2 and 4-Year NHS Bridge Targets

Source: Caltrans Division of Transportation Asset Management

**ATTACHMENT C**  
**PM3: System Performance**

Process

On January 18, 2017, the Federal Highway Administration (FHWA) published a final rule in the Federal Register (82 FR 5970) that established performance measures that State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) will use to report on the performance of the Interstate and Non-Interstate National Highway System (NHS) to carry out the National Highway Performance Program (NHPP). The performance measures are summarized in Table 5.

**Table 5**  
**PM3 System Performance Measures**

<b>System Performance Measure</b>	<b>Applicable in Santa Barbara County?</b>	<b>Why? / Why Not?</b>
Percent of Reliable Person-Miles Traveled on the Interstate	No	No Interstates traverse Santa Barbara County region
Percent of Reliable Person-Miles Traveled on the Non-Interstate NHS	<b>YES</b>	Santa Barbara County region contains a number of freeways, highways, and local roads on the National Highway System (NHS).
Percentage of Interstate System Mileage Providing Reliable Truck Travel Time (Truck Travel Time Reliability Index)	No	No Interstates traverse Santa Barbara County region
Total Emissions Reductions by Applicable Pollutants under the CMAQ Program	No	The measure is only applicable to regions that receive CMAQ funding (i.e. regions that are designated "non-attainment" for federal air quality standards)
Annual Hours of Peak-Hour Excessive Delay Per Capita (PHED)	No	These measures only apply to regions with urbanized areas that contain a population greater than one million.
Percent of Non-Single Occupancy Vehicle (Non-SOV) Travel	No	

The only measure applicable to the Santa Barbara County region is *Percent of Reliable Person Miles Traveled on the Non-Interstate NHS*. Person-miles take into account the users of the NHS. Data to reflect the users can include bus, auto, and truck occupancy levels. The final rule changes the weighting of the Travel Time Reliability measures from system miles to person-miles; this change provides opportunities to capture overall occupancy factors from national surveys. Level of Travel Time Reliability (LOTTR) is defined as the ratio of the 80th percentile travel time of a reporting segment to a "normal" travel time (50th percentile), using data from FHWA's free National Performance Management Research Data Set (NPMRDS) or equivalent. Data is collected in 15-minute segments during all time periods other than 8 p.m.- 6 a.m. local time. The measures are the percent of person-miles traveled on the relevant NHS areas that are reliable.

Federal regulations require State Departments of Transportation (State DOTs) to establish and report annual targets related to each of these six performance measures. Caltrans established the targets on May 20, 2018. SBCAG has 180 days to establish targets (November 16) by either:

- 1) Agreeing to plan and program projects so that they contribute toward the accomplishment of

the State DOT system performance target for that performance measure; or 2) Committing to a quantifiable target for that performance measure for their metropolitan planning area.

Consultation

In preparation for PM3's 2018 target-setting effort, coordination between the California Department of Transportation (Caltrans) and MPOs occurred via guidance from Technical Advisory Group (TAG) meetings, which included members from MPOs and Caltrans, in-person/ webcast workshops in 2017 and 2018, and other key stakeholder meetings. SBCAG staff participated in these meetings and provided feedback and comments. A key product developed by Caltrans and their consultants was the development of the MAP-21 application within the NPMRDS Analytics tool. This allows MPOs to determine the overall Level of Travel Time Reliability (LOTTR) within their regions. The data for the Santa Barbara County region for 2017 and a portion of 2018 is shown in Figure 1 and a map illustrating Travel Time Reliability on the region's NHS for 2017 is shown in Figure 2. The data for each regions' non-interstate NHS was aggregated to the statewide level and used to establish a 4-year target (shown in Table 1 below).

