



DATE: October 24, 2019

TO: Transportation Authority of Marin Board of Commissioners

FROM: Anne Richman, Executive Director
Derek McGill, Planning Manager *Anne Richman*

SUBJECT: Accept the 2018 System Monitoring Report and the 2019 Congestion Management Program Report (Action), Agenda Item No. 10

RECOMMENDATION

The TAM Board accepts the 2018 System Monitoring Report and the 2019 Congestion Management Program (CMP) Report for Marin County.

The TAM Administration, Projects and Planning Executive Committee reviewed the item and voted unanimously to refer the 2018 System Monitoring Report and the 2019 CMP Report for Marin County to the TAM Board for acceptance.

The CMP report concludes that no follow up actions are required on any of the evaluated roadway segments, due to these meeting the established goal or road segments being grandfathered in as part of the original network adoption. Nonetheless, TAM and our local jurisdictions are working towards improvements on many of these road segments.

BACKGROUND

As part of TAM's responsibilities as a Congestion Management Agency (CMA), TAM must update the CMP every two years for Marin County to remain eligible for federal and state funds. The next CMP update is due to Metropolitan Transportation Commission (MTC) in December 2019.

California Government Code Section 65089 requires that every county that includes an urbanized area adopts a CMP. The CMP shall include every city and the county. California Government Code Section 65088.1 defines urbanized areas as being over 50,000 in population. Marin County meets this definition. The requirements for the CMP were enacted with the passage of Assembly Bill 471 (1989) and became effective upon voter approval of the Prop 111 Blueprint Legislation passed in June 1990. The CMP sets the stage for local land use changes to not adversely impact current transportation service without committed transportation mitigation measures. The goal of the original legislation was to tie together land use decisions with transportation investments. Proposition 111 provided for a nine-cent increase in the state gas tax. Note that since 1990, there has been significant additional legislation linking transportation and land use, specifically AB 32 and SB 375.

Consistent with requirements from State law, TAM and its consultant team, TJKM Associates, have prepared the 2018 System Monitoring Report and 2019 CMP Report. As with previous CMP updates, TAM has collected transportation data to measure system performance in even-numbered years, in this case 2018, with

additional data collection efforts in April and May of 2019 due to weather events. The data utilized for the CMP is prepared in odd number years, in this case 2019.

The CMP measures automobile travel times to determine the level of congestion on all highways and principal arterial segments in Marin County. These segments were adopted by the Marin County CMA (TAM's predecessor agency) in the first CMP in 1994. The CMP evaluates the measured conditions against pre-established performance standards using a Level of Service (LOS) standard. The CMP then identifies segments of roadways with deficiencies that requiring remedial action. The CMP uses Transportation Demand Management (TDM) and traffic relief strategies and compiles a capital improvement program to improve multi-modal system performance. Transportation system monitoring data collection is necessary to develop the CMP.

The CMP legislation makes the following requirements of a conformance determination for local jurisdictions:

- Maintain highway Level of Service (LOS) standards outlined in the CMP (LOS E for highways and LOS D for local arterials), with the exclusion of grandfathered segments;
- Participate in a program to analyze the impact of land-use decisions;
- Participate in the adoption and implementation of a deficiency plan when LOS standards are not maintained, with the exclusion of grandfathered segments.

Cities and counties have a vested interest in complying with the CMP requirements because their receipt of Proposition 111 gas tax subventions, along with other state and federal transportation funds, is conditioned on the development of and compliance with a CMP. Please note that recent passage of Senate Bill 1 (SB1) does not condition funding based on CMP compliance.

MTC published updates to its CMP Guidance on June 14, 2019. The CMP must be consistent with the latest adopted RTP (Plan Bay Area 2040, adopted July 2017) and with the current MTC travel model. Changes to MTC's CMP Guidance include references to regional goals and policies established in Plan Bay Area.

