

**CITY AND COUNTY OF SAN FRANCISCO  
BOARD OF SUPERVISORS**

BUDGET AND LEGISLATIVE ANALYST

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**POLICY ANALYSIS REPORT**

To: Supervisor Mar  
From: Budget and Legislative Analyst   
Date: November 18, 2013  
Re: Impact of Raising the Vehicle License Fee and Subsequent Improvements to SFMTA Services

**Summary of Requested Action**

Pursuant to your request, the Budget and Legislative Analyst has prepared this report on the public policy options available to City policy makers should the Vehicle License Fee (VLF) be raised to its historic level pursuant to a vote of the people through a ballot measure. This report first estimates how much revenue would be generated by raising the VLF to its historic level of 2 percent from its current level of 0.65 percent as well as the impact of such an increase on low, moderate, and high-income residents. Additionally, as you requested, the Budget and Legislative Analyst has analyzed five potential funding areas including: (1) improving Municipal Railway operations with increased service levels; (2) improving reliability of Municipal Railway through increased funding for maintenance; (3) improved bicycle facilities; (4) pedestrian safety improvements; and, (5) increased funding for street repaving. As you requested, these funding options were reviewed for their impact on the following policy objectives: (1) changes to transportation mode share; (2) improvements to mass transit performance; (3) reductions in carbon emissions; (4) impacts on safety of the travelling public; and, (5) reduction in the City's capital costs over time. The impacts of varying funding levels for each option are also presented in this report.

**EXECUTIVE SUMMARY**

The revenue that could be generated for the City and County of San Francisco ("the City") from an increase in the Vehicle License Fee (VLF) to its historic level of two percent presents a unique opportunity and challenge to the Board of Supervisors, Mayor, and City departments to plan for the allocation of such funds in a cost-effective manner that also supports agreed upon policy objectives. The Budget and Legislative Analyst estimates that approximately \$72.8 million would be generated from an increase in the VLF to its historic level of two percent in the initial year of the new rate. While low and moderate income residents would likely pay a larger share of their income than higher income residents for vehicles of equal value, lower income residents are less likely to own a vehicle and the vehicles they own tend to be valued lower.

Exhibit 1 below graphically depicts the potential impacts of allocating new VLF revenue in five funding areas relative to the following policy objectives:

- (1) Changes to transportation mode share to reduce private vehicle use;
- (2) Improvements to mass transit performance;
- (3) Reductions in carbon emissions;
- (4) Impacts on travelling public safety;
- (5) Reduction to the City's capital costs over time.

As shown in Exhibit 1 below, funding the expansion of Muni service and investing in rehabilitating the Muni fleet could potentially contribute to a shift in the transportation mode share away from private vehicle use, improve Muni’s on-time performance, and contribute to a reduction in carbon emissions. While it is unclear whether funding these two initiatives would have a measurable impact on safety of the travelling public, it is likely that the City’s capital costs would rise as the result of additional usage of Muni vehicles and facilities. Investing in Muni fleet maintenance would probably have no net impact on the City’s capital costs.

Exhibit 1 also shows that funding street repaving would reduce the City’s long term capital costs. However, funding street repaving is unlikely to result in a shift in the transportation mode share away from private vehicle use. In the Budget and Legislative Analyst’s opinion, it is unlikely that funding street repaving would impact Muni’s on-time performance or contribute to a reduction in carbon emissions, or travelling public safety. Additionally, while street repaving may have some impact on bicycle safety, it would not have as much of an impact as dedicated bicycle improvements, such as dedicated bike lanes.

As shown in Exhibit 1, significant investment in bicycle improvements could result in a shift in transportation mode share away from private vehicle use, contribute to a reduction in carbon emissions, improve safety for cyclists, and contribute to a reduction of the City’s long term capital costs. Similarly, significant investments in pedestrian safety improvements could improve safety for pedestrians, but it is unclear whether such improvements would have a significant impact on shifting transportation mode share, improving Muni’s on-time performance, reducing carbon emissions, or reducing the City’s long term capital costs.

<b>Exhibit 1: Potential Impacts of Various VLF Funding Options</b>					
<b>Funding Type</b>	<b>Change from Private Vehicle Use</b>	<b>Improvement to Muni On-Time Performance</b>	<b>Reduction in Carbon Emission</b>	<b>Impact on Safety of Travelling Public</b>	<b>Reduction in the City’s Capital Costs</b>
Expanded Muni Service: more runs	↑	↑	↑	↔	↓
Investment in Muni Fleet Maintenance: more reliable service	↑	↑	↑	↔	↔
Street Repaving	↔	↔	↔	↔	↑
Bicycle Improvements	↑	↔	↑	↑	↑
Pedestrian Safety Improvements	↔	↔	↔	↑	↔

↑ = Will likely result in positive effects.

↔ = Will likely have no effect or the effects are unclear.

↓ = Will likely result in negative effects.

## Background

The State Vehicle License Fee (VLF) was established by the State Legislature in 1935 in lieu of a property tax on vehicles. From 1948 through 2004 the VLF rate was two percent of the value of a vehicle<sup>1</sup>, though through a series of “offsets” the effective VLF rate dropped to 1.5 percent in 1999 and continued to drop to 0.65 percent through 2004. For 2005 and after, the Legislature repealed the offsets, but reduced the VLF rate to 0.65 percent.<sup>2</sup>

In September 2012, the State Legislature passed the Local Assessment Act (S.B. 1492), which authorized the City and County of San Francisco to impose a voter-approved local assessment on most vehicles, up to a total VLF of two percent of the value of the vehicle, if certain conditions, including a two-thirds majority of the Board of Supervisors and a simple majority approval by local voters, are met. The City would be able to retain all collections of the VLF above 0.65 percent, or 1.35 percent of vehicle value, less the amount required by the California Department of Motor Vehicles (DMV) to administer the local assessment.

