



City and County of San Francisco
Civil Grand Jury 2011-2012

BETTER MUNI SERVICE NEEDED, WITHOUT SWITCHBACKS

**AN INVESTIGATION INTO THE
SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY**

June 2012

Superior Court of California, County of San Francisco
Civic Center Courthouse
400 McAllister Street, Room 008
San Francisco, CA 94102
(415) 551-3605

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THE CIVIL GRAND JURY

California state law requires that all 58 counties impanel a Grand Jury to serve during each fiscal year (Cal. Const., Art. I, § 23; Cal. Penal Code, § 905). In San Francisco, the presiding judge of the Superior Court impanels two grand juries. The Indictment Grand Jury has sole and exclusive jurisdiction to return criminal indictments. The Civil Grand Jury scrutinizes the conduct of public business of county government.

The function of the Civil Grand Jury is to investigate the operations of the various officers, departments and agencies of the government of the City and County of San Francisco. Each civil grand jury determines which officers, departments and agencies it will investigate during its term of office. To accomplish this task the grand jury is divided into committees which are assigned to the respective departments or areas which are being investigated. These committees visit government facilities, meet with public officials, and develop recommendations for improving City and County operations.

The 19 members of the Civil Grand Jury serve for a period of one year from July 1 through June 30 the following year, and are selected at random from a pool of 30 prospective grand jurors. During that period of time it is estimated that a minimum of approximately 500 hours will be required for grand jury service. By state law, a person is eligible if a citizen of the United States, 18 years of age or older, of ordinary intelligence and good character, and has a working knowledge of the English language.

Applications to serve on the Civil Grand Jury are available by contacting the Civil Grand Jury office:

- by phone (415) 551-3605 (weekdays 8:00 a.m. - 4:30 p.m.).
- in person at the Grand Jury Office, 400 McAllister St., Room 008, San Francisco, CA 94102.
- by completing an online application (available at <http://www.sfsuperiorcourt.org/index.aspx?page=312>), and mailing it to the above address.

**CITY AND COUNTY OF SAN FRANCISCO
CIVIL GRAND JURORS
2011-2012
(AS OF DATE OF PUBLICATION)**

	Umung Varma, Foreperson	
Helen Blohm	Sharon Gadberry	Mort Raphael
Mark Busse	Ossie Gomez	Jack Saroyan
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Matthew Cohen	Lewis Hurwitz	Jack Twomey
Kay Evans	Todd Lloyd	Gregory Winters
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WITNESSES

With regard to witnesses who provide testimony to the Civil Grand Jury to aid it in its investigation, **California Penal Code § 929** provides that:

As to any matter not subject to privilege, with the approval of the presiding judge of the superior court or the judge appointed by the presiding judge to supervise the grand jury, a grand jury may make available to the public part or all of the evidentiary material, findings, and other information relied upon by, or presented to, a grand jury for its final report in any civil grand jury investigation provided that the name of any person, or facts that lead to the identity of any person who provided information to the grand jury, shall not be released. Prior to granting approval pursuant to this section, a judge may require the redaction or masking of any part of the evidentiary material, findings, or other information to be released to the public including, but not limited to, the identity of witnesses and any testimony or materials of a defamatory or libelous nature.

The intention of the California State Legislature in enacting **Penal Code § 929** is to encourage full candor in testimony in Civil Grand Jury investigations by protecting the privacy and confidentiality of those who participate in an investigation of the Civil Grand Jury.

REQUIRED RESPONSES

California Penal Code § 933(c) provides deadlines for responding to this report:

No later than 90 days after the grand jury submits a final report on the operations of any public agency . . . the governing body of the public agency shall comment to the presiding judge of the superior court on the findings and recommendations pertaining to matters under the control of the governing body, and every elected county officer or agency head for which the grand jury has responsibility . . . shall comment within 60 days to the presiding judge of the superior court . . . on the findings and recommendations pertaining to matters under the control of that county officer or agency head and any agency or agencies which that officer or agency head supervises or controls. In any city and county, the mayor shall also comment on the findings and recommendations. All of these comments and reports shall forthwith be submitted to the presiding judge of the superior court who impaneled the grand jury.

