

## **Getting the North Bay Back on Track: The Seven Benefits of Rail Service**

by Steve Birdlebough, Chair, Friends of SMART

Rail transportation is the key to future mobility and a more resilient economy in Marin and Sonoma Counties. For some time it has been clear that we cannot solve traffic problems simply by adding lanes to highways. Recognizing this, community leaders asked the State Legislature to create the Sonoma Marin Area Rail Transit (SMART) District in 2002 to restore passenger rail service on the historic Northwestern Pacific right of way between Cloverdale and Larkspur. The SMART Project offers travelers new options in the corridor and reduces the need to bring more cars and parking lots into downtown areas. The entire 70 mile system, with passenger equipment and track upgrades can be operational sooner and with less impact on the environment than widening the highway from Novato to Petaluma.

The return of railroad service to the North Bay will provide seven important benefits to the residents of Marin and Sonoma counties.

### **Benefit One: Get People to Work on Time**

The SMART Train is a reliable way for people to get to work without undue stress during rush hours. Passenger rail service reliably operates on time because it uses a separate right-of-way that is unaffected by traffic congestion. Since the SMART District owns the right of way south of Healdsburg, it can assure that passenger trains have priority over any freight operations. The 40 thousand people in census tracts within half-mile walking distance of proposed SMART stations can ride a train and walk to any one of 40 thousand jobs according to ABAG information. Bus, bicycle, shuttle, and ferry boat connections will give thousands more people a car-free option for getting to work.

### **Benefit Two: Reduce traffic tie-ups on Highways and in Cities**

By serving five thousand of the trips that are now made on Highway 101 each day, the SMART Project reduces traffic pressures that would otherwise exist during the peak commute hours. Five thousand cars would occupy a lane of traffic for over two hours. In the near term, moving these trips to the train will not only shorten the peak periods of congestion, it will reduce the number of people using highways that parallel the freeway. It is worth noting that when a highway is at capacity, even a small reduction in traffic significantly reduces traffic tie-ups. A 5% reduction in peak-hour traffic volumes on a road at 90% capacity can cut delay by 20% or more [source: Rail Transit in America, by Todd Litman October 2004].

Over time, train service will permit more walkable places in cities to be free of heavy traffic. As infill housing and commercial activity makes cities more compact, it will be more efficient to do business on foot, rather than using a car for every errand. Because people with fewer needs to drive are more likely to use transit, there is more road space for those who need to use a car. The presence of attractive transit alternatives calms the effects of congestion and shortens periods of peak traffic flow.

### **Benefit Three: Prevent Intolerable Future Traffic Congestion**

Present projects adding carpool lanes to various sections of Highway 101 may shorten the length of peak congestion in parts of the corridor for a time, but traffic will again worsen as more people move into the region. Within 20 years, Sonoma and Marin Counties are expected to have a combined population that exceeds the 795,000 now living in San Francisco (see table below). The highway right-of-way is nearly filled by the present and planned lanes, and it would be environmentally damaging to continue to add lanes to the freeway, so it is important to develop high-quality transit alternatives and land-use patterns to maintain mobility in the face of such growth.

The SMART Project calls for twelve two-or-three-car trains per day in each direction, operating primarily during commute hours. As demands for service increase, and funding becomes available, the number of daily trains can rise, to over thirty per day using the present track configuration with additional passing tracks. A three car train can carry upwards of 550 passengers, so with fifteen minute headways during rush hour the railroad provides more than the equivalent of a full highway lane of peak hour reserve capacity for the corridor. Where necessary, this capacity can be doubled by installing another track.

The Metropolitan Transportation Commission predicts a 23 % increase in North Bay population over the next 20 years—over 164,000 new residents. It is easy to imagine the traffic that so many additional cars would bring, especially if there were no alternative to driving. The SMART Project is essential to avoid gridlock.

