Train Horns
A Modern Public Health Plague

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DRAFT

November 12, 2013

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Introduction

As a City Council member, I routinely receive emails from residents complaining about train horns. Some examples:

> *It's Saturday night. Enough train horns before 5:30 have just stopped to have me really awake. Seems like weekend engineer assignment. This is one more for the record. And I don't send you a tally every day or night.*
> *****
> *Hope you are well. You may remember me from years ago when we were setting up the North Quiet Zone in the Country Club Vista Area. Recently, we have been experiencing significant train horn noise in Country Club Vista. It appears that the noise may be coming from the giant and atlas road crossings. However, we may be getting some noise from the John Ave and Parr crossings as well as a couple of crossings over private driveways between those crossings.*
>
> *****
> *Another Saturday night of train horns sounding over and over in Richmond beginning around midnight and lasting until almost 4am. There is a train engineer who seems to be able to flout the rules of the "quiet zones" with impunity week after week. Isn't it time the city of Richmond found a way to enforce its codes on the railroads that pass through its borders?*
>
> *****
> *I would like to file another complaint against NOCR for violating the Richmond Quiet Zones. Last night (2/18/13) the engineer who violated the Quiet Zone last Thursday was back, I believe it was the same engineer because he blasts his horn the same way in the same places. Between 11:30PM last night and 12:15AM this morning this engineer, whom I believe was operating BNSF Locomotive #1263, blasted his horn 84 times along Canal Bvld. This is ridiculous' There are not any crossing there except at Canal and Wharf. He was blasting between crossings. This activity is not acceptable and must cease. Those few engineers who refuse to honor the Quiet Zones should be repremanded or fined. Please let me know what you can do to improve this situation. Thank you for all your help.*

The City of Richmond has done as much or more than any city in California to reduce the unwelcome impact of train horns, but the effort is neither easy nor quick, and it's often expensive. In some cases, thanks to federal and state laws protecting the railroads, it's virtually impossible.

Fight for Quiet

Cities across the country are coming together to fight for fight for quiet, trying to break the railroad stranglehold that subjects millions of Americans to the unwelcome, unhealthy and unnecessary plague of train horns.

This paper has three objectives:

1. Provide a general context for the train horn problem in the Unites States.

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2. Describe successful effort to curtail rain horn use in Richmond, California, as well as remaining challenges to eliminating all train horns.
3. Recommend actions can that remove existing impediments to achieving elimination of unnecessary horn blowing.

We Are Not Alone

Cities interested in starting a Quiet Zone Working Group include:

- Darin Atteberry, City Manager – Fort Collins, CO: Datteberry@fcgov.com 300 LaPorte Avenue, Fort Collins CO 80521 Phone: (970) 221-6505 Fax: 970.224.6107

- Kelly Arnold, Town Manager – Windsor, CO: Karnold@windsoegov.com 301 Walnut Street, Windsor CO 80550 Phone: (970) 674-2400 Fax: 970 674.2456

- Bill Cahill, City Manager – Loveland, CO: Bill.Cahill@cityofloveland.org 500 East 3rd Street suite 330, Loveland CO 80537 phone: (970) 962-2306 Fax: (970) 962-2900

The Robber Barons

American railroads came to California in the 19th Century when robber barons[1] owned not only California but much of America. Railroads became synonymous with greed, arrogance, corruption and power. Over the last 100 years or so, political reformers have siphoned off much of that power, but the railroads have clung to what they can in remembrance of their golden age.

The crowning macho vestige of that once overwhelming political and economic power has been distilled in the locomotive train horn and the sadists who blow it with abandon.

As a part of the political reforms intended to moderate the power of the railroads, the federal government formed the Federal Railroad Administration (FRA), and the California state government formed the California Public Utility Commission (CPUC). On paper, they look like great organizations intended to serve the people.

Can't sleep at night because of train horns? Think your government cares? Think the railroad companies care? Think again.

Indeed, the Federal Railroad Administration (FRA) Mission Statement looks like they really care about you and me. The FRA Mission Statement is:

> *"Serve the United States by ensuring a safe transportation system that furthers our vital national interests and enhances the quality of life of the American people."*

Similarly, the California Public Utilities Commission (CPUC)Mission Statement and Vision Statement include lofty goals that would lead you to believe they actually care about us:

[1] http://en.wikipedia.org/wiki/Robber_baron_%28industrialist%29

"We lead with integrity, take initiative, and inspire a shared vision in the pursuit of the public interest."

"The California Public Utilities Commission betters the lives of all Californians through our recognized leadership in innovative communications, energy, transportation, and water policies and regulation."

The truth is that neither gives a whit about us. They are not much more than pandering fronts for the railroads, and in the case of the CPUC, the other utilities they regulate. You only have to look at the San Bruno gas pipeline explosion to see how the CPUC helped PG&E avoid maintenance and testing of gas lines until it was too late. The CPUC shows the same affinity for protecting and enhancing the interests of the railroads.

Despite a growing body of evidence that loud nighttime sound disturbances, such a train horns, are a significant public health threat, both the FRA and the CPUC remain irrationally obsessed with protecting and enhancing the railroad's use of literally deafening locomotive horns, particularly at grade crossings, as much and as loud as possible, all in the name of safety.

The scenario below, although rare, is an obsession for railroad-regulatory complex and their love affair with train horns. That's all they know and all they think about.

Is Safety Really the Issue?

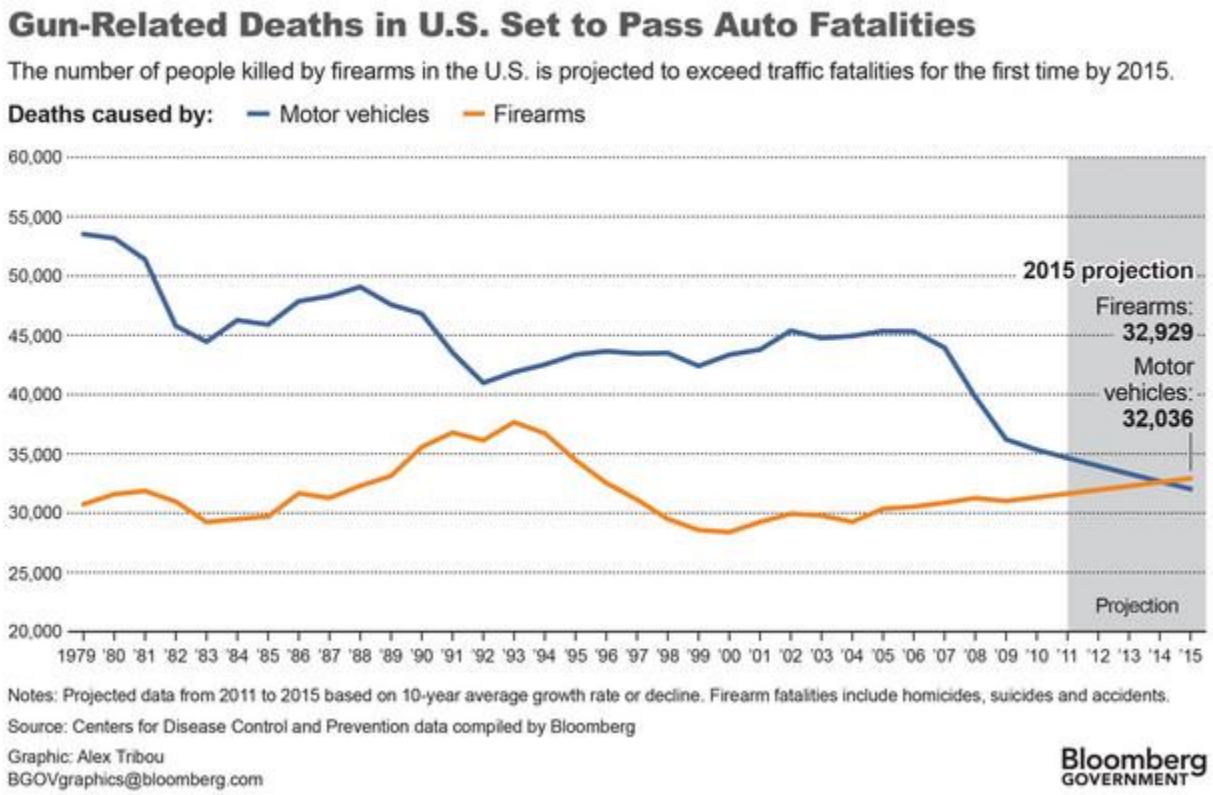
Both regulators and railroads have what has become an unhealthy obsession with grade crossing safety that is fixated on the essential use of 96-110 decibel horns. The fact is that the adverse health impacts of train horns may do far more damage to humans than the relatively small number of collisions at grade

crossings. Millions are exposed to damaging horn noise on a nightly basis ostensibly to prevent a relatively small number of grade crossing collisions.

When rules requiring the use of whistles were established, a concern for safety is what dominated the regulators' actions. Let's put this in perspective. In 2012, there were 1,967 "incidents" nationwide at railroad grade crossings, resulting in 233 fatalities and 938 injuries. A highway-rail incident is any impact between a rail and a highway user at a crossing site, regardless of severity and includes motor vehicles and other highway/roadway/sidewalk users at both public and private crossings.[2]

Compare this to other significant sources of injury and death. In 2010, there were 32,885 traffic deaths in the United States, according to the National Highway Traffic Safety Administration. Roughly 13 percent of those, or 4,280, were pedestrians.[3]

Gun deaths in the US are rapidly overtaking auto fatalities.[4]



Since railroads first came into existence in the 19th Century, whistles were used as both warnings and signals. Whistles have morphed into 96+ decibel horns, but despite vast advances in technology, the use remains the same.

