

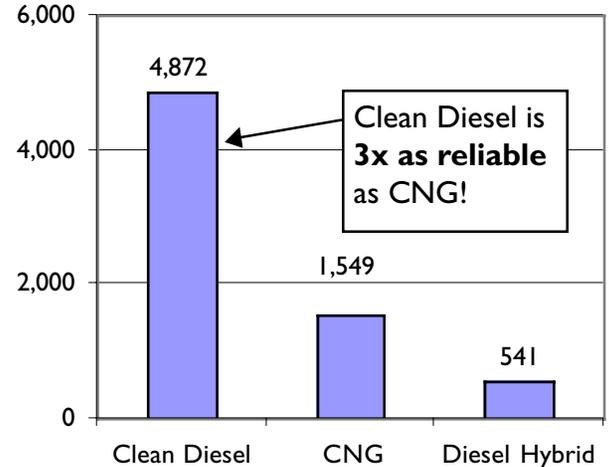
RESCUE MUNI

Transfer

No. 17,
July 2002

CNG vs. Clean Diesel Buses

Distance between
propulsion system failures



Source: Alternative Fuel Pilot Program Initial 6 Month Evaluation Results, Muni Fleet Engineering, Working Draft, May 2002

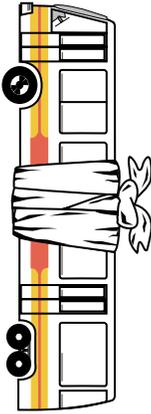
Also: 2002 Survey Results: Muni Earns A "B"

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General Meeting with Muni GM Michael Burns

Also: Ratification asked for
Newsom for Supervisor (2)
Wednesday, July 24, 6 p.m.
SPUR, 312 Sutter, 5th Floor



RESCUE MUNI

P.O. Box 190966
San Francisco, CA 94119-0966
415-273-1558 • www.rescuemuni.org

July 2002
Transfer
The Newsletter of
RESCUE MUNI

CNG Buses: A Mistake
2002 Riders' Survey Results
Ferries and Transit
Car-Free Day
Bus Rapid Transit in LA
J-Church Proposals

RETURN SERVICE REQUESTED

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Steering Committee Digest

Recording Secretary **Howard Strassner** lets you know what we're up to.

In accordance with RESCUE MUNI Bylaws none of the following are RM policy unless consented to by a majority of the RM Membership present at a General Membership Meeting. Endorsement of Candidates or Ballot Initiatives requires a two-thirds vote.

July 15, 2002: Present: Eric Carlson; Dan Krause; Dan Murphy; Howard Strassner; Andrew Sullivan; and David Vasquez. Absent: Charlotte Breckenridge; Joan Downey; Richard Mlynark; and David Pilpel.

Steercom:

1. Alternate Fuels: We voted to oppose any resolution in the SFCTA requiring that Muni purchase alternate fuel vehicles now or at any time until alternate fuel vehicles are as reliable as diesel vehicles. Murphy and Sullivan to discuss with relevant Supervisors. (6-0)

2. Expanding Electric Service: We voted to support a proposal to increase the parking tax to 35% and to use the additional money for to expand trolley coach service. Projects can include overhead wire and TPS/BRT street treatments. (6-0)

3. Endorsement: We voted to endorse **Gavin Newsom** for Supervisor in District

2. All other endorsements will be considered at the General Meeting in September, but this one will be considered on 7/24. (6-0)

4. CAC: We congratulated **Daniel Murphy** on his election as Chair of the MTA Citizens' Advisory Council and noted the continuing need for new members. (6-0)

5. Car-Free Day: We voted to endorse the Car-Free Day proposed for September 27. (6-0)

Excom:

1. General Meetings: The next two General Meetings will be on 7/24 (Burns) and 9/9 (Supervisors' Forum).

June 10, 2002: Present: Charlotte Breckenridge; Eric Carlson; Joan Downey; Dan Murphy; David Pilpel; Howard Strassner; Andrew Sullivan and David Vasquez. Absent: Richard Mlynarik, Dan Krause.

Steercom:

1. Alternate Fuels: We decided the following with regard to the Report on preliminary results form the alternative fuels pilot project. RM urges:

Continued on page 19

Transfer

the newsletter of RESCUE MUNI
July 2002 - No. 17

Editor: Eric Carlson

Designers: David Vasquez, Andrew Sullivan

Contributing writers: Heidi Machen, Collin Maslov, Daniel Murphy, David Vartanoff, Sue Vaughan

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RESCUE MUNI (Riders for an Efficient, Safe, Consistent, Utilized, and Expedient Muni), founded 1996, is a volunteer-run, not-for-profit transit riders' association.

Hotline: **415-273-1558**

www.rescuemuni.org

transitl@rescuemuni.org

Membership Form

We need YOU to help us Rescue Muni.

Join us by mailing this form to P.O. Box 190966, San Francisco, CA 94119-0966.

You can also join online at www.rescuemuni.org.

Name: _____

Address: _____

Phone: _____

Fax: _____

Email: _____

Muni lines you ride: _____

riders in your household: _____

I would like to volunteer! Y N

Membership category:

\$5 Student / Limited Income

\$15 Basic

\$40 Sustaining

\$100 Contributing

Other: \$ _____

Rescue Muni may from time to time publish membership lists *with names only*. May we publish your name only as a member? Y N

Signature: _____

Steering Committee

Chair: Andrew Sullivan

Vice-Chair: Daniel Murphy

Charlotte Breckenridge, Eric Carlson, Joan Downey, Dan Krause, Richard Mlynarik, David Pilpel, Howard Strassner, David Vasquez

Executive Committee

Chair: Andrew Sullivan (acting)

Vice-Chair: Richard Mlynarik

Membership Sec'y: Daniel Murphy

Recording Sec'y: Howard Strassner

Corresponding Sec'y: Eric Carlson

Treasurer: Joan Downey

Coordinators:

Charlotte Breckenridge, David Pilpel, Andrew Sullivan, Dan Krause

Standing Committees

Muni Metro: addresses scheduling and reliability of Muni's light rail lines. Meets second Wed. of every month, 6 p.m., at

SPUR, 312 Sutter, 5th floor (chair: Howard Strassner, 661-8786, ruthow@juno.com)

Service Expansion discusses ways Muni can add service. Meets every three weeks on Wednesdays at SPUR, 6:30 PM; see calendar at left or contact the acting chair. (acting chair: Eric Carlson, 863-5578, ericrescue@hotmail.com)

Other Rescue Muni Initiatives

Membership (chair: Daniel Murphy, 665-4074, daniel@well.com)

Surveys (chair: Andrew Sullivan, 673-0626, andrew@sulli.org)

Any member may form a committee. If it meets at least four times per year, the committee may request appointment of a representative to the Steering Committee, the policy-making body of RESCUE MUNI.

RESCUE MUNI Calendar

Coming events, for the transit activist. If you would like to form a committee or add an event to the calendar, let us know! Updates are on www.rescuemuni.org.

date	event	location
JULY 2002		
7/15, 6 PM	RM Executive & Steering Committees	SPUR, 312 Sutter, 5 th Floor
7/16, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400
7/17, 6:30 PM	RM Service Expansion Committee	SPUR
7/24, 6 PM	RM General Membership Meeting with Muni Director Michael Burns	SPUR
AUGUST 2002		
8/6, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400
8/12, 6 PM	RM Executive & Steering Committees	SPUR
8/14, 6 PM	RM Metro Committee	SPUR
8/20, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400
TBA August	RM Service Expansion Committee	SPUR
	<i>see rescuemuni.org or call 273-1558 for date</i>	
SEPTEMBER 2002		
9/3, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400
9/9, 6 PM	General Meeting (tentative date) with Board of Supervisors Candidates' Forum	SPUR
9/11, 6 PM	RM Metro Committee	SPUR
9/17, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400
9/27	SF Car-Free Day (tentative date)	
TBA Sept.	RM Service Expansion Committee	SPUR
OCTOBER 2002		
10/1, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400
10/9, 6 PM	RM Metro Committee	SPUR
10/14, 6 PM	RM Executive & Steering Committees	SPUR
10/15, 5 PM	Municipal Transportation Agency Board	City Hall, Rm. 400

CNG Buses: Repeating an Old Mistake

The Steering Committee has voted to oppose any requirement that Muni buy compressed natural gas buses. Vice Chair and CAC member **Daniel Murphy** explains why.

