

A photograph of a sidewalk with yellow dashed lines, trees, and a person walking. The sidewalk is paved with concrete and has several yellow dashed lines painted on it. To the left of the sidewalk is a grassy area and a row of trees. In the background, a person is walking on the sidewalk, and a white van is parked on the street. The sky is clear and blue.

Appendix

G

A photograph of a person riding a bicycle on a sidewalk. The person is wearing a dark jacket and a helmet. The sidewalk is paved with concrete and has yellow dashed lines. To the right of the sidewalk is a grassy area and a row of trees. The background is slightly blurred, showing a building and a clear sky.

**Operation and
Maintenance
Detail**

Contents

- Trail Maintenance Tasks G-3**
 - Routine Maintenance Tasks G-4
 - Seasonal or Annual Maintenance Tasks..... G-5
 - As-Needed Maintenance Tasks..... G-6
 - Capital Maintenance G-7
 - Special Maintenance Tasks G-8
 - Volunteer Maintenance: Trail Ambassador Programs G-9
- Trail Operation and Maintenance Cost..... G-10**
 - Operation and Maintenance Cost Implications from other Agencies..... G-10
 - Trail Maintenance Cost Estimates G-12
 - Total Maintenance Cost vs. Shared Maintenance Cost..... G-12

Operation and Maintenance Detail

This appendix details the tasks and costs of operation and maintenance of the trail system.

Trail Maintenance Tasks

The following sections describe various tasks that should be performed as part of a comprehensive trail maintenance program. The tasks are organized according to the frequency with which they must be performed:

- Routine Maintenance Tasks
- Seasonal or Annual Maintenance Tasks
- As-Needed Maintenance Tasks
- Capital Maintenance
- Special Maintenance Tasks

There is an interrelationship between the design of a trail facility and the level of maintenance required. For instance, trail facilities with numerous amenities and landscaping will require more maintenance tasks to be performed than facilities with no amenities or landscaping.



Damaged sidewalk on Paseo Padre Parkway near Dumbarton Circle

Routine Maintenance Tasks

Tasks that require weekly or monthly attention. Tasks with an asterisk (*) are generally required regardless of how the trail facility is designed. Tasks without an asterisk may not be required, depending on the design of the trail facility.

Trash Removal*

The purpose of removing trash on trail systems is to protect public health and safety and to improve conditions for wild animals, and air, water, and soil quality. Trash removal includes removing ground trash including broken glass, and emptying trash containers if they are present. Trailheads where dogs are allowed should also have dog waste stations with disposable bags. Trash removal should occur regularly – i.e. at least weekly. The most common approach to removing trash from trail systems is to implement an ongoing trash removal and an as-needed trash management program. Where resources are limited trash receptacles can be located at entry points to trails so that the trash cans are easily accessed and serviced by maintenance staff. A less common, and often less effective, approach to trash removal is implement a “carry in/carry out” trash policy in which trail users are supposed to be responsible for removing all trash. Trash cans are not provided. Especially with dog waste, people are not inclined to take it with them and tend to leave it bagged on the trail, so this approach may not be practical for an urban trail system.

Blowing or Sweeping*

To keep a paved trail safe, especially where there are nearby trees and shrubs, it is important to blow or sweep the surface clear of leaves and other debris. Blowing with a hand-held power blower should be done weekly during peak times of leaf or bark litter, and more effective sweeping with a small truck or tractor-based sweeper should be done monthly.

Inspection and Maintenance of Active Use Trailside Elements

Trailside elements are features along the trail designed to enhance the safety and enjoyment of trail users. Some elements are actively used and require frequent, regular cleaning or inspection to ensure they are working properly. These types of amenities include picnic tables, drinking fountains, or bicycle repair stations. Because of their higher maintenance requirements, these elements may be restricted to a few strategic locations or corridors, only installed within parks where they can be maintained as part of an overall park facility, or even not installed at all along trails.

Seasonal or Annual Maintenance Tasks

Tasks that may have more seasonal requirements or may be scheduled annually or as needed.

Landscaping and Irrigation Inspection

See Landscaping and Irrigation Maintenance under Special Maintenance Tasks, below.

