

2019 Solano County Congestion Management Program

October 2019

Draft Report



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Executive Summary

Introduction

The Congestion Management Program (CMP) is a mobility monitoring and planning tool for California counties that contain an urbanized area with a population of 200,000 or more. The 1991 CMP legislation allows the local Congestion Management Agency (CMA) to prepare, monitor, and update the CMP. As the CMA for Solano County, the Solano Transportation Authority (STA) is required to update the CMP biannually on odd numbered years. CMP development is guided by the Metropolitan Transportation Commission (MTC), who publishes guidelines in odd numbered years. The most recent guidance was published in 2019, and as such this CMP will conform to these guidelines.

The major goals of the CMP are:

- To maintain mobility on Solano County's streets and highways;
- To ensure that the Solano County transportation system operates effectively as part of the larger Bay Area and northern California transportation systems;
- To conform with and support implementation of MTC's adopted Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), Plan Bay Area 2040;
- To align the CMP with the federal transportation bill, Moving Ahead for Progress in the 21st Century (MAP-21);
- To share information and organization with the Solano County Comprehensive Transportation Plan;
- To provide a basis for the STA to review and comment upon land use proposals that may impact roadways and intersections listed in the CMP

Highlights of the 2019 Solano County CMP

Chapter 1: Designated Roadway System

Solano County's CMP network was established in 1991 with the development of the first CMP document. By law, it has not changed. The CMP network is divided into segments for the purposes of measuring LOS.

Chapter 2: Roadway System Level of Service

LOS is monitored on 60 segments of roadway in Solano County: 48 segments on state owned Interstates and State Highways, and 12 on local arterial streets. LOS is also monitored at 5 intersections where CMP arterials meet. The LOS standard is E for all roadway segments and intersections, except for 25 segments that have a grandfathered standard of F. Grandfathered segments are those that measured at LOS F when the first CMP was developed in 1991. Such segments are not required to be mitigated if it continues to operate at LOS F.

The monitoring results from 2019 show that all CMP network segments are within the established monitoring standard.

Chapter 3: System Performance

To measure the effectiveness of Solano County's multimodal transportation system, STA sets performance measures by which the transit system and bike and pedestrian network are measured. These measures include intercity transit ridership, bike and pedestrian counts, multimodal commute patterns, and travel time reliability (on I-80).

Solano County's transit system includes a network of bus, rail, and ferry connections. SolanoExpress intercity bus routes, operated by Fairfield-Suisun Transit (FAST) and Solano County Transit (SolTrans), connect Solano residents to locations within the county and to BART and Sacramento. SolanoExpress recently went through a route restructure where seven routes were consolidated into four. As of Q3 in FY 2018-19, SolanoExpress routes are on track to exceed the ridership of the previous three fiscal years. Local transit routes, spread across five operators, are overall seeing a decline in ridership. Dixon Read-Ride and Rio Vista Delta Breeze are both experiencing ridership increases. Rail and ferry transit services are seeing increases in ridership, as they provide quick, reliable connections to the Bay Area.

Bike and pedestrian network progress is measured by the number of miles completed in the network, and by conducting bike and pedestrian counts at various locations throughout the county. Currently, Solano County has approximately 132 miles of bike infrastructure, and 1,313 miles of pedestrian sidewalks.

Chapter 4: Transportation Demand Management

Transportation Demand Management (TDM) is an integral part of mitigating congestion on Solano County's roadways because they are utilized to improve the efficiency of existing transportation systems, without significant capacity expansions. Most of the strategies focus on ways to reduce single occupancy vehicles, or to eliminate the need to drive all together. Strategies to reduce single occupancy vehicles include carpool, vanpool, bicycles, transit, and park and ride lots. Encouraging the link between land use and transportation can also help to encourage non-auto modes of transportation, or to encourage a better balance of available jobs and housing. TDM strategies are a cost effective method of increasing efficiency on existing transportation infrastructure and easing congestion on roadways.

Chapter 5: Land Use Analysis

The CMP represents a unique opportunity for STA and its member agencies to collaborate on land use decisions that may affect the regional transportation system. The Land Use Analysis Program focuses in two main areas; first, it requests that member agencies submit development notices for projects that are expected to generate at least 100 P.M. peak hour trips, or is going through a general plan amendment or update. STA will review these projects to examine potential impacts on the regional transportation system, and may comment with proposed mitigation efforts. The second area of analysis is updating the countywide traffic model with general plan projections for land use, housing, and jobs. STA works with its member agencies whenever such updates occur to add this data. Doing so ensures that the model continues to produce accurate forecasts when projecting traffic in the forecast year. The Land Use Analysis program will also be shaped by the upcoming switch from LOS to Vehicle Miles Traveled (VMT) as the preferred method of analyzing transportation impacts under CEQA. While the legislation did not require the switch for the CMP, STA is preparing to incorporate both LOS and VMT in the 2021 CMP.

Chapter 6: Local Conformance and Deficiency Plans

The CMP legislation requires STA to give a conformance determination for all local jurisdictions within its boundaries. Conformance determinations are based on the local jurisdiction's ability to:

- Maintain the highway LOS standards outlined in the CMP
- Participating in the adoption and implementation of a deficiency plan, if required
- Participating in the Land Use Analysis Program

Deficiency plans are required when an LOS segment falls below the accepted standard for two consecutive monitoring cycles. These plans will be prepared by the local agency responsible for the deficient segment in question, in coordination with STA, and will contain projects to help return the roadway segment to an acceptable LOS. In certain circumstances, if a jurisdiction does not complete a deficiency plan as required, it may face withholding of certain gas tax subvention funds, and/or not having projects programmed in the RTIP.

STA works with all of its member agencies to ensure compliance. All incorporated cities in Solano County, along with the unincorporated county, are in conformance at this time.

Chapter 7: Travel Demand Model

STA maintains the Solano Activity Based Model, which serves as the countywide travel demand model for Solano County. The model is used to project congestion in the model's forecast year, and to measure the impact of proposed projects on the overall transportation system. In this way, the model is utilized in STA's Land Use Analysis Program, where the impact of major development projects may be measured. STA's travel model was originally developed as a joint effort with the Napa Valley Transportation Authority in 2008 as the Solano-Napa Travel Demand Model. Since then, the model has been updated to an activity based model, and was recently split between the two counties in 2018 to better predict differing traffic patterns in the two counties.

The CMP legislation requires that STA's countywide travel demand model be consistent with MTC's regional model. Currently, STA's model is undergoing updates that will bring it into conformance with MTC's Travel Model 1.5; the model that will be used for Plan Bay Area 2050. These updates will also add the ability to forecast public transit, so that STA can better plan for ridership on the SolanoExpress intercity bus service.

Chapter 8: Capital Improvement Program

STA, as part of its biannual CMP update, is required to prepare a seven year Capital Improvement Program (CIP) of projects that will help to mitigate congestion on Solano County's roadways. This CIP is also the basis by which Solano County projects are included in the Regional Transportation Improvement Program (RTIP), prepared biannually by MTC. The RTIP is the basis by which the State Transportation Improvement Program (STIP) is formed, which allows projects to receive state transportation funding. The CIP for this CMP is a combination of projects from Plan Bay Area 2040, the most recently adopted RTIP, and the Regional Traffic Impact Fee (RTIF), an impact fee assessed on development in Solano County and used for transportation projects.

Section 1: Defining the CMP System

1.1: Purpose and Intent of Legislation

California law requires that each Congestion Management Agency (CMA) in the state have an adopted CMP network on which levels of congestion are measured using established LOS standards. The intent was to include regionally significant roadways, such as freeways and highways, to monitor congestion and create a Capital Improvement Program (CIP) of projects that would help to mitigate the congestion. As such, all State owned roadways within Solano County are required to be included. Several principal arterials and intersections with regional connections are also included.

Solano County's CMP network was established in 1991 following the passage of the CMP legislation by the State of California. Once a roadway is included in the CMP network, it is not allowed to be removed. As such, the network has not changed since it was established.

1.2 Purpose of a CMP

The Congestion Management Program is a planning tool by which Congestion Management Agencies monitor and plan to mitigate congestion on the county's roadways. Although other countywide planning documents include Capital Improvement Programs of projects that will ultimately reduce congestion; the CMP is specifically required to measure congestion levels on all state owned roadways, as well as several local arterials and include a seven year CIP to address the findings. The ultimate goal of the CMP is to plan for and mitigate congestion either before it occurs, or before it worsens. Besides the LOS monitoring of congestion on roadways, CMPs also measure performance on the county's transit systems, bike/pedestrian network, and TDM programs. The CMP is also used to collaborate on land use decisions that may have an impact on the countywide transportation system, and is the basis for maintaining a countywide traffic model.

As the CMA for Solano County, STA updates its CMP every two years. The STA collaborates with other local, regional, and state agencies in doing so, as the resulting projects would not occur without this collaboration.

1.3 Role of Local and Regional Agencies in CMP Process

Although the CMP is prepared by STA, the roadways that are monitored for congestion are all owned by either the state (Caltrans), or one of STA's member agencies. As such, it is vital to collaborate with these agencies in the development and implementation of the CMP. Under the CMP legislation, local agencies are required to make necessary improvements to their CMP network designated arterials and intersections to keep them at an acceptable LOS. Segments that fall below accepted standards may be required to have a deficiency plan prepared by the local agency, with proposed improvements to bring the LOS back to an acceptable standard.

The CMP also provides an opportunity for Solano County's local governments to collaborate on land use decisions, and examine how they may impact the regional transportation system. As part of the CMP Land Use Analysis program, STA will review land use development proposals that are expected to generate more than 100 trips in the P.M. peak hour, as well as any general plan amendments or updates. In tandem to the CEQA analysis done by the local agency, STA will review the projects to see if it will have a measureable impact on the transportation system. If so, STA may suggest measures that

could help to mitigate the impacts. Few other programs exist in Solano County that provide an opportunity for this collaboration to occur on land use decisions. Additionally, as Solano's local agencies make the switch to using VMT as the preferred metric of analyzing transportation impacts under CEQA, the CMP Land Use Analysis program will provide the opportunities to identify methods for reducing VMT on a project-by-project basis, with STA and the member agency working together.

Regional and state agencies also play a role in the development and implementation of the CMP. MTC, as the metropolitan planning organization (MPO) for the Bay Area, publishes guidance every odd numbered year on guidelines for developing a CMP. MTC also reviews all CMPs in the Bay Area to ensure consistency with its own adopted RTP/SCS, Plan Bay Area 2040. As part of the CMP legislation, STA is required to maintain a countywide travel model and ensure consistency with the regional model maintained by MTC. Projects that are included in the CIP for this CMP is consistent with Solano's portion of the Regional Transportation Improvement Program (RTIP). The RTIP is used to develop the State Transportation Improvement Program (STIP), which is how state transportation dollars are disbursed to local agencies.

Caltrans, as the agency responsible for maintaining all state highways, plays an important role in the CMP. LOS monitoring is done by STA working closely with Caltrans, who has traffic count data on most of its roadways. STA also collaborates with Caltrans to develop any proposed improvements on the state highway system. Many of these projects are included in the CIP of this CMP, located in Chapter 8.

1.4 Relationship to Regional Plans

The CMP is a short-range planning document that is required to be consistent with long range transportation plans at the local and regional level. One such document is the Comprehensive Transportation Plan, or CTP. STA produces the Countywide CTP in coordination with the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), produced by MTC. The most recent CTP will be adopted in late 2019, while the most recent RTP/SCS was adopted in 2017. Additionally, the CMP is required to be consistent with:

- MTC's RTP/SCS Goals and Objectives
- Adjoining counties definition of the CMP system
- Federal and state air quality plans
- MTC travel demand modeling database and methodologies
- RTP/SCS financial assumptions

MTC also produces bi-annual regional guidance on the CMP to the Bay Area CMAs. The last guidance was released in 2019, and as such this CMP will conform to those guidelines.

1.5 Solano CMP System

The CMP system in Solano County consists of all state owned roadways, as well as several regionally significant local arterials and intersections that connect Solano's communities to the State-owned highway system, or to each other. As required by the CMP legislation of 1990, all segments of the CMP system are monitored for congestion using the LOS standard. Doing so allows CMAs to prepare a CIP of projects to mitigate the congestion, implement TDM strategies, and monitor local land use decisions and their impact on the designated CMP network. In the future, the CMP network may be monitored using

the Vehicle Miles Traveled (VMT) metric, as well as the LOS metric, as California moves towards using VMT to analyze transportation impacts under CEQA.

Figures 1-3 illustrates all of the designated CMP roadway facilities within Solano County. The following State owned roadways are included as part of the system:

1. Interstate 80: From Carquinez Bridge to Yolo County Line
2. Interstate 505: From I-80 to Yolo County Line
3. Interstate 680: From I-80 to Benicia-Martinez Bridge
4. Interstate 780: From I-80 to I-680
5. State Route 12: From Napa County Line to Rio Vista Bridge
6. State Route 29: From Napa County Line to I-80
7. State Route 37: From I-80 to Sonoma County Line
8. State Route 84: From SR-12 to Yolo County Line
9. State Route 113: From I-80 to SR-12
10. State Route 128: From Yolo County Line to Napa County Line
11. State Route 220: From SR-84 to J-Mack Ferry

Additionally, the following local arterials and intersections are also included in the CMP network:

1. Military East in Benicia
2. Military West in Benicia
3. Peabody Road (Air Base Pkwy in Fairfield to California Drive in Vacaville)
4. Walters Road (Air Base Pkwy in Fairfield to SR-12 in Suisun City)
5. Air Base Parkway in Fairfield (Walters Rd to Peabody Rd)
6. Elmira Road in Vacaville (Leisure Town Rd to A St in unincorporated Elmira)
7. Vaca Valley Parkway in Vacaville (I-80 to I-505)
8. Tennessee Street in Vallejo (Mare Island Wy to I-80)
9. Curtola Parkway in Vallejo (Lemon St to Maine St)
10. Mare Island Way in Vallejo (Maine St to Tennessee St)
11. Vanden Road (Peabody Rd in Fairfield to Leisure Town Rd in Vacaville)
12. Intersection of Peabody Rd and Cement Hill Rd/Vanden Rd in Fairfield
13. Intersection of Walters Rd and Air Base Pkwy in Fairfield
14. Intersection of Tennessee St and Sonoma Blvd in Vallejo
15. Intersection of Curtola Pkwy and Sonoma Blvd in Vallejo
16. Intersection of Mare Island Wy and Tennessee St in Vallejo