In the 1970's, Muni made a colossal mistake: it bought the infamous Boeing-Vertol streetcars. Unreliable and difficult to repair, they caused widespread delay and frustration before being replaced around the turn of the millennium, well before the end of their projected life cycle.

Once again, Muni stands on the precipice of buying vehicles unsuitable to its service needs: this time, the supposedly environment-friendly compressed natural gas (CNG) fueled buses.

Q: Wait a second. Aren't they a lot cleaner than the old diesels?

Sure, they're cleaner than the old diesels. But Muni wouldn't be buying the old diesels. Muni would be buying the new Clean Diesel buses and using ultra-low-sulphur fuel. Compared to Clean Diesel, CNG produces more of some kinds of pollutants and less of others. And there's no clear scientific agreement about which set of pollutants is worse.

Q: I read that the CNG buses are just as reliable as the diesels.

So far, this isn't the case. Muni is doing side-by-side testing, in conjunction with the Institute of Transportation Studies at UC Davis. Preliminary results show that CNG buses break down four times as often as do Clean Diesels.

Q: Four times as often? Will Muni be buying extra buses to pick up the slack when all these breakdowns occur?

Don't bet on it. CNG buses are more expensive to buy and operate than Clean Diesels. So, if anything, Muni will be buying fewer buses or cutting corners somewhere else.

Q: Do the CNG buses perform well on hills?

So far, Muni has found that the buses are barely capable of climbing the hills, under ideal test circumstances. Do we really want to bet Muni's future on buses that can barely negotiate hills?

Q: But don't other cities use CNG buses successfully?

Yes and no. The success stories seem to be small transit systems where the buses aren't run as heavily as Muni's buses. Remember, a lot of mass transit agencies run very little service—not a whole lot outside AM and PM rush—on flat terrain. This seems to be true of CNG's success stories too. We don't think it's fair to compare a small system to Muni, which runs buses all day and night, with lots of stops, and short headways.

Q: But other big urban systems use CNG, right?

The R&D Division of New York City's transit system said CNG buses are only 50-75% as reliable as diesels. And the riders' group there produces a white paper arguing against expansion of the CNG program there.

The transit system in Vancouver, British Columbia bought 50 CNG buses. Glen Leicester, manager of implementation planning for their regional agency



the book

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Send \$12 to: (U.S. check or money order only)
Dan Siegler, P.O. Box 193-556, SF, CA 94119
 For this week's Puni, see:
<http://www.sfweekly.com/comics/puni/index.html>

said, in a letter, that CNG buses “have higher operating and maintenance costs and suffer more frequent breakdowns than diesel or trolley buses” and that the city was now using the buses only on light-duty suburban lines, and that the agency did not plan to buy more of them.

Q: This is all very grim. But isn't Muni testing another alternative fuel solution?

Yes, it is: diesel-electric hybrid. Unfortunately, Muni's testing shows that these are even less reliable than CNG and vastly more expensive.

Q: But we have to do something about air quality, don't we?

Sure. But we think reliability of transit is central to air quality. If Muni service becomes less reliable, fewer people ride it. We saw that in the 1990's. Those people are getting to work somehow; a lot of them are getting into cars, which pollute the air and cause other problems, like traffic congestion, parking issues, etc. The proponents of CNG don't take reliability into account. We think Muni is part of the solution for air quality, not part of the problem. The more people who ride Muni, whether it's running diesel, CNG, hybrid, or electric vehicles, the fewer cars on the road, and the cleaner our air.

CNG is an interesting technology. But it isn't ready for use in system of San Francisco's scope, frequency, and intensity. We fear that the proponents of CNG are trying to leverage the technology on the backs of Muni riders. Adopting CNG technology means building new—and slower—fueling facilities, all of which would become obsolete sometime after 2015, when new air quality standards go into effect, since CNG is not compliant with those stan-

dards, thus requiring Muni to make yet another change in technology.

Rescue Muni believes Muni should not adopt a whole series of radically new, as yet unreliable technologies. We believe the most important thing Muni can do to preserve air quality is to provide reliable service, providing an attractive alternative that gets people out of their cars. To the extent Muni tailpipe emissions matter at all—they are a very small percentage of total diesel emissions in San Francisco—we think they can best be ameliorated with the purchase of Clean Diesel buses and the electrification of existing diesel lines.

Q: What can we do about this?

Write or call your supervisor to tell them you **oppose the purchase of CNG** now.

- Tom Ammiano (president) 554-5144
Tom.Ammiano@sfgov.org
- Jake McGoldrick 554-7410
Jake.McGoldrick@sfgov.org
- Gavin Newsom 554-5942
Gavin.Newsom@sfgov.org
- Aaron Peskin 554-7450
Aaron.Peskin@sfgov.org
- Leland Yee 554-7752
Leland.Yee@sfgov.org
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Matt.Gonzalez@sfgov.org
- Chris Daly 554-7970
Chris.Daly@sfgov.org
- Tony Hall 554-6516
Tony.Hall@sfgov.org
- Mark Leno 554-7734
Mark.Leno@sfgov.org
- Sophie Maxwell 554-7670
Sophie.Maxwell@sfgov.org
- Gerardo Sandoval 554-6975
Gerardo.Sandoval@sfgov.org

Those who cannot learn from history are doomed to repeat it. —George Santayana ★

Thank You 2002 Survey Volunteers!

- | | |
|---------------------|--------------------|
| Adrienne Norton | Jim Browne |
| Andrew Sullivan | Jim Chappell |
| Ariel Parrish | Joan Downey |
| Barbara Hoose | John David Duncan |
| Barbara Mannone | Karen Saylor |
| Barbara McCormick | Karen Tschoe |
| Barbara Roos | Kraig Meyer |
| Bob Sykes | Kyle Pollock |
| Carl Stein | Loralee Hamilton |
| Charles Haletky | M. Sue Turner |
| Chris Wright | Marcus |
| Cliff Hobson | Mark Mackler |
| Collin Maslov | Migi Lee |
| Daisy Yu | Milt Phegley |
| Daniel Murphy | Paul Lewis |
| David Parrish | Peter Ehrlich |
| David Vartanoff | Phil Hoehn |
| Debbie Petroporitos | Ralph Sinick |
| Donna Kuker | Ray Saari |
| Edward Sullivan | Richard Winn |
| Edwin Limonto | Robert Durhame |
| Emma Rosen | Rui Zhang |
| Eric Carlson | Sarah Oitzinger |
| Erica Freeman | Si Wan Ho |
| Farinaz Agharabi | Silke Drechsel |
| Fay Shamansiu | Susan Cable |
| Francis Rigney | Susan Vaughan |
| Frank Levin | Val Menotti |
| Hank Hodes | Walter P. Knoepfel |
| Heidi Machen | Warren McCarthey |
| Herbert Weiner | Wolfgang Heinle |
| J. Burbank | |

Survey Results continued

ous other reliability measures, backed by a merit pay system. By 2004, Muni will be required to provide 85% on-time service; in FY 2002, the standard adopted by Muni was 70%. The improved accountability and better management associated with these service standards also appears to be leading to better service, as measured by our survey.

