



TECHNICAL MEMORANDUM

Date: April 7, 2020
To: Jamar Stamps, Contra Costa County
From: Fehr & Peers, on behalf of Trail People
Subject: Marsh Creek Corridor Demand Analysis

WC18-3536

The Marsh Creek Trail, when complete, has the potential to extend 13.5 miles through rural landscapes connecting a small suburban community to a mid-sized suburban community and the many agricultural land uses and parklands in between. This Technical Memorandum centers on whether there is demand for the trail, i.e., if the trail is built, how much will it be used.

This memo analyzes data on the location, number, and type of origins and destinations along the trail; the current use by pedestrians and bicyclists of the corridor and adjacent areas; and the number and type of users along trails with similar characteristics. This information is used to understand the number, type (recreational vs. commuting), and activity (hiking, walking, bicycling, horseback riding, etc.) of trail users that should be expected along the trail.

The analysis finds that due to the scenic nature of the corridor, the number of regional parks, existing travel patterns in the area, and the size of adjacent communities, there is significant demand for a trail along Marsh Creek. However, each user type and activity have specific design and connectivity-related demands, which must be accommodated during the future phases of trail design for significant trail use to be actualized. These recommendations are provided in the memo's closing summary.



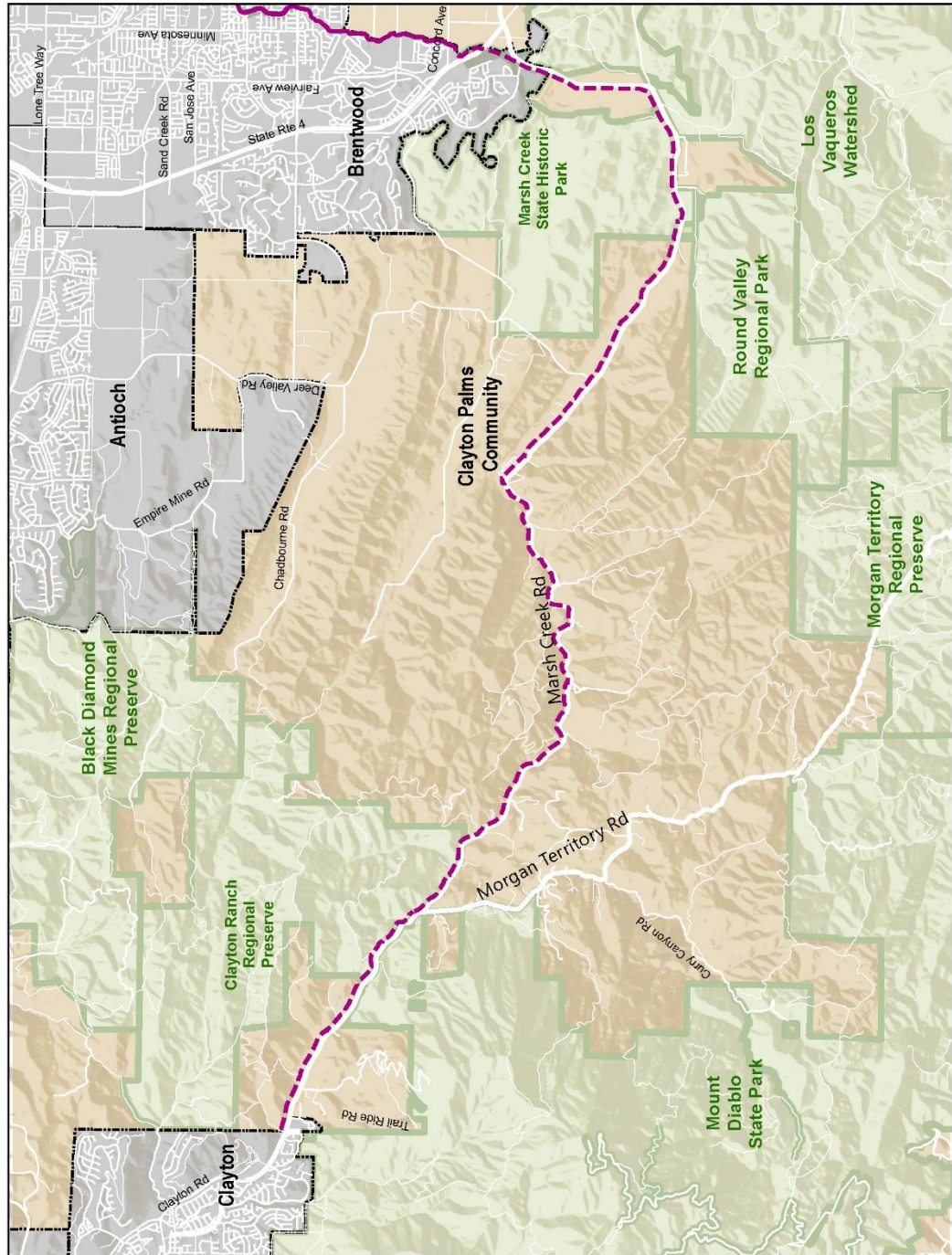
Project Overview and Demand Summary

The 13.5-mile Marsh Creek corridor travels through golden rolling hills dotted with majestic oaks adjacent to numerous state and regional parks between the communities of Clayton on the west and Brentwood on the east. Most people using the trail are expected to do so for recreational purposes. Recreational users include individuals and groups walking or running, riding on bicycles or horseback for purposes of exercise or to enjoy the scenic beauty of the area. Bicyclists will most likely ride the entire length of the trail or ride the trail/segments of the trail as part of a loop. Walkers, hikers, and runners are likely to do shorter segments connected to towns and parks along the route. Recreational users are expected to be the dominant users due to the distance of the corridor and lack of significant housing and jobs along the route. However, the trail is also expected to be used for commuting and transportation purposes. Although the distance between Clayton and Brentwood is over 13 miles, the Marsh Creek Trail route is dotted with residences, businesses, and public parks creating destinations along the route that can be accessed by walking and bicycling. Currently, there are bicyclists that use Marsh Creek Road as a commute and recreation route.

