Grant Proposal

for

Personal Rapid Transit (PRT) Crossing of Railroad Tracks

Sunnyhills Neighborhood Association
Winner of the 2002 BRICC Award
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Incorporated: 1997. Gained 501(c)(3) status: 1999

Table of Contents

Executive Summary

Like many American cities, Milpitas is divided by physical barriers that make alternative transportation options challenging. Cyclists, pedestrians, scooter kids, and others discover that railroad tracks, freeways and creeks are barriers to safe and convenient travel. Spanning these barriers using standard steel-and-concrete bridges has become increasingly costly and difficult to site. Nevertheless, America's responsibility to the world community requires that we move away from oil-powered transportation. Finding an alternative, less expensive technology to bridge barriers will support all transportation alternatives.

Instead of a static “dumb” bridge, how about a “smart ferry” that could carry people and their stuff (bikes, wheelchairs, groceries, etc.) safely and conveniently over barriers? People get on at one station and ride to the station on the other side. The “ferry” technology could be Personal Rapid Transit (PRT), a small, light-weight Disneyland-type of conveyance.

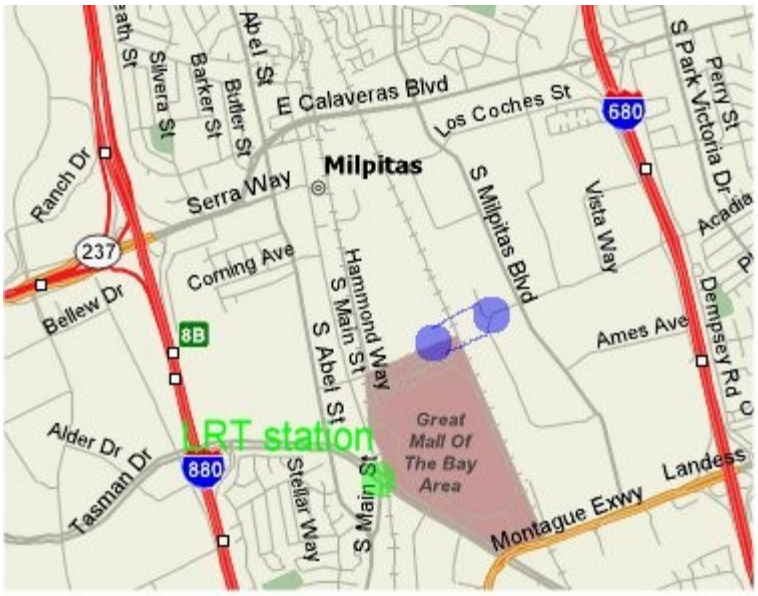
As a first step toward such a PRT “ferry”, this proposed project would create the Environmental Impact Report (EIR) necessary for a crossing over the railroad tracks in Milpitas, CA. To accomplish this $50,000 step, we'll contract with a consulting firm and work with City officials. Once the EIR is written and approved, engineering and construction phases could follow. A successful, cost-effective PRT crossing of the railroad tracks could be replicated elsewhere in the state and nation.

The Sunnyhills Neighborhood Association (SNA), however, is planning for more effective use of PRT technology. SNA is working to create a PRT feeder from their neighborhood at the north end of Milpitas to the Great Mall Transit Center (LRT, buses and future BART) at the south end 3.5 miles away. PRT is a new technology, so it makes sense to “learn as we go” by starting small. A minimal system of two stations with a loop connecting them - a ferry - will allow us to evaluate PRT technology before deciding about expanding the system to service Sunnyhills and the rest of Milpitas. Such a demonstration system will cost less than a standard steel-and-concrete pedestrian bridge.

SNA is a volunteer group of local homeowners and residents of the Sunnyhills neighborhood of Milpitas who work together to improve the neighborhood and the City through various activities and programs. Our mission statement: *SNA nurtures civic responsibility and community service, educates local residents, and bridges cultural gaps so that quality of life, community well-being, and neighborhood cohesion blossom.* Since 1998, SNA has managed over $35,000 in grant funds dedicated to over a dozen projects - winning recognition and a number of awards in the process. Board of Directors members will manage the project in cooperation with City of Milpitas staff.