## Projected Revenue from Raising the VLF to Historic Levels

Based on data provided to the Budget and Legislative Analyst by the DMV, VLF collections from San Francisco in 2012 (based on 0.65 percent of vehicle value) amounted to approximately \$35.2 million. The Budget and Legislative Analyst thus estimates that by increasing the VLF paid by San Francisco residents by 1.35 percent to its historic level of two percent, approximately \$72.8 million in new revenue would be generated in the first full year of the VLF being raised. Further, the Budget and Legislative Analyst projects that VLF revenues will continue to increase in the second through fourth years, albeit minimally, after an increase in the VLF rate due to increases in prior year penalty amounts. Exhibit 2 below shows the projected revenue for the first four years if San Francisco were to increase the VLF to the historic rate of 2.0 percent from 0.65 percent of assessed vehicle values.

<b>Exhibit 2: Projected Additional Revenue if VLF is Raised to Historic Level of 2.0%</b>				
<b>Year</b>	<b>Initial Year</b>	<b>2<sup>nd</sup> Year</b>	<b>3<sup>rd</sup> Year</b>	<b>4<sup>th</sup> Year</b>
Projected Revenue	\$72,769,071	\$73,026,983	\$73,110,365	\$73,122,630

Source: BLA estimate based on DMV data on San Francisco VLF Collections for 2012

### **Additional Factors that may Affect Actual Revenues**

The actual revenues realized by the City will likely be slightly different than those projected based on several factors that are difficult to quantify at this time including (1) one-time DMV administrative costs associated with implementing the additional fee; (2) increases in vehicle value over time; (3) the

<sup>1</sup> The formula for VLF assessment established by the Legislature is based upon the purchase price of the vehicle or the value of the vehicle when acquired. The VLF decreases with each renewal for the first 11 years. The VLF is prorated if the assignment/reassignment of a registration year results in a registration year of less than 12 months.

<sup>2</sup> For 2005 and since, the VLF tax rate was reduced to 0.65%. The reduced VLF funding was replaced with additional property tax share to cities and counties.

potential for leakage, which could include residents and businesses re-registering their vehicles outside of the City in order to pay the lower VLF in other counties or changing the status of their vehicles to non-operational in order to avoid the annual fee. The potential impacts of these factors are detailed below.

- **DMV Administrative Costs:** The Local Assessment Act (S.B. 1492) requires the City to pay the DMV for the initial setup and programming costs identified by the department. DMV management has estimated that these costs will likely range between \$400,000 and \$600,000 based on previous similar programs. DMV will not conduct a full cost estimate of its administrative costs unless voters approve a measure to increase the VLF.
- **Fleet Value Increases:** As with most goods, the cost of new vehicles has risen over time due mostly to inflation. A review of the average cost of a new car in current dollars<sup>3</sup> in the United States from 1996 to 2006 found that the average annual increase was 1.9 percent with fluctuations ranging from a drop of 0.4 percent to an increase of 4.9 percent. According to figures released in September,<sup>4</sup> the average transaction price for a new vehicle set a record of \$31,252 in August, up 3.2 percent from August 2012. The estimate of initial year revenues does not account for the increase in the fleet value that may occur between 2012 (the year of VLF collections that the projection is based on) and the first year that the increase is in effect (likely 2015 or later).
- **Leakage and Demand Impacts:** According to DMV staff, it is likely that the City will lose some of the additional revenue from an increase in the VLF due to leakage, which would result from residents and businesses changing the registration address of their vehicles to avoid the additional VLF charges. Although it is difficult to determine how much revenue the City will lose, a projection could be made after additional information, such as the number of commercial trucks weighing more than 10,000 pounds and the number of vehicles valued at more than \$100,000 is determined since large trucks and expensive vehicles would have more incentive to avoid the VLF as they would pay relatively more in fees. Additionally, the increased fee may reduce consumer demand for vehicles, which may reduce the size and/or the average value of the fleet.

The City Controller's Office of Economic Analysis is currently working on a projection of the revenues that may be realized and the vehicle demand impacts that may result from an increase of the VLF to two percent for the Mayor's Transportation Task Force. The results of this analysis may provide City policy makers with further adjustments to the potential new VLF revenues projected by the Budget and Legislative Analyst.

### Potential Impact of a VLF Increase on Low, Moderate, and High-Income Residents

While residents at all income levels would be affected by an increase in the VLF to two percent, the extent of the impact would be dependent on the number and value of vehicles owned by residents. As seen in Exhibit 3, residents in the lowest income quintile (those making less than \$23,000 per year) would pay the largest share of their income for additional VLF charges for an average valued vehicle,

<sup>3</sup> Current dollars represent the actual cost of a good in the year that it was purchased (e.g. not adjusted for inflation).

<sup>4</sup> According to Truecar.com as reported by USA Today:

<http://www.usatoday.com/story/money/cars/2013/09/04/record-price-new-car-august/2761341/>

valued at \$11,115.<sup>5</sup> At two percent, the average annual fee for a vehicle valued at \$11,115 would thus be \$222, or \$150 more than the current \$72 fee, based on the current VLF of 0.65 percent of the vehicle's value. The incremental annual fee amount of \$150 per year would amount to 1.3 percent of household income for low-income households earning \$11,500 per year. However, only 35 percent of households in the lowest economic quintile own one or more vehicles. Further, it is likely that households in this quintile own vehicles that are valued significantly less than average. If the same household earning \$11,500 owned one vehicle valued at \$4,446, or 40 percent of the average, it would pay \$60 or 0.5 percent of its annual income for the additional VLF charges.

Although households in the upper income quintiles would pay a smaller percentage of their annual income on an increase in the VLF for an average valued vehicle, they may be likely to pay more overall as they are more likely to own vehicles and those vehicles are more likely to be valued higher than average. For instance, a household with \$146,400 in annual income (the lowest income for the fifth income quintile shown) would only spend about 0.1 percent of its annual income on additional VLF fees for a vehicle of average value. However, a majority of such households own two or more vehicles and are more likely to own vehicles that are valued significantly higher than the average. If a household earning \$146,400 owns two vehicles each valued at \$30,000, it would pay \$810 for the additional VLF charges, which is about 0.6 percent of that household's annual income.