DISCUSSION/ANALYSIS

The CMP network of monitored roadways was adopted in 1994 by the CMA in response to state statutory requirements associated with the CMP legislation of 1990. The locations of the CMP roadways are identified in the table below:

Marin County CMP Network

Street	From	To	Roadway Type
SR 1	US 101	Tennessee Valley Rd	Arterial
SR 1	Northern Ave	Almonte Blvd	Arterial
SR 1	Sir Francis Drake Blvd	Pt. Reyes Station	Arterial
SR 37	US 101	Atherton Ave	Freeway
US 101	Golden Gate Bridge	Spencer Ave	Freeway
US 101 (SOV and HOV)	SR 131 (Tiburon Blvd)	Tamalpais Dr	Freeway
US 101 (SOV and HOV)	Sir Francis Drake Blvd	I-580	Freeway
US 101 (SOV and HOV)	I-580	Mission Ave	Freeway
US 101 (SOV and HOV)	Mission Ave	N. San Pedro Rd	Freeway

Street	From	To	Roadway Type
US 101 (SOV and HOV)	Freitas Pkwy	Lucas Valley Rd	Freeway
US 101	North of Atherton	Sonoma Co. Line	Freeway
SR 131 (Tiburon Blvd)	Redwood Hwy Front. Rd	E. Strawberry Dr	Arterial
I-580	Sir Francis Drake Blvd	Marin Co. Line	Freeway
I-580	Bellam Blvd	Sir Francis Drake Blvd	Freeway
Novato Blvd	San Marin Dr	Eucalyptus Ave	Arterial
Novato Blvd	Wilson Ave	Diablo Ave	Arterial
S. Novato Blvd	Sunset Pkwy	US 101	Arterial
Bel Marin Keys	US 101	Commercial Blvd	Arterial
Sir Francis Drake Blvd	Butterfield Rd	Willow Rd	Arterial
Sir Francis Drake Blvd	San Anselmo Ave	Red Hill Ave	Arterial
Sir Francis Drake Blvd	College Ave	Toussin Ave	Arterial
Sir Francis Drake Blvd	College Ave	Wolfe Grade	Arterial
Sir Francis Drake Blvd	US 101	Larkspur Landing Circle	Arterial
Red Hill Ave	Sir Francis Drake Blvd	Second St	Arterial
Second St	US 101	Marquard St	Arterial
Third St	US 101	Marquard St	Arterial
Bridgeway	Gate 5 Rd	Gate 6 Rd	Arterial

As its base, the CMP measures PM peak hour travel times along arterial and highway segments to determine system performance. Over the course of its development, the data collection process for travel times have changed from floating car surveys to big data sources including Inrix and PeMS.

With the development of the non-motorized transportation pilot program and increased focus on transit services in the county, TAM has modified the approach to system monitoring over the years to reflect additional transit reporting and bike and ped reporting. A major expansion of this effort occurred in 2016, in response to needs for better data on growing traffic congestion on our highways and local roads. The TAM Board authorized an expanded set of data collection effort to include:

- Expanding the Bike and Pedestrian Counts to 28 locations over a 14-hour period on weekdays
- Expanding the hours of the data collection to gather average daily traffic (ADT) and determine peak hour counts.
- Expanding the weekend data collection process to better compare weekend ADT to weekday ADT.
- Expanding data collection outside the CMP roadway network including the following locations:

Additional Count Locations

1	Alexander Avenue south of Princess Street (Sausalito)
2	Blithedale Avenue west of Camino Alto (Mill Valley)
3	Tiburon Boulevard in Downtown Tiburon (Tiburon)
4	San Rafael Avenue south of Tiburon Boulevard (Belvedere)
5	Magnolia Avenue between Ward St and Doherty Drive (Larkspur)
6	Tamal Vista Boulevard North of Madera Boulevard (Corte Madera)
7	Lucky Drive West of Fifer Ave (Corte Madera)
8	Anderson Drive at Sir Francis Drake (San Rafael)
9	SFD West of Anderson (Larkspur)
10	Grand Avenue north of Mission Ave (San Rafael)
11	Center Boulevard at Madrone Avenue (San Anselmo)
12	Butterfield Road north of Sir Francis Drake (San Anselmo)
13	Center Boulevard at Willow Avenue (Fairfax)
14	North San Pedro Avenue east of civic center (san Rafael)
15	Lucas Valley Road east of Las Gallinas (San Rafael)
16	Alameda Del Prado South of Alameda De La Loma (Novato)
17	San Marin Drive west of Redwood Highway (Novato)
18	Atherton Avenue East of Highway 101 (Novato)
19	Miller Ave Between Reed & Camino Alto (Mill Valley)

This data collection effort has been shaped by our member agencies, specifically input from public works staff, with funding from a temporary increase of city/county fees to TAM to support the effort.