#### **164,000 new residents for Sonoma and Marin Counties**

County	2000	Projected population growth		
		2025	Growth	% Growth
Sonoma	455,305	591,597	136,292	29.9%
Marin	250,402	278,401	27,299	11.2%
Study Area	705,707	869,998	164,291	23.3%

Source: MTC

### **Benefit Four: End the North Bay's Complete Dependency on Automobiles**

It is important for the Region to break out of its near total dependence on automobiles. All of the transportation consultants who have studied the SMART corridor predict that conservatively, about 5,000 riders will take advantage of the train daily in the first twenty years of operation. This shift in travel habits can begin to reverse the North Bay's trend toward ever more vehicles per household, which is costly, unhealthy, inefficient, and environmentally damaging. SMART Trains may well exceed these ridership forecasts, as have many new rail lines:

- **The Altamont Commuter Express**, between Stockton and San Jose commenced in 1998 with a forecasted ridership of 3,000 passengers per day, but ridership kept right on climbing until it exceeded 4,000 passengers in December of 2000, and it was necessary to add a third daily train in each direction. [Source: Cong. Testimony, Oct 2001, Stacy Mortensen]

- **In Salt Lake City**, ridership on the TRAX rail line – now at an average of 20,000 people on weekdays – has exceeded forecasts by 43%. [Source: Utah Transit Authority, 2000; Denver Business Journal 2001/01/26]
- **In St. Louis**, ridership on the MetroLink rail system, with an initial forecast of 12,000 riders per day, actually served 20,000 riders per day in its first year – exceeding the forecast by 40%. After just 8 years, ridership reached the 40,000 level – exceeding the 20-year projection of 37,000. [Source: Bi-State Development Agency, 2000; Citizens for Modern Transit, 2001]
- **Denver's** Southwest LRT extension to Littleton, Colorado opened in the summer of 2000, and by the following year was carrying up to 14,000 people on weekdays – 40% above the original projections of 8,400. [Source: Denver RTD ; Denver Business Journal 2001/01/26]

### **Benefit Five: Grow the Economy While Preserving Open Space**

Train service allows the attractive rural character of much of the region to be complemented with better access to jobs, walkable cities, and homes in every price range.

Efficient train travel during commute hours gives businesses and workers convenient access to an employment market that encompasses the entire corridor—a substantial advantage for a dynamic economy that seeks to match a wide variety of skills and opportunities. The train insures continued mobility in the corridor despite a growing population, and encourages preservation of open space by attracting jobs and housing to the urban areas close to stations. This will continue the historic pattern of development in the region.

The North Bay is fortunate to have several cities, including San Rafael, Petaluma, and Santa Rosa that are ready to capitalize on the compact mixed-use and walkable core areas that developed around the rail service of the early 20<sup>th</sup> Century. Additional infill residential and commercial areas near the Cotati, Novato, and Windsor stations are developing in anticipation of rail service. With voter-enacted urban growth boundaries, and public acquisition of open spaces, the region can remain a very attractive place to live and work. It is important to have rail service in place to help realize the vision that guides these initiatives.

Train stations serve as catalysts for infill housing and walkable commercial zones attractive to a growing number of people in the real estate market who would rather not live in sprawling tract homes. The train will also increase transportation options, giving families the ability to spend less on transportation. Most families spend about one-fifth of their income on automobiles--the largest family budget item next to shelter. A recent study by the Brookings institute details the ways that families can reduce costs by living close to rail stations and relying on transit for routine travel. North Bay employment trends show that many jobs will be in child-care, home-care, security, and retail sales, with entry wages under \$12 an hour. The benefits of compact walkable zones extend to businesses that can reduce investments in parking; to cities that can extend the life of existing street patterns; and to utilities that can save on construction costs.

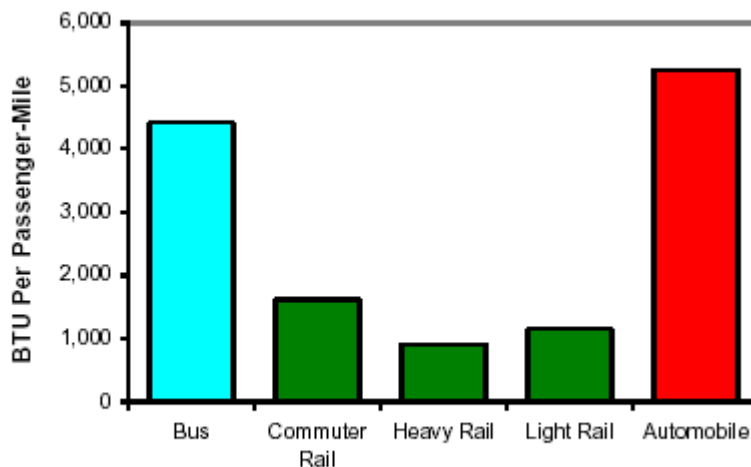
## Benefit Six: Cut Costs, Energy Use & Greenhouse Gas Emissions

Restoring rail service costs much less per mile than building additional freeway lanes. We estimate that residents of Marin and Sonoma counties now spend more than \$4 billion per year on transportation; train service will add less than %1 per cent to these costs. A train also offers substantial operating savings per mile for the transit system, and reduced greenhouse gas emissions.