<b>Exhibit 3: Car Ownership and Impact of VLF Increase on Residents by Household Income Quintile</b>					
<b>Income Quintile</b>	<b>Quintile Midpoint</b>	<b>% with No Vehicle</b>	<b>% Owning One Vehicle</b>	<b>% Owning Two or More Vehicles</b>	<b>Percentage of Annual Income for VLF Increase: Vehicle of Average Value<sup>6</sup></b>
Less than \$23,000	\$11,500	65%	29%	6%	1.3%
\$23,000-\$50,999	\$37,000	39%	44%	17%	0.4%
\$51,000-\$87,999	\$69,500	24%	48%	28%	0.2%
\$88,000-\$146,399	\$117,200	15%	46%	38%	0.1%
\$146,400 and more	N.A.	8%	39%	53%	0.1% (for Households making \$146,400)
Total Households	N.A.	30%	41%	53%	N.A.

Source: U.S. Census Bureau, American Community Survey 2006-2010 Public Microdata Sample

<sup>5</sup> This figure represents the estimated average vehicle value in San Francisco. It has been estimated using DMV collections data from 2012 and does not include vehicles that are not in operation (classified as "planned non-operation"), trailer coaches, and vehicles that are registered under the International Registration Plan (IRP), which are vehicles that are registered in two or more states or countries.

<sup>6</sup> Based on DMV data on 2012 VLF collections in San Francisco, the Budget and Legislative Analyst estimates that the average vehicle value in the City is \$11,115.

Research<sup>7</sup> conducted by the University of California Transportation Center (UCTC) at UC Berkeley found that the VLF is a regressive tax as its impact relative to household income declines as income rises, consistent with the findings shown in Exhibit 1 above. Further, the research found that:

the regressivity of the VLF is heightened when interactions with other taxes are taken into account. Households can significantly reduce their net VLF payments by deducting personal property taxes (including the VLF) from their taxable income.

The research also found that while:

most families (84 percent) do not claim a deduction for the VLF, the average household at the highest income levels wins back one-quarter of its VLF bill when it pays income taxes. The average household at the lowest income levels saves only 2 percent of its VLF payments through tax deductions.

### **VLF Funding Options**

The Budget and Legislative Analyst reviewed several funding options for the additional revenue that may be realized from an increase in the VLF. These options include: (1) funding for the Municipal Railway operations, to increase the number of runs; (2) funding for Municipal Railway maintenance to improve the reliability of existing services; (3) bicycle infrastructure improvements; (4) pedestrian safety improvements; and, (5) street repaving. The projected impact of allocating new VLF revenues in each of these funding areas is detailed below relative to the following policy objectives:

- (1) Changes to transportation mode share to reduce private vehicle use;
- (2) Improvements to mass transit performance;
- (3) Reductions in carbon emissions;
- (4) Impacts on safety of travelling public;
- (5) Reduction to the City's capital costs over time.

While the amounts discussed for each funding area below do not necessarily add up to the estimated \$72.8 million in projected new VLF revenues, three funding scenarios are presented at the end of this report that allow for various mixtures of funding that add up to approximately the full amount projected to be available.

In addition to the analysis contained within this report, the Mayor has convened a 2030 Transportation Task Force, the goal of which is to "identify transportation capital priorities for the City and connect these plans and priorities to existing and new funding sources." Since the spring of 2013 the task force has held numerous public meetings and evaluated existing capital plans, proposed capital plans and has envisioned other potential plans. The 2030 Transportation Task Force is expected to hold its final meeting on November 19, 2013. At this final meeting the task force will present its final report to the Mayor.

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<sup>7</sup> Dill, J., Goldman, T., Wachs, M. (1999). California Vehicle License Fees: Incidence and Equity. *Journal of Transportation and Statistics*, 136-137.

**Muni Operations: Expanded Service**

VLF revenues could be used to increase transit services throughout the City. The Transit Effectiveness Project<sup>8</sup> has found that approximately a 10 percent increase in service hours<sup>9</sup> would help address the needs of current Muni customers and equitably distribute service across the City to better connect neighborhoods and reduce crowding. According to SFMTA staff, the increased service could be a combination of: (1) more frequent runs due to an increased number of now idle vehicles in operation, which would provide additional capacity and reduce crowding, and (2) an increase in the span of service hours by starting service earlier or ending later to better serve travelers' needs.

Exhibit 4 below displays the potential increases in service hours and passengers that could occur given different levels of annual investment in Muni service expansions. Funds would be spent primarily on additional personnel hours and electricity and fuel so that currently idle vehicles could be utilized. As shown in Exhibit 4, SFMTA estimates that an \$18.1 million annual investment would be needed to increase service hours by 3 percent, \$30.2 million per year would be needed to increase service hours by 5 percent, and \$60.5 million per year would be needed to increase service hours by 10 percent. These investments would allow for the increased capacity of 6.5 million, 10.9 million, and 21.7 million annual passengers<sup>10</sup>, respectively. SFMTA predicts that these hypothetical levels of annual funding would result in increases in annual passengers as shown in Exhibit 4. For 2012 approximately 216 million annual passengers<sup>11</sup> used SFMTA's Municipal Railway system.

<b>Exhibit 4: Potential Costs and Impacts of Investing Additional VLF Revenue in Muni Service Expansion</b>		
<b>Annual Funding Amount</b>	<b>Percent Increase in Service Hours</b>	<b>Increased Passengers (Annual)</b>
\$18.1 million	3%	6.5 million
\$30.2 million	5%	10.9 million
\$60.5 million	10%	21.7 million

Source: SFMTA

**Potential Impacts on Policy Objectives of Funding this Area:**

Expanding Muni service by adding more runs would likely contribute to changes in the City's transportation mode share away from private vehicle use, which could contribute to a reduction in carbon emissions. It would also contribute to the agency's on-time performance, but is unlikely to have an impact on the safety of the travelling public (though there could possibly be a decrease in private vehicle accidents). Expanding Muni service may increase the City's capital costs by requiring additional funds to maintain vehicles and facilities that will be used more often as a result of additional runs.

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<sup>8</sup> The Transit Effectiveness Project is an on-going City program headed by SFMTA that aims to improve service reliability, reduce travel time on transit, and improve customer experiences and service efficiency.

<sup>9</sup> Number of hours of transit service provided by SFMTA including its bus, trolley coach, and LRV fleets.

<sup>10</sup> Passengers refers to unique passenger trips, or boardings.