Clearing, Brushing, and Pruning

Clearing is the removal of windfall trees, protruding roots, leaning trees, and loose limbs or large pieces of bark from the trail tread to the recommended buffer zone. Brushing is the removal of all living or dead vegetation from the outside of the trail tread to the recommended buffer zone. Overhanging branches should be pruned to 12 feet on shared-use, limited-use, and single-use trails for equestrians and bicycles. Vegetation should be pruned to the minimum clearance of 2 feet on each side of the trail. All cut tree limbs and other cuttings should be removed from the trail edge and discarded from drainages, to avoid creating a fire hazard.

Mowing, Trimming, and Weed Abatement*

Ensuring that shrubs and grasses do not intrude on or above the trail tread is essential to trail safety, functionality, and longevity. It also helps protect against fire risk, which may include more extensive mowing, or grazing, such as on the Sabercat Creek Trail. At minimum, mowing is the clearing of shrubs and grasses with a minimum clearance of 2 feet on each side of the trail. Paved trails should have compacted aggregate shoulders 2 feet wide on each side of the trail, which helps prevent encroachment by vegetation. Grass around fencing may need to be cut manually with a hand-held trimmer rather than a tractor-mounted mower.

Pavement Inspection and Asphalt Crack Patching*

Annual pavement inspection is part of a comprehensive pavement management plan. Pavement management plans should evaluate four trail characteristics: roughness (ride), surface distress (condition), surface (skid characteristics), and structure (pavement strength and deflection). Preserving the trail surface condition through preventive maintenance keeps trails safe, extends pavement life, and reduces long-term expenses.

The asphalt pavement must routinely be inspected for cracks, raveling, and disintegration. Cracks that are more than 1/4 inch to 1/2 inch wide should be thoroughly cleaned, dried, and filled with a sealant.

With proper design and construction, asphalt pavement requires minimal maintenance. A significant advantage of asphalt pavement over concrete pavement is that asphalt pavement repairs can be quick and cost effective.

Replacing and Refreshing Signage and Striping*

Trail markings (centerline striping, crossings, and other markings) and signage (regulatory, wayfinding, and interpretive signs) need to be regularly refreshed and/or replaced as they become damaged, faded, or out of date.

Inspection and Maintenance of "Passive" Trailside Elements

Some trailside elements do not require frequent, active maintenance, but should still be inspected on a regular cycle, with minor repairs performed as needed. These elements include: benches, bicycle parking, fencing, railing, gates, and bollards. Typical inspection includes checking for:

- Damage, deterioration or rusting on metal parts, requiring cleaning, painting or replacement
- Deterioration of wood elements, including vandalism, rotting, splintering or other condition that presents a hazard, requiring repair or replacement
- Cracks or other failure in concrete benches, tables, pads or footings

As-Needed Maintenance Tasks

Graffiti Removal*

The key to a successful graffiti control program is pre-treating walls or surfaces with anti-graffiti coatings, crime prevention through environmental design (making sure that the surfaces are highly visible), and prompt graffiti removal – especially offensive writing and drawing. A successful graffiti control program discourages vandalism, ensuring that trails are safe places for people to bike and walk. Graffiti removal may occur weekly in conjunction with other regular maintenance, or on as-needed basis.

Lighting Inspection and Maintenance

Some Fremont trail corridors that serve commuters who may travel during dusk hours in winter have been identified for potential lighting upgrades. The chief concern with lighting maintenance is tracking and fixing outages. Bulbs also need to be kept clean. Posting signage on fixtures and trailheads requesting that trail users report outages along the trail helps with lighting maintenance. Solar power lighting may be considered for some corridors where running conduit presents issues, but introduces different maintenance needs.

Addressing Homeless Encampments

During public engagement, several people commented on homeless encampments along trails. These encampments are not unique to Fremont, and reflect the local and regional housing and homelessness crisis. Addressing the homeless encampments along the trails is a complex project that would likely be a special project involving Environmental Services and Human Services staff. Increasing housing, providing shelter options, and providing debris removal services would be required as part of the City's Compassionate City Charter.

Capital Maintenance

The following maintenance tasks would generally happen as standalone, capital improvement projects (CIP), or as major rehabilitation is needed (on a multi-year cycle).

Rehabilitation of Paved Trails

Well-maintained asphalt trails typically need resealing every 5 to 7 years, depending on wear and type of pavement deterioration. Well-maintained concrete trails need replacing roughly every 25 years.

Resealing Asphalt Trails

Asphalt trails can be resealed using a slurry seal or seal coat application.