Statement of Need

Like many American cities, barriers in Milpitas challenge people who use alternative transportation options. The city of Milpitas (pop. 70,000) is sliced up by five north-south barriers: 2 railroads lines, 2 freeways, and a creek. Cyclists, pedestrians, scooter kids, and others discover that these barriers hamper safe and convenient travel within the city. In the southern half of the city, cyclists and pedestrians must choose from only two railroad crossings, neither of which is bicycle-friendly due to adjacent high-speed traffic and lack of bike lanes. Spanning these barriers using standard steel-and-concrete bridges has become increasingly costly in terms of money and time. Finding an alternative, less expensive technology to bridge barriers will support all transportation alternatives.



Both the need for a crossing and the specific location have been identified in three official City documents. The Bicycle Master Plan, Trails Master Plan, and Midtown Plan all called for a bike and pedestrian crossing of the railroad tracks to connect Curtis Avenue with Yosemite Drive. A fully automated Personal Rapid Transit (PRT) "ferry" could provide that connection so people can safely access the Great Mall of the Bay Area (a regional shopping center), the Great Mall Transit Center, and the rapidly developing Midtown Area. **On the accompanying map, the blue dots indicate the general location of the PRT two stations. The green dot shows the LRT station above Main Street.** The Valley Transportation Authority (VTA) previously scheduled $3M for a standard steel-and-concrete pedestrian overcrossing (POC) at that location. Either a POC or a PRT "ferry" will enable:

- workers in the industrial core area (east of the tracks) to
  1) utilize light rail and buses at the Great Mall Transit Center,
  2) access the Great Mall for meals and shopping, and
  3) enjoy the public park near the Curtis Avenue cul-de-sac.
  (The industrial core lies between the railroad tracks and I-680.)
- residents living east of I-680 to safely and conveniently cross the tracks.
- residents living west of the tracks to safely and conveniently cross the tracks to parks, schools and sporting facilities.

The history of this crossing over the past years includes:

- 1996: an at-grade crossing costing $300,000 is investigated but dropped because implacable railroad rules prohibit new at-grade crossings.
- 1998: early estimates of a steel-and-concrete pedestrian overcrossing (POC) run to $2,000,000.
- 2000: VTA adds the POC to their Tier 1 list and allocates $3,000,000 for the project; the City of Milpitas starts conversations with Solectron, owner of the property east of the railroad tracks.
- 2004/5: Solectron's objection to a POC combined with the City's reluctance to pursue eminent domain proceedings leads to consideration of a plan to move the POC southward by 1/3 to 1/2 mile and raise the cost to $5,500,000 - at which point the City abandons the project.
- 2009: After Flextronics buys out Solectron, their staff direct questions about a crossing to the property owner, Westcore Properties. Based on a supportive letter from Westcore, City Council votes to send a letter from the City of Milpitas to the Santa Clara Valley Transportation Authority regarding funding for PRT/ATN (Automated Transit Network) for the Curtis/Yosemite overcrossing.
- 2013: General Plan update proposes an ATN/PRT crossing of the tracks, thus making it eligible for VTA funding.

Why a PRT "Ferry" Rather Than a POC?

Either a POC or a PRT “ferry” would cross privately-owned property which stretches for 1/2 mile along the eastern edge of the railroad tracks. When they owned the property, Solectron management refused to allow a standard steel-and-concrete bridge over their property. Conversations with Solectron representatives uncovered their concerns:

- on-site security: they don't want strangers on their property.
- parking disruption: they're concerned about placement of supporting pillars interfering with parking and traffic flow.
- mischief from above: people throwing things onto their property.
- esthetics: a world-class company needs to project a clean, modern image.

The use of PRT technology for the crossing would resolve all four concerns. For a relatively small cost, the PRT station could be located on public property rather than Solectron property. The widely-spaced supports (every 60 to 90 feet), small footprint, and flexible layout makes it easy to accommodate Solectron's current parking and traffic. Being enclosed in sealed cabs will prevent PRT users from dropping stuff on Solectron's property. The clean, modern look of PRT would enhance Solectron's image.