<sup>11</sup> SFMTA *Proposition E: Municipal Transportation Quality Review July 1, 2008 – June 30, 2010 Final Report*

**Muni Maintenance: Rehabilitation of Fleet**

VLF revenues could be used to help SFMTA adequately maintain its currently operating fleet. The FY 2012-13 adopted SFMTA budget allocated approximately \$11.2 million for equipment and maintenance, but this does not include funds for fleet vehicle rehabilitation as no program currently exists within SFMTA for that purpose. While the timely replacement of transit vehicles is largely funded by federal sources with Proposition K sales tax revenue providing most of the required match, there is no dedicated source for midlife vehicle overhauls, or rehabilitations, which could significantly extend the amount of time between vehicle failures according to SFMTA representatives.<sup>12</sup>

Exhibit 5 below displays the costs and benefits that could be anticipated for future fleet midlife overhauls. As shown in Exhibit 5, an annual investment of approximately \$10 million would be needed in order to routinely provide midlife rehabilitations to SFMTA's bus fleet, which currently numbers 477. According to SFMTA staff, comparing the same type of vehicles one year before to one to two years after vehicle rehabilitation, the average distance between failures has increased by about 30 percent, or from an average of 3,000 miles between failures to 4,000 miles. This means buses being taken out of service less frequently and better service levels for passengers.

For the light rail vehicle (LRV) fleet, it would cost roughly \$4.2 million per year to regularly rehabilitate LRVs in the current SFMTA LRV fleet based on the current count of 151. This investment would be highly concentrated (over a 5-6 year period) compared to the bus investment as the LRVs are purchased in bulk, the estimated service life is 25 years, and all vehicles will reach the point where a midlife rehabilitation is needed around the same time. \$4.2 million would thus not be needed every year, but represents an average to allocate annually for this purpose to have sufficient funds when rehabilitations are needed. Based on the SFMTA's recent LRV rehabilitation program, which has been very limited, the average distance between failures could improve by over 60 percent, or from the current average of 3,000 miles between failures to 4,800 miles.

According to SFMTA staff, there is no current program funded for the trolley coach fleet rehabilitation, but assuming a cost similar to overhauling the bus fleet, the Budget and Legislative Analyst estimates the SFMTA's current fleet of 333 trolley coaches would cost about \$5.5 million per year to fund midlife rehabilitations of the trolley coaches. SFMTA staff also noted that due to a number of factors, the priority for the trolley coach fleet is to first replace the current vehicles, then institute a program of regular rehabilitations.

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<sup>12</sup> Failures are defined by SFMTA as the malfunction of any vehicle system, subsystem or component on a transit vehicle which would result in the vehicle going out of operating service.

<b>Exhibit 5: Potential Costs and Impacts of Investing Additional VLF Revenue in Transit Fleet Maintenance</b>			
<b>Fleet Type</b>	<b>Fleet Size</b>	<b>Annual Cost for Routine Fleet Rehabilitations</b>	<b>Anticipated Impact</b>
Bus (Non-Electric)	477	\$10 million	30% increase in average distance between bus failures (4,000 miles after overhaul vs. 3,000 miles before)
Light Rail Vehicle (LRV)	151	\$4.2 million	60% increase in average distance between LRV failures (4,800 miles after overhaul vs. 3,000 miles before)
Trolley Coach	333	\$5.5 million	The impact of this investment is not clear as there is no current program in place for trolley coaches. However, SFMTA staff state that results would be similar to the Bus and Light Rail Vehicle rehabilitation programs.
<b>Total</b>		<b>\$19.7 million</b>	

Source: SFMTA; trolley coach costs estimated by Budget and Legislative Analyst

**Potential Impacts on Policy Objectives of Funding this Area:**

Investments in the maintenance of the Muni fleet are likely to improve on-time performance, which could spur changes to transportation mode share away from private vehicle use and contribute to a reduction in carbon emissions. The investments are unlikely to have a significant impact on safety of the travelling public. Greater funding for maintenance would not increase the City’s net costs if it is funded by increased VLF monies.

**Bicycle Improvements**

Additional revenues resulting from an increase in the VLF could be used to make significant improvements to the City’s bicycle facilities and infrastructure, such as bike lanes. The SFMTA Strategic Plan requires a shift in mode share to meet the goal of 50 percent of all trips in San Francisco made using sustainable modes (walking, bicycle, public transit, and vehicle sharing) by 2018. The SFMTA Bicycle Strategy estimates that half of the 11 percent mode share shift can be accommodated by bicycles within this time frame given funding levels of \$190 million over five years (versus the \$39 million of currently available funding for that time period, resulting in a Citywide bicycle mode share of 8 to 10 percent by 2018, or more than double today’s bicycle mode share of 3.5 percent.

According to the SFMTA Bicycle Strategy, growing bicycle mode share will require site-specific network treatments (e.g., traffic diverters, buffered bicycle lanes, etc.) and support facilities (e.g. parking and bicycle sharing). Exhibit 6 below shows the different types of treatments that could be used based on the key purpose and costs. As seen in Exhibit 6, most of the network improvement options and support facility options cost \$100,000 or less per mile or intersection.

<b>Exhibit 6: Bicycle Improvement Options, Key Outcomes, and Costs</b>					
<b>Tools</b>	<b>Safety</b>	<b>Connectivity</b>	<b>Convenience</b>	<b>Security</b>	<b>Cost</b> (per mile or intersection)
<b>Network Treatments</b>					
Wayfinding Signage	✓	✓			\$5,000
Traffic Diverter	✓	✓	✓		\$5,000
Bicycle Boxes	✓	✓			\$5,000
Bicycle signal, bicycle boxes, and counters	✓✓	✓✓			\$10,000
Buffered bicycle lane	✓✓	✓			\$100,000
Basic cycle track	✓✓✓	✓			\$250,000
Colored bicycle lane	✓✓	✓			\$500,000
Bicycle boulevard	✓✓	✓			\$1 million
Separated cycle track	✓✓✓	✓			\$10 million
<b>Support Facility Treatments</b>					
Bicycle corrals			✓✓		\$5,000
Bicycle lockers			✓	✓	\$5,000
Secure bicycle parking stations			✓✓✓	✓✓✓	\$500,000
Bicycle sharing (per station)			✓✓✓		\$100,000

Source: SFMTA Bicycle Strategy, April 2013

According to SFMTA Capital Financial Planning and Analysis staff, the agency plans to spend \$39 million total over five years, or an average of \$7.8 million per year, on bicycle improvements. These amounts do not include all operational costs required to make the improvements. Projected new VLF revenue would be more than sufficient to meet the funding gap of \$30.2 million per year, or \$151 million over five years (\$190 million needed less \$39 million currently available over five years) for full implementation of the Bicycle Strategy.