[2] http://safetydata.fra.dot.gov/officeofsafety/publicsite/Query/statsSas.aspx
[3] http://www.washingtonpost.com/blogs/wonkblog/wp/2012/08/08/pedestrian-deaths-are-on-the-rise-again-but-why/
[4] http://www.bloomberg.com/news/2012-12-19/american-gun-deaths-to-exceed-traffic-fatalities-by-2015.html

The fact is that most injuries and fatalities resulting from railroad operations would not have been prevented by horns, gates and flashing lights. Most involve people, not in vehicles, intentionally or inadvertently intimately sharing the tracks with a train, which is not a good idea. The railroads pejoratively call this "trespassing," despite the fact that rights-of-way are rarely fenced or signed. What vehicle collisions do occur at grade crossings usually involve a driver ignoring horns, or when present, gates and lights. Take a look at typical train related deaths during 2013:

- http://www.nydailynews.com/new-york/couldn-stop-fatal-train-hit-article-1.1510432
- http://www.sfgate.com/bayarea/article/2-BART-workers-killed-by-train-in-Walnut-Creek-4909974.php
- http://www.news10.net/news/article/262367/2/Questions-surround-womans-death-at-Davis-train-station
- http://www.kmaland.com/news/more-info-on-stanton-train-fatality/article_74cf62d2-464c-11e3-8ac4-001a4bcf6878.html
- http://www.mercurynews.com/crime-courts/ci_24475219/san-jose-man-dies-after-falling-from-amtrak
- http://www.wowktv.com/story/23871672/police-investigating-pedestrian-hit-by-train-in-marmet-wv
- http://www.foxcarolina.com/story/23850434/coroner-called-to-stopped-train-in-greer
- http://www.thedenverchannel.com/news/local-news/miami-university-student-found-dead-on-ohio-train-tracks-was-from-colorado
- http://abclocal.go.com/kabc/story?section=news/local/inland_empire&id=9283599
- http://www.pressherald.com/news/Portland_police_identify_man_killed_by_train.html
- http://www.10news.com/news/man-hit-killed-by-amtrak-train-in-encinitas-10192013

Physiological Impacts of Noise

What is now known is that the noise from train horns can have severe physiological effects on humans, particularly at night when people are trying to sleep.

Night time noise is not just an urban annoyance. Those train horns we now hear are not the lonely and romantic steam whistles sounding infrequently from miles way across rural America. They are not your grandmother's train whistles. They are air horns so loud that they can damage your hearing and ruin your life.

Dr. Louis Hagler writes in Noise Pollution: *A Modern Plague:*

> Exposure to night-time noise also induces secondary effects, or so-called after effects. These are effects that can be measured the day following the night-time exposure while the person is awake. These include reduced perceived sleep quality, increased fatigue, depressed mood or well-being, and decreased performance.
>
> Long-term effects on psychosocial well-being have been related to nocturnal noise exposure. Noise annoyance during the night increases total noise annoyance for the following 24 hours. People exposed to night-time noise report an increased use of sedatives, closed bedroom

> windows, and use of personal hearing protection. Particularly sensitive groups include the elderly, shift workers, persons vulnerable to physical or mental disorders, and those with sleeping disorders.
>
> Other factors that influence the problem of night-time noise include its occurrence in residential areas with low background noise levels, combinations of noise and vibration such as that produced by trains and heavy duty vehicles, and sources with low-frequency components which are more disturbing, even at very low sound pressure levels. These low-frequency components have a significant detrimental effect on health.

Dr. Hagler used to be a Richmond resident until he was driven out of town by train horns. Read more at http://www.nonoise.org/library/smj/smj.htm.

Both the FRA and the CPUC are so obsessed with potential railroad grade crossing train-vehicle collisions, they completely ignore what is statistically a larger health problem relating to noise.

Effects on Sleep

Uninterrupted sleep is known to be a prerequisite for good physiological and mental functioning of healthy persons. Whereas sleep disturbance is considered to be a major effect of environmental noise, data on the effects of environmental noise on sleep are limited. Recent research on sleep disturbance has been conducted for aircraft noise, road traffic, and railway noise. For example, road traffic noise in excess of 30 dB disturbs sleep. The probability of being awakened increases with the number of noise events per night. When background noise is low, noise exceeding 45 dB should be limited; for sensitive individuals, an even lower level is preferred.

The primary sleep disturbance effects are: difficulty falling asleep, frequent awakenings, waking too early, and alterations of sleep stages and depth, especially a reduction of REM sleep. Other effects of noise during sleep include increased blood pressure, increased heart rate, increased finger pulse amplitude, vasoconstriction, changes in respiration, cardiac arrhythmias, and increased body movement. For each of these, the threshold and response relationships may be different. Studies have shown that the frequency of noise-induced awakenings decreases over eight consecutive nights; however no such habituation has been shown for heart rate and after effects.

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levels. These low-frequency components have a significant detrimental effect on health. (Dr. Louis Hagler, Noise Pollution: A Modern Plague (2007).[5]

There is evidence that the standards for night-time nose exposure are not nearly high enough to protect human health. This is something the acoustical engineering profession should take on.

Below is a summary of the Night Noise Guidelines for Europe prepared by Louis Hagler, MD, based on the World Health Organization Night Noise Guidelines for Europe.[6]

> In 1999, the World Health Organization (WHO) published comprehensive *Guidelines for Community Noise* that were applicable to all member states in the European region (EU). It covered, among other issues, the adverse effects of exposure to night-time noise on sleep. It noted the importance of being able to sleep with open windows and the importance of the volume, nature, and number of noise events. In 2009, based on studies carried out since1995, the WHO published the *Night Noise Guideline for Europe* as complementary to - as well as an extension and update of - the earlier Guideline.
>
> The WHO defines health as a state of complete physical, mental, and social well-being; the highest attainable standard of health is recognized as a fundamental right of every human being. Environmental noise is a threat to public health and well-being; it is one of the most common public complaints in many member states. These guidelines were designed to reduce the health effects of night-time noise in Europe.
>
> **Extent.** Not all member states have information on exposure to night-time noise or its effects. Estimates from several countries indicate a substantial portion of the EU population could be exposed to noise levels that risk health and well-being; in one such survey, the percentage of the population so exposed rose from about 19% in 1998 to about 27% in 2003. What is known about the relationship between sleep and health and the disturbance of sleep by noise provides abundant indirect evidence of the widespread nature of the problem.
>
> **Indicators.** Different indicators were chosen for different health end points. Long term effects, such as cardiovascular disorders, were better correlated with such measures as the yearly average night-time noise level. Instantaneous effects, such as disturbed sleep, were better correlated with the maximum noise level at the time of the event (such as the passage of a truck, plane, or train).
>
> **Sleep Time.** Studies show that the average sleep time for adults is a little less than 7.5 hours. Because of variations due to age and genetic makeup, there is great variability in sleep time. Nevertheless, data suggest that sleep time might be biologically fixed in humans. For a number of reasons, a fixed 8 hour interval was chosen as the desired minimum time for night-time protection.
>
> **Noise, Sleep, and Health.** There is abundant evidence that sleep is a biological necessity and disturbed sleep is associated with a number of health problems. Noise disrupts sleep by a number of direct and indirect pathways. Even at very low noise levels, physiological reactions can be reliably produced and measured. Among the effects of noise during sleep are an increase in heart rate, arousals, changes in the stage of sleep, and awakenings. Night-time noise causes

[5] http://www.nonoise.org/library/smj/smj.htm
[6] www.euro.who.int/document/e92845pdf

self-reported sleep disturbances, increased use of medication, increase in body movements, and insomnia. Insomnia is a problem in itself; it leads to further adverse consequences for health and well-being, such as fatigue, accidents, and reduced performance. There is also evidence that night-time noise causes hormone level illness.

Vulnerable Groups. Children are considered to be at risk, even though they have a higher wakening threshold than adults, because they spend more time in bed. Because sleep becomes more fragmented in the elderly, they are more vulnerable to night-time noise. Pregnant women and the sick are also at greater risk. Finally, shift workers are at risk because their circadian rhythms are stressed.

Thresholds for Observed Effects.

A. Sufficient evidence exists for the following threshold levels (in dB) for a number of adverse effects; these threshold levels are those at which an observed effect starts to occur.

Using the maximum level of inside, night-time nose as the indicator, the following effects have been noted: EEG awakening (35 dB), motility (32 dB), sleep changes (35 dB), and waking at night or too early in the morning (42 dB). Changes in cardiovascular activity and other changes in sleep quality were shown to occur but a threshold level could not be determined.

Using the level of outside, night-time noise as the indicator, the following effects have been noted: increased movement while asleep (42 dB), self-reported sleep disturbance (42 dB), use of sleeping medications and sedatives (40 dB), and diagnosis of insomnia by a medical professional (42 dB).

B. Limited evidence exists for the following threshold levels (in dB) for a number of adverse effects. These effects have been shown to occur or to have a plausible biological explanation; threshold levels have been estimated or remain undetermined.

Using the level of outside noise as the indicator, the following effects have been noted: complaints (35 dB), hypertension (50 dB), myocardial infarction (50 dB), and psychic disorders (60 dB).

Other effects, where neither indicator nor threshold could not be determined, include changes in stress hormone levels, daytime drowsiness, irritability, impaired social contacts, insomnia, obesity, depression (in women), occupational accidents, and reduced life expectance.

Relation to Outside Noise. The relation between the level of outside, night-time noise and adverse effects is not straightforward since these effects are produced inside the bedroom. The desire of a large part of the population to sleep with windows open influences the level of noise that reaches the ear of the sleeper.

Recommendations for Health Protection. Based on the systematic review of evidence provided by epidemiologic and experimental studies, the relationship between night-time noise exposure and adverse health effects can be summarized as follows.

For outside, night-time noise below 30 dB, no effects on sleep are observed except for a slight increase in the frequency of body movements. There is no evidence that the biological effects observed below the 40 dB level are harmful to health, even though modest effects are seen in susceptible groups (children and the chronically ill). Adverse health effects begin to appear when

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outside, night-time noise levels exceed 40 dB; these levels produce coping adaptations . Above 55 dB, a sizable portion of the population is annoyed and sleep disturbed; cardiovascular effects become the main public health concern.
changes, cardiovascular disease, depression, and other mental For the primary prevention of subclinical adverse health effects, it is recommended that the population should not be exposed to outside night-time noise levels greater than 40 dB during that part of the night when most people are in bed.

(Author note -the sound levels in a library or the typical living room are around 40 dB.)

Other sources of information about nighttime noise and train horns:

- Impact of Traffic Noise on Sleep Patterns http://www.terradaily.com/reports/Impact_Of_Traffic_Noise_On_Sleep_Patterns_999.html
- Effects of train noise and vibration on human heart rate during sleep: an experimental study http://bmjopen.bmj.com/content/3/5/e002655.full
- Noise Pollution: A Modern Plague http://docs.wind-watch.org/goineshagler-noisepollution.html
- Washington County – Noise Control Task Force, (NCTF) – Final Report – Volume I – Report and Recommendations – http://wcnctf.org/docs/Volume_I_Final_Report.pdf
- Single and Combined Effects of Air, Road, and Rail Traffic Noise on Sleep and Recuperation http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3001788/
- Railroad-Highway Grade Crossings – A Look Forward http://onlinepubs.trb.org/onlinepubs/millennium/00096.pdf
- Communitywise Bellingham – Informing the Conversation http://www.communitywisebellingham.org/wp-content/uploads/2013/01/CWB-Economic-Scoping-Comment-FINALProofed.pdf
- The Train Horn Rule and Quiet Zones http://www.fra.dot.gov/Page/P0104

Train Horn Rule and Quiet Zones

Horns Required at Grade Crossings

If there is one thing the railroads can't stand, it is local government regulating what they can and cannot do. Courts have consistently upheld federal preemption of anything relating to railroads under the Commerce Clause. They are virtually untouchable.