The resultant 2018 System Monitoring Report provides system performance information on a wide range of quantitative travel information from roadway speeds and volumes, transit performance, and bike and pedestrian volumes. Between October 2018 and May 2019, tube counts were conducted at roadway locations and video technology was used at the identified bike and pedestrian count locations. Vehicle data was collected on a seven-day period to capture Tuesdays through Thursdays when schools were in session, and Bike and pedestrian data was collected on a Thursday and Saturday. Holidays, special events or weather conditions were avoided.

Local Roadway Volumes

Roadway volumes collected during this process and a summary of the data is included in **Attachment A**, specifically showcasing a 3-day (Tuesday-Thursday) average, with approximated peak period of 6-10 AM and 3-7 PM. These volumes have been shared with local jurisdictions public works and planning staff and are being added to marinmap.org's TAM Travel Count GIS Database.

Local Roadway Service Levels

In the 2018 Monitoring Cycle, three roadways segments fell below the LOS goal "D" for the PM peak of the 17 arterial roadways monitored. All three of these arterial segments are on Sir Francis Drake.

No follow up actions are required on any of these segments, due to these roadway segments being grandfathered in as part of the original network adoption. Nonetheless, TAM and our local jurisdictions are working towards improvements on many of these road segments.

TAM also measures AM peak periods, and no arterial segments fell below the LOS goal “D.” Since the AM period is not included as a performance standard for the CMP, no action is necessary.

The arterial service trends are slightly worse in the PM period than in past monitoring cycles, with the same number of segments receiving a LOS of E or F as the 2014 monitoring cycle.

Highway Service Levels (Mixed Flow Lanes)

In the 2018 monitoring cycle, one mixed flow highway segment fell below the minimal established LOS goal of “E” in the PM period, and all other segments performed above this goal. This roadway segment, highway 101 between Tiburon Boulevard and Tamalpais Avenue, is grandfathered in as part of the original network adoption, so no action is required.

TAM also measures AM peak periods, and one highway segment fell below the LOS goal of E, on Highway 101 southbound from Lucas Valley Road to Freitas Parkway. Since the AM period is not including as a performance standard for the CMP, no action is necessary.

Historically, highway service trends are slightly improved over previous years, with travel times improving in the central Marin segments of US 101 showing travel time improvements in the PM period.

HOV Lane Service Levels

In the 2018 monitoring cycle, two segments of HOV lanes fell below established LOS goals for HOV lane performance in the PM period, both in the northbound direction at US 101 from SR 131 to Tamalpais and at US 101 from Sir Francis Drake to I-580. These locations are both grandfathered segments that have historically not met established LOS standards at LOS “F”.

In the AM period no segments of US 101 HOV lanes fell below LOS level “E.”

Other System Performance Measures

Transit Services

The CMP measures total transit ridership across Marin Transit, Golden Gate Transit and Golden Gate Ferry services, and reports out on data collected from FY17/18. This data set shows a slight increase in transit ridership across all services, when compared to the previous data from FY16/17 and reversing a slide in transit ridership felt since FY13/14. Additional analysis shows an increase in annual revenue hours that corresponds to the increase in ridership. Sonoma Marin Area Rail Transit District (SMART) ridership for FY17/18 is also reported in this monitoring cycle, however, is not included in the historical trend analysis.

New for this reporting cycle is a correlation of transit services, with CMP roadway segments to assist in identification of transit routes that may be adversely affected by roadway delay on the CMP network.

Bike and Pedestrian Activity

Bicycle and pedestrian activity is monitored at various locations in Marin County as mentioned above. Bridgeway at Princess Street remains the highest location of activity within the locations monitored.