When the new property owner, Westcore Properties, was apprised of the facts, they sent a letter of support to Councilman Peter McHugh (dated March 2, 2009, www.electric-bikes.com/prt/Westcore.pdf). When Mayor Livengood was presented with both the Westcore letter and another from Supervisor Dave Cortese, he asked the Council to send a letter to the Valley Transportation Authority pointing out that the City

had a PRT project in mind if they have a funding for advanced transit. Council voted to do so on August 18, 2009.

Challenges to a PRT "Ferry" Crossing

The ultimate goal sought by the Sunnyhills Neighborhood Association (SNA) is a PRT feeder from their neighborhood in northern Milpitas to the BART Transit Center (LRT, buses, and BART in 2017) at the South end 3.5 miles away. Such a feeder could enable up to 50% of Milpitas residents to easily access regional transportation without using a car. Because PRT is a new technology, it makes sense to start small. A simple PRT "ferry" using a minimal system of two stations and a loop connecting them could safely "ferry" people over the railroad tracks. It will also allow the residents of Milpitas and the County to see, ride, and evaluate a minimal implementation of PRT to inform their decision about expanding the PRT system to the Transit Center and, ultimately, Sunnyhills neighborhood.

Several concerns have been raised and answered. Here are the top three.

Operations & Maintenance (O&M) costs. Who pays? Who does the work?

Due to automatic, energy-efficient electric drive, operating costs are expected to be minimal. Maintenance costs of a new installation are unpredictable in the short run. Since our "ferry" will likely be an initial site for some PRT company (and possibly their initial test track), it's arguable that the company should absorb all maintenance (and any unexpected operating) costs for the first 10 years. Doing so provides invaluable feedback for the company and rewards the City for being an early adopter. Beyond that time, O&M is so small that it's likely a nominal fee (say $0.25 per crossing) would cover it. Any required subsidies could come from the beneficiaries: VTA, Great Mall, "ferry" users, BART and nearby property owners. If the crossing is expanded into a feeder system, O&M would be covered at the system level.

Security from vandalism. How to keep it from being vandalized?

Installing a motion-sensing and tracking video recorder system will dramatically reduce potential vandalism. The video stream could easily be linked to the police substation at the Great Mall. PRT is a fun and humanizing technology that people embrace, so fewer people will want to damage it. Proper industrial design, already used in other public facilities, will mitigate the small amount of vandalism remaining.

Political Resistance/Reluctance. Who will risk a bet on an "unproven" technology?

The first question political representatives usually ask is "Has PRT been implemented elsewhere?" Even though that question can be answered affirmatively, politicians balk. Even with full funding coming from outside sources, many (or most) politicians and bureaucrats will remain reluctant to try a new technology. Their fear of the new and

unknown seems to magnify the perception of risk. The actual risk is small because 1) most aspects of PRT have already been used in other systems (e.g. Automated People Movers, driveless metros, Morgantown GRT, airport baggage handling, amusement park thrill rides, etc.), and 2) PRT technology has been in public use for two years at Heathrow Airport and Masdar City, demonstrated in the prototypes and test beds of two other leading PRT companies. Time, the urgency of Global Wamring, and growing public support will soon overcome perceived risk.

PRT "ferry" as a Model for Replication Elsewhere

If the Milpitas PRT "ferry" proves cost-effective, it can be replicated as a substitute for POCs across the country. Current estimates place the cost of a PRT crossing at approximately 2/3s the cost of a standard POC. And the need for POCs is large, whether to cross railroads, creeks, freeways, or other barriers.

Milpitas is just one city in the Bay Area that needs a bike/pedestrian crossing. Crossings are also needed in Palo Alto (at the Palo Alto Medical Center) and Redwood City (at Five Points) among others. The need for crossings can be estimated by assuming any community the size of Milpitas (population 70,000) needs at least one barrier crossing (Milpitas needs 5). A California population of over 35 million would project a need for 500 crossings; for a USA population of over 290 million, nearly 4500 crossings may be candidates for replication – or re-use.

Some of the initial ferry projects may be moved to one of those 4500 potential crossings. Many PRT designs are simply bolted together from manufactured parts. After a year or two of use, a City may decide to upgrade or change their PRT technology to another type of advanced transit. Expect some cities to unbolt the existing crossing, sell it off to another municipality, and bolt the new PRT system onto the existing footings.