**Potential Impacts on Policy Objectives of Funding this Area:**

Assuming that the City were to invest a significant amount of new VLF revenues into bicycle improvements there would likely be a pronounced shift in transportation mode share away from private vehicle use (and possibly from transit) by providing cyclists with a safer and more connected bicycle network. For instance, a \$30 million investment in bicycle improvements could result in 60 miles of colored bicycle lanes or 300 miles of buffered bicycle lanes. This transportation mode share could contribute to a reduction in carbon emissions. Significant investments in bicycle improvements could reduce the City's capital costs by easing the deterioration of City streets from private vehicle use. It is unclear whether bicycle improvements would have an impact on Muni's on-time performance unless a

significant number of Muni passengers shift to bicycle riding, thus reducing overcrowding, slow boardings and delays related to overcrowding.

**Pedestrian Safety Improvements**

Additional VLF revenues could be used to fund pedestrian safety improvements such as pedestrian countdown signals, crosswalk treatments, flashing crosswalk beacons, and traffic calming devices like sidewalk bulb-outs and speed humps. The SFMTA Strategic Plan and the SFMTA Bicycle Strategy Plan call for a shift away from private automobile use from its current level of 61 percent to 50 percent of all trips by 2018. In order to achieve this goal, the SFMTA estimates that pedestrian trips should rise from the current 7.5 percent of total trips in the City to about 20 percent by 2018. Exhibit 7 below shows the costs of many of the most common pedestrian and traffic calming improvements that are installed in the City.

<b>Exhibit 7: Pedestrian Safety Improvement Options and Costs</b>			
<b>Item</b>	<b>Estimated Cost</b>	<b>Unit</b>	<b>Notes</b>
<b>Pedestrian Improvements</b>			
Pedestrian Countdown Signals	\$30k to \$200k	Per Intersection	Cost varies widely from one location to another
Accessible Pedestrian Signals	\$15k to \$200k	Per Intersection	Cost varies widely from one location to another
Continental Crosswalks <sup>13</sup> with Yield Lines <sup>14</sup>	\$10k to \$12k	Per Intersection	
Continental Crosswalks without Yield Lines	\$4,500	Per Intersection	
Reopen Closed Crosswalk	\$40k to \$150k	Per Intersection	Cost varies widely from one location to another
Red Visibility Zone <sup>15</sup>	\$2,000	Per Intersection	
Flashing Beacons	\$27k to \$70k	Per Crossing	
Raised Crosswalk	\$2k to \$15k	Per Crossing	
<b>Traffic Calming Improvements</b>			
Speed Hump	\$5k to \$15k	Per Hump	
Traffic Circle	\$25k to \$100k	Per Circle	
Bulb Out	\$50k to \$400k	Per Bulb Out	
Median/Diverter	\$50k to \$400k	Per Median	

Source: SFMTA and Federal Highway Administration

According to the SFMTA FY 2013 to FY 2017 capital revenue budget, the agency plans to spend \$30.7 million total over five years, or an average of \$5.1 million per year, on pedestrian safety improvements based on funding that is already in place. These amounts do not include operational costs required to

<sup>13</sup> Continental crosswalks are crosswalks with several parallel painted bars going across, which are aligned perpendicular to the direction that pedestrians travel across the street.

<sup>14</sup> Yield lines are a series of triangles that are aligned in front of the crosswalk on either side. Yield lines are typically accompanied by signage to bring more attention to the crosswalk.

<sup>15</sup> A red visibility zone is a parking spot or a series of parking spots preceding a crosswalk that are painted red to prohibit parking so that pedestrians are more visible to drivers as they enter the crosswalk.

make the improvements and SFMTA staff report that the capital revenue budget is currently being revised.

**Potential Impacts on Policy Objectives of Funding this Area:**

It is unclear whether a significant City investment of VLF revenues into pedestrian improvements would result in a shift in transportation mode share away from private vehicles as the City is already considered very pedestrian friendly. Additionally, studies have shown that pedestrians believe that their primary consideration in choosing a route is minimizing time and distance while safety and attractiveness of the route are considered secondary factors.<sup>16</sup> It is also unclear whether pedestrian improvements would have an impact on Muni's on-time performance, reduce carbon emissions, or reduce the City's capital costs. A significant investment in pedestrian and traffic calming improvements would likely result in a marked improvement to pedestrian safety. For instance, a \$30 million investment from new VLF revenue could result in at least 75 bulb outs or 150 additional intersections with countdown crosswalk signals or at least 2,500 additional continental crosswalks with yield lines.

**Street Repaving**

Another option for the use of additional VLF funding is to provide additional funding for street repaving. According to Department of Public Works (DPW) staff, a new local funding stream of approximately \$40 million will be necessary to raise the City's Pavement Condition Index<sup>17</sup> (PCI) from its current level of 65 ("fair") to the Department's stated goal of 70 ("good") by 2020, which is incorporated into the City's Capital Plan. According to DPW staff, the difference of a PCI of 68 and a PCI of 70 would result in a reduction of \$175 million in costs over the next 10 years and 500 fewer blocks in the City in very bad condition. DPW staff state that the City's PCI score will drop to 56 ("at-risk") without an additional long-term funding stream of about \$40 million per year to replace the 2011 Streets General Obligation Bond that has provided an average of \$45.6 million over the three years from FY 2011-12 to FY 2013-14. As seen in Exhibit 8 below, while the FY 2014-15 DPW budget includes \$40 million in General Fund monies to make up for the exhaustion of 2011 Streets Bond funds, it is unclear what revenue source will be used for FY 2015-16 and beyond to support street repaving. Maintaining the level of approximately \$40 million per year in street repaving funding with the new VLF revenue would allow the City to achieve its PCI goal of 70 and reduce future costs of at least \$175 million.