Figure 1: Solano County CMP Network

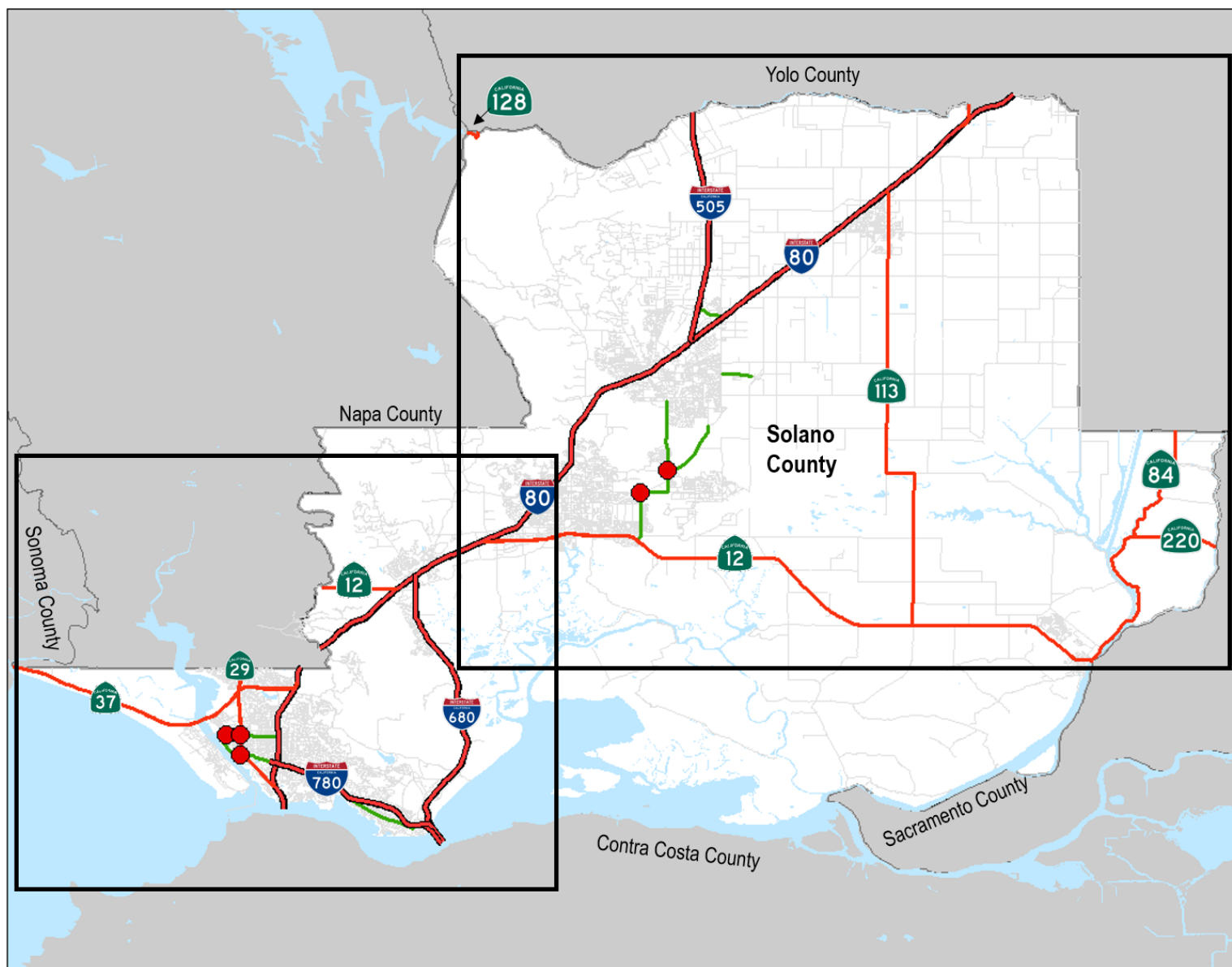


Figure 2: Solano County CMP Network – North County

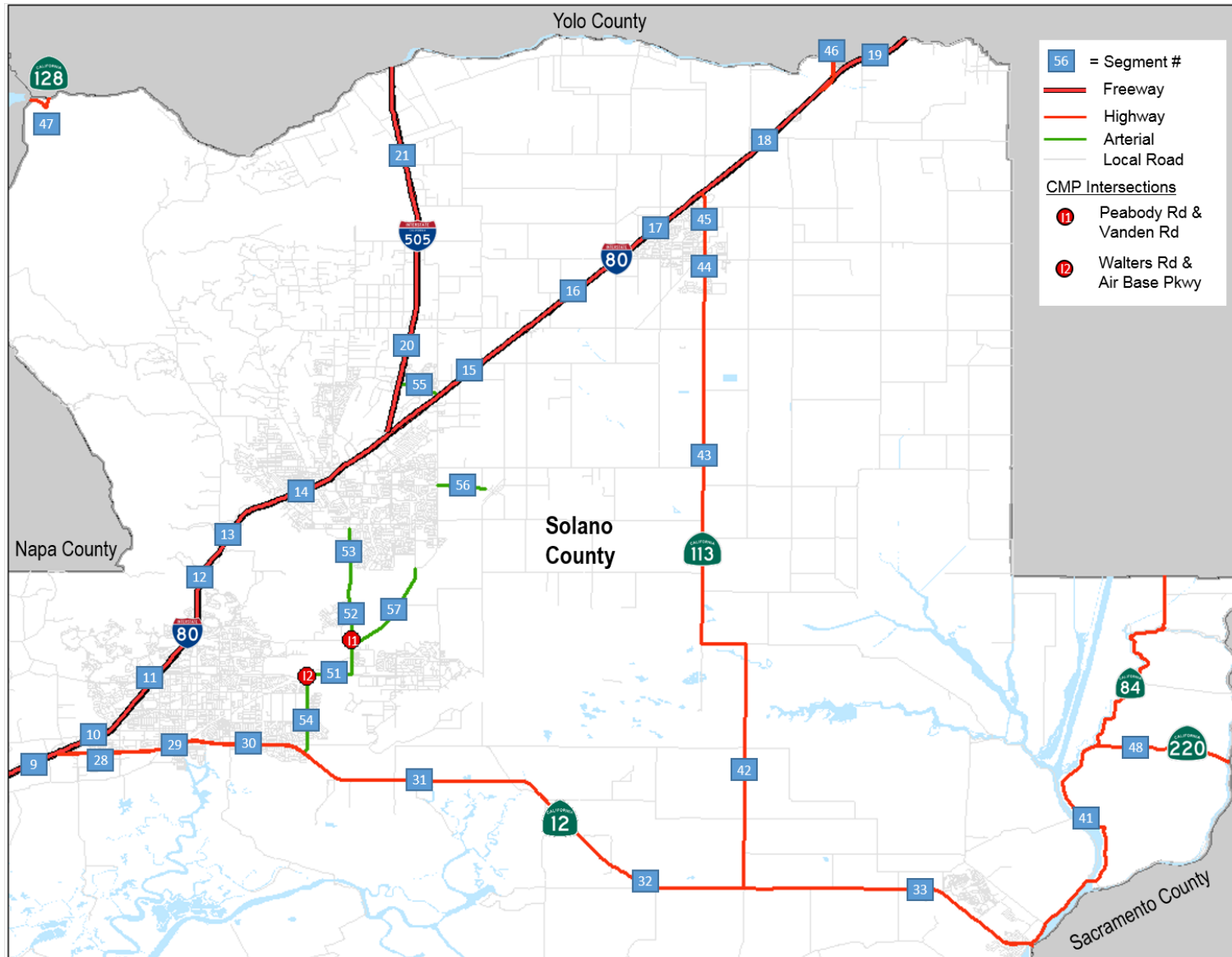


Figure 3: Solano County CMP Network – South County



Section 2: Roadway Level of Service Monitoring

2.1 Purpose and Intent of Legislation

The CMP Legislation of 1990 requires that each segment in the designated CMP network be monitored using the Level of Service, or LOS, standard. According to the legislation, LOS must be measured either using the Circular 212 method, by using the Transportation Research Board’s Highway Capacity Manual (HCM), or an accepted alternative. All state owned roadways and principal arterials must be designated as part of the CMP system. Once a roadway is designated as part of the system, it may not be removed. LOS monitoring occurs biannually on odd numbered years, in tandem with the update of the CMP. A segment’s LOS standard must not fall below LOS E, unless it was measured at LOS F when the first CMP measurement occurred in 1991. These segments are considered “grandfathered” and do not need to meet the LOS E requirement.

2.2 LOS Explained

Level of Service, or LOS, is a mechanism by which transportation planners and engineers measure the amount of congestion on a roadway, based on factors such as speed, travel time, maneuverability, delay, and safety. It provides a quantitative tool that can be used to analyze the impacts of land use changes on the CMP network, and to be used as a measure of system performance (e.g. congestion). LOS is designated based on a letter grade, ranging from A to F (A represents the best conditions, while F represents the worst). While there are several ways to calculate LOS, it is often done through a volume to capacity ratio (V/C) calculation. This is the most common way to calculate LOS on freeways, multi-lane highways, and two-lane highways as it accurately shows the amount of capacity on the roadway that is being used, which typically corresponds to levels of congestion. The V/C ratios and typical freeway speeds associated with each level of LOS are as follows:

Table 1: Level of Service Standards

LOS Level	Description	V/C Ratio	Typical Freeway Speed
A	Free-flow conditions with unimpeded maneuverability.	0.00 to 0.60	60 mph
B	Reasonably unimpeded operations with slightly restricted maneuverability.	0.61 to 0.70	57 mph
C	Stable operations with somewhat more restrictions. Motorists will experience appreciable tension while driving.	0.71 to 0.80	54 mph
D	Approaching unstable operations where small increases in volume produce substantial increases in delay and decreases in speed.	0.81 to 0.90	46 mph
E	Unstable flow at or near capacity levels with poor levels of comfort and convenience.	0.91 to 1.00	30 mph
F	Forced traffic flow in which the amount of traffic approaching a point exceeds the amount that can be served. Characterized by stop-and-go waves and poor travel times.	Greater than 1.00	< 30 mph

Sources: San Mateo CCAG Traffic Level of Service Calculation Methods, Highway Capacity Manual, & Virginia DOT

LOS is also calculated for an intersection using the Circular 212 method. This is done by dividing the sum of critical volumes by the intersection's capacity, creating a volume-to-capacity ratio as with LOS calculations on freeways, highways, and arterials. Critical movements are defined as the combinations of through movements, plus right-turn movements if there is no exclusive right-turn lane, and opposing left-turn movements that represent the highest per-lane volumes.

2.3 LOS Standards

Every odd numbered year, STA is required to determine whether local governments have been conforming to the CMP by maintaining LOS on their roadways above the accepted standard. STA has established the minimum LOS standard across the system as LOS E, with one exception: grandfathered segments. Grandfathered segments are all segments that measured at an LOS F when the first CMP was completed in 1991. No action is required on these facilities if it remains at an LOS F in the 2019 monitoring results. These segments are excluded from local government requirements to maintain the adopted LOS standard as part of any new development approval process. Currently, 24 CMP network segments in Solano County are considered grandfathered, as well as one intersection.

STA performs all monitoring of LOS conditions on the CMP network, in cooperation with its member agencies. Member agencies may be asked to submit traffic counts for arterial segments in the CMP network, if the agency has performed the counts within the previous two years before the CMP update occurs. For this CMP update, traffic counts were conducted on all segments and intersections, supplemented by count data from Caltrans, as well as data from the Solano Activity Based Model, and big data sources like INRIX.

Different types of locations require different techniques for LOS measurement as follows:

- LOS should be assessed at intersections where system principal arterials meet. Such intersections should be measured using the Circular 212 method.
- For mainline freeways, highways, and arterials, the standards by the Highway Capacity Manual (HCM) shall be used. For mainline freeways and highways, the segments correspond to those shown in the Caltrans Route Segment Report (RSR). If no other source data is readily available from Caltrans, the most recent RSR may be used as the source of traffic data to determine LOS along any segment in the state system.
 - For arterials in the system that do not intersect other system segments for considerable distances, STA, in collaboration with its member agencies, will determine where segment level LOS must be determined. The arterials that fall under this category are:

Table 2: Segment Level LOS Determinations using HCM Method

Arterial	Segment Measurement Limits
Military West in Benicia	Between West 3 rd and West 5 th
Walters Road in Suisun City	Between Petersen and Bella Vista
Walters Road in Solano County	Between Fairfield and Suisun City
Peabody Road in Solano County	Between Fairfield and Vacaville
Peabody Road in Vacaville	South of California Drive
Elmira Road in Vacaville	East of Leisure Town Road

Each jurisdiction is responsible for segments or intersections within its jurisdiction. If a segment falls within more than one jurisdiction, then the jurisdiction with the greatest number of mileage is determined to be the responsible agency, with the other agencies working in cooperation with the responsible agency. Should the LOS of a segment or intersection fall below the accepted standard for two monitoring cycles, the segment may be considered deficient and the jurisdiction may be required to submit a deficiency plan, if the segment is still deficient after allowed exemptions are removed. These exemptions include:

- Interregional travel (trips not beginning or ending in Solano County)
- Trips generated from low and very low income housing

If a segment still falls below the accepted LOS standard after these exceptions have been removed, then the segment may require a deficiency plan with planned improvements to remedy the congestion and bring it back to an acceptable LOS. See Chapter 6 for more information on Deficiency Plans.

2.4 2019 LOS Monitoring Results

LOS measurements are conducted on a biannual basis. For this 2019 CMP update, the monitoring was conducted by TJKM on behalf of STA. In order to provide a foundation for current and future CMPs, TJKM in its 2019 data collection effort, conducted new traffic counts on all CMP network segments. Roadway segment counts were counted between August 26-28, 2019 in the AM peak period (7 a.m. – 9 a.m.) and PM peak period (5 p.m. – 7 p.m.). Intersection counts were counted in the 4 p.m. – 6 p.m. peak period on May 14, 2019. Below shows a table that details the LOS standards for each required segment, compared with historical results. Note: Caltrans Postmiles count up in the eastbound and northbound directions.

Table 3: 2019 Solano County CMP State Highway LOS Monitoring Results with Historical Comparisons

ID	Roadway	From (Postmile)	To (Postmile)	Standard	2001	2003	2005	2007	2010 Model	2015 Model	2019
State Highways											
1	I-80	0	0.933	F	D	D	E	F	D	D	A
2	I-80	0.933	1.114	F	F	E	E	E	D	D	C
3	I-80	1.114	4.432	F	F	D*	D*	D	E	C	C
4	I-80	4.432	6.814	F	F	D*	D*	D	E	B	C
5	I-80	8.004	10.015	E	D	D	D	C	B	B	B
6	I-80	10.015	11.976	E	C	D*	C	C	B	A	C
7	I-80	11.976	12.408	E	D	D*	E	E	D	B	B
8	I-80	12.408	13.76	F	F	D*	F	F	C	A	B
9	I-80	13.76	15.57	F	F	D*	F	E	D	B	A
10	I-80	15.57	17.217	F	F	E*	E	E	E	A	C
11	I-80	17.217	21.043	F	F	E*	F	E	E	B	D ₂
12	I-80	21.043	23.034	F	D	D*	E	D	C	B	D
13	I-80	23.034	24.08	E	E	E	D	D	D	B	D
14	I-80	24.08	28.359	F	D	D	D	C	D	A	A
15	I-80	28.359	32.691	F	D	D	C	C	D	A	C
16	I-80	32.691	35.547	F	E	E	D	C	C	A	B
17	I-80	35.547	38.21	F	D	D	E	D	C	A	B

ID	Roadway	From (Postmile)	To (Postmile)	Standard	2001	2003	2005	2007	2010 Model	2015 Model	2019
18	I-80	38.21	42.53	E	C	C*	C*	D	C	A	A
19	I-80	42.53	44.72	E	D	C	D	D	D	A	A ₁
20	I-505	0	3.075	E	B	D	B	B	B	A	A
21	I-505	3.075	10.626	E	A	A	B	A	A	A	A
22	I-680	0	0.679	F	F	F	F	F	D	A	A
23	I-680	0.679	2.819	E	C	B*	B*	***	D	A	C
24	I-680	2.819	8.315	E	C	C	D	D	D	A	D
25	I-680	8.315	13.126	E	C	***	D	***	C	A	C
26	I-780	0.682	7.186	E	C	C*	C*	***	E	A	A
27	SR-12	0	2.794	F	C	F	F	F	F	B	E
28	SR-12	1.801	3.213	B	B*	B	B	***	C	B	B
29	SR-12	3.213	5.15	F	B	B**	B	C	E	A	A
30	SR-12	5.15	7.7	F	B	B**	B**	A	D	A	A
31	SR-12	7.7	13.625	E	B	B	B	B	B	A	A
32	SR-12	13.625	20.68	F	B	B	B	B	B	A	A
33	SR-12	20.68	26.41	E	E	E**	E**	E**	E	D	D
34	SR-29	0	2.066	E	A	A*	A*	A	E	A	A
35	SR-29	2.066	4.725	E	B	B*	B*	B	E	D	A ₁
36	SR-29	4.725	5.955	E	C	C*	C*	C	F	D	A
37	SR-37	0	6.067	F	C	C*	C*	A	F	A	C
38	SR-37	6.067	8.312	E	B	B*	B*	A	C	A	A
39	SR-37	8.312	10.96	F	F	F*	F*	A	C	B	B
40	SR-37	10.96	12.01	F	F	F*	F*	A	C	A	C
41	SR-84	0.134	13.772	E	C	C	C	C	C	A	A
42	SR-113	0	8.04	E	B	B	B	A	A	A	A
43	SR-113	8.04	18.56	E	B	B	B	A	A	A	A
44	SR-113	18.56	19.637	F	F	F	***	C	A	A	A
45	SR-113	19.637	21.24	F	F	F	***	D	C	A	A
46	SR-113	21.24	22.45	E	C	C	C	B	B	A	B
47	SR-128	0	0.754	E	C	C	C	C	C	A	A
48	SR-220	0	3.2	E	C	C	C	C	C	A	A

Table 4: 2019 Solano County CMP Local Roadway LOS Monitoring Results with Historical Comparisons

Local Roadways										
ID	Roadway	From	To	Standard	2001	2003	2005	2007	2010 Model	2019
49	Military East	E. 2 nd St	Adams St	E	***	***	C	***	C	A
50	Military West	I-780	E. 2 nd St	E	B	***	A	***	B	A
51	Air Base Parkway	Walters Rd	Peabody Rd	E	***	***	***	C	B	A

ID	Roadway	From (PM)	To (PM)	Standard	2001	2003	2005	2007	2010 Model	2019
52	Peabody Road	Fairfield City Limit	VV City Limit	E	D	E	D	D	E	E
53	Peabody Road	Vacaville City Limit	California Dr	E	A	A	D	C	A	A
54	Walters Road	Petersen Rd	Bella Vista Rd	E	B	***	***	***	A	A
55	Vaca Valley Pkwy	I-80	I-505	E	C	C	C	D	A	A
56	Elmira Road	Leisure Town Rd	VV City Limit	E	B	B	C	C	B	A
57	Vanden Road	Peabody Rd	Leisure Town Rd	D	B	B	B	C	B	A
58	Tennessee Street	Mare Island Wy	I-80	E	***	***	***	C	D	A
59	Curtola Parkway	Lemon St	Maine St	E	***	***	***	B	E	A
60	Mare Island Way	Maine St	Tennessee St	F	***	***	***	B	B	A

¹ On Segments 19 and 35, some congestion was observed in the video footage from traffic counts that may have lowered the traffic volumes observed at this location, resulting in a higher LOS.

² At Segment 11, Caltrans PeMs 2018 data was used.

* LOS taken from STA's I-80/I-680/I-780 Corridor Study

** SR-12 MIS 2001

*** Data not available

Table 5: 2019 Solano County CMP Intersection LOS Monitoring Results with Historical Comparison

ID	Intersection	Jurisdiction	Standard	2001	2003	2005	2007	2010 Model	2019
11	Peabody Road at Cement Hill/Vanden Road	Fairfield	E	***	E	***	B	B	C
12	Walters Road at Air Base Parkway	Fairfield	E	B	B	***	A	D	D
13	Tennessee Street at Sonoma Blvd	Vallejo	E	D	C	B	B	B	D
14	Curtola Parkway at Sonoma Blvd	Vallejo	E	C	C	C	C	C	D
15	Mare Island Way at Tennessee Street	Vallejo	F	D	D	B	B	B	C

The 2019 monitoring of Solano County's CMP network shows that all segments are within compliance. However, several segments (such as Segments 9, 10, 11, 36, and 37) show a higher LOS than has been previously reported from the 2010 Model. There are two potential explanations for this: one is that the count location may have been slightly different from previous years and could result in a different LOS. This may be the case for Segment 1, which is located near the Carquinez Bridge toll plaza. If previous counts were taken south of the toll plaza, it could have resulted in a lower LOS (queueing and slowing near the toll plaza). The second is that the segment may be congested to the point that traffic is slowed, and lower volume counts are reported. In the second of such cases, the overall corridor may be performing closer to LOS D or E.

Regardless of the compliant status, it is prudent to offer potential explanations to other segments that saw drastic shifts in LOS with the 2019 Monitoring Cycle, based on recently completed projects. On I-80 through Fairfield, the I-80/I-680/SR-12 Interchange project continues to progress, with Phase 1 completion occurring in 2017. This improved the interchange with both Green Valley Road and SR-12. Additionally, metering ramps have been added to I-80 between Red Top Road and I-505 in Vacaville since the last monitoring cycle. It is possible that both of these projects improved LOS on I-80 through Fairfield and Vacaville.

On I-680, improvements to LOS at the Benicia Bridge were likely realized after the opening of the new northbound bridge span and relocation of the toll plaza. Since the toll plaza was relocated on the southern end of the bridge in Contra Costa County, backups that were once common on the northern end of the bridge were drastically reduced.

2.5 Future of LOS: Switch to VMT

A new aspect to this and future CMPs is the transition from LOS to Vehicle Miles Traveled (VMT) to analyze transportation impacts under the California Environmental Quality Act (CEQA). Senate Bill 743 (SB 743), passed in 2013, required changes in the guidelines to implementing CEQA. Rather than using the traditional LOS metric, Vehicle Miles Traveled (VMT) was adopted as the primary metric by which all transportation impacts would be measured under CEQA. Under this law, LOS and other similar metrics are no longer considered a significant environmental impact under CEQA. Regardless, LOS still provides a valuable metric for analyzing congestion.

SB 743 represents a significant shift in how all projects that require a CEQA analysis will be analyzed. Previously, under the LOS metric, the goal of CEQA analysis was to ensure that the project would not have an adverse effect on the LOS of nearby CMP network segments or intersections; in other words, the analysis was done to ensure the project would not significantly increase congestion on nearby roadways. Projects to mitigate LOS increases may consist of roadway widening, but could also include bike or pedestrian projects, or TDM measures. Under a VMT analysis, a project will be analyzed based on how many total vehicle miles traveled the project will generate. Mitigation measures will include projects that will reduce the amount of VMT generated by a project; in other words, the goal will be to reduce the overall number of vehicle trips rather than simply reducing congestion. Mitigation projects under this are more likely to be TDM measures or bike and pedestrian projects, as they are projects that can have a direct impact on reducing VMT by giving people options besides the automobile.

Previous legislative efforts, such as AB 32, SB 375, and SB 32 have set greenhouse gas emission reduction standards for California to meet. For example, AB 32 (2006) required California to reduce its

GHG emissions to 1990 levels by 2020, and SB 32 (2016) further requires a 40% reduction in GHG emissions from 1990 levels by 2030. SB 375 set further goals by directing regional MPOs to develop a sustainable communities strategy that will outline strategies for helping California meeting its climate goals. SB 743 represents a next step in curbing GHG emissions in California. Transportation accounts for 40% of all GHG emissions, with cars and light trucks accounting for three quarters of those emissions (30% overall). As such, reducing single occupancy vehicle (SOV) trips is imperative to curb GHG emissions in California. Switching to using VMT as the primary analysis metric under CEQA will lead to mitigation efforts that have a more lasting impact on reducing SOV trips across the state.