Traffic: Some improvements in service speed may have resulted from reductions in automobile traffic due to the soft economy. (This reduction in auto traffic also seems to correspond to the reduction in Muni ridership and lower crowding numbers this year.) This is probably not sustainable in future years as the economy is likely to recover; but it does provide an excellent opportunity to Muni and the Department of Parking and Traffic, now under a single director in the Municipal Transportation Agency, to expand transit-only lanes and transit preferential streets to speed up service. **Now** is the time to expand these features, while auto traffic is reduced; this way, when traffic volume increases again, faster transit service will attract more drivers away from their cars.

Conclusion

Muni continues to make good progress in improving reliability, according to the data collected by our volunteers. Four years of improvement have led to Muni cutting delays in half since 1998 - something many would not have predicted in the days of the Metro Meltdown. Muni's workers and management should take credit - but not rest yet! With continued progress on this path, which is very feasible, Muni could earn an **A** grade as soon as next year. ★

Caltrain Join Powers Board voted recently to eliminate the funding for this express service. Under the current schedule, the 80X-81X-82X service will be discontinued late this summer. We resolved: 1. RESCUE MUNI opposes these cuts. 2. Muni should begin the '46' line service connecting Caltrain to the Presidio already adopted as RM Policy 3. Muni should replace the Levis Plaza express with rush hour initiation of the E Line to Pier 39 turnaround. Muni should aggressively seek funding from JPB, the MTC or other regional or extra-city sources to support these important connections for intercounty riders. passed 6-0

3. PCOs in MTA: No action to be taken as attempt to move PCOs to SFPD appears to have lost its momentum. Should it regain momentum we will mobilize to oppose it.

4. CAC appointments: Andrew will contact Ken Niemi re the Hall seat and Bike Coalition re the Leno seat.

5. Transbay Terminal funding: Item 4 on the San Francisco Board of Supervisors Finance committee agenda for the Wednesday May 15 meeting, 12:30 PM in Room 263, San Francisco City Hall is an item that would take money meant for the Transbay Terminal EIR and reappropriate it to other purposes. We resolved "RM opposes defunding of the Transbay Terminal EIR because we support this project." (6-0) D KRAUSE to write)

6. Proposed car-free day: Susan Vaughan invited to speak at General meeting re this and to write a 200 word piece in TRANSFER. Contacted by Eric, 9PM 3/13/02. By consensus.

7. Metro Committee: did not meet.

8. Service Expansion Committee: Steercom voted to adopt Serv. Exp. comm resolution re Geary alignment: We endorse subway to Laguna Portal, surface or elevated rail with as much grade separation as possible with absolute pre-empts at all intersections where there is no such separation, to Presidio, Under Masonic hill. Dedicated right of way with pre-empts to Point Lobos. We endorse and recommend the Pine street spur from Stockton sub-

way connecting to embarcadero Station and oppose the proposed Folsom spur. (5-1; not ratified by membership 5/28/02)

Excom

I. General Meeting Tue. 5/28

IA. speaker: Duncan Watry and team: Muni's X plan starting at 6PM - or a bit later) at SPUR.

IB. Survey results announced.

IC. Excom Election announcement - election in July. Committee voted to nominate Messrs Murphy, Carlson, Pilpel and Mlynarik for re-election.

ID Invitation for help with 501(c)4

IE: Car-free day/SF, Invited S. Vaughan to speak. (we envision a GM w/ M Burns in July and a candidates forum in early Sept.)

IF Approval of pending motions / positions by general membership.

2. 501(c)4 - need new volunteer to continue this task. ERIC pursuing book from NOLO press.

3. Transportation for a Livable City: RM looking at being a founding member of this group, coalescing with Walk San Francisco and SF Bicycle Coalition about common interests and visions. RM seeks a permanent rep to this group.

4. APTA Grant Application: Andrew et al (Richard?) to write a grant request re advocacy of BRT in an urban setting. Discussion of other areas a grant proposal might take were tabled.

5. Membership: Not much news. Renewals coming in. Membership recruiter issue on hold - to be discusses w/ BikePac.

6. Survey update - results planned by 5/28 (general meeting)

7. TRANSFER - articles on Survey (Eric). Car Free Day (Sue Vaughan). Article on TLC (Andrew presumably) - forthcoming in next issue. Policy article on the apparent failures of CNG in SF, Vancouver and New York and the future before the CAC and Supes. (Dan Murphy). (You're reading it now!) ★

From Waves to Asphalt: Making Good Connections With Transit

Rescue Muni member and Water Transit Authority public affairs officer **Heidi Machen** discusses what this new agency is doing to improve transbay and regional connections.

Transit agencies tend to be very "self-involved." Such self-involvement is not necessarily a bad trait when you consider that these agencies often are struggling to exist, competing against one another for scarce transit dollars and attempting to maintain levels of service that meet the existing public need. For instance, San Francisco's Municipal Railway boasts of approximately 700,000 boardings per day. With such a demanding internal operation, it's a wonder that various transit agencies ever talk to one another. Yet, transit riders, being the cantankerous sort that we are, are constantly demanding routes that cross county lines; thus, riders must often rely upon more than one transit agency during a single trip. In transit lingo, this requires the interlocking grid of transit providers to offer good "intermodality."

In 1999, the California State Legislature created the **San Francisco Bay Area Water Transit Authority (WTA)** to plan new and expanded ferry service. In its infinite wisdom, the Legislature recognized that ferries could not solve the congestion problem alone, but could be a key ingredient in supplementing the services already available. In short, the Legislature saw the Bay as the last remaining option for moving people from one part of the region to another; but, only a limited number of those anticipated to use ferries would be expected to use ferries would be expected to both live and work along the shore-

line. Thus, as part of its mission, the WTA was tasked with planning transit connections that would serve new and expanded ferry terminals.

Just two years ago, Muni extended its F line along the Embarcadero, conveniently linking ferry terminals at the Ferry Building and at Fisherman's Wharf with the downtown. Few passengers arriving at a destination served by ferry will have a car waiting for them. Thus, passengers alighting the boat at the Ferry Building have long had the bonus of being able to push a button and receive a free Muni transfer good for passage from and returning to the ferry. Translink, the smart card that allows passengers to use one convenient debit card between different modes of transit, is also making its debut on some transit lines, including ferries departing the Ferry Building and some Muni lines. Hopefully, Translink will help to make transit connections more attractive by making them "seamless."

In studying intermodality, the WTA will recommend additional changes to enhance the passenger experience. Apart from giving terminal access priority to bicyclists, pedestrians, and transit, adequate passenger information can reduce the public's anxiety when changing between services. Imagine Nextbus' pilot project with Muni, which provides digital information conveyed electronically on signs and updated through a GPS system carried one step further. A similar service could help passengers

Continued next page

Car-Free Day Comes To SF

Susan Vaughan announces this exciting transit event scheduled for this fall.

San Francisco currently has about 469,000 cars, up nearly 15 percent from January 1996. The operation of these cars is contributing to global warming and geopolitical instability - besides the fact that there is so little space left in our city's 49-square miles that they are inching up onto the sidewalks. In response to the takeover of our city by cars, several groups are working on a car-free day for San Francisco. They hope to hold the city's first CFD this fall, probably on **September 27**. By setting a September date, San Francisco's first car-free day will coincide with two weeks of international car-free events, from September 13 through 27, and European Car-Free Day on September 22. Supervisor Sophie Maxwell, in cooperation with the Department of Parking and Traffic and other city agencies, is spearheading the

planning process.

