



Downtown Traffic and SMART

White Paper No. 17

Opponents of SMART's 70-mile rail and trail project repeatedly have claimed that when SMART trains begin operating, residents of downtown areas should "expect major traffic delays."

The root cause of any delays, however, will not be SMART's passenger rail operations. Increased traffic congestion will occur primarily because road improvements – particularly within the confines of developed urban areas – will not be able to keep up with population growth and an increased number of cars on the road.

As SMART's environmental documents make clear, traffic in Marin and Sonoma counties is expected to get worse in the coming years. Particularly in downtown areas, traffic conditions during the peak morning and evening commute hours generally are forecast to deteriorate by the year 2025.

In fact, SMART's Draft and Final Environmental Impact Reports note that while most downtown streets are expected to experience declines in "level of service" ratings by 2025, and some are expected to improve slightly, almost all of those changes will happen whether the SMART project is developed or not.

The one exception is downtown San Rafael, where short block lengths, proximity to Highway 101 on- and off-ramps and an already congested transit hub will combine with SMART service to "increase traffic volumes and delay at intersections near the proposed Downtown San Rafael Station," according to the Final EIR.

None of those delays will be bad enough to be rated "unacceptable" by the standards listed in the City of San Rafael's general plan. Still, SMART proposes mitigation measures to reduce the impact of train service on traffic in downtown San Rafael. These measures include connecting the train's crossing-signal system with the city's centralized traffic signal system in order to electronically coordinate traffic lights with grade-crossing signals. And, according to the Final EIR, this system will "minimize delays, pre-empt conflicting traffic movements, provide

progression (on-going flow) of non-conflicting traffic movements and allow faster recovery of the traffic signal system after a train has passed.”

In other words, the measures will help keep traffic moving. And not just during peak commute hours. Again according to the EIR, these improvements not only will help coordinate train and vehicle traffic in downtown San Rafael, but also will benefit traffic operations during periods of the day when trains aren't running.

In addition to the coordination of railroad signals with traffic signals to smooth the flow of vehicle traffic around the station, SMART's mitigation plan includes special signals within the station to direct trains to leave the station only when their departure will least affect traffic flows.

An upgrade of existing traffic signals and train signal coordination also is proposed near the Railroad Square station in Santa Rosa and around the downtown Petaluma station. The mitigation measures in those cities are not as great as the system proposed for San Rafael because the impacts will not be as great. But SMART has pledged to work with local traffic engineers in every jurisdiction, and install signal-coordination upgrades where they are warranted.

When trains pass through grade crossings, traffic must stop, leading some to worry that SMART will cause traffic jams as its trains pass through the region. That's not the case, or – in the words of the Final EIR – it is a “less than significant” impact.

The self-propelled rail cars proposed for use by SMART are 85 to 135 feet long, depending upon the type of vehicle selected. They will likely operate in two-car sets, carrying about 200 to 300 passengers on trains of about 170 to 270 feet long. ***A train stopped at a SMART station will not block any streets near that station.***

The time it takes a SMART train to cross a street or a road depends primarily on its speed. At its maximum speed of 79 mph, even the longest train will cross a two-lane road in about the same time it takes to count the train's cars: one, two. In a downtown area, as the train slows to about 15 mph on its approach to a station, it might take a two-car train 11 seconds to cross a street with six travel lanes -- about as long as it took to read this sentence.

Of course, traffic needs to stop at a crossing before the train passes. Federal and state regulations require signal lights to begin flashing 20 seconds before the arrival of the train at the crossing, and that crossing gates “shall reach horizontal position at least five seconds before the arrival of the train.” The gates take about three to five seconds to go upright once the train has passed.

That means the total delay at grade crossings will typically be about 35 seconds – not much longer than a driver might wait for a pedestrian to cross a street. With SMART running during

morning and evening commute times every 30 minutes both southbound and northbound, trains will pass through each grade crossing only four times an hour.

When trains are stopped at downtown stations, special signal technology will keep nearby crossings open even though the train will be close enough to otherwise trigger the signals and gates. To preclude those crossings from closing while the train is stopped, SMART will use a grade-crossing protection system that allows the crossing gates to remain open until the train is ready to depart the station. At that time, the train operator activates the crossing gates, closing the intersection to allow the train to pass through. In use on the Caltrain line for a number of years, this technology will be included in the development of the downtown Santa Rosa and downtown Petaluma stations, and the EIR recommends evaluating its need at other downtown stations. As stated earlier, San Rafael will have its own unique traffic-signal coordination system.

The SMART train, along with its adjacent 70-mile bicycle and pedestrian pathway, will provide a necessary addition to the North Bay's transportation infrastructure for the coming decades. Rather than becoming the cause of "major traffic delays," it will be the vehicle that allows thousands of travelers to avoid the delays that inevitably will worsen on our overburdened streets and roads.

For more information about the SMART rail and trail project, go to www.sonomamarintrain.org or call SMART's information lines in Marin, 415-419-3510, or Sonoma, 707-583-2323.