PRT "ferry" as a Pilot Project for City-wide BART Feeder/Distributor

Although the potential for replication is big, the potential of Automated Transit Networks (ATN) is huge. PRT is the favored version of ATN, which also includes Group Rapid Transit (GRT) with larger vehicles. All ATN systems share these factors: elevated guideways and cabs with merge and diverge ability, computer control for safe 24/7 service, and off-line stations that allow for non-stop transit from origin to destination.

The potential of ATNs to reduce single-occupancy vehicle (SOV) driving is striking. One study indicates that the SOV rate at one high-tech job center could be reduced from 89% to just 45%:

> ABSTRACT: A five-mile, $50M Personal Rapid Transit (PRT) "shuttle" system is proposed for Palo Alto's Stanford Research Park (SRP), complementing and significantly increasing the attractiveness of commuter rail, carpool, vanpool, bicycle, and bus commutes for the center's 20,000 employees. ...

> A complex travel demand analysis was conducted on a sample of suburban employees, of which 89% drive alone. When presented with a hypothetical Year 2008 commute alternative scenario, where PRT solved the "last mile" problem and new mobility services solved specific objections, drive alone commutes dropped to only 45%. Extrapolating to the entire office park, 6,600 cars per day are removed, freeing 50 acres of parking for reclamation, conservatively worth $150M. It appears possible to eliminate traffic congestion and air pollution without lifestyle sacrifice -- a result consistent with the Bush Administration's energy policy philosophy. … The model for Palo Alto plausibly translates to other job-rich major employment centers. (http://www.cities21.org/silver_bullet.htm)

A successful PRT pilot project near the BART station could quickly expand to create a feeder/distributor for that station. Doing so will help validate the strategy of the California High Speed Rail Commission to encourage ATN feeders for their stations. A Milpitas feeder could also help answer the question of whether transportation in suburbia, edge cities and other sprawl areas can become sustainable. At the least, any work done in Milpitas can support the efforts of San Jose to use ATN to link their airport terminals with LRT, Caltrain and BART.

If PRT is adopted at the rate LRT was a hundred years ago, investment in this project could spark a wave of systems across the country within ten years generating benefits totaling tens of billions of dollars.

Project Description

Objectives

Although ultimately ambitious, the first few steps of a PRT feeder between the Sunnyhills neighborhood of Milpitas and the BART transit station are relatively small. SNA proposes starting with a minimal system of two stations connected via a guideway loop. Such a system could safely "ferry" people across the railroad tracks between Yosemite Drive and Curtis Avenue. People get on at one station and ride up and over the railroad tracks to the other station.

As an initial step, this proposed project would create the necessary Environmental Impact Report (EIR) for the PRT "ferry". To accomplish this $50,000 step, SNA will contract with a consultant firm and work with City of Milpitas officials. The EIR will be created in accordance with public law and any specific requirements from the City of Milpitas Engineering Department. The consultant firm proposed to be employed is RBF Consulting (www.rbf.com) which provides professional consulting services including Civil Engineering for Land Development, Water Resources, Transportation, Structures and Public Works. They worked under contract with Sandis Humber Jones (www.shj-ca.com) and the City of Milpitas on a crossing feasibility study at the location of the proposed PRT ferry. Given their prior involvement and their reputation, they should be able to "hit the ground running" and complete the EIR within 6 months after signing the contract. The Draft EIR they produce should easily receive formal approval by the City Council and Planning Commission and become the official Final EIR, clearing the way for engineering.

Once the EIR is written and approved – and funding secured - the engineering and construction phases would follow. The creation of a single EIR, even as a model for railroad crossings elsewhere, is only part of the picture. This EIR will ensure that PRT technology in general does not harm the environment.

Although an EIR is a required first step for construction projects in California, this EIR also serves as the public introduction to PRT. SNA plans to use this EIR as an opportunity to engage the public in a conversation about the future, transportation, and PRT. Without grassroots support, the political challenge to implementing PRT is too great. So, as we progress financially and legally, we must also nurture public thinking.

Methods

An EIR is a technical document generally written by professionals knowledgeable in the field. SNA plans to employ the services of a professional firm to write the EIR. A team of three members of the SNA Board of Directors along with representatives of the City of Milpitas will draw up the contract and monitor its progress. SNA will administer the grant and ensure compliance by the consultant with the terms of the contract. Upon completion of the EIR, it will be presented to the City's Planning Commission and Council for approval - thus clearing the way for engineering studies and funding.