When some U.S. cities started experimenting with quiet zones, and the railroads started challenging them, the FRA moved to preempt local efforts by establishing the Train Horn Rule, which requires the use of train horns at all grade crossings but provides a way for local jurisdictions to establish Quiet Zones.[7]

Under the Train Horn Rule (49 CFR Part 222), locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings. Train horns must be sounded in a standardized pattern of 2 long, 1 short and 1 long blasts. The pattern must be repeated or prolonged until the lead locomotive or lead cab car occupies the grade crossing. The rule

[7] http://www.fra.dot.gov/Page/P0104

does not stipulate the durations of long and short blasts, but engineer discretion seems to err in favor of longer versus shorter to the chagrin of millions living near railroad tracks. The maximum volume level for the train horn is 110 decibels which is a new requirement. The minimum sound level remains 96 decibels. This is substantially louder than a motor vehicle horn, despite the fact that traffic fatalities far exceed railroad fatalities.

Quiet Zones

The Train Horn Rule also provides an opportunity for localities nationwide to mitigate the effects of train horn noise by establishing "new quiet zones." In a quiet zone, railroads are required to cease the routine sounding their horns when approaching public highway-rail grade crossings. Train horns may still be used in emergency situations or to comply with other Federal regulations or railroad operating rules. Localities desiring to establish a quiet zone are first required to mitigate the increased risk caused by the absence of a horn. Learn how to create a Quiet Zone here.[8]

According to the FRA:

> In general terms, a Quiet Zone may be established after implementing safety improvements that provide the same level of risk reduction as would otherwise be provided by the train horn. A Quiet Zone can be one crossing in a community, or several consecutive crossings in one or more communities. A Quiet Zone can be created along corridors shared by both railroad and rail transit.
>
> The Federal Railroad Administration (FRA) Train Horn Rule (49 CFR Part 222) became effective on June 24, 2005. This rule provides a step-by-step process to determine what can be done to offset the lack of a train horn, to calculate the risk reduction associated with potential improvements, to formally document the silencing of the train horns and officially establish a Quiet Zone.[9]
>
> FRA website: For more complete information about the federal rule, visit the FRA website which has pages about the Train Horn Rule and Quiet Zones.

The principal impediment for establishment of Quiet Zones is the cost of crossing hardware (gates, bells, street modifications and sophisticated electronics) that can cost as much as half a million dollars for a single crossing. Local jurisdictions are required to pay the entire cost, and the railroads are required to pay nothing. Furthermore, the crossing equipment has to be installed by the railroads on a no-bid contract. Railroads routinely drag their feet for months or even years in providing construction costs proposals and in actually accomplishing the required work.

As of April 2013 in California, there were 36 Established FRA Quiet Zones (181 crossings) and 5 corridors with Wayside Horns (15 crossings (CPUC list of Quiet Zones).

[8] http://www.fra.dot.gov/eLib/details/L03055
[9] http://www.fra.dot.gov/Page/P0104

Private Crossings in California

Private crossings are grade crossings that do not involve public streets, roads or highways and are not governed by the Train Horn Rule. California Public Utilities Code 7604 regulates train horn use at private crossings and references the FRA Train Horn Rule.

The CPUC has recognized one exception found in C.F.R., Title 49, Section 222.21(a), which establishes the train horn pattern when approaching public highway-rail grade crossings, states: "This pattern may be varied as necessary where crossings are spaced closely together." California Public Utilities Code 7604, which regulates train horn use at private crossings, references Section 222. Leeann Dickson of the FRA has pointed out that this "varied" shortened train horn pattern can be used along Canal Boulevard, and FRA will monitor for compliance. This has improved but not eliminated the Canal Boulevard problem.

> 7604. (a) (1) Except as provided in paragraph (3), a bell, siren, horn, whistle, or similar audible warning device shall be sounded at any public crossing in accordance with Section 222.21 of Title 49 of the Code of Federal Regulations.
>
> (2) Except as provided in paragraph (3), a bell, siren, horn, whistle, or similar audible warning device shall be sounded, consistent with paragraph (1), at all rail crossings not subject to the requirements of Subpart B (commencing with Section 222.21) of Part 222 of Title 49 of the Code of Federal Regulations.
>
> (3) A bell, siren, horn, whistle, or similar audible warning device shall not be sounded in those areas established as quiet zones pursuant to Subpart C (commencing with Section 222.33) of Part 222 of Title 49 of the Code of Federal Regulations.
>
> (4) This section does not restrict the use of a bell, siren, horn, whistle, or similar audible warning device during an emergency or other situation authorized in Section 222.23 of Title 49 of the Code of Federal Regulations.
>
> (b) Any railroad corporation violating this section shall be subject to a penalty of two thousand five hundred dollars ($2,500) for every violation. The penalty may be recovered in an action prosecuted by the district attorney of the proper county, for the use of the state. The corporation is also liable for all damages sustained by any person, and caused by its locomotives, train, or cars, when the provisions of this section are not complied with.

Normally, the CPUC is incompetent, unreasonable, irrational, overcautious and counterproductive. The CPUC is an ineffective bureaucracy that has largely failed the people of California.

But even when the CPUC tries to do the right thing, the legislature and the courts continue to support the railroads and horn blowing.

Recently, the City of San Clemente was successful in getting CPUV approval to establish quiet zones at some private crossings. The grade crossing improvements included wayside horns, a solution that is acceptable for an FRA Quiet Zone. BNSF challenged the CPUC decision, and the court ruled against San Clemente:

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> This writ of review proceeding presents the question of whether the Public Utilities Commission (the commission) has the authority to order railroads to stop using locomotive mounted horns at certain pedestrian rail crossings in the City of San Clemente (the city) . We conclude the answer to that question is "no ,"because in Public Utilities Code section 7604 the Legislature has commanded that an audible warning device mounted on the train must be sounded at every rail crossing in the state, except those within federally established quiet zones. Because the pedestrian crossings at issue here are not within a federally established quiet zone, a train horn must be sounded at those crossings, and the commission has no authority to order otherwise. Accordingly, we will set aside the commission's decision to the contrary.[10]

Probably because of the publicity involving the San Bruno PG&E gas line explosion, the California legislature will not touch anything that even looks like a reduction in safety in any context.

Train Horns in Richmond

Why are train horns at night such a problem in Richmond, particularly south Richmond?

This is a complicated issue and involves many parties. Some are part of the problem, and some are part of the solution. And some are a little of both.

Before the West Three, West Four, West Five and South One Quiet Zones were established, a train traversing south Richmond would blow its horn a least 44 times, often more. Even though the Train Horn Rule did not specify the minimum length of the toots, train engineers routinely would stretch out the longs to 4-10 seconds or more, making a total of as much as three minutes of almost continuous horn blowing. Because of the volume required by the Train Horn Rule, these horns can be sleep disturbing within a half mile or more, taking in many neighborhoods in south Richmond and over 10,000 people that include Point Richmond, Marina Bay, Atchison Village, the Irion Triangle, Santa Fe and Coronado. Depending on wind direction and weather conditions, the sound can travel even further and is particularly disturbing on summer nights when residents tend to leave windows open.

For many years, the railroad tracks that crisscross south Richmond were seldom used, night or day. They were essentially abandoned infrastructure largely left over from the WWII shipyard complexes. About the only train activity on the area was a multi-modal facility BNSF operated at the Richmond rail yards that parallel Garrard Boulevard north of Point Richmond and a few industrial customers along Canal Boulevard and Harbour Way South. In the early 1990s, the City completed a study that recommended removal of most of the rails.

When Marina Bay was in the planning stage, the railroad infrastructure south of what is now I-580 was virtually abandoned. The 1987 Shoreline Conservation and Development Strategy concluded:

[10] http://www.courts.ca.gov/opinions/documents/C072746.PDF 8-5-13 (BNSF RAILWAY COMPANY et al.,Petitioners, v. PUBLIC UTILITIES COMMISSION, Respondent; CITY OF SAN CLEMENTE, Real Party in Interest, Court of Appeal, Third District, California - August 5, 2013 - Cal.Rptr.3d - 13 Cal. Daily Op. Serv. 8455

> As a result of changing service requirements, several railroad properties may become surplus to railroad use…Suitable for redevelopment are the railroad yards in Marina Bay… if these yards are to be phased out.

The *Knox Freeway/Cutting Boulevard Corridor Specific Plan* adopted by the City Council in 1991 still did not anticipate a level of rail activity sufficient to even consider a grade separation in the Marina Bay area:

> Railroad operations will continue to be a vital part of the circulation system serving the West Cutting Boulevard, Ford Peninsula, and South Shoreline Sub-areas… In the long-term, rail trackage in the Sub-areas should be reduced and consolidated to facilitate service and allow for planned uses. In accordance with this objective, the Circulation Plan identifies alternative railroad alignments and yard locations to serve future needs. ..*Grade Crossings* - Grade crossings would be at Cutting Boulevard, Marina Way South, Harbour Way South, Regatta Boulevard, Marina Bay Parkway, and South 32nd Street. These crossings should be controlled by signalized rail guards.[11]

The significant problems caused by mile-long trains traveling at slow speeds arose only as recently as 2002, but they came on with a vengeance and have continued unabated.[12] This new transportation-related development has severely impacted the lives of those who live and work in Marina Bay

Beginning about the year 2000, the multi-modal facility was moved from Point Richmond to the Port of Oakland, and BNSF started using its meandering south Richmond trackage as a main line, moving ponderous mile-long trains from the Port of Oakland through Richmond and on to Martinez. BNSF, and later, the Port of Richmond ramped up the use of the spur line that runs through Point Richmond to transport car-carrying trains both in and out of a yard owned by BNSF at the intersection of Canal and Cutting Boulevards.

In 2009, with the completion of the Honda Port of Entry project, night trains dramatically increased use of a track east of and parallel to Canal Boulevard to reach Point Potrero Marine Terminal. This track has one public grade crossing at Wharf Street and six private grade crossings, adding significantly to the nighttime horn blowing.