The next section provides detail on the volume of potential users, and destinations that would attract additional users along the trail corridor.



Marsh Creek Corridor Multi-Use Trail Destination Map





Trip Generators

Origins (typically where people live) and destinations (typically where people work, shop and recreate) help us understand and predict the number of people expected to use a trail. The greater the number of people and the greater the number of activities available along a trail, the greater the number of users. The information below provides an overview of the number of people, jobs, and activities to be found along or at each end of the trail.

Populations Along the Route

The proposed Marsh Creek Trail will terminate at the cities of Clayton and Brentwood with populations of 11,800 and 58,800, respectively. According to 2010 census data, there are also almost 1,000 people living along the corridor. This includes the Clayton Regency Manufactured Home Community, a 180-unit all-ages development located on Marsh Creek Road with a focus on outdoor recreation. There are an additional 700 people living in the vicinity of Perkins Canyon/along Morgan Territory Road, just off the Marsh Creek corridor and midway between Clayton and Brentwood.

The trail would enhance the ability to walk or bicycle safely to destinations for the 1,700 people who live along the corridor. For the 70,600 residents of Clayton and Brentwood, the trail will provide the opportunity to access local parks by foot or by bicycle, or just enjoy the trail corridor.

Jobs Along the Route

In Clayton, there are 1,625 jobs while in Brentwood there are 11,100 jobs, based on 2010 census data. While some workers currently commute between Clayton and Brentwood, most workers travel further afield and would likely not use the trail for commuting purposes.

Along the trail corridor the area is sparsely populated; throughout the route, however there are businesses. According to the U.S. Census, immediately adjacent to the corridor there are over 30 jobs. There are an additional 60 jobs along Morgan Territory Road in Perkins Canyon, just five miles by trail from Clayton. Businesses and employers along the route include Rodie's Feed and Pet Supply, the Marsh Creek Detention Facility, the Clayton Palms Community, and numerous equestrian centers, farms, and parks.

