

Coordinated Countywide Student Transportation Study



in partnership with: **Transportation Authority of Marin (TAM) & Marin County Office of Education (MCOE)**

december, 2015



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This study is grant funded by Caltrans as part of the 5304 Rural or Small Urban Transit Planning Studies Program

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Introduction

In 2014, the Marin County Transit District (also referred to as 'Marin Transit' or the 'Transit District'), in partnership with the Transportation Authority of Marin (TAM) and the Marin County Office of Education (MCOE), began a process to identify alternatives for school bus transportation across Marin County (hereon referred to as 'the County'). The focus of the study was to identify options to relieve roadway congestion, encourage healthy mobility options, and improve the coordination of resources dedicated to providing student access to school (program objectives). The study evaluated the provision of all current program offerings, including yellow bus transportation programs, public transit services, and Safe Routes to Schools (SR2S) programs, to identify opportunities where these services could achieve proposed goals, especially the goal of reducing traffic congestion.

The evaluation process included an initial inventory of the current conditions across the County. This effort identified the wide variety of programs offered by school districts, Marin Transit and TAM in pursuit of the dual goals of congestion relief and student access to school. The report identified nearly \$4 million of separate programs ranging from supplemental public transit services, to school district provided yellow bus services, to highly successful education and outreach programs targeted at providing safe routes for walking and biking to school. All existing modes and methods of school transportation were considered holistically in order to identify program integration opportunities that would not be identified if programs were considered individually.

Throughout the study, the project involved stakeholders from across the County, forming a multi-agency partnership established to oversee the project. This partnership, known as the Technical Advisory Committee (TAC), provided representation from individuals and organizations representing cities, towns, schools, and countywide agencies. The broad range of perspectives was designed to ensure that the unique operating constraints that exist across the County were identified and that the unique perspectives of each entity were considered.

Based on stakeholder participation and the initial inventory of existing programs, the project team developed the recommendations and next step action items presented in this report. It is important to understand that many future actions are still needed to truly identify a countywide program that achieves the overall goals of relieving congestion, encouraging healthy mobility options and coordinating student transportation resources.

Program Goals and Expectations

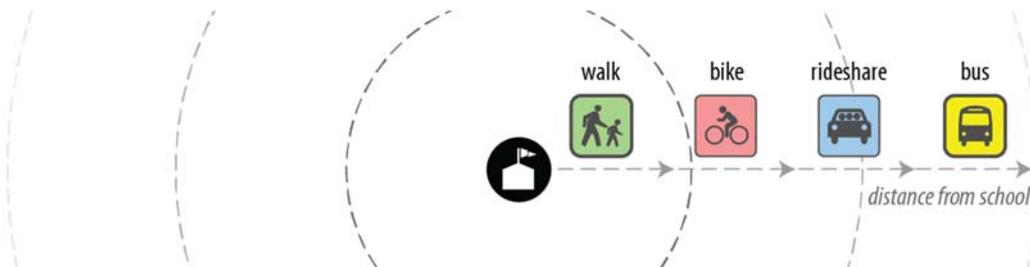
As traffic and enrollment growth in Marin County has increased in recent years and roadway capacity has remained largely unchanged, the partner agencies recognized the relationship between peak hour traffic congestion and student access to school. While this concern is common across many regions, the problem is particularly acute in Marin County due to the transportation challenges presented by the geography,

topography, and demographics of the region. Identifying innovative ways to address both congestion and access were the core goals of the study, as best summarized in the language below from the Request for Proposals that guided the process.

“In an attempt to relieve roadway congestion from school traffic, encourage healthy mobility for students, and expand transportation offerings to students and parents, the CSTA [Countywide School Transportation Assessment] will evaluate how students in Marin County currently get to school and the current transportation options available throughout the County, and make recommendations for enhancements to bus options and service. The core focus will be on identifying an appropriate and scalable model(s) for bus service and evaluating how this model(s) could be better coordinated and integrated into the current Safe Routes to School offerings.”

Marin County is fortunate to have one of the nation’s most advanced SR2S programs that encourages students to walk and bike to school. In many communities, SR2S participation may be peaking and capturing the majority of students that are physically able to use these active modes to get to school (those that typically live within shorter distances to school). The next evolution in the SR2S program in many communities is now to retain the high walking and bicycling rates as new children enter schools and evaluate the value of offering busing to student who feasibly cannot walk or bike to reduce cars on the road and create safer walking and biking conditions for those who choose these modes.

The SR2S program provided an established and understood metric, the “green trip” rate, which was used to understand and analyze home to school trip making. As part of its school-based survey efforts, the SR2S program identifies the green trip rate at each of the school locations where Safe Routes programs exist. This metric represents the proportion of students traveling to school in a mode of transport other than a single passenger personal vehicle. Based on the idea that increasing shared trip services through busing services, car pools, and expanded walking and biking opportunities would contribute to the congestion relief desired by the program, a key goal of this study was to design options that would increase the green trip rate for schools across the County.



Using the goal of increasing the green trip rate as the point of departure, additional guiding principles were also established to support the development of a recommended program. These principles included:

- Any program should be designed to serve as many students as possible
- Programs should be designed to begin providing services as soon as possible
- Programs should be designed to minimize the cost of service to students and parents
- Services should be managed by a lead agency that has a formal and structured process of stakeholder outreach

The remainder of this report identifies the opportunities to create a program of busing services coupled with existing SR2S programs that can support the goal of increasing the “green trip” rate at schools. Encouraging students to take the initiative to safely walk and bike to school on their own, or with friends or family members, is the most sustainable and practical model for these modes. Integrating busing and ridesharing into the discussion will be a key aspect in the development of the program.

Existing Conditions Summary

The statutory and regulatory environment in the State of California and the structure of agencies across Marin County have resulted in a number of different entities responsible for, or associated with, school transportation. As identified in the Existing Conditions Assessment report, there are:

- Five (5) school districts that offer yellow bus services
- Eight (8) school districts that participate in the Youth Pass program offered by Marin Transit
- Five (5) school districts that receive transportation services through Marin Transit
- Eleven (11) school districts that participate in Safe Routes to School programs
- Eighty (80) locations served by Crossing Guards, managed by TAM

The management and administration of these programs varies greatly across each of the agencies involved. While both yellow bus and transit services are provided mostly by private sector contractors (two school districts do provide services using in-house personnel) there are substantial differences in the number of staff dedicated to the management of these services. As would be expected, the number of staff dedicated to school transportation operations varies greatly by the size and scope of the school district’s program. In a limited number of instances there is dedicated transportation staff responsible for program management and oversight. In other instances, the predominance of program management responsibilities have been outsourced to the bus contractor, while the school district remains in charge of financial management and oversight. The wide range of operating responsibilities and diverse reporting requirements are illustrative of the coordination challenges that currently exist and that have to be resolved in any future program development.

The funding streams that support the services vary greatly due to the range of entities providing the services. In total, more than \$4 million dollars are expended on programs targeting student access to school, including transit services, yellow bus services, and SR2S related activities. Key funding sources include:

- Measure A and Measure B funds that support transit services, the TAM Crossing Guards program, and other SR2S programs/infrastructure
- Direct allocation of funding by school districts for yellow bus services
- User fees used to pay for both yellow bus and transit services

While all of this funding is used in some way towards school transportation activities, the varied sources and the associated requirements of each source present a challenge to modifying existing programs, and the lack of new funding precludes adding or expanding services. While it is possible that efficiencies could be realized in existing programs such that funds could be repurposed, new sources of funding will need to be identified to successfully implement program goals.

Improving student access to school offers a significant number of educational and broader societal benefits. One of the most important, for purposes of this study, is that increasing the use of non-motorized or multi-rider mode options has the potential to reduce traffic congestion in and around school sites. The initial Existing Conditions report indicated that “approximately 21-27% of all peak hour traffic” is related to school trips. Additionally, the report determined that:

“There are currently an estimated 40,000 K-12 students enrolled in all public and private schools in Marin County and an estimated 62% of all students get to school via car, with 80% of these students riding alone or not in a carpool. This equates to approximately 25,000 students or 50,000 daily student trips made by automobile.”

The impact of school commute trips is particularly acute in the morning when school hours generally align with morning work hour commutes. School traffic at dismissal time, while certainly not free flowing, has less of a sustained negative impact on the streets and communities in the vicinity of the schools. Quantifying the impact of traffic related to school transportation can be challenging since the start and dismissal times don't match these work-based peak hour travel times. Current travel demand models used in Marin County to forecast and quantify traffic impacts are not designed to measure school-related traffic and updates are needed if congestion relief is factored into the discussion of a home to school busing program.

Another challenge of this time of day asymmetry is in the ability to maximize the efficient and cost effective use of buses and drivers, and to ensure that efforts to maximize their use does not result in spillover effects that increase congestion. The capital intensive nature of any busing program requires regular use of the bus for it to be cost effective to operate, whether it is operated by a public agency or private vendor.

Home-to-School Bus Transportation Options

The use of yellow school buses and transit services represent one of the best options for increasing the green trip rate and mitigating traffic congestion in the region. These services, when developed to be attractive and affordable, offer a highly efficient mechanism to reduce vehicle traffic in and around schools.

Program Considerations

When evaluating different countywide models for home-to-school bus transportation in Marin County, there are a number of factors that need to be considered. The first is the organizational challenge presented by numerous school districts and how services and costs are shared among the school districts and among the individual schools. The second deals with regulatory constraints at the state and federal level that outline the definition of “school bus” and “public transit” bus and what is allowable for transport with these vehicles. A third constraint deals with the natural topography of Marin County and what is physically feasible to operate in the way of buses based on the available road network. The final constraint is the significant cost of school bus programs, particularly the required investment in capital assets, the lack of a single facility, and the absence of dedicated funding.

A report released in 2014 by the Center for Cities + Schools at the University of California-Berkeley¹ provided a number of insights in the innovative use of school buses for community transportation services. The report describes a number of case studies on sharing resources among transit services, yellow school bus agencies, and school districts. The key findings focused on:

- Subsidized Youth Access to Public Transit
- Tools to Encourage Use of Student Transportation
- Programs to Increase School Attendance
- Reduction in Cost and Environmental Impact

Additional reports that have evaluated similar concerns regarding coordinated services and shared use of vehicles include a 1999 report by the Transit Cooperative Research Program entitled *Integrating School Bus and Public Transportation Services in Non-Urban Communities Implementation Guide* and a 2004 report from the Washington State Department of Transportation entitled *Building a Community Bus: Guide to Coordinating Pupil and Public Transportation*. Each of these reports has identified the statutory and regulatory challenges

¹ Vincent, Jeffrey M., Carrie Makarewicz, Ruth Miller, Julia Ehrman and Deborah L. McKoy. 2014. *Beyond the Yellow Bus: Promising Practices for Maximizing Access to Opportunity Through Innovations in Student Transportation*. Berkeley, CA: Center for Cities + Schools, University of California.

associated with the coordinated use of transit and school buses, particularly issues related with Federal Transit Administration regulations and institutional concerns that often prevent collaboration.

Organizational Constraints

Including the Marin County Office of Education, Marin County has 19 school districts that encompass 63 public schools. Thirteen of these districts and 59 schools fall within the urbanized area and are the focus of this assessment. In addition, there are 41 private schools in Marin County. Each public school district and each private school has their own financial objectives and policies that establish school start and end time, early release days, minimum days, and annual calendars (bell times). Since school bus programs are designed to work around a schools bell times, the lack of coordination around these times limits the ability of a bus program to maximize the use of vehicles and drivers.

City, county and state-wide boundaries are also relevant to the discussion. Within Marin County, there are 11 incorporated cities and towns. Each city and town oversees their local roadways and share similar concerns about congestion, especially during the peak school hours. The State Department of Transportation, Caltrans, has oversight and operational responsibility on the freeway and highways within the County that create the backbone for the roadway network.

Home-to-school transportation in Marin County also includes a number of current participants, including:

- **Transportation Authority of Marin (TAM):** oversees the SR2S programs which encourages walking, bicycling, carpooling, and bus travel to and from school
- **Marin Transit:** provider of local public transit services including the supplemental school services. Effective Fall of 2015, also responsible for contract oversight of the Ross Valley School District yellow bus services.
- **Dixie and Lagunitas School Districts:** direct providers of home-to-school yellow bus transportation.
- **San Rafael Elementary, Reed Union, and Tamalpais Union School Districts:** providers of home-to-school yellow bus service under contract.
- **Novato Unified School District:** direct provider of special needs student transportation.
- **Marin Pupil Joint Powers Authority (JPA):** provider of special needs student transportation under contract for all school districts in the urbanized area except Dixie and Novato Unified.

A countywide busing program that meets the needs of all affected parties will be challenging due to the number of competing interests and limited financial resources for additional transportation operating costs. Development of a successful program requires identifying a feasible organizational structure that will allow representation or participation from all of these stakeholders. The allocation and pricing of future busing services should also be done to achieve countywide goals of decreasing roadway congestion and increasing student access. Success of the program will likely hinge on the ability to plan and operate services across educational, political, and transportation boundaries and integrate with the existing SR2S program.

Regulatory Constraints

Home-to-school transportation is not mandated by California law, but special needs education transportation is required by federal law as part of the individualized education program when transportation is identified as a related service. All school-related busing programs are heavily regulated, and for good reason. Safety is the top priority when assessing potential models for student transportation. The National Highway Transportation and Safety Administration (NHTSA) guideline No. 17, Pupil Transportation Safety program outlines recommendations on student transportation operations including the look and feel (identification) of the bus. These standards, including the National School Bus Glossy Yellow color and stop signal arm, have been translated by the school bus manufacturers and represents the standard yellow school bus.