Quiet Zones in Richmond

History

Since 2003, the Richmond City Council has supported the establishment of Quiet Zones with the goal of expansion to all grade crossings in the city:

> Resolution 62-04, April 13, 2004

[11] *Knox Freeway/Cutting Boulevard Corridor Specific Plan* 4-38 through 4-42

[12] See More On Train Blockages, March 5, 2003, City Council Authorizes Quiet Zones and Federal Action to Reduce Long Trains, April 16, 2004, Update on Train Horns and Long Trains, July 28, 2004 and Quiet Zones and Long Trains, February 4, 2005.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RICHMOND, CALIFORNIA, DIRECTING ACTIONS TO MITIGATE LONG TRAINS AND TRAIN HORN USE

WHEREAS, the frequent sounding of train horns at dozens of Richmond grade crossings has become a serious disturbance to residents as well as a public health concern; and

WHEREAS, In response to a Congressional legislative mandate, the Federal Railroad Administration (FRA) has issued an Interim Final Rule for the Use of Locomotive Horns at Highway-Rail Crossings. The rule requires that locomotive horns be sounded as a warning to highway users at public highway-rail crossings. In accordance with a legislative requirement, the rule will not take effect until one year following the date of its publication on December 18, 2003. Until December 18, 2004, the sounding of the locomotive horns at crossings will remain subject to applicable State and local laws; and

WHEREAS, the rule also provides an opportunity, not available until now, for thousands of localities nationwide to mitigate the effects of train horn noise by establishing new "quiet zones;" and,

WHEREAS, communities seeking to establish New Quiet Zones are encouraged to thoroughly investigate the options available to them under the rule. FRA will be working with public authorities and reviewing applications for quiet zones in order to permit communities to institute quiet zones at the *earliest* possible date after the one-year required period has elapsed. Accordingly, FRA will accept quiet zone applications from public authorities during the one-year period commencing with publication of the rule.

WHEREAS, the FRA has an extensive website at http://www.fra.dot.gov/Content3.asp?P=1318 that describes how to evaluate and apply for Quiet Zone Designation; and,

WHEREAS, BNSF has offered to help the City of Richmond find funding sources for Quiet Zone improvements; and,

WHEREAS, the frequent blockage of grade crossings by mile-long BNSF trains coming and going from the Port of Oakland has become not only a severe aggravation for Richmond residents but is also a substantial public safety concern; and,

WHEREAS, one solution to the long train problem would be for BNSF to route long trains onto UP tracks further north in the vicinity of Martinez instead of at the Stege "Y," but, according to BNSF sources, UP will not allow this; and

WHEREAS, the Surface Transportation Board (http://www.stb.dot.gov/index.htm) has the authority to intervene in such issues and to motivate or compel the railroad companies to cooperate for the greater good of the public.

THEREFORE, BE IT RESOLVED that The Richmond City Council directs that the City Manager and the City Attorney initiate an application for a Quiet Zone or Quiet Zones in Richmond in the areas of Point Richmond, Atchison Village, Marina Bay, Santa Fe, the Iron Triangle, Parchester Village, Country Club Estates, Richmore Village, and other neighborhoods adversely affected by train horns, and

THEREFORE BE IT FURTHER RESOLVED that the City Manager and the City Attorney file a Petition for Declaratory Order with the Surface Transportation Board requesting that the Board compel UP and

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BNSF to share tracks in a way that will eliminate the passage of long, through trains through south Richmond.

Minutes of May 20, 2003, City Council Meeting

In the matter to consider adopting a resolution establishing a Railroad "Quiet Zone" and seeking limits on the amount of time that a Grade Crossing can be blocked by a train. Diane Holmes, City Clerk, stated for the record that Terry Good filed a petition, on behalf of the homeowners in the Country Club Vista community in support of the matter. Vice Mayor Penn stated that the matter has been before the Public Safety Public Services Standing Committee and is being brought forward to direct staff to proceed with the fact finding in order to perform due diligence to resolve the matter. Councilmember Butt commented that he received a similar resolution passed by the Contra Costa Board of Supervisors from Supervisor Gioia addressing the blockage problem. The County Counsel's office has agreed to work with Richmond's City Attorney; and in the first "Whereas" he asked that the following be added regarding the noise problem: *"the South part of Richmond, Country Club Vista, Parchester Village, and Atlas Road areas."* Following discussion, on motion of Councilmember Butt, seconded by Councilmember Griffin, adopted Resolution No. 70-03 establishing a Railroad "Quiet Zone" and seeking limits on the amount of time that a Grade Crossing can be blocked by a train, by the unanimous vote of the Council.

The Richmond General Plan 2030 includes the following:

Action SN4.D Quiet Zone Expansion. Establish the entire City of Richmond as a railroad quiet zone and complete a study to determine the improvement costs for all of Richmond's at-grade crossings.

This policy is also included under SN4.D and HW9.S.

Established Quiet Zones in Richmond

Richmond was a pioneer is Quiet Zone establishment and has more Quiet Zones than any city in California – Six separate zones that include 13 grade crossings.[13]

1. North One: Giant Highway and Atlas Road (near Parchester Village)
2. South One: Marina Way South (south grade crossing only), Regatta Way and Marina Bay Parkway (all in Marina Bay)
3. West One: West Richmond Avenue (Point Richmond)
4. West Two: Garrard Avenue, Cutting Boulevard and Canal (all in Point Richmond)
5. West Three-Four: Garrard Avenue (two crossings) and Ohio Avenue (all near Atchison Village)
6. West Five: Second and Third Streets (north of Cutting Boulevard in the Santa Fe Neighborhood)
7. West Six: Cutting Boulevard and 4th Street (Santa Fe Neighborhood)

Below is a table listing all public right of way grade crossings in Richmond and the quiet zone they are part of, if any.

Public Right of Way Grade Crossings in Richmond

[13] http://www.ci.richmond.ca.us/index.aspx?NID=1776

BNSF (north to south)	UP (north to south)	Existing Quiet Zone
Atlas Road		North One
Giant Road		North One
John Street		Will join North One when Interconnect Project is completed
Parr Boulevard	Parr Boulevard	None
Brookside Drive	Brookside Drive	None
Market Street	Market Street	None
Chesley Avenue	Chesley Avenue	None
Richmond Parkway East (2)		West Two
Ohio Avenue		West Three
3rd Street		West Five
4th Street and Cutting		West 6
	Cutting/Carlson	None
Cutting Boulevard (2)		West Two
Harbour Way South/Wright		None
Harbour Way South (south)		South One
Marina Way (north)		None
Marina Way (south)		South One
Regatta Way (west)		South One
Marina Bay Parkway		South One
34th Street		Pending
Seaver Avenue (east)		None
Meade Street		None

Richmond Quiet Zones in Progress

Johns Avenue

As a mitigation for the Richmond Rail Connector Project,[14] the Johns Avenue grade crossing will be upgraded sufficiently to add it to the North One Quiet Zone. This project will connect two segments of its mainline that are currently unconnected, which requires BNSF to pass all of its train traffic to and from the Port of Oakland through the Richmond Intermodal Yard located along the Richmond Parkway. Once complete, this should remove all of BNSF's nighttime traffic that currently moves through Marina Bay. BNSF currently anticipates completing this work by the end of the 2013.

> The project would benefit the residents of Richmond by reducing air emissions and noise from train air horns and warning signals at the fourteen at-grade crossings on the BNSF track. The new, shorter route along the UPPR tracks has only three at-grade crossings and no speed restrictions. In addition, it would reduce the need for BNSF trains to use tracks north of Richmond on the Martinez Subdivision, freeing up capacity and reducing conflicts for both UPRR and passenger trains.

According to Carlos Privat, July 1, 2013, BNSF now anticipates starting its track work in the 1st Quarter of 2014 since Caltrans funding is not yet fully in place. Once funding has been completely secured, they will order materials and schedule the work. Constant warning time (CWT) is required at Johns Ave to

[14] http://www.dot.ca.gov/dist4/documents/richmond_rail/environmental_assessment.pdf

qualify for a quiet zone. BNSF is installing CWT as part of its interconnection project at Johns Ave. Once CWT is installed and BNSF's track work is complete, Richmond will move forward with a quiet zone.

34th Street

Richmond Pacific Railroad, a local switching short line railroad, paid for half the cost of Quiet Zone improvements at 34th Street, north of Marina Bay. This would eliminate another horn noise source for Marina Bay and other neighborhoods in South Richmond.

Quiet Zones Challenges

All Aboard Storage (Meeker Avenue)

This private crossing is a major Marina Bay area noise source and is regulated by the CPUC, not FRA. The first issue is a private driveway that crosses a single track at All Aboard Storage on Meeker Avenue. Unfortunately, the property is bifurcated by the track. The office is on one side and the storage units are on the other side of the track. My understanding is that the security gate does not even allow access to the storage units at night. There are no gates, flashing lights or bells at this crossing, and none are required. I don't know why the City of Richmond and the CPUC ever approved this project, but that's water under the bridge. The CPUC's interpretation and enforcement of their Section 7604 requires trains to sound their horns four times at his crossing. This is the full-on locomotive horn that is incredibly loud and upsetting to Marina Bay residents at night. The rest of the Marina bay crossings are in an FRA Quiet Zone, but this one is not because it is under CPUC jurisdiction. It would cost the City of Richmond $324,000 to upgrade this crossing sufficiently for the CPUC to let it go quiet. We have proposed a wayside horn in lieu of the locomotive horn, but the CPUC will not allow it.

Richmond staff, along with Councilmember Butt, was unsuccessful in convincing local State representatives to introduce legislation -- to eliminate soundings at private crossings- - even though we had support from BNSF for that legislation.

Canal Boulevard

The second private crossing issue is Canal Boulevard, which has seven driveways to adjacent business properties crossing a single track on the east side running parallel to Canal. Before acknowledging the Train Horn Rule exception for closely spaced crossings, the CPUC required the locomotive train horn to be blown four times at each crossing for a total of 28 blasts for a train traversing Canal.

These trains are typically run constantly during the early hours of the morning, originally resulting in over a hundred full-on blasts that could be heard all over southwest Richmond by thousands of otherwise sleeping residents.

The CPUC had denied our request to treat this as would be required under federal rules. According to Deputy City Attorney Carlos Privat, "Felix [Ko of the CPUC] raised concerns with setting precedent for all private crossings and a resultant 'proliferation of mini private quiet zones across California' but acknowledged that this approach may actually make those crossings safer." Our Assembly member, Nancy Skinner, has so far been unwilling to carry a bill that would make this possible.