Whereas the trail is unlikely to serve as a high-use commute route, it will provide the opportunity for those who live and work along the corridor to walk or bicycle to work, if they so choose.



Table 1. Populations and jobs along and at the ends of the trail alignment.

<i>Location</i>	<i>Population</i>	<i>Jobs</i>
City of Clayton	11,800	1,625
City of Brentwood	58,800	11,000
Marsh Creek Trail Corridor	1,000	30
Clayton Regency Manufactured Home Community	180-units	
Morgan Territory Road in Perkins Canyon	700	60

Destinations and Visitor Attractions Along the Route

The corridor boasts numerous destinations of regional significance, such as state and regional parks, “pick-your-own” farms, wineries, and equestrian centers. These are destinations to which people will travel for employment as well as for entertainment. The proposed Marsh Creek Trail will provide the means to access and travel between these destinations by foot, bicycle, and horseback.

The following are notable examples of regionally significant destinations along the Marsh Creek corridor. The table below shows the user counts at these destinations, where available.

Mt. Diablo State Park (CA Department of Parks and Recreation)

(Mitchell Canyon Staging Area) 96 Mitchell Canyon Road, Clayton, CA

www.parks.ca.gov/?page_id=517

The proposed Marsh Creek Trail could be designed with connections to Mt. Diablo.

Round Valley Regional Preserve (East Bay Regional Park District)

19450 Marsh Creek Road, Brentwood, CA

www.ebparks.org/parks/round_valley

Thousand-acre preserve with archaeological, historic, and natural resources accommodating hiking, cycling, and camping via Marsh Creek Road. Organized activities, such as birding and hikes, occur occasionally. Connects to *Los Vaqueros Reservoir and Watershed/Morgan Territory Regional Preserve* via the Miwok Trail.



Marsh Creek State Historic Park (CA Department of Parks and Recreation)

21789 Marsh Creek Road, Brentwood, CA

www.parks.ca.gov/?page_id=525

<http://johnmarshhouse.com>

One of California's newest state parks, though not currently open to the public. The park is undergoing a planning process to guide public access. The property includes 3,659 acres of natural habitat, wildlife, and unique cultural features, including the historic John Marsh Home which was considered the "finest ranch home in California" when built in 1856. Current plans include connections to Marsh Creek and numerous multi-use trails, camping facilities, and historic and natural resources.

Old Marsh Creek Springs Park

12510 Marsh Creek Road, Clayton, CA

www.oldmarshcreeksprings.com

Historic home and natural pool that is open for picnicking and event hosting.

Table 2. User counts at parks along and near the potential trail alignment.

<i>Destination</i>	<i>Annual User Counts</i>
Marsh Creek Trail (existing)	108,000
Round Valley/Brushy Peak	181,200
Morgan Territory	48,659
Clayton Ranch (planned)	Two walk-in areas, parking for 125
Black Diamond Mines (planned)	Unknown

The trail is likely to become a destination itself with walkers, joggers, bicyclists, and equestrians traveling to go for a walk or ride along the scenic corridor. It will also serve as a gateway to the parks and preserves in the area. New parks (such Marsh Creek State Park) can further encourage use of the trail. Existing parks (such as Mt. Diablo and Round Valley Regional Preserve) can be enhanced to create gateways serving pedestrians, bicyclists, and equestrians who wish to access these parks from the proposed Marsh Creek Trail.



It is also expected that the cities of Clayton and Brentwood will serve as attractors for visitors from outside the area to visit the trail, as both cities include historic downtowns with shops and restaurants and include other destinations such as schools, churches, and playing fields. Enhancing or developing wayfinding and creating safe connections for all users from the trail into town will increase trail use and generate positive economic impacts for Clayton and Brentwood.

Current Use

To determine the expected use of a trail, it is valuable to review the current travel volumes and modes in the area. For example, high numbers of people bicycling and walking demonstrate a community's interest in these modes of travel. However, it is important to recognize that low numbers may indicate a lack of safe routes rather than a lack of interest. In addition, the volume of vehicles traveling the same path as the future trail provides insight on the number of people who may be able to switch to walking or bicycling once the trail is built. There is some information on the amount of walking and bicycling along the corridor and in the area provided by trail counts, Strava data, and vehicle traffic in the corridor that is regularly collected. However, given the length of the corridor and relative low population density, it is unlikely that many of the vehicle trips will be converted to bicycling or walking trips.

