Caltrain Bicycle Access and Parking Plan: Implementation Strategy

(September 2014)

DRAFT

Purpose:

Caltrain adopted a Bicycle Access and Parking Plan in 2008. To date, implementation of the plan has been limited due to staff and funding constraints. Caltrain's wayside bicycle facilities complement its on-board program and are essential component of Caltrain's overall access system. The following Implementation Strategy outlines staff's recommended approach for implementing the remaining wayside bicycle improvements identified in the 2008 Bicycle Access and Parking Plan (BAPP) in a systematic way that maximizes the use of available funding and resources.

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Introduction

On a typical weekday, more than 6,000 of Caltrain's customers ride their bike to the train station. Most will take advantage of Caltrain's "bikes onboard" program and bring their bicycles with them on the train. Others choose to park their bike at the station or may use the new Bay Area Bike Share system. For customers who have an ultimate origin or destination that lies one to two miles from the station, bicycles provide an efficient and sustainable way to make a first or last mile connection.

Caltrain's onboard accommodation of bicycles is the hallmark of its bike program and over the last two decades, Caltrain has encouraged a boom in bicycle access by providing successively increasing amounts of onboard space for passengers and their bicycles. In addition to onboard capacity, however, Caltrain also has an extensive system of "wayside" bicycle facilities including secure parking and access amenities that benefit all passengers with bicycles. In 2008, the Peninsula Corridor Joint Powers Board (JPB) adopted a Bicycle Access and Parking Plan outlining recommended wayside improvements to bicycle access, parking, information and safety at the system's busiest stations. Over the last six years, implementation of the plan has been limited due to staff and funding constraints. Today, Caltrain's system of wayside bicycle facilities varies from station to station and is difficult for new customers to understand and navigate. During the same time period, however, Caltrain has accommodated the needs of cyclists by dramatically increasing its onboard capacity.

Now, as Caltrain's overall ridership continues to grow, the system's ability to provide additional onboard accommodation for bikes is challenged. Investing in Caltrain's wayside bicycle facilities is a way to complement its on-board program and enhance overall system access. The following Implementation Strategy outlines a renewed approach for systematically implementing the remaining wayside bicycle improvements identified in the 2008 Bicycle Access and Parking Plan (BAPP) in a way that maximizes the use of available funding and resources. It is the result of a year's worth of work by Caltrain staff and the Caltrain Bicycle Advisory Committee, as well as sustained collaboration with local congestion management agencies and cities. More than a list of individual projects, the plan outlines a transparent, living methodology to improve bicycle facilities throughout the Caltrain system.

1. Context & Background

Bicycles are a major mode of access to the Caltrain system. As of February, 2014 11% of Caltrain's weekly riders (nearly 5,900 per day) took a bike on board the train.[1] A smaller number of passengers (roughly 1% of weekday riders)[2] park their bicycle at a Caltrain station before boarding.

At a policy level, Caltrain is committed to sustaining and growing the use of bicycles to access its system. In 2010, the Peninsula Joint Powers Board adopted a Comprehensive Access Policy Statement. The statement identifies Caltrain's priorities for context sensitive access improvements throughout its system and in particular reaffirms the agency's commitment to bicycles within a system wide hierarchy of access priority that runs from walking to transit, to cycling to driving.

There are two major components to Caltrain's bicycle program; bikes onboard and wayside facilities. The 2008 Bicycle Access and Parking Plan (the BAPP) as well as this implementation strategy deal exclusively with Caltrain's wayside facility program. However, the two programs inform one another and it is important to understand the overall context of both.

Bicycles Onboard

The majority of Caltrain customers who use a bicycle to access or egress the system bring their bike with them on board the train. Taking a bike on board allows customers to bicycle from their origin point to the train and then again from the train to their ultimate destination, thus providing both a first- and last-mile connection. The growth and success of Caltrain's bikes on board program is the result of the agency's sustained investment over the past 20 years and Caltrain is proud to have one of the most extensive bikes on board programs of any rail system in the United States.

The bikes on board program began as a demonstration project in 1992, with space for 4 bikes provided on off-peak trains. In 2004, when Baby Bullet service was first initiated, Caltrain expanded the program substantially with each train having a dedicated bike car holding between 16 and 32 bicycles. The program underwent another significant expansion between 2009 and 2011 as additional train cars were modified to allow for the inclusion of two dedicated bike cars on every train. Today, all of Caltrain's trains have two dedicated bike cars with a total capacity of 48 to 80 bikes per train depending on equipment type.

The Caltrain system has experienced rapid and sustained ridership growth over the last several years and in spite of Caltrain's increases in on board bicycle capacity, many peak hour trains do not have sufficient space to accommodate every bicycle. Caltrain is subject to Federal Railroad Administration (FRA) regulations governing how bikes can be stored on trains. When crowded trains are at their bike capacity, conductors enforce the capacity limit and no additional passengers are allowed to bring bikes on board. In practice, this creates a situation where passengers with bikes may not be allowed to bring them on board, effectively "bumping" them and causing them to have to wait for the next train. As

[1] Caltrain Annual Passenger Count, February 2014
[2] Peninsula Corridor Electrification Project Draft Environmental Impact Report, Appendix D: Transportation Analysis (February, 2014)

Caltrain's overall ridership growth has surged in the past several years the number of bicyclists experiencing these "bumps" has increased.

In the past, Caltrain has addressed "bike bumps" and accommodated increased demand from cyclists by expanding bike car capacity or increasing the number of bike cars per train consist. To create or expand a bike car, Caltrain modifies the bottom level of an existing rail car by removing a set of four seats to create a rack that can hold 4 bikes. The overall seating capacity of the train is thus reduced to create space for bicycles (since cyclists will typically place their bike on a rack and then occupy a seat- thus using the space equivalent of two seats).