Local governments across California will be required to start using VMT as the primary metric for analyzing transportation impacts under CEQA on July 1, 2020. SB 743 did not amend the CMP legislation to require CMPs to adopt the VMT metric instead of LOS, however, MTC has taken steps to write legislation that would make this change. It is probable that by the next biannual CMP update in 2021, VMT will be used as a metric for monitoring the CMP network. While it is not being used as a metric for this CMP update, STA wishes to include a discussion of VMT in order to prepare for future CMP updates. Additionally, STA has been working with its member agencies to prepare them for the shift to VMT in CEQA analysis that is to occur by 2020, as well as collaborating with other Bay Area agencies to understand best practices.

SB 743 made one change to the CMP legislation, by amending it to reinstate the designation of “infill opportunity zones” where the CMP LOS would not apply. These areas may be established in Transit Priority Areas (TPAs) or high quality transit corridors with at least 15 minute frequency of transit service. Previous infill opportunity zones expired in 2009, and no member agency in Solano County had taken advantage of the designation.

Vehicle Hours Delay

Another shift in this CMP is examining how the LOS is measured. In previous CMPs and in the current one, traffic count data has typically come from Caltrans or their PeMS (Performance Measurement System) database, which maintains traffic counts for all state owned roadways. LOS calculated from this data is typically done using a volume to capacity (V/C) ratio. Recently, with the increase in the amount and reliability of big data from companies such as INRIX, the subject of data sources for LOS monitoring is worth reexamining. INRIX data, when calculated to LOS, is calculated using a formula that requires travel times and speed on each roadway segment. The result is an LOS that reflects the delay that a vehicle experiences on said segment, rather than showing which segments are at capacity or over capacity. Several other CMAs measure congestion on their CMP network using this method, and it may be advantageous for STA to consider in future CMP monitoring cycles. While the typical data source for traffic counts has been Caltrans, it is worth considering other sources as big data continues to grow in the amount available and its accuracy. Doing so would result in greater accuracies on showing speeds and delay on CMP segments.

Section 3: System Performance

3.1: System Performance Purpose and Intent of Legislation

The CMP Legislation of 1991 requires all CMAs to establish performance measures to evaluate the current and future multimodal system performance, in addition to the LOS metric presented for roadways. Solano County has a robust multi-modal transportation network that features many public transportation options, a connected network of bicycle and pedestrian paths, and TDM measures to encourage commuters to use alternative forms of transportation, such as carpool and vanpool. Each of these are described in detail in this chapter. The measures should not be confused with “standards,” as no level of performance is required by the legislation. Rather, the intent is to determine whether the goals of the CMP are being met (see Executive Summary for a full list of CMP goals). These measures could also be used in determining any necessary CIP projects, or be used in the land-use analysis program.

3.2 Performance Measures

There are many ways to assess the effectiveness of a transportation system besides the level of congestion on roadways using LOS. Only using LOS would ignore the fact that the transportation system is multimodal, and that LOS does not work for measuring the effectiveness of a transit line or a bike path. As such, STA must use other performance measures to measure the effectiveness of Solano County’s transit system and bike and pedestrian system. These performance measures are designed to support mobility, air quality, land use, economic objectives, and are used in the development of the Capital Improvement Plan. Unlike LOS, however, these performance measures do not have a standard that must be met; rather they provide a measuring stick to measure the effectiveness of each component. These standards are:

- Ridership for Intercity Transit
 - Headways, stops per mile, days and hours of operation, and farebox recovery
- Bicycle and Pedestrian Movement
 - Bicycle and Pedestrian Plan Implementation in the CIP; number of miles of infrastructure built, and gap closures to improve safety and encourage use
- Multimodal Split (See Chapter 4)
 - Percent of trips per mode taken based on American Community Survey data
- Travel Time Reliability
 - Measuring the reliability of travel times on I-80

3.3: Current Transit Operations in Solano County

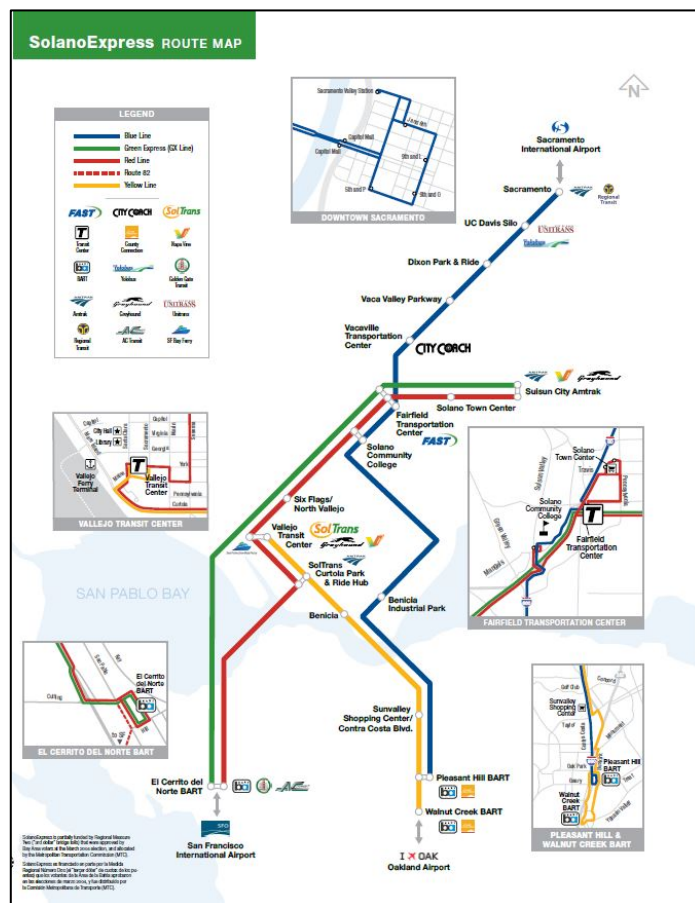
The transit system consists of:

- SolanoExpress Intercity bus routes are operated by Fairfield and Suisun Transit (FAST) and Solano County Transit (SolTrans), through operating agreements with STA. These routes primarily serve those traveling between cities in Solano County, as well as destinations outside Solano County. SolanoExpress routes serve BART in El Cerrito, Pleasant Hill, and Walnut Creek, as well as U.C. Davis and downtown Sacramento. Rio Vista Delta Breeze also operates two

intercity routes not part of the SolanoExpress system that connect Rio Vista to Fairfield/Suisun City, and to Pittsburg Bay Point BART.

- Passenger rail service provided by the Capitol Corridor, connecting Solano County to Sacramento and the Bay Area. The Capitol Corridor has two stops in Solano County: Suisun/Fairfield, and Fairfield/Vacaville.
- Passenger ferry service operated by the San Francisco Bay Ferry, connecting Vallejo to downtown San Francisco. Caltrans also operates two small car ferries to provide access to Ryer Island near Rio Vista.
- Local bus service provided by Dixon Read-Ride, FAST, Rio Vista Delta Breeze, SolTrans, and Vacaville City Coach. Additionally, Dixon Read-Ride, FAST, SolTrans, and Vacaville City Coach also provide ADA accessible paratransit to those who qualify.
- Formal carpool and vanpool facilities and services
- The intercity taxi scrip program

Figure 4: SolanoExpress Route Map



SolanoExpress Intercity Bus Service

Intercity public transit service in Solano County is primarily provided by Fairfield and Suisun Transit (FAST), Solano County Transit (SolTrans), and Rio Vista Delta Breeze. The two former services operate the Green Express Line, Blue Line, Yellow Line, and Red Line. Each of these lines combine to form the SolanoExpress system, and reach destinations from Sacramento to BART in the Bay Area. The Blue Line, Green Express Line, and Yellow Line all went into service in July 2018, and consolidated several routes. The Blue Line combined the previous Routes 20, 30, and 40, the Green Express was formed from the previous Route 90, and the Yellow Line was formed from the previous Route 78. In July 2019, the old Routes 80 and 85 combined to form the Red Line. The consolidation of SolanoExpress route occurred to create more frequent, efficient service and to consolidate overlapping routes.

SolanoExpress buses operate as early as 4:00 A.M. on weekdays, and as late as midnight on weekdays. Headways vary by route but range (in the peak hours) from 15 minutes (Red Line) to 30 minutes (Yellow Line).

All SolanoExpress buses are equipped with accessible features (e.g., lifts, dedicated seating, etc.) in compliance with the Americans with Disabilities Act (ADA). All SolanoExpress routes accept Clipper, the

Bay Area’s universal transit fare card, and are equipped with Automated Vehicle Locators (AVL), allowing passengers to track their bus’s arrival in real time. FAST uses the app NextBus, while SolTrans uses the app MyRide to track their local and SolanoExpress routes respectively. Currently, the SolanoExpress fleet includes 37 buses, 19 operated by FAST and 18 operated by SolTrans. Currently, the entirety of the FAST fleet runs on diesel, and the SolTrans buses run on compressed natural gas (CNG). STA has secured grant funding from CalSTA to begin the process of electrifying the SolanoExpress fleet. This is expected to be phased in as the technology develops.

Table 6: SolanoExpress Routes

Route	Origin	Intermediate Stops	Destination	Approx. Peak Headways	Approx. Off Peak Headways	Operator
Blue Line	Fairfield Transportation Center (FTC)	Vacaville, Dixon, UC Davis	Downtown Sacramento	30 min	60 min	FAST
Green Express Line	Suisun/Fairfield Amtrak	FTC	El Cerrito Del Norte BART	20 min	N/A	FAST
Red Line	Suisun/Fairfield Amtrak & Solano Mall (off peak trips)	FTC, Fairgrounds Dr, Vallejo Transit Center	El Cerrito Del Norte BART	15 min (60 min to Fairfield)	20 min (60 min to Fairfield)	SolTrans
Yellow Line	Vallejo Transit Center	Curtola P&R, Downtown Benicia, Sun Valley Mall	Pleasant Hill BART (AM Eastbound only) & Walnut Creek BART	30 min	60-90 min	SolTrans

Source: FAST and SolTrans

SolanoExpress Route Performance

As of the third quarter of FY 2018-19, the SolanoExpress system is on track to see a 2.9% increase in ridership over the previous fiscal year. The increase in ridership from 2017-18 to 2018-19 is significant because of the recent SolanoExpress service changes, which began at the beginning of FY 2018-19. The system is also continuing the trend of carrying over 1 million passengers per year, of which it has done so since 2011. After three quarters of FY 2018-19, the route with the highest ridership is the Route 80 (consolidated to the Red Line as of July 2019), with 398,407 riders. This is followed by the Green Express, with 157,539. Traditionally, these have been the most productive routes of the SolanoExpress system because they provide a direct connection to El Cerrito Del Norte BART.

Table 7: SolanoExpress Ridership by Route

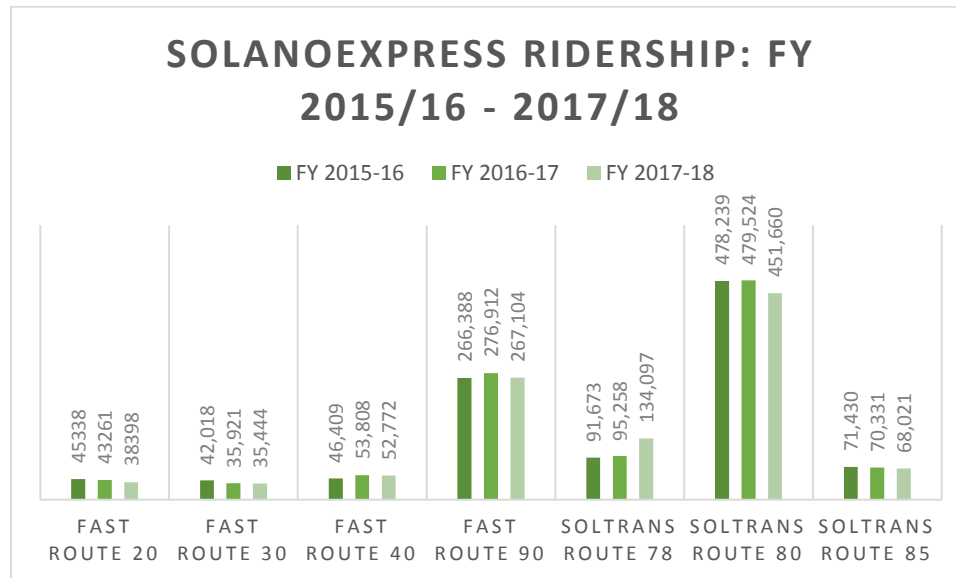
	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19 (Q1-Q3)
FAST Route 20	45,338	43,261	38,398	N/A*
FAST Route 30	42,018	35,921	35,444	N/A*
FAST Route 40	46,409	53,808	52,772	N/A*
FAST Route 90	266,388	276,912	267,104	N/A*
SolTrans Route 78	91,673	95,258	134,097	N/A*
SolTrans Route 80	478,239	479,524	451,660	398,407
SolTrans Route 85	71,430	70,311	68,021	70,031

	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19 (Q1-Q3)
FAST Blue	N/A*	N/A*	N/A*	108,906
FAST Green Exp.	N/A*	N/A*	N/A*	157,539
SolTrans Yellow	N/A*	N/A*	N/A*	80,832
TOTAL	1,041,495	1,054,995	1,057,013	815,715

Source: Solano Transportation Authority

*No data available due to route consolidation

Figure 5: SolanoExpress Ridership, prior to service changes



Source: Solano Transportation Authority

Another metric to measure SolanoExpress system performance is the fare box recovery ratio of each route. This represents the revenue collected in fares, divided by the cost to operate the route; in other words, it shows how much of the route's operating costs are paid for by passenger fares. The established standard set by the State of California is generally 20% fare box recovery. As of the end of the third quarter of 2018-19, all SolanoExpress routes were meeting this standard, with the exception of the FAST Blue Line, which was expected to take a slight dip in farebox recovery during its first year of operations.

Table 8: SolanoExpress Farebox Recovery by Route; 2018-19 Q1-Q3

Route	Farebox Recovery 2018-19 Q1-Q3
FAST Blue Line	16%
FAST Green Express	67%
SolTrans Yellow Line	25%
SolTrans Route 80	74%
SolTrans Route 82	33%
SolTrans Route 85	22%

Source: Solano Transportation Authority

Other Intercity Fixed Routes serving Solano County

In addition to the SolanoExpress system, several transit operators have intercity bus service serving Solano County. Rio Vista Delta Breeze operates two inter-city routes: Routes 50 and 52. Route 50 connects Rio Vista to Suisun Walmart, Suisun Amtrak, Fairfield Transportation Center, and several medical facilities. Route 52 is primarily a commuter route, and provides two round trips from Rio Vista to Pittsburg Bay Point BART. Additionally, Napa VINE has two routes that serve Solano: Routes 11 and 21. Route 11 begins at Redwood P&R in Napa, and serves downtown Napa, Napa Valley College, American Canyon, and Sereno Transit Center before ending at the Vallejo Ferry Terminal. Route 21 begins at the Soscol Transit Center in downtown Napa, and serves Napa Valley College, Fairfield Transportation Center, and Suisun Amtrak. Yolobus Route 220 begins at the U.C. Davis Memorial Union, and stops in Winters and at Vacaville Kaiser before ending at the Vacaville Transportation Center. Additionally, a number of Solano transit operators offer intercity paratransit service by appointment only for ADA-qualified individuals.

Table 9: Other Intercity Bus Routes serving Solano County

Route	Origin	Intermediate Stops	Destination	Approx. Peak Headways	Approx. Off Peak Headways	Provider
Route 50	Downtown Rio Vista	Trilogy, Suisun Walmart	Fairfield Transportation Center	1 WB Trip; 1 WB Trip Daily	1 WB Trip; 3 EB Trips Daily	Rio Vista Delta Breeze
Route 52	Trilogy Rio Vista	Downtown Rio Vista	Pittsburg Bay Point BART	1 Round Trip Daily	N/A	Rio Vista Delta Breeze
Route 11	Redwood P&R Napa	Downtown Napa, NVC, Sereno Transit Center	Vallejo Ferry Terminal	60 min	60 min	Napa VINE
Route 21	Soscol Transit Center Napa	NVC, Fairfield Transportation Center	Suisun Amtrak	60 min	60 min	Napa VINE
Route 220	U.C. Davis Memorial Union	Downtown Winters, Kaiser Vacaville	Vacaville Transportation Center	3 Round Trips Daily	N/A	Yolobus

Source: Rio Vista Delta Breeze, Napa VINE, and Yolobus

Local Transit Services

Solano County has five local transit operators, serving all seven cities in Solano County and providing connections to intercity transit. Below is a summary of each operator:

Solano County Transit, or SolTrans, is the joint transit service for Benicia and Vallejo. SolTrans operates the following services:

- **Local Routes:** 9 local routes serve major destinations in Vallejo and Benicia Monday-Saturday, with one route operating on Sundays. SolTrans is supplementing their local service in Benicia with a partnership with Lyft to provide rides from Benicia to shopping and medical appointments in Vallejo, and within Benicia city limits. This partnership will replace the Route 20 and the Benicia Dial-a-Ride. SolTrans local routes operate between 5:30 A.M. and 9:00 P.M. and

most routes operate on 30-60 minute headways throughout the day, with some operating on 15 minute headways during peak hours.

- School Routes: 3 routes operate before and after school hours only, serving Benicia schools and Jesse Bethel High School in east Vallejo. Benicia's school routes also offer limited Saturday service.
- Intercity Commuter Routes: 2 routes (Yellow and Red), operate as part of the SolanoExpress system and provide connections to Fairfield/Suisun, El Cerrito Del Norte BART, Sun Valley Mall, Pleasant Hill BART, and Walnut Creek BART. SolTrans also operates one late night round trip Monday-Friday directly to the Transbay Transit Center in San Francisco, billed as the Route 82.
- Dial-a-Ride Paratransit Service: Offered to eligible individuals upon requests to destinations within Vallejo and Benicia Monday-Saturday, and limited destinations regionally

In 2019, SolTrans implemented service improvements across all of their routes in response to the 2018 Comprehensive Operational Analysis. A few of these changes include extending service hours on local routes to 9pm on weekdays, replacing the Route 20 with a Lyft partnership (in coordination with STA), and adjusting the headways on most local routes. The partnership with Lyft reflects the overall nationwide trend of transit operators adjusting to declining local service and changing travel patterns. A Lyft partnership allows for more convenience and provides greater weekend service.

In FY 2017-18, SolTrans local routes and paratransit experienced a combined ridership of nearly 710,947, a decrease over the previous three fiscal years. The average farebox recovery for local routes in FY 2016-17 was 13%, below the state standard of 20%. All SolTrans buses accept Clipper fare payments.

Fairfield and Suisun Transit, or FAST, is the transit service for Fairfield and Suisun City, operated by the City of Fairfield. FAST operates the following services:

- Local Routes: 8 local routes operate Monday-Saturday and serve major destinations in Fairfield and Suisun City, and connect to intercity routes, as well as Amtrak's Capitol Corridor
- School Routes: 1 route operates before and after school hours only, connecting Cordelia schools with Suisun City and other parts of Fairfield. Local routes operate from 6:00 A.M to 8:30 P.M on weekdays and 9:00 A.M. to 6:00 P.M. on Saturdays. Most local routes operate on a headway of 30-60 minutes.
- Intercity Commuter Routes: 2 routes (Blue and Green Express), operate as part of the SolanoExpress system and provide connections to U.C. Davis, Sacramento, El Cerrito Del Norte BART, and Pleasant Hill BART. Blue Line operates Monday-Saturday, while the Green Express Line operates Monday-Friday during commute hours only
- Dial-a-Ride Paratransit Service: Offered to eligible individuals upon request Monday-Saturday to destinations within Fairfield and Suisun City, and limited destinations regionally

In FY 2017-18, FAST local routes and paratransit had a combined ridership of 597,949, accounting for 59% of the total system ridership. In the same fiscal year, FAST's local routes in 2014-15 averaged a farebox recovery of 13%, below the state standard of 20%. All FAST buses accept Clipper fare payments.