Marsh Creek Trail (Existing)

Currently, eight miles of the Marsh Creek Trail has been constructed in Brentwood, connecting the Delta shores of Big Break south to Concord Avenue. The trail meanders adjacent to Marsh Creek, passing tracts of farmland. In addition to providing an off-street bicycling route in urban parts of Brentwood, the trail connects to a system of regional trails including the Delta de Anza, Big Break Regional Trails, and the Mokelumne Coast-to-Crest Trail, among others. The proposed Marsh Creek Trail would be extended to the city of Clayton. The *existing* Marsh Creek Trail is in an urban/suburban area, whereas the *proposed* Marsh Creek Trail extension is in a much more rural area. However, counts taken on the existing portion can provide us with an expectation of future use. Based on data collected by the East Bay Regional Park District, monthly counts on the trail to date show usage levels of 7,000 to 11,000 a month.

Table 3. 2019 User Counts on Marsh Creek Trail

	Jan	Feb	Mar	Apr	May	June
Marsh Creek Trail (existing)	7,350	6,478	7,471	11,752	9,690	9,530



Strava Data

Strava (www.strava.com) is a web application oriented predominately to athletes but is also used by people who want to track and share their rides and runs. Strava collects and aggregates this data into a global “heat map,” updated monthly, that reflects the relative levels of activity on popular routes. The maps don’t include trip count data but indicate the relative levels of activity. The brighter/heavier the route on the map, the more often it is used. The maps below show Strava tracked trips on Marsh Creek Road and in adjacent areas.

Bicycling Counts

Figure 1 shows bicycling activity in the area near the proposed Marsh Creek Trail. Along Marsh Creek Road, which is adjacent to the proposed trail, there are currently moderate amounts of cycling on the western section (near Clayton) and lighter amounts on the eastern section (near Brentwood). This suggests a trail that follows this route will be used by bicyclists, potentially to a greater degree as safety improves with the establishment of a trail separated from vehicular traffic. There are also moderate amounts of bicyclists on Morgan Territory Road (which would connect to the trail at the mid-point). There is substantial bicycling throughout Brentwood and Clayton. There is light to moderate bicycling in regional parks (presumably mountain bikes), with heavy use in Mt. Diablo State Park and light use in Round Valley Regional Preserve.