In previous years when demand for on board bike space was high but the overall system had excess seating capacity, providing on board space for bikes could be accomplished without impacting the overall system. This is no longer the case. Today, Caltrain's overall system is at capacity during peak hours with popular commuter trains operating at standing room only. Accommodating additional bikes on board requires a reduction in the percentage of train capacity available for seating. Any further increases in on board capacity must thus be carefully coordinated as part of an overall system capacity strategy.

Wayside Bicycle Facilities

In addition to on board capacity, Caltrain and its partner transit agencies and cities provide a variety of bicycle parking facilities at stations. Currently, Caltrain's system of wayside facilities varies substantially in quality and capacity from station to station and can be confusing for customers.

Nearly all stations within the Caltrain system have bike racks and most have secure, keyed bike lockers that can be rented directly from Caltrain. Overall, Caltrain currently has approximately 700 bicycle rack spaces and over 1100 keyed bike locker spaces at its stations. An additional several hundred spaces are available in the dedicated facilities at San Francisco, Palo Alto, and Mountain View stations. Most bike parking facilities at stations are owned and administered by Caltrain but others, including the bicycle facilities at Palo Alto and Mountain View, are owned or operated by a local jurisdiction or other entity.

Utilization of bicycle parking varies greatly throughout the system and is dependent both on the individual station and on the type of parking provided. Survey data conducted in fall of 2013 showed that system wide bike locker utilization is roughly 50% while bike rack capacity is approximately 37% occupied on weekdays. Utilization varies widely, however, between stations. Busier hubs like Redwood City, Mountain View and San Jose Diridon have parking facilities that are regularly at or above capacity. At the San Francisco Caltrain station the valet parking provided by Alameda Bicycle is extremely popular however excess capacity remains in the self-serve lockers. Conversely, many less utilized stations have largely vacant lockers and bike racks.

Caltrain is also a participant in the Bay Area Regional Bike Share Program and hosts Bikeshare docking stations at its San Francisco, Redwood City, Palo Alto, California Avenue, San Antonio, Downtown

Mountain View and San Jose Diridon stations. In total 184 bikes out of 700 in the overall bikeshare system are located at or immediately adjacent to a Caltrain station.

The 2008 Bicycle Access and Parking Plan

The Caltrain Bicycle Access and Parking Plan (the BAPP) was adopted by the JPB in 2008 and is the most recent plan to provide detailed guidance addressing Caltrain's wayside bicycle facilities. The plan includes recommendations for improving bicycle access and parking throughout the Caltrain system. The plan included a systemwide review of focuses exclusively on the wayside component of Caltrain's bicycle system.

The majority of the BAPP's recommendations focus on specific issues at the 10 Caltrain stations that had the highest number of observed bicycle boardings in 2008. These stations included:

- San Francisco (4th & King)
- 22nd Street
- Millbrae
- San Mateo
- Hillsdale
- Redwood City
- Palo Alto
- Mountain View
- Sunnyvale
- San Jose (Diridon)

The BAPP groups the specific recommendations related to these stations into four categories; "parking," "access," "information" and "safety." In addition to station-specific recommendations, the BAPP also provides system wide recommendations and guidance and suggests several system wide "innovative ideas" for further study including exploring a bike share system and developing a capacity monitoring system for Caltrain's bike cars.

Progress to Date

Although Caltrain has significantly expanded its on-board bicycle program in the last several years, funding constraints have resulted in mixed progress on the wayside bicycle improvements recommended in the BAPP. Projects have been implemented on an ad-hoc basis as funding has become available or as individual local jurisdictions have been able to bring resources to bear. Table 1 presents a list of individual recommendations within the BAPP that have either been completed or are actively in progress:

Table 1-1: BAPP Recommendations Completed or In-Progress

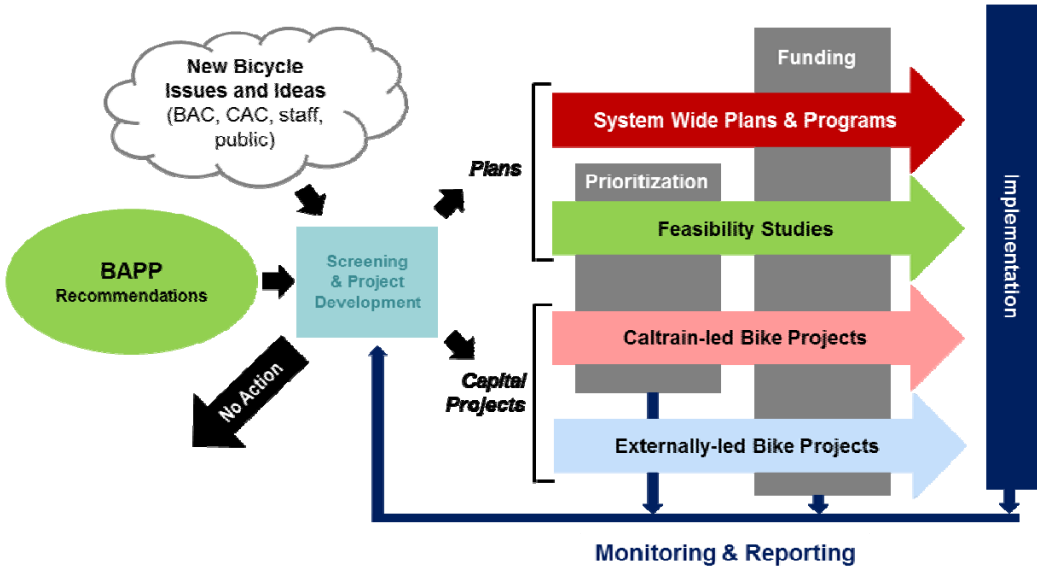
BAPP Recommendation	Location	Status & Notes
Regularly identify, tag and remove abandoned bicycles at Caltrain stations.	System Wide	Ongoing. Administrative procedures being addressed by Caltrain.
Include stairway channels on all new or reconstructed stairways and retrofit on to existing stairways if no ADA ramp or elevator is nearby	System Wide	Partially complete. Stairway channels incorporated into Caltrain station design standards for all new construction.
Use and implement wayfinding signage guidelines for regional transit hubs to improve wayfinding and bike information within stations (to bike parking, connecting services, and area destinations)	System Wide	Partially complete. Wayfinding at some stations has been updated.
Implement a "walk your bike" campaign to discourage bike riding on platforms.	System Wide	Ongoing. Campaigns conducted periodically.
Implement bike sharing program serving the Caltrain system	System Wide	Partially complete. Bay Area Bike Share regional pilot program is in place at seven Caltrain stations.
Clean and maintain locker area on a regular basis.	System Wide	Ongoing. Lockers are cleaned and serviced regularly
Work with the San Francisco bicycle station operator to promote their services to Caltrain bicyclist passengers	San Francisco	Complete. Bike station is well utilized and operates at capacity
Post way-finding signs at both station entrances to direct cyclists to bicycle parking, based on MTC regional hub way-finding guidelines.	San Francisco	Partially complete. Wayfinding maps throughout station and signage at north entrance include bike parking directions
Replace angled parking along Townsend with back-in angled parking, back-in perpendicular parking or parallel parking, per San Francisco Bicycle Plan.	San Francisco	Complete
Stripe bicycle lanes on Townsend Street, per San Francisco Bicycle Plan	San Francisco	Complete
Move existing bicycle rack on southbound platform closer to north car to accommodate bumped bikes.	22nd Street	Complete
Move ticket vending machine on southbound platform further south	22nd Street	In Progress. Recommendation has been incorporated into system wide ticket vending machine program.
Construct a fence/gate to preclude unauthorized access to the maintenance ramp to the southbound platform	22nd Street	Complete
Work with BART to develop a clear, unified signage program throughout the Millbrae station based on MTC regional hub wayfinding signage guidelines, especially maps inside the station to bicycle parking and the bicycle train car.	Millbrae	Complete
Work with Caltrans and the City of Millbrae to develop pedestrian crossings of El Camino at Victoria Avenue, Chadbourne Avenue and/or Isabel Alley to facilitate bicycle and pedestrian access.	Millbrae	Complete

BAPP Recommendation	Location	Status & Notes
Convert 18 existing keyed lockers to electronic lockers and install 18 new electronic lockers	San Mateo	Partially complete. City of San Mateo has installed electronic lockers and is monitoring usage.
Convert 8 keyed lockers to electronic lockers and retain two keyed lockers by station building in west parking lot	Hillsdale	Partially complete. City of San Mateo has installed electronic lockers and is monitoring usage.
Work with Bay Meadows to provide an opening in the fence (separate from the walkway opening) along the Bay Meadows/ east parking lot to allow cyclists to conveniently travel north-south.	Hillsdale	In progress. Conditions changing as construction proceeds.
Provide maps and information on each platform regarding bike parking at the station	Palo Alto	Complete
Work with VTA, the City of Palo Alto, and Stanford University to provide maps, information and way-finding signage based on MTC regional hub wayfinding signage guidelines.	Palo Alto	Complete
Work with the City of Mountain View and VTA to improve way-finding signage based on the MTC regional hub way-finding guidelines	Mountain View	Complete
Consider moving ticket vending machines, ticket validators and shelter on northbound platform farther east (or "south") to alleviate bottleneck that forms around the location where the bike car stops	Mountain View	In Progress. Recommendation has been incorporated into system wide ticket vending machine program.
Existing 4 electronic Lockers need to be reinstalled	Sunnyvale	Complete. Lockers installed per Bikelink standards and are well utilized.
Encourage City of Sunnyvale to install a "Walk your bike" sign northbound on the Mathilda Avenue overcrossing.	Sunnyvale	Complete
Work with the City of San José, VTA and other operators to provide way-finding signage based on MTC regional hub way-finding guidelines to help cyclists find bicycle parking at the station and to help all passengers find correct platforms/ destinations, as well as nearby destinations, such as downtown San José, the HP Pavilion, and the Guadalupe River Trail. Maps and signage should be installed	San Jose Diridon	Partially Complete. MTC Regional Hub signage in place. Further implementation should be driven as part of larger wayfinding and signage effort throughout stations

2. The 2008 Bicycle Access and Parking Plan Implementation Strategy

In the summer of 2013, Caltrain staff began work with the Caltrain Bicycle Advisory Committee (BAC) to develop an Implementation Strategy to systematically and transparently implement the remaining recommendations from the 2008 BAPP. Over the following year, staff worked with the BAC and its designated subcommittee to develop the implementation strategy diagramed in Figure 2-1.