Vacaville City Coach is the City operated local transit service for Vacaville. City Coach offers the following services:

- Local Routes: 6 local routes operate Monday-Saturday and serve major destinations in Vacaville, and connect to SolanoExpress intercity routes. City Coach routes operate on 30-60 minute headways and run from 6:00 A.M. to 6:30 P.M. on weekdays, and 8:00 A.M. to 6:00 P.M. on Saturdays.
- Dial-a-Ride Paratransit Service: Offered to eligible individuals upon request Monday-Saturday to destinations within Vacaville

In FY 2017-18, Vacaville City Coach routes achieved a ridership of 426,717, a decrease over the previous two fiscal years. In this same fiscal year, the farebox had dropped to 17%, prompting a restructure of City Coach routes in the summer of 2018. The restructure occurred after a complete system analysis in early 2018. All City Coach buses accept Clipper fare payments.

Dixon Read-Ride is the City operated dial-a-ride transit service for Dixon residents. Read-Ride offers the following services:

- Dial-a-Ride Service: Read-Ride offers dial-a-ride service Monday-Friday from 7am-5pm within Dixon City Limits. The service serves all Dixon schools, and connects to the SolanoExpress Blue Line at the Dixon Market Lane Park and Ride
- Intercity Paratransit Service: Read-Ride offers paratransit service to Vacaville and Davis to ADA eligible individuals by appointment only

In FY 2017-18, Dixon Read-Ride's ridership was 63,843, a slight increase over the previous two fiscal years. In 2014-15, the farebox recovery was 14.9%, above the state standard of 10% for rural transit systems. The 10% rural transit threshold applies to Dixon Read-Ride as well as the Rio Vista Delta Breeze.

Rio Vista Delta Breeze is the transit operator serving Rio Vista and nearby Isleton in Sacramento County. Delta Breeze offers the following services:

- Dial-a-Ride Service: Delta Breeze offers dial-a-ride service Monday-Friday from 9am-1:30pm within Rio Vista city limits and Isleton city limits, as well as the Delta resort communities between the two cities along State Route 160
- Intercity Routes: Delta Breeze operates two intercity routes Monday-Friday, one to Fairfield/Suisun and the other to Pittsburg Bay Point BART. Both of these routes provide vital connections to the rural community of Rio Vista. Route 50 to Fairfield/Suisun has three round trips per day, while Route 52 to Pittsburg/Bay Point BART operates two round trips per day.

In FY 2017-18, Rio Vista Delta Breeze had a combined ridership from all routes of 10,009; In 2014-15, the farebox recovery during that same fiscal year was 6.9%, below the state standard of 10% for rural transit services.

Rail Service

Amtrak's Capitol Corridor

The Capitol Corridor Joint Powers Authority (CCJPA) operates passenger rail service between San Jose and Auburn, serving Oakland, San Francisco (via bus connection), Richmond, and Sacramento in between. The Capitol Corridor has two stops in Solano County:

- Suisun/Fairfield located in downtown Suisun City at the intersection of Main Street and SR-12. The station has a single building with two automated ticket machines, and a transit information booth operated by Solano Mobility. There is indoor and outdoor seating under a covered station platform, and two bus shelters adjacent to the station. Parking is available adjacent to the station, or across the street at the Lotz Way Park and Ride lot. Bike parking is also available at the station and the Park & Ride lot. The Suisun/Fairfield station is served by the SolanoExpress Red Line and Green Express Line, as well as the Napa VINE Route 21, Rio Vista Delta Breeze Route 50, and FAST Route 50. Greyhound makes a stop at the station, and it is also served by STA's Lyft First/Last Mile Program. The station serves as an anchor for Suisun City's waterfront downtown PDA and the adjacent Fairfield Downtown PDA, and is expected to benefit from future growth in housing and retail in the area.
- Fairfield/Vacaville, a new station located in northeast Fairfield at the intersection of Peabody Road and Vanden Road. The station is equipped with automated ticket machines, adjacent parking, bike parking, and 5 bus shelters served by local transit (currently FAST Route 2). The station is expected to be a catalyst for new development that is planned to occur in the northeast Fairfield area. Over 6,000 housing units are planned to be built within the Fairfield/Vacaville Train Station Priority Development Area (PDA), which surrounds the newly opened station. The station also serves Solano County's largest employer, Travis Air Force Base.

Each station is served by 30 trains per day on weekdays, and 22 trains per day on weekends. The tracks run through Solano County for 41.5 miles, from the Yolo County line to the Benicia-Martinez Bridge across the Carquinez Strait. The service is popular among commuters and students, and saw a ridership of 1.7 million system-wide in 2018, an increase of 6.25% over 2017 ridership. After three quarters of FY 19 (Oct 2018 to June 2019), the Suisun/Fairfield Train Depot had a combined boardings and alightings of 86,081, while the Fairfield/Vacaville Station saw a combined boardings and alightings of 66,495 during the same time period.

Ferry Service

San Francisco Bay Ferry

Passenger ferry service began in Solano County in 1986, operating a single route between Vallejo and San Francisco. Originally, the service was operated by the City of Vallejo, but has since been transferred to the San Francisco Bay Ferry, which is operated by the Water Emergency Transportation Authority, or WETA. This single route remains, carrying commuters from the downtown Vallejo waterfront to the San Francisco Ferry Building and Pier 41 7 days a week. Two ferry stops exist in Vallejo:

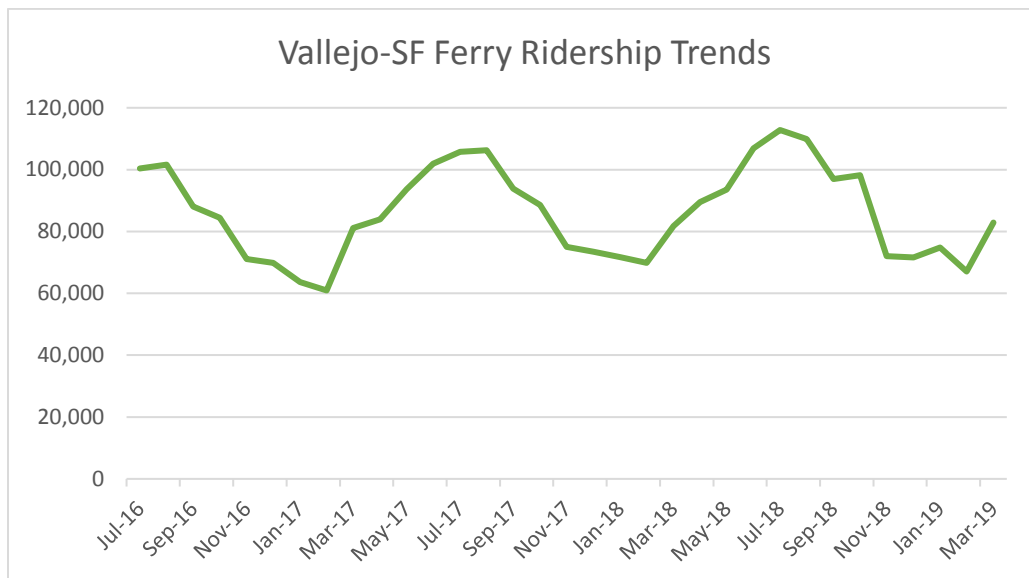
- Mare Island: Limited ferry service is available from Mare Island adjacent to the San Francisco Bay Ferry's operations and maintenance center on Nimitz Ave. Free parking is available at the terminal, and ticketing is available on the ferry. The Mare Island Terminal is served by 6 outgoing and 7 incoming boats on weekdays, and 3 outgoing and 4 incoming boats on weekends.
- Vallejo Ferry Terminal: Located at the intersection of Mare Island Way and Georgia St, this popular terminal enjoys direct ferry service to downtown San Francisco 7 days a week. Based on the summer schedule, the terminal is served on weekdays by 15 outgoing boats and 14 incoming boats. On weekends, it is served by 7 outgoing and incoming boats a piece. Each

season the schedule is changed to reflect fluctuating ridership trends, such as increased tourism ridership in the summer. The Ferry Terminal is directly adjacent to the Vallejo Transit Center, which is served by all SolTrans local routes, SolanoExpress Red Line, and Yellow Line, and the Napa VINE Routes 11 and 29. Paid parking is available across the street from the terminal, or in a nearby parking garage with 750 spots. Plans are underway to expand the parking garage and add mixed use residential/retail buildings adjacent to the Ferry Building.

San Francisco Bay Ferry also operates a seasonal ferry service from Vallejo to San Francisco Giants games during the spring and summer seasons. On weekends, the ferry serves the ballpark directly in both directions, but on weekdays it is only direct on the return trip (ferry riders must use regularly scheduled trips to the SF Ferry Building to get to San Francisco).

The Vallejo-SF Ferry Route is one of the San Francisco Bay Ferry's most productive routes. In FY 2017-18, the route saw a ridership of 1,056,341, an increase of 5.5% over the previous fiscal year's ridership. Several boats during peak hours are often at capacity, and will sometimes turn away passengers at the dock. Regional Measure 3, a bridge toll increase passed by Bay Area voters in 2018, will include additional funds to expand ferry service between Vallejo and San Francisco. Additionally, in FY 2016-17, the Vallejo-SF Route achieved a farebox recovery of 62%, better than any other route in the WETA system.

Figure 6: Vallejo – San Francisco Ridership: July 2016 to March 2019



Source: San Francisco Bay Ferry

Caltrans Delta Ferries

Caltrans operates two small car ferries in the Delta: the Real McCoy II Ferry on SR-84, and the J-Mack Ferry on SR-220. Each ferry can accommodate cars, light trucks, and RVs. The capacity of the Real McCoy Ferry is 8 cars, while the J-Mack Ferry can accommodate 6 cars. The ferries primarily serve recreational and agricultural traffic, as there is no significant housing or industry on Ryer Island.

Specialized Transit Services

Travel Training

Though not explicitly a transportation service in itself, travel training provides a vital service to members of the public who would like to learn how to ride public transportation. A qualified trainer will meet the patron at their house, and show them step-by-step how to get from Point A to Point B, depending on the needs of the patron. The trainer will show the patron how to read a bus schedule, how to board the bus, pay the fare, where to get off the bus, etc. This service is highly popular among those who would otherwise not feel comfortable riding public transportation.

Intercity Taxi Card Program

The Solano County Intercity Taxi Card Program is a result of two Senior and Disabled Transit summits sponsored by STA and the County of Solano in 2009. The program provides a flexible option for those who qualify for ADA paratransit to get a ride anywhere in Solano County, 24 hours a day, 7 days a week. Such persons are eligible to purchase discounted taxi fares, which are loaded onto a prepaid debit card that may only be used for its purpose. Previously, paper tickets were used, but as of 2019 the program is being phased into an electronic debit system. These discounted fares may be used to ride taxis anywhere in Solano County, as long as the ride begins and ends in Solano County. The program is also introducing a new non-ambulatory service. Previously, in order to be eligible to use taxi scrip the user must have been able to get in and out of the taxi without assistance from the driver. Now, people who have wheelchairs will also be able to use the service, using wheelchair accessible taxis.

ADA Paratransit

All five of Solano County's transit operators provide ADA accessible paratransit to their qualified residents within their service area. In all cases, the service is available by reservation only, and generally must be reserved at least a couple of hours in advance. SolTrans and FAST offer regional connections on their paratransit system to neighboring cities, while Dixon and Rio Vista offer paratransit services as part of their general public dial-a-ride service. Dixon also offers paratransit rides to Davis and Vacaville by advance reservation only. SolTrans, FAST, and City Coach operate Monday-Saturday, while Dixon and Rio Vista operate Monday-Friday.

Volunteer Driver Services

Supplementing transit options are volunteer driver services, run by local non-profits. One of these services, called Faith in Action Ride with Pride, offers rides to older adults on a donation basis only. These services are available to older adults who no longer drive and are ambulatory. Ride with Pride is often used to transport seniors to medical appointments or shopping.

3.4 Bike and Pedestrian

STA is committed to encouraging active modes of transportation, such as bicycling and walking, as a healthy alternative to driving.

3.4.1 Current System

Solano County's bicycle network is made up of a mix of Class I paths, Class II bike lanes, and Class III bike routes. As of 2012, Solano County had a total of 132.9 miles of Class I and Class II bikeways connecting

the county. These include important inter-city connector routes, such as the Solano Bikeway, Dixon-Davis Bikeway, and Vaca-Dixon Bikeway.

The pedestrian network is made up of sidewalks, Class I paths, crosswalks, and other enhanced pedestrian treatments. As part of the Active Transportation Plan, STA recently mapped all sidewalks in each Solano County city and pockets of unincorporated County. The total countywide sidewalk mileage is 1,313 miles (includes measurements of sidewalks on both sides of the street independently).

Current Adopted Plans

STA's current adopted bicycle and pedestrian plans are the 2012 Countywide Bicycle Transportation Plan, and the 2012 Countywide Pedestrian Transportation Plan. Both of these plans are being combined with the 2012 Safe Routes to Transit Plan and the Safe Routes to School Plan to form the Solano Active Transportation Plan; scheduled to be complete in early 2020. Additionally, the Active Transportation Element of the Solano County CTP from 2014, also includes some active transportation policies and projects.

Currently, no Solano County member agency has its own adopted bicycle or pedestrian plan, however, STA is currently working with each jurisdiction to develop their own plan as part of the Solano ATP process. All Solano County General Plans also have policies related to bike and pedestrian transportation.

Active Transportation Plan

STA is currently working with its member agencies to develop the Solano Active Transportation Plan, which will set a new vision for biking and walking in Solano County. The Solano ATP will combine four previous STA plans: Countywide Bicycle Plan, Countywide Pedestrian Plan, Safe Routes to Transit Plan, and the Safe Routes to School Plan to provide a comprehensive plan for all biking and walking projects in Solano County. Additionally, the ATP will provide each jurisdiction with its own chapter, containing existing conditions, public outreach results, and prioritized projects to adopt as their own Active Transportation Plan, should the jurisdiction wish to. Previously, jurisdictions were given the option of adopting the Countywide Bike or Pedestrian plan to qualify for grant funding. This approach will give each jurisdiction a more personalized approach with action items and projects to follow up on. Projects will be based on public outreach, data analysis, and feedback from local jurisdictions. The ATP is expected to be complete by early 2020.

Currently, the most recently adopted Countywide Bike and Pedestrian Plans were adopted in 2012. As such, the new Active Transportation Plan will provide Solano County with new projects, as many of the major projects from the previous adopted plans have been funded or built.

Funding Programs

STA and its member agencies use many fund sources to complete bike and pedestrian projects, but the most common sources include:

- Congestion Mitigation and Air Quality Funds (CMAQ): Federal funds that are passed through to local agencies via MTC's One Bay Area Grant (OBAG). CMAQ funds may be used for bike and pedestrian projects, or any project that helps to reduce air pollution.

- Transportation Development Act Article 3: Sales tax funds that return to Solano County to be used for bike and pedestrian capital projects. Every five years, the funds may be used for bike and pedestrian planning.
- Transportation Funds for Clean Air (TFCA): From Bay Area Air Quality Management District. Projects must help to reduce air emissions, including bike and pedestrian projects.
- Clean Air Funds (CAF): From Yolo-Solano Air Quality Management District. Projects must help to reduce air emissions, including bike and pedestrian projects.

Current and Recently Completed Projects

STA and its member agencies are committed to encouraging bicycle and pedestrian transportation by dedicating funds to the construction of capital facilities. Recently completed bicycle projects include the Dixon Green Bike Lanes project (first in Solano County), Vaca-Dixon Bikeway Phase 6 (the last segment gap in a continuous bicycle facility between Vacaville and Dixon), and a Class II buffered bike lane on Lopes Road, completed by the City of Fairfield. Other projects that are currently in development are the Bay Trail/Vine Trail Gap Closure Project in Vallejo, and the Class I path along the Jepson Parkway project in Fairfield and Vacaville. Segments of the Jepson Parkway trail are already complete, including on Leisure Town Rd between Vanden Rd and Elmira Rd, and on Vanden Rd near the Fairfield/Vacaville Train Station. The ultimate plan for this bicycle facility is that it will provide a continuous connection from I-80 in Vacaville to SR-12 in Suisun City.

Recently completed pedestrian projects include Suisun Valley Farm to Market Phase 1 (pedestrian enhancements on Suisun Valley Rd and Mankas Corner Rd at Mankas Corners in rural Suisun Valley), and an enhanced pedestrian crossing at Front St in downtown Rio Vista, connecting to the Rio Vista Waterfront Promenade. Other projects currently in development include SR2S Infrastructure Improvements, which will provide enhanced pedestrian amenities at 7 schools in Vallejo and Benicia, and the Green Valley Rd Ridge Trail Crossing Project in Fairfield.

Bike and Pedestrian Counts

STA maintains four bicycle counters outfitted with pneumatic tubes, and four pedestrian counters that use heat sensors to count passing pedestrians. These counters are used on an as needed basis for grant applications or before/after counts to measure project effectiveness. Below is a table of some recent counts collected within the last few years.

Table 10: Recent Bike and Pedestrian Counts

Year	Jurisdiction	Location	Purpose	Count Days	Bike ADT*	Ped/Bike ADT*	Total Trips
2018	Fairfield	Lopes Rd & Gold Hill (N)	Before/after restriping	11	60	N/A	658
2018	Fairfield	Lopes Rd & Gold Hill (S) at City Limit	Before/after restriping	11	14	N/A	157
2018	Vallejo	Curtola Pkwy WB at Curtola PnR	Grant application	17	7	N/A	118

Year	Jurisdiction	Location	Purpose	Count Days	Bike ADT*	Ped/Bike ADT*	Total Trips
2018	Vallejo	Curtola Pkwy EB at Solano Ave	Grant application	17	8	N/A	127
2018	Vallejo	Mare Island Causeway	Before bridge maintenance	17	40	N/A	682
2017	Rio Vista	Airport Rd at Palisades Dr	Grant application	7	N/A	21	150
2017	Benicia	Columbus Pkwy at Rose Dr	Before restriping	47	26	N/A	1,200
2017	Dixon	Rehrmann Dr at Evans Rd	Before green striping	27	22	N/A	600
2017	Dixon	Rehrmann Dr at N. Lincoln Dr	Before green striping	27	21	N/A	550
2016	Vacaville	E. Main St between McClellan & Wilson	Redevelopment project	17	15	52	1,150
2016	Dixon	SR-113 between County Fair Dr & E. Chestnut	Event (Dixon May Fair)	11	N/A	631	6,900
2016	Vallejo	Fairgrounds Dr at SR-37	Redevelopment/Transit Service Change	83	22	135	13,000
2016	Benicia	E. 3 rd St tunnel at I-780	ATP SR2S Project	42	N/A	87	3,650
2016	Benicia	E. 3 rd St at Golden Slopes Ct	ATP SR2S Project	42	N/A	246	10,300
2015	Suisun City	McCoy Creek Path	ATP SR2S Project	366	N/A	103	37,700
2015	Vallejo	Bay Trail between B St and Hichborn	ATP SR2S Project	366	N/A	98	35,900
2015	County	Suisun Valley Pkwy	ATP SR2S Projects	9	49	N/A	440

Source: Solano Transportation Authority

*Bike ADT numbers were generated from the bicycle counters, which use pneumatic tubes. Ped/Bike ADT numbers are generated by pedestrian counters, which use heat sensors and are unable to differentiate between bikes and pedestrians.