Regulations from the California Department of Motor Vehicles (DMV) and the Federal Transit Administration (FTA) further define what is and what isn't a "school bus," driving the design and specifications for each of these vehicles. If a vehicle is classified as a school bus, it carries with it state-mandated maintenance and inspection schedules, driver certification, safety and equipment standards, and operational standards such as bus stop placement and stopping requirements. A vehicle whose intended purpose is for home-to-school transportation of students is considered a school bus and must comply with operational standards outlined under the California Vehicle Code. One exception to this rule is if the vehicle holds no more than ten passengers (nine passengers plus the driver), the vehicle does not qualify as a school bus.

California Vehicle Code 545 and 546 define school bus and student pupil bus which determines how these vehicles can be used in the transport of students, their ridership capacities, and the required driver training. Following the DMV code for home-to-school transportation, unless the vehicle is operated by a public transit agency and open to the public for use, the traditional yellow bus vehicle is required.

Public transit operators are allowed to operate extra service on regular routes to accommodate increased demands from students and reduce overcrowding on services. This extra service is often referred to as school "tripper" routes or "supplemental" service. However, under the FTA regulations, federal policy set by the Federal Mass Transit Assistance Act of 1974 prohibits the use of federal public transit funds for the provision of public bus service exclusively for students. It states:

No Federal financial assistance may be provided for the construction or operation of facilities and equipment for use in providing public mass transportation service to an applicant [transit agency] unless the applicant and the Administrator enter into an agreement that the applicant will not engage in school bus operations exclusively for the transportation of students and school personnel, in competition with private school bus operators. (49 U.S.C. § 5323(f))

FTA reinforced this policy by releasing an updated circulate in 2005 that stated the tripper rule applies to transportation to and from school as well as from school-sponsored activities or trips. Thus, government-

funded public transit services are not allowed to compete with private school bus providers to operate service that is designed specifically for students. Exceptions to the rule are as follows:

- A transit agency may use buses, facilities, and equipment for the transportation of school students, personnel, and equipment for incidental charter bus operations, if the charter bus exceptions apply. For example, no private school-bus operator or charter service is able or willing to provide services at a reasonable rate, or the trip involves a significant number of students with disabilities.
- In the event that a private school-bus operator cannot provide safe service at a reasonable rate or that no private bus operators exist in the urban area, a transit agency must either:
 - provide notice to all private school-bus operators in its urban area on the intent of the transit agency to provide student service or
 - provide a certification to FTA that there are no private school-bus operators within the urban area.

(For both options above, transit agencies can only use buses, equipment, and facilities purchased with non-FTA funds to provide exclusive transit services. It is therefore not likely that many agencies use this exception.)

- On-demand and paratransit services can be used to transport students to schools. This is utilized in both urban and rural areas across the country (e.g., Washington, DC, only provides exclusive transit service for students with disabilities). Transporting disabled students to school through paratransit or on-demand service falls under Americans with Disabilities Act compliance.

These regulations frame the available options for home-to-school busing and in some ways limit the flexibility for shared use services or sharing financial resources to support common mobility goals.

Physical Constraints

Marin County is defined in many ways by its diverse environments, natural beauty, and rolling terrain. This natural setting creates a number of challenges for transportation and for current and future busing programs. Perhaps the most challenging aspect of the terrain is the hills and valleys in the central and southern portions of the County where narrow, steep roadways often do not have or have only disconnected sidewalk networks and limited opportunities for safe siting of bus stops, bus loading areas, or a large enough turning radius for standard school buses making left or right turns. These conditions create limitations on the type of school bus equipment that can be operated and the ability to safely load and unload passengers. A smaller bus can be driven where road conditions require, but this comes with an efficiency penalty as there are fewer seats available and less opportunity to use those vehicles for variable missions. In these instances, geography and density will constrain the model that can ultimately be implemented.

Another challenge for all busing programs in the County is the lack of population density in certain areas. While there are dense areas with an adequately flexible road network, there are other areas, particularly in the northern and western portions of the County, where these characteristics are not present. School busing, similar to public transit, is most productive (as measured by passengers per hour or passengers per mile) when ridership is concentrated and trip distances are shorter. This issue is further exaggerated when students who do live in close proximity are distributed over various schools due to local enrollment policies, overcrowding, or

household decisions that send students to a non-neighborhood school. In higher density regions a full range of walking, biking and transport options are available. In lower density areas more targeted solutions are required.

The final physical consideration is the need for land itself. Transportation operations generally require significant parking facilities. While this concern is not an absolute obstacle, it does have clear and noticeable implications related to cost and feasibility. The lack of readily available and appropriate land within the County constrains the types of programs that can be implemented and may have a negative impact on the comparative cost of those programs. Therefore, every effort will have to be made to create efficiency opportunities that maximize the use of existing vehicles to minimize the parking footprint they require.

Cost and Funding

One of the key concerns inherent in all student transportation operations is the fact that providing services requires a significant investment in an expensive capital asset (vehicles) that will be used for very limited periods of time in a given day and in the labor needed to drive the buses. It is this “inefficient” use of buses and drivers that contributes to the high cost of services and often prevents organizations from even considering implementing a busing program. The cost of home to school transportation and exploring options for new sources of dedicated home to school transportation funding is further discussed in this report’s Financial Plan section.

Service Models

Any increase in busing services must reconcile the fact that there are significant statutory and regulatory concerns related to the use of transit services for school transport, and that the implementation of any broad-based yellow bus program will have significant expense associated with it. Therefore, three service models have been developed that can be implemented together to support the dual goals of increasing green trip rates and reducing traffic congestion:

- Yellow Bus Services
- Supplemental Public Transit Services
- Student Shuttle (or Student Dial-A-Ride)

Each of these are described in further detail below.

Yellow Bus Services

Overview

Yellow bus services are the most recognized and widely-used mode for home-to-school busing in North America. The configuration and design of the yellow bus is tailored to the safety needs and capacity needs of student transportation. Yellow bus programs are generally focused on moving the maximum number of

students with the fewest number of buses possible. In order to support this goal it is necessary to align a wide range of institutional concerns within a school district, including school start and end times; athletic programs; eligibility criteria; and specialized expectations (i.e., student nutrition programs offering meals before school). Coordinating these efforts within one school district is complex, and that complexity increases exponentially if multi-agency/multi-school coordination is pursued. On-going multi-agency advisory structure will be an important requirement to successfully implement new and revised models of service.

A major advantage to the yellow bus model is the high capacity of the vehicles. Depending upon the size and type of vehicle, large yellow buses can seat a maximum of 84 elementary students, or 56 middle school students. Compared to a typical bus of similar size used in public transit service, this is 40-80% more seats. The difference in seated capacity is due to a number of differentiating factors including seat and aisle design (public transit is designed to allow for standees while yellow bus is not), single-door-only versus front- and rear-door found on public transit, and the lack of wheelchair access that is typically not found on the yellow bus is and standard on the public transit bus.

Service design for yellow bus programs are traditionally provided by the school district and focus on geographic equity and access for students. Some communities have targeted yellow bus services to serve specific populations of students (rather than broad-based programs designed to serve all students) as a means of relieving congestion. In instances where services have been targeted, it has been crucial that program goals, policy expectations, and operating practices are clearly articulated. This clarity mitigates any concerns or issues related to fairness or equity of the programs that are implemented.

Operation of yellow bus programs are either conducted in-house by the school district or provided under contract to a private company. Programs operated in-house require a transportation division within the school district to provide the oversight, drivers, maintenance, and storage of the vehicles. Services provided under contract allow the school district or contracting school to request the vendor to provide all aspects of the service. This leaves contract oversight as the only administrative duty for the school or school district.

Fare payment on yellow bus is typically done as a pre-paid pass that guarantees the seat for the student. Annual and semester passes are typically offered by either AM, PM, or two-way trips. This structure is based on the dedicated use of the vehicle for student transportation and the need to ensure that seats are not only being used but also guaranteed so students are not left without a seat. This model requires parents to make a commitment to the bus and offers limited opportunities to “pay as you go.” Some yellow bus programs offer single ride ticket books or day passes that are premium priced. These offerings provide a feasible option for casual riders but increase the level of administrative oversight for the program.

Marin County Experience

Yellow bus service is currently the most commonly provided home-to-school busing service offered in Marin County. Two school districts provide yellow bus service with an in-house operation (Dixie and Lagunitas) and

four others provide yellow bus service through contracted operations (San Rafael City Elementary, Reed Union Elementary, Ross Valley and Tamalpais Union). Novato does not provide home-to-school yellow bus service but currently has a fleet of full-size transit style vehicles that are used for field trips. Dixie’s yellow bus program operates 10 routes with eight vehicles, while Lagunitas maintains a single route and vehicle operation. Contracted services range from San Rafael’s 27 routes with 10 vehicles to Tamalpais Union’s single route and single bus operation for West Marin students. School districts providing yellow bus service do so to achieve various goals. Therefore, the level of subsidy ranges from near nothing (charge the user 100% of the cost) to 100% of the cost (service is free for the user).

Marin Transit, in partnership with Ross Valley School District, recently entered into a partnership to test a new yellow bus program for students of White Hill Middle School and Hidden Valley Elementary School. The service started in the Fall of 2015 and serves over 500 students using six buses, through a contracted operation. The program is a pilot to test the conversion of supplemental public transit service (defined and discussed in the next section) to yellow bus service.

The experience of the Transit District contracting for yellow bus service offered a number of lessons learned for the County. These include:

- **When issuing a competitive bid requesting a full service yellow bus operation, there is very little competition.** Marin Transit took the lead on a Countywide Invitation for Bid (IFB) that included a consortium of participants including San Rafael City Schools, Reed Union School District and Marin Transit (on behalf of Ross Valley Schools). The IFB requested the contractor provide all aspects of the service (management, drivers, maintenance, and storage) and estimated a total of 23 buses needed for the service. Only one response was submitted and only 16 of the requested 23 buses were included. The limited amount of service offered by the bidder was a result of challenges related to attracting drivers to do the work. Follow-up with potential bidders identified a lack of interest in competing with the larger providers and the inability to be competitive on price.
- **The lack of a maintenance and storage facility makes it costly and challenging for school districts and private contractors to operate yellow bus service.** Aside from the countywide special needs buses, current contract yellow bus providers are storing and maintaining vehicles outside the County where land is more readily available. This arrangement leads to an increase in non-revenue miles, which increases costs associated with operator time and fuel. Since Marin County has very few entry points, reliability is also compromised which can impact service quality. The Dixie school district’s in-house operation is done on a very constrained property and allows for little or no expansion. Although proximity to students and the service area is not an issue in the Dixie experience, the constrained space increases operational expenses of employees’ time to carefully move buses and trucks in and out of the yard.

Future Applicability

The yellow bus model is a tested and accepted form of home-to-school transportation and is nationally regarded as one of the safest forms of transportation for students. Recognizing all students could use yellow bus services, the focus of yellow bus services in Marin County should be the younger students who benefit from the customized home-to-school transportation offering and may not be ready to navigate a public transit

environment. Although various sizes of yellow buses are available, larger buses are the desired model to reduce costs and increase efficiencies. The size of the vehicle limits the geographic coverage of this service as it would not provide a good option for serving the hillier areas of the County.

The ability for the school districts to expand or develop new in-house operations is challenging due to the lack of facilities and transportation departments needed to support busing operations. The exception is Novato where a facility and a transportation division still exist. Contracted yellow bus operations are more likely to expand since the vendor is responsible for providing the transportation infrastructure and oversight. However, based on previous experience, the degree of expansion may be limited unless services are purchased at a premium and performed largely by operators based outside the County.

A possible option for yellow bus service would be a countywide-contracted model that would be similar to Marin Transit's current fixed route contracted services, only operated with a school bus instead of a transit bus. As opposed to the current yellow bus services under contract in the County, a County-Wide agency would purchase and hold title to the vehicles and provide these vehicles to the selected contractor. Based on the challenges of finding vehicle storage and maintenance facilities in Marin County, a public agency-owned property also provided to the selected contractors would likely increase interest from the private sector and reduce operating costs.

Supplemental Public Transit Services

Overview

Supplemental public transit services are provided along fixed route alignments to address overcrowding created by higher ridership demands created on school days by the K-12 student market. This is achieved by adding additional buses during morning and afternoon bell times on school days to minimize the impact of heavy student ridership on regular service. The service is provided using a public transit bus and is available for use by all members of the public.

Service design and routing for supplemental routes follow current or historic fixed route alignments. In addition to providing the added capacity, routes are coordinated with the school bell schedules to meet student rider needs. Based on this design, these services work well for riders and schools that are located along fixed route alignments, but not feasible for those students or schools located farther from these alignments.

Supplemental routes are operated by Marin Transit using a fully contracted service delivery model. At Marin Transit, specifically, the Transit District provides the administrative oversight and vehicles for the contracted fixed route services with operated by a contractor - MV Transportation. The nature of these peak, school-day-only trips is challenging from an operations standpoint because of the added equipment and short work shifts needed to support a relatively small amount of service.

Payment for supplemental services is arranged either through a pre-paid pass (annual, semester, monthly, weekly) or “pay as you go” with cash or a pre-paid electronic fare media card (i.e. Clipper). The flexibility in fare payment is attractive for parents and students who only use the bus some days and rely on other options on other days. This model leaves the public transit agency uncertain about potential revenues and, more importantly, does not guarantee that a seat will be available for every student as daily ridership fluctuates.

Marin County Experience

Marin County is somewhat unique in that Marin Transit, through its supplemental service routes and the Youth Pass program, is the primary provider of student transportation services in Marin County. This has resulted in the development of an organizational and operational infrastructure that is better equipped than most of the local school districts to design and manage transportation services for school children.