**Table 6**  
**System Performance Measure Target**

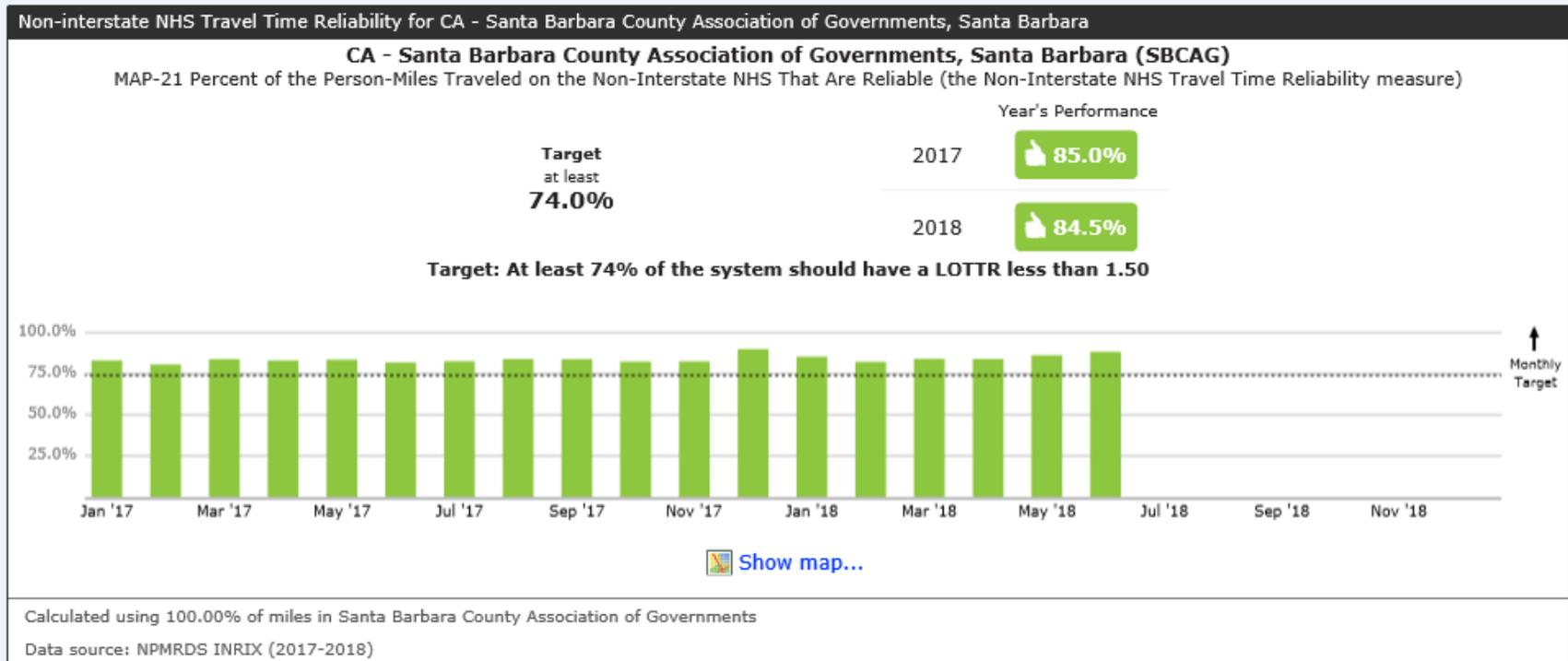
<b>Performance Measure</b>	<b>2017 Baseline Data</b>	<b>2-Year Target</b>	<b>4-Year Target</b>
% of Reliable Person-Miles Traveled on the Non-Interstate NHS	73.0 %	n/a	74.0% (+1%)

Source: Caltrans Office of Multi-Modal System Planning

Recommendation

Agree to the Caltrans statewide system performance measure target.

**Figure 1: Non-Interstate NHS Travel Time Reliability for Santa Barbara County Region – Monthly Summaries**



**Figure 2: 2017 Non-Interstate NHS Travel Time Reliability – Santa Barbara County Region**