California Penal Code § 933.05 provides for the manner in which responses to this report are to be made:

- (a) For purposes . . . as to each grand jury finding, the responding person or entity shall indicate one of the following:
 - (1) The respondent agrees with the finding.
 - (2) The respondent disagrees wholly or partially with the finding, in which case the response shall specify the portion of the finding that is disputed and shall include an explanation of the reasons therefor.
- (b) For purposes . . . as to each grand jury recommendation, the responding person or entity shall report one of the following actions:
 - (1) The recommendation has been implemented, with a summary regarding the implemented action.
 - (2) The recommendation has not yet been implemented, but will be implemented in the future, with a timeframe for implementation.
 - (3) The recommendation requires further analysis, with an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or head of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This timeframe shall not exceed six months from the date of publication of the grand jury report.
 - (4) The recommendation will not be implemented because it is not warranted or is not reasonable, with an explanation therefor.

EXECUTIVE SUMMARY

A switchback is a tool, according to officials at the San Francisco Municipal Transportation Agency (Muni), used to improve the service times of Light Rail Vehicles (and buses) during the course of their runs. When vehicles become bottlenecked in the system, it creates a logjam throughout the line – “bunching” – where trains follow each other too closely. Taking the “lead” vehicle in the bunch out of service and turning it around enables the vehicle to head back out without having to wait in the traffic jam. Thus, according to Muni managers, it gets more cars out of the way and creates a faster and smoother run for the remaining Light Rail Vehicles and buses. As a result of these switchbacks, riders are told to disembark. Then they must wait for the next train or bus.

The Civil Grand Jury learned that Muni uses switchbacks on 0.03% to 0.06% of all Muni runs. While that number appears small, it represents as many as 14,000 to 31,000 riders a month who are inconvenienced while waiting for a replacement car. Muni management describes problems such as inadequate rolling stock, scheduling snafus, poor utilization of staff, and lack of effective technology as creating the need for switchbacks. Management also claimed that use of switchbacks improves overall system performance and that it is a standard practice among metropolitan transit systems in the United States and Europe. Neither of these claims is supported by facts or evidence. On the contrary, Muni could provide no statistical support for performance improvement as a result of switchbacks, and San Francisco is in the distinct minority in using this practice to reduce delays.

The Jury surveyed a number of other transit systems, some in the Bay Area as well as other American cities, and even Paris, to determine whether these transit systems consider switchbacks an acceptable tool. Our survey found only one other system using switchbacks in the normal course of business. The others felt this practice was unnecessary and disrespectful to their riders.

Lastly, Muni has a room full of high tech equipment intended to monitor the entire system, but it lacks the staffing to operate it. Its communications technology is woefully inadequate to the task of operating its transit components efficiently.

This Jury has concluded that the unquestioning use of switchbacks by Muni is a practice that is antithetical to the goals set for the system in the Charter. Muni executives need to embrace the outlook of other transit system operators who view switchbacks as a sign of systemic failure. Muni must re-examine the many reports, studies, and surveys offered to improve the system, establish a detailed plan for implementation, seriously study other transit systems that have experienced more success even in trying budgetary times, and learn how public transit can be done well.

BACKGROUND

Past Civil Grand Juries have investigated a number of aspects of the San Francisco Municipal Transportation Agency (SFMTA), or Muni, but have never addressed the problem of switchbacks on Light Rail Vehicles (LRVs). According to SFMTA officials, a switchback is a tool used to improve the service times of LRVs (and buses) during the course of their runs. It is used when LRVs become bottlenecked in the system, creating a logjam throughout the line, or “bunching,” where trains follow each other too closely. A consequence of bunching is that long gaps between trains follow the bunch. “Headway” is a term used to refer to the time between vehicles. When the headway is uneven, passengers are left waiting for delayed vehicles. Muni managers have decided to use switchbacks as the primary method for dealing with headway problems. The switchback solution involves identifying where the bunching is occurring, taking the “lead” vehicle in the bunch out of service, and turning it around. This enables the vehicle to head back out without having to wait behind the other Muni vehicles. According to Muni managers, switchbacks get some trains and buses out of the way, thus creating a faster and smoother run for the remaining LRVs and buses. As a result of these switchbacks, riders are told to disembark and wait for the next train.