Figure 2-1: BAPP Implementation Strategy Overview



The development of the strategy included four major components, each of which is discussed in more detail in the following document:

- Screening & Project Development: Staff and the BAC reviewed BAPP recommendations, screened them for relevancy and redefined them as "projects." Projects were then grouped into one of four categories based on their recommended implementation pathway
- Project Prioritization: Staff and the BAC developed a prioritization approach for Caltrain-Led Projects
- Funding Analysis: Staff developed cost estimates and grant-based funding analysis and strategy for Caltrain-led projects and feasibility studies
- Implementation: Staff developed a recommended approach for "operationalizing" the BAPP Implementation Strategy into a recurring, annual process

Over the course of the year Caltrain staff briefed County Congestion Management Agencies and reached out to individual local jurisdictions. The Caltrain Citizens Advisory Committee (CAC) and the Caltrain Board received informational updates on the recommended Implementation Strategy in the summer of 2014.

3. Project Development & Screening

Much of the work required to develop the BAPP Implementation Strategy involved screening the contents of the 2008 Plan and developing the document's recommendations into a specific set of projects ready to be moved forward. In its analysis of 10 Caltrain stations, the 2008 BAPP made a variety of recommendations for improving wayside cycling facilities. Staff worked with the BAC and its designated subcommittee to screen the plan's recommendations into different groups as shown in Table 3-1 below:

Table 3-1: BAPP Recommendation Screening

	Screen	Outcome
1	BAPP Recommendation has been completed or changed conditions have eliminated need for project	Recommendation removed from BAPP Implementation process
2	BAPP Recommendation pertains to or involves a system wide planning or administrative issue	Recommendation rolled up into one of several "System Wide Plans and Programs"
3	BAPP Recommendation requires further feasibility analysis before a capital project can be defined	Recommendation translated into a numbered project and tracked within the "Feasibility Study" category
4	BAPP Recommendation describes a specific capital project that is not on Caltrain property or is all or primarily outside of Caltrain's jurisdiction.	Recommendation translated into a numbered project and tracked into the "Externally-Led Projects" category
5	BAPP Recommendation describes a specific capital project on Caltrain property	Recommendation translated into a numbered project and tracked into the "Caltrain-Led Project" category

System Wide Plans & Programs

A number of recommendations in the BAPP point towards overarching changes in Caltrain's bike program. For example, the BAPP recommends a uniform system of way finding for cyclists throughout all Caltrain stations. Similarly, the plan indicates that Caltrain should begin installing electronic, on-demand lockers at its stations. For these projects to be effectively implemented on a station by station basis, administrative planning and program development is needed.

This kind of administrative planning and coordination is essential but, unlike specific physical improvements, cannot be easily prioritized nor is likely eligible for grant funding. Because of this, Caltrain staff elected to create a separate category for these projects. Caltrain is committed to pursuing each of these efforts as resources and staff time permit. Projects falling within this category are described in Table 3-2:

Table3-2: System Wide Plan & Programs

Project ID	Project Description
SW01	**Bike Parking Business Plan:** Develop a coordinated "Bike Parking Strategy & Business Plan" that defines a programmatic approach to upgrading and operating bike parking throughout the Caltrain system. The plan should include the following elements: 1. A detailed assessment of bike parking capital requirements at all stations based on updated ridership and occupancy numbers and parking recommendations included in the 2008 Bike Access and Parking plan. 2. A capital improvement plan detailing funding strategies for implementing capital portion of bike parking improvements including purchase and installation of bike racks, lockers and potential upgrades or changes to shared parking facilities. 3. A bike parking administration plan and business strategy that identifies different options, costs and benefits for managing and maintaining Caltrain's bike parking system.
SW02	**Bike Wayfinding & Signage Program:** Develop a system wide bike signage policy that describes how informational, regulatory and wayfinding signs and platform markings (including "walk your bike stencils") related to cyclists should be integrated and standardized across all Caltrain stations. The plan should describe how bicycle specific signage and information can be be integrated with general Caltrain signage and an overall station wayfinding program as well as the Metropolitan Transportation Commission's Regional Hub signage standards. Plan should also outline best practices for providing wayfinding signage to Caltrain stations and should thus provide a basis for engaging external jurisdictions on station area wayfinding issues.
SW03	**Bike Marketing & Information Program:** Develop a comprehensive, updated bike marketing and information program. The program should identify approaches for providing Caltrain customers with information about bike regulations, safety and existing and new amenities. The program should be particularly focused on developing and implementing system wide informational campaigns around the following issues: 1. An informational "Bike Cars for Bicyclists" campaign to encourage passengers without a bike to use other train cars. 2. A marketing program encouraging biking to stations (rather than driving) and parking at stations (rather than bringing bikes on board) 3. The ongoing development and implementation of marketing strategies to accompany rollout of new bicycle parking options and facilities.
SW04	**Station-Level Bike Needs Audits:** Conduct individual, station-level audits of bike needs for stations not included in 2008 plan

Feasibility Studies

The BAPP also contains several recommendations that require further study and definition before they can be developed into discrete capital projects. Caltrain staff believes that the appropriate next step for advancing these projects is to first study their feasibility and then define the scope of any subsequent capital project.

The four projects categorized as "feasibility studies" are shown below with a staff recommendation regarding how they should be pursued. These recommendations were developed through discussions with the Caltrain BAC. Staff will pursue these projects as resources, including grant funding, permit.