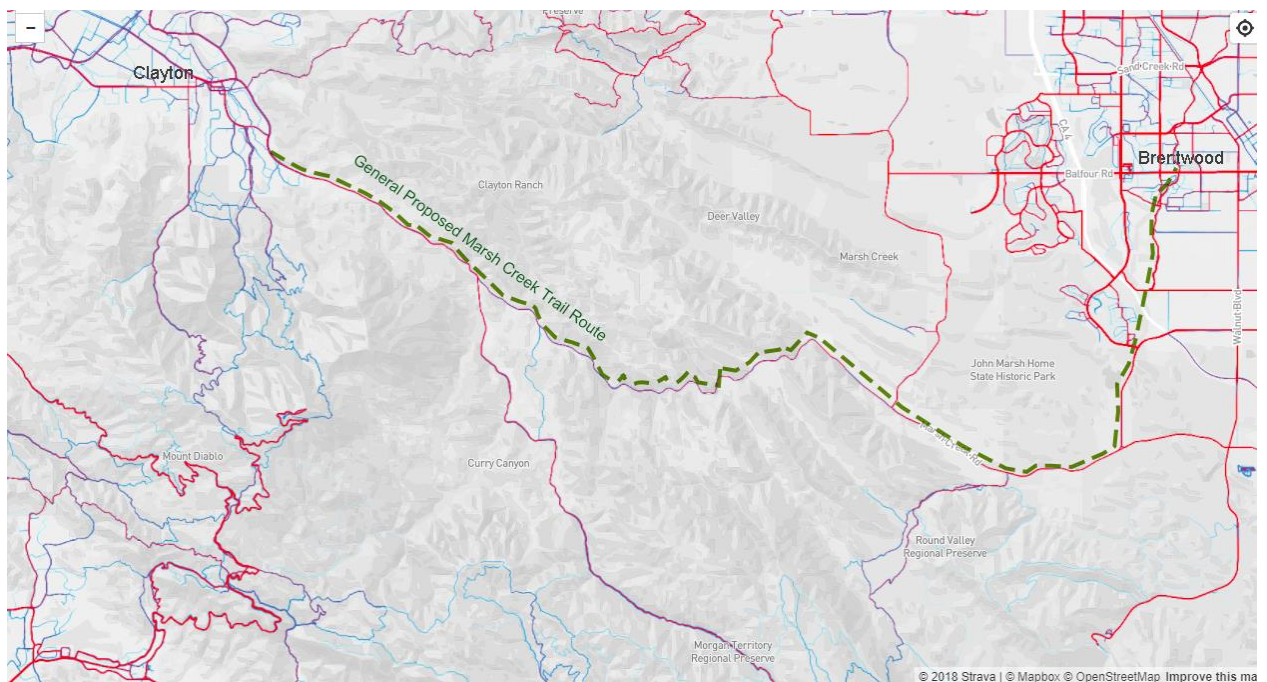


Figure 1. Strava Bicycling Activity



Walking Counts

Figure 2 shows running and hiking activity, which is even more intense in the urban areas and parks and preserves with public trails but is virtually absent along Marsh Creek Road and other rural roads. The relative intensity of use in the urbanized areas at either end of Marsh Creek Road and on the public trails in Mt. Diablo State Park and Round Valley Regional Preserve indicates that if a safe, comfortable, and scenic trail were created along Marsh Creek Road it may see heavy use – as heavy or heavier than some of the popular on-street routes and trails that exist in the cities and parks. This would be especially true if there were intermediate areas along the route to visit and rest, so that users could walk or ride segments of the trail