Car-Free Day's organizers plan to invite people to participate in a grand experiment in which they leave their cars at home and challenge themselves to be car-free for a day. In addition, Maxwell, in cooperation with DPT, is working to close one street to automobile traffic for at least a few hours, possibly Montgomery Street, the Wall Street of the West. The goals of the city's first car-free day will be: 1) to have a successful first year that can be built on in successive years; 2) to expose people to the benefits of going car-free; and 3) to begin to change transportation behavior patterns every day in such a way that car use is seen as less and less necessary. If you would like to be involved, please contact **Sarah He**, in Supervisor Maxwell's office, at 415/554-7670. ★

Ferries continued

navigate the system from ferry to their next mode of transit when arriving at a destination.

While an ideal transit system will likely require some car access, the WTA will include suggested parking management measures in its final plan for expanding ferry service. If the 1998 BART Station Profile Study is any indication, future ferry riders departing from San Francisco will tend to arrive at the terminal by modes other than automobile. Of all BART stations system-wide, those located within San Francisco have the highest percentage - greater than 50% - of passengers arriving at a station via transit, walking or biking. In a

hopeful effort to encourage such behavior, the WTA has imposed parking fees on its ridership projections at every terminal, even when BART has not yet begun charging fees for their parking lots. Car share programs would be assumed at transit stations, and, preferential parking could be given to car/van pool users.

Ferries may not be the final solution to gridlock, but can play an important role when coordinated effectively with other means of transit. Muni and other transit providers that meet the ferry at its various destinations can provide the seamless connection necessary to encourage greater transit ridership throughout the entire Bay Area. ★

Steering Committee Digest continued

a) No vehicle purchase decision should be made at this time.

b) An ongoing Research and Development Program should be established within Muni's Vehicle/Fleet engineering function regarding pollution control and other technologies.

c) Additional testing should be conducted on alternative fuel vehicles including LNG and fuel cell when feasible and a further Report made in another six months.

d) RM should be represented on the Independent Oversight Committee.

e) RM strongly opposes any attempt to force Muni to buy CNG buses at this time.

2. PCL Initiative: RM opposes the Planning and Conservation League initiative and will roll out a campaign of Opposition after ratification by members. (7-0-1)

3. Hastings Garage Project: RM opposes this because the added traffic will adversely impact Muni Lines 5, 19, 31, 47 and 49. (7-1-0)

4. Union Contract Changes: RM recommends rejection of contract changes to union contract because it is not necessary and will have adverse future financial impacts. And, RM requests that MTA vote on a program for the \$3.5 million from the City employee contract changes for some Muni workers. (8-0)

5. Lease/Leaseback Funds: RM requests that MTA set aside a substantial portion of the Breda Lease/Leaseback for a Reserve Fund. (8-0)

6. Fares: RM requests further details before adoption of Short-term experimental Fares. Vote 8-0

Excom:

1. Set General Membership Meeting for July 24 with Michael Burns.

2. Next Steercom meeting 7/8 to include mailing party for Transfer. (Postponed to 8/15.)

3. Transfer Assignments due on to Eric on 6/24: CNG by Dan; Minutes, March to June by Howard; Car Free by Susan Vaughn; Survey Results by Andrew; J-Church Study by Eric; Consent Decree, including M and N study by Howard.

4. Candidates for Excom for election at July Meeting: Eric, Dan, David Pilpel and Richard. Andrew to check on Richard's availability. We may have to change usual meeting date.

5. We set a General Membership Meeting on **September 9**, to include possible endorsements for Supervisors.

6. We discussed possible membership in TLC with SFBC, Walk SF and Car Share. This could provide some financial sponsorship. We may want veto power on future members. We may want veto or no use of RM name on some policies. Andrew and David Pilpel to negotiate possible membership in TLC based on above discussion. Vote 7-1-0

7. We approved Bylaw amendments for July meeting.

a) Reduce percentage for endorsement of candidates and ballot issues from 66.67 to 60%.

b) Clarify membership requirement before voting at meetings to be 30 days. Dan will write detail changes.

May 13, 2002: Present: Sullivan, Murphy, Downey, Krause, Carlson, Pilpel via phone
Absent: Breckinridge, Mlynarik, Strassner, Vasquez (Steercom only)

Steercom

Note: All but item 8 were ratified at the 5/28 General Meeting. Because item 8 was not ratified, it's not official Rescue Muni policy.

1. Parking Charges at BART Stations: the board resolved "We support imposition of parking charges at BART Stations in order to provide critically needed funds to BART to avoid service cuts which would negatively impact BART within San Francisco and could negatively impact Muni operating costs." To be sent to Bart Board and staff, Supervisors, Chronicle, etc. to write: Eric.

2. Muni Caltrain Expresses cut: 80X-81X-82X: The three-county Joint Powers Board that sets policy for Caltrain has been paying the cost of providing bus service on the 80X Gateway Express, 81X Caltrain Express, and 82X Presidio-Caltrain Express service. Due to budget constraints, the

J-Church Recommendations

The Metro Committee has submitted the following suggestions for speeding up service to Muni. **Eric Carlson** explains.

The Rescue Muni Metro Committee has submitted the following proposals to Muni in an effort to improve service in the J line and assist Muni with compliance with its recent consent judgment. The J Line serves not just its own ridership but also serves as a pull in-out route for historic streetcars and the N line; therefore, speed improvements would ripple throughout Muni rail operations.

Balboa Park: Rescue Muni favors eventual reconfiguration of this poorly designed intermodal facility, as indicated in earlier letters.

Glen Park BART: the connections between LRV, BART and Muni bus is lamentable. We are open to new ideas on possible improvements.

30th street Stop/ inbound: we recommend that the LRV stop be moved to the same place as the northbound 24-Divisadero bus, rather than its present location, well around the corner on Church street. Some riders would board either vehicle to head north.

Church Street generally: As Church is a transit-preferential street, we recommend that all 4-way stop signs be replaced with 'treadle stoplights' (activated by weight of cross-Church vehicle) and pedestrian walk-light push-buttons, accompanied by LRV pre-empts, and any proposed future stop sign on Church be implemented with this treadle stop-light / LRV pre-empt model as well.

We cite the following examples of excessive stopsigns which slow Muni to a crawl:

- Day Street (farside outbound stop)
- 29th street

BRT continued

ine a Geary picking up at Powell running non-stop to Fillmore, then non-stop to Park Presidio..Announcements of stops/connections are still random/human rather than automated, but were usually audible. ★

- 27th Street
- Cesar Chavez
- 26th Street
- Clipper Street
- 25th Street
- 24th Street- a busy intersection controlled by a stop sign.
- 23rd Street: the existing signal should have a Muni pre-empt
- 18th Street: inbound pre-empt should be modified so it can be used by all trains.
- 17th Street: no inbound pre-empt is requested, an outbound pre-empt is desirable
- 16th Street: a Vetag activated pre-empt should be installed.
- 15th street: a pre-empt in both directions should be installed.
- Market Street: a roof shelter would be helpful on the outbound island, especially if Muni envisions installing fencing at the inbound island
- Duboce / Church: We hope Vetag signal pre-empts are part of the signals being installed at this intersection. We suggest that green arrows rather than green lights and photo enforcement be used to reiterate and strengthen the no-left-turn policy.

We also support the Green Division Safety Committee JLMB recommendations re repainting clearance lines the entire length of Church street, and we support NextBus at key stops such as Market, 18th Street, 24th street, and 30th street. In all shelters, there should be published schedules. ★



2002 Riders' Survey Results

Collin Maslov discusses Muni's significant improvement in this year's survey.