In January of 2011, Supervisor Carmen Chu conducted a study of switchbacks, including hearings at which riders testified.¹ This study was in response to the public’s dissatisfaction with this practice.² Riders described their shock and dismay when they were unexpectedly required to disembark from a fully functional car. Waiting in a strange area for another car to appear was stressful, especially at night, in inclement weather, and for handicapped riders. There was fear of crime, and many were outraged at the unexpected delay in their trip. In defense of its use of switchbacks, Muni minimized their impact by asserting that switchbacks occurred on only 0.03% to 0.06% of all Muni runs³ and blamed the necessity for switchbacks on many problems it considered insoluble in the near future. Most significantly, their report indicated that switchbacks were needed to overcome delays in the system. Management at Muni did not concede that the riders’ objections were to the practice of switchbacks itself, but rather interpreted rider complaints so as to focus on other elements of related performance: poor communication and announcements, inaccurate destination signs, and excess time for following trains. Management maintained that improving these functions would assuage rider complaints. They also asserted that switchbacks were a common practice employed by all transit systems, including those in Europe, to regulate efficient transit operations.

In October 2011, Muni reported that 200 to 440 switchbacks a month were occurring on LRVs alone.⁴ Given a conservative estimate of 70 riders per double LRV, that accounts for 14,000 to 31,000 riders inconvenienced every month. Being compelled to leave an LRV or bus you boarded with the reasonable expectation it would take you to your regular destination violates the trust between Muni and its riders. It also conflicts with those characteristics Muni

riders have expressed as being most important to them: regularity, dependability, and timeliness. The Jury decided to look further into the problem of switchbacks.

METHODOLOGY AND APPROACH

The Civil Grand Jury conducted fifteen interviews with employees of Muni, at all levels, members of the Board of Supervisors, City Attorney staff, transit bloggers, and Muni passengers. We conducted telephone interviews and exchanged emails with executives of three other Bay Area transit agencies (BART, AC Transit, and Santa Clara Valley Transit) as well as the Boston and Seattle transit agencies to develop facts for a transit comparison. We spoke with one executive of the Paris RER system, who also provided us with statements from managers of the Paris Métro and Bus system and with internal documents on emergency switchback procedures. The Jury reviewed websites, emails, and documents that confirmed switchback policies in these transit agencies. Other documents, including Muni reports and divisional bulletins, studies commissioned by the Office of the Controller, and news articles, blogger websites, and commentary, were digested and analyzed.

DISCUSSION

I. Muni Switchbacks Violate the Spirit of the SF Charter

In 1999, San Francisco voters passed Proposition E (Prop E),⁵ which created the SFMTA to improve the performance of transit service in the City. The overall goals for transit service articulated in that initiative are as follows:

1. Reliable, safe, timely, frequent, and convenient service to all neighborhoods;
2. A reduction in breakdowns, delays, over-crowding, preventable accidents;
3. Clean and comfortable vehicles and stations, operated by competent, courteous, and well-trained employees;
4. Support and accommodation of the special transportation needs of the elderly and the disabled;
5. Protection from crime and inappropriate passenger behavior on the Municipal Railway; and
6. Responsive, efficient, and accountable management.⁶

As mandated by Prop E,⁷ Muni conducts quarterly service standard reports,⁸ and biennially, these reports are analyzed in a Quality Review. The Municipal Transportation Quality Review for FY 2009 and 2010 included a number of measurable factors including on-time performance,

service delivery, and safety.⁹ Rider satisfaction, a critical measure of the success of any transit system, is also reported as “customer perceptions.” In 2010, 52% of riders rated Muni service as “good” or “excellent,” the lowest since 2005. The consultants recommended that SFMTA increase its efforts by surveying riders on a monthly basis. However, as of the date of this report, no monthly rider surveys have been conducted or published.

Muni claims that it uses switchbacks to reduce the gaps, i.e., the time between successive vehicles on the same line, in order to increase the overall speed of the system. One Muni executive stated that switchbacks are used to sacrifice the experience of “a few riders” for the “greater good” of others. The Jury is not aware of any effort by Muni to document the effectiveness of switchbacks or that any “greater good” has been achieved by this practice. It is not clear how moving LRVs from one line to another in mid-run is of benefit to the entire population of riders. The Jury believes that switchbacks violate the spirit (though not necessarily the letter) of the goals set by the Charter for the transit system.