Prior to the fall of 2015, Marin Transit offered 11 supplemental routes using 23 buses designed to serve 13 schools across the County. These services were traditionally provided under contract to Golden Gate Transit but shifted to other service providers at the request of Golden Gate Transit as part of their 2012 intergovernmental agreement with Marin Transit. Starting in the Fall of 2015, MV Transportation now provides service on all nine of the current supplemental routes using 11 buses. The remaining routes were shifted to contracted yellow bus service with Michael’s Transportation.

As part of the shift of supplemental school services from Golden Gate Transit to MV Transportation, Marin Transit paired the school service with two other programs (the Muir Woods Shuttle – and dedicated College of Marin shuttle service) that operated at different times of day and days of week than the school service. The buses and drivers used for Muir Woods Shuttle on weekends are available for morning and afternoon school service on weekdays. These same drivers are then available for midday services to College of Marin. While these programs complement each other well, growth and expansion must be considered collectively as investments in equipment and scheduling of services must have some nexus.

Future Applicability

Supplemental transit services, compared to yellow bus services, are most appropriate for older students (high school and, to a lesser extent, middle school). These services are open to the general public and require the rider to independently navigate the system, including boarding the vehicles, paying the fare, signaling for a requested stop, and potentially transferring to another route. This exposure to public transit is attractive in that it helps establish use of alternative transportation at an early age and helps eliminate barriers of use created by not knowing how to use the system. This model, however, does not guarantee a seat for every student since passengers are able to “pay as you go” and do not have to subscribe to the service.

Supplemental services create natural opportunities for partnership between the local Transit District and the schools by allowing the Transit District to leverage its expertise in managing and operating bus services while

allowing the schools to focus on academic goals. However, unless these supplemental services have a synergistic program to share drivers and vehicles, they do create an exaggerated need for equipment and labor that is very expensive to provide.

Operationally, the current structure of supplemental services works well by balancing the weekend needs of the Muir Woods shuttle and College of Marin shuttle against the weekday student needs for supplemental public transit. While the current fleet of 11 vehicles is sufficient to meet the needs of current recreational demands, additional supplemental needs are likely much higher. Thus, service expansion with the current shared program model would lead to an imbalance of work between the services. To remain sustainable, significant investment in capital equipment would be required. An opportunity to expand supplemental public transit service to appropriate high schools is possible if routes serving students younger than high school age are transitioned to yellow bus or another model. It is estimated that of the current 11 supplemental buses and nine supplemental routes, shifting these younger students could free up an additional two transit buses.

In considering expansion of supplemental school service Marin Transit must ensure that it meets all of the requirements of FTA tripper service regulations including public access to bus stops (which can be problematic if bus stops are on school property) and capacity to serve the general public as well as the student population. While Marin Transit already has adequate processes in place to support the identification of opportunities to expand supplemental service routes to support school transport, the primary constraint on any expansion is the availability of funding.

Student Shuttle (Student Dial-A-Ride)

Overview

When considering options for the residential areas of the county that are rural or within the hills, it is apparent that many of the SR2S programs and busing options would not be available due to the lack of density and/or adequate transportation infrastructure. Models that integrate general public transit or senior transportation and student transport may offer potential solutions and Marin County could be the right place to implement them. Historically within Marin County, there has been a concerted effort to facilitate collaboration in a way that is often not practical in other locations. As a result, a number of innovative best practices exist in the County, including shared use of management and technical services among agencies, like the routing and management services provided by Marin Transit to local school districts.

The dual pressures of service expectations and cost containment have forced many communities to explore alternatives beyond traditional transportation models to support student access to school and reduce traffic congestion. National examples include:

- In one community in Georgia, a program similar to Marin Transit's Dial-a-Ride has been established where students can register for service and pay on a per ride basis.

- In the Los Angeles area, a major bus contractor is providing ad hoc pay-for-used services, using yellow school buses (<http://www.schoolwheels.com/>).
- Denver Public Schools in Colorado has established a transit style loop system for its students that provides access to programs at regular intervals using yellow school buses as the mode of transport.
- Dallas County Independent School utilizes a national firm (<http://www.alcsolutions.com>) to coordinate low density ridership to specialized programs.

The recent emergence of ride hailing companies that offer on-demand transportation similar to taxi services has opened new doors for transportation. New technology has allowed everyday drivers to join the network of transportation providers and do so at lower rates than traditional taxis. These services offer additional tracking and feedback tools that meets the desire of today's rider. This new space for transportation has also extended into the student transportation. A few Bay Area examples include:

- Shuddle (<https://shuddle.us/>) is a new transportation network company that operates in six counties within the Bay Area including Marin County. These services are provided as needed through an online request. Services are focused on transporting school children and take additional measures to ensure the service offered is appropriate and safe for younger riders. Costs range from \$8.00 per trip up.
- Kid's Cab in Richmond (<http://www.ci.richmond.ca.us/2924/Kids-Cab>) offers taxi service targeted at children for recreational travel before or after school. Costs are \$5.00 per trip.

All of these programs are designed to offer alternatives to existing transport infrastructure to serve specialized populations. While the volume of these services is somewhat limited, their intent is wholly consistent with the goals of the coordinated transportation plan – to offer opportunity to increase the number of passengers in individual vehicles in order to reduce traffic congestion around individual school sites.

Marin County Experience

Within the last year, a private company called Shuddle started business in Marin County offering on demand rides targeted at school-aged children. The service is requested online or using an app, similar to other ride hailing companies such as Uber or Lyft. Shuddle however is focusing their model on school children and is doing additional training and background checks on their drivers to ensure the services and driver are appropriate for transporting school children. While it is unclear how many students are actively using this service, costs range from an \$8.00 per trip carpool rate to a minimum of \$12.00 for a non-shared ride.

Future Applicability

Traditionally, there is little overlap between supplemental school service provided by public transit agencies and yellow bus services provided by schools due to regulatory restrictions mentioned above. The construction and design of school buses is strictly defined by regulation and the result is a vehicle with limited utility outside of the primary mission of student transportation. However, public transit vehicles can provide much greater flexibility in how and, most importantly, where the units can be used. For example, the paratransit and

community shuttle programs provided by Marin Transit utilize vehicle types that are capable of operating in environments in which school buses cannot operate due to lack of turning radii or road conditions.

The service design of the student shuttle model would utilize smaller vans or shuttles to provide a more flexible and personalized home-to-school transportation service for students living in areas not served by supplemental public transit or yellow bus service. The type of vehicle would have limited capacity and higher operating costs per passenger. To make this model financially feasible, future applications should explore use of these vehicles for other school and non-school related services.

Examples from the Bay Area and elsewhere suggest this model could be either subscription based or “pay as you go” with some form of registration that provides the students’ desired pickup and/or drop-off location in a central database. Since residential pick-up/drop-off locations for this type of service are likely dispersed, and students may only request the service when needed, a software solution would also be necessary to allow a trip request to be placed and confirmed. Commercial software packages are currently available that provide this automated dispatch functionality, allow the driver and rider to communicate, and complete a financial transaction for the trip. The experience can mimic an Uber or Lyft type of real-time request or a more traditional reservation service that is communicated to the driver.

It is likely that the most applicable implementation of this model would be done by the private sector. However, if it was done by the public sector, this would be a new program and it is likely that the type of operation would be similar to the current contractor model. However, the vehicle type does allow for a less comprehensive driver certification, a lighter maintenance cycle, and potentially less storage space. Since students will be a primary, if not sole market for these services, the driver and vehicle need to be trained and designed for youth.

While all ages would be appropriate for these services, the customized nature of the service may lend itself to a younger rider that is either unable to safely walk to a public or yellow bus stop or a student that has irregular schedules and needs a higher level of transportation to get to remote after-school programs or has a staggered morning schedule.

School Level Demand Assessment

The following section presents an assessment of the existing and potential busing demand for Marin County Schools. It estimates the specific busing needs and potential demand of each public school in the urbanized areas of Marin to help structure the discussion of future bus expansion. This assessment is based on current enrollment data and demand projections do not take into account any potential changes in enrollment. Appendix A includes an assessment at the school level based on current and anticipated bus need.

The following is a high level qualitative assessment and uses the following factors to identify the appropriate bus model and level of service anticipated at each school site, including:

- **Existing busing services, their usage, and potential for expansion using their current model.** An analysis was done to determine the existing ridership, if the current service is productive, and whether increased ridership could be supported with existing resources.
- **Student distribution and distance from attending school site.** The team used the following thresholds for identifying schools with strong busing needs:
 - **“High” Demand Schools:** elementary and middle schools where more than 75% of students live over a half mile from school and high schools where over 50% of student live greater than one mile from school.
 - **“Medium” Demand Schools:** elementary and middle schools where more than 50% of students live over a half mile from school (all high schools were defined as high demand)
- **Observed barriers within the school catchment area that may limit connectivity.** Pure distance from school illuminates a relative need for busing services but often times, even when students live within close proximity of their school, a freeway, railway, or waterway can make it challenging to access the site. An assessment of these isolated neighborhoods were included when determining busing needs.
- **Grades and ages of students attending the school.** Generally speaking, younger students need a more restricted and monitored yellow bus program and older students are capable of more independently navigating the public transit services.
- **Proximity of the school to key transportation corridors.** As busing helps reduce auto trips associated with student travel, proximity of the school site to transportation corridors that support local and regional mobility was included.
- **Proximity of the school to existing fixed route public transit services.** School sites in close proximity to existing fixed route service are stronger candidates for supplemental school services.

Many of the factors listed above are documented in the Existing Conditions portion of this report. The demand assessment used current ridership and the student distribution data to estimate potential usage of the busing programs at schools that demonstrate “high” and/or “medium” demand characteristics. The specific schools included in the proposed busing program are detailed in the Findings and Recommendations section. Figure 1 and Figure 2 below shows these school’s current and potential bus mode split by District and by School, respectively. Figure 3 and Figure 4 show a summary of the current number and potential number of daily student bus riders for each District and School, respectively. Again, this information is provided for only the schools that were identified as “high” or “medium” demand schools and assumes service expansion would occur.

Figure 1: Current and Potential Bus Mode Split (by District and Bus Service Type)

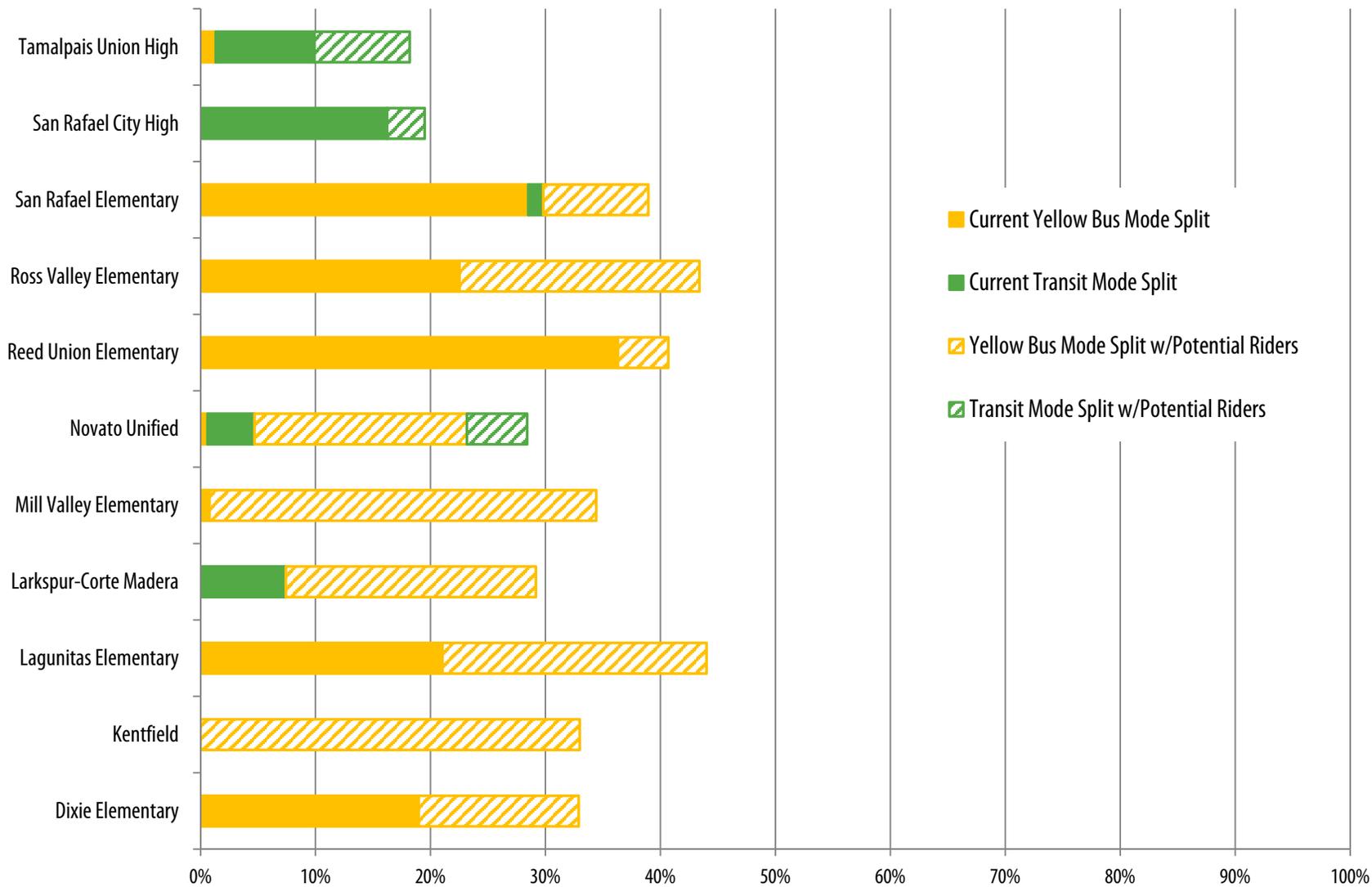


Figure 2: Current and Potential Bus Ridership (Daily Students Riding by District)