Additionally, as part of this CMP update, TJKM conducted bicycle and pedestrian counts at the five intersections included in the CMP network. In all cases, counts were conducted between 4 P.M and 6 P.M. on 5/14/19. These intersections include:

1. Peabody Road at Cement Hill Road/Vanden Road in Fairfield
2. Walters Road at Air Base Pkwy in Fairfield
3. Tennessee Street at Sonoma Blvd in Vallejo
4. Curtola Pkwy at Sonoma Blvd in Vallejo
5. Mare Island Way at Tennessee Street in Vallejo

Table 11: 2019 CMP Intersection Bicycle Counts

Bicycle Counts	EB	WB	NB	SB	NEB	Total
Peabody Rd at Cement Hill Rd	0	0	0	2	N/A	2
Walters Rd at Air Base Pkwy	0	2	0	2	N/A	4
Tennessee St at Sonoma Blvd	1	0	0	0	N/A	1
Curtola Pkwy at Sonoma Blvd	0	0	0	0	0	0
Mare Island Wy at Tennessee St	1	0	1	0	N/A	2

Source: 2019 CMP Data Collection

Table 12: 2019 CMP Intersection Pedestrian Counts

Pedestrian Counts	EB	WB	NB	SB	SWB	Total
Peabody Rd at Cement Hill Rd	1	0	0	0	N/A	1
Walters Rd at Air Base Pkwy	2	2	1	0	N/A	5
Tennessee St at Sonoma Blvd	14	13	9	13	N/A	49
Curtola Pkwy at Sonoma Blvd	7	3	9	1	6	26
Mare Island Wy at Tennessee St	7	10	4	5	N/A	26

Source: 2019 CMP Data Collection

Overall, bicycle counts were low across the board at all three intersections. This is likely due to the fact that the five CMP intersections in question are high traffic volume and often high speed intersections. Of the roadways listed at each intersection, only Peabody Rd at Cement Hill Rd has bike lanes south of the intersection (and a Class I path under construction along Cement Hill Rd), and Mare Island Wy has a Class I path. The lack of bicycle facilities at several of these roadways, combined with high volumes of traffic, may explain the relative lack of bicycle traffic.

Pedestrian traffic ranked low at the Fairfield intersections, but higher at the Vallejo intersections. This can be explained by the fact that the Vallejo intersections are located in a more urban environment close to town, while the two Fairfield intersections are far from most destinations. The one exception is the Peabody Rd at Cement Hill Rd intersection, where the Fairfield/Vacaville Train Station. Additionally, the two Fairfield intersections lack sidewalks on some of the streets leading up to the intersection, while this is not the case at Vallejo's intersections.

3.5 Travel Time Reliability

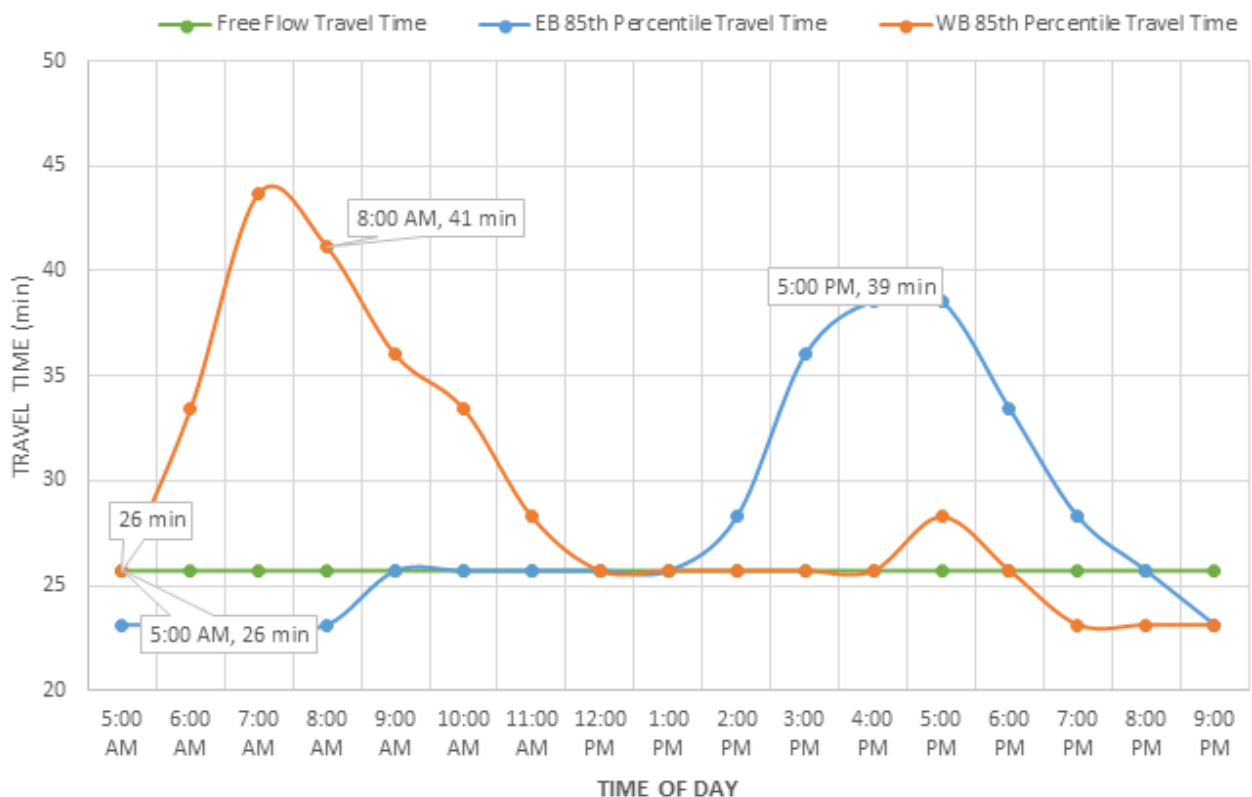
Travel time reliability is the consistency or dependability in travel times, as measured from day-to-day or across different times of day. This metric is particularly important for commuters who travel along congested corridors, where traffic patterns may be unreliable. Consider this example: if a major commuter route has a travel time of 20 minutes in free flow traffic, but experiences congestion on all weekdays with an average travel time of 28 minutes, a reasonable commuter will plan for the average travel time to account for traffic. However, when unforeseen incidents slow down traffic further than the average (accidents, bad weather, etc.), it could take 35 minutes to make the same commute, or

perhaps even longer. Travel time reliability allows commuters to plan for this variability so that they will arrive on time. Otherwise, the commuter may end up being late 50% of the time, or early 50% of the time because they planned on an average commute time. For STA, travel time reliability allows the agency to further measure transportation system performance in Solano County.

The most effective measures of travel time reliability are 90th or 95th percentile travel times, buffer index, and planning time index. Buffer index represents the extra buffer time (or time cushion) that travelers would need to add to their average travel time to ensure on-time arrival. Lastly, planning time index is the total travel time that should be planned when an adequate buffer time is included. It is calculated by dividing the 95th percentile travel time by the free-flow travel time.

Below is a chart showing travel time reliability on I-80 between Vallejo and the Yolo County Line.

Figure 7: Travel Time Reliability on I-80



*Chart represents 85% of observed data, collected from Caltrans

The chart shows that under free flow conditions the time to travel the length of the segment is 26 minutes. However, during the A.M. peak hour (8 a.m.), the planning time index rises to 41 minutes to travel this segment of I-80 in the westbound direction. In the afternoon peak hour (5 p.m.), it takes approximately 39 minutes to travel the segment in the eastbound direction. These results are consistent with typical traffic conditions in the area, which tend to exhibit congestion at various points on the study segment.

Section 4: Transportation Demand Management

4.1 Purpose and Intent of Legislation

Transportation Demand Management, or TDM, refers to the improved efficiency of existing transportation systems without significant expansion of the infrastructures. Most often, these strategies focus on ways to reduce single occupancy vehicles, or to eliminate the need for driving altogether. Common strategies to reduce solo driving include carpool, vanpool, bicycles, transit, and park and ride lots. Strategies to reduce vehicle miles traveled, or VMT, include telecommuting, alternative work schedules, and parking cash-out programs. Promoting housing near high quality transit can help to eliminate the need for a car, as well as promoting a healthy balance between the location of jobs and housing. Skewing these areas can lead to higher commute distances and increased congestion.

Subsection 3 of the California Government Code Section 65089(b) requires that all CMPs include a TDM element that outlines strategies to promote alternative forms of transportation; hereby reducing traffic congestion and improving air quality. The emphasis of this section is to use strategies that will result in reduced VMT on Solano County's freeways and roadways, and promote reduced GHG emissions. Local governments also have an opportunity to contribute to reduced VMT as they review new development proposals. Local land use decisions are key to contributing to the overall TDM strategies by locating housing and jobs near transit and near to each other.

4.2 Air Quality Conformity

MTC Resolution 3000 Revised requires all CMPs to be consistent with the region's adopted Transportation Control Measures (TCMs) that are based on Federal and State Clean Air Plans. TCMs help to achieve and maintain standards for ozone and carbon monoxide set by the Federal, State, and Regional Clean Air Plans. As required by state statute, Solano County's CMP conforms to the transportation-related vehicle emission air quality mitigation measures. The Bay Area Air Quality Management District's (BAAQMD) 2017 Clean Air Plan lists 15 TCMs that are better refined from previous federal and state plans and include greenhouse gas emission mitigation actions. Below lists where each TCM is addressed in the Solano County CMP:

Table 13: 2017 Bay Area Clean Air Plan Transportation Control Measures

TCM	Description	CMP Reference
TR1 Clean Air Teleworking Initiative	Develop teleworking best practices for employers and develop additional strategies to promote teleworking. Promote teleworking on Spare the Air Days.	Chapter 4, Transportation Demand Management
TR2 Trip Reduction Programs	Implement the regional Commuter Benefits Program (Rule 14-1) that requires employers with 50 or more Bay Area employees to provide commuter benefits. Encourage trip reduction policies and programs in local plans, e.g. general and specific plans while providing grants to support trip reduction efforts. Encourage local governments to require mitigation of vehicle travel as part of new development approval, to adopt transit benefits ordinances in order to reduce transit costs to employees, and to develop innovative ways to encourage rideshare, transit, cycling,	Chapter 4, Transportation Demand Management

	and walking for work trips. Fund various employer-based trip reduction programs.	
TR3 Local and Regional Bus Service	Fund local and regional bus projects, including operations and maintenance.	Chapter 3, System Performance and CIP
TR4 Local and Regional Rail Service	Fund local and regional rail service projects, including operations and maintenance.	Chapter 3, System Performance and CIP
TR5 Transit Efficiency and Use	Improve transit efficiency and make transit more convenient for riders through continued operation of 511 Transit, full implementation of Clipper fare payment system and the Transit Hub Signage Program.	Chapter 3, System Performance
TR6 Freeway and Arterial Operations	Improve the performance and efficiency of freeway and arterial systems through operational improvements, such as implementing the Freeway Performance Initiative, the Freeway Service Patrol, and the Arterial Management Program.	Chapter 8, Capital Improvement Program
TR7 Safe Routes to School and Safe Routes to Transit	Provide funds for the regional Safe Routes to School and Safe Routes to Transit Programs.	Chapter 3, System Performance and CIP
TR8 Ridesharing, Last-Mile Connection	Promote carpooling and vanpooling by providing funding to continue regional and local ridesharing programs, and support the expansion of carsharing programs. Provide incentive funding for pilot projects to evaluate the feasibility and cost-effectiveness of innovative ridesharing and other last-mile solution trip reduction strategies. Encourage employers to promote ridesharing and car sharing to their employees.	Chapter 4, Transportation Demand Management
TR9 Bicycle and Pedestrian Access and Facilities	Encourage planning for bicycle and pedestrian facilities in local plans, e.g. fund bike lanes, routes, paths, and bicycle parking facilities.	Chapters 3, 4, and CIP
TR10 Land Use Strategies	Support implementation of Plan Bay Area, maintain and disseminate information on current climate action plans and other local best practices, and collaborate with regional partners to identify innovative funding mechanisms to help local governments address air quality and climate change in their general plans.	Chapter 5, Land Use Analysis
TR11 Value Pricing	Implement and/or consider various value pricing strategies.	Not applicable to Solano County
TR12 Smart Driving	Implement smart driving programs with businesses, public agencies, and possibly schools and fund smart driving projects.	Chapter 4, Transportation Demand Management
TR13 Parking Policies	Encourage parking policies and programs in local plans, e.g. reduce minimum parking requirements; limit the supply of off-street parking in transit-oriented areas; unbundle the price of parking spaces; support implementation of demand-based pricing (such as “SF Park”) in high-traffic areas.	Chapter 4, Transportation Demand Management
TR15 Public Outreach and Education	Implement the Spare the Air Every Day Campaign including Spare the Air alerts, employer program, and community resource teams, a PEV Outreach campaign, and Spare the Air Youth Program.	Chapter 4, Transportation Demand Management

Source: Bay Area Air Quality Management District’s 2017 Clean Air Plan

4.3 Transportation Demand Management in Solano County

STA and its member agencies remain committed to reducing congestion on Solano County's roadways through TDM measures. As the population of Solano County and its surrounding areas grow, peak-period travel speeds will continue to deteriorate on freeways and arterials within the county without mitigation. TDM strategies are crucial because they provide a more cost-effective way of reducing congestion without expensive infrastructure expansion. Along with improving roadway operations and local transit service, TDM measures are crucial to improving operating efficiency within the existing county transportation system.

TDM strategies in Solano County can be divided into three main categories:

- **Trip Reduction:** Focuses on reducing single occupancy vehicle trips by promoting alternative forms of transportation, such as transit, carpooling, cycling, etc.
- **Operational Improvements:** Mostly uses existing transportation system to provide upgrades to improve operations, such as signal timing, parking management, or HOV lanes. Some capacity increases are used, such as on the Solano Express Lanes project.
- **Land Use:** Promoting denser and mixed use land uses near transit stations

How are Solano Residents Commuting?

Before exploring the various options available to Solano residents to help out their commute, it may be helpful to show how Solano residents are commuting currently. Based on data from the American Community Survey (ACS), there are 194,308 Solano residents age 16 years or older who are in the workforce. Of these, they are commuting in the following ways:

Table 14: Solano County Commute Modes; 2017

Commute Mode	Number of Workers	Percentage
Drive Alone	148,850	76.6%
Carpooled	26,488	13.6%
Public Transportation	5,745	3.0%
Walked	2,620	1.3%
Other Means (Including Cycling)	2,667	1.4%
Worked at Home	7,938	4.1%
TOTAL	194,308	100%

Source: 2017 American Community Survey

While the percentage of public transportation, walking, and cycling commuters remains low, it is noteworthy to point out the high percentage of commuters who carpool in Solano County, compared to other Bay Area counties. The high carpooling rate is likely due to the large number of residents who commute to the Bay Area (34% of all Solano commuters), and because of the long commuting distances.

Additionally, the mean travel time to work for Solano residents is 31.8 minutes. Considering that around 40% of all Solano commuters leave the county (34% to the Bay Area), this figure is in line. Solano commuters are commuting to the following locations:

Table 15: Destination of Solano County Commuters; 2015

Work Destination	Number of Commuters	Percentage
Solano County	66,899	35.8%
Contra Costa County	23,431	12.5%
Alameda County	15,720	8.4%
Sacramento County	12,288	6.6%
Napa County	12,207	6.5%
San Francisco City & County	11,635	6.2%
Santa Clara County	6,432	3.4%
San Mateo County	5,300	2.8%
Marin County	5,001	2.7%
Sonoma County	5,514	3.0%
Other Counties	22,322	12.0%

Source: Solano County Index of Economic and Community Progress, 2017

Trip Reduction

Solano Mobility implements most of the trip reduction based TDM programs in Solano County. Some of the programs that are currently offered include:

Mobility Call Center

Tying all of these services together is the Solano Mobility Call Center, the one stop shop for all things alternative transportation in Solano County. The Mobility Call Center has friendly staff that will answer questions on transportation options, such as how to form a vanpool, which bus to take to get from Point A to Point B, or how to become ADA certified to use Paratransit and the Taxi Card program. The call center is open Monday-Friday from 7am-5pm, and can be visited in person at the Suisun Train Depot. Call center staff are also involved in promoting local and regional transit services, as well as other alternative modes of transportation at community events, job fairs, health fairs, and other employer events.

Lyft First/Last Mile Program

Solano Mobility has partnered with Lyft to offer discounted rides to commuters wishing to make a first/last mile connection from an Amtrak train or SolanoExpress bus. Commuters who sign up in advance and use Lyft to travel to or from any SolanoExpress transit center, or Capitol Corridor station within Solano County will receive a discounted ride. The program is intended to close crucial first/last mile gaps in using mass transit within Solano County, as many employer sites are not located immediately next to transit stops. The program is funded by Transportation Funds for Clean Air from the Bay Area Air Quality Management District. As of May 2019, the program had 70 participants and 541 total trips taken.

STA also recently launched an Amtrak + Lyft pilot in partnership with the Capitol Corridor. Under this program the first 50 participants who are new to trying commuting by train can purchase a 10 ride Amtrak pass for \$20, and receive 10 free first last mile Lyft connections. Program participants will be asked to complete surveys in order to analyze the effectiveness of the pilot. After a trial period, the pilot will be considered for renewal.

Carpool/Vanpool Subsidies

Carpooling and vanpooling are a popular means for Solano County residents to get to work, particularly those that work in Contra Costa, Alameda, or San Francisco. As of 2017, 203 of the Bay Area's 502, or 40%, of registered vanpools travel to, from, or through Solano County daily. This equates to approximately 2,233 van riders, taking 4,466 trips per day, or 1,161,160 trips annually. Solano Mobility and 511 Bay Area offer subsidies to drivers who start up vanpools, including \$300 in gas cards for the first three months. Solano Mobility, through its Ride Amigos platform at commuterinfo.net, can help match commuters with a carpool or vanpool that works with their schedule. Other incentives include discounted tolls on all state owned bridges in the Bay Area, and the use of the HOV lanes on I-80 in Solano County, as well as many other Bay Area freeways.

Another popular form of commuting is casual carpool. Unofficial pick-up points are established across the Bay Area (two in Solano County: Fairfield Transportation Center and Vallejo's Curtola Park and Ride). Commuters who wish to catch a ride line up at these locations. Other commuters who are traveling to San Francisco and want to pick up passengers can go to these locations and pick up several people, who pay a small fee to cover bridge toll and gas. Forming these carpools allows the vehicle to use the HOV lanes and receive discounted bridge tolls, saving time and money for all involved. This service began mostly organically, but is growing in popularity and becoming more organized. In 2018, STA partnered with MTC to conduct a casual carpool survey at the Fairfield Transportation Center, and the Curtola Park and Ride in Vallejo. They found that the top three reasons that commuters will casual carpool is to save money, to save time, and to take advantage of the HOV lane.

Solano County has 20 park and ride locations countywide with at least one in each city to serve carpools and vanpools. Many choose to meet at these locations as they provide a central location for carpoolers and vanpoolers to meet near transit stops and/or freeways.