II. Other Transit Systems’ Practices

The Jury was told by Muni management that switchbacks were a widespread, common, and acceptable procedure for decreasing “bunching” of vehicles. When asked to provide documentation on the effectiveness of switchbacks in increasing transit speed, management volunteered that switchbacks were used by most U.S. transit systems for that purpose and were commonly used in Europe as well. We were emphatically assured that there was no need for any documentation or studies on its effectiveness. Switchbacks, according to Muni management, was such a commonly understood tool for smoothing traffic that it did not have to be studied or verified in other systems.

The San Francisco Controller’s 2011 City Survey took a look at Muni rider satisfaction.¹⁰ The survey compared San Francisco to five benchmark cities: Boston,¹¹ New York, Oakland (AC Transit), San Jose (Santa Clara Valley Transit), and Seattle. It found that the percentage of San Francisco respondents, who considered Muni “excellent” or “good,” was the lowest overall on five of the six areas rated, since 2005 when the City Survey was launched.¹² In comparison to the benchmark cities, San Francisco rated the lowest in rider satisfaction on four dimensions: timeliness/reliability, cleanliness, fares, and safety. These benchmark cities were chosen in the survey because they had issues in common with SFMTA, including the many problems that Muni cited in justifying adopting the use of non-emergency switchbacks. All had limited budgets, old systems and vehicles, challenging topography, organized workforces, and traffic congestion.

Muni’s claim that other systems rely on switchbacks was not validated by the Jury’s inquiry into all five systems in the City Survey. We went further and surveyed Bay Area Rapid Transit (BART) and three systems in Paris, France (RER, Métro, and RAPT). The Jury interviewed

management-level personnel in each jurisdiction except New York City. Our interviews revealed that these systems experienced the same kinds of problems as Muni, and that, with the exception of Santa Clara Valley Transit, none of these systems used switchbacks for reducing delays.

Other systems denied their use of switchbacks except in the case of breakdowns or accidents. Their spokespersons described taking special pains to accommodate riders when such mishaps occurred. All were adamant that requiring passengers to disembark from a vehicle for any reason but safety was unacceptable. Among the comments made were “It is an insult to the passengers” and “It is unfair to make passengers suffer for shortcomings to the system.” Without prompting, the managers of these other systems pointed out that switchbacks were not effective in speeding up transit systems. They explained that unloading one vehicle of its passengers and loading another actually slowed the system and defeated the goal of reducing delays. One said, “We never offload a full vehicle. That just takes more time and doesn’t at all help with the schedule.”

III. Alternative Strategies to Prevent Switchbacks

Transit managers outside of San Francisco offered numerous other ways of improving transit systems confronting the same difficulties as Muni without resorting to switchbacks.¹³ Some of these include:

- Establish a shop that makes its own parts and keep an inventory on hand for recurrent mechanical problems.
- Educate riders on how to avoid forcing open vehicle doors. One system described an extensive public relations outreach which included signs in stations and on the website, warnings on doors, and deputies on the vehicles, to prevent riders from keeping the doors open and thus stalling the vehicles.
- Establish a program gradually purchasing a more flexible and interchangeable fleet of vehicles.
- Reduce traffic on tracks and at stops. One system had installed cameras on buses in order to photograph vehicles parked in the Muni lanes and loading zones. This practice is being implemented by Muni as the Jury report is being written.
- Immediately tow blocking vehicles.
- Timed lights. This technology was recommended to Muni in 2008, and is currently being implemented. It increases efficiency by enabling buses and trains to change the traffic lights and cross intersections on their schedule.
- Use dedicated lanes either permanently or in rush hour.
- Add short runs in dense areas during rush hour.

Muni has recently begun to apply some of the methods that are used by other systems to speed the system and avoid switchbacks. In 2008, Muni carried out an extensive Transit Effectiveness Project (TEP).¹⁴ The TEP project involved riders and community groups, and ended by developing and proposing many solutions similar to the ones used by other U.S. and European systems for providing a faster and more reliable system.¹⁵ After being dormant for four years, TEP is being revived. The Jury was told by Muni staff that the TEP was dropped in 2008 because of budget problems, but now the agency is committed to its implementation.

IV. Muni is Not Effectively Using New Technology

An essential component of a modern transit system is the effective application of technology to operations. Muni has made some progress in this area, but available technologies which could provide solutions to Muni's chronic problems are not being implemented.