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<sup>16</sup> Schlossberg, M., Weinstein A., Asha, Irvin, K., Bekkouche V.L. (2007). How Far, By Which Route, and Why? A Spatial Analysis of Pedestrian Preference. *Mineta Transportation Institute Report 06-06*.

<sup>17</sup> The pavement condition index (PCI) is a numerical index between 0 and 100 which is used to indicate the general condition of a pavement.

<b>Exhibit 8: Street Repaving Funding Sources FY 2006-07 to 2016-17</b>									
	<b>Actual (Millions)</b>					<b>Projected Annual Budget (Millions)</b>			
<b>Funding Source</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>
Federal Sources <sup>18</sup>	11.8	-	3.2	-	-	0.5	2	1.1	1.2
State Gas Tax	11	11.7	12.7	18.4	15.1	19	19.3	18.6	19.4
Prop 1B (State)	23	2.3	4.2	-	-	-	-	-	-
Prop K Sales Tax	2.9	3	3	3.1	3.2	3.3	10.4	6.1	5.2
Prop AA VLF	-	-	-	-	3.4	2.2	-	2.2	2.2
General Fund	-	-	-	-	-	1	40	-	-
Certificates of Participation	-	24.8	27.6	-	-	-	-	-	-
2011 Streets G.O. Bond	-	-	-	44.2	48.3	44.3	-	-	-
<b>Total</b>	<b>48.7</b>	<b>41.8</b>	<b>50.7</b>	<b>65.7</b>	<b>70</b>	<b>70.3</b>	<b>71.7</b>	<b>28</b>	<b>28</b>

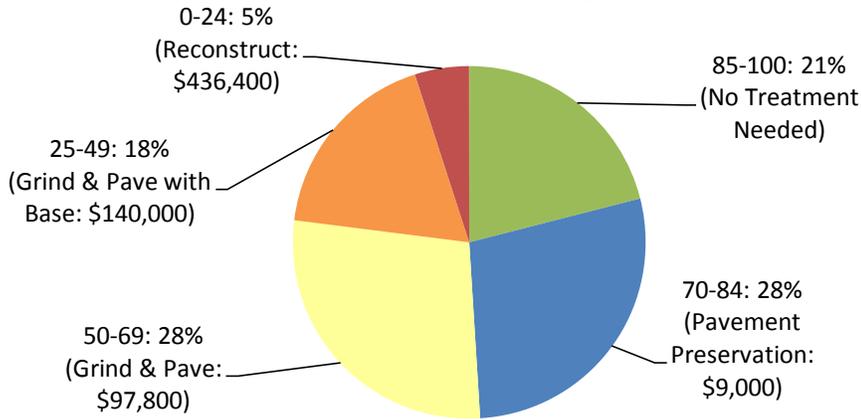
Source: Department of Public Works

Exhibit 9 below shows the current<sup>19</sup> PCI of San Francisco's streets. As seen in the exhibit, about half of the City's streets have a PCI rank of 70 or above, which is considered "good" or "very good" condition. Streets in this category would require \$9,000 or less on average per block to conduct the necessary pavement preservation work to bring the quality of the street to a 100 PCI score. If the block has a score of 85 or higher, no treatment is needed. About 28 percent of the City's streets have a PCI score between 50 and 69, which is considered to be "at-risk" and would require about \$97,800 per block to conduct the grinding and repaving work necessary to be brought up to a PCI score of 100. About 18 percent of the City's streets have a PCI score between 25 and 49, which is considered to be in "poor" condition. Streets in this range need about \$140,000 per block to conduct the necessary grinding and repaving with base repair to be brought up to a PCI score of 100. Finally, about 5 percent of the City's streets have a PCI score between 0 and 24, which is considered to be "failed." Streets in this category require about \$436,400 per block to be completely reconstructed so that they can be brought up to a PCI score of 100.

<sup>18</sup> Federal Sources include Federal Highway Administration Surface Transportation Program and American Recovery and Reinvestment Act.

<sup>19</sup> PCI scores across the City are analyzed annually in December. The data in Exhibit 8 represents the condition of streets as of December 2012.

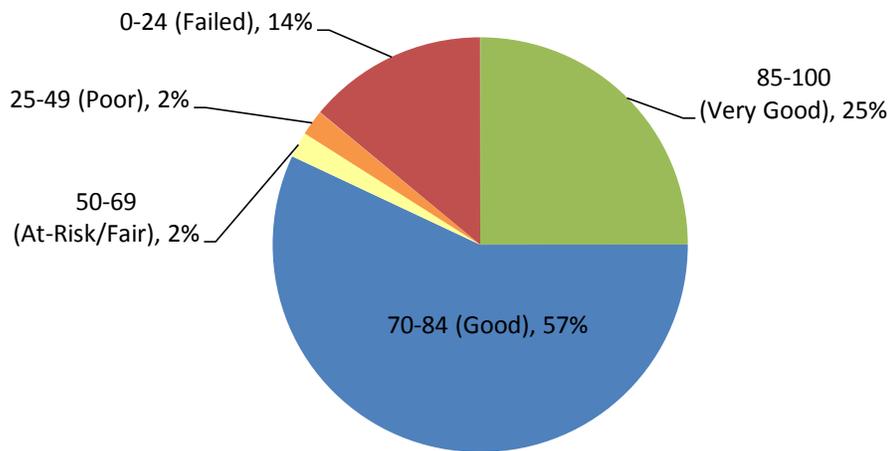
### Exhibit 9: Current PCI of San Francisco's Streets and Average Costs per Block to Maintain all Streets at "Very Good" Levels\*