I asked Juan Acosta of BNSF if arrangements could be made to limit trains on Canal Boulevard to times people are most likely to be sleeping, midnight to 6:00 AM. Mr Acosta replied on October 10, 2011,

essentially indicating that the convenience of the businesses was more important than the community's sleep:

> Since our discussion at the recent wayside horrn demonstration at the Canal Street crossings, I surveyed several colleagues who work in a cross section of disciplines, including general operations, auto facilities, industrial products and rules/safety. At the time of our discussion, my initial reaction to your suggestion was not to be too hopeful inasmuch as my hunch, as I described it that day, was rail operations are often dictated by customer needs and related considerations. After several internal inquiries, the information I received confirmed my hunch.
>
> For both the several industrial products customers and the auto facility, there are several factors which require evening rail operations. For example, the industrial products customers along Canal have daytime business hours operations that are inconsistent with rail car switching. The switching operation commences after our customers complete their first and second shifts. During customer business hours, there is a large amount of truck traffic in/out of their facilities.
>
> Trying both to complete rail switching operations and accommodate truck traffic during daylight business hours would take significantly longer than is currently the case. The result would be business and rail operations that run well into the evening and commence earlier in the morning, with more traffic congestion as trucking moves are delayed at crossings while rail operations proceed through the multiple crossings.
>
> Additionally, our industrial product customers currently use their first and second shift crews to load and unload cars. If the industrial customers were switched during the day, they would be forced to consume a substantial amount of their employee time waiting while we attend to the lugubrious, but necessary tasks of removing brake hoses, securing cars, and performing required safety checks after we arrived to switch the cars. Moreover, time used by BNSF crews to conduct such operations would also limit the industrial customers' time and ability to complete loading/unloading the rail cars.
>
> Similarly, the port-related rail operations are dependent on customer needs and factors such as ship arrivals and are, therefore unpredictable. As is the case with loading rail cars at the industrial customers' facilities, it is difficult to conduct rail operations at the same time car loading takes place. Arrival and departures for steamships set the parameters for loading rail cars with autos and, in turn, establish when rail cars can be switched in and out of the port.

The requirement to establish Quiet Zones along Canal Boulevard was pat of the mitigation conditions for the Honda Port of Entry project:

> <u>From the Minutes of the November 18, 2008, City Council meeting:</u>
>
> The city clerk announced this was the time set, pursuant to published notice, to conduct a public hearing to consider an appeal by Fred Arm from the Design Review Board's (DRB) approval of the certification of an Environmental Impact Report (EIR) and Design Review Permit for the Honda Port of Entry Project at Point Potrero and affirm, modify, or deny the certification of the EIR with Statement of Overriding Consideration and accompanying Mitigation Monitoring Reporting Program and affirm, modify, or deny the Design Review Permit, subject to conditions. Planning

Director Richard Mitchell gave an overview of the item. Mayor McLaughlin declared the public hearing open. Fred Arm and Legal Counsel Bradley Brownlow spoke as the appellants. Mr. Brownlow submitted, for the record, a detailed list of concerns with the status of the current Environmental Impact Report (EIR). On motion of Councilmember Bates, seconded by Councilmember Lopez accepted into the record the detailed list of concerns regarding the EIR submitted by the appellant by the unanimous vote of the Council. Jim Matzorkis and Bill Robbins spoke as the major opponents. Speakers from the audience were: Katrinka Ruk, Robert Lane, Anthony J. Craig, Jim Dewitt, Eva Craig, A William Bodle, Jack Bryant, Harold Brinkley, Allison Bryant, Douglas Kidder, Bruce Beyaert, Lee Jones, Larry Magid, Bobbi Scott Hlebek, Amon Rappaport, Ric Borjes, Michael Davenport, Jerome Smith, Corky Booze, Theresa Wilkerson, Sherry Padgett, and Kate Spaulding. Bradley Brownlow gave a rebuttal on behalf of the appellant. Port Director Jim Matzorkis and Bill Robbins gave a rebuttal as the major opponents. On motion of Councilmember Bates, seconded by Councilmember Viramontes closed the public hearing by the unanimous vote of the Council. Discussion began. Councilmember Butt stated that an agreement had been reached on the last two issues regarding grade crossings and emissions. Mr. Matzorkis read the new mitigations conditions as follows: "The project shall not undertake switching operations that block traffic on Canal, West Cutting, and Garrard Boulevards. Project operations shall occur primarily between 7:00 p.m. and 4:00 a.m. Grade crossing blockages associated with the project shall be in the 1.5 to 6 minute range and in no case shall the project create blockages that violate CPUC Rule 135. The city shall be responsible for installing an automated monitoring system that automatically records grade crossing blockages on Canal, West Cutting, and Garrard Boulevards and that information shall be made available to the public on a monthly basis. Any grade crossing blockages in excess of 10 minutes that violate CPUC Rule 135 shall be prosecuted by the City." Jim Matzorkis read the following language regarding emissions: "Following implementation of carb regulation for fuel sulfur for ocean-going vessels in 2009 and 2010 the emissions of NOX and PM10 including those from this project shall be lower in Richmond than in current base line and the health risk assessment shall indicate a lower risk than which currently exist. Calculations shall be provided to show how this conclusion could be reached and such calculation shall be incorporated in the Design Review Permit". Mr. Matzorkis stated the calculations could be provided within 30 days. City Attorney verified that Mr. Matzorkis read conditions to the permit not mitigation. Councilmember Viramontes requested that the record reflect that the agreement was reached with Councilmember Butt outside of the Council Meeting. Following discussion a motion was made by Councilmember Bates, seconded by Councilmember Viramontes to deny the appeal and affirm the DRB's decision. A friendly amendment was offered by Councilmember Butt to adopt the five amended conditions of approval that the applicant has agreed to which includes: train noise, grade crossing blockages, solar electricity generation, historic resources parking, and emissions. Also modify finding 11 to reflect the latest projections provided by the Finance Director Jim Goins. The amendment was not accepted. A substitute motion was made by Councilmember Butt, seconded by Councilmember Thurmond to deny the appeal and certify the EIR with the change in finding 11 and adopt the five amended conditions of approval that the applicant has agreed to which includes: train noise, grade crossing blockages, solar electricity generation, historic resources parking, and emissions. A second substitute motion was made by Councilmember Viramontes, seconded by Councilmember Butt to deny the appeal and approve the staff recommendations and conditions of approval that the applicant has agreed to, modify finding 11 to reflect the latest projections provided by Finance Director Jim Goins. Discussion ensued and a friendly amendment was offered by Councilmember Bates to direct staff to evaluate for two years noise impacts and also to work with the railroads to eliminate horn noise. The amendment was accepted. The second substitute motion passed by the following vote: **Ayes:** Councilmembers Bates, Butt, Lopez, Rogers, Sandhu, Thurmond, and Viramontes. **Noes:** Mayor McLaughlin. **Abstention:** None. **Absent:** Vice Mayor Marquez.

From the Staff Report for the November 18, 2008, City Council Meeting:

Train Noise

The project will increase train traffic south of the Canal Boulevard Grade crossing, and it is possible that trains will be sounded at grade crossings. The City of Richmond shall determine what is required to establish a Quiet Zone and shall obtain cost estimates for providing sufficient grade crossing safety devices at grade crossings south of the Canal Boulevard grade crossing to qualify for a Quiet Zone. The City of Richmond shall maintain a reserve fund for a period of two years sufficient to pay for such devices, if required. If train horns are routinely sounded at grade crossings south of the Canal Boulevard grade crossing, the City of Richmond shall implement a Quiet Zone extending from the Canal Boulevard grade crossing to the PPMT. After two years, the reserve capital fund shall no longer be required, but if after two years, train horns are routinely sounded at grade crossings south of the Canal Boulevard grade-crossing, the city of Richmond shall install such devices in a timely manner as necessary and establish a Quiet Zone from the Canal Boulevard grade crossing. "Routinely sounded" means sounded in accordance with Federal Railroad Administration orders at grade crossings but does not include sounding in case of emergencies. In addition, the City of Richmond shall complete the required improvements and establish a Quiet Zone from the existing Garrard Boulevard (Richmond Parkway east leg) to and including the grade crossing at Cutting Boulevard near 4th Street.

The Port of Richmond, in conjunction with BNSF shall investigate, adopt a plan and apply best practices to continually reduce wheel squeal on tight radius curves on tracks serving the Honda Port of Entry Project. Practices may include gauge face lubrication; top of rail friction modification and the maintenance and modification of track and rolling stock.

Delete the following DRB condition –

8. The project proponent shall make best efforts to establish a quiet zone within the project site and from Cutting Blvd to Wharf Street and shall bring documentary evidence of such efforts to the Design Review Board when the final landscaping, lighting and gateway plans are considered; and

Harbour Way South and Meeker Avenue

This is another noise source that affects the Marina Bay, Santa Fe and even Point Richmond neighborhoods. It has unique challenges because the track crosses diagonally at the intersection, and it has no existing crossing improvements It would require crossing arms at four streets and would be very expensive, perhaps as much a $1 million.

Marina Way South (northern crossing)

The Marina Way South crossing is not eligible for a quiet zone because the building complex housing the Kaiser facility located near the crossing has a private driveway too close to the crossing to qualify.

Cutting/Carlson

Unfortunately, the Carlson/Cutting crossing does not qualify under the federal train horn rules as a quiet zone. The risk index without horns is greater than the established risk threshold. Simply put, under the federal rules the crossing is considered too dangerous. However, the Engineering Department is exploring the use of wayside horns at this crossing too.

Quiet Zone Complaints and Enforcement

The City of Richmond offers a Train Quiet Zone Complaint Form , and complaints are also often made by email to the designated Deputy City Attorney, Carlos Privat, who passes them on to the railroad company or to the FRA. Unfortunately, this appears to be a futile process, there being no evidence that either BNSF or the FRA has ever taken any disciplinary action.

In addition, the Richmond Municipal Code now provides that train horns, whistles, sirens, bells, and other similar audible warning devices are exempt from the Community Noise Ordinance, but only to the extent that such warning devices are permitted or required by Federal or State Law. Therefore, the unnecessary use of train warning devices are prohibited and subject to enforcement actions by the City.

A critical deficiency in the Train Horn rule is that it leaves the railroads unscathed and requires cities to pay for whatever improvements are needed to create a Quiet Zone, and those improvements can cost several hundred thousand dollars per crossing. Another critical deficiency is that in a controversial Federal pre-emption matter, the railroads are allowed to use the horn in yards to signal train movements, usually one or two toots.

If you live in south Richmond and are disturbed by nighttime train horn blowing, you could be hearing any combination of the following:

- Grade crossing horn blowing at private crossings at All Aboard Storage on Meeker Avenue or Marina Way.
- Yard horn blowing at the yards between Marina Way and Marina Bay Parkway, yards south of the former Safeway facility, or grade crossings at South 34th Street and Erlandson Avenue.
- Grade crossings at Harbour Way South and Wright Avenue and 4th Street and Cutting Boulevard.
- Grade crossings east of Canal Boulevard.
- Engineers who are simply violating the rules.