Due to various methodologies used over time for bike and pedestrian counts, there is limited comparable historical data when discussing historical bike/ped counts. To account for the limitations of the historical data set, the CMP compares peak hours of bike/ped activity at consistent locations across the CMPs. Based on this peak hour analysis, 2018 saw a record high of bike/ped usage. Bike/ped activities measured at 41-48% higher than average past cycles. Caution is recommended when using this data for historical comparisons, as the counting methodology is limited and subject to a wide range of extraneous variables.

While it is encouraging to see an overall shift towards increased non-motorized travel, it is improbable that the changes in cycling and pedestrian activity are entirely attributable to overall commute and modal shift changes during this time period.

Travel Demand Modeling and Land Use Analysis

The CMP is required to identify consistency with MTC's Regional Travel Demand Model Methodology and databases used in the Regional Travel Demand Model. MTC published updates to its CMP Guidance on June 4, 2019. As done in previous CMP cycles, the 2019 CMP Update must be consistent with the adopted RTP (Plan Bay Area 2040, adopted July 2017) and with the current MTC travel model. There have been no changes of note to the regional guidance since TAM's adoption of the 2019 CMP. MTC and congestion management agency staff around the region are in discussions about future CMP guidance and modeling requirements.

The intent of the Land Use Analysis Program is to improve the linkage between local land use decisions and regional transportation facility decisions; to better assess the impacts of development in one community on another; and to promote information sharing between local governments when the decisions made by one jurisdiction have an impact on another. TAM acts as a resource to local governments in performing transportation analyses of land use changes on the CMP designated transportation network.

Capital Improvement Program

TAM's CMP Capital Improvement Program is the basis for determining which projects are included in the State Transportation Improvement Program (STIP). The CMP Capital Improvement Program must also show consistency with regional air quality attainment plans.

Both Marin's ½-Cent Transportation Sales Tax (Measure A/AA) and \$10 Vehicle Registration Fee (Measure B) Expenditure Plans provide dedicated local funding to transportation projects and programs. Please note that as of now, Marin is not expecting any RTIP (Regional Transportation Improvement Program) out of the STIP for approximately 10 years due to advanced funding provided to the Highway 101 Gap Closure project.

Monitoring, Conformance and Deficiency Planning

Local jurisdictions must meet the CMP conformance requirements to receive funding in several state programs. The process of conformity has not substantively changed in the 2019 CMP. LOS monitoring did not report any new deficiencies and local jurisdictions that conform to the land use analysis program requirements are expected to remain in conformance.

APP Executive Committee Comments

The TAM APP Executive Committee reviewed the reports at its October 14, 2019 meeting and provided the following comments:

- Comparisons of weekend to weekday travel on corridors providing Recreational activities. This data is included in raw data format and provided to local department of public works; TAM will work to incorporate weekend travel data more prominently in future reporting.
- SMART annual reporting data. The data has been reported on in this report for the first time, what does that mean for overall transit ridership? SMART ridership data is only available for one fiscal year in the report, however SMART ridership is additive to the transit ridership analysis shown in the report, meaning transit usage in the county has grown with the development of SMART service.
- Some sections of the highway have historically performed at highly variable levels including Lucas valley to Freitas parkway, what is the possible explanation of this? Marin County's transportation network is highly skeletal, and subject to a wide range of factors, such as employment, school transportation, and other variables that make determinations of any individual reasons behind historical variances difficult.

FISCAL CONSIDERATION

There are no fiscal considerations and the 2018 System Monitoring Report and the 2019 CMP Report were completed on schedule and within budget.

NEXT STEPS

Upon acceptance of Board, staff will submit the CMP to MTC by October 2019 for review and acceptance.