Slurry sealing asphalt is a preventive maintenance treatment that extends the life of the paved trail by applying a mixture of asphalt emulsion and aggregate (crushed stone and/or sand) to the trail. Slurry seals preserve and protect the underlying pavement structure and provide a new surface. The expected life of a slurry seal is three to five years.

Seal coating is a preventive maintenance treatment that extends the service life of the paved trail by waterproofing the surface, sealing small cracks, reducing oxidation of the pavement surface, and improving friction. A seal coat is an application of a layer of asphalt followed immediately with an aggregate (crushed stone and/or sand) cover. Two-layer applications are referred to as a double chip seal. Dry, raveled pavement can be seal coated. The seal coat itself may only last three to six years, but it may extend the life of the treated pavement by ten years.

Maintenance and Repair of Aggregate Trails and Trail Shoulders

Some trails currently have portions that are surfaced with compacted aggregate (base rock that typically underlies pavement). Ideally this aggregate surface would be carefully designed with a binder to make it smoother and firmer than typical aggregate base rock roads.

Most asphalt trails also require compacted aggregate shoulders, ideally 2 feet wide or more, on each side of a asphalt surface to prevent paved edges from crumbling.

Compacted aggregate tends to wear more quickly than pavement and needs to be refilled, smoothed, and compacted where it has been damaged or deteriorated. Frequency of maintenance depends on the trail use: trail shoulders that are used by runners and walkers may only need to be regraded every few years, while trails that support maintenance trucks may need to be regraded every year.

Trailside Elements Major Repairs or Replacement

The trailside elements and facilities listed above will ultimately require major repairs or replacement, usually over a period of 10 years.

Special Maintenance Tasks

The following tasks relate to drainage, landscaping, or structural features that may or may not be present in all trail segments. To the extent that the design requires maintenance of these elements, these maintenance tasks may be required on a seasonal, annual, or as needed basis.

Drainage Maintenance

Drainage facilities control or direct the flow of water under or around a trail. Drainage maintenance work is critical to prevent damage to trails during storms, and to keep them open for use. Common drainage maintenance activities include:

- **Clearing Ditches**
Ditches may be parallel to the trail tread or leading away from the trail or to a culvert. They must be deep and wide enough to carry the anticipated volume of water in a serious storm. Clearing ditches requires removing vegetation and/or trash that may block water flow and fixing bank slumping that may block the ditch. Typically ditches are maintained by the landowner or utility company that created them.
- **Clearing Culverts**
When surface flow or subterranean springs cross a trail, culverts may be placed perpendicular to the trail or at an angle to redirect the water under the trail to the downhill side. Culverts need to be checked and cleared, particularly before big storms, to ensure that they function properly to avoid damage to or closure of the trail. Typically culverts are maintained by the landowner or utility company that created the culverts.

Landscaping and Irrigation Maintenance

In public engagement, community members expressed an interest in shade trees along trails. To make trails attractive for users landscaping is also often a desired amenity. Any landscaping along trails should be low-maintenance, and ideally rely on native and low-water use plants. Such landscaping, including the required water-conserving irrigation system, will require regular inspection and occasional weed control, mulch placement, replanting and irrigation repair. Landscaping can be minimized as a part of the design of trails if greater levels of funding for trail maintenance are not available, or if maintenance is not conditioned on an associated development.

Bridge Inspection and Repair

Concrete and metal bridges are generally more durable than wood, but metal may rust and require cleaning and repainting. Wooden bridges in particular require checking for damage or deterioration; particularly wooden decking.

Retaining Wall, Steps and Ramps Inspection and Repair

Concrete or masonry unit retaining walls and steps are generally more durable than wood. Wooden retaining walls require more frequent checking for damage or deterioration.

Invasive Species Removal/Reintroduction of Native Species

Invasive plant species can poison wildlife and out-compete native species, harming a trail's environment. Often the removal of invasive plant species and re-introduction of native species involves coordinated volunteer efforts. If there are invasive species or weeds located along a corridor, the use of synthetic weed killers is a last resort.

Volunteer Maintenance: Trail Ambassador Programs

Through a Trail Ambassador Program, local volunteers help to monitor trail systems and provide weekly reports on trail condition and issues. The volunteers, or Trail Ambassadors, report to a coordinator or Trail Steward. In some cases, Trail Ambassadors wear a uniform so the public can easily identify them. When on the trail they carry notebooks, pencils, trash bags, and cellphones/cameras. This helps them to document trail conditions and issues.