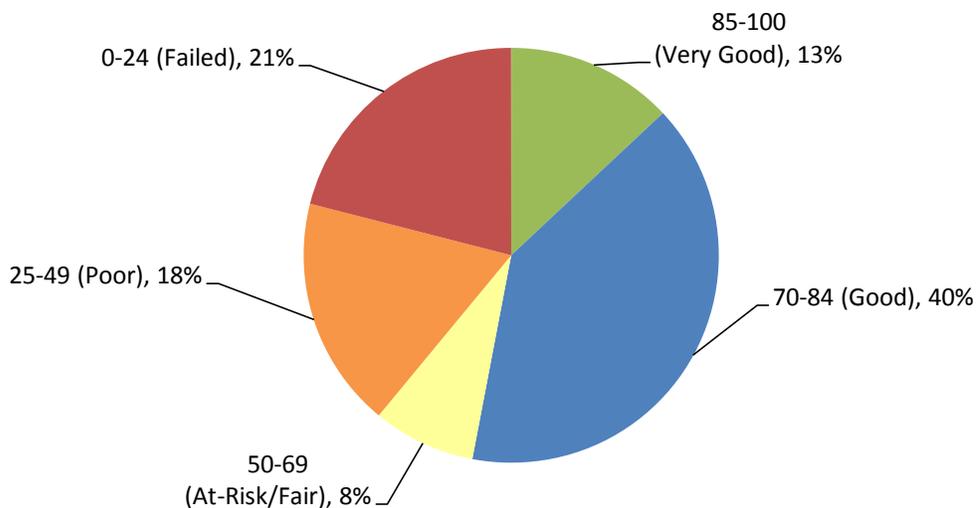
\* Dollar figures represent the average cost per block to upgrade street to a PCI score of 100, which is considered "very good."  
Source: Department of Public Works

Exhibits 10 and 11 below show DPW projections that estimate San Francisco's PCI score in 10 years with and without additional funding to replace the approximately \$46 million in annual funding that came from the 2011 Streets Bond. As seen in Exhibit 10, DPW staff estimate that if the City devotes sufficient revenues, about \$70 million is needed in total over ten years, San Francisco should reach an average PCI score of 70, considered at the low end of "good" condition, by 2023. Conversely, as seen in Exhibit 11, DPW staff project that the City's average PCI score will drop to 56, considered "at-risk," by 2023 if funding drops from its current annual rate of about \$70 million to about \$30 million. Projected VLF revenues would be more than sufficient to fill the paving funding gap of approximately \$40 million per year.

**Exhibit 10: 2023 Average PCI Score assuming Long-Term Local Funding Source of \$40 mill./year**



**Exhibit 11: 2023 Average PCI Score assuming no Long-Term Local Funding Source**



**Potential Impacts on Policy Objectives of Funding this Area:**

Significant investment of VLF revenue into street repaving is likely to reduce the City's capital costs, but it is unlikely to change transportation mode share from private vehicle use. It is unlikely or uncertain whether a significant investment in road repaving would have an impact on Muni's on-time performance, carbon emissions, or travelling public safety.

**Options for Consideration by the Board of Supervisors**

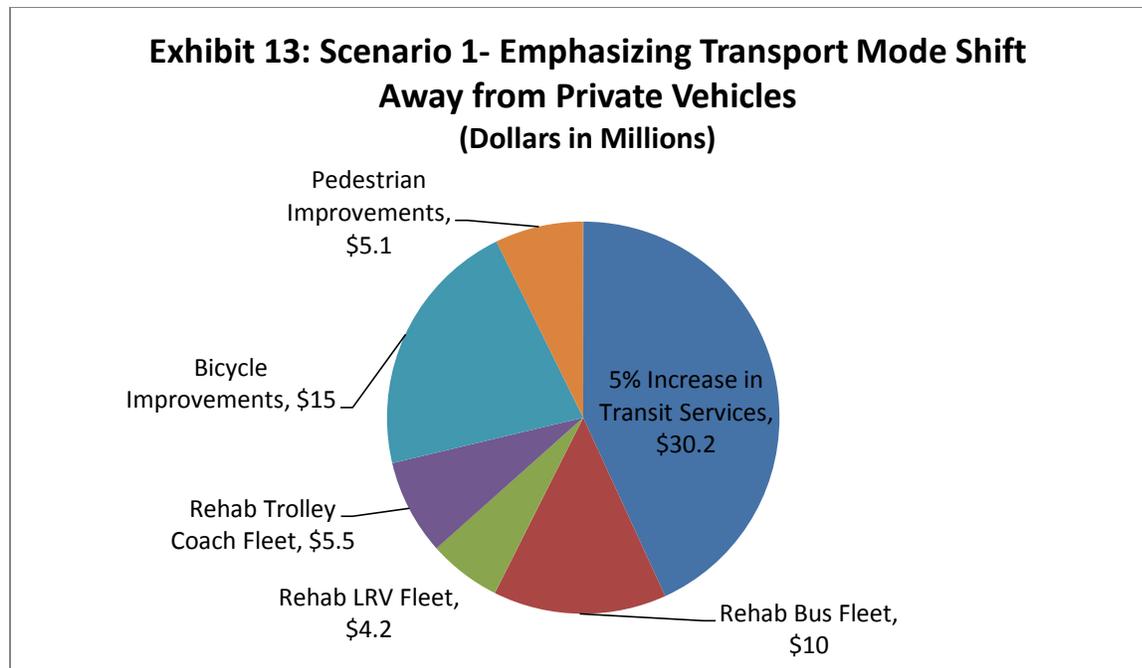
Below are three scenarios that the Board may want to consider as funding options for increased revenue from raising the VLF to its historic level of two percent. These options, which are summarized in Exhibit 12 include a funding scenario that emphasizes shifting transportation mode from private vehicle use, a funding scenario that emphasizes reducing the City’s capital costs, and a scenario that emphasizes improving Muni’s on-time performance. All scenarios assume that raising the VLF to two percent will result in approximately \$70 million in additional revenues. While the new revenue could be allocated in many ways and would still achieve benefits, the configurations below were selected by the Budget and Legislative Analyst to incorporate “critical mass” amounts identified by the relevant departments to achieve certain results. Mixes of allocations to the different funding areas have been included in each scenario to provide different methods of addressing the policy objective stressed in the scenarios.