Restoration of the rail corridor has an average cost of about \$5.5 million per mile, whereas the addition of high occupancy vehicle lanes is costing about \$30 million per mile. In operation, rail service can bring large savings in labor costs, because upwards of 400 passengers can ride on a single train, compared with a 60 passenger bus. In providing quick passenger movement along the corridor, the train can relieve bus operators of the costs of deadheading buses back to local service areas. This is significant because labor costs account for the largest share in the budget of a transit agency. The speed and comfort of a train also saves passengers' time and stress.

As the figure below demonstrates, rail services consume considerably less energy than highway transportation, partly because of the low rolling resistance of steel wheels on steel rails. The SMART Project forecasts a reduction in carbon dioxide emissions of 62 tons per day (Final EIR for SMART Project, p. 4-37).

**Figure 27** Transit Energy Consumption (Shapiro, Hassett, and Arnold)



*Rail travel consumes much less energy than bus or automobile travel.*  
[source: Rail Transit in America, by Todd Litman October 2004].

## Benefit Seven: Improve Service for Bus Riders

Rail service will attract more people to transit, through its speed, convenience and comfort, and bus operators can expand and optimize their services for discretionary users. More intense bus service can permit better schedules throughout the day, to the benefit of all transit users. Cities that establish new rail systems report that transit ridership increases significantly, and overall bus services improve.

Some examples of the impact of rail on bus ridership are:

- **Sacramento** added rail to its transit system in 1987. By 2005 total transit ridership had increased from 14.0 million to 30.9 million—a 120% increase. 61% of trips (18.9 million) are now on RT buses, and other bus lines, as well as AMTRAK, connect with the rail system. (source: Sacramento RT, 2000, 2006)
- **St. Louis**, Missouri implemented its MetroLink rail system in 1993. After rail service began, transit ridership increased by 44%, or 16.5 million riders per year. Prior to the start of rail transit, the St. Louis bus system had been losing about 2.4 million riders per year (source: St Louis Bi-State Development Agency, 2000).
- **Los Angeles** The Southern California Regional Rail Authority (Metrolink) conducted a survey of rider demographics, satisfaction, trip characteristics and travel patterns in 2004. Prior to the opening of Metrolink rail service, 50% of riders drove alone; 27% didn't make the trip at all; 13% participated in car/van pools; and only 8% had been bus riders.

There are good reasons for rail's positive impact on bus ridership as well as on overall transit ridership.

- Rail cars offer a smooth, quiet ride with spacious comfort, including ample seats and leg room. In a recent survey by the North Bay Council 24% of employees said they would prefer to commute by rail if it was available. Many people will ride a bus to connect with the train; others will move into a transit-rich corridor stimulated by train service, and they will find bus service convenient.
- A new trunk line rail service enables bus operators to reallocate their bus fleets to improve branch (cross town/feeder) routes, thus attracting new riders. This is especially true in suburban regions that are difficult to serve cost-effectively with traditional radial bus routes.
- Since the majority of train riders are first time transit riders (i.e., not transit dependent) the overall image of the transit system improves.

Two recent studies point out that nearly four times as many people enjoy riding trains as buses. A survey of employees by the North Bay Council in 2006 found that 24% of their employees would favor commuting by train, whereas 6% would favor using the bus. In a recent UC Davis survey of 1,358 Bay Area respondents, 426 (31.4%) liked commuting by train, and 112 (8.2%) liked commuting by bus. When the neutral and negative opinions of commuters were considered, 966 (71.2%) either liked or were neutral about riding trains, whereas 862 (63.4%) said they disliked riding buses. [See, "When is Getting There Half the Fun?" David T. Ory and Patricia L. Mokhtarian, *Transportation Research* 39A(2-3), 2005, pp. 97-124]

## **Conclusion**

The return of railroad transportation offers fundamental benefits to communities in the North Bay. Train service will enable people to get to work on time and in comfort, it serves as an antidote to traffic pressures, and it can lead to more choices about when and how to use cars, bicycles, and bus services. Trains are also good for the economy and the environment. Like libraries, parks, and water works, trains are an important community asset. It is time to restore this asset in Marin and Sonoma Counties.