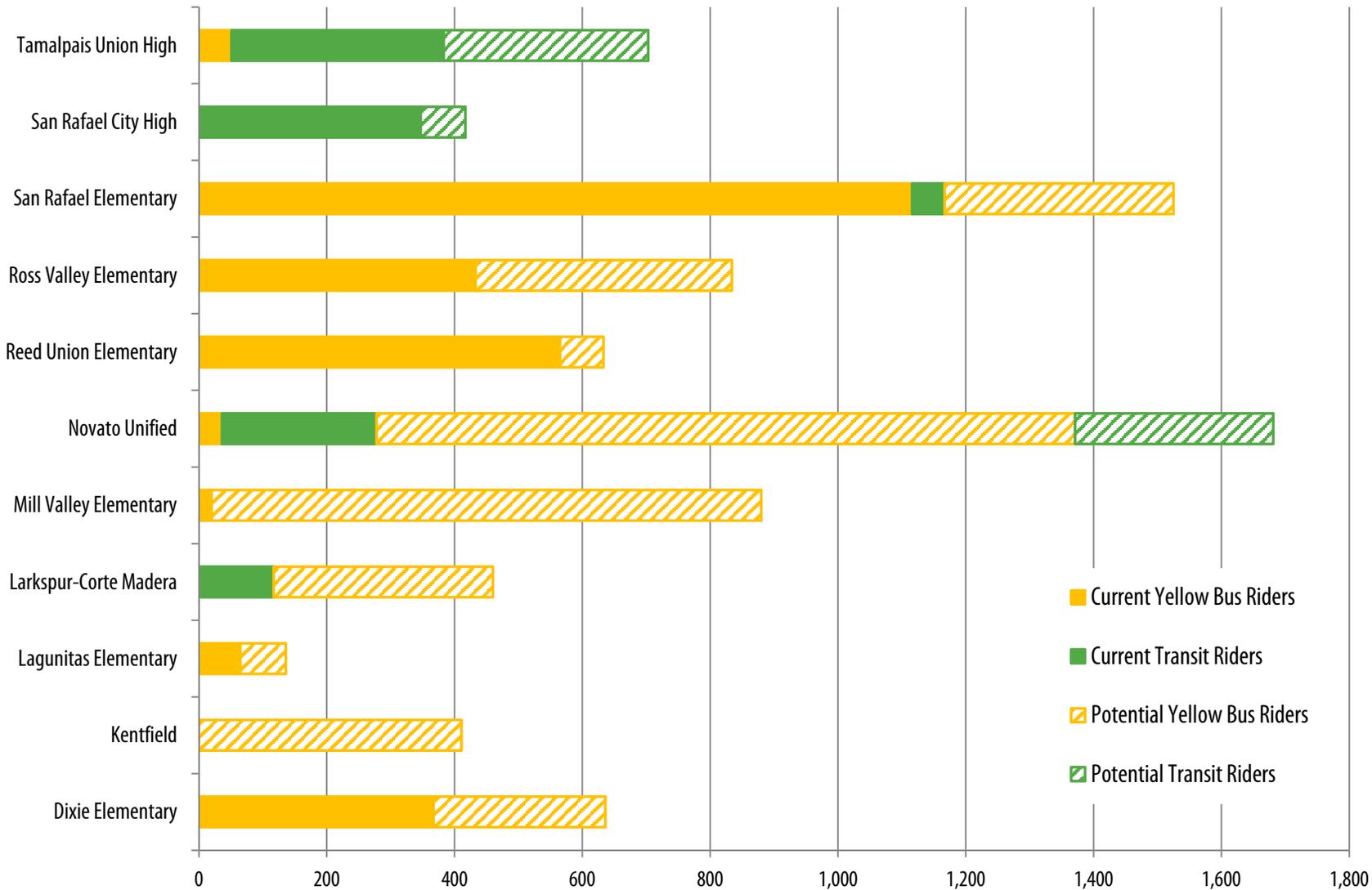


Figure 3: Current and Potential Bus Mode Split (by School)

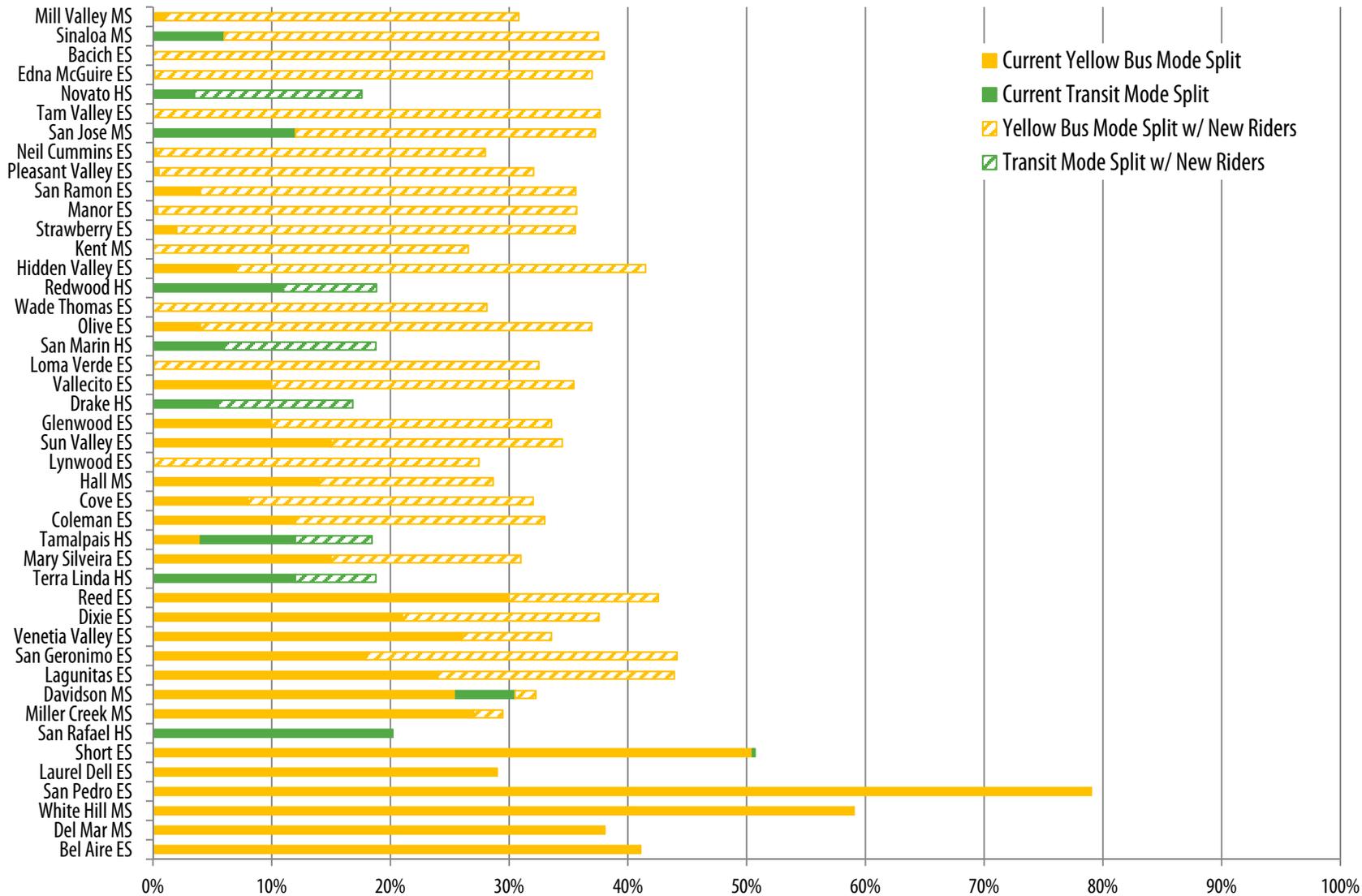
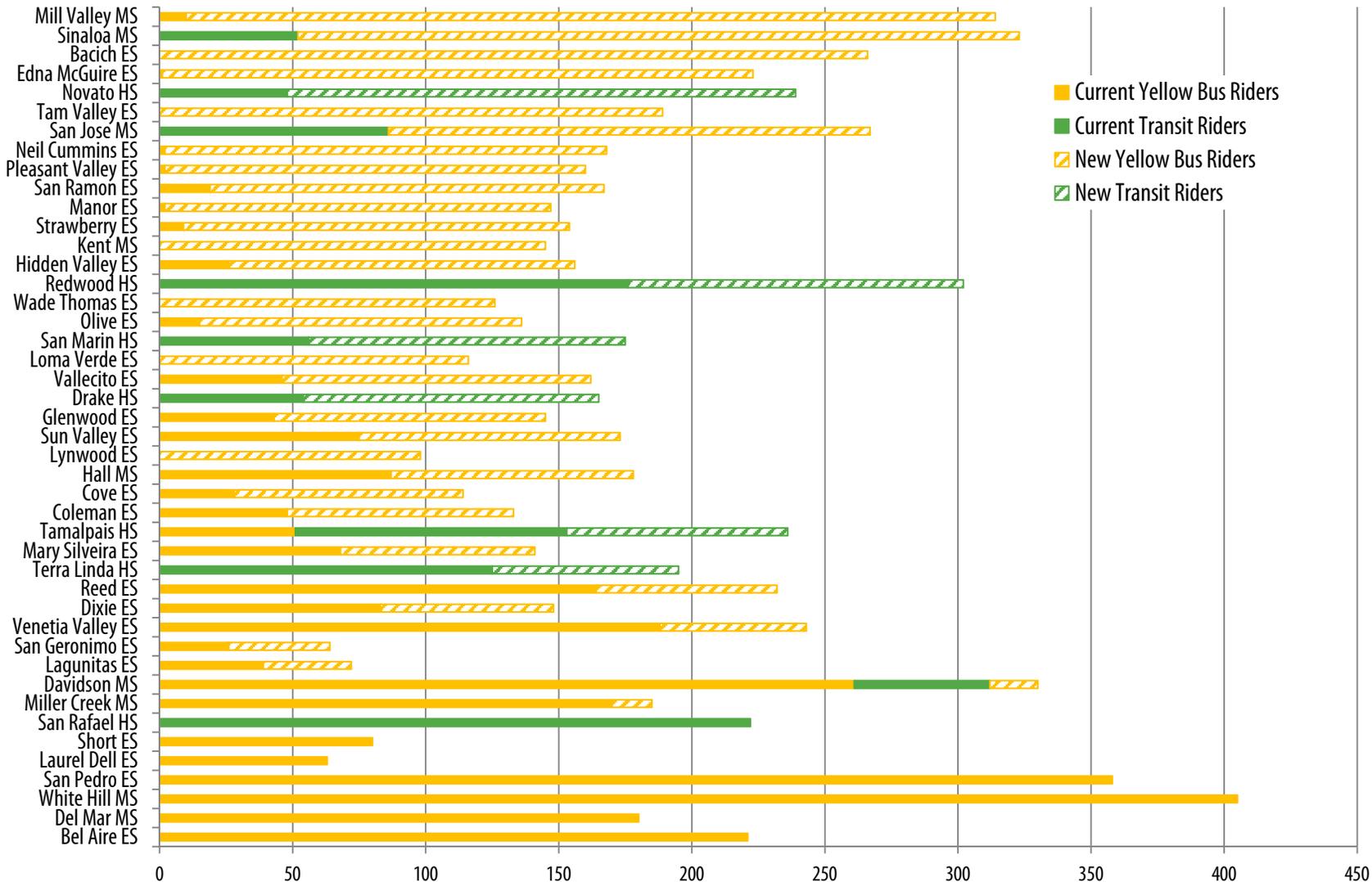


Figure 4: Current and Potential Bus Ridership (Daily Students Riding by School)



Estimates for potential riders assume that the future service model (shown in Table 8 and Table 9) is available and service levels and characteristics (cost, ride time, stop locations, etc.) are similar to similar services currently offered elsewhere in Marin County. The bars in the figures below are color coded to match the type of future service offered (yellow = “yellow bus”, green = “supplemental transit services”).

The results of the demand assessment shows that added busing services have the potential to increase bus patronage from the current 3,800 students per day to nearly 8,700 students (+4,900). Combined, this increase in ridership would increase the current mode split at these schools from a collective 13% to just over 30%. Nearly 7,000 of the potential 8,700 future bus riders (80%) would use yellow bus services with the remaining 20% using supplemental public transit services.

Individual districts that demonstrate the most potential for growth in bus ridership include: **Novato Unified** (+1,650), **Mill Valley Elementary** (+860), **Kentfield** (+411), **Ross Valley** (+401) and **San Rafael Elementary** (+358). Individual schools that demonstrate the most potential for growth in bus ridership include: **Mill Valley Middle School** (+304), **Sinaloa Middle School** (+271), **Bacich Elementary** (+266), **Hamilton Meadow** (+244), and **Edna McGuire** (+222).

Increasing bus patronage to the levels outlined by potential new riders could have a significant impact on traffic, especially in areas where schools are located on or near congested roadways. A parent taking on child to and from school equates to two additional AM and two additional PM trips along all roadway segments between home and school. Assuming nearly 5,000 potential new students would use busing options and all these students are currently being driven to school alone, an estimate 20,000 daily vehicle trips could be removed from roadways around the County.

Congestion relief benefits from busing services may be attractive to many communities that have limited roadway capacity and few options to expand. A successful and stable busing program needs to be well funding and these revenues need to be stable. The following sections outlines the estimated costs of a countywide program and identifies potential revenue sources to fund the fund.