Table 16: Solano County Park and Ride Locations

City	Location	Capacity	EV Charging?	Bike Parking?	Transit Service?
Benicia	E. 2 nd St & E. S St	15	No	No	No
Benicia	Park Rd & Industrial Wy (Benicia Bus Hub)	50	Yes, 2 chargers	No	SolanoExpress Blue Line
Dixon	Market Ln & Pitt School Rd	90	No	Yes	SolanoExpress Blue Line
Dixon	N. Jefferson & West B St (Dixon Trans Ctr)	114	No	Yes	Dixon Redit-Ride
Fairfield	Red Top Rd & I-80	214	No	Yes	No
Fairfield	Fairfield Trans. Ctr. Cadenasso Dr & I-80	640	Yes, 2 chargers	Yes	SolanoExpress Blue Line, Green Express & Red Line, FAST Local, RV Delta Breeze, Napa VINE
Fairfield	Oliver Rd & I-80	178	No	No	No
Fairfield	Fairfield/Vacaville Train Station (Peabody & Vanden)	139	No	Yes	Capitol Corridor, FAST Local

City	Location	Capacity	EV Charging?	Bike Parking?	Transit Service?
Rio Vista	1 Main St	10	Yes, 1 charger	No	Rio Vista Delta Breeze
Suisun City	Suisun City Train Depot (Main St & SR-12)	306	Yes, 2 chargers	Yes	Capitol Corridor, SolanoExpress Red Line & Green Express, FAST Local, RV Delta Breeze, Napa VINE
Vacaville	Cliffside Dr & Mason St	125	No	No	No
Vacaville	Davis St & I-80	250	Yes, 2 chargers	Yes	Vacaville City Coach
Vacaville	Bella Vista & I-80	201	Yes, 6 chargers	Yes	No
Vacaville	Vacaville Transportation Center (Allison & Ulatis)	245	No	Yes	SolanoExpress Blue Line, Vacaville City Coach, Yolobus
Vacaville	Leisure Town Rd & I-80	45	Yes, 2 chargers	No	No
Vallejo	Curtola Park and Ride	590	Yes, 20 chargers	Yes	SolanoExpress Yellow Line, SolTrans Local
Vallejo	Lemon St & Curtola	64	No	Yes	SolTrans
Vallejo	Magazine St & I-80	19	No	No	SolTrans
Vallejo	Vallejo Transit Center & Ferry Terminal (Parking Structure and Surface Parking)	900	No	Yes	SF Bay Ferry, SolanoExpress Red Line & Yellow Line, SolTrans Local, Napa VINE

Emergency Ride Home

Another incentive offered by Solano Mobility to encourage alternative forms of transportation is the Emergency Ride Home program. One of the top reasons cited for not using transit and other alternative modes is needing to go home in case of an unexpected emergency; such as an illness, picking up a child from school, etc. The Emergency Ride Home addresses this by offering a voucher for a free taxi ride, Lyft or Uber ride, or car rental from the worksite to home in the event of an emergency. Participating employers must register in advance and sign up their employees to qualify. The service is offered only to those who use alternative forms of transportation, such as transit, carpool/vanpool, or cycling. While it is offered only to Solano County employers, most Bay Area counties have a similar program.

Employer Programs

Solano Mobility works with employers to help them understand their options when it comes to offering commute incentives to their employees. As part of the employer program, Solano Mobility is developing an online Employer Toolkit that will give employers the resources to create and carry out their benefits program. Many of the services offered are mentioned above, but Solano Mobility is also conducting a Solano Commute Challenge that rewards commuters for using alternative modes of transportation.

Typically, these are in the form of prizes or gift cards, offered to commuters who log their trips on the commuterinfo.net platform.

The commuterinfo.net platform was developed in partnership with STA and Ride Amigos and will host all of Solano Mobility's TDM programs in one online platform. Using this, an employer may choose from a menu of options when building their commuter benefits program. Commuter benefits are required for employers with 50 or more employees in the Bay Area Air Quality Management District. A similar program is slated to be piloted in the Solano County portion of the Yolo-Solano Air Quality Management District in the near future.

Telecommuting/Spare the Air

Telecommuting is an effective method to reduce peak hour traffic congestion. Many employees have jobs that do not have to be performed at the worksite each day. Other employees may have jobs that could consider a flexible work schedule outside of the normal 8am-5pm work hours. Whenever feasible, employers are encouraged to implement telecommuting or flexible work hour arrangements.

STA also supports BAAQMD's Spare the Air program, which aims to reduce single occupancy vehicle use on days where air quality is poor. On such days, employees who are able are encouraged not to drive, or to use alternative modes of transportation.

Additionally, STA supports MTC and BAAQMD in their efforts to implement regional smart driving as part of the outreach component of their Transportation Climate Action Campaign. Smart driving teaches motorists to drive in a more fuel efficient manner.

Bikes and Pedestrians

As part of the overall TDM strategy for Solano County, STA through its Solano Mobility and Safe Routes to School programs encourages increased biking and walking for commuting and recreational purposes by providing resources and funding capital projects. In addition to the existing system, funding strategies, and recently completed capital projects outlined in Chapter 3, STA and Solano Mobility offer the following programs/resources to encourage Solano County residents to bike and walk:

Biking and Walking Resources

- Bucks for Bikes: Commuters who live or work in Solano County and wish to purchase a new bike for the purposes of commuting can get up to \$100 off the cost of the bike
- Yolo-Solano Bike Links Map: Comprehensive map showing all bike facilities in Solano County and most of Yolo County. This is a popular map that can be found at most libraries, community centers, and bike shops countywide.
- Top 10 Bike Rides in Solano County: Brochure and interactive website that highlights the best bike rides in Solano, with rides ranging from easy to difficult. The brochure was created in collaboration with the Solano Bicycle Advisory Committee.
- Top 10 Walks and Hikes in Solano County: Similar to the Top 10 Bike Rides, this brochure lists the best walks and hikes of varying difficulty. Both urban walks and remote hikes are included. The brochure was created in collaboration with the Solano Pedestrian Advisory Committee.

Safe Routes to School

The Solano Safe Routes to School program works with each Solano city, school district, and the County of Solano to encourage kids to bike and walk to school. The goals of the program include not only encouraging kids to bike and walk, but to reduce traffic congestion around schools and increase students' daily exercise. Safe Routes to School offers many free programs to Solano County schools, including:

- **Bike Rodeos:** events that teaches elementary students how to ride their bike safely. It includes agility courses that shows students how to properly turn, signal, and watch for traffic on the road.
- **Walking School Buses:** Allows kids to walk to school in a safe, supervised manner. Kids can be dropped off at an off-school location and escorted to school by volunteer adults with other kids to school. Walking School Buses help to reduce congestion in front of schools by diverting drop off points.
- **Enforcement Grants:** Enable local police departments to work with schools to address unsafe biking and walking behavior. Several communities have hired Community Service Officers (CSOs) to work directly with the SR2S programs and implement biking and walking education programs.
- **Rock the Block assemblies:** Fun, educational assemblies put on by the Bay Area Children's Theater that teaches kids how to safely bike and walk in an interactive way.
- **National Bike to School Day in May:** In 2019, 28 schools across Solano County participated in Bike to School Day, and 1,650 kids biked to school that day.
- **International Walk to School Day in October.** In 2018, 48 schools participated and over 8,600 students across Solano County walked to school.

4.4 Operational Improvements

HOV/Express Lanes

High Occupancy Vehicle (HOV) lanes provide shorter trip times for busses and passenger vehicles with multiple occupants by allowing them to queue jump through heavy traffic. This encourages more transit usage and carpooling, which in turn reduces congestion for other motorists. Express lanes allow busses and HOVs to travel for free, as in an HOV lane, but also allow single occupancy vehicle to travel in the lane for a toll during peak hours. Since the 2007 CMP update, the Bay Area has begun planning and implementing a region-wide express/HOV lane network. To date, express lanes have been implemented on three Bay Area freeways (I-680, I-580, and SR-237), and under construction on one other (I-880).

In Solano County, STA has completed the PS&E and environmental clearance for the Solano I-80 Express Lanes, which will convert a nine mile stretch of existing HOV lanes to express lanes/HOV on I-80 from Red Top Rd to Air Base Pkwy, and add nine miles of new express/HOV lanes from Air Base Pkwy in Fairfield to I-505 in Vacaville. The project has been environmentally cleared by STA and Caltrans District 4 and is ready to commence with construction as soon as state and regional funding is secured.

Signal Timing

Signal timing helps to improve the operational efficiency of a CMP roadway in three primary ways:

- Coordinates the flow of traffic on roadways, thereby reducing stop and go traffic

- Ramp metering measures the flow of traffic onto freeways, reducing the congestion that occurs when a large number of vehicles seek to enter the freeway at one time.
- Improves the efficiency of transit services, such as express and local buses by reducing travel times through transit priority signaling.

STA encourages its member agencies to consider signal timing as an operational improvement on their roadways. An example project that is currently in the implementation stages is transit priority signals adjacent to the Fairfield Transportation Center along Beck Ave and West Texas St in Fairfield for SolanoExpress buses. Westbound SolanoExpress buses currently have to travel through four traffic signals once leaving I-80 to reach the Fairfield Transportation Center. This project will install transponders in each SolanoExpress bus to activate each traffic signal as it passes through. Doing so will greatly reduce the amount of time each SolanoExpress bus waits at each light, and will improve overall on-time performance.

STA also worked with Caltrans to install metering lights on eastbound and westbound on-ramps to I-80 in Fairfield and Vacaville. Currently, metering lights exist in the eastbound and westbound direction on all on-ramps between Redwood St in Vallejo, and I-505 in Vacaville. The first phase (Red Top Rd to N. Texas St in Fairfield) was activated in 2014, with a second phase activated in 2015.

Parking Management

One of the ways that agencies can further encourage alternative forms of transportation is through parking management. Agencies can encourage employers to offer:

- Discontinue subsidized parking: This is more common in dense, urban areas where parking is at a premium. Most areas in Solano County, with low density land uses and plentiful free parking, would not benefit from this program
- Parking cash out: State law requires employers with over 50 employees to offer parking “cash-out” programs if they meet the following requirements:
 - The employer leases parking for its employees
 - The employer subsidizes parking for its employees
 - The employer can reduce the number of available parking spaces available to employees without penalty (such as breaking a lease or violating planning regulations)

In these cases, employers are required to offer employees a cash out option for their parking space, if they commute by an alternative mode of transportation.

- Incentives for employees: This could be in the form of preferential parking for carpools/vanpools, subsidized transit passes, or bike commuter facilities (such as lockers or showers)

As local agencies, cities and counties can also consider removing minimum parking requirements, or adjusting them in higher density areas near transit. This is particularly important in Priority Development Areas, which are typically located near regional transit such as rail, ferry, or express bus service.

4.5 Land Use

Coordination between land use and transportation is a critical part of the overall strategy to reduce congestion on freeways and arterials, as land use decisions can have a much more lasting impact than other TDM programs. There are two components to land use decision making that can have a lasting and beneficial impact on the transportation system:

- Ensuring a good balance of housing and jobs in Solano County: Currently, there are more housing units in Solano County than there are jobs, unique among job-rich Bay Area counties. Ensuring a good balance of jobs to housing units can help to reduce congestion on local roads and highways by locating people closer to where they work, effectively reducing time spent on freeways commuting to work. It also increases the likelihood that they may be willing to try an alternative mode, if they are close enough to bike, walk, or use regional and local transit.
- Locating housing near transit options: Encouraging increased regional and local transit use can be done through land use decisions, simply by placing dense housing or mixed use developments near transit options. Having high quality transit options within walking distance of housing encourages those residents to commute using transit.

STA is currently working with each of its member agencies to encourage more housing and jobs to be built in each city's Priority Development Area, as a measure to address the Bay Area's housing crisis. Solano County is the most affordable county in the Bay Area, so it is critical to provide affordable housing options near regional transit service so that new residents commuting to the Bay Area have the option to choose transit, rather than increasing congestion on I-80.

Section 5 Land Use Analysis

5.1 Purpose and Intent of Legislation

One of the key features of the 1990 CMP legislation was the attempt to link land use decisions to the ability to provide satisfactory transportation facilities and services. Since its inception the CMP legislation has required CMAs to include a program to analyze the impact of local land use decisions on the regional transportation system (both highways and transit). The program also must include an estimate of the costs to mitigate the impact of such developments. Costs to mitigate interregional travel (trips not beginning or ending in Solano County) may be excluded.

While the legislation requires STA to track and comment on proposed development, it does not change the role of local jurisdictions making their own land use decisions, and in determining the responsibilities of mitigating impacts. Local jurisdictions still have full control over their land use decisions; the CMP Land Use monitoring program simply allows the STA to monitor the effects of development on the regional transportation system, and make suggestions to mitigate the impacts if necessary. 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.

STA serves as a resource to local governments when assessing the impact of land use changes on the regional transportation system. For example, STA's countywide travel model, the Solano Activity Based Model (SABM), is available for local jurisdictions to analyze the countywide transportation effects of their land use decisions and general plan amendments.

At the regional level, MTC has adopted Resolution 3434, which sets a Regional Transit Expansion Program of Projects most recently updated in 2015. \$18 billion in projects are proposed, including expansion projects on the Capitol Corridor. The resolution also establishes a policy on transit-oriented developments (TOD) associated with the development of transit expansion projects. The policy requires minimum levels of residential development around transit stations in new transit corridors; local station area plans that address future land use changes, station access needs, circulation improvements, pedestrian-friendly design, and other components of transit friendly design; and, requires corridor working groups of key stakeholders to support the transit project development process. Currently, there are no corridors in Solano County subject to this TOD policy.

5.2 Current STA Land Use & Transportation Planning Efforts

A unique aspect of this CMP is noting how STA is linking land use and transportation decisions to help mitigate congestion. While serving as a congestion management agency that is focused on transportation planning, projects, and programs, STA has traditionally also been involved in land use planning through the lens of linking it to transportation. Land use and transportation planning are closely linked together, as the decisions of one can greatly affect the other. For example, locating more dense housing near a high volume transit stop can have a more positive effect on freeway congestion, as more of these residents are likely to use transit to commute to work. Consequently, low density suburban development can have the opposite effect if it is not located near transit, as these residents

would be more likely to need to rely on a car. STA has been promoting integrated transportation and land use planning since the late 1990's.

Priority Development Areas

STA has been linking transportation with land use decisions since the late 1990's and early 2000's, when the Jepson Parkway Concept Plan was completed (the first of its kind in the Bay Area). STA and MTC also helped fund one of the Bay Area's first Transportation for Livable Communities (TLC) capital project in 2001; a streetscape project in downtown Rio Vista. As the regional TLC program run by MTC has evolved into the Priority Development Area program it is today, STA has been working to plan for smart land uses near regional transit center, and invest in capital projects to support them.

In 2008, prior to MTC's One Bay Area Grant (OBAG) 1 process, local jurisdictions designated areas within their communities that they would like to prioritize for growth as part of an Association of Bay Area Governments (ABAG) program. These areas, called Priority Development Areas, are at least 100 acres in size, located near transit, and are areas that the local jurisdiction has prioritized for increased housing and/or job growth. Currently, each Solano County city has designated at least one PDA:

Table 17: Solano County Priority Development Areas

Jurisdiction	PDA
Benicia	Downtown Benicia PDA
Benicia	Northern Gateway & Industrial Park PDA
Dixon	Downtown Dixon PDA
Fairfield	Downtown South PDA
Fairfield	Fairfield-Vacaville Train Station PDA
Fairfield	North Texas Corridor PDA
Fairfield	West Texas Gateway PDA
Rio Vista	Downtown Rio Vista PDA
Suisun City	Downtown & Waterfront PDA
Vacaville	Allison Drive PDA
Vacaville	Downtown Vacaville PDA
Vallejo	Downtown & Waterfront PDA
Vallejo	Sonoma Blvd PDA