<b>Exhibit 12: Summary of Policy Option Scenarios Presented (\$ Millions)</b>			
<b>Funding Type</b>	<b>Scenario 1: Shifting Transport Mode Away from Private Vehicles</b>	<b>Scenario 2: Reducing the City’s Capital Costs</b>	<b>Scenario 3: Improving Muni’s On-Time Performance</b>
Transit Service	\$30.2	\$0	\$50.3
Transit Maintenance: Bus	10	0	10
Transit Maintenance: LRV	5.5	0	4.2
Transit Maintenance: Trolley Coaches	4.2	0	5.5
Street Repaving	0	45	0
Bicycle Improvements	15	20	0
Pedestrian Improvements	5.1	5	0
<b>Total</b>	<b>\$70</b>	<b>\$70</b>	<b>\$70</b>

**Scenario 1: Emphasizes Shifting Transportation Mode Share Away from Private Vehicles**

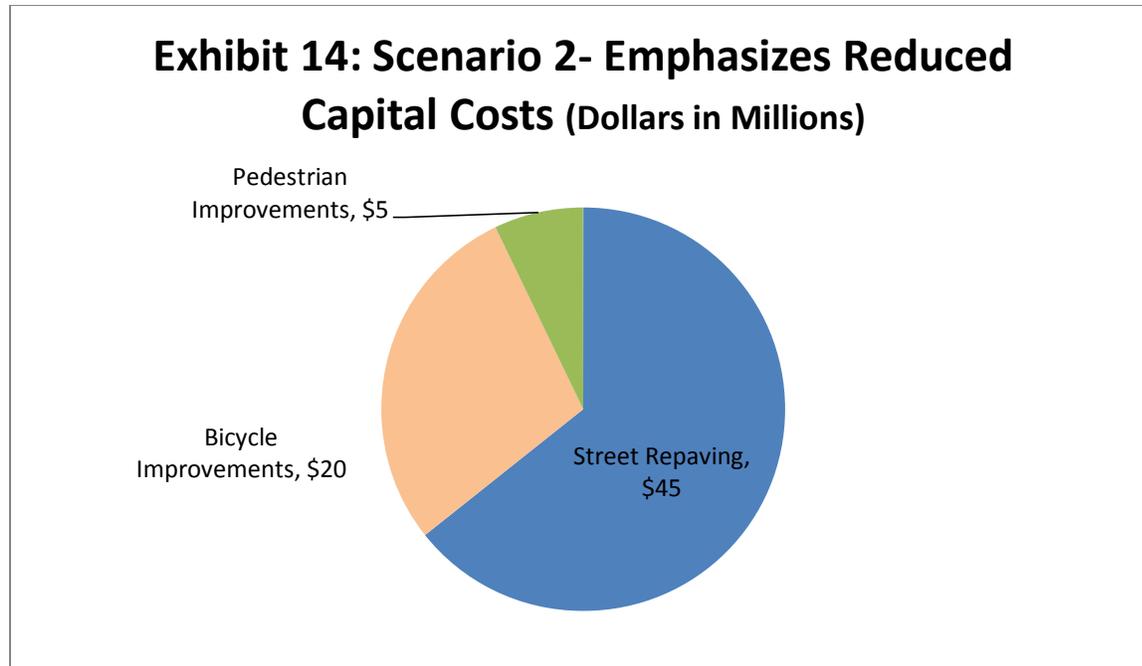
The first scenario emphasizes shifting transportation mode share away from private vehicle use and reducing carbon emissions. This scenario would heavily favor investments in the Municipal Railway (including maintenance and operations) and bicycle improvements. As shown in Exhibit 13, this scenario would include \$49.9 million for Muni, comprised of \$30.2 million for transit service improvements (resulting in a 5 percent increase in service hours and 10.9 million additional passengers per year), \$10 million for rehabilitation of the bus fleet, \$4.2 million to rehabilitate the LRV fleet, and \$5.5 million to rehabilitate the trolley coach fleet, collectively resulting in 30-60 percent improvements in miles between vehicle failures. SFMTA representatives have stated that they believe ridership will increase as service improves.

With the remaining \$20.1 million that would still be available, this funding scenario also includes \$15 million for bike improvements, which would allow for the creation of 30 miles of colored bicycle lanes each year and would foster an increase in bicycle mode-share. To address safety of the travelling public with some of the new VLF revenue, this funding scenario would also include \$5.1 million for pedestrian improvements, which would allow for the creation of over 1,000 bulb outs, speed humps, crosswalks and pedestrian countdown signals making walking a more attractive option for residents and visitors.



**Scenario 2: Emphasizing Reduced City Capital Costs**

The second scenario emphasizes reducing the City's long-term capital costs. This scenario would heavily favor investments in street repaving and bicycle improvements as cost effective methods for reducing long term capital costs. As shown in Exhibit 14, this scenario would include \$45 million to replace General Fund monies budgeted in FY 2014-15 for DPW street repaving and fully fund this program in order to raise the City's average PCI score to 70 by 2023. As previously mentioned, raising the City's PCI score to 70 would result in a reduction of at least \$175 million in future capital costs. The scenario also includes \$20 million for bicycle improvements, which would allow for the creation of 40 miles of colored bicycle lanes each year and would foster an increase in bicycle mode-share. In addition, the scenario includes \$5 million for pedestrian improvements which would allow for the creation of over 1,000 bulb outs, speed humps, crosswalks and pedestrian countdown signals making walking a more attractive option for residents and visitors. The investments in bicycle and pedestrian improvements would support a shift away from modes of transportation that deteriorate City streets.



**Scenario 3: Emphasizes Improving Muni On-Time Performance and Service Levels**

The third scenario emphasizes improving Muni's on-time performance. This scenario would provide all additional VLF funding to the SFMTA. As shown in Exhibit 15, this scenario would include \$50.3 million to increase transit service by eight percent and passenger volume by 17.3 million per year, \$10 million to rehabilitate the bus fleet, \$4.2 million to rehabilitate the LRV fleet, and \$5.5 million to rehabilitate the trolley coach fleet for more reliable service. These investments could improve on-time performance by extending the life of transit vehicles (and reducing vehicle breakdowns) and reducing overcrowding and therefore allowing for quicker and more reliable boardings.

**Exhibit 15: Scenario 3- Muni On-Time Performance and Services Levels  
(Dollars in Millions)**