For Quiet Zone complaints or information, contact : Carlos A. Privat, carlos_privat@ci.richmond.ca.us.

Yard Signals

While Quiet Zones have the potential to provide some protection against nighttime horn blowing, they do not provide any protection against horn use in rail yards that does not involve public grade crossings. After over 150 years, the railroad industry, it seems, has never figured out a way to communicate other than bells and whistles. The telegraph, the Victrola and the tin can telephone are all gone, but the 96+ decibel train horn outside your bedroom window at 3:00 AM is still the way railroads say “I’m moving forward or “I’m backing up” The General Code of Operating Rules (GCOR) has been adopted by over 100

railroad companies in the U.S., and it is also used by BNSF. It allows “other forms of communication,” such as radios, to be used in the yard other than horns, but BNSF has deleted that option from their version. The result is that you hear horns sounded all night long by BNSF, when they could be communicating by radio. The railroad’s response is that radios aren’t reliable, but BNSF has enough confidence in electronics to move remote controlled trains all over Richmond via electronics. The FRA recognizes an individual railroad’s GCOR as equivalent to Federal regulations.

Below is the excerpt from the GCOR that describes “whistle” (read “horn”) signals.

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5.8.2 Sounding Whistle

The whistle may be used at anytime as a warning regardless of any whistle prohibitions.

When other employees are working in the immediate area, sound the required whistle signal before moving.

Other forms of communications may be used in place of whistle signals, except signals (1), (7), and (8). See following chart.

The required whistle signals are illustrated by "o" for short sounds and "—" for longer sounds:

Sound		Indication
(1)	Succession of short sounds	Use when persons or livestock are on the track at other than road crossings at grade. In addition, use to warn railroad employees when an emergency exists, such as a derailment. When crews on other trains hear this signal, they must stop until it is safe to proceed.
(2)	—	When stopped: air brakes are applied, pressure equalized.
(3)	— —	Release brakes. Proceed.
(4)	o o	Acknowledgment of any signal not otherwise provided for.
(5)	o o o	When stopped: back up. Acknowledgment of hand signal to back up.
(6)	o o o o	Request for signal to be given or repeated if not understood.
(7)	— — o —	When approaching public crossings at grade with the engine in front, sound signal as follows: A. At speeds in excess of 45 MPH, start signal at or about the crossing sign but not more than 1/4 mile before the crossing. B. At speeds of 45 MPH or less, start signal at least 15 seconds, but not more than 20 seconds, before entering the crossing. C. If no crossing sign start signal at least 15 seconds, but not more than 20 seconds before entering crossing but not more than 1/4 mile before the crossing. D. If movement starts less than 1/4 mile from a crossing, signal may be sounded less than 15 seconds before the crossing when it is clearly seen traffic is not approaching the crossing, traffic is not stopped at the crossing or when crossing gates are fully lowered. Prolong or repeat signal until the engine completely occupies the crossing(s).
(8)	— o	**BNSF Amendment—Indication for sound (8) is changed to read:** Regardless of any whistle prohibitions: Approaching men or equipment or other individuals on or near the track. After sounding initial warning for men or equipment or other individuals, sound whistle signal (4) intermittently until the head end of train has passed the men or equipment or other individuals. Whistle warning is not required: • When there is an adjacent track and men or equipment or other individuals are beyond the farthest rail of the adjacent track. • For members of the same crew associated with movement of their engine unless necessary to warn or alert a crew member Do not sound whistle in designated mechanical servicing and repair facilities, unless for an emergency or when approaching roadway workers.

In addition, there is evidence that BNSF and a contractor working under BNSF, NorCal, routinely violate the Quiet Zone rules, honk horns longer than necessary and use horns for signaling in the yards when radios are a perfectly acceptable alternative. On May 17, 2011, the City Council adopted a new Noise Ordinance. Section 9.52.050.p deals with "yard" horn use:

> (Train bells, sirens, horns, whistles or similar audible warning devices shall be 11 exempt from the provisions of this chapter only to the extent that the General Code of Operating Rules (GCOR) adopted by railroad companies or Federal or State law permits or requires their use and such use is strictly limited to the GCOR or Federal or State sounding standards, including, but not limited to, the sound level, the necessity for using the signal and the pattern or frequency of use.
>
> Where an adopted GCOR allows the use of "other forms of communication," railroad companies are encouraged to use maximum reasonable restraint in the use of horns, particularly during times when people are likely to be sleeping (10:00 PM until 7:00 AM) and to use "other forms of communication," including radios and visible signals whenever possible, consistent with safety requirements.

Because of federal preemption, this is the strongest language we could use. Unfortunately, railroad companies have chosen not to exercise that level of constraint and engage in yard horn blowing on a regular basis.

Railroad Operators in Richmond

- BNSF: juan.acosta@bnsf.com
- "NorCal" (known to FRA as Inter-Rail Management Inc.) fjoliver@interrail-transport.com
- Richmond Pacific
- UP (Union Pacific)

Federal Preemption

Now it turns out that the railroad from Hell, BNSF, is trying to undo the previously approved use of Automated Horn Systems (AHS) – also known as wayside horns -- compliance with the FRA Rules during testing in Commerce City, Colorado. The FRA responded by requiring stricter compliance then before, which would make all AHS inoperable. Including the one recently installed at 34th Street in Richmond CA. (See letter from Quiet Zone Technologies for details<http://www.tombutt.com/pdf/AHS%20Alert%20-%20Regulatory%20Implications.pdf>).

The City of Richmond has responded (See City of Richmond letter<http://www.tombutt.com/pdf/Support%20for%20petition%20Joel-FRA%207-11-13.pdf>), and you can too. You can comment or upload your support letter by going to the following link: http://www.regulations.gov/#!docketDetail;D=FRA-2013-0058. Then next to the line that reads, U.S.DOT/FRA - City of Commerce, CO Waiver Request, hit the "Comment Now" button. Then you can fill out your contact information and upload your letter without having to mail it in.
Subject: TOM BUTT E-FORUM: URGENT - Help Preserve Quiet Zones

You may recall that Richmond Pacific Railroad, our local switching short line railroad, paid for half the cost of Quiet Zone improvements at 34th Street, north of Marina Bay. This would eliminate another horn noise source for Marina Bay and other neighborhoods in South Richmond.

Now it turns out that the railroad from Hell, BNSF, is trying to undo the previously approved use of Automated Horn Systems (AHS) – also known as wayside horns -- compliance with the FRA Rules during testing in Commerce City, Colorado. The FRA responded by requiring stricter compliance then before, which would make all AHS inoperable. Including the one recently installed at 34th Street in Richmond CA. (See letter from Quiet Zone Technologies for details).

The City of Richmond has responded (See City of Richmond Letter), and **you can too.** You can comment or upload your support letter by going to the following link: http://www.regulations.gov/#!docketDetail;D=FRA-2013-0058. Then next to the line that reads, U.S.DOT/FRA - City of Commerce, CO Waiver Request, hit the "Comment Now" button. Then you can fill out your contact information and upload your letter without having to mail it in.

The Commerce City is making a waiver request and we can post supporting comments and letter(s). (See email below with instructions and link). **THE DEADLINE IS JULY 15.**

For recent court cases involving Federal preemption, see:

- http://www.courts.ca.gov/opinions/documents/C072746.PDF
- http://www.courts.ca.gov/opinions/documents/C072746.PDF

Changing the Law

If you are looking for relief from night time train horns, you will have to look to Congress to change some of the power given to railroads that is part of the legacy left over from the robber baron days of the 19th Century, and you will have to look to the California legislature to provide direction to the CPUC.

Federal Law

I urge you to contact your legislators and ask them to sponsor legislation that will:

- Require railroads to use communication methods other than horns while doing yard switching in areas within ½ mile of homes.
- Allow local jurisdictions to enforce Quiet Zone violations.
- Impose a one cent per ton tax on rail freight to pay for grade crossing improvements required to qualify for Quiet Zones.

Office of Congressman George Miller
3220 Blume Drive, Ste. 160
Richmond, CA 94806
Phone: (510) 262-6500
Fax: (510) 222-1306

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Office of U.S. Senator Barbara Boxer
70 Washington Street, Suite 203
Oakland, CA 94607
(510) 286-8537
(202) 224-0454 fax

Office of Senator Dianne Feinstein

One Post Street, Suite 2450
San Francisco, CA 94104
Phone: (415) 393-0707
Fax: (415) 393-0710

California State Law

Ask your legislators to direct the CPUC to:

- Follow Federal FRA rules for use of wayside horns as a substitute for train horns.
- Provide flexibility for private crossings, such as banning horn blowing when private crossings are closed during nighttime hours.

State legislators:

- Loni. Hancock (loni.hancock@comcast.net)
- Terri Waller (Hancock staff) Terri.Waller@asm.ca.gov
- Assemblywoman Nancy Skinner (skinnerforassembly@gmail.com)
- Mark Chekal-Baine (Skinner staff) (Mark.Chekal-Bain@asm.ca.gov)
- Myrick, Jael (Skinner staff), Jael.Myrick@asm.ca.gov

Good Guys and Bad Guys

Who are the good guys and the bad guys?

Good Guys

City of Richmond

The City of Richmond City Attorney's Office, Engineering Division and Public Works have been great, particularly Assistant City Attorney Carlos Privat and Assistant City Engineer Joel Camacho. And don't forget the City Council and city manager who have consistently supported Quiet Zones. However, The City of Richmond Port Department committed to a Quiet Zone on Canal Boulevard in 2008 but has not delivered.

Richmond Pacific Railroad

Richmond Pacific Railroad does not operate at night, and they have funded Quiet Zone Improvements at 34tth Street.

Bad Guys

Federal Railroad Administration

The FRA had been mostly a hindrance but have been sporadically helpful. Leeann Dickson (916-773-0253 or LeeAnn.Dickson@dot.gov) pointed out to the CPUC, "NorCal" (known to FRA as Inter-Rail Management Inc.) and BNSF that California Public Utilities Code 7604, which regulates train horn use at private crossings, does not, in fact, require the type of horn blowing that BNSF and NorCal have been using. The Federal regulation regarding the Use of Locomotive Horns found in C.F.R., Title 49, Section 222.21(a), which establishes the train horn pattern when approaching public highway-rail grade crossings, states: "This pattern may be varied as necessary where crossings are spaced closely together." California Public Utilities Code 7604, which regulates train horn use at private crossings, references Section 222. Ms Dickson pointed out that it will be this "varied" shortened train horn pattern that will now be used along Canal Boulevard, and FRA will monitor for compliance. This has improved but not eliminated the Canal Boulevard problem.