ATTACHMENTS

Attachment A – Travel Data Summaries

Attachment B – Draft 2018 Transportation System Monitoring Report (Hard copies of this report were included as part of the TAM APP Executive Committee package. Electronic copies of this report are available here: https://2b0kd44aw6tb3js4ja3jprp6-wpengine.netdna-ssl.com/wp-content/uploads/2019/10/10b-2018-TAM-TSM-Report_Draft-9-20-191.pdf

Attachment C – Draft 2019 CMP Report (Hard copies of this report were included as part of the TAM Executive Committee package. Electronic copies of this report are available here: <https://2b0kd44aw6tb3js4ja3jprp6-wpengine.netdna-ssl.com/wp-content/uploads/2019/10/10c-2019-DRAFT-CMP-9-20-19-Copy.pdf>

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Transportation Authority of Marin - 2018/19 Traffic Volume Summary Table
Congestion Management Plan - CMP Roadway Segments

ID	Roadway Segment	Location	ADT (tues-thurs)		AM Peak (6-10)		PM Peak (3-7)	
			EB	WB	EB	WB	EB	WB
1A	SR 1	U.S. 101 to Tennessee Valley Rd	15,256	16,594	4,733	3,649	2,870	5,044
1B	SR 1	Northern Ave to Almonte Blvd	6,089	5,866	1,586	1,798	1,709	1,497
1C	SR 11	Sir Francis Drake Blvd to Pt. Reyes Station	1,243	1,062	280	225	355	292
4A	SR 131 (Tiburon Blvd)	Redwood Hwy Frontage Rd to E. Strawberry Dr	15,435	16,910	4,148	4,832	3,820	4,011
6A	Novato Blvd	San Marin Dr to Eucalyptus Ave	3,378	3,830	870	969	941	1,204
6B	Novato Blvd	Wilson Ave to Diablo Ave	8,171	7,615	2,298	1,421	1,824	2,432
6C	S. Novato Blvd	Sunset Pkwy to U.S. 101	5,055	3,799	1,761	846	1,052	1,213
7A	Bel Marin Keys	U.S. 101 to Commercial Blvd	10,183	10,247	3,550	1,923	1,618	3,283
8A	Sir Francis Drake Blvd	Butterfield Rd to Willow Rd	10,401	11,765	3,115	2,395	2,246	3,678
8B	Sir Francis Drake Blvd	San Anselmo Ave to Red Hill Ave	14,480	13,652	4,316	2,393	2,826	4,825
8C	Sir Francis Drake Blvd	College Ave to Toussin Ave	10,913	11,595	3,273	2,349	2,422	4,043
8D	Sir Francis Drake Blvd	College Ave to Wolfe Grade	14,187	15,006	3,824	3,794	3,319	3,836
8E	Sir Francis Drake Blvd	U.S. 101 to Larkspur Landing Circle	16,681	15,444	3,234	4,092	4,978	3,217
9A	Red Hill Ave	Sir Francis Drake Blvd to Second St	19,817	19,299	5,816	4,487	4,572	5,508
9B	Second St	U.S. 101 to Marquard St	22,755	-	5,796	-	5,697	-
9C	Third St	U.S. 101 to Marquard St	-	20,771	-	4,867	-	5,607
10A	Bridgeway1	Gate 5 Rd to Gate 6 Rd	11,678	12,764	1,548	4,028	3,361	2,907

Transportation Authority of Marin - 2018/19 Traffic Volume Summary Table
Congestion Management Plan - Additional Count Locations