Muni's attempts at employing technology have fallen short. Muni recently installed a federally-funded high-tech monitoring system. Vehicles and street views can be observed and reported in real time from its 16 stations. The Jury toured the center on a weekday afternoon between 3 and 4 p.m. The center was completely unstaffed. It was explained to us by a Muni executive that there was usually at least one person on duty during rush hour, but none of the 12 Muni Inspectors qualified to operate the center was available. The effectiveness of this monitoring center is severely degraded, since there is no way for it to communicate directly with vehicle operators. We were told that the center would be used after a new building is erected next to Muni Headquarters at #1 South Van Ness. At that time, several years in the future, the control center from the West Portal Station will be relocated there as well. The literal disconnect between an expensive monitoring system and an inadequate communication system does not reflect well on Muni planning and management.

The Jury learned that Muni turned down the offer of a free Apple iPad app, using GPS tracking, to aid in resolving communication problems. According to a news article, "Muni hopes to put the app to good use some day, but the agency is \$29 million over budget and cannot afford to buy the iPads required to run the software. Nor is the City willing to invest \$100,000 to run a pilot program."¹⁶ The Jury questions whether technology solutions to the underlying causes of system delays are being ignored.

V. Findings

F1. Muni switchbacks violate the spirit of the San Francisco Charter.

Responses are requested from the Mayor, the Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F2. Muni management has expressed very little interest in finding alternatives to switchbacks.

Responses are requested from the Mayor, the Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizen's Advisory Council.

F3. There is not statistical or other evidence that switchbacks alleviate delays or improve scheduling.

Responses are requested from the Mayor, Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F4. Muni officials show a callous disregard for the welfare of riders overall in their use of switchbacks.

Responses are requested from the Mayor, the Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F5. Muni officials are mistaken in their belief that switchbacks are used extensively by other transit systems in their day-to-day operations.

Responses are requested from the San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F6. Other comparable transit systems refuse to subject passengers to switchbacks for any reasons other than equipment breakdowns, accidents, or unavoidable emergencies.

Responses are requested from the Mayor, the Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F7. Muni has failed to fully implement basic technological improvements in the system.

Responses are requested from the Mayor, the Board of Supervisors, the Controller, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F8. Muni's newest and most advanced control centers lack adequate operating personnel and cannot communicate directly with Muni drivers.

Responses are requested from the Mayor, the Board of Supervisors, the Controller, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

F9. Muni has failed to conduct and publish monthly rider surveys as recommended in the FY 2008 and 2010 quality review.

Responses are requested from the Mayor, the Board of Supervisors, the Controller, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

VI. Recommendations

R1. Eliminate switchbacks except for equipment breakdowns, accidents, or unavoidable emergencies.

Responses are requested from the Mayor, the Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

R2. Contact and learn from comparable transit systems that do not resort to switchbacks as a regular solution to their problems.

Responses are requested from the Mayor, the Board of Supervisors, the Controller, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

R3. The Controller audit Muni funds to determine if there are additional resources that may be available to rectify delays and scheduling problems.

Responses are requested from the Mayor, the Board of Supervisors, the Controller, San Francisco Municipal Transportation Agency Board of Directors, and the San Francisco Municipal Transportation Agency Director of Transportation.

R4. Train and employ sufficient staff to operate the new control center and establish communication from there with Muni drivers.

Responses are requested from the Mayor, San Francisco Municipal Transportation Agency Board of Directors, and the San Francisco Municipal Transportation Agency Director of Transportation.

R5. Conduct and publish monthly rider satisfaction surveys in accordance with the FY 2008 and 2010 quality review recommendations.

Responses are requested from the Mayor, the Board of Supervisors, San Francisco Municipal Transportation Agency Board of Directors, the San Francisco Municipal Transportation Agency Director of Transportation, and San Francisco Municipal Transportation Agency Citizens' Advisory Council.

CONCLUSION

Muni struggles with many frustrating issues. It has a huge job serving hundreds of thousands of passengers every day. Jury interviews with other systems prove that it is unnecessary to inconvenience passengers for the sake of scheduling problems on the Muni. Switchbacks are an insult to passengers and are an ineffective and time-consuming strategy that does not help Muni to maintain schedules. Muni must adopt more rider-friendly policies and practices. The many underlying problems that cause delays and "bunching" of vehicles must be addressed directly. This Jury has concluded that the almost casual use of switchbacks by Muni is a practice that is antithetical to the goals set for the system in the Charter. Muni needs to re-examine the many suggestions aimed at fixing the system and set out a detailed schedule for implementation.