Prior to securing funding for the EIR, SNA will conduct a design charrette for the crossing. A charrette is a dynamic design event at which attendees, with a wide variety of backgrounds, plan and design various aspects of a project. A charrette of the PRT "ferry" over the tracks could include sketches of its appearance, a connection with the adjacent park, discussion of extensions, appearance and siting of stations, etc.

SNA is also securing monetary pledges of support for the EIR. We point out the need and practicality of a PRT "ferry", say that the first step is a $50,000 EIR, that we plan to fund $45,000 from foundation grants, and then ask for a pledge to be redeemed after we secure the $45,000. Three levels of participation are offered: individual ($5), non-profit organization ($20), other organization ($100). At the individual level, over 100 people have already pledged $5 toward the EIR. Our current pledge form can be found in Appendix B.

Upon receiving commitments of a minimum of $45,000 in grant funding, SNA will begin two actions:

1. Contact RBF Consulting to create a contract for writing the EIR, and
2. Contact all the individuals and organizations that pledged to support this EIR; in addition to requesting the pledged funds, inform them of the project's progress and ask support for the next step - a pledge for the engineering study.

Staffing/Administration

As a highly technical document, SNA plans to employ the services of a professional firm to write the EIR. A team of three members of the SNA Board of Directors along with representatives of the City of Milpitas will draw up the contract and monitor its progress. SNA will administer the grant and ensure compliance by the consultant with the terms of the contract. Upon completion of the EIR, it will be presented to the City's Planning Commission and Council for final approval.

SNA will be responsible for financial management, project outcomes, and reporting. The three SNA Board members who will administer the process are:

- Robert S. Means: 20-year career as a systems engineer in the computer industry; 15 years as small business owner, community activist, and transportation expert.
- Guy Haas, technical writer, Board member of Sunnyhills United Methodist Church.
- Bill Ferguson, in addition to community- and work-related roles, was Board President of national non-profit organization. He holds a B.S. in Business Administration.

Volunteers from SNA and other sources will be active in creating the grassroots support for the PRT "ferry". In addition to advertising and conducting the design charrette, volunteers will help generate additional pledges through e-mails, conversations and personal notes.

Travel

We anticipate that the Milpitas City Council will elect to send one of its members to a PRT company on a fact-finding tour. Such a trip to Taxi2000 in Minnesota would run about $1000 and would be an additional expense to ensure that the final EIR is approved by the City Council.

Evaluation

The EIR itself is a collection of findings and results that have, until now, not been gathered. As the first EIR investigating PRT's impact on a wide range of environmental aspects, this document will provide much information needed by other PRT projects in the future. A copy of the EIR will be placed on the Web for instant access from around the world, thus adding to the rapidly growing knowledge base about PRT technology.

Evaluation of the EIR will be conducted by both the Planning Commission and the City Council of Milpitas. Their approval of the EIR will satisfy state law and clear the way for engineering studies and funding.

Budget

This proposed project would create the necessary Environmental Impact Report (EIR) for a PRT "ferry", at an estimated cost of $50,000. SNA will contract with a consultant firm and work with City of Milpitas officials. The consultant firm of RBF Consulting has been working under contract to the City of Milpitas on a crossing feasibility study at the location of our proposed PRT ferry. Given their involvement in this overcrossing project to date, we may be able to negotiate the price of the EIR downward. Also, some of the information required by the firm to complete the EIR may be provided by companies actually working on PRT development. Since an EIR would further their efforts, we expect the information will be made available for free.

Other Support

This grant request will be sent to a dozen foundations in hopes of securing partial funding from at least five sources for the anticipated $45,000 cost of the EIR. We expect that many organizations will find this project attractive because PRT addresses environmental issues, transportation issues, and social equity while also providing a cost-effective solution that can benefit most cities of our nation.

An estimated $5,000 will come from individuals and organizations. As of this writing, 20% of that $5,000 has already been pledged. See Appendix B for a list of current pledges. We also expect support from the Advanced Transit Association (ATRA, www.advancedtransit.org) and “Citizens for PRT”, a volunteer organization that works to educate policy makers and the public about the potential of PRT.