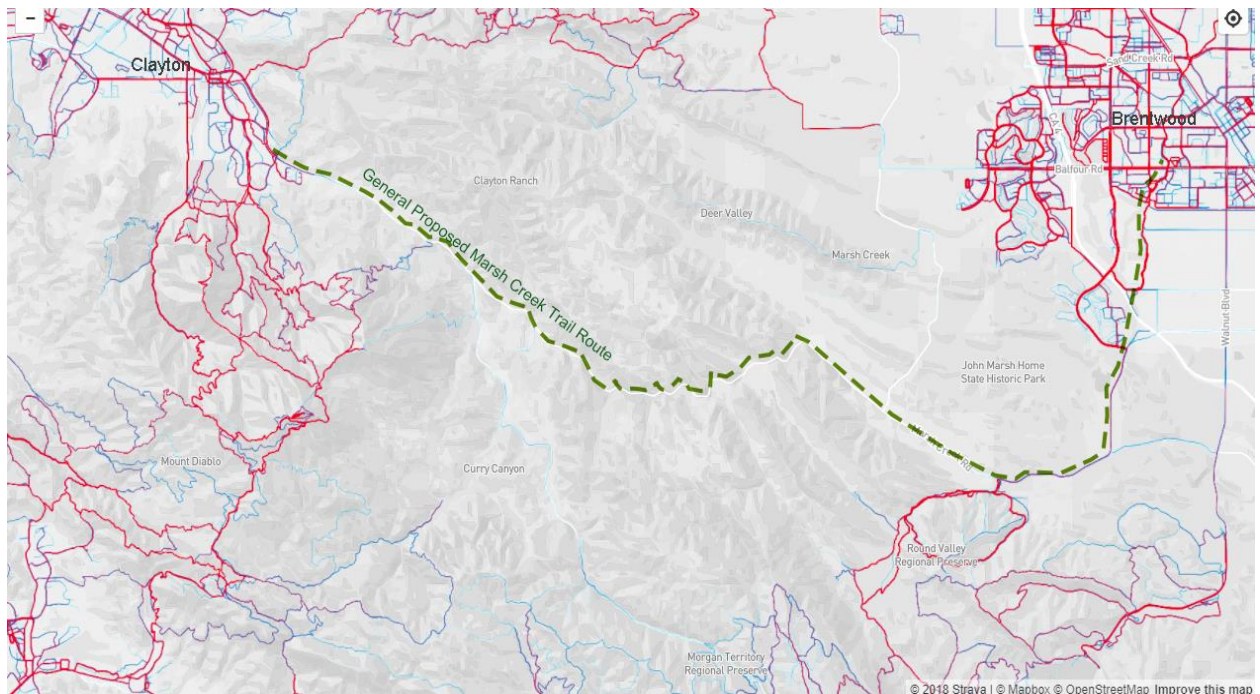


Figure 2: Strava Running/Hiking Activity



Expected Use

Future trail use is typically determined based on the density of housing, jobs, and activity centers along a trail in addition to the scenic quality of the trail itself. Vehicle counts provide some data on the number and pattern of current use. Across the country, trail use is infrequently counted and less so in rural areas. However, comparing the proposed Marsh Creek Trail to other rural trails in the form of case studies can provide a general understanding of the expected use.

Where a similar regional trail connection between communities has been implemented and user counts have been taken, this data may be the more realistic method of projecting the future level of use of the proposed Marsh Creek Trail. Three such comparable implemented regional trail connections have been identified and evaluated for comparison and use projection purposes.

Case Studies

Gresham Springwater Trail, Oregon

The rural Gresham Springwater Trail connects Boring (pop. 8,000) to Gresham (pop. 111,000) approximately five miles away. Boring is anything but, with numerous parks and recreation areas attracting visitors. The scenic trail follows Johnson Creek much of the way. According to the *Intertwine Trail Use Snapshot 2008-2010* report, the trail receives approximately 18,000 users monthly. Gresham is located ten miles from Portland's (pop. 600,000) city center and is connected by a continuation of the Springwater Trail. The picturesque trail, access to parks and natural areas, and continuation of the trail into downtown Portland, all likely contribute to its high use.

The Marsh Creek Trail will also connect small- to medium-sized urban areas to regional parks. If connected to trail networks in Clayton and Brentwood and designed to create a restful and scenic experience (separated from the roadway with landscaped or natural buffers), it could experience commensurate use as the Gresham Springwater Trail.

Tammany Trace, LA

The 31-mile Tammany Trace spans urban, suburban and rural communities in southern Louisiana. The Trace connects four communities – Covington (pop. 10,000), Abita Springs (pop. 2,500), Mandeville (pop. 12,000), and Lacombe (pop. 8,500), and approaches Slidell (pop. 27,000). The multi-use trail has been designed to accommodate pedestrians, bicyclists and equestrians. The trail is paved with a parallel natural surface trail for equestrians. The Trace follows a spur line of the Illinois Central Railroad, the first rail-to-trail conversion in Louisiana. Because the trail is built along a rail alignment it is separated from the roadway, creating a quiet, serene experience for users. It



also connects to historic sites, serves as a wildlife corridor, and is lined with scenic vistas of bayous, streams, rivers and wetlands, and forests of loblolly pine, live oaks, and magnolia trees. Per the *Greater New Orleans Pedestrian and Bicycle Count Report* of 2019, the Tammany Trace receives 9,000 visitors during peak months.

The Marsh Creek Trail is similarly located in a rural area connecting small towns. Whereas visitors of the Tammany Trace are looking to visit forests and bayous, the Marsh Creek Trail can provide access to numerous public parks. Designing a parallel equestrian path will further encourage use.