Financial Plan

This financial plan provides an estimate of future costs and revenues needed to support busing needs for schools showing “high” and “medium” bus demand characteristics (identified in the previous section). A financial model was developed to estimate the costs provided in this section and to allow some sensitivity testing to be done on certain policy decisions.

As shown in Table 1 below, just over \$2 million was spent on regular home to school busing service in FY 2014/15. This amount went up by over \$1 million in FY 2015/16 as operations expanded in areas like Ross Valley and Tiburon. Users pay approximately 30% of these costs and the other 70% is publicly subsidized through a variety of sources. Approximately 8% of total expenditures on home to school busing are made by Marin Transit on the supplemental transit services and the rest is spent on yellow bus services.

Table 1: Revenues and Expenditures for Current Student Transportation Programs and Services (2014-15)

Program	FY 2014/15		FY 2015/16	
	Estimated Annual Cost of Operations	Estimated Annual Cost of Operations	Fares or User Fees	Other
Yellow Bus	\$1,436,416	\$2,850,000	\$850,000 (30 %)	\$2,000,000 (70 %)
Supplemental Transit Service	\$571,721	\$239,940	\$86,400 (36 %)	\$153,540 (64 %)
Total	\$2,008,137	\$3,092,940	\$936,400 (30 %)	\$2,153,540 (70 %)

Expenditures

Regulatory requirements, service design, and operational needs play a role in designating the type of bus and cost components of operations. The following is a discussion on the likely expenditures associated with each of the busing models identified earlier in the report. Costs are separated into the ongoing operating costs and capital costs. Since there is experience in Marin County with some types of home-to-school busing and not with others, accuracy of the cost estimates may vary.

Capital Costs

Regardless of the model selected to provide home-to-school transportation service, there are several capital cost considerations that will remain consistent. These costs are primarily associated with the assets (vehicles) and the facility needed to store and maintain the vehicles.

Vehicles

The first, and most significant capital cost consideration, is the ongoing need for the vehicles themselves. Transit buses, school buses, and other student transport vehicles all require significant investments ranging from tens of thousands of dollars for van-type vehicles to hundreds of thousands of dollars per unit for some transit and school buses. The typical vehicle is identified based on the regulatory requirements of the program. Table 2 shows a summary of these vehicles and compares the capacity, costs, and utility of each type of vehicle.

Table 2: Vehicle Needs by Service Type

Type of Busing Program	Typical Vehicle Used	Average Max Seats	Average Cost Per Vehicle ²	Life of Vehicle	Annualized Cost
Yellow Bus	Yellow School Bus	70 ¹	\$150,000	20 yrs	\$7,500
Supplemental Transit	Transit Bus (Heavy Duty)	45	\$530,000	12 yrs	\$44,167
Student Shuttle	Van	9	\$51,000	5 yrs	\$10,200

1. Maximum seated capacity is dependent upon age of student. Generally a full size yellow bus can seat 56 middle school students (two to a seat) and 84 elementary school students (three to a seat) for an average of 70.
2. Vehicle costs for transit bus and van based on are regional guidance from the MTC as part of the 2015/16 bus/van pricelist and assumes diesel vehicle type. Marin Transit prioritizes low and/or no emission vehicles whenever feasible and cost for these vehicle types are at least 40-50% higher.

Since vehicles are not one-time investments they require a regular funding stream to support their timely replacement. Therefore, any program development effort would require strong consideration of the cost of capital vehicles and focus on efficiency efforts that minimize the number of units required.

Onboard equipment such as cameras and GPS tracking is becoming more common on buses and should also be considered in the cost estimation process. These devices can add an additional \$10,000-\$15,000 per bus.

Capital Cost Estimates

Table 3 shows a summary of the current vehicles used to provide school related service and the potential fleet needs to serve the “high” and “medium” demand schools. Based on these schools, it is estimated that just over 100 vehicles are needed to support all regular home-to-school transportation bus programs countywide, with over 70% of these identified as yellow bus. New fleet needs are estimated at 56 vehicle or \$15.24 million and a replacement of the current fleet would total 46 vehicles or \$11.46 million. Assuming a new fleet would be purchased for this program, the 102 vehicle fleet is estimated to total \$26.7 million

Table 3: Capital Needs - Vehicles

Type of Busing Program	Current Vehicles Used	Potential Vehicles Used	New Vehicles Needed	Estimated Cost of Current Vehicles	Estimated Cost of New Vehicles	Total Fleet Costs
Yellow Bus	34	72	38	\$5,100,000	\$5,700,000	\$10,800,000
Transit Bus ¹	12	30	18	\$6,360,000	\$9,540,000	\$15,900,000
Total	46	102	56	\$11,460,000	\$15,240,000	\$26,700,000

1. Transit bus numbers indicate additional vehicle needs, in addition to daily fixed route needs, to support the supplemental transit service

If a contracted model of service is pursued, there would be an option to rely on the contractor to provide the vehicles as part of the service contract. This structure reduces the initial capital outlay but increases ongoing operations costs. While this approach can allow expansion without a significant capital outlay, it can make it challenging to customize the vehicle for the needs of your operation including adding onboard equipment. It will also lead a higher hourly or daily rate for service, thus increasing ongoing operating costs.

Facility

Other significant capital investments that are required regardless of service model are land and facilities. Facility costs are largely dependent upon how the service is operated, in-house or contracted. No stakeholders associated with home-to-school transportation have a bus storage and maintenance facility that could be considered for any future school bus expansion. Thus, the near term options for busing programs will likely rely on contractors to identify these facilities and include them as part of their operating costs (hourly or daily rates). This cost model is currently in place for all supplemental public transit services and the contracted yellow bus services.

Contracted supplemental public transit services store and maintain vehicles in Novato while contracted yellow bus services store vehicles and perform maintenance outside the County (Richmond, San Francisco, and Vallejo). Based on a preliminary analysis of contractor costs by Marin Transit, it is estimated that contract costs could be reduced by 10-15% if contractors were provided a storage and maintenance facility within the County.

Investing in a storage and maintenance facility for any type of future student busing program should be a high priority because it reduces costs, reduces risks of facility turnover if leased, and helps improve service reliability. Even the current facilities located within the County and used for current student busing programs by the school districts or Marin Transit’s contractors are at or near capacity and likely unable to take on much expansion of service. Recent exploration within the County for overnight or even midday storage has been challenging. The ability to identify and acquire a facility that is designed specifically for bus storage and maintenance may be a limiting factor in developing a countywide busing program.

Based on the assumption that all vehicles needed to support the “high” and “medium” demand schools (102 vehicles), it is estimated that 8-10 acres would be needed at a minimum to provide vehicle storage for a countywide program. Limited parcels within the County are well suited for bus storage and even fewer are sized to meet the anticipated need of these programs. Thus a series of smaller storage yards and a consolidated maintenance facility prove to be the most feasible way to accommodate expansion. If a site was to become available, or smaller suitable sites, the estimated cost to purchase and improve for bus storage is estimated at \$20-25 million.

Ultimately, the impact of these land and facility constraints are manifested in the cost of service. Higher land costs to operate within Marin County will require comparatively higher rates for service. Alternatively, staging buses outside Marin County and traveling into the county to provide service increases the non-productive time of the vehicles and general operating wear and tear, which will increase costs. Therefore, any program model chosen must consider how to stage the vehicles as close to their operating environment as possible as part of broader cost management efforts.

Operating Costs

The cost to operate school services will vary based on the type of operation (in-house versus contracted), the type of vehicle operated, and the amount of training and licensing of the driver. A typical school driver shift is a few hours in the morning and few hours in the afternoon with a long midday break. Although yellow school bus drivers are paid guaranteed minimums, the excessive down time and longer shift lengths tend to be less attractive than similar positions within the transit industry. These conditions, along with the current strength of the economy, make it challenging to attract and retain qualified and reliable school bus drivers for the work.

An in-house operation assumes the managing organization has secured vehicles and maintenance/storage facility and will directly hire drivers to operate the service. As noted previously, very few of these models exist today in Marin County and opportunities to expand these to take on a larger role does not seem feasible. Development of a new, perhaps county-wide, in-house operation would be a longer-term project that would identify the appropriate hiring organization, an appropriate maintenance and storage facility, and purchase of a new fleet.

Contracted services are used throughout the county to deliver most home-to-school transportation services including the public transit services. As stated earlier, upfront investments in capital for the program (vehicles and facilities) would result in a lower operating cost for contracted operations.

Table 4 shows a high-level estimate of the potential costs associated with each type of busing program in 2015 dollars.

Table 4: Busing Service Types and Costs

Type of Busing Program	Type of Operation	Estimated Operating Costs per Bus ²	Estimated Daily Operating Costs for Student Services per Bus ³	Estimated Daily Students Transported per bus ¹	Estimated Cost per Student per Day
Yellow Bus	Contracted (no vehicle or facility provided by contractor)	\$500 / half day \$625 / full day	\$688	140	\$4.91
Supplemental Transit	Contracted (vehicle provided, no facility provided by contractor)	\$110 / revenue hour	\$433	90	\$4.81
Student Shuttle	Contracted (no vehicles or facility provided by contractor)	\$60 / revenue hour	\$341	18	\$18.95

1. Assumes each bus is on two different AM & PM trips and an average of 60 students per day use each trip
2. Operating savings could potentially be achieved if capital investments were made by the contracting agency however a cost benefit analysis would need to be undertaken before making the capital investment to ensure that cost savings would actually be realized.
3. Daily operating costs include operating costs, administrative costs, and capital costs

Due to the specific type of vehicle used, yellow bus services are typically limited to only performing transportation for students. Aside from the trip to school in the morning and back again after school, opportunities to perform work outside these peak travel hours are limited primarily to field trips. Thus, a standard driver will get paid for a minimum number of hours (4-6 hours) and the hourly or daily rate will reflect these terms and include other aspects of operation including fuel, administration, and storage/maintenance costs.

Supplemental public transit service operates using a more universal vehicle than yellow bus, which allows for additional transportation needs to be delivered with the same driver/vehicle. Starting in the Fall of 2015, Marin Transit used its supplemental drivers to operate new shuttle service for the College of Marin. This new service operates all day and allows drivers to work full shifts rather than a split-shift with base minimums. This arrangement allows the hourly cost for supplemental school service to be spread over more service and better utilization for capital investments.

The proposed student shuttle model is largely untested and operating costs are somewhat speculative. However, a couple of assumptions can be made to develop an operating cost range. First, the type of vehicle (van) would allow multiple opportunities for all-day work. Second, the licensing required to operate the vehicle would require less training and may be attractive to a wider range of people, including those already associated with the academic institutions or volunteers. These aspects could result in a lower operating cost per hour compared to the other two models but still have a higher cost per rider due to the lower-capacity vehicle.

It is assumed that operating costs for a yellow bus operation would be based on a daily or half-day rate while the supplemental public transit and student shuttle services would be provided at an hourly rate (based on revenue hours).

Operations Cost Estimates and Subsidies

Table 5 shows an estimate of current expenditures on regular home to school transportation and potential expenditures on a future program that includes the estimated needs of the high and “medium” demand schools. The total annual cost to operate a future busing program is estimated between \$6.8 and \$8.2 million. A range is provided that assumes a variety of operating conditions including keeping the current operations in place and accommodating all future growth through expansion of current contracts to transitioning all services to a single countywide model with a significant capital investment, including a facility. A number of assumptions were also tested including how efficiently the vehicle could be used (service multiple schools or multiple bell times) and how full each trip will sell (percent of seats sold per trip).

The table also provides a range of annual subsidies needed to support the program. While it’s unclear where future subsidies may come from, today’s subsidies come from a variety of sources including school general funds, city/town general funds, and countywide transportation sales tax. Cumulatively on all home to school busing programs, user fees today account for 30% and the other 70% is subsidized. Assuming continued subsidy at the 70% level, the needed annual amount would be between \$4.76 million and \$5.74 million and a 50% subsidy level would be half at between \$3.4 million and \$4.1 million per year. The following section identifies potential revenue sources to help fund this subsidy.

Table 5: Annual Operating Cost Estimates

Type of Busing Program	Estimated Annual Operating Costs - Yellow Bus	Estimated Annual Operating Costs - Supplemental Transit Service	Estimated Total
Existing Service	\$2,850,000	\$239,940	\$3,089,940
Expansion Service	\$4,050,000	\$360,060	\$4,410,060
Total Annual Cost	\$6,900,000	\$600,000	\$7,500,000
<i>75% Subsidy Level</i>	<i>\$5,120,000</i>	<i>\$450,000</i>	<i>\$5,570,000</i>
<i>50% Subsidy Level</i>	<i>\$3,450,000</i>	<i>\$300,000</i>	<i>\$3,750,000</i>
<i>25% Subsidy Level</i>	<i>\$1,730,000</i>	<i>\$150,000</i>	<i>\$1,880,000</i>

Current Revenue Sources (Non-User Subsidy)

The agencies that operate school related bus service in Marin County use a mix of funding for operating service and capital expenditures. Because school trippers on public transit vehicles are typically integrated into overall transit service operations, all of the applicable fund sources for general transit operations are listed. While each

agency has a unique mix of funding that they use to fund school bus and/or transit operations, their primary funding sources include:

- State Transportation Development Act (TDA)
- State Transit Assistance (STA)
- Marin County Measure A Sales Tax
- Passenger Fares or User Fees (transit fares, transit passes, yellow bus passes and McKinney Vento Home to School Transportation Assistance)
- California Department of Education LCFF (Local Control Funding Formula) Add-On Funding for Home to School Transportation
- Local contributions, including parcel taxes or and city general funds

In general, transit bus services to and from schools are funded with the same mix of sources as the overall transit agency budget. Yellow bus services are generally funded with school district-specific sources, local contributions, and yellow bus pass revenue. It should be noted that funding programs related to 'Safe Routes to School' (SR2S) are geared toward infrastructure improvements to increase pedestrian and bicycle access to schools. Consequently, while these funds can complement school bus service (e.g. they can be used to implement SR2S outreach programs), they do not typically provide direct school bus funding.