Local Businesses

The following businesses that have private grade crossings or utilize rail service on Canal have been unsympathetic:

- Brenntag Pacific, contact Paul Seffrood, Phone: (510) 970-7535, Email: pseffrood@brenntag.com, Address: 860 Wharf St, Richmond, CA 94804
- National Gypsum, J. P. Burrall – Owner, Tom Nelson - License Tax Manager, (510)233-4874,. 1040 Canal Blv, No email listed: no answer to phone call
- Conoco Phillips, Robert A. Mcelroy- 600a Plaza Office Bldg., Bartlesville, 0K 74005, (510)412-7612, 1300 Canal Blvd, No email listed: no answer to phone call
- BP West Coast Products, LLC, Ronald J. Arnault – Owner, Sir John Brown – Site Manager, 1306 Canal Blvd, No phone or email listed
- Auto Warehousing Co, 1311 Canal Blvd, Richmond, CA 94804-3555, (510) 234-1817steves@autowc.com.

BNSF

The BNSF railroad is nothing but trouble. They have no sympathy whatsoever for anyone afflicted by horns.

UP

Union Pacific grade crossings in Richmond have not received as many complaints as BNSF crossings, but the Cutting Boulevard/Carlson Boulevard crossing is an exception.

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"NorCal" (known to FRA as Inter-Rail Management Inc.)

NorCal operates the automobile operation along Canal Boulevard. They are responsible for the "yard signals" at night.

CPUC Railroad Crossing Funding Programs

The Commission's Rail Crossings Engineering Section administers three funding programs for reducing hazards at highway-rail crossings:

Section 130

The Federal Section 130 Grade Crossing Hazard Elimination Program provides funds to local governments (cities and counties) and railroads to eliminate hazards at existing at-grade public highway-rail crossings.

For more information, contact Bree Arnett at 916-928-2516 or bree.arnett@cpuc.ca.gov

Maintenance Fund

The Railroad Crossing Automatic Warning Device Maintenance Fund provides funds to railroads to pay for the local government's share of the costs of maintaining automatic warning devices at railroad crossings.

For more information, contact Maria E. Cardenas at 916-928-3807 or maria.cardenas@cpuc.ca.gov

Section 190 Grade Separation Program

The Section 190 Grade Separation Program provides funds to local agencies to grade-separate at-grade crossings (crossings), or to improve grade-separated crossings.

For more information, contact (Yen) Ken Chiang at ykc@cpuc.ca.gov or 213-576-7076.

Call for grade separation projects for Fiscal Years 2014-2015 and 2015-2016

In accordance with Section 2452 of the California Streets and Highways Code, the California Public Utilities Commission (Commission) establishes the highway-rail Grade Separation Priority List (Priority List) for grade separation projects by July 1st of each year. The California Transportation Commission and California Department of Transportation (Caltrans) use the Priority List to allocate available funds for the fiscal year (FY) to assist local agencies to finance grade-separating at-grade crossings of city streets, county roads, or state highways or altering or

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reconstructing separations. The Priority List prioritizes funding for qualified grade separation projects.

The Commission issues a new Order Instituting Investigation (OII) every two (2) years, determining the Priority List for the next two (2) FYs. The Commission adopts the Priority List for the first FY by issuing an interim decision before that FY. Subsequently after removing the projects which were funded already in the previous FY, the Commission adopts the revised Priority List for the second FY by a final decision before the second FY.

The Priority List for FY 2013-2014 was adopted in the Commission's Final Decision D.13-06-008, dated June 27, 2013. Local agencies must submit a separate allocation application(s) to Caltrans by April 1, 2014, for qualified projects on this Priority List to be considered for funding. See Appendix 1 of the OII I.11-07-022.

On July 3, 2013, the Commission issued an Order Instituting Investigation (OII) I.13-06-014 for establishing the new Priority List for FYs 2014-2015 and 2015-2016. Interested local agencies must follow the OII I.13-06-014 instructions and submit the nomination forms to Commission staff Ken Chiang no later than Friday, October 25, 2013. It is anticipated that an interim Commission decision for this proceeding, including the approved Priority List for FY 2014-2015, will be issued in May or June 2014. Projects receiving allocations for FY 2014-2015 will be removed from the Priority List and a new ranking, reflecting their removal, will be issued resulting in the final Priority List for FY 2015-2016.

Commission staff maintains a list of basic information about Caltrans funding allocations for Section 190 grade separation projects.

http://www.cpuc.ca.gov/PUC/safety/Rail/Crossings/funding.htm

The Section 130 Program funding will also not be used to fund improvements for the sole purpose of qualifying a local agency to apply for a "Quiet Zone" with the United States Secretary of Transportation pursuant to Title 49 Code of Federal Regulation Section 222 (49 C.F.R 222), or for demonstration or pilot projects.[15]

[15] http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/60157.htm

Appendix A - Federal Railroad Administration

The Federal Railroad Administration (FRA) was created by the Department of Transportation Act of 1966. It is one of ten agencies within the U.S. Department of Transportation concerned with intermodal transportation.

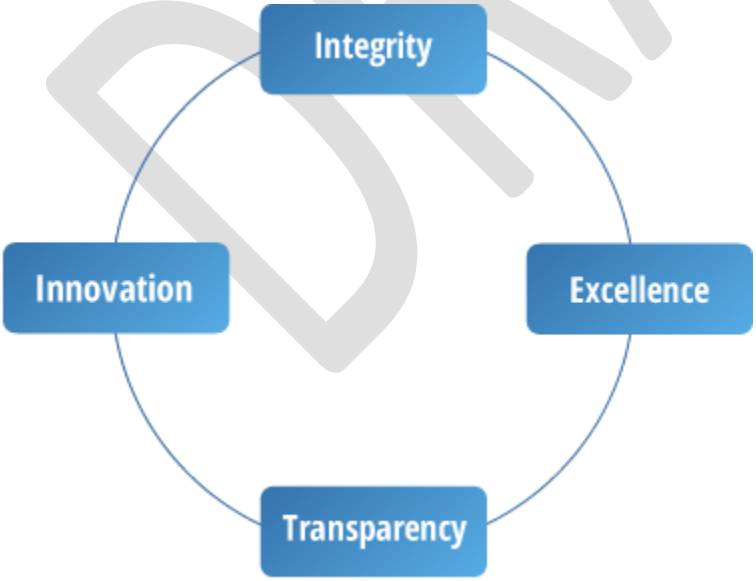
Mission

The Federal Railroad Administration's mission is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future.

Vision

Guiding Principles

We value INTEGRITY; therefore, the highest standards of ethical conduct guide our stewardship of the public's trust and resources.



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We value EXCELLENCE; therefore, we will empower employees to focus time and resources on data-driven, cost-effective solutions that promote FRA mission accomplishment. We seek ongoing development of our knowledge base and skills. We exhibit professional behavior at all times.

We value TRANSPARENCY and accountability; therefore, senior leadership will engage employees in robust dialogue and constructive communication. We will embrace open decision-making. Our reward and recognition system will hold each of us responsible for our performance.

We value INNOVATION; therefore, we will become an enterprising, resilient organization that invests in the future, as it streamlines and improves current operations.

The local FRA contact is Leeann Dickson (916-773-0253 or LeeAnn.Dickson@dot.gov). Other Contcats:

- leeann.dickson@fra.dot.govpatrick.patten@dot.gov
- FRAPA@dot.gov

Appendix B - CPUC

CPUC Authority

A Quiet Zone does not require state approval, and any crossings meeting the safety criteria established by the federal Train Horn Rule will qualify. Although the federal Train Horn Rule does not require state authority to establish a Quiet Zone, RCES is required to receive and evaluate all notices of intent, establishment or continuation of Quiet Zones, and provide written comments. The evaluation requires research and verification of data submitted under the rule, as well as a field diagnostic review of the crossings.

Under the Train Horn Rule, RCES is required to participate in diagnostic reviews of crossings in the proposed Quiet Zone and makes recommendations for safety enhancements in lieu of the train's sounding of their horn. Some crossings will require improvements be implemented before the crossing will qualify for inclusion in a Quiet Zone. Some may qualify as currently configured, however, RCES or the other parties involved in the Quiet Zone review (railroads, FRA, roadway authority) may recommend further improvements be implemented before establishing the Quiet Zone. Cities and Counties decide whether to implement the additional recommended improvements, but the crossing must meet the a number of requirements before a Quiet Zone can be established. These include:

- Federal Railroad Administration Train Horn Rule
- California Public Utilities Commission General Orders
- United States Department of Transportation's Americans with Disabilities Act Standards for Transportation Facilities
- California Manual on Uniform Traffic Control Devices (published by Caltrans)

Where modifications to a crossing are proposed by a local agency, RCES will process the application to the Commission for authority to alter the crossing. Authority to alter existing crossings must be obtained from the Commission, typically through the Commission's General Order 88-B process. For further information, see the GO 88-B web page.

Quiet Zone Contacts at CPUC

Please use the following information to contact CPUC Rail Crossings Engineering Section staff regarding Quiet Zone notices, correspondence, or inquiries.

(1) For **general inquiries** relating to the Train Horn Rule, please contact the **Quiet Zone Coordinator**:

(Yen) Ken Chiang, P.E.
Utilities Engineer
Rail Crossings Engineering Section
California Public Utilities Commission
(213) 576-7076
yen.chiang@cpuc.ca.gov

(2) For **Notices** required under the Train Horn Rule:

Please address a **printed copy** to the Branch Manager and the RCES engineer assigned to that territory.

Please also send **electronic copies** (PDF format preferred) to the RCES Supervisor, RCES engineer, and the Quiet Zone Coordinator. To electronically submit files totaling more than 10 MB in size, please use the CPUC File Transfer site at https://cpucftp.cpuc.ca.gov/

(a) Branch Manager

Daren Gilbert, Branch Manager
Rail Transit and Crossings Branch
California Public Utilities Commission
180 Promenade Circle, Suite 115
Sacramento, CA 95834-2939

(b) RCES Supervisor

Antranig Garabetian, Supervisor
Rail Crossings Engineering Section
antranig.garabetian@cpuc.ca.gov

(c) RCES engineer assigned to the County

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See Rail Crossings Contact Information.