Table 3-3: Feasibility Studies

Project ID	Project Description	Staff Recommendation
FS01	**Discounted Locker Rentals:** Explore effectiveness of offering discounted double locker rentals as a means of encouraging customers to park their bike rather than bring it on board the train.	Consider recommendation as a component of larger "Bike Parking Business Plan" (SW01) rather than as a standalone program or study.
FS02	**Bikeshare Next Steps:** Work with BAAQMD and other Bike Share partners to understand impacts of bike share pilot program on Caltrain access. Pending findings develop Caltrain policy and standards to facilitate expansion of Bike share system at Caltrain stations.	Monitor progress of regional program as transition from Bay Area Air Quality Management District to Metropolitan Transportation Commission proceeds. Based on outcome determine appropriate role and next step for Caltrain.
FS03	**Folding Bike Promotion:** Explore feasibility of subsidizing folding bike purchases and coordinate folding bike demos or promotional events.	Staff does not recommend prioritizing this issue.
FS04	**Bike Car Capacity Information:** Identify ways to provide information on type and number of bicycle cars on scheduled trains in advance. Explore developing a system to provide real-time capacity information for bike cars.	Develop a more detailed scope and vet internally and with BAC and cycling community for input. Once scope has been developed, explore options for funding next phase of analysis and design.

Externally Led Projects

The 2008 BAPP included a large number of recommendations and projects that fall outside of JPB property lines or are otherwise outside of Caltrain's direct ability to implement. Many of these projects relate to improved station access improvements (eg. adding bike lanes to streets approaching stations) or pertain to station facilities that are not actually on Caltrain property.

The projects listed below have been identified by Caltrain staff as "externally led." This means that primary control and implementation responsibility for these projects lies with a local city or other transit agency. Caltrain will work with these jurisdictions to advocate for projects and assist in their completion. Projects are grouped by "type" (parking, access, information and safety) reflecting categories used in the 2008 BAPP.

Table 3-4: Externally Led Projects

Project ID	Project Description	Station (Coordinating Jurisdictions)
Parking Projects		
EX01	Work with the City of San Francisco to identify space to install 36 new electronic lockers at street level. Work with the City of San Francisco to replace underutilized bicycle racks on Iowa Street with bicycle lockers. JPB does not own any property at street level.	22nd Street (City and County San Francisco)
EX02	Work with VTA and the City of San José to identify appropriate locations for 22 new electronic bike lockers on the west (VTA) side of the San Jose Diridon station. This side of the Station is controlled by VTA	San Jose Diridon (VTA, City of San Jose)
EX03	Convert 16 existing, City-owned bring-your-own lock day-use lockers to electronic lockers at Sunnyvale	Sunnyvale (City of Sunnyvale)
EX04	Work with the City of San Francisco to identify space to install 10 bicycle rack spaces at street level. Consider installing the bike parking in on-street car parking spaces near the southbound platform entrance to maximize visibility to passers-by.	22nd Street (City and County San Francisco)
EX05	Work with the City of Redwood City to install bicycle racks at street level near the Winslow Street entrance to the northbound platform.	Redwood City (City of Redwood City)
EX06	Work with the City of San Mateo to evaluate pros and cons of having Caltrain take over management of the bicycle lockers at all stations within the City.	San Mateo, Hayward Park and Hillsdale (City of San Mateo)
Access Projects		
EX07	Work with BART to install stairway channels to provide an alternative to elevator access for passengers with bicycles.	Millbrae (BART)
EX08	Work with the City of Redwood City to widen the landscaped choke point at the northern end of the southbound platform to facilitate access to plaza.	Redwood City (City of Redwood City)
EX09	Work with the City of San Francisco to enhance gateway connections to the 4th and King station. In particular, consider relocating the taxi-stand southwards, and designating a "Bicycle Greeting Zone" with a curb cut close to the station. Minimally, consider relocating "No Parking, Taxi Zone" sign to wall and removing sign post. Also, work with City to construct sidewalk on Townsend between station and bicycle lockers, and beyond, per San Francisco Bicycle Plan.	4th & King (City and County San Francisco)

Project ID	Project Description	Station (Coordinating Jurisdictions)
EX10	Work with the City of Mountain View to create an opening in the parking lot fence at Bush Street and reconfigure the intersection of Evelyn Avenue and Bush Street to allow bike/pedestrian access through the parking lot. The parking lot should also be reconfigured to accommodate bicycle circulation.	Mountain View (City of Mountain View)
EX11	Encourage VTA to consider replacing the three narrow track-crossing gates with two wider and lighter ones.	San Jose Diridon (VTA)
EX12	Work with the City of Millbrae, Caltrans and BART to improve station area bike access. Ensure construction of bikeways from El Camino Real to the station. Define an alignment for a short path on the west side of the Caltrain tracks between Linden Avenue and Hillcrest Boulevard to eliminate the need to ride on El Camino Real north of Millbrae Avenue.	Millbrae (City of Millbrae, BART, Caltrans)
EX13	Work with the City of San Mateo, Caltrans, and the San Mateo County Transportation Authority as needed to improve station area access. Install bicycle lanes on Hillsdale Boulevard and El Camino Real and ensure future installation of bicycle lanes on Pacific Avenue as part of the Bay Meadows Phase II project. Similarly, work with the San Mateo County Transportation Authority to ensure that all grade separation projects include bicycle lanes.	Hillsdale (City of San Mateo, Caltrans)
EX14	Encourage City of Palo Alto to improve bicycle access on Alma Street and University Ave in the vicinity of the station	Palo Alto (City of Palo Alto)
EX15	Work with the City of Mountain View and VTA as appropriate to improve station area access. Investigate the feasibility of striping bicycle lanes or sharrows on Evelyn Avenue between Hope and Castro. Investigate traffic signal operations at the Hope/Evelyn/ bus turnaround. Work with the City of Mountain View to identify safe and convenient ways to allow cyclists to access the station from southbound Castro Street/Moffett Blvd	Mountain View (City of Mountain View, VTA)
EX16	Encourage City of San Jose to install curb cut at Cahill Park on west side of station and to install a mid-block crosswalk across South Montgomery Street.	San Jose (City of San Jose)
Information Projects		
EX17	Work with BART to post rental information at all blocks of bicycle lockers.	Millbrae (BART)
EX18	Work with Caltrans and the City of Millbrae to install bicycle way-finding signage between El Camino Real and the station via Serra and Linden avenues and California and Murchison drives.	Millbrae (City of Millbrae, Caltrans)
EX19	Work with City of Palo Alto and the Bike Station operator to post current and correct information and to market and promote bike parking/usage of the facility	Palo Alto (City of Palo Alto)
Safety & Operations Projects		
EX20	Work with the City of San Francisco to improve lighting on Iowa Street between 22nd and 23rd streets.	22nd Street (City and County of San Francisco)