Project Potential

As mentioned above, the ultimate goal of this PRT "ferry" project is to plant the seed for a feeder that connects the Sunnyhills neighborhood at the north end of Milpitas to the regional transit center at the southern end. If the feeder project is realized, then the transportation picture for the entire United States could change.

If an expanded PRT feeder system proves cost-effective, PRT systems could provide cost-saving substitutes for other costlier transportation projects while providing better service and less environmental impact. As a public transportation option, the fundamental shift is from and mass transit stations and big vehicles traveling along corridors with relatively few origins and destinations to small stations with car-sized vehicles traveling in networks between many origins and destinations - like the automobile!

The federal government and many large cities have invested heavily over the past ten years in Light Rail Transit (LRT). To get a feel for the impact PRT can make, consider the service benefits that can be realized for the same costs as an LRT line:

- PRT will provide 10 times as much "walking distance area" versus LRT, i.e. area within one-fourth mile of a station.
- PRT will get you to these areas 2.5 times faster. (If LRT waiting times are taken into account, this figure could be much higher. PRT requires no, or little, waiting.)

America, as the top oil-consuming and greenhouse gas emitting country in the world, bears a responsibility to the world community to move away from oil-powered transportation. In addition to being an environmental issue, our dominant transportation mode creates or exacerbates energy-security issues, health issues, urban planning issues, economic issues, and social issues. Briefly:

- Peak Oil is the point at which half the oil available to pump has been pumped. Several predictions set Peak Oil, that time when the market shifts from a buyers market to a sellers market, around 2006/2007; PRT uses domestically-generated electricity.
- America's dependence on imported oil has led to ill-advised foreign incursions, energy insecurity, and burgeoning balance of trade deficits; PRT reduces the need for oil.
- Most air pollution (and the resulting public health problems) in many newly urbanized areas results from transportation sources; electrically powered PRT is clean.
- Roads and cars consume vast quantities of material resources and impose inefficient use of available land; PRT is very efficient on both counts.
- No existing public transit option serves suburban areas well; according to one study, PRT may be the exception (http://www.cities21.org/silver_bullet.htm).
- With declining public transit service in many areas, PRT promises social and transportation equity to the one-in-three people who can't drive.

It's time to look at a new transit option that promises to be:

- cost-effective
- safe and reliable
- low impact environmentally (energy efficient, resource frugal, small footprint)
- convenient and easy to use
- socially equitable and land-use efficient
- a model that can be repeated in many other cities.

Organizational Information

Sunnyhills Neighborhood Association (SNA) is a volunteer group of local homeowners and residents of the Sunnyhills neighborhood who work together to improve the

neighborhood and the city of Milpitas through various activities and programs. Our mission statement: *SNA nurtures civic responsibility and community service, educates local residents, and bridges cultural gaps so that quality of life, community well-being, and neighborhood cohesion blossom.* Since 1998, SNA has managed over $35,000 in grant funds dedicated to over a dozen projects - winning recognition and a number of awards in the process.

History

Sunnyhills was the first successful racially-integrated community in the United States; it was implemented in 1956 by a co-op of the United Auto Workers. Today, Sunnyhills still has one of the highest levels of integration of any neighborhood in the country.

In 1992, SNA's predecessor organization was founded as the Sunnyhills Improvement Committee to address neglected areas of the Sunnyhills neighborhood. As its original goals were accomplished, the committee's number of participants, scope of issues, and influence grew until a more formal structure became appropriate. Thus, the creation of the Sunnyhills Improvement Association (SIA) in 1994. Through a succession of leaders, SIA accomplished more goals. In 1996, Neil Mackenzie was elected president.

Until his death in 2004, Neil nurtured SNA to become a strong, vibrant community devoted to a livable neighborhood and city. Under his guidance, SIA was incorporated in 1998 under the name "Sunnyhills Neighborhood Improvement Association (SNA)". In 1999, SNA was granted an Advance Ruling granting 501(c)(3) status by the Internal Revenue Service (IRS) under tax Id. number (EIN) 77-0493926; in 2003, the IRS granted SNA full recognition. The Association's 501(c)(3) status enabled it to solicit and secure grant funding in excess of $35,000 between 1998 and 2004 which supported over a dozen projects.