ID	Location	ADT (tues-thurs)		AM Peak (6-10)		PM Peak (3-7)	
		EB	WB	EB	WB	EB	WB
1	Alexander Avenue south of Princess Street (Sausalito)	3,430	3,334	673	824	1,094	875
2	Blithedale Avenue west of Camino Alto (Mill Valley)	9,038	9,644	2,411	2,633	2,156	2,597
3	Tiburon Boulevard in Downtown Tiburon (Tiburon)	2,493	2,327	690	611	659	625
4	San Rafael Avenue south of Tiburon Boulevard (Belvedere)	2,525	2,483	692	675	598	527
5	Magnolia Avenue between Ward St and Doherty Drive (Larkspur)	6,923	7,520	1,155	1,301	1,252	1,468
6	Tamal Vista Boulevard North of Madera Boulevard (Corte Madera)	5,733	4,748	1,145	960	1,726	1,340
7	Lucky Drive West of Fifer Ave (Corte Madera)	7,121	6,181	1,450	1,526	2,112	1,415
8	Anderson Drive at Sir Francis Drake (San Rafael)	2,667	1,551	740	530	453	320
9	SFD West of Anderson (Larkspur)	16,901	16,280	3,054	5,169	5,569	3,308
10	Grand Avenue north of Mission Ave (San Rafael)	2,369	3,581	575	1,038	699	894
11	Center Boulevard at Madrone Avenue (San Anselmo)	6,157	7,022	1,033	2,332	2,074	1,538
12	Butterfield Road north of Sir Francis Drake (San Anselmo)	6,155	6,085	1,405	2,007	2,056	1,532
13	Center Boulevard at Willow Avenue (Fairfax)	5,204	4,771	1,701	803	1,129	1,684
14	North San Pedro Avenue east of civic center (san Rafael)	9,174	9,181	2,159	2,828	2,823	2,198
15	Lucas Valley Road east of Las Gallinas (San Rafael)	5,140	5,087	1,724	862	942	1,816
16	Alameda Del Prado South of Alameda De La Loma (Novato)	2,222	3,168	508	1,534	651	584
17	San Marin Drive west of Redwood Highway (Novato)	9,782	10,431	2,999	2,118	2,037	3,422
18	Atherton Avenue East of Highway 101 (Novato)	3,786	3,445	949	1,065	1,055	802
19	Miller Ave Between Reed & Camino Alto (Mill Valley)	9,131	9,122	2,495	2,421	2,413	2,338

Transportation Authority of Marin - 2018/19 Bike/Ped Summary Table

ID	Location	Ped	Bike	Total
1	Tiburon Boulevard @ Main Street, Tiburon	1,573	432	2,005
4	Bridgeway @ Princess Street, Sausalito	6,686	1,700	8,386
5	San Anselmo Avenue @ Tunstead Avenue, San Anselmo	2,462	499	2,961
6	Broadway @ Bolinas Road, Fairfax	2,291	619	2,910
8	Magnolia Avenue @ Ward Street, Larkspur	1,907	229	2,136
9	Mill Valley-Sausalito Path @ E. Blithedale Avenue, Mill Valley	576	917	1,493
10	Mill Valley-Sausalito Path @ Tennessee Valley Path Junction, Tam Junction	796	1,246	2,042
11	Tiburon Bike Path @ Blackie's Pasture/McKegney Green, Tiburon	166	154	320
12	Larkspur-Corte Madera Path @ Baltimore Avenue, Larkspur	816	496	1,312
13	Corte Madera Creek Path @ Bon Air Road, Greenbrae	730	372	1,102
15	Camino Alto @ E. Blithedale Avenue, Mill Valley	225	380	605
16	Pacheco Hill Path @ Alameda del Prado, Novato	25	115	140
17	Los Ranchitos Road @ Lincoln Hill Multi-Use Pathway, San Rafael	62	213	275
18	Doherty Drive @ Larkspur Plaza Drive/Rose Lane West, Larkspur	824	493	1,317
19	Doherty Drive @ Rose Lane East, Larkspur	953	585	1,538
20	Andersen Drive @ Cal Park Tunnel Path, San Rafael	118	379	497
21	S. Novato Boulevard @ Rowland Way, Novato	376	125	501
22	Bellam Boulevard @ Andersen Drive, San Rafael	228	198	426
23	Nicasio Valley Road @ Nicasio School, Nicasio	3	65	68
24	Enfrente Bike Path @ S. Novato Boulevard, Novato	46	109	155
25	Tiburon Boulevard @ S. Knoll Road, Mill Valley	120	148	268
26	E. Blithedale Avenue @ Tower Drive, Mill Valley	135	214	349
29	Central Marin Ferry Connector Bridge @ Sir Francis Drake Boulevard, Larkspur	275	435	710
30	Almonte Boulevard @ Shoreline Highway, Mill Valley	357	256	613
31	Francisco Boulevard E. @ Bay Street, San Rafael	464	13	477
32	Andersen Drive @ Du Bois Street, San Rafael	188	383	571
33	Merrydale Road @ Lincoln Hill Multi-Use Pathway, San Rafael	54	70	124
34	US 101 NB Off-Ramp @ Marin County Bike Route 20/Sir Francis Drake Boulevard, Larkspur	101	242	343

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