The specific mix of capital funding depends on the type and timing of the capital investments, including the replacement of vehicles. Some types of capital funding are limited in what they can purchase, and others are only available during a specific timeframe (such as bond proceeds). In general, the following funding sources have been used Marin County transit agencies' capital programs:

- Federal Transit Administration Section 5307 Urbanized Area Formula Program (FTA 5307)
- Transportation Development Act (TDA)
- State Transit Assistance (STA)
- Regional bridge tolls (Regional Measure 1 and 2)
- Proposition 1B (Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006)

Appendix B provides more detailed information about the funding sources, including eligible uses, revenue estimates, and requirements for each source including new and potential funding sources described below.

Fares (User Subsidy)

Countywide, fares currently account for 30% of yellow bus and 36% of supplemental transit services costs. Yellow bus programs have a range of annual pass pricing from free to \$600. These programs also have sliding scales for how students on free and reduced lunch programs are provided subsidy and what other pass options are offered (semester, AM vs PM, day pass, etc.). Supplemental services operate on a pay as you go model and offer a variety of pass products to choose if you are a regular rider or use the public transit service for travel

outside school trips. Table 6 shows a side-by-side comparison of the current public transit fares and those typical for yellow bus programs in Marin County.

Table 6: Pass Price Comparisons

	Supplemental Public Transit – Marin Transit	Typical Marin County Yellow Bus
Per Trip User Cost	\$1.00	\$2.25 - \$4.00 ¹
Weekly Pass	\$10.00 (\$1.00 per trip)	Not offered
Monthly Pass	\$40.00 (\$0.91 per trip)	Not offered
Semester Pass	\$175.00 (\$0.98 per trip)	\$225.00 - \$330.00 (\$1.25 – \$1.83 per trip)
Annual Pass	\$325.00 (\$0.90 per trip)	\$399.00 - \$600.00 (\$1.11 – \$1.67 per trip)
Annual Pass (for students receiving a reduced price lunch)	Free	\$50.00 - \$285.00 (\$0.27-\$1.58 per trip)
Annual Pass (for students receiving a free lunch)	Free	\$0.00-\$60.00 (\$0.00 - \$0.33 per trip)

Note: per trip costs and those shown in (X) are based on two trips per day and use every day (180 school days)

1. Per trip costs for yellow bus are based on schools offering ticket books or per day seats for sale. Not all schools offer this option.

The current semester, annual and free/reduced pricing in the table above is based on the Transit District’s Youth Pass program. The Transit District conducts an evaluation of this program annually and tracks trends in usage and ridership as a result of the program. In the last five years, the program has experienced steady increases in usage, however, the number of paid participants has consistently dropped. Today, nearly 90% of all participants receive the pass for free by qualifying for their school’s free or reduced lunch program. Paid pass participants are slowly moving away from the Youth Pass to Clipper, which offers a pre-paid account but only charges based on use (pay as you go).

The table above highlights some of the cost differences between yellow bus and public transit. In a peer review of similar transit agencies, Marin Transit’s Short Range Transit Plan identifies the need to re-evaluate the price of the youth transit pass. This should be done in concert with evaluating the price of the youth fare to ensure consistency across all youth fare media.

Future Funding Sources (Non-User Subsidy)

In general, current funding sources are fully used for existing services, and have limited or no capacity to fund service expansions. Therefore, expanding school bus services would likely require new funding sources or a reprioritization of existing funds. However, few funding sources currently exist that will pay for operating additional fixed route or school bus service outside of those being currently used, or those that would require a vote of the electorate. Table 7 provides a summary of potential funding sources that are either relatively new funding programs that have not yet been applied to school bus services or those that may require a reprioritization of projects within each fund category. Some of the additional sources would require legislative and/or voter approval to be implemented.

Fund types that have a high likelihood for use in Marin County for the proposed busing program are described below based on the programming authority and not the direct source of funding. An exhaustive list of all potential funding sources is included in Appendix B. It should be noted that many available revenue sources to fund supplemental transit or yellow bus are already allocated for existing programs and not available for expansion efforts.

State Funding Sources

Local Control Formula Funding (LCFF) Add-On for Home to School Transportation

The Local Control Funding Formula (LCFF) was enacted with the passage of the 2013/2014 California Budget Act and replaced the previous K–12 finance system with a new funding formula. The funding formula will be phased in over a number of years. For most Local Educational Agencies (LEA), the new formula is based on an LEA's 2012–13 funding level, adjusted for changes in student population, plus an additional amount each year to bridge the gap between prior funding levels and the new LCFF target levels.

The LCFF apportionment includes an “Add-on” funding allocation for Home to School transportation. However, it is based on prior formulas established in the early 1990s, and was eliminated with the passage of the LCFF. As a result, changes in school size and demographics have not been factored into the Add-On allocation for Home to School Transportation in the new LCFF. Consequently, funds for those activities may not reflect the current overall need of the schools. While SB191 sought to correct some of those formula deficiencies, it was not enacted. Legislation would be required to alter the LCFF to better address the Home to School transportation needs.

Table 7: Potential School Bus Funding

Source	Eligible Uses	Type of Approvals	Applicable Program	Likelihood for Use in Marin
State				
STIP/RTIP	Capital	CMA, MTC, and CTC approval of competitive applications	Transit	Low
LCFF Add-On Funding (Home to School transportation)	Operating	Requires state legislation to augment the LCFF or to recodify the Add-On funding for Home to School Transportation	Yellow Bus	High
Regional / Local				
OBAG	Capital & Limited Operating	CMA and MTC approval of competitive applications	Transit & SR2S	Low
Cap & Trade	Capital & Operating	MTC must adopt new framework in order to benefit smaller operators; potential revisions currently under discussion	Transit	Low
Regional Gas Tax	Capital & Operating	2/3 voter approval	Transit	Medium
Development Impact Fees	Capital & Operating	Local legislative approval	Transit	Low
New Regional Bridge Toll Measure (RM-3)	Capital & Operating	2/3 voter approval	Transit	Medium
City or School Contributions	Capital & Operating	Local city or school budget or student approval	Transit & Yellow Bus	High
Parcel Taxes (County or School District)	Capital & Operating	Local legislative and 2/3 voter approval	Yellow Bus	High
McKinney Vento Grant	Operating	Local school district approval	Yellow Bus	High
New Transportation Sales Taxes	Capital & Operating	Local legislative and 2/3 voter approval	Transit & Yellow Bus	High
Spare the Air School Bus and Shuttle Program	Capital & Operating	CMA, MTC, and BAAQMD approval of competitive applications	Yellow Bus	Medium

Regional and Local Funding Sources

City or School District Contributions

Within the Bay Area and Marin County, cities or school districts have contributed funds to transit operators to pay for additional service associated with school bell times, or to provide service to out of the way locations. Additionally, universities and colleges have passed Universal Pass Programs that provide a dedicated source of funding to transit operators in exchange for allowing students to ride transit either free or at a discount. This funding can be used for either capital or operating expenses. Unless student population votes are required, these contributions may only require the approval of the school board or city council.

Parcel Taxes

Cities, counties, or special Districts can place a measure on the ballot to impose a parcel tax to generate funding for specific purposes. A two-thirds vote of property owners is required for passage. These funds typically generate a stable funding source that can be used for capital and operating uses. Funds flow from the County's Assessor's office to the entity that places the tax on the ballot. There is also flexibility in use of funds (not explicitly tied to Expenditure Plan) which provides both school districts and/or other applicable agencies the ability to provide funds where services or capital programs are most needed.

McKinney-Vento Act

Marin County receives grant funding from the U.S. Department of Housing & Urban Development (HUD) through the Continuum of Care program, which is designed to address the needs of homeless families. Providing transportation to and from the school of origin for homeless students when requested is a responsibility of the LEA mandated in the McKinney-Vento Act. As such, using LEA transportation or general funds to provide transportation for homeless students is an acceptable, and often necessary, option. While the funds are likely overprescribed for other uses associated with homeless youth and children, funds are allocated for supportive services such as youth passes or other transportation. Prioritization of this use and program would be required in order to solicit funds.

New Transportation Sales Taxes

Cities and counties have the ability to put a tax for transportation on the ballot depending upon their identified need. Funds can be used for operating and capital expenditures. An Expenditure Plan lays out the investments proposed for the tax, including programs and projects. A two-thirds vote of the electorate is required for passage.

Findings and Recommendations for a County-Wide Busing Program

This section proposes a busing model, based on a mix of yellow bus and supplemental school service that responds to the findings identified in this report. The section further identifies both near term actions that can be implemented without the identification of new funding sources and a framework for the future that outlines actions beyond the scope of this study to support development of a county-wide school transportation program.

The following findings result from the foregoing analysis of existing conditions, review of service models, and school level demand assessment:

Organizational/Regulatory Findings

- A number of different entities are responsible for, or associated with, school transportation
- All school-related busing programs in California are heavily regulated

Mobility/Service Related Findings

- Increasing the use of non-motorized or multi-rider mode options has the potential to reduce traffic congestion in and around school sites. However, the County lacks a consistent tool to quantify school-related congestion at all public school sites.
- Yellow school buses and school oriented transit services represent one of the best options for increasing the green trip rate and mitigating traffic congestion in the county
- Marin County has infrastructure and geographic constraints that make some neighborhoods inaccessible to traditional full size buses
- A major advantage to the yellow bus model is the high capacity of the vehicles.
- Service design for yellow bus programs are traditionally provided by the school district and focus on geographic equity and access for students
- Service design and routing for supplemental public transit routes follow current or historic fixed route alignments
- For both school bus and public transit school service, the nature of peak hour, school-day-only trips is challenging from an operations standpoint because of the added equipment and short work shifts needed to support a relatively small amount of service
- School service can be delivered most cost effectively when the vehicles and drivers can be used for more than just home to school runs
- The results of the demand assessment shows that added busing services have the potential to increase bus patronage from the current 3,800 students per day to nearly 8,700 students (+4,900), or 30% of all trips.
- The current facilities located within the County and used for current student busing programs by the school districts or Marin Transit's contractors are at or near capacity

Financial Findings

- There is no dedicated source of funding for providing home-to-school transportation and the funding streams that support the services vary greatly due to the range of entities providing the services
- Providing school services requires a significant investment in vehicles and the nature of the service makes it costly to operate
- School buses are significantly less costly (\$150,000/bus) than transit buses (>\$500,000/bus)
- A countywide fleet of over 100 vehicles would be needed to support home to school transportation services for public schools in Marin. This fleet would cost an estimated \$26.7 million.
- Annual operating costs for a countywide home to school bus program are estimated between \$6.8 and \$8.2 million. Greater than 90% of these costs are associated with yellow bus services with the remaining allocated to supplemental transit services.

In addition to responding to the findings identified in this reporting, a future busing model for Marin County must take into consideration the following issues:

1. **How suitable the busing service model is for the age of each school's students.** It is generally agreed that yellow bus service provides additional safeguards for younger students that is not the focus or the intent of public transit. These safeguards include a vehicle that is specifically designed for small children; the absence of a rear door to control boarding and alighting activity; a driver specially trained to interact with children; a direct service between home and school (no transfer required); and perhaps the most important, a guaranteed seat on the bus and no risk of not being able to board the vehicle due to overcrowding.
2. **Geographic location of the school and geography of the enrollment area.** A school located along an existing fixed route alignment that serves the school's enrollment area is a good candidate for supplemental public transit. Topography, infrastructure, and density are key characteristics that not only determine the demand for service, but also drive the appropriate busing model for an enrollment area. A densely populated area with minimal topography and modern infrastructure support a high-capacity busing service while less dense areas with hilly terrain and substandard roads and sidewalks call for a more personalized door-to-door service.
3. **Regulatory restrictions.** As discussed in the previous section, there are a number of regulatory constraints that limit the type of home-to school transportation services that can be offered and who can operate the service. These restrictions not only apply to the delivery of the service but the type of funds used to support it.
4. **Current and historical busing for students in Marin County.** Recommendations for busing consider the historic and current practices, take what works well today, and learn from the shortcomings of the past.
5. **Funding and fares.** A future busing model will need to go above and beyond what is done today to meet transportation demands. Unless there are opportunities to significantly reduce costs or become much more efficient with the current service, new revenues are needed. Costs and revenue will also drive the fares for families who choose the service and the subsidy for those who need it for free. The goal is a financially-feasible future model that doesn't create an exorbitant fare for students.

The following provides a framework for developing a countywide busing program for Marin County to address these findings.

Busing Model

The proposed busing model offers a mix of yellow bus and supplemental transit service. Service type is recommended based primarily on the age of the students. Students in K-8 levels are well suited for yellow bus services while grades 9-12 should be encouraged to use the public transit services. In addition to some of the federal restrictions on what supplemental public transit services can and cannot do, yellow bus is specifically designed to meet the transportation needs of younger students. Supplemental public transit service requires additional independence as a rider and is more appropriate for older students. Using public transit service for school related travel provides exposure to these services at an opportune time in life and encourages continued use of public transit as students make decisions on non-school related travel and travel after high school. Below is a brief description of these two types of services.



Supplemental public transit service:

This service model would continue to serve all public high schools in Marin County. Services would continue operation under contract by Marin Transit and would supplement the current local fixed route network. A comprehensive near term evaluation of the current services is recommended to ensure regulatory compliance. Fare policies would be set by the Transit District's governing Board and would carry across to all fixed route services.