Programs

SNA coordinates the annual "Sunnyhills Music in the Park" series, the monthly "Milpitas Community Breakfast" and various community-building events throughout the year including "National Night Out" and "Sunnyhills International Potluck".

In 2003, the Community Foundation of Silicon Valley and United Neighborhoods of Santa Clara County selected SNA as the winner of the coveted BRICC award for outstanding community service. Over a period of ten years, SNA worked with the city to develop the Hetch-Hetchy right-a-way into a linear park, install traffic calming devices, and invest over $300,000 in improvements to our local park (Augustine Park). Utilizing a committed group of volunteers, we have published and delivered our own newsletter for a decade; currently, the newsletter goes to 2000 residences.

SNA Board of Directors

- Bill Ferguson, 408-946-5096, 862 Rivera Street, Milpitas, CA, 95035-3316, bill@billferguson.org, President

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- Guy Haas, 408-262-5250, 1277 Fallen Leaf Drive, Milpitas, CA 95035, guy@hiskeyboard.com, Member at Large

Conclusion

The potential for PRT is effectively unbounded. Alone among transportation alternatives, PRT promises to reduce air pollution, reduce oil dependency, pay its way, and provide badly needed, reliable, and safe public transit. This project, as a first step toward a PRT "ferry", is also a first step toward a major change in transportation.

Due to the financial difficulties facing the City of Milpitas, outside support is critical. Although proposed in many cities across America, the reluctance of politicized organizations to pursue PRT opportunities has been consistent. Without this non-profit third way, political and corporate interests will continue to ignore and suppress PRT implementations as they have for over 20 years.

Although you may review hundreds of worthy projects, few have the potential to make such huge changes as PRT for our environment, our economy, and our transit-dependent public. If PRT is adopted at the rate LRT was a hundred years ago, investment in this project could spark a wave of systems across the country within ten years generating benefits totaling tens of billions of dollars.

High potential! High probability of success! Your support can make it highly likely.

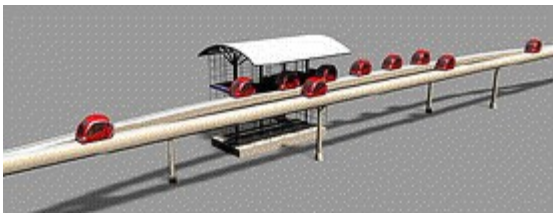
Appendix A: PRT Background

Personal Rapid Transit (PRT) is a revolutionary transit technology that promises extraordinary service that is:

- quicker door-to-door times than using the car or bus
- requires no or brief waiting (cabs wait for you)
- elevated guideways avoid conflicts and danger to auto traffic and pedestrians
- offers a safe and secure ride
- is dependable (fully automated, 24/7 operation)

PRT also requires less money, environmental impact and time to build than other public transit options like LRT or BART.

PRT became practical within the past 20 years due to advances in microprocessors, sensors, telecommunications and software. Instead of using large metal containers to move many people (e.g. a bus or BART train), PRT uses small plastic (i.e. fiberglass) vehicles or "cabs" to move a few people - or a person and their stuff. Cabs ride on an elevated guideway non-stop from origin to destination bypassing all other stations.



Stations are similar in size to bus stops, and can be located at ground level or elevated (with access by elevator). Due to the small size of stations and guideways, a PRT system is flexible and easy to lay out - even in crowded cities. Most times a PRT cab will be awaiting you at your local station. Select your destination and get in. Quickly and quietly your cab leaves the station to merge with the flow of other cab traffic on the main guideway. Since all stations are offline, your cab does not stop until your destination station. There, your cab automatically leaves the main guideway to a parallel station for you to exit. Your cab is now available for use by someone else. Uninterrupted flow and close spacing between cabs are the keys to system capacity, not vehicle size. So a PRT guideway can carry as many people as three lanes of freeway traffic!