Every year, Rescue Muni conducts its annual **Muni Riders' Survey**, which is designed to measure Muni's performance from the rider's perspective. This year as in previous years, volunteers recorded bus and streetcar rides, noting how long they waited and how long the trip took. Some volunteers also stood at fixed points and recorded all vehicles that came by. As we have done since 1997, we compared riders' actual waiting times with the headways advertised on Muni's *Street and Transit Map* (posted in all bus shelters) and service bulletins. Riders who waited more than the full headway are considered delayed – this is a fairly liberal measure, but one that is consistent with riders' expectations. We also asked riders to record crowding on a scale of 1 to 5, and whether a vehicle was clean or not.

This year, we are very pleased to report that Muni service quality has im-

proved, for the fourth year in a row. Only **14%** of riders experienced delay this year, down from 17.3% delayed in 2001. Improvement was **fairly consistent**: the reliability of most (but not all) measured lines improved, some quite substantially, and service was better for all modes except historic streetcar. Most improved was the **38-Geary**, which was graded A this year (6% of riders delayed) after being graded C (32% delayed) just a year ago. This year, only 1 of 38 lines with sufficient data¹ was graded D and none of the lines was graded F.

We have listed here Muni's five best and worst lines, and its system-wide score. (This table includes only lines with over 20 responses.) Later in the report, we will provide a list of all measured routes and analyses by mode and time of day.

Methodology

route	% riders late	Grade	change 02-01	2001 % late	2000 % late	1999 % late	Total responses
Total	14.0%	B	-3.3%	17.3	18.9%	25%	2,464
<i>Best five lines:</i>							
47	4%	A	-12.8%	17%	14%		26
49	5%	A	-15.3%	21%	29%	23%	59
38	6%	A	-26.9%	32%	52%	33%	85
2	7%	A	7.3%			19%	34
33	7%	A	-6.6%	14%	8%	12%	44
<i>Worst five lines:</i>							
KLM	35%	D	6.9%	28%	18%	22%	80
L	30%	C	2.1%	28%	28%	26%	63
M	28%	C	-1.4%	29%	25%	26%	59
22	23%	C	-3.7%	26%	21%	22%	85
10	22%	C					26

This survey attempts to measure Muni's reliability from the rider's perspective, with a methodology that has not significantly changed since we began the survey in 1997. For the entire month of March 2002, volunteers recorded how long they waited for the buses and streetcars that they used every day, and a few watched vehicles go by and recorded the headways. This year, **67** volunteers recorded **2,464** separate rides, or **79** per day; this was higher response rate than in 2001, when 1,773 data points were submitted. (See chart on page 13.) We were also able to increase survey coverage to 38¹ lines this year up from 30 lines in 2001.

For each ride, we calculated waiting time and compared it to the frequency advertised on Muni's *Street and Transit Map*, posted at most stops.² We calculated the percentage of riders delayed, the average waiting time, and the average *normalized waiting time* - waiting time over advertised frequency - for each line. For data collected by watching vehicles go by, we used a system of weighted averages to calculate these metrics for a hypothetical rider arriving at random.³

In addition, we were also able to assign riders to *groups* of lines, which more accurately reflects their experience; a rider from Powell Street to Haight and Masonic, for example, has a choice of four lines (6, 7, 66, 71). For

riders who could choose from groups of lines, we calculated a segment headway reflecting the frequency of *all* vehicles passing the stop, assuming even distribution, subject to a minimum headway of three minutes.

Based on these data, we calculated results for the system as a whole and the 38 lines for which we had 20 or more data points. In addition, we calculated the results for each mode (streetcar, metro, diesel, electric) of service and for various times of day. We assigned our letter grades based on the percentage of riders delayed, and we compared these with survey results from previous years.

We also asked riders to measure *crowding* on their ride based on a scale of 1 (empty) to 5 (crush-loaded), as well as *cleanliness* (clean/not clean).

Key Findings

Systemwide Performance: Muni's systemwide performance improved significantly from 2001 to 2002. As noted above, **14% of riders experienced a delay** in the 2002 survey, an improvement of 3.3 percentage points from 2001. In addition, compared to the results of previous surveys, Muni's performance continues to improve for the fourth straight year; with number of delays cut almost in half since 1998, the year of the infamous Muni Meltdown. This earned Muni a **B** for overall performance, its best grade yet. (See chart on page 10 for results since 1997.)

¹ 38 lines had more than 20 responses to our survey this year, our standard. An additional 33 had between 10 and 20 responses.

² This map is the most widely distributed system guide for Muni, though it does not contain its most complete schedules.

³ To accurately assess the probability that a rider arriving at random will be delayed, we weighted the probability that a rider would be delayed in a particular monitored interval by the length of the interval (or, more precisely, the ratio of the interval to the total time in which that bus or streetcar was monitored).

Bus Rapid Transit in LA

Service Expansion and Metro Committee member David Vartanoff recently visited Los Angeles and has some comments on the innovative new transit service there.

In both Rescue Muni's Phased expansion plan and Muni's own "X-Plan," Bus Rapid Transit is the major mode for near term improvements. While Rescue Muni has published some suggested 'standards for BRT' it is worth looking at BRT as it is being rolled out at California's other major transit providers — AC Transit and the Los Angeles County Metropolitan Transit Authority (LA MTA).

AC has been moving very tentatively and slowly to upgrade the San Pablo Ave "Corridor". The low floor buses with a special green paint job have been deployed for two years and the NextBus predictor more recently. A visit to NextBus real-time website shows a very sparse service. The bus shelter predictors are at a very few locations (two BART stations in El Cerrito) and new shelter (AC removed all bus shelters in a rider hostile economy move several years ago) deployment is similarly slow. No exclusive bus lanes have been created yet so the routes are essentially still mired in traffic but in a new paint scheme. While Muni studies/plans 'Bus Rapid Transit' LA's MTA has been getting favorable press for its two routes. The LA Times has profiled a street 'inspector' assigned to keep the buses moving, and more recently praised MTA for improving bus stop signage and schedule information. (Erroneously, the Times reported that 22% of SF bus stops have schedule info posted apparently mistaking maps for schedules).

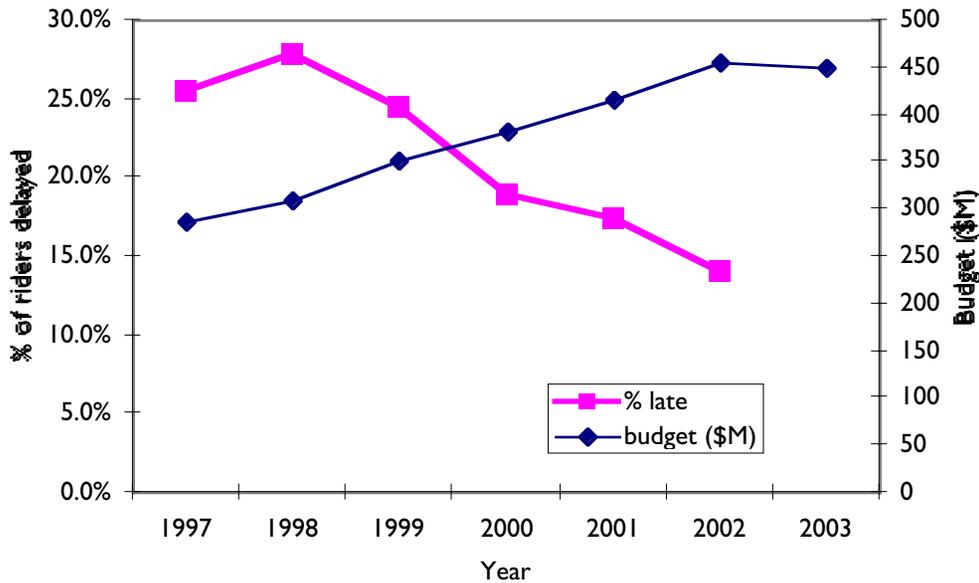
On a recent trip south I had a chance

to check out the Wilshire *Metro Rapid* route. My host lives very close to the La Brea stop making it the route of choice for trips to several different areas.