Figure 8: Solano County Priority Development Areas – North County

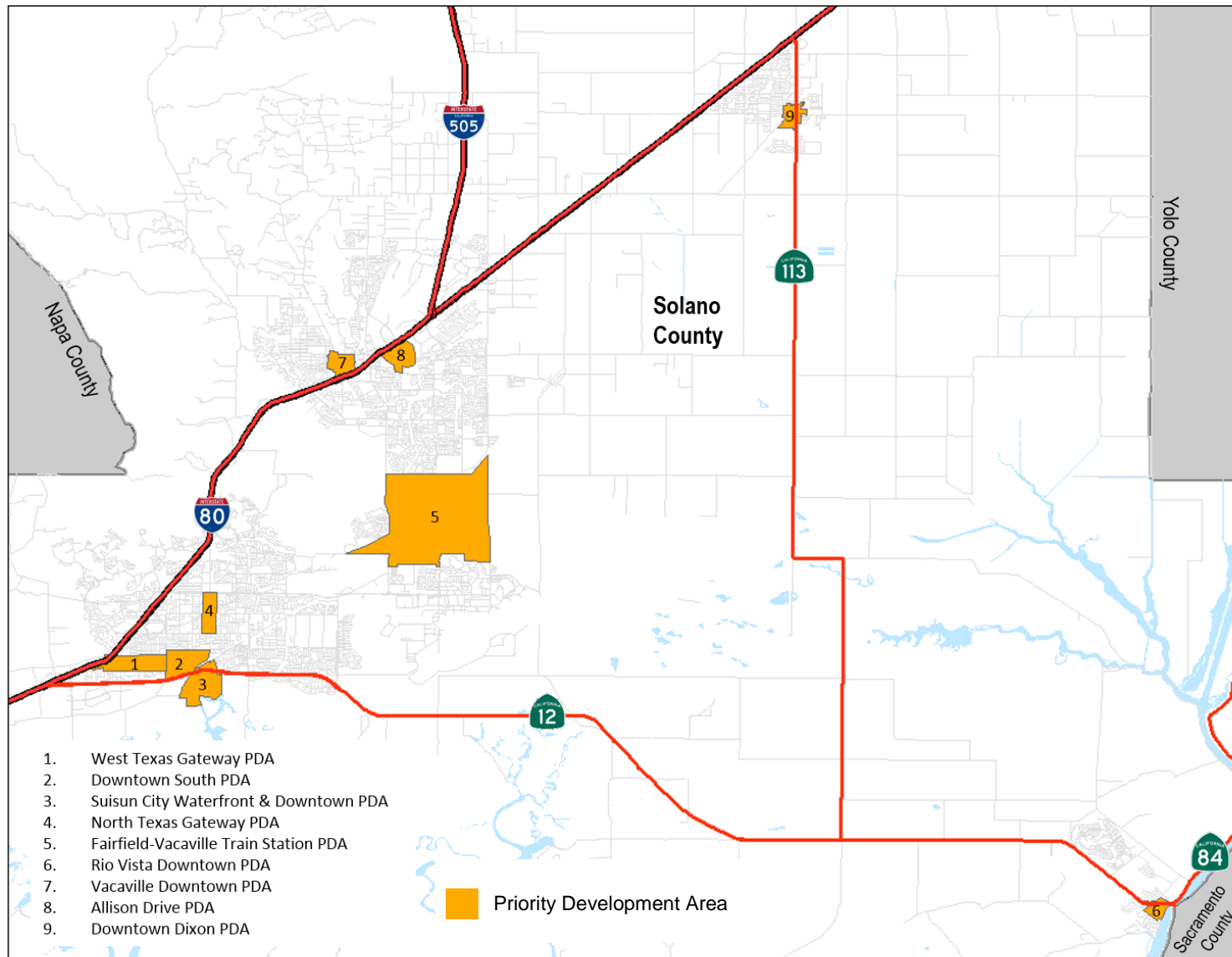
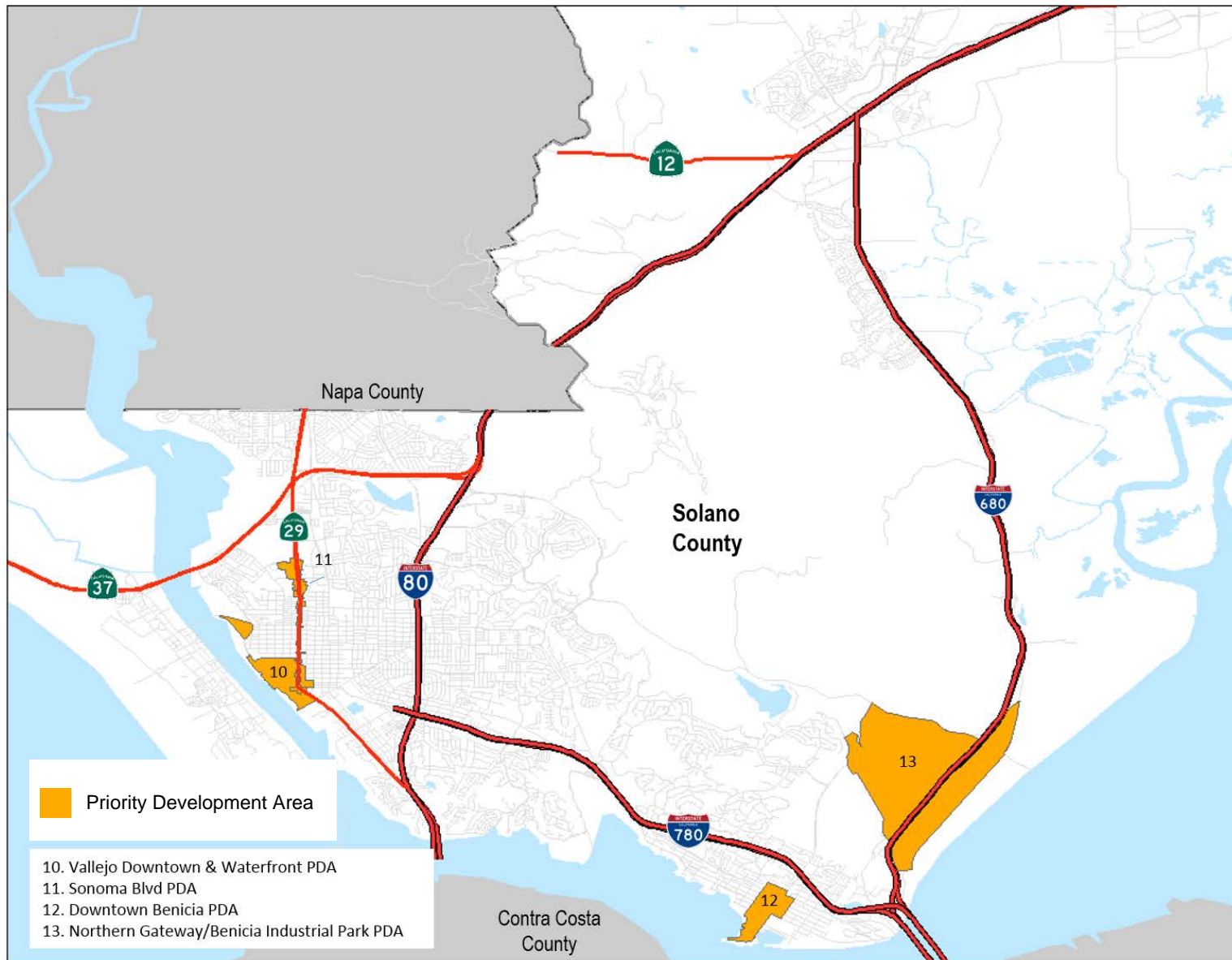


Figure 9: Solano County Priority Development Areas – South County



Since 1999, STA has invested over \$240 million in transportation infrastructure within PDAs, ranging from large capital projects like the Fairfield-Vacaville Train Station, to pedestrian enhancements like the Vallejo Downtown Streetscape Project. These investments have helped to facilitate past, current, and future housing and employment growth within Solano County's PDAs, and has enhanced the landscape and transportation facilities of each. STA has also invested significant funds in PDA planning, including funding the completion of five PDA plans in Benicia, Dixon, Fairfield, Rio Vista, and Suisun City. STA, in partnership with local agencies, has completed concept plans for the Jepson Pkwy corridor and the North Connector corridor, as well as several land use/transportation plans such as:

- 2004 Transportation for Livable Communities Plan
- 2012 Transportation for Sustainable Communities Plan
- 2013 & 2017 PDA Investment and Growth Strategy

Currently, several Solano County cities have planned housing going in or near their PDAs that will be served by high quality regional transit. Listed below is a summary of the housing that is planned in PDAs and their surrounding areas in the near term.

Table 18: Planned Housing in PDAs

Jurisdiction	Planned Housing Units in PDAs	Total Planned Housing Units
Benicia	0	0
Dixon	0	1,356
Fairfield	1,085	3,915*
Rio Vista	0	1,895
Suisun City	1,748	1,748
Vacaville	763	5,742
Vallejo	596	596

* Does not include full build out projections for Train Station Specific Plan, which numbers over 6,000 housing units.

Priority Conservation Areas

Alongside PDAs are Priority Conservation Areas, which represent areas that local jurisdictions have set aside for conservation; for open space, agricultural, or recreational purposes. Currently, Solano County has five designated PCAs:

Table 19: Solano County Priority Conservation Areas

Jurisdiction	PCA
Fairfield	Fairfield-Vacaville Greenbelt PCA
Solano County	Blue Ridge Hills PCA
Solano County	Suisun Valley PCA
Solano County	Tri-City Cooperative Planning Area PCA
Solano County	Western Hills PCA

STA has invested over \$30 million in transportation funding allowing greater access to PCAs, and has completed a countywide PCA Assessment and Implementation Plan. The PCA Plan further refined the boundaries of the current PCAs, and identified options to designate new ones. The County of Solano has

recently updated its PCAs in the unincorporated County and has added a PCA on Mare Island. These new PCAs need to be added to the STA's PCA Plan following approval by ABAG.

Housing and CTP Land Use Chapter

As the Bay Area's housing crisis deepens, Solano County has stood out as the most affordable county in the region. More Bay Area residents are moving to Solano in search of less expensive housing and a relatively reasonable commute to their jobs in the Bay Area. As the CMA for Solano County, STA is committed to relieving and helping to mitigate congestion on I-80 and other highways countywide. As such, STA has been working with its member agencies to build more housing in their Priority Development Areas near their transit centers. STA has co-hosted two summits on housing, bringing together elected officials and staff from across the county. The second of these occurred in February 2019, and drew an attendance of nearly 200 people. STA has also been meeting with each jurisdiction to discuss their current and upcoming housing projects, and to identify potential transportation related projects in these areas that might incentivize developers to build housing. Another task has been identifying funding sources for these projects, and in response STA has been working with MTC to develop the SubHIP (Suburban Housing Incentive Pool) pilot program, which will bring a small amount of money to Solano County to build a transportation related project that will directly benefit housing growth in PDAs. STA is also working with the cities and county to leverage SB 2 planning and capital funds with transportation funding to support affordable housing production adjacent to regional transit.

Tying all of these efforts together is the Comprehensive Transportation Plan (CTP) Land Use Chapter. This chapter will assess past and current development in Solano County's Priority Development Areas, and lay a foundation for helping STA understand future growth needs. It will also identify potential strategies for incentivizing growth in Priority Development Areas. The chapter is scheduled to be complete in fall 2019.

In addition to seeking funding for housing and transportation projects at the regional level, funding sources for these projects exist at the state level as well. A prime example of this is the Affordable Housing and Sustainable Communities (AHSC) grant from the California Department of Housing and Community Development. The purpose of the grant is to fund land use, housing, transportation, and land preservation projects that support in-fill and compact development that reduce greenhouse gas (GHG) emissions. STA has applied for these grant funds in the past and will continue to pursue future opportunities.

5.3 Thresholds for Analysis

As part of the Land Use Analysis program, STA requests that all local jurisdictions in Solano County (in coordination with their respective Planning/Community Development departments) submit two types of information:

- Development notices as they occur prior to the public comment period
- General plan projections on land use/housing/jobs when regional model updates occur

These two submittals of information serve different purposes. The first allows STA to review land use developments as they occur and submit comments if necessary. Typically, STA will review a notice if it meets the following criteria:

- The development is projected to produce more than 100 trips in the P.M. peak hour
- A General Plan update is occurring
- A General Plan amendment is occurring

The P.M. peak hour is used for determining a threshold of trips because the P.M. peak hour typically experiences a greater amount of congestion than that A.M. peak hour. Examples of projects that typically meet the 100-trip threshold include 100 single-family homes, 150 apartment units, 5,000 square feet of retail space, or 40,000 square feet of office space.

When noticing a project to the STA, the following information should be included:

- Location of the project with maps noting street access locations
- Proposed project land use(s) and number of dwelling units or square footage of development
- Any available traffic studies, including trip generation rates assumed in determining whether the project exceeds the 100 trip threshold
- Expected occupancy of each land use in 2040, with completion date and phasing

Once STA receives notice of a development meeting these criteria, it will conduct a review and utilize the SABM if needed to analyze the impacts of the development on the regional transportation system. The analysis process may be done through the existing CEQA process in order to avoid duplication of efforts. STA will either find the development to adequately mitigate the effects of the added trips on the CMP network, or it will submit comments on potential mitigation measures. These may include (but are not limited to): accommodating bikes and pedestrians, adding transit service, or minimizing parking. STA will work with the local jurisdiction(s) to bring the project into full compliance with CMP standards. In the unlikely event that a project should be found out of compliance, a Deficiency Plan would need to be filed, explained in Chapter 6.

The second data collection method is general plan projections for land use, housing, and jobs. Since the SABM relies on each of these projections to make accurate assumptions about future traffic patterns, it is critical that each jurisdiction submit these projections whenever updates to the model occur. This typically happens when MTC releases its new RTP/SCS, which is every 5 years. The next model update is currently underway to align the SABM with MTC's Travel Model 1.5, and occurring in tandem with the Plan Bay Area 2050 RTP/SCS process. When model updates occur, STA works with its member agencies to add the most recent general plan projections on land use, housing, and jobs to the SABM. These projections are also added when a new general plan is completed, or a general plan amendment that changes previous projections.

5.4 Upcoming Switch to VMT: How this will affect local governments and STA

As discussed in Chapter 2, SB 743 (2013) will change the preferred method of analysis of transportation impacts under CEQA from LOS to Vehicle Miles Traveled (VMT). The legislation does not require the shift to occur in CMP monitoring at this time, however STA expects that the shift will occur within the next couple of CMP monitoring cycles. Nonetheless, VMT will become the preferred method of CEQA analysis starting July 1, 2020, and many local governments across the state are already implementing VMT.

For local governments, the legislation represents a significant change in how CEQA analysis will be conducted. Cities and counties will be required to consider mitigation efforts beyond reducing traffic congestion; they will also be required to consider measures that will increase biking, walking, transit

use, carpooling/vanpooling, or other alternative modes of transportation. This will be due to the fact that each project will be required to analyze how many VMT will result from the project. In other words, if a project is designed in such a way that commuters are encouraged to drive, it will result in a higher VMT forecast. New CEQA regulations will require that the City or County make efforts to reduce the amount of VMT such a project would produce. It is a fundamental switch away from LOS, which only forced cities and counties to consider how their project would affect traffic congestion on nearby roadways.

For STA, the VMT switch will affect the way the Land Use Analysis program in the Solano CMP is conducted. Rather than examining how a project or general plan amendment will affect the transportation system's LOS, it will examine how much it will grow the regional transportation system's VMT by. Mitigation projects will more be more likely to focus on reducing overall VMT, rather than improving a freeway or intersection's LOS. This will result in more bike and pedestrian or TDM related projects, rather than capacity increasing roadway projects. It is expected that in the 2021 CMP Update, more details will be available on how the VMT metric will be incorporated into the CMP.

Section 6 Local Conformance and Deficiency Plans

6.1 Purpose and Intent of Legislation

CMP legislation requires STA, as the congestion management agency for Solano County, to give a conformance determination for all local jurisdictions in Solano County. The determination is based on the local jurisdictions participation in:

- Maintaining the highway LOS standards outlined in the CMP (Chapter 2)
- Participating in adoption and implementation of a deficiency plan if a segment of the CMP network is found to be out of compliance with established LOS levels
- Participate in a program to analyze the impact of land use decisions, including the estimate of costs associated with mitigating these impacts

By monitoring congestion on the CMP network biannually, STA is taking steps to ensure that all Solano County jurisdictions will remain in compliance.

6.2 Role of Local and Regional Agencies

MTC

As the Metropolitan Planning Organization (MPO) for the Bay Area, MTC is tasked by the CMP legislation to ensure that each Bay Area county's CMP conforms to its guidelines and meets the goals of the most recently adopted RTP/SCS, Plan Bay Area 2040. While STA makes a conformance determination for each of its member agencies, MTC will make a conformance finding for the Solano CMP itself. MTC also ensures consistency between its regional travel demand model and the countywide model maintained by STA, explained in greater detail in Chapter 7.

STA's Member Agencies

STA's member agencies play a critical role in the development and implementation of the CMP. As the agencies that own and maintain local arterials in the CMP network, the member agencies play a vital role by maintaining proper LOS on their local arterials, and implementing projects to improve operations on each of them. Member agencies also participate in the development of a deficiency plan, should one be necessary. Deficiency plans allow STA to collaborate with the member agency in question to address severe congestion on one of the agency's roadways, and find solutions to mitigate it.

The member agencies also make land use decisions on major projects, General Plan amendments, and General Plan updates. Participation in the CMP Land Use Analysis Program allows them to collaborate with STA and with each other to examine the impact their land use decisions could have on the countywide transportation system. STA will work with their member agencies any impacts a project could bring, should any potential impact be found.

6.3 Local Government Conformance Requirements

Outlined below are the major actions that may be required to ensure CMP conformance. Currently STA performs all required LOS monitoring, and works with its member agencies to mitigate congestion if needed.

Maintaining Highway LOS standards outlined in CMP

STA monitors the CMP network biannually on designated segments within Solano County and its jurisdictions. Currently, STA and its consultant perform all traffic counts and data collection associated with the monitoring. Turning movements are taken at the five CMP network intersections, as well as bike and pedestrian counts. LOS analysis for the biannual CMP is based on these counts. To determine trends on each individual segments, the LOS is compared with previous CMPs. Should a segment fall below the established LOS standard for that segment for two monitoring periods, a deficiency plan may be necessary to mitigate the congestion.

In future CMPs, the LOS metric will be affected by the switch to VMT as the preferred method of analyzing transportation impacts under CEQA. As the state moves away from LOS, the CMP may start using VMT as a method of measuring transportation system performance. This could be in the form of a VMT threshold for each monitored segment. More details on this switch are expected in the 2021 CMP Update.

Participation in Required Deficiency Plans

When a roadway segment falls below the established LOS standard, the congestion should be monitored on this segment for two CMP cycles. If, after the two cycles the segment still falls below the LOS standard, it may be considered deficient. A determination must be made to see if a Deficiency Plan will be required, once the exempted trips allowed in the state legislation are assumed not to exist (e.g. interregional travel and trips generated from low-income housing).

If it is determined that the non-grandfathered segment doesn't meet the accepted LOS standards, then the jurisdiction responsible for the segment must immediately propose and designate funds for measures that would improve the LOS to acceptable standards, or create a Deficiency Plan in accordance with CMP requirements. A deficiency plan must include:

- Analysis of the cause of the deficiency and defined improvements to the facility to maintain previous LOS standards, or
- Defined improvements that have a measurable improvement on the transportation system's LOS or substantial air quality benefit and determine the cost of the improvements.

All incorporated cities in Solano County, along with the unincorporated County, are in conformance at this time.

Land Use Analysis

Land use impact analysis as required by the CMP are detailed in Chapter 5, but in general entail:

- Inform STA of any general plan update, general plan amendment, or any development proposal that would generate 100 or more P.M. peak hour trips so that the impacts on the countywide transportation system can be fully analyzed. This may include applying the Solano Activity Based Model to see how the proposed project will impact congestion.
- Periodically update the Solano Activity Based Model with new General Plan land use, housing, and jobs projections from each jurisdiction.

Both of these measures allow STA to collaborate with its member agencies to examine how land use decisions may impact the countywide transportation system, and propose mitigation measures if necessary.

Non-Conformance Procedures

If a project or general plan update/amendment causes a segment or intersection in the CMP network to fall below the adopted LOS standard within the seven year timeframe of the capital improvement program, and the jurisdiction does not place mitigations on the project to bring the LOS up to an acceptable standard, then the jurisdiction in question may be required to complete a deficiency plan. A deficiency plan is required by California law if STA believes that a local government is not conforming to CMP requirements, and the following steps are taken:

- A public hearing is held to determine areas of nonconformance
- Written notice is given to the jurisdiction citing specific areas of non-conformance
- The jurisdiction is given 90 days past the date written notice is given to remedy the instances of nonconformance

If, after all of these steps are taken and the jurisdiction is still found to not be in compliance, the jurisdiction may face withholding of certain gas tax subvention funds and/or not having projects programmed in the RTIP.

Section 7 Travel Demand Model

7.1 Purpose and Intent of Legislation

The CMP Legislation requires all CMAs to develop a uniform database on traffic impacts in the form of a transportation computer model. State statute also requires this model to be consistent with the modeling methodology and databases used by the regional transportation planning agency. The CMA also approves sub-county area transportation models and models used by local jurisdictions for land-use impact analysis, if local jurisdictions decide to use them.

The purpose of developing and maintaining a travel model is to help the CMA in identifying projects and programs that will have the most impact on mitigating congestion and maintaining LOS standards. A travel model can help to consider the benefits of transit service and TDM programs, and to show the benefit of capital projects in reducing congestion on the CMP network. It is also used to help local agencies in assessing the impact of new development on the transportation system. Inputting local land use projections is an important component of travel modeling that helps to provide accurate projections in the model's horizon year.

7.2 Overview of Model

STA maintains the Solano Activity Based Model, which serves as the countywide travel demand model for Solano County. The model was created in coordination with the Napa Valley Transportation Authority (NVTa) in 2008 as the Solano-Napa Travel Demand Model. It was originally created as a joint effort to monitor congestion on major highways and freeways in both counties, due to similar traffic patterns and a high number of commuters who travel in between the two counties. Though the model was originally developed with a 2000 base year and 2030 forecast year, it has since been updated to a 2015 base year and 2040 forecast year. Additionally, in 2014 the model was converted to an activity based model, which more closely replicates actual traveler decisions than a trip based model does.