Establishing a Trail Ambassador Program engages the community in trail maintenance and trail security to encourage trail use, keep trails safe, and strengthen community engagement in trail systems.

The responsibilities of a Trail Ambassador may include:

- Walking and monitoring the condition of a trail (or section of it) at least once a week
- Meeting and greeting people on the trail
- Observing trail conditions and potential hazards
- Reporting trail conditions and repairs needed
- Performing some routine maintenance such as removing fallen branches and monitoring culverts for wash-outs or blockages

Case Study: City of Richmond and Non-Profit Partnerships

The City of Richmond partners with non-profits, such as the Friends of the Richmond greenway (see below) for advocacy, programming, stewardship, and development support. Some of the City's non-profit partners include Groundworks Richmond, Urban Tilth, Rich City Rides, POGO Park, and The Watershed Project. These groups all help maintain the Richmond Greenway: a 3-mile bicycle and pedestrian rail-trail surrounded by 32 acres of community-designed artwork, urban agriculture, and recreational space. Many of these non-profits have received grant funding from Cal Fire, the Richmond Environmental and Community Investment Agreement (ECIA), the California Natural Resources Agency (CNRA), and the Coastal Conservancy to help create, improve, and sustain the Richmond Greenway.

The Parks & Landscaping Superintendent in the Public Works Department's Parks & Landscaping Division for the City of Richmond, is a liaison between these non-profits and can provide tools and mulch for any facility maintenance needs.

Friends of the Richmond Greenway (FORG)

The Friends of the Richmond Greenway (FORG) is one non-profit organization involved in the support of the Richmond Greenway. FORG is a collaboration of community members and over 17 local organizations working together to maintain and manage the Richmond Greenway as a beautiful and healthy space serving the local community. FORG provides many ways for individuals and organizations to get involved, including volunteer days, committee meetings, and advocacy drives.

Trail Operation and Maintenance Cost

Operation and Maintenance Cost Implications from other Agencies

Estimated operations and maintenance (O&M) costs for trails per mile from a representative sample of peer agencies are used here to generate a planning-level cost to maintain Fremont's proposed trail network.

The City of San Jose was one of the sources for cost estimates. The City has an extensive trail system with good wayfinding and rules signage and marking, and in some cases associated amenities. San Jose budgets \$17,050 per mile of trail for operations and maintenance annually. They also budget \$2,000 per mile for Park (Trail) Rangers annually. These costs were estimated based on time records per task for typical operations and maintenance tasks. The \$17,050 figure is used for all paved trails, regardless of content. It is reduced to 50% (\$8,525) for an interim (gravel) trail. San Jose also adds \$17,050 per acre if the trail travels through a landscaped area solely for the trail, rather than part of a park or a development that is responsible for landscape maintenance.¹

The Napa Valley Vine Trail, was another source for cost estimates. The Vine Trail is a non-profit organization that leads and coordinates the construction of a 47 mile walking and biking trail system through Napa County from Vallejo north to Calistoga. Approximately 1/3 of the trail has been completed. In 2014 the Vine Trail prepared a Maintenance White Paper based on research of local trail maintenance costs and prior studies.² **Table G-1** (reproduced from the Vine Trail Maintenance White Paper) summarizes this research. The costs are updated to 2020 dollars but vary widely.

A third cost source was EBRPD, which budgeted \$25,000 for the Iron Horse Trail, a paved trail that stretches across Alameda and Contra Costa counties. It was described as all-inclusive, with a reserve for crack sealing, overlays, police patrol, as well as trash pickup and mowing.

The Town of Yountville and City of Napa costs (included in the Vine Trail white paper) are probably

on the high end because they are short, heavily used segments of trail. For a larger system the average cost per mile would go down. But these are probably the most realistic references for operations and maintenance costs for Fremont.