Painted a distinctive bright red, the fleet of low floor buses stop only at special bus shelters each equipped with a map, headway data and an electronic arrival system like NextBus. The bus shelters are minimalist roofs without walls, and in my limited sample relatively graffiti free. Over the several days, the predictor signage mostly worked well, although occasionally displaying either nothing or gibberish. But the buses arrived, and I rarely had a wait longer than the advertised. Often they were in clumps of two or three — crush loaded. Fares are still collected the old fashioned way - no POP, no ticket vending machines at the stops. Loading was slow as few riders had any sort of pass. Ticket Vending Machines at "Red" Subway stations connecting to the Rapid Bus sell tickets at below ground fare mezzanines although I saw no-one using them for bus fares.

BRT theory is supposed to include signal priority/preemption but I could not detect any such effects. Ironically, the buses seemed to operate best in the stretches of low density traffic (d'oh) and be slowed down just like any other in heavy traffic. (Wilshire seemed empty compared to the parallel freeway, or Geary for that matter.) The buses did not have any special lanes, but managed to move along well. Distances between stops are long - imag

Budget / Reliability



credit for the improvements, in our opinion:

Budget: Muni's budget has grown significantly in the last several years, well ahead of the rate of inflation. In part this has been a recovery from years of underfunding; however, the increased operating dollars have clearly made a difference in Muni operations. (See chart on previous page for a comparison of Muni reliability to funding levels.)

However, in fiscal 2003, Muni's budget will actually be slightly below 2002 levels, due mostly to the poor economy. Muni's challenge in the next year is to continue to improve service reliability despite these more challenging economic times.

Fleet Replacement: One of the major improvements to Muni over the last several years has been the replacement of its old, worn-out buses and streetcars with modern equipment. This year, for example, all light rail ser-

vice was run with Breda streetcars instead of the older Boeings. In addition, major improvements are observed on the diesel bus lines, which have benefited from the replacement of more than half of their vehicles and are scheduled to have the rest replaced in the next couple of years.

The improved reliability resulting from the acquisition of new diesel motorcoaches is one reason why we are opposing any requirement that Muni purchase compressed natural gas (CNG) buses. In Muni's recent tests, CNG buses have been shown to be much less reliable than new Clean Diesel (diesel with particulate filter) vehicles; we are very concerned that this improvement in service quality might be lost if Muni is forced to implement this less reliable technology.

Service Standards: Proposition E (1999) set mandatory standards for on-time service, service delivery, and vari-

Continued on page 21

Table 2: Most and least crowded lines

Least Crowded:

Route	Avg Crowding
17	1.25
28L	1.38
K	1.50
12	1.70
28	1.96

Most Crowded:

Route	Avg Crowding
31AX	3.92
30X	3.23
47	3.12
KLM	3.03
N	2.99

Even as overall reliability of the system improved, the average rider's **waiting time** increased from 76.4% to 81.0% of the official posted maximum wait time. Ideally, average rider's wait should be around 50% of the posted time. (See chart on page 13 for results since 1997.) One possible explanation for this paradox is that there are fewer buses and streetcars that come in groups all at the same time. Another explanation could be that people did not record buses that came right away. If the latter explanation is correct, the actual performance of Muni was even better than what is reported in the survey.

Muni vehicles were much **less crowded** this year than the year before. The proportion of riders reporting seats available (1-2 crowding rating) increased from 40% in 2001 to over 54% this year. (See chart on page 13.) It appears that several factors were responsible for reduction in crowding. On the supply side, additional vehicles purchased by Muni, as well as better on-time performance surely helped in

making more buses available. But we believe that crowding was even more influenced from the demand side, where softer economy with fewer jobs reduced the number of riders.

Overall, the **cleanliness** of Muni vehicles has improved slightly with 20% of vehicles being dirty (21% of vehicles reported to be dirty in 2001). However, when broken down by the modes, the results show that only metro (light rail) vehicles improved, while all of the other modes became dirtier. The improvement in cleanliness of the metro vehicles is probably due to the discontinuation of use of old Boeing cars. Some routes were quite dirty, however; see table 3 for details.

Performance by Mode: Muni's performance continued to vary by mode (route type) and time of day, but less than it had in previous years. This continues a trend of improvement in consistency that began in 1999; Muni is clearly less random in its performance than it has been. This year, all of the modes were graded **B**.

Express and light rail (metro) lines experienced the most improvement in

Table 3: Cleanest and dirtiest lines

Cleanest:

Route	% clean	grade
28	100%	A
31 AX	100%	A
1	98%	A
30	96%	A
14	93%	A

Dirtiest:

Route	% clean	grade
2	11%	F
12	33%	F
K	57%	F
10	59%	F
38L	60%	F

2002 Muni Riders' Survey: Complete Results

route	Total resps	% late	grade	chg 02-01	avg wait	norm avg wait	avg crowd†	% clean	clean grade	2001 %late	2000 %late	1999 %late	*
Total	2464	14.0%	B	-3.3%	0:08	81%	2.94	79%	C	17.3%	19%	25%	
47	26	4%	A	-12.8%	0:04	53%	3.12	72%	C	17%	14%	40%	
49	59	5%	A	-15.3%	0:04	53%	2.90	76%	C	21%	29%	23%	
38	85	6%	A	-26.9%	0:05	67%	2.47	70%	C	32%	52%	33%	
2	34	7%	A	7.3%	0:15	87%	2.35	11%	F	0%		19%	
33	44	7%	A	-6.6%	0:09	53%	2.12	80%	B	14%	8%	12%	
6	81	9%	A	4.6%	0:09	68%	2.17	86%	B	4%	18%	21%	
N	419	10%	A	-5.5%	0:06	65%	2.99	87%	B	16%	20%	23%	
28L	22	10%	B		0:11	101%	1.38						
JKLMN	56	11%	B	1.1%	0:01	54%	2.63	68%	D	10%	15%	20%	
71	49	11%	B	1.3%	0:11	96%	2.26	83%	B	10%	29%	23%	
I	44	11%	B	-1.4%	0:02	45%	2.95	98%	A	13%	24%	28%	
30X	35	11%	B	-9.4%	0:03	58%	3.23	88%	B	21%	0%		
31AX	26	12%	B	-38.5%	0:05	55%	3.92	100%	A	50%			
12	22	12%	B	-5.1%	0:10	91%	1.70	33%	F	17%			
K	22	12%	B	-7.7%	0:10	68%	1.50	57%	F	19%	4%	32%	
44	50	12%	B	4.2%	0:07	47%	2.31	86%	B	8%	10%	25%	
7	53	12%	B	12.4%	0:12	101%	2.38	86%	B	0%	38%	50%	
9	65	13%	B	-1.5%	0:10	98%	2.15	79%	C	14%	5%	31%	
43	39	13%	B	9.9%	0:10	90%	2.21	92%	A	3%	12%	26%	
F	84	13%	B	4.3%	0:09	99%	2.54	91%	A	9%	21%	11%	
28	28	14%	B	14.5%	0:11	98%	1.96	100%	A	0%	8%	21%	
38L	45	15%	B	-10.1%	0:06	116%	2.42	60%	D	25%	13%	35%	
31	53	15%	B	-10.1%	0:12	92%	2.53	77%	C	25%		42%	
24	40	15%	B	0.5%	0:06	47%	2.65	82%	B	14%	17%	22%	
21	68	15%	B	-13.5%	0:11	89%	2.04	71%	C	29%	14%	26%	
17	21	15%	B		0:22	113%	1.25						
J	88	16%	B	-13.1%	0:09	87%	2.67	91%	A	30%	25%	36%	
5	104	17%	B	-9.1%	0:08	110%	2.48	83%	B	26%	12%	16%	
15	21	17%	B	0.5%	0:09	93%	2.28	88%	B	17%		19%	
30	48	18%	B	2.6%	0:06	100%	2.09	96%	A	15%	50%	26%	
14	34	18%	B	2.3%	0:06	100%	2.13	93%	A	15%	32%	47%	
29	37	18%	B	7.9%	0:13	84%	2.26	75%	C	10%	18%	40%	
45	39	21%	C	18.8%	0:07	102%	2.00	63%	D	2%	36%	23%	
10	26	22%	C		0:08	72%	2.11	59%	F				
22	85	23%	C	-3.7%	0:09	100%	2.75	62%	D	26%	21%	22%	
M	59	28%	C	-1.4%	0:14	138%	2.13	90%	A	29%	25%	26%	
L	63	30%	C	2.1%	0:14	147%	2.52	80%	B	28%	28%	26%	
KLM	80	35%	D	6.9%	0:05	98%	3.03	91%	A	28%	18%	22%	