Caltrain Led Projects

The major focus of the BAPP Implementation Strategy is the fourth and final group of "Caltrain led" projects. These are specific capital improvements that can be prioritized, funded and implemented directly by Caltrain. Staff will seek policy and financial support from local jurisdictions to assist in the completion of these projects, but the primary responsibility for implementing the project lies with Caltrain.

Caltrain led projects are listed and described below along with a conceptual cost estimate for each project. Cost estimates were developed based on descriptions in the BAPP and are order of magnitude only. As individual projects move towards implementation, more refined estimates will need to be developed. Estimates include only capital costs and do not account for ongoing operations or maintenance expenses.

Parking

The majority of Caltrain led projects included in the BAPP, both by number ad estimated cost, relate to improving bike parking at Caltrain stations. They include projects to expand the parking supply by adding racks and lockers, projects to convert existing mechanical lockers to more efficient electronic lockers, and projects to reposition bicycle parking so that it is more convenient for users.

Table 3-5: Caltrain Led Parking Projects

Project ID	Project Description	Station	Estimated Cost
Locker Additions & Conversions			
CT01	Install 20 electronic and 2 keyed bicycle lockers at Hillsdale in the east parking lot, some of which can be relocated and upgraded from existing lockers in the west parking lot	Hillsdale	$90,000
CT02	Add 24 additional (new) electronic lockers at Redwood City	Redwood City	$90,000
CT03	Relocate all lockers from the north Broadway parking lot at Redwood City. Relocate and add new lockers closer to platforms on both east and west sides of station	Redwood City	$14,000 (assumes relocation of approximately 50 lockers)
CT04	Convert 134 existing keyed bicycle lockers to electronic lockers and Consider upgrading the key-lock entrance to the locker compound to a number pad key code system.	San Francisco	$510,000
CT05	Upgrade 46 keyed lockers at Millbrae to electronic lockers	Millbrae	$180,000
CT06	Upgrade 40 keyed lockers to electronic lockers at Redwood City	Redwood City	$150,000
CT07	Upgrade 65 keyed lockers to electronic lockers at Palo Alto	Palo Alto	$255,000
CT08	Convert 87 existing keyed bicycle lockers to electronic lockers at Mountain View	Mountain View	$330,000
CT09	Convert 62 existing keyed bicycle lockers to electronic lockers at Sunnyvale	Sunnyvale	$240,000

Project ID	Project Description	Station	Estimated Cost
CT10	Upgrade 35 existing keyed bicycle lockers to electronic lockers at San Jose	San Jose Diridon	$240,000
Rack additions and replacements			
CT11	Install inverted-U racks in the Townsend plaza along fence outside bicycle station. Look for other opportunities to install racks as space permits.	San Francisco	$4500 (assumes up to 10 racks)
CT12	Add bicycle racks for bumped bikes at San Mateo and relocate / add racks to station plaza area.	San Mateo	$4500 (assumes up to 10 racks)
CT13	Install 2 to 6 bicycle rack spaces in the east and west parking lots for bumped bicycles, as close to the stairways as possible	Hillsdale	$4500 (assumes up to 10 racks)
CT14	Provide bike racks on east side of station at Broadway. Consider installing two bicycle rack spaces on the sloped strip between the southbound platform and the shopping center. This would require building up strip to allow level parking	Redwood City	$4500 (assumes up to 10 racks)
CT15	Install bicycle racks in expansive pedestrian area by the southeast end of the bus turnaround.	Mountain View	$4500 (assumes up to 10 racks)
CT16	Install two bike rack spaces adjacent to the west (“north”) end of the northbound platform on concrete pads, like the one that currently accommodates a trash can and bench. Consider installing more bike racks at north end of the drop-off loop in the plaza south of the platforms.	Sunnyvale	$4500 (assumes up to 10 racks)
CT17	Install some inverted U-racks in a visible location, such as on the wide concrete walkway between the bus bays and the platforms, just north of the station building and/or on the existing east/west grassy strip on the east entrance to the station. If space permits, also install bicycle lockers in these areas.	San Jose Diridon	$4500 (assumes up to 10 racks)
CT18	Relocate bicycle racks from the southbound platform closer to the existing racks that are located in the middle of the southbound platform near the base of the stairs	Millbrae	$4500 (assumes up to 10 racks)
CT19	Relocate two bicycle rack spaces to a location available for bumped bicycles on the northbound platform. (There are existing racks close to the north end of the southbound platform.) Relocate bike racks on east side of station on to paved surface.	Palo Alto	$2000 (assumes relocation of up to 10 racks)
CT20	Relocate two bicycle rack spaces to be available for bumped bikes on the southbound platform.	Mountain View	$2000 (assumes relocation of up to 10 racks)
CT21	Replace "coat-hanger" racks under the Millbrae Avenue overcrossing with inverted U racks.	Millbrae	$2000 (assumes relocation of up to 10 racks)

Project ID	Project Description	Station	Estimated Cost
CT22	Replace outdated coat hanger racks with inverted- U's.	San Jose Diridon	$4500 (assumes up to 10 racks)

Access & Circulation

A smaller number of Caltrain-led projects relate to improving station access and circulation. Many access projects in described in the BAPP fall into the "externally led" projects category because they pertain to facilities outside of Caltrain's stations. A smaller number, however, involve creating new access points to stations or improving the internal circulation of stations and removing obstacles to cyclists.

