

Chapter 1 – Why do we need Grade Separations

Phil (previously Adina) – this version downloaded July 16, 2020

Draft Caltrain Section for XCAP Report

The goal of the Grade Crossings Separation project is to eliminate the grade crossings on the Caltrain right of way in Palo Alto. When Caltrain finishes electrification, scheduled for 2022, there will be an expected increase in peak hour service, which will increase the amount of time that gates are down. Caltrain is planning future service increases that would carry more passengers, and also increase delay for crosstown travel. When High Speed Rail starts service some years later, delays will increase further.

This section covers several topics regarding how Caltrain's plans affect Palo Alto's plans for grade separations. These topics include Caltrain's plans for service frequency increases, Caltrain's grade separation planning, and the potential need, timeline, and constraints relating to passing tracks.

At the time this document is being written, in April, 2020, the US economy has largely shut down in response to the corona virus outbreak. As a result, Caltrain passenger ridership has dropped drastically. As the economy reopens and economic recovery starts, there will be a transition period of some number of months until Caltrain regains its former ridership. As of now, it is not possible to predict exactly when Caltrain ridership reaches its pre-Coronavirus levels, and thus exact dates are less certain than they were prior to the onset of the corona virus crisis. However, the fundamental drivers of Caltrain ridership, current population jobs and expected population and jobs growth, are still in place. Thus barring a completely unforeseen and unlikely collapse of the entire Bay Area economy, it is reasonable and prudent to plan for increased Caltrain ridership and therefore service level increases.

It is also possible that grade crossing separation projects would be included in a future "economic stimulus" passed by Congress as part of its response to the current (as of April, 2020) economic situation. If history is a guide, qualifying projects will need to be "shovel ready" within several years of passage of such a law. For this reason, it is also prudent to continue planning work on this project.

Caltrain service plans and the need for grade separations

The benefit of grade separations to improve crosstown travel is strongly driven by the frequency of rail service, which affects the amount of time people need to wait to cross the tracks when the gates are down (gate downtime) to allow trains to pass safely.

Caltrain is currently electrifying the line between San Francisco and San Jose, with electric service expected to start in 2022/2023. Once electrification is completed, service is planned to increase to 6 trains per direction per hour (from a total of 10 to 12 trains per hour). This increase will result in increased crossing gate downtime and therefore crosstown travel delays.

In October, 2019, the Caltrain board approved a long range “Business Plan Service Vision”. Caltrain’s studies indicated pent-up demand that could increase ridership by 3-4x by 2040. This would be the equivalent of removing a whole 101’s worth of cars off the freeway - and off the local streets leading to and from the freeway.

Recently, in February 2020, before the emergence of the coronavirus crisis, Caltrain has identified a shorter-term set of investments that could increase ridership by 20,000 to 25,000 between 2027 and 2030. These investments would enable increasing frequency to eight trains per direction per hour (16 trains per hour) at peak hours. This change would create noticeable additional delays for crosstown travel above the six trains per hour planned for 2022.

Prior to the pandemic, Caltrain was working on a proposal for a 2020 ballot measure that could go a long way toward funding its 2030 service increase plan with the prospect of 16 trains per hour. As noted above, there is every reason to expect an eventual increase in service levels, even if exact dates are now in doubt. Depending on the rate of economic recovery, it is reasonable to expect that such a measure could be on the 2022 ballot. There is a realistic prospect of more frequent Caltrain service that makes Palo Alto’s deliberations about grade separations a timely matter.

High Speed Rail

In 2008, voters approved Proposition 1A, which authorized funds for the construction for the California High-Speed Rail Authority to build a high speed rail line between San Francisco and Los Angeles, as part of an eventual system that would also extend to Sacramento in the north and San Diego in the south. High speed rail trains would run over the Caltrain line between San Jose and San Francisco.

The original plans for High Speed Rail called for the start of service between San Francisco and Los Angeles in 2028, with four trains per hour in each direction, at peak hours. As of this writing, the High Speed Rail project is running on a slower timeline and is in need of funding; it is unclear when this project might be complete. However, it is clear that if and when High Speed Rail does start service, the additional trains would create further delays at the grade crossings.

Caltrain’s grade separation plans

The Business Plan Service Vision approved by the Caltrain board in October, 2019 includes a vision and support for a fully grade separated corridor, with a price tag over \$10 Billion. Currently, Caltrain is starting on a corridor wide grade separation study. With this study, Caltrain has said that they are not intending to step into the local process to select grade separation designs, which will continue to be done on a community basis. Caltrain’s study will focus on prioritization, ability to build multiple grade separations, and funding for the corridor, including pursuit of regional, state, and federal funding.

While Caltrain’s interest in pursuing funding for corridor grade separations is good for the cities on the corridor with 42 remaining at-grade crossings, the program is very expensive. It is unlikely that such a corridor-wide program would prioritize options that are more expensive in Palo Alto than in other cities.

Passing track need and timeline

The increase in capacity and ridership called for in Caltrain's business plan service vision includes "passing tracks" to achieve higher levels of service. Caltrain has said that until High Speed Rail arrives on the Peninsula, the only passing tracks that would be needed to improve Caltrain service are in the middle of the line in Redwood City.

The four-track sections that are contemplated for North Santa Clara County (Mountain View and/or Palo Alto) would be needed only at such time that High Speed Rail travels on the Peninsula Corridor. The estimated date for HSR on Peninsula Corridor has recently been extended to 2031, and the project has had implementation and funding challenges that are likely to make that date later.

While the plans for HSR service between San Jose and San Francisco that are currently being environmentally cleared do not include passing tracks, bringing HSR trains to the Peninsula without passing tracks would degrade the quality of Caltrain service (because Caltrain trains would need to wait in order for the fast trains to pass). Caltrain has said that it would make use of its legal ownership of the corridor in order to ensure implementation decisions that protect good Caltrain service.

However, the Caltrain Board's approved Business Plan Service Vision says that Caltrain will not preclude future decisions to provide a high level of Caltrain service at such time that High Speed Rail is serving the corridor. This means that Caltrain is very unlikely to approve local grade separation designs that would not be compatible with possible future passing tracks.