## References & Notes

Rail Transit in America, by Todd Litman (Victoria Transport Policy Institute--October 2004).  
ABAG and MTC population information  
Ridership studies by Calthorpe, Wilbur Smith, Schiermeyer, Dowling  
Ace Ridership [Source: Cong. Testimony, Oct 2001, Stacy Mortensen]  
Salt Lake City ridership on TRAX Utah Transit Authority, 2000; Denver Business Journal 2001/01/26]  
St. Louis, ridership on MetroLink Bi-State Development Agency, 2000; Citizens for Modern Transit, 2001]  
Denver's Southwest LRT extension to Littleton Denver RTD ; Denver Business Journal 2001/01/26  
GHG reduction (Final EIR for SMART Project, Ch. 4, p. 4-37).

### CAPITAL COST OF NEW HOV LANES COMPARED WITH RESTORING RAIL

The June 12, 2006 workshop by the Sonoma County Transportation Authority on HOV lane projects for Hwy 101 between Hwy 37 (Ignacio) and Windsor – about 37 miles – showed a total cost of \$1.16 billion, or about \$30 million per mile.

The workshop summarized the costs as follows: two miles between Hwy 12 & Steele Lane in Santa Rosa: \$130 million; 16 miles between Ignacio at Hwy 37 & Petaluma's Old Redwood Hwy: \$587 million; 7.5 miles between Steele Lane & Windsor have a forecast of \$153 million; 4 miles completed between Rohnert Park and Santa Rosa: \$29 million. The Willfred Avenue overcrossing, with less than two miles of HOV lane: \$88 million.

Marin IJ articles on Jn 22, and Jul 13, 2006 state the cost of the 4.5 mile "Gap Closure" project through central San Rafael at \$124 million (\$27.5 million per mile).

No major right of way purchases are included in any of these estimates.

The expenditure plan adopted by the SMART Board states the capital cost of the rail project, including track upgrades and rail cars at \$387 million, or \$5.53 million per mile.

### ANNUAL ESTIMATED COST OF THE MARIN-SONOMA HIGHWAY SYSTEM, INCLUDING VEHICLES

Residents of Marin and Sonoma counties drove about 6.5 billion miles in 2001 according to CalTrans. At an average 50 cents per mile private cost (AAA) and 20-50 cents per mile public cost (Litman), the total would be \$4.6-\$6.5 billion.

About \$4 billion in annual transportation system cost can be estimated from available sources:

New/used car purchases	\$1.470 billion	(Bd. of Equalization: 13.08% of \$11.24B taxable sales in region)
Fuel, oil & maint.	\$736 million	(BOE: 6.55% of region's taxable sales -- service stations)
Auto parts & supplies	\$120 million	(BOE: 1.07% of region's taxable sales -- parts & body shops)
Labor for auto repair	\$120 million	(assume equal to parts & supplies)
Insurance	\$600 million	(CA in 2003 averaged \$821 per car per Ins. Info. Institute)
Parking	\$700 million	(\$3 per car per day [3 spaces] mostly paid indirectly; see Shoup, infra.)
Road Constr. & Maint.	\$250 million	(State subventions, 20% of bldg permits, measures A & M)
TOTAL	\$3.996 billion	

Sales tax receipts for the rail and trail project average about \$33 million per year in current dollars, according to the expenditure plan adopted by SMART—equal to less than 1% of the above total.

The following data is from the annual report of the Board of Equalization  
[http://www.boe.ca.gov/annual/table20\\_04.pdf](http://www.boe.ca.gov/annual/table20_04.pdf)

Taxable Sales 2004	in Sonoma County	\$7.19 billion
	in Marin County	4.05 billion
Total		\$11.24

Statewide, the automotive group accounts for 20.59% of total sales.  
New and used car dealers account for 13.08%  
Service stations account for 6.55%

The department of Motor Vehicles estimates the number of registered vehicles (12-31-04) in  
Sonoma County at 489,817 305,665 are automobiles  
Marin County 243,499 186,832 autos  
TOTAL 733,316

Estimated average California auto insurance expenditure (2003) \$821.11 Insurance Information Institute.  
\$821 x 733,316 = \$602 million  
<http://www.iii.org/media/facts/statsbyissue/auto/>

For parking costs, see Donald Shoup, *The High Cost of Free Parking* (APA 2005) pp. 209, 217. He estimates that there are at least three parking spaces for each vehicle, and that the average parking space cost exceeds \$1.46 per day to operate and maintain; cars are parked 95% of the time on average.