Yellow bus service:

This service model would be used to serve all students K-8 in Marin County. Similar to current practices, this service is envisioned to operate in one of two ways: contracted or in house. Current in house operations would be encouraged to continue operations and school districts that do not have this service could participate in a countywide contracted service with Marin Transit or a new entity. Similar thinking is what led Marin Transit to partner with San Rafael Elementary, Reed Union, and Ross Valley School District on a joint procurement for services in 2015.

Recommended Service Type by School

The demand assessment provided in the previous section provides a starting point for each school and school district to discuss the appropriateness of the suggested busing model and the details such as routing and cost. Table 8 and Table 9 show a summary of the schools identified as "high" and "medium" need busing schools based on the factors identified in the previous section. Included in the table are the current bus service model (if available) and the proposed service model. Within the high need schools, only four of the 25 (Bacich Elementary, Kent Middle, Mill Valley Middle, and Edna McGuire) are not served today by a busing program. The opposite is true of the "medium" demand schools where only three of the 12 currently have bus service.

Table 8: Recommended Bus Service Type by School (“High” Demand)

District	School	Bus Service Model	
		Current	Proposed
Dixie	Miller Creek Middle		
	Dixie Elementary		
Kentfield	Anthony G. Bacich Elementary	-	
	Adaline E. Kent Middle	-	 
Lagunitas	Lagunitas Elementary		
	San Geronimo Elementary		
Larkspur-Corte Madera	Hall Middle School		
Mill Valley	Mill Valley Middle School	-	
	Edna McGuire	-	
Novato	Novato High		
	San Jose Intermediate		 
	San Marin High		
	Sinaloa Middle		
Reed	Bel Aire Elementary		
	Del Mar Middle		 
	Reed Elementary		
Ross Valley	Hidden Valley Elementary		
	White Hill Middle School		
San Rafael Elementary	Davidson Middle		 
	San Pedro Elementary		
San Rafael High	Madrone Continuation		
	San Rafael High		
	Terra Linda High		
Tamalpais Union	Redwood High		
	Sir Francis Drake High		
	Tamalpais High		

 = Supplemental Transit Services  = Yellow Bus Services

Table 9: Recommended Bus Service Type by School (“Medium” Demand)

District	School	Bus Service Model	
		Current	Proposed
Dixie	Mary E. Silveira Elementary		
	Vallecito Elementary		
Larkspur-Corte Madera	Cove Elementary		
	Neil Cummins Elementary		
Mill Valley	Strawberry Elementary		
	Tamalpais Valley		
Novato	Loma Verde Elementary		
	Lynwood Elementary		
	Olive Elementary		
	Pleasant Valley Elementary		
	San Ramon Elementary		
Ross Valley	Manor Elementary		

 = Supplemental Transit Services  = Yellow Bus Services

While the proposed framework indicates a clear divide between supplemental services and yellow bus services by age of student, some middle schools could use both models if there are opportunities for shared services. Shared services could be appropriate for schools located along existing fixed route corridors or near high schools where Supplemental public transit is already being provided. Middle schools with a Supplemental transit option would also need to provide yellow bus as many students at these schools do not live in areas where the supplemental public transit services are accessible.

Recommended actions for yellow bus do not necessarily call for a consolidation of providers but rather a coordinated plan for focusing resources and supporting each school district’s ability to offer busing services if desired. Aside from the actual service delivery, a countywide data management system, customizable transportation website and pass sales tools, and an equitable cost sharing agreement that encourages efficiencies and cost savings is envisioned.

Near Term Action Items

In the near term, implementation of the plan will largely rely on existing service models and contracts to continue carrying out current service and any small expansions. This includes yellow bus operations at Dixie and Lagunitas, contracted yellow bus in Ross Valley, Reed, and San Rafael Elementary, and supplemental public transit service in Larkspur-Corte Madera, Novato, Tamalpais Union, and San Rafael High.

The near term action items are summarized as follows and described in greater detail below.

1. Better align supplemental transit and yellow bus fares
2. Develop a transition plan to better match service models to student needs
3. Further evaluate service to schools that demonstrate a “high” demand for service based on this study’s preliminary analysis
4. Further integrate bus offerings into current SR2S programs
5. Further evaluate the recommendations for supplemental public transit service to ensure they are consistent with regulatory standards
6. Determine Marin Transit’s role in advancing or expanding yellow bus services

1: Better Align Supplemental Transit and Yellow Bus Fares

The Marin Transit Board of Directors should consider increasing a variety of youth-related fares on local transit to bring costs in line with those of the yellow bus program. Public transit offers either a pay-as-you go model at \$1.00 per trip or period pass products that give you unlimited ridership over a given time period. The yellow bus model is based on pre-paid registered riders so students must invest in an annual or semester pass to guarantee their seat is available on any given day, whether they use it or not.

The discrepancy in pricing encourages schools and parents to campaign for or select a mode for their students based on pricing rather than based on the optimum service for the age of the student served. This problem could be eliminated if Marin transit revised its youth fares on public transit to be more consistent with yellow bus rates and other countywide transit agencies in the Bay Area. The current Marin Transit Short Range Transit Plan includes a proposal for increasing the youth fare. An additional benefit of increased youth fares is the generation of additional revenue. Assuming minimal loss in ridership due to fare changes, increasing the youth fare from \$1.00 to \$2.00 would generate approximately \$500,000 annually. Increasing the youth pass (\$325 to \$500) and charging a nominal application amount to the free/reduced lunch students (\$25) would generate another \$125,000 annually.

2: Develop a Transition Plan to better match service models to student needs

The second element of the near-term plan is to identify a transition plan to increase service levels to the high schools with supplemental public transit, by shifting “high” demand K-8 schools to yellow bus. This strategy is applicable to any public elementary schools and middle schools currently served by supplemental public

transit service. Shifting these students to the yellow bus is deemed a more appropriate model and may create opportunities to expand supplemental services to meet the needs of growing high school demand instead. As indicated in Tables 1 and 2 schools that are candidates for shifting from supplemental services to yellow bus include:

- Cove School (Elementary, Larkspur-Corte Madera School District)
- Hall (6-8, Larkspur-Corte Madera School District)
- San Jose (6-8, Novato School District)
- Sinaloa (6-8, Novato School District)
- Willow Creek (K-8, Sausalito School District)

A transition plan would need to ensure an organizational structure and funding are in place to allow these K-8 schools to take on the new yellow bus services. Novato may be the one school district where current supplemental services to the middle schools (San Jose and Sinaloa) could be shifted to an in-house model. In addition to the transportation staff employed by the Novato Unified School District, the school district's ownership of a maintenance facility, storage yard, and fleet puts it in an ideal position to provide these services.

In addition to shifting services, the District should also consider discontinuing service to St. Hilary's schools, the only private school currently receiving supplemental public transit service. The nature of the private school and the K-8 ages make this a candidate for yellow school bus service supported by the school.

Shifting the elementary and middle school service to yellow bus would help add capacity to routes that currently experience overcrowding and also free up supplemental vehicles and drivers to allow some modest service expansion for the high schools. Marin Transit would need to further study ridership and demand to identify where these added services would be most effective and efficient.

3: Further evaluate service to schools that demonstrate a "high" demand for service based on this study's preliminary analysis

The third component to the near-term plan is to further evaluate and plan for service to schools that currently don't have any form of busing and demonstrate a "high" demand based on this study's initial review. These schools include two within the Kentfield School District (Bacich Elementary and Kent Middle) and two within the Mill Valley School District (Mill Valley Middle School and Edna McGuire). Based on the ages of these students, the most appropriate model for service would be yellow bus. However, yellow bus may have limited application due to the challenging terrain and limited infrastructure to support operation of large school buses. Regardless of the challenges, a small pilot project to test the market should be evaluated and considered at

these locations. Since these schools currently do not have school bus services school staff, parents, and local SR2S teams will need to organize and plan for the potential pilot project.

4: Further integrate bus offerings into current SR2S programs

Marin Transit, Marin County Schools, and TAM's SR2S team should continue recent progress to fully integrate bus offerings into the SR2S education, outreach, and encouragement. Marin Transit and TAM recently partnered on a regional grant to create a transit education course for high school students. Sir Francis Drake and Terra Linda students participated last year in the program that included a "Great Race" event where students used public transit services to complete a scavenger hunt. This year the program has extended to Tamalpais High School.

Busing services have also been integrated into the school-level suggested route maps that are under development for many schools across the County. These maps are valuable resources for parents and students as they plan the best and safest routes to school. Further development of these maps for all schools in the County should be supported and bus offerings, including yellow bus services, should continue to be represented on these maps. Figure 5 shows an example of a "Suggested Routes to School" map developed for Cove School in the Larkspur-Corte Madera School District that includes all routes including busing.

Expanding the application of current SR2S programs to consider the needs of bus riders should also be explored. This can be done on the front end as the teams with local stakeholder committees to initiate or modify its programs and services and during the latter stages when educational and encouragement can be used to help maximize use of these services. As busing services grown and expand to new areas of the County, routes and stops (or centralized pickup points) may create new walking or biking routes where crossing guards or infrastructure improvements may be needed. Development of walking school buses to get to the bus stop or school site improvements to allow more efficient bus circulation or loading may emerge as new needs once busing is introduced or expanded. The SR2S program offers a great partnership opportunity to resolve issues related to walking and biking to and from the bus services.

Marin Transit operates supplemental public transit services countywide and recently, with the assistance of Ross Valley School District, implemented the largest, single site yellow bus program in the County (White Hill School). Over 500 students from this one school purchased passes in its first year of operation. The Transit District also assisted Reed Unified School District in planning and contracting for their 2015/16 yellow bus expansion project.

In recent months, other school districts including Mill Valley and Kentfield, have shown interest in testing yellow bus. Based on the results of this study, and its recent experience with Ross Valley School District and Reed Unified School District, Marin Transit needs to determine the most appropriate role for the County's public transit agency in supporting and expanding yellow bus service. Historically, public transit agencies have not been involved in the planning or provision of yellow bus service due to both regulatory concerns, limited funds, fund source restrictions, and a general perception that yellow bus service is beyond the mission of public transit. By choosing to lead a yellow bus initiative, Marin Transit would be forging new territory for public transit providers. If the Marin Transit Board of Directors determines to continue to take a role in the provision of a yellow bus program there is a range of levels of involvement as outlined below:

- Work with new K-8 programs that are interested in yellow bus to leverage the District's expertise and implementation tools developed for Ross Valley. These services would include route planning and identification of stops, and access to a website and database for selling bus passes, templates for pass printing and distribution, and communication tools for parents and student riders.
- Take the lead in a countywide contract for yellow bus service and either directly contract and manage the bus service, as Marin Transit is currently doing for Ross Valley School District, or be the lead on a joint procurement as Marin Transit did with Reed Unified and San Rafael Unified School Districts.
- Oversee contracted school bus operations which includes day to day contractor communication, evaluation and troubleshooting as well as significant involvement with students, parents and school site administrators. This is the current role that Marin Transit is providing to Ross Valley School Service.

It is important to note that there is a significant amount of effort associated with oversight of the program, even under a contracted model and with guidance from the District. Further, only Marin Transit's Measure A funds can be used to support yellow bus services. All of Marin Transit's other funding sources are for the exclusive provision of public transit. Additionally, Marin Transit's Measure A funds are currently programmed to support other services. Any expansion, and even the continuation of the current role in yellow bus would require diverting Measure A from other services. Consequently, those interested in developing new busing service would need to fully subsidize the pass price or pass along the costs to parents, or a combination of subsidies and parent payments.

Framework for the Future

The development of a countywide program will need to be an incremental process and is dependent upon a number of considerations including funding. That said, there are four major questions that need to be answered in establishing a new or expanded busing service. This report provides the starting point for

answering these questions and identifies the future actions to fully answer these question. These questions include:

- **What is the best model for service delivery (by age, by location)?** The following provides direct recommendations to this question.
- **Who should manage and oversee the delivery of services?** The following suggests next steps to answering this question.
- **Who should be included in the program?** The following identifies schools that display strong characteristics for needing busing services. However, participation will likely be at the discretion of each District and the following simply suggests actions to create a countywide program that applies to every District in the urbanized areas of Marin.
- **How is it funded?** The Financial Plan of this report provides estimates for costs and identifies potential revenue streams. Additional actions will be needed to develop cost-sharing arrangements and identify localized pricing and subsidy levels for passes.

Following the conclusion of this study, the partner agencies should focus on advancing the following three items that will provide the framework for a future busing program;

1. Develop a forum to identify and develop an appropriate organizational structure, a detailed financial plan, cost-sharing options, and a timeline for the expanded service
2. Evaluate bus integration with other home-to-school busing, SR2S programs, and local public transit offerings
3. Update the countywide travel demand model that allows congestion to be quantified and used in the assessment

1: Develop a forum to identify and develop an appropriate organizational structure, a detailed financial plan, cost-sharing options, and a timeline for the expanded Yellow Bus service

Home-to-school transportation includes a number of stakeholders in Marin County, including the students and parents, the schools and school districts, TAM and its consultants that manage and coordinate SR2S, and Marin Transit. Marin Pupil, a Countywide JPA, also plays a key role in coordinating the home-to-school transportation for special education students in Marin County. Although not necessarily a direct provider of services, Marin County, the 11 local jurisdictions, and Caltrans all maintain the infrastructure needed for student travel and also work to reduce congestion on its roadways. It should be recognized that a coordinated, countywide program will provide all of these stakeholders a voice in the planning and operations of student transportation services.