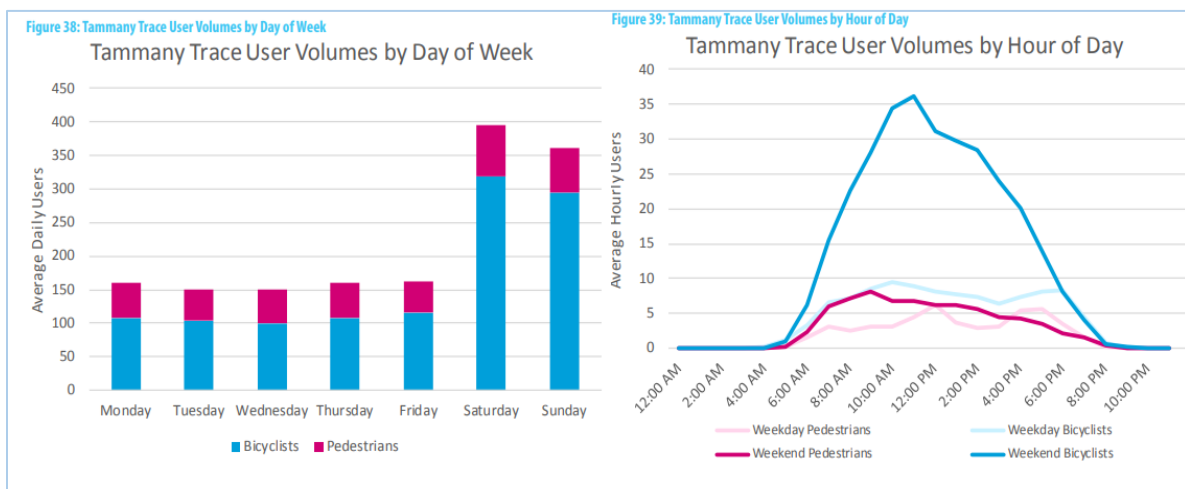


Figure 3. User Volumes showing weekend and daytime peaks, typical of a recreationally focused trail

Napa Valley Vine Trail

The Napa Valley Vine Trail has plans to extend for 47 miles. Today, 18 miles are open between the cities of Napa (pop. 80,000) and Yountville (pop. 3,000) with two-thirds located in Napa and six miles traveling through rural farmland marked by periodic tasting rooms. Eco-counters were installed in 2017 and counted 348,400 trail users (an average of 30,000/month).

Although the Napa Valley is a popular tourist destination, the Marsh Creek Trail, with access to numerous parks, could similarly attract numerous visitors.



Closing Summary

The proposed Marsh Creek Trail is likely to serve as a minor commuter route, to provide people who live along the route the ability to walk or bicycle to destinations – which they were not previously able to do – and to become a regional destination for recreational cyclists, hikers, and horseback riders, and those wishing to access the numerous regional parks. The case studies suggest a rural trail of this length can be popular and well-used. However, the user counts vary considerably from 10 to 20 to 30 thousand users a month. Based on these case studies and the data and analysis of origins, destinations and existing use, the following recommendations for trail design are provided based on their likely ability to lead to increased Marsh Creek Trail use.

To increase trail use, the proposed Marsh Creek Trail should be designed to:

- Be separated from the roadway and buffered by landscaping (to the extent possible) to create a scenic experience and provide a shaded trail.
- Include waysides with frequent benches, especially near the cities of Clayton and Brentwood, near the Clayton Regency Community, and the Morgan Territory Road junction.
- Connect to parks, recreation and activity centers and include clear signage, bicycle parking, and hitching rails for horses.
- Connect to a trail network in and through the cities of Clayton and Brentwood and continue to BART stations at Concord, Pittsburg/Bay Point, and Antioch.
- Include a parallel natural surface trail for equestrian use.

Additional factors that will affect the level of use include clear access, wayfinding, and appropriate management and maintenance. The proposed Marsh Creek Trail should experience greater use volumes if well connected to residences, activity centers, transit, and staging areas. Trails that are shaded in summer; include scenic places to stop, rest, and eat; are easy to navigate; and are programmed with activities are more likely to experience greater use. Based on the number of current residents, jobs, activity centers, regional destinations, and current bicycle and walking activity in the area, the proposed Marsh Creek Trail can be a well-used and appreciated trail if designed to safety and attractively accommodate all users.