† Crowding is on a scale of 1 (empty) to 5 (jammed).

really need to get us a double bus instead of a small one. It would give more room and everyone a chance to have a seat. The 31AX gets really crowded at the first stop and at the last stop before heading home, it's very crowded.

Some riders suggested possible service improvements:

- The K bus service is more frequent, more reliable, and less crowded than the K streetcar service. Keep the buses!!! Or set a streetcar schedule that is like the bus schedule.
- Preempts PLEASE on N line!
- need more J service
- There is no route sign at the Second and Market median stop. Passengers unfamiliar with the routes must ask people for bus info. It has been missing for months.

Some riders commented about the conduct of bus/streetcar operators:

- bus driver talking on cell phone when I got on. Bus # 8138.
- At Van Ness, driver unexpectedly announced, This is my last stop.

Two riders voiced their dissatisfaction with Muni pamphlets, which were available only in foreign languages:

- Why are the pamphlets available in some pamphlet slots on muni vehicles not in English or even bilingual? A lot of the handouts/pamphlets are in Spanish or an Oriental language!! This is ridiculous. Tourists, visitors, English speaking Americans reach for & obtain these passouts and cannot read nor decipher them!
- There are Muni booklets / info available to passengers on vehicles that are in foreign languages only. This I have discovered on many lines of

metropolitan/ downtown vehicles. I don't appreciate my tax dollars going to something I can't read that should be in English.

Others questioned the validity of the survey citing the unusually good performance by the Muni:

- Just want to say that generally, I've waited less time for my buses during the month in which I filled out the Rescue Muni Survey than I traditionally do. I'm not sure if MUNI got much better in March or if it was my imagination, but I usually wait longer.
- Your survey is not valid. This is a time when people are away for Easter, spring break, etc. None of the above data looks normal. Plus I had a feeling that quite exceptionally buses were on time, which is rarely the case. Was this all planned? It certainly creates that feeling.

There were also two comments about inaccuracy of the NextBus and ATCS electronic vehicle-tracking systems:

- J and L train repeatedly announced as due, never arrived. Announcements totally out of sync w/ actual train arrivals.
- Next Bus is wrong 50% of times I've checked, on 22 line...

Even one praising message to Mike Burns, the General Manager of Muni:

- Mike Burns: You've done a terrific job, especially with Muni Metro. Couldn't you add more buses on Van Ness Avenue? Crosstown Travel is still bad, even after my 55 years in S.F.

Policy Implications

Muni deserves commendation for the improvements we have seen in this year's survey. Several factors deserve

Cleanliness by mode

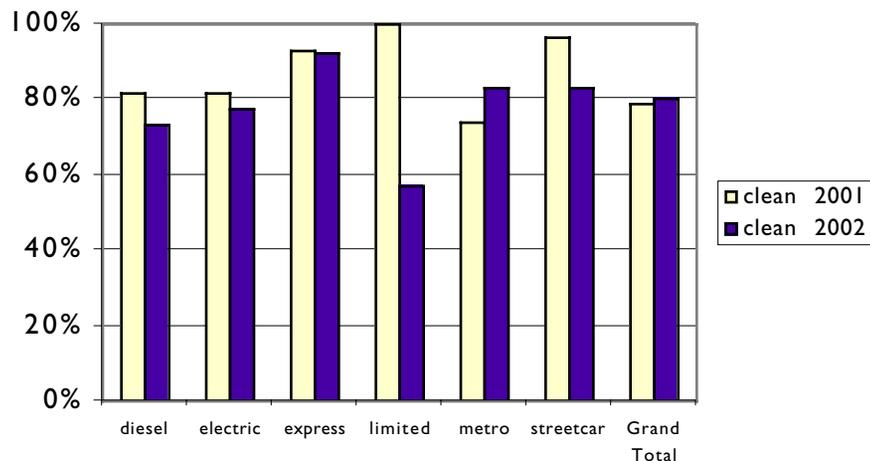


table to compare improvements in reliability between 2001 and 2002. Note, that only the lines with sufficient data (20 or more data points) for both years are compared.

The most noticeable change between 2001 and 2002, when analyzing lines one by one, is that the difference in performance between lines became smaller. This is another evidence of the fact that service became **more consistent**. Most of the lines fall into the **B** category, with the rest of the lines almost equally split between A and C.

Rider Comments

As usual, survey participants were liberal with their comments on Muni performance. Riders commented on a wide range of issues, mainly concerning the reliability, and crowding of the buses and streetcars they took:

- Very pissed about N making us sit there for 20 minutes past midnight, when Caltrain always comes on time, and a lot of people were in sight surging toward the stop.

That 20 minutes pushed me into Owl timing for transfers, and another 20-minute wait late at night. Church/Duboce stop is poorly lit, considering its frequent use at night, next to 24-hour Safeway.

- The situation on the 24 line Saturday (with the long wait) is typical when a bus is either off schedule or missing. The leader will be instructed to turn around at Divis and Sutter. Which is fine for those folks down the line, but leaves us at California stranded. I should know better by now to walk the few extra blocks to accommodate. Oh, how I hate waiting a half-hour for the bus!
- 22 Fillmore line has become increasingly unreliable lately. Long waits. Overcrowded buses, coming 2 or 3 at a time. Before recent weeks, there was more or less a steady flow of buses within a few minutes, with seating available.
- On the ride home (on the 31AX) they

service. Only 11% of riders were delayed on **express** lines in 2002, compared to 17% in 2001. Similarly, 16% of **light rail** riders were delayed in 2002 down from 20% in 2001. But the best service was again by diesel buses - these lines delayed only 11% of riders. Trolley (electric) coach service also improved, but the F-Market historic streetcar, was significantly less reliable this year.

Customers are also getting more consistent performance from Muni regardless of the time of day. This year, only service in the evening rush was graded **C** (20.6% of riders delayed); all other service was graded **A** or **B** with chances of delays in the 7%-13% range. Significantly, morning rush delays were almost halved from 19% in 2001 to under 10% in the current year. Similarly, evening (non-rush) delays were cut from 20% in 2001 to just over 11% in 2002. However, weekend service got worse over the past year, at 19% delayed it is only 1 percentage point away from being graded **C**.