Table 3-6: Caltrain Led Access Projects

Project ID	Project Description	Station	Estimated Cost
CT23	Improve bicycle circulation within San Francisco station. Specifically, consider marking a path from the north end of each platform, through the double doors, and off to the side to separate queuing passengers with bikes from other waiting passengers	San Francisco	$75000
CT24	Enhance bicycle circulation within 22nd Street station. Specifically, add stair channels to both sets of stairs.	22nd Street	$150,000
CT25	Install stairway channels on the stairway from the south-west parking lot to the southbound platform.	Hillsdale	$50,000
CT26	Improve platform circulation by considering location of signposts and light standards in the context of mini-highs and bicycle racks on north end of southbound platform. Relocate Caltrain kiosk / sign post at south end of platform.	Palo Alto	$15,000
CT27	Provide connection (ramp or stairs) through the fence leading from the north end of the northbound platform to Railroad Avenue, which would benefit all passengers and discourage cyclists from riding on the platform	San Mateo	$350,000
CT28	Create another opening in the southern end of the fence at Winslow/Middlefield Road for stair access to the southbound platform, near the existing ramp.	Redwood City	$250,000

Information

The BAPP contained a number of recommendations to improve wayfinding for cyclists throughout the system. As indicated earlier, staff believes these should be undertaken comprehensively and the majority of the recommendations have been consolidated into the "System wide Plans and Programs" category. A few individual recommendations, however, remain to be undertaken at individual stations as their own projects.

Table 3-7: Caltrain Led Information Projects

Project ID	Project Description	Station	Estimated Cost
CT29	Implement an informational "Bike Cars for Bicyclists" campaign to encourage passengers without a bike to use other cars.	System-Wide	$60000 (over 5 years)
CT30	Post way-finding signs at both station entrances to direct cyclists to bicycle parking, based on MTC regional hub way-finding guidelines.	San Francisco	$10,000
CT31	Provide way-finding signage to bicycle parking.	Redwood City	$20,000
CT32	Post schedules, maps and other information near the ticket vending machine on the southbound platform. Schedules should also be posted on the northbound platform.	22nd Street	$10,000

Safety

There is only one "safety" focused recommendation included in the Caltrain-led Projects list:

Table 3-8: Caltrain Led Information Projects

Project ID	Project Description	Station	Estimated Cost
CT33	Locker alley is dark- needs better lighting and/or camera	Sunnyvale	$50,000

4. Project Prioritization

The 33 "Caltrain-Led" projects described on the previous pages will be subject to an annual prioritization process. This process, along with an assessment of available funding opportunities, will be used to help Caltrain staff prioritize which projects to submit to the following year's capital budget. Prioritization will recur annually in the fall since the prioritization criteria identified below are subject to change as are system needs and funding availability.

Projects identified as "Externally led" were not prioritized since their ultimate funding and implementation responsibility does not lie with Caltrain. Similarly, projects identified as "System Wide Plans and Programs" were not prioritized since all the projects in this category are considered to be essential for the overall success of Caltrain's wayside bicycle facility program. Feasibility studies were not prioritized but were given a staff recommendation for advancement as shown previously on page 10.

Staff worked iteratively with the BAC and its designated sub-committee to develop a single prioritization methodology that could be used to prioritize all Caltrain led wayside bicycle projects on an annual basis. The prioritization methodology was developed to be easily applied (requiring minimal technical analysis) and to be durable and useful across a wide range of bicycle projects. The recommended methodology involves scoring each project based on a 12 point system with points given to a project as it satisfies the below statements.

Table 4-1: Caltrain-Led Project Prioritization Criteria

Criteria		Description	Points
Support	S.1	Project is referenced and/or encompassed by a local jurisdiction bike plan or other adopted planning document	1
	S.2	Project is conceptually supported by local jurisdiction (jurisdiction is willing to write letter of support for grant application)	1
Funding	F.1	Project is materially supported by local jurisdiction (commitment of capital / operating funds or in-kind support)	1
	F.2	Project has a unique, committed funding source (not applicable or transferable to other bicycle projects)	1
Readiness	R.1	Feasibility of project (physical and operational) is established	1
	R.2	Project is shovel-ready	1

Criteria		Description	Points
Need & Effectiveness	N.1	Project will improve the efficiency and convenience of bicycle facilities at a Caltrain station	1
	N.2	Project will improves the safety and security of cyclists and their bicycles at a Caltrain station	1
	N.3	Project accommodates new or increased usage of a Caltrain station by cyclists	1
	N.4	Project addresses a recorded customer complaint, incident or request	1
	N.5	Bike activity at project station is in top 5 system wide for all day cyclist boardings	1
	N.6	Bike activity at station is in top 10 system wide for all day cyclist boardings	1
Total Available Points			12

5. Funding Analysis

Funding for wayside bicycle improvements poses a significant challenge. Although individual projects are comparatively low dollar value, the total cost of implementing the wayside program defined in the BAPP runs into the millions of dollars. Extending that program beyond the 10 stations included in the BAPP to the Caltrain system as a whole will cost millions more. Given Caltrain's limited capital funding availability, staff sought to develop a funding analysis and strategy based on leveraging as many external grants as possible.