To account for inflation, all costs evaluated were updated to 2020 dollars using the Consumer Price Index (CPI). The Consumer Price Index for the U.S. city average was 237 in October 2014, and 260 in October 2020. This is a 0.097 increase, or about 10%. Thus the 2020 costs would be \$27,500 for the Iron Horse Trail, \$30,049 for the Yountville Vine Trail, and \$24,013 for the City of Napa Vine Trail. The average would be \$27,187. These costs are much higher than the current \$17,050 per mile for City of San Jose trail maintenance, plus \$2,000 per mile for Trail Rangers. The latter was used as **the low O&M cost assumption: \$19,050 per mile rounded to \$19,000.**

The median of the average October 2020 cost of the prior three agencies (\$27,187) plus the total City of San Jose costs (\$19,050) was used as a per mile baseline for **the medium O&M cost assumption: \$23,119 per mile rounded to \$23,000.**

In addition, for trails that are expected to feature landscaping and amenities, the \$17,050 per acre used by the City of San Jose, assuming one acre per mile, was added for amenity rich Primary trails, totaling **\$40,000 per mile for the high O&M cost assumption.**

¹ Yves Zsutty, Division Manager, Capital Improvement Program, City of San Jose, CA, personal communication, November 16, 2020

² Philip Sales, Executive Director, Napa Valley Vine Trail, Napa, CA

Table G-1. Average Trail Maintenance Cost from 2014 Vine Trail White Paper

Author of data	Source/study	Average cost per mile	Year of study data	Adjusted average cost/mile in October 2014 dollars using CPI index	Notes/Comments
National Studies					
Rails to Trail Conservancy North East	Rail Trail Maintenance and Operations (survey of 100 trails)	\$1,500	2003	\$1,936	Wide range of bike path types some maintained by volunteers
Santa Cruz County Regional Transportation Agency	Monterey Bay Sanctuary Scenic Trail-Operations and Management Plan	\$8,000	2008	\$8,822	Projections not actuals
City of Billings	Trail Assessment Management Plan for Billings Montana	\$4,100	2011	\$4,328	
Michigan Trails and Greenways Alliance Pere Marquette Trail	Statewide Greenways Maintenance Inventory and Case Studies	\$4,238	2006	\$4,991	Pere Marquette Trail is a 21 miles long asphalt bike path.
National Institute of Health	Cost Analysis of the Built Environment: The Case of Bike and Pedestrian Trails in Lincoln, Nebraska	\$4,381	2004	\$5,508	Study of five bike paths Trail lengths ranging from 1.6 to 4.6 miles.
Bay Area Agencies					
Transportation Authority of Marin	Marin County Bike Paths Maintenance Report (2007)	\$10,417	2007	\$11,928	9 mile bike path. Does not include overhead
East Bay Regional Parks	Iron Horse Trail (personal communication)	\$25,000	2014	\$25,000	40 mile bike path. Includes policing and a reserve for trail overlays and repairs
Sonoma County Regional Parks	Joe Rodota and West County Trails (personal communication)	\$6,424	2013	\$6,642	12.5 mile bike paths. Does not include overhead. Includes some repairs (appx.\$15k)
Napa County Agencies					
Town of Yountville	Existing Vine Trail	\$26,850	2013	\$27,316	0.88 bike path. Includes overhead (50%+)
City of Napa Parks Dept.	Bike paths within City of Napa	\$21,434	2013	\$21,830	Includes overhead (50%+)

Table G-1 Notes:

Although there is a DRAFT watermark, this is the final version of the table.

Costs in this table are in 2014 dollars. These costs are inflated to 2020 dollars in the estimates provided for Fremont.

Trail Maintenance Cost Estimates

Table G-2 presents a summary of the projected trail operations and maintenance cost for each trail corridor in the envisioned Fremont Trail System.

Low Maintenance Cost Trails

Estimate: \$19,000 annually per mile

Trails that have minimal trailside elements, no landscaping, and only require basic maintenance tasks (pavement maintenance, mowing, clearing, trash pick-up, graffiti removal).

Low maintenance trails include:

- Channel trails, as they tend to have little space for amenities and landscaping.
- Morrison Canyon Road.

Medium Maintenance Cost Trails

Estimate: \$23,000 annually per mile

Trails that include basic trailside elements (such as benches, trash cans, and interpretive signage) but do not require frequent maintenance.

Medium maintenance trails include:

- Park Trails, as they have benches and trash receptacles and typically heavier use.
- Trails along roadways, such as Kato Road Trail.
- Both Hetch-Hetchy Trails, due to the expected gravel surface (per SFPUC preference). However, their wide corridors provide many opportunities for amenities, including local mini-parks.
- Parts of the Alameda Creek trail that are gravel surfaced.