Performance by Specific Lines: This year

about as many lines got better as became worse (21 and 17 respectfully). However, the average improvement was higher than average decline. Hence, overall reliability of the system improved. The biggest improvement was achieved by **38 Geary**, which delayed only 6% of the riders this year compared to 32% just a year earlier. Also, significant improvement was achieved by routes **47** and **49** serving Van Ness corridor. Both lines were graded **A** this year with only 4% and 5% of riders delayed (Last year 47 was graded **B** with 17% of riders delayed; and 49 was graded **C** with 21% of riders delayed).

On the flip side, the **KLM** line (the subway between West Portal and Embarcadero) went from bad to worse increasing delays from 28% in 2001 to **35%** in 2002. Track replacement activities conducted by Muni on portions of K and L lines in March could be partially blamed for this decrease in reliability. However, with good planning and organization these delays could have been avoided.

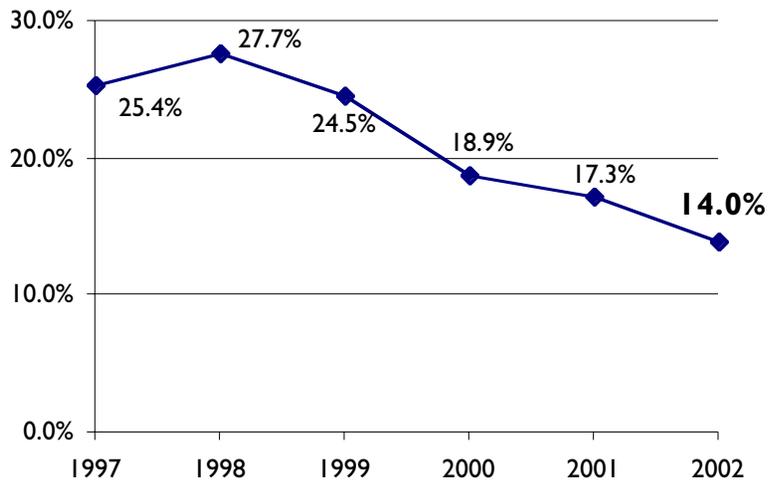
Please see the Complete Results

route	Total resps	% late	grade	chg 02-01	avg wait	norm wait	avg crowd†	% clean	clean 2001 grade	2000 %late	1999 %late	*	
18	16	0%	A	0.0%	0:03	24%	2.69	44%	F	0%	11%	10%	*
90	12	0%	A		0:09	33%	1.25	100%	A				*
108	10	0%	A	0.0%	0:06	25%	3.11	44%	F	0%	0%		*
16BX	10	0%	A	-7.1%	0:01	16%	3.40	100%	A	7%	6%	19%	*
3	14	3%	A	3.3%	0:11	76%	1.46	80%	B	0%			*
31BX	10	10%	A	-4.3%	0:07	62%	3.38	100%	A	14%	10%		*
38BX	16	13%	B		0:03	41%	2.38	81%	B				*
71L	12	10%	B	1.2%	0:06	68%	3.30	100%	A	9%	8%		*
48	18	16%	B	-17.2%	0:13	113%	4.00			33%		26%	*
9x	11	25%	C	25.3%	0:13	113%	2.13	100%	A	0%			*

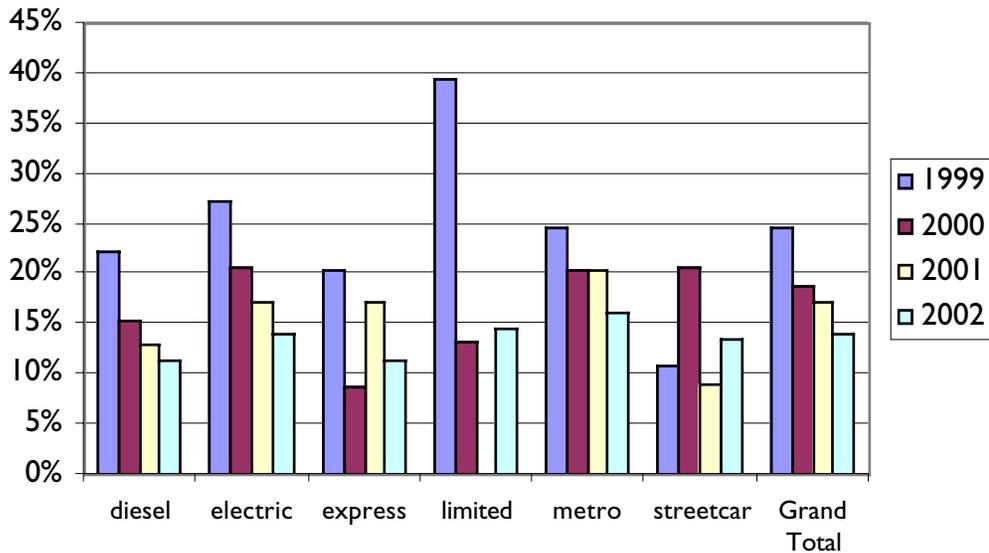
Note: Routes with an asterisk (*) in the right column had fewer than 20 responses; we are reporting them here for completeness, but these results should be considered less accurate than those in roman type.

2002 Survey Results Summary

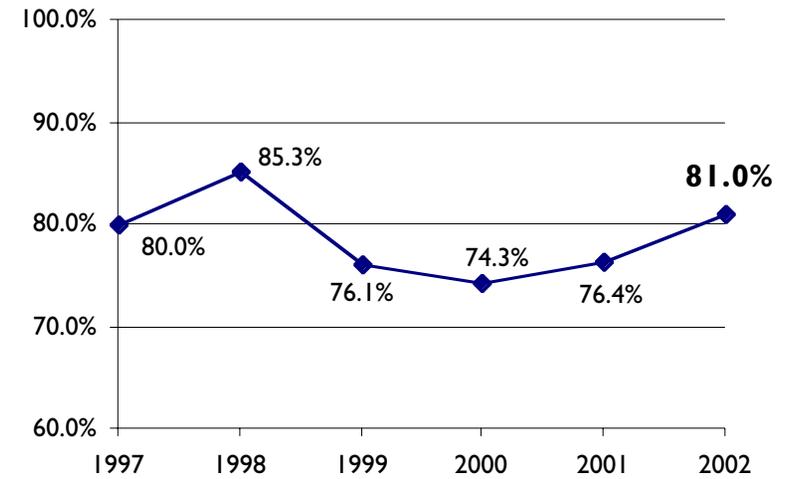
% of riders delayed



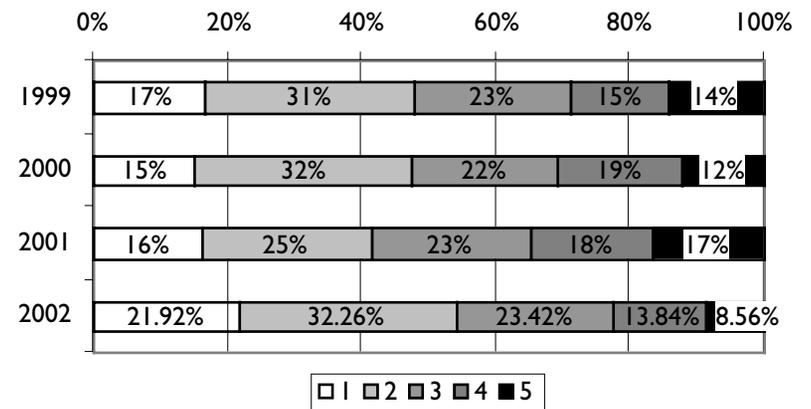
Riders delayed by mode



Normalized wait time (Ideal = 50%)



Crowding 1999-2002



total responses