In 2018, STA and NVTa embarked on a process to validate the Solano-Napa Activity Based Model. At the time, the model was not accurately forecasting traffic in both the 2015 base year and the 2040 forecast year. It was also mutually agreed between the two agencies to split the model into separate county models, rather than one regional, two county travel model. The split occurred to better focus validation efforts within each county, and to account for increasingly different traffic patterns in the two counties. For example, during the validation process, it was identified that Napa and Solano counties have different peak hours for congestion in both the A.M. and P.M. peak hours. Napa County's peak congestion time occurs later in the A.M. and earlier in the P.M. than in Solano County, which is more in line with the rest of the Bay Area. The validation work also included the addition of public transit information, so that the model may be used to forecast demand on the express bus system in both counties. The validation work is expected to be complete in mid-2019.

7.3 Role of Model in CMP Process

The Solano Activity Based Model is used to monitor forecasted congestion on the CMP network. As discussed in Chapter 5, STA routinely requests local jurisdictions to submit general plan forecasts for land use, housing, and jobs whenever the model is updated (typically in tandem with MTC's RTP/SCS process). This data is used in tandem with data provided by ABAG/MTC. Since the SABM is required to

be consistent with the regional travel model for the Bay Area, it is vital that this information be included in the model.

STA also uses the SABM to evaluate projects that go in the CIP for the CMP, as well as other STA documents like the CTP. Using the model allows STA to view forecasted congestion levels without the project, and see if the project would make a measurable improvement in congestion when it is added to the model.

7.4 MTC Modeling Consistency

As required by the CMP legislation, the Solano Activity Based Model is consistent with MTC's Travel Model 1. The last consistency finding occurred following the adoption of the first Plan Bay Area. The base year of the model is 2015 and the forecast year is 2040. Currently, the model is undergoing updates and is a work in progress. The model is being updated to include information on public transportation in both Solano and Napa Counties, so that ridership on express buses may be projected. At the same time, the model will be updated to be consistent with Travel Model 1.5, which is being used by MTC for Plan Bay Area 2050. The update will add a number of enhanced features, including a new population synthesis software, inclusion of TNCs and autonomous vehicles, and will be better calibrated to perform public transit forecasts.

7.5 Model Update Process

The Solano Activity Based Model is updated with each RTP/SCS cycle to ensure consistency with the MTC travel model. Currently, the SABM is consistent with MTC's Travel Model 1, which was used for Plan Bay Area, and Plan Bay Area 2040. MTC is currently in process of developing Travel Model 1.5, which will be used for forecasting in Plan Bay Area 2050. In tandem with the Plan Bay Area 2050 process, MTC is also developing Travel Model 2, which will be used in future RTP/SCS efforts. Currently, the SABM is being updated with public transit information, and at the same time will be updated to be consistent with Travel Model 1.5. The updates will ensure the model remains consistent with MTC while Travel Model 2 is completed.

Section 8: Capital Improvement Program

8.1 Purpose and Intent of Legislation

CMPs are required by California Government Code Section 65089(b)(5) to include a seven year CIP to maintain or improve the performance of the multimodal system for the movement of people and goods and to mitigate regional transportation impacts identified through the Land Use Analysis Program. All projects must conform to federal, state, and regional air quality mitigation measures.

8.2 Relationship to Local and Regional Plans

The projects contained in the CIP must be consistent with other regional & state plans and programs, such as the Regional Transportation Plan (RTP/SCS), and the Regional Transportation Improvement Program (RTIP). The RTP/SCS is prepared by MTC and is adopted every 4 years. The projects included in this CIP are consistent with the goals, policies, and actions identified in the RTP/SCS. MTC's most recently adopted RTP/SCS is Plan Bay Area 2040, adopted in July 2017. Plan Bay Area 2050 is currently under development and is expected to be complete by 2021.

The Regional Transportation Improvement Program (RTIP) is the first step to obtaining a funding commitment for a particular project from the State. Projects that MTC includes in the RTP/SCS are recommended to the California Transportation Commission (CTC) for inclusion in the State Transportation Improvement Program (STIP). In order for a project to be included in the RTIP, it first must be included in the CIP for the CMP. The CIP for this CMP update is based on information from the most recently adopted RTIP in December 2017.

STA's CIP project list must also conform to air quality attainment plans. The 2017 Bay Area Clean Air Plan, prepared by the Bay Area Air Quality Management District, cites 15 Transportation Control Measures (TCMs) that this CMP must conform to. References to how this CMP conforms to the TCMs is contained in Section 4. MTC gives priority to proposed projects that support or help implement any of the TCMs.

8.3 2019 Solano CMP Capital Improvement Program

As part of the CMP development process, STA must develop a Capital Improvement Program with projects that will help to mitigate and improve congestion on Solano County's roadways. The projects contained within this CIP are used to inform the Regional Transportation Improvement Program (RTIP), which sets the region's priority for the State Transportation Improvement Program (STIP). MTC adopts that RTIP every two years. The last RTIP was adopted in December 2017, following the most recent RTP/SCS in 2017. The most recent STIP was adopted in March 2018.

Table 20: Solano County RTIP & STIP Projects

			Funds by FY (\$1,000)					
Project	Agency	Project Cost (\$1,000)	18-19	19- 20	20-21	21- 22	22-23	Outside RTIP
Jepson Pkwy (Leisure Town Rd from Commerce to Orange)**	Vacaville	\$9,296	0	0	\$9,296	0	0	0
I-80/I-680/SR-12 I/C Package 2A***	STA	\$9,000	\$9,000	0	0	0	0	0
SR-37 Project/Mare Island Interchange*	STA	\$5,000	0	0	\$5,000	0	0	0
Silverado Trail Repaving	Napa Co.	\$98	0	\$98	0	0	0	0
SR-12/Church Rd	STA	\$1,939	0	0	\$1,939	0	0	0
Planning, programming, and monitoring	MTC	\$186	\$43	0	\$46	\$48	\$49	0
Planning, programming, and monitoring	STA	\$681	\$204	0	\$159	\$159	\$159	0
MTC Transportation Incentive Program*	MTC	0	0	0	0	0	0	\$945

Source: Metropolitan Transportation Commission

*Included in the RTIP but not the STIP

**In STIP, project named Jepson Pkwy, 4-lane widen, Elmira Rd-New Ulatis Crk

***Requested \$9,000,000 in funding for FY 18-19 in RTIP moved to FY 19-20 in STIP

STA also works with MTC to develop a program of projects for the Regional Transportation Plan, which is the Bay Area's financially constrained master plan for transportation in the Bay Area over the next 30 years. The most recent RTP/SCS, Plan Bay Area 2040, was adopted in July 2017. Solano County's RTP projects from Plan Bay Area 2040 include:

Table 21: Solano County Plan Bay Area 2040 RTP/SCS Projects (\$1,000s)

Jurisdiction	Project Title	Requested Regional Funds	Committed Funds	Local Funds	Total Cost
Benicia	Park Road Improvements	-	\$2,731	-	\$5,858
Dixon	Parkway Blvd Overcrossing	\$8,000	\$1,060	\$4,000	\$12,000
Fairfield	Fairfield-Vacaville Train Station Building, Access, and Parking	\$10,000	\$75,000	\$5,000	\$90,000
Fairfield	West Texas Rd Diet	\$9,000	-	\$2,000	\$11,000

Jurisdiction	Project Title	Requested Regional Funds	Committed Funds	Local Funds	Total Cost
Solano County	SR-113 Re-Alignment Study and Implementation	\$5,000	-	\$45,000	\$50,000
Solano Transportation Authority	I-80/I-680/SR 12 Interchange Packages 2 - 7	\$480,000	\$150,000	\$20,000	\$650,000
Vacaville	I-505/Vaca-Valley	\$7,500	\$1,907	\$6,075	\$15,482
Vacaville	Lagoon Valley Interchange			\$10,000	\$10,000
Vallejo	Redwood Pkwy Interchange & Fairgrounds Dr Phase 2	\$71,000	\$20,000	\$5,000	\$96,000
Vallejo	American Canyon Overcrossing	\$1,000	-	\$9,000	\$10,000
Vallejo	Vallejo Station Phase B	\$25,000	-	\$5,000	\$30,000
N/A	I-80 Express Lanes in both directions: Air Base Pkwy to Red Top Rd	-	-	-	\$44,000
N/A	I-80 Express Lanes in both directions: Air Base Pkwy to I-505	-	-	-	\$136,000
N/A	Construct 4-lane Jepson Parkway from Route 12 to Leisure Town Road at I-80	\$30,000	\$50,000	\$10,000	\$90,000
N/A	I-80 WB Truck Scales	\$145,000	\$105,000	-	\$250,000
N/A	Construct train station building and support facilities at the new Fairfield / Vacaville multimodal station	\$60,000	-	\$25,000	\$85,000
N/A	Vallejo Station Parking Structure Phase B	\$25,000	-	\$5,000	\$30,000
N/A	Bicycle and Pedestrian Program	-	-	-	\$20,000
N/A	Provide auxiliary lanes on I-80 in EB and WB directions from I-680 to Air Base Pkwy	-	-	-	\$57,000
N/A	Access and Mobility Program	-	-	-	\$113,000
N/A	Climate Program: TDM and Emission Reduction Technology	-	-	-	\$23,000
N/A	Conduct planning and design studies along SR-12 corridor in Solano County	-	-	-	\$58,000
N/A	County Safety, Security, and Other	-	-	-	\$17,000
N/A	Minor Roadway Expansions	-	-	-	\$10,000
N/A	Multimodal Streetscape	-	-	-	\$2,000
N/A	PDA Planning	-	-	-	\$17,000
N/A	Roadway Operations	-	-	-	\$59,000
N/A	Solano MLIP Support Projects	-	-	-	\$115,000
N/A	East and North Bay Express Lanes – Environmental and Design Phases for Future Segments*	-	-	-	\$200,000

Jurisdiction	Project Title	Requested Regional Funds	Committed Funds	Local Funds	Total Cost
N/A	East and North Bay Express Lanes – Operations and Maintenance*	-	-	-	\$1,512,000
N/A	East and North Bay Express Lanes – Reserve*	-	-	-	\$2,164,000
N/A	Highway 37 Improvements and Sea Level Rise Mitigation PSR	-	-	-	\$24,000

Source: Solano Transportation Authority & Plan Bay Area 2040

State Highway Operations Protection Program (SHOPP)

SHOPP is a four year Caltrans program of projects that focus on capital improvements to safety, operations, maintenance, and rehabilitation of state highways. No capacity increasing projects are allowed under the SHOPP program. The following projects have been programmed in the 2018 SHOPP in Solano County:

Table 22: 2018 SHOPP Projects in Solano County

Route	Post Miles	Location/Description	FY	Total Cost (\$1,000)
12	20.6/26.4	In and near Rio Vista, from Currie Road to Sacramento County line. Roadway rehabilitation	21-22	\$17,433
12	19.2/19.4	Near Rio Vista, at the intersection of SR-12 and SR-113; also on SR-113 from PM 0.0/0.2. Environmental mitigation for safety project EA4G560	19-20	\$260
680	R1.9/R2.0	In Benicia, from north of Industrial Way to south of Lake Herman Road. Repair slipouts and stabilize slope.	19-20	\$2,695
80	34.5	In and near Dixon and Vacaville, at McCune Creek Bridge No. 23-0084L/R; also on I-505 at Horse Creek Bridge No. 23-0077L. Bridge preventative maintenance.	20-21	\$8,741
80	1.8/4.4	In Vallejo, from Magazine St Overcrossing No. 23-0066 to Redwood St Overcrossing No. 23-0014. Increase vertical clearance at six overcrossing structures.	18-19	\$21,998
80	1.1	In Vallejo, at I-80/SR-29 Separation Bridge No. 23-0087. Replace bridge.	19-20	\$19,618
80	14.6	Near Fairfield, at Suisun Creek Bridge No. 23-0007. Scour mitigation.	19-20	\$3,185
84	12.0/12.4	Near Rio Vista, at Miner Slough Bridge No. 23-0035. Replace bridge.	19-20	\$38,482
84	2.5	Near Rio Vista, at Cache Slough Ferry Crossing. Upgrade the existing fender systems, concrete ramps, and swing gate systems, modify the ferry boat deck, surface, and install traffic counter and Vehicle Detection Systems (VDS).	21-22	\$19,480

Source: Caltrans 2018 SHOPP

Regional Traffic Impact Fee

STA and the County of Solano coordinate on the collection and management of the Regional Traffic Impact Fee, assessed as part of the County's Public Facilities Fee. \$1,500 per dwelling unit is assessed on development projects to help mitigate traffic impacts as a result of the development. The RTIF is managed by seven working groups, five of which are geographically based. The remaining two are designated for the unincorporated County for road projects, and the other for transit projects countywide. Projects chosen by geographically based groups must be located within the group the funds are collected for. For FY 2018-19, the seven working groups have selected the following projects to receive RTIF funds:

Table 23: 2018-19 RTIF Projects

Working Groups	Projects	Agencies
District 1	Jepson Parkway	Fairfield, Suisun City, Vacaville, and County
District 2	SR-12/Church Rd Project	Fairfield, Rio Vista, Suisun City, and County
District 3	Fairgrounds Drive	Benicia, Vallejo, and County
District 4	Green Valley Overcrossing	Fairfield and County
District 5	SR-113 Safety Study	Dixon and County
Transit District 6	Fairgrounds Drive	Transit Operators and STA
County Uninc. District 7	McCormick Rd and Hay Rd	County

Source: Solano Transportation Authority

In Q4 of FY 2018-19, a total of \$574,327 in RTIF has been collected, with a total of \$7,414,617 collected since the start of the program in 2014. In 2019, the Nexus study for the County's Public Facilities Fee (PFF) was updated and recommended an increase of the RTIF from \$1,500 to \$2,500. After presenting the change to various stakeholder groups, including the STA Board, STA TAC, developer groups, and City Managers, the Solano County Board of Supervisors approved the change at their August 6, 2019 meeting. The change is expected to be effective starting October 6, 2019, and will increase the projected average annual revenue of the RTIF from \$1.2 million yearly to \$2 million yearly.

Table 24: 2018-19 RTIF Revenue

	FY 2018-19 Q4	Grand Total		
RTIF Collection	\$574,327	\$6,274,658		
Interest		\$2,974		
2% STA Admin	\$11,486	\$125,493		
RTIF Revenue for Eligible Projects	\$562,840	\$7,414,617	Total Disbursements	Remaining Funds
District 1 Jepson Corridor	\$258,795	\$3,407,069	\$1,375,192	\$2,031,876
District 2 SR-12 Corridor	\$81,602	\$594,516	\$121,481	\$473,035
District 3 South County	\$33,467	\$305,886	\$60,000	\$245,886
District 4 Central County	\$34,530	\$1,606,448	\$1,280,000	\$326,448
District 5 SR-113	\$98,161	\$561,803	\$183,571	\$378,232
District 6 Transit (5%)	\$28,142	\$342,019	\$208,128	\$133,891
District 7 County Roads (5%)	\$28,142	\$596,877	\$121,760	\$475,117
Total RTIF Revenue Received for Eligible Projects:	\$562,840	\$7,414,617	\$3,350,133	\$4,064,485

Source: Solano Transportation Authority

Active Transportation Projects

STA's current adopted Bike and Pedestrian Plans are current as of 2012, and contain a set of proposed projects to grow the active transportation network. Currently, STA is developing the Solano Active Transportation Plan, which will combine all previous active transportation planning efforts STA has undertaken. The new Solano ATP will provide an updated list of prioritized projects for each jurisdiction, and will be available for the jurisdiction to adopt should they choose. By reference, the Solano County CMP recognizes these plans and planned facilities. Individual projects will be implemented by local agencies as funding becomes available. Funding sources include, but are not limited to, CMAQ, TFCA, TDA Article 3, and CAF.

Completed projects since the 2015 CMP Update

Since the 2015 CMP update, STA has made progress on its transportation goals by completing projects and furthering progress on others. The following projects in the 2015 CMP CIP have been completed or seen progress:

- RTP ID 230660: Convert I-80 HOV lanes to express lanes from Red Top Road to Air Base Pkwy in each direction
 - This project, along with RTP ID 240581 (Widen I-80 for express lanes from Air Base Pkwy to I-505) is fully designed and environmentally cleared. Construction will occur as soon as funds are secured.
- RTP ID 21341: Construct new Fairfield/Vacaville multimodal train station for Capitol Corridor intercity rail service

- The Fairfield/Vacaville Train Station is complete and opened in November 2017. Remaining improvements include the construction of additional parking and a station building.
- RTP ID 22629: Construct new Vallejo Ferry Terminal (includes additional parking, upgrade of bus transfer facilities, and pedestrian access improvements)
 - Phase 2 of the Vallejo Station Parking Garage moves forward. Recently, the City of Vallejo removed the old Post Office building to make room for the expanded parking garage. Mixed use residential and retail buildings are also planned for the site. STA has developed a funding plan for the project, which Vallejo has environmentally cleared and started design.
- RTP ID 22794: Improve Curtola Transit Center, includes transit plaza on existing park and ride lot, auto/carpool pick-up and circulation improvements
 - This project was completed in December 2015 and is open to the public. SolanoExpress and local buses started serving the transit center in March 2016.
- RTP ID 22985: Implement transit hub in the Benicia Industrial Park
 - This project is complete and was opened to the public in 2019. The Benicia Bus Hub is served by the SolanoExpress Blue Line.
- RTP ID 94151: Construct 4-lane Jepson Parkway from SR-12 to I-80 at Leisure Town Road
 - Significant progress continues to be made on this project. The City of Vacaville recently completed the section on Leisure Town Road from Vanden Road to Elmira Road. Vacaville's last section, from Elmira Rd to Sequoia Drive, is in design and scheduled for construction in FY 2021-22. The City of Fairfield is nearing completion on a section of Vanden Road from Peabody Road to south of Canon Road, near the new Fairfield/Vacaville Train Station. Remaining sections include Vanden Road from Canon Road to Leisure Town Road, Cement Hill Road, and the Walters Road Extension. STA is developing funding plans to finish the project.
- RTP ID 230313: Improve interchanges and widen roadways serving Solano County Fairgrounds, including Redwood Pkwy
 - Progress continues on this project. In advance of the SolanoExpress Red Line, STA is constructing bus stops on the on/off ramps to SR-37 at Fairgrounds Drive, along with pedestrian enhancements to the nearby areas. Full completion of this interchange project is still seeking funding, with design phase underway
- RTP ID 230216: Improve I-80/I-680/SR-12 Interchange (Phase 1), includes widen I-80 and I-680 and improve direct freeway to freeway connections
 - This project is complete and open to the public. Work continues on construction packages 2A and 2B. 2A is fully funded and expected to be constructed in 2020.
- RTP ID 240210: Implement I-505/Vaca Valley Pkwy interchange improvements (includes widening southbound off-ramp at Vaca Valley Pkwy, widening Vaca Valley Pkwy to provide protected left turn pockets, and signalization of the southbound ramp intersection)
 - This project received funding from OBAG 2 and is in design phase by the City of Vacaville. Remaining construction funds are still being sought.
- RTP ID 240576: Replace existing transit fleet
 - STA is working with its transit operators to implement the SolanoExpress bus replacement plan, which will replace aging diesel buses in the SolanoExpress fleet. FAST

recently purchased 9 new buses, and SolTrans will be purchasing four more in the near future. Additionally, STA has secured grant funding to begin the electrification of the SolanoExpress fleet. This is expected to be phased in as the technology develops.

- SHOPP Project on I-80 at PM 31.4/32.6: Near Vacaville, at Meridian Road Overcrossing No. 23-0147 and Midway Road Overcrossing No 23-0148. Rehabilitate and replace bridges.
 - This project was completed in early 2019, and both bridges are open to traffic.