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Appendix C - Richmond Residents Who Have Routinely Complained About Train Horns

- White, Bob, bobwhite234@yahoo.com
- Ann Killebrew aklori@yahoo.com
- suejazz@earthlink.net
- Terry Goode teegoode@aol.com 510-684-3697

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Appendix D - Grade Crossings Maps

FIGURE 3b
Location of At-Grade Crossings

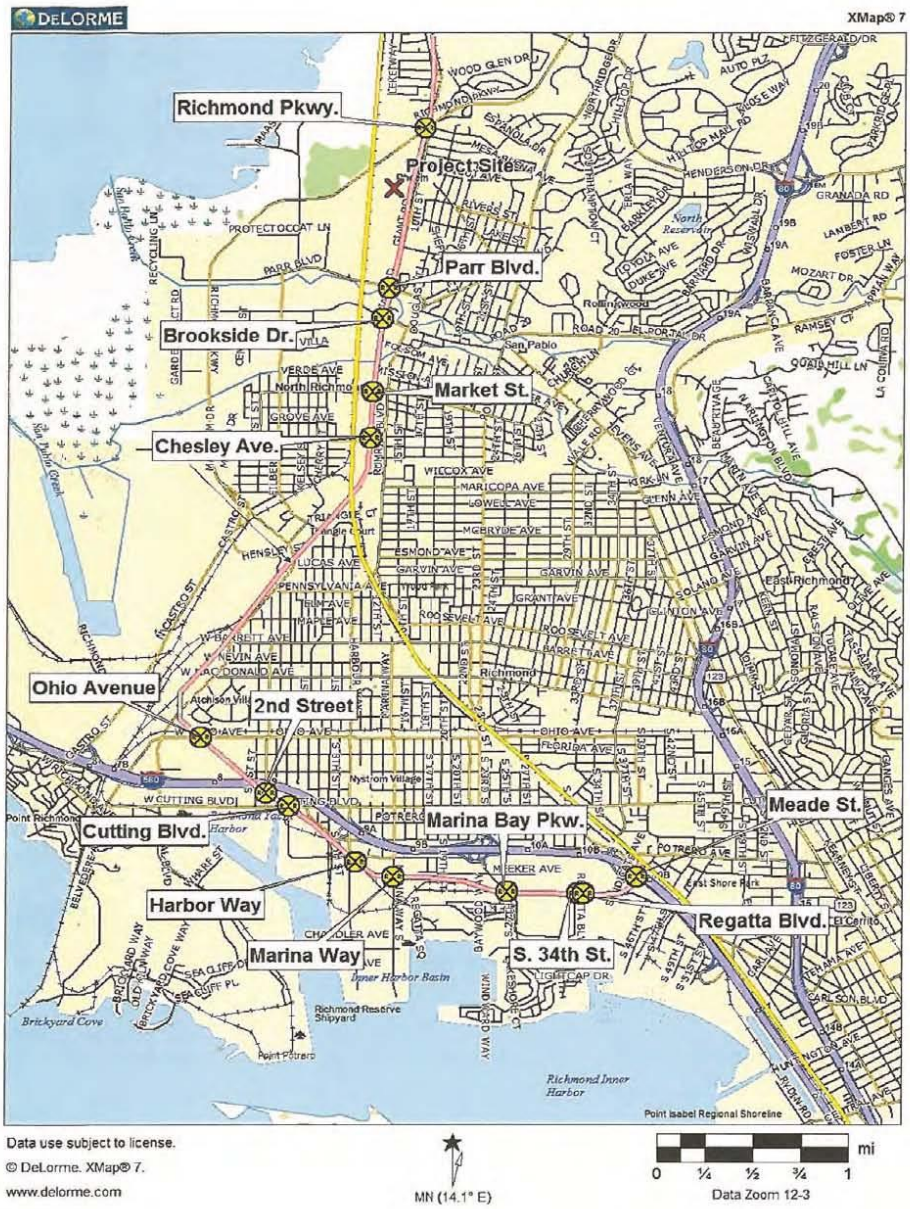

FIGURE 3a
Location of At-Grade Crossings

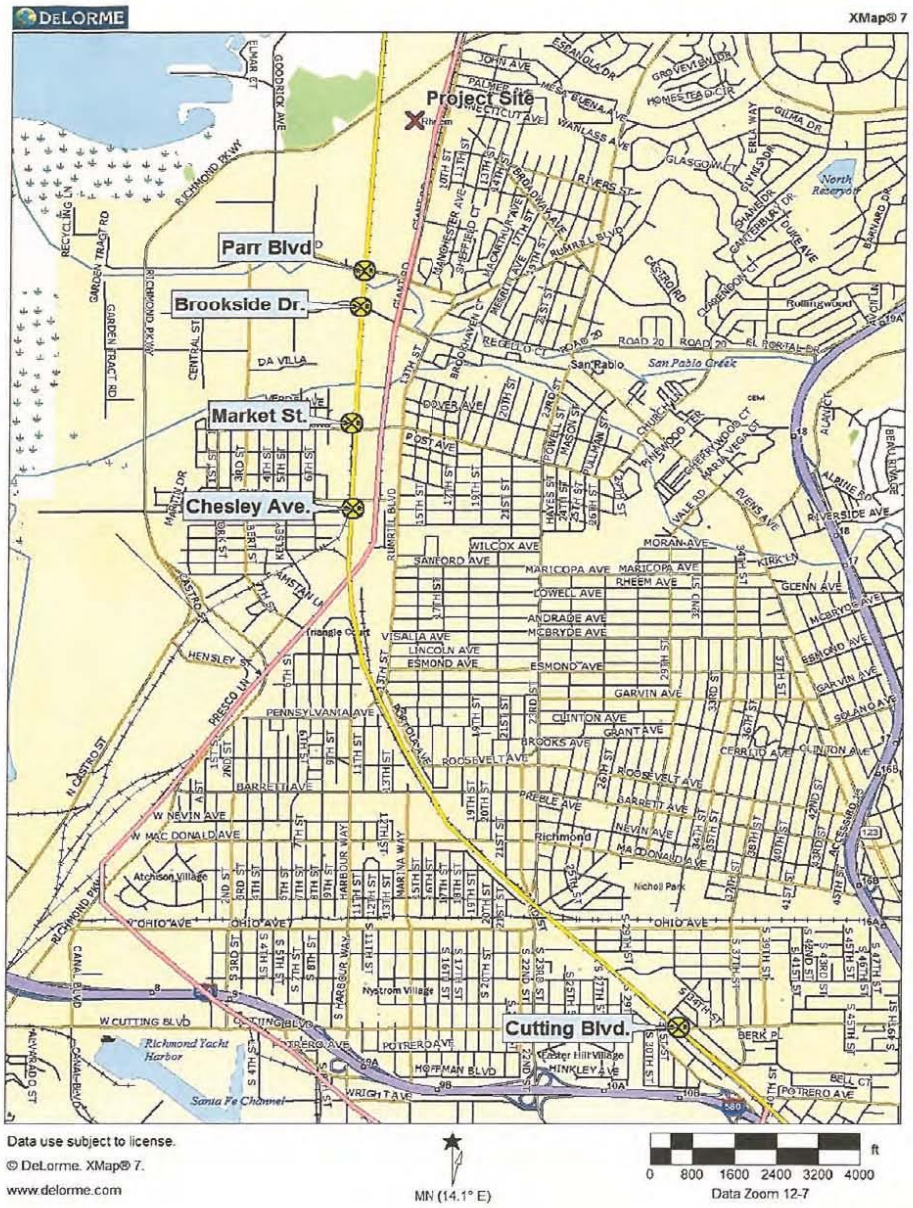
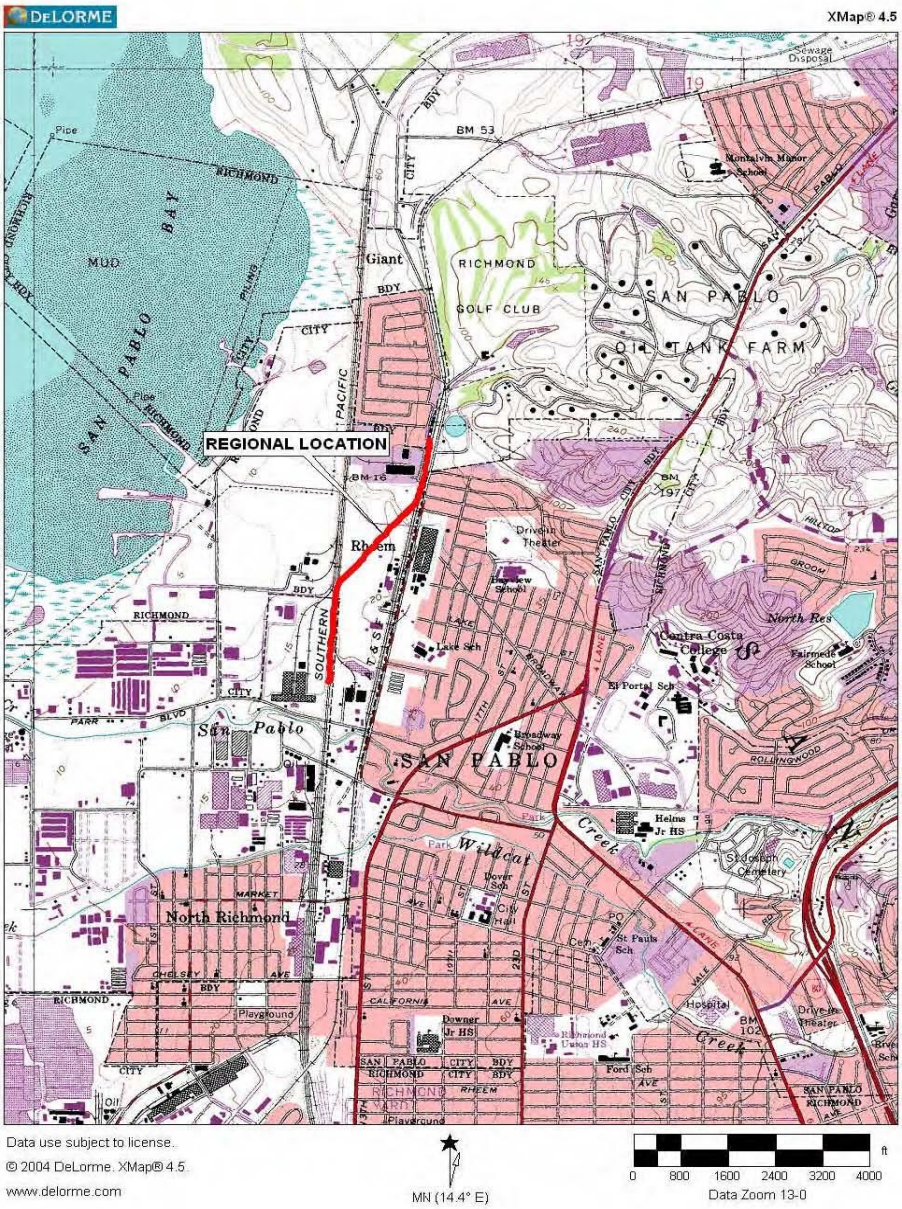
FIGURE 1
Regional Location