ENDNOTES

- ¹ SFMTA Presentation to the Board of Supervisors City Operations and Neighborhood Services Committee, “System Service Adjustments Using Technology to Improve Service Reliability.” (January 10, 2011).
- ² Rachel Gordon, “Anger erupts over Muni cutting runs short,” *SFGate.com, City Insider* (January 10, 2011).
- ³ *Ibid.*
- ⁴ Memo from SFMTA, “LRV Switchback Data” (October 24, 2011).
- ⁵ San Francisco 1999 Consolidated Municipal Election: Proposition E. Municipal Transportation Agency, http://sfpl.org/pdf/main/gic/elections/November2_1999short.pdf.
- ⁶ City and County San Francisco Charter, § 8A.100.
- ⁷ *Ibid.*
- ⁸ Found at <http://www.sfmta.com/cms/rstd/sstdindx.htm>.
- ⁹ Nelson/Nygaard Consulting Associates for San Francisco Municipal Transportation Agency, “Proposition E: Municipal Transportation Quality Review, July 1, 2008 – June 30, 2010 Final Report,” <http://www.sfmta.com/cms/cmta/documents/4-3-12Item12Transp.qualityreviewreport.pdf>.
- ¹⁰ ETC Institute for the Office of the Controller, City and County of San Francisco City Survey – 2011 (September 2011).
- ¹¹ Massachusetts Bay Transit Authority, <http://www.mbta.com/>.
- ¹² *Ibid.*
- ¹³ City and County of San Francisco City Survey – 2011 (September 2011).
- ¹⁴ Egon Terplan, “A Better Future for Bay Area Transit,” *SPUR Publication* (March 2012).
- ¹⁵ “Fiscal Year 2013 – Fiscal Year 2018 SFMTA Strategic Plan,” January 3, 2012, <http://www.sfmta.com/cms/rstrategic/documents/1-3-12item12dfy13-18strategicplan.pdf>.
- ¹⁶ Shane Shifflett, “San Francisco Puts Brakes on an App for Transit,” *The New York Times* (April 2012).

RESPONSE MATRIX

Pursuant to **Penal Code § 933.05**, the Civil Grand Jury requests responses as follows:

Respondent	Findings								
	F1	F2	F3	F4	F5	F6	F7	F8	F9
Mayor	X	X	X	X		X	X	X	X
Board of Supervisors	X	X	X	X		X	X	X	X
Controller							X	X	X
San Francisco Municipal Transportation Agency Board of Directors	X	X	X	X	X	X	X	X	X
San Francisco Municipal Transportation Agency Director of Transportation	X	X	X	X	X	X	X	X	X
San Francisco Municipal Transportation Agency Citizens' Advisory Council	X	X	X	X	X	X	X	X	X

Respondent	Recommendations				
	R1	R2	R3	R4	R5
Mayor	X	X	X	X	X
Board of Supervisors	X	X	X		X
Controller		X	X		
San Francisco Municipal Transportation Agency Board of Directors	X	X	X	X	X
San Francisco Municipal Transportation Agency Director of Transportation	X	X	X	X	X
San Francisco Municipal Transportation Agency Citizens' Advisory Council	X	X			X

APPENDIX

Glossary of Terms

BART: Bay Area Rapid Transit.

BOS: Board of Supervisors.

LRV: Light Rail Vehicle.

Métro: Paris Métro or Métropolitain is the rapid transit metro system of Paris, France. It has sixteen lines, mostly underground.

Prop. E: Proposition E, passed in 1999, created the San Francisco Municipal Transportation Agency, combining the transit operations of Muni with the street operations of the Department of Parking & Traffic into a single agency.

RAPT: Régie Autonome des Transports Parisiens is a state-owned public transport agency headquartered in Paris, France. It has responsibility for Paris Metro, bus and tram services, and most of Paris RER.

RER: The Paris RER (Réseau Express Régional) comprises five express trains that connect central Paris to surrounding suburbs.

SFMTA: San Francisco Municipal Transportation Agency.

TEP: Transit Effectiveness Program.

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