Table 5-1 shows the rough cost estimates for feasibility studies and Caltrain led projects categories summed by by project type and by county. The estimated costs shown represent only the capital funding needed to implement the Caltrain led bike projects and Feasibility studies derived from the BAPP. They do not account for projects not explicitly included in the BAPP and are thus not intended to fully capture Caltrain's wayside bicycle improvement funding needs.

Table 5-1: Estimated Capital Funding Need

Project Category	San Francisco	San Mateo	Santa Clara	System-wide
Bike Parking	$515,000	$544,000	$1,087,000	$2,146,000
Bike Access	$225,000	$650,000	$20,000	$900,000
Bike Information	$20,000	$40,000	$20,000	$100,000
Bike Safety	N/A	N/A	$50,000	$50,000
Feasibility Studies	N/A	N/A	N/A	$165,000
Total Cost	**$760,000**	**$1,234,000**	**$1,177,000**	**$3,361,000**

Based on the above estimate of capital need, staff developed a funding strategy oriented towards leveraging limited local funds to the greatest extent possible by pursuing grants in a systematic fashion. To develop the strategy, staff examined a matrix of possible funding sources including local sales tax measures and regional and statewide grant sources, matching them with bicycle projects based on geographic eligibility and project competitiveness. Grant sources considered are shown below.

Table 5-2: Potential Grant Funding Sources

Administration	Grant Source
State & Regional (administered by Caltrans or MTC)	• California Active Transportation Program (statewide) • California Active Transportation Program (regional) • Transportation Fund for Clean Air (regional bike locker and rack program)
County (administered by County Congestion Management Agencies)	• Transportation Fund for Clean Air (Program Manager Funds) • Transportation Development Act –Article 3 Funds • Lifeline Transportation Program Funds • One Bay Area Grants (or successor program)
City & County of San Francisco	• Proposition K Pedestrian & Bicycle Funding
San Mateo County	• Measure A Pedestrian & Bicycle Funding

Administration	Grant Source
Santa Clara County	• County Bicycle Expenditure Plan

The analysis of grant funding sources revealed that over a 5 year period Caltrain could potentially leverage between $1 and $3 million in funding dependent on several key factors:

- The timely availability of local matching funds to successfully compete for grants
- The willingness of local jurisdictions to partner with Caltrain and "bundle" multiple projects into overall more competitive applications
- The availability of staff resources to aggressively pursue, apply for and administer grants

The above factors will be critical in determining Caltrain's ability to successfully pursue and win grants. Nearly all grant funding sources require a local match and Caltrain will rely on its funding partners (the San Francisco County Transportation Authority, the San Mateo County Transit District and the Valley Transportation Authority) as well as individual local jurisdictions to assist with dedicated funds. Similarly, many of the individual improvements included in the BAPP will not be competitive for grants unless Caltrain is able to cooperate with local cities and congestion management agencies to bundle them into larger, more compelling bike projects.

6) Implementation & Next Steps

The year-long development of a Bike Access and Parking Plan Implementation Strategy has resulted in a path forward towards implementation of bicycle improvements. Implementation will vary based on the category of project.

System Wide Plans and Programs:
Caltrain considers these plans and programs to be essential to the success of its overall access program and staff will begin working on them as resources allow. Developing a "Bike Parking Business Plan" that details how Caltrain will administer bicycle parking on a system wide basis is Caltrain's first priority in this category and will be undertaken as resources become available.

Externally-Led Projects:
Although they are led by external agencies, these projects were identified in the BAPP and are important to Caltrain's customers. Caltrain will continue to track these projects and will reach out to local jurisdictions including cities and congestion management agencies to identify opportunities to assist in their further definition and implementation.

Feasibility Studies:
Caltrain staff has developed recommendations for moving these studies forward or folding them in to other programs. Within the studies listed, staff recommends pursuing a bike car capacity information system as a priority. Caltrain will seek external funding opportunities and partners to advance this effort.

Caltrain-Led Projects:
Caltrain staff plans to operationalize the ongoing implementation of these and other wayside bicycle improvement projects through an annual cycle of prioritization and funding that is synchronized with the larger Caltrain capital budget process. The list of "Caltrain led" wayside bicycle improvement projects (tables 3-5 through 3-8) would thus become a living document that is updated and prioritized annually with projects leaving the list as they are implemented and other added to the list as new needs are identified.

Table 6-1 describes and annual workflow for augmenting the project list, prioritizing projects and submitting projects to the Caltrain capital budget for funding consideration. Caltrain Bicycle Advisory Committee meetings in the spring and fall of each year will provide a venue for public input and discussion. In addition to working with the BAC, Caltrain staff will establish an internal technical committee to administer this process track and apply for grant funding sources, and monitor the implementation of projects as funding becomes available either through grants or the annual budget cycle.

Table 6-1: Annual Wayside Improvement Funding Cycle

Timeframe	Action
Spring (March or May BAC meeting)	Wayside bicycle improvement list is "opened" for new suggestions and input
Summer	Staff vets updated project list and applies prioritization criteria
Fall (September or November BAC meeting)	BAC is presented with updated, re-prioritized project list
Winter	Staff finalizes prioritized list and submits projects to JPB capital budget
July (following year)	Capital Budget Adopted
Year-round	Caltrain staff applies for grant funding and coordinates with local jurisdictions