Financially, PRT compares favorably with light rail (LRT), electrified rail, subways, and our local BART. PRT offers comparable (or better) service for 1/10 the cost of BART - or 10 times the service for the same price. Environmentally, PRT also excels by being:

- energy efficient (20X less energy used than an automobile)
- resource efficient (less physical material to build)
- quiet (the only moving parts are motors, switches and rubber wheels)
- clean (uses a non-polluting electric drive system)

Rather than adapting existing cities through long-term planning and transit-oriented development, PRT systems adapt to cities – urban, suburban, and “edge” – by using aerial right-of-way over existing streets and corridors. Unlike corridor-type transit systems serving “string-of-pearls” development, PRT matches the everywhere-to-everywhere travel needs of suburban areas. PRT’s ability to overlay existing

development makes it an excellent feeder for, and complement to, existing corridor transit systems that provide regional connections. Because PRT can be easily extended as demand grows, less up-front investment is required.

Most of America depends on the automobile for 80% of its transportation needs. Although cars have opened many opportunities for development and growth, the drawbacks have become quite challenging: increasing congestion, air pollution, run-off water pollution, 40,000 deaths per year, dependency on costly foreign oil supplies, and a major contribution to Global Warming. Meanwhile, effective alternatives are declining or missing altogether: new LRT systems don't attract the projected ridership, declining revenues lead to further reductions in suburban bus service, support for cycling facilities is minimal, and costly ongoing subsidies for public transit drain resources from other public needs.

For in-depth information about PRT, check on the Web at:
http://www.electric-bikes.com/prt-info.html
You'll find links to:

- Various introductions and in-depth descriptions of PRT
- Frequently asked questions (FAQs) about (SkyWeb Express) PRT
- Differing ways to evaluate Personal Rapid Transit (PRT)
- Books on PRT
- How and Why PRT Works
- Comprehensive bibliography of all aspects of PRT design and implementation
- Economics of PRT, where you'll learn that PRT is affordable in four ways:
  - ✓ Affordable to build/construct.
  - ✓ Affordable to operate and maintain.
  - ✓ Affordable to the consumer/user/rider.
  - ✓ Affordable to modify/expand/re-use as needed.

PRT technology will have remarkable benefits for urban residents everywhere. These systems feature a combination of low cost and rider appeal that enables them to be built and operated in many applications with little or no public subsidy. They possess a combination of small land use, low trip time, no direct air pollution, low noise, a high level of safety and reliability, and 24/7 personal service that makes possible livable, high-density urban developments. Thus, these systems can contribute to reduction of urban sprawl. The low cost and small size means that these systems can be deployed much more widely than conventional transit systems in the vast existing low- and medium-density areas of cities. PRT is the next logical step in the evolution of urban transport. It is the essential means for solving a wide range of pressing urban problems for the benefit of urban society everywhere.

Appendix B: Existing Support

Abrar Ahmad
Alex Walker
Alfred (Al) Garcia
Amy Kurian
Andrea Dorey
Aqeel Siddiqi
Bert Porter
Bob Roll
Chellappa Dhanukodi
Colleen J. Swier
David Schymeinsky
Debbie Rankin
Deepka Lalwani
Dennis Murphy
Don Mercado
Fred Zeise
Genevieve Papp
George Berry
Gina R. Hoetert
Herb Holloway
James Madden
Janna Hathaway
Jim Rabe
Joe Nguyen
Kelly Mackenzie
Kurt Heiden
Larry Ciardella
Lena Mackenzie
Linda Rabe
Lloyd Vancil
Mari Mendizabal
Marie Donner
Marta Bermudez
Martha Lamdin
Martha McNulty
Merlan Espiritu
Michael Mora
Mike Boester
Mike McInerney
Mike Mendizabal
Minda Espiritu
Moiz Khan
Nancy Menizabal
Nicole Wilburn
Pablo Rodriguez
Patricia Lakinsmith
Patrick Mackenzie
Paul Dawson
Randall J. Swier
Ray Maglalang
Rob Means
Shaun Teacher
Shauna Wilson
Sheila McMullen
Steve Raney
Sue Davis
Sue Millman
Syed Mohsin
Tayyab Alim
Tom Briseno
Warner Bloomberg
Wiley Rankin
William Sanford
Zeya Mohsin

In addition to this list of 65 pledgers, another 48 wish to remain anonymous.
One person has pledged $500: "I promise to contribute $500.00 after 90% of the EIR funding is secured."