High Maintenance Cost Trails

Estimate: \$40,000 annually per mile

Trails that include separate bicycle and pedestrian spaces and more extensive trailside elements (such as lighting, rest areas, picnic areas, bike parking, repair stations, and landscaping) require significantly more maintenance.

High maintenance cost trails include:

- Regional trails, as they typically require more amenities and trail user separation.
- Grimmer Greenway.

Total Maintenance Cost vs. Shared Maintenance Cost

These maintenance costs reflect the higher level of operation and maintenance desired by the public and reflected in the costs derived from other agencies.

Trails that are currently maintained by Fremont are labeled so, and grouped as a total. Trails where the maintenance is "To Be Determined" (TBD) are also grouped into a total. Maintenance and operations costs were also estimated for trails that are already maintained by other agencies (i.e. EBRPD for the Alameda Creek Trail or parts of the Bay Trail), and trails that are partly maintained by developers as part of the landscape (i.e. Pacific Commons Linear Park). Also, there are at least a few segments of trail where the trail maintenance may overlap with existing roadway resurfacing or sidewalk repair budgets/projects (e.g. if the trail has a section of Class IV bikeway or Class I sidepath).

The overall operations and maintenance cost for specific corridors and the entire Fremont trail system may actually be shared by other partners, agencies and developers, and assistance from "Trail Ambassadors" reducing the overall maintenance cost for Fremont.

Table G-2. Trail Maintenance Cost Summary

#	Corridor Name	Maintenance Entity	Total Trail Length (Miles)	Cost Per Mile Assumption	Total Cost
1	Alameda Creek Trail ¹	EBRPD	22.6	Medium	\$519,800
2	Niles Canyon Trail	TBD	10	Medium	\$230,000
3	San Francisco Bay Trail - In Fremont, not by EBRPD	TBD	30.5	Medium	\$600,300
3	San Francisco Bay Trail - In Fremont, by EBRPD ²	EBRPD	5.8	High	\$133,400
4	East Bay Greenway	TBD	9	High	\$360,000
5	Dumbarton Bridge to Quarry Lakes Trail	TBD	12	High	\$480,000
6	Mission Creek Trail	City of Fremont	2	High	\$80,000
7	Sabercat Historical Park Trail	City of Fremont	2	High	\$80,000
8	Fremont Boulevard Channel Trail	TBD	3.8	Low	\$72,200
9	Hetch Hetchy East-West Trail	TBD	4	Medium	\$92,000
10	Hetch Hetchy North-South Trail	TBD	5.75	Medium	\$132,250
11	PG&E Corridor & Channel Trail	TBD	1.3	Low	\$24,700
12	Richmond Avenue Channel Trail	TBD	2	Low	\$38,000
13	Brookvale, Cabrillo, and Patterson Park Trails	City of Fremont	1.7	Medium	\$39,100
14	Northgate Trail	City of Fremont	0.75	Medium	\$17,250
15	Crandall Creek Trail and Ardenwood Path	TBD	3.2	Low	\$60,800
16	Farwell Pathway	City of Fremont	0.7	Medium	\$16,100
17	Lowry Neighborhood Park Trail	City of Fremont	0.6	Medium	\$13,800
18	U-Channel Trail	City of Fremont	3	Low	\$57,000
19	Grimmer Greenway	City of Fremont	0.4	High	\$16,000
20	Irvington Neighborhood Trail	City of Fremont	0.63	Low	\$11,970
21	Morrison Canyon Road	City of Fremont	1.25	Low	\$23,750
22	Warm Springs BART to Milpitas Trail	TBD	3.3	Medium	\$75,900
23	Pacific Commons Bicycle/Pedestrian Connection	TBD	2.6	Medium	\$59,800
24	Kato Road Trail	City of Fremont	2.6	Medium	\$59,800
Total Annual Cost of Operation and Maintenance by City of Fremont					\$1,074,870
Total Annual Cost of Operation and Maintenance TBD					\$1,565,850
Total Annual Cost of Operation and Maintenance EBRPD					\$653,200
Grand Total					\$3,293,920

1 The "Medium Cost Per Mile" is an average of both paved and unpaved portions of the Alameda Creek Trail.

2 The length of Bay Trail in Fremont excludes Coyote Hills Regional Park trails, Don Edwards San Francisco Bay National Wildlife Refuge trails and existing privately maintained trails between Nobel Dr and Auto Mall Auto Mall Pkwy.