A next step in the process of implementing yellow bus services countywide is to identify options for new ways to organize the management, planning, and operation of home-to-school transportation services. Pursuit of a new structure will support better coordination between the schools and the transportation services and allow transportation services to be better integrated when presented to students and parents.

This effort should identify the role of the agency and the appropriate staffing levels needed to support the management and oversight of transportation services. Removing any duplication in roles and responsibilities across the current offerings and identifying technology solutions to gain efficiencies should be explored. It's also likely that new roles and responsibilities will be identified in the process and these should be accounted for as well.

All options for program oversight should be evaluated and considered including assigning to existing entities or creating a new entity. Roles and responsibilities of existing organizations should also be considered as this new entity is discussed to determine if further efficiencies could be gained through shared services.

The new oversight entity will need to make decisions on how the yellow bus services will be provided. Options include developing a new in-house operation or contracting out for services. Independent of how the service will be provided, this group will need to identify capital investment needs for the program including a storage and maintenance facility needs, fleet needs, and software/IT needs.

2: Evaluate bus integration with other home-to-school busing, SR2S programs, and local public transit offerings

Identification of a future yellow bus model should take into consideration opportunities to integrate with other home to school transportation offerings including other yellow bus services and the SR2S programs. Integration could range from coordinating operations, sharing information, or consolidating services under one umbrella operation. Coordination with other yellow bus services should focus other yellow bus services currently being provided by public and private schools including special needs student transportation. This exercise should identify if Dixie and Novato are interested in continuing their in-house operation or if they may want to join a larger countywide operation. Similarly, opportunities for private schools that operate or contract for yellow bus services. Reed and San Rafael should also be queried to find out how they see their current contracted services operation in the future.

The findings from this effort should be considered when recommending an appropriate management and oversight agency (described above). For example, if home to school special needs transportation offers integration benefits with regular education home to school transportation, the current JPA structure (Marin Pupil Services) may be given higher consideration. If SR2S offers better integration opportunities, a future organizational model may also consider oversight of these services.

3: Update the countywide travel demand model that allows congestion to be quantified and used in the assessment

Input received throughout the study process identified congestion as a primary motivation for home to school busing in Marin. Many on the project advisory committee believe that congestion should also be a factor in prioritizing funding or implementation for busing services if it offers regional congestion relief.

Currently there is no single tool for quantifying congestion countywide. Local municipalities tend to maintain citywide traffic models that are not consistent with other citywide models. Regional models done by TAM or MTC do not capture the right level of detail or the right peak hour that corresponds to school-related traffic. This recommendation is for TAM to include the ability to quantify school-related traffic congestion in its next countywide travel demand model update and also include the right level of roadway detail to represent adjacent conditions at all public schools in the urbanized area of Marin County. This tool could then be used to quantify school-related congestion and allow funding or implementation priorities to be applied in a potential cost-sharing agreement.

Conclusion

Marin County is fortunate to have a well-developed and effective Safe Routes to School program, a number of yellow bus services, and a comprehensive system of transit service that meet the needs of many students. These programs and services work together to encourage “green trips” that limit the amount of school-related traffic on local roadways and reduce congestion. However, even in Districts where Safe Routes to School programs have achieved walking and biking rates of 40-50% of all trips to school, congestion is still prevalent and more can be done to reduce these impacts.

This study identifies a framework for potential bus solutions to help increase “green trips” and reduce school-related traffic. This framework includes a mix of yellow bus, supplemental transit, and other personalized shuttle services that offer a menu of busing options based on the need of the community and the ability of the rider. A comprehensive countywide busing program is estimated to attract nearly 5,000 additional students to and increase countywide bus usage by students from the current 13% to just over 30% of all trips. The majority of this new ridership would be in Districts like Novato, Mill Valley, and Kentfield, where no “yellow bus” service is currently provided.

Financial estimates for busing service to schools demonstrating a “high” or “medium” demand for service show a range of \$6.8-\$8.2 million needed in annual operating and another \$2.4 million in annualized capital costs for an investment close to \$10 million per year. This represents a doubling of all current expenditures on home-to-school transportation programs and services including Safe Routes to School and existing busing services.

The action items presented in this study are intended to continue the discussion and further assess the feasibility of a comprehensive countywide busing program. It will be important to include a wide range of stakeholders in these action items to ensure a future program considers the needs of all involved and achieves as many shared goals as possible.

Appendix A: School Level Busing Demands

Dixie School District

Dixie School District is relatively unique compared to most other school districts in that it has its own transportation department and provides its own home-to-school yellow bus transportation. In 2010, the Dixie School District worked with the State’s Fiscal Crisis & Management Assistance Team to review their transportation program and provide recommendations on their operation and financial savings. The report concluded with some minor recommendations to their daily operations but largely supported their continued operation of an in-house yellow bus program, unless additional cost savings could be achieved. The report does identify limited expansion of operations at their current facility.

Dixie School District is a K-8 district and has relatively good roadway infrastructure with comparatively little topography compared to the rest of the county. These attributes make yellow bus the most appropriate bus service type for schools in this school district. Although actual student addresses were not provided for use in this study, an analysis of the residential areas in the various school catchment areas and the presence of a higher volume roadway that act as barriers to travel for younger students (Highway 101, Lucas Valley Road, and Freitas Parkway) create a “high” busing demand for two schools (Miller Creek and Dixie) and a “medium” need for the two other schools (Mary E. Silveira and Vallecito).

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Dixie Elementary	High	Yellow Bus	83	148 (+65)
Mary E. Silveira Elementary	Medium	Yellow Bus	68	141 (+73)
Miller Creek Middle	High	Yellow Bus	170	185 (+15)
Vallecito Elementary	Medium	Yellow Bus	46	162 (+116)
TOTAL			367	636 (+269)

Kentfield School District

Kentfield School District is one of the few school districts without any current busing option. Both schools in the school district, Bacich Elementary and Kent Middle, are located along public transit routes but supplemental public transit services have never been offered for these schools. Due to the advanced implementation of SR25 programs at these schools, family vehicle mode is below the countywide average. Absent actual student home origins for use in this study, residential parcel data within the schools’ catchment

areas indicate both schools have over 75% of their potential students living over a half mile away from school. Further, many of these students live on the north side of Sir Francis Drake or east of Bon Air and have to negotiate those busy roadways to access their school sites.

Based on the age of the students, yellow bus service should be considered in the near term for both schools. These routes could operate along appropriate roadways in the area including Sir Francis Drake, Magnolia/College, Bon Air, and South Eliseo and pick-up/drop-off within the school’s parking lot. Supplemental public transit services are also an option for Kent Middle, especially with the high volume of service already available at the College of Marin, adjacent to the Kent campus.

The student shuttle model has application in the long term for Kentfield students, especially those living north of Sir Francis Drake. These residential neighborhoods have little roadway connectivity, lack sidewalks, and create challenging conditions for standard buses to maneuver and load/unload passengers. A shuttle service could negotiate many of these neighborhoods and provide new student access options for residents.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Bacich Elementary	High	Yellow Bus, Shuttle	0	266 (+266)
Kent Middle	High	Yellow Bus or Supplemental Transit, Shuttle	0	145 (+145)
TOTAL				411 (+411)

Lagunitas School District

Lagunitas is one of the few Districts that owns and operates its own yellow bus. Although the fleet is only one vehicle, the service is used by approximately one in four students and serves both elementary schools in the district. Due to the more rural nature of the school district, a significantly high percentage of students live over a mile away and Sir Francis Drake separates many of the residential areas within the school district from the schools. These factors give this school district a “high” demand rating in the busing needs ranking.

Based on the age of the students and the limited public transit service in the area, the yellow bus model offers the best fit for busing services in Lagunitas.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Lagunitas Elementary	High	Yellow Bus, Shuttle	39	72 (+33)
San Geronimo Elementary	High	Yellow Bus, Shuttle	26	64 (+38)
TOTAL			65	136 (+71)

Larkspur-Corte Madera School District

Larkspur-Corte Madera School District straddles the Highway 101 corridor in the south-central portion of the county and serves K-8 students. Until 2014, all students living in East Corte Madera and attending public school were forced to cross Highway 101 to access the elementary and middle schools. In 2014, Cove Elementary school opened and provided a closer school for students in East Corte Madera. However, students going into middle school (and then on to high school) are still faced with the Highway 101 barrier and a significant distance to access school. These factors create a “high” busing demand for the middle school (Hall) and “medium” needs for the two elementary schools (Neil Cummins and Cove).

Safe Routes to School programs have been highly effective in this school district and Hall Middle School ranks #1 countywide in percentage of students biking to school, #3 in overall “green” trips, and #3 in Marin Transit’s Youth Pass distribution. Busing currently plays a major role at Hall Middle School, with an estimated 87 students per day using the supplemental public transit bus. Although public transit has been effective at getting students to the middle school, a yellow bus model should be considered district-wide in the near term to provide an opportunity to serve more students with a more age-appropriate service. Longer term consideration should be given to the student shuttle service for students where yellow bus is not feasible.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Cove Elementary	Medium	Yellow Bus, Shuttle	28	114 (+86)
Hall Middle School	High	Yellow Bus or Supplemental Transit, Shuttle	87	178 (+91)
Neil Cummins	Medium	Yellow Bus, Shuttle	2	168 (+166)
TOTAL			137	460 (+323)

Mill Valley School District

The District serves the community of Mill Valley as well as the unincorporated areas of Strawberry on the east side of Highway 101. Mill Valley’s residential areas are split between the compact residential development in

the valley and the scattered residential areas found within the hills. The limited roadway network concentrates traffic on a select few roadways that have exceeded their functional capacity and demonstrate high levels of congestion during most peak hours of the day.

Mill Valley is one of the few school districts in the County that lacks any form of busing services. Although dedicated busing is not provided, all schools in the Mill Valley School District have strong participation in the SR2S programs. The school district is home to two of the top three highest walking schools and the second highest biking school (as a percentage of their total students).

Even with strong participation in the SR2S program, Mill Valley has a number of opportunities to benefit from busing services. On a daily basis, Mill Valley Middle school has an estimated 350 students who are transported to school in a family vehicle that is not considered a carpool. Countywide, this ranks seventh in the most students at any given school demonstrating this travel behavior. Mill Valley Middle School also has over 85% of students living greater than a half-mile from the school and 50% living greater than a mile from school. Natural and man-made geographic barriers, including Highway 101 and the hills of Mill Valley, create further barriers for students attending the middle school. These factors rank Mill Valley Middle School and Edna McGuire as a “high” busing demand school. Two others in the District, Strawberry and Tamalpais Valley rank as “medium” demand for busing due to their dispersed enrollment and geographic barriers for students and should be implemented in the longer term.

Based on the age and geography of the school district, yellow bus and student shuttle are recommended as potential busing models for Mill Valley School District. Yellow bus has an opportunity to serve the school site and connect students who can access stops along East Blithedale/Tiburon Blvd, Miller Ave, Highway 1, and near Strawberry Village. In areas that yellow buses can't physically serve, the shuttle model could offer an attractive home pick-up option for students.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Edna McGuire Elementary	High	Yellow Bus, Shuttle	0	223 (+223)
Mill Valley Middle School	High	Yellow Bus, Shuttle	10	314 (+304)
Old Mill Elementary	Low	-	<i>na</i>	<i>na</i>
Park Elementary	Low	-	<i>na</i>	<i>na</i>
Strawberry Elementary	Medium	Yellow Bus, Shuttle	0	154 (+154)
Tamalpais Valley	Medium	Yellow Bus, Shuttle	0	189 (+189)
TOTAL			10	880 (+870)

A recent task force called the Mill Valley Traffic and Congestion Reduction Task Force examined traffic congestion issues in and around the community in an attempt to identify solutions to traffic congestion. Yellow bus service was identified a top project to help solve traffic congestion. Marin Transit recently engaged with member of the Task Force to further assess feasibility of these services to select schools in the District.

Novato Unified School District

Novato School District is a K-12 district that includes all of Novato. The school district relies 100% on supplemental transit service for its home-to-school busing options. It is one of the few school districts in Marin County that provides its own special needs yellow bus services and does not participate in the Marin Pupil JPA. The school district is also unique in that it has its own storage, maintenance and fueling facility within its school district and owns a fleet of 10 full-size yellow buses and a fleet of smaller accessible yellow buses for its special needs transportation program. The fleet of larger buses is only used for field trips since the school district cut regular home-to-school services.

Novato schools have some of the lowest “green trip” scores and SR2S scores countywide. Aside from the middle schools and high schools (not included in survey), all elementary schools have a 60% or greater family vehicle commute rate. Travel behavior at the middle schools and high schools is different, with students carpooling or riding transit at a much higher rate than observed at elementary schools.

Aside from Hamilton School, which offers grades K-8, all middle schools and high schools are located on the west side of Highway 101 which provides a significant barrier for residents east of the highway looking to walk or bike. The five auto crossings of this freeway facility offer minimal sidewalk and biking facilities which make it especially challenging for younger students to navigate. This barrier creates conditions in areas of Hamilton,

Bel Marin Keys, and Olive where busing is especially attractive and supplemental transit services have been successful.

The current supplemental services function well and are suited for the high schools in Novato. Further investigation is needed to determine whether yellow bus or supplemental service is the best model to continue to serve the middle schools. While the routing and bell schedules currently offer some efficiencies and allow the same driver and vehicle to serve both schools, yellow bus would offer more personalized service, allow service to expand to other neighborhoods not on the public transit routes, and offer greater flexibility for parents and students. Since the school district already owns its own fleet and has maintenance and storage in Novato, implementation of new programs in the near term may have a higher feasibility than some of the other school districts.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Hamilton Meadow Park	Unknown ¹	Yellow Bus	29	<i>na</i>
Loma Verde Elementary	Medium	Yellow Bus	0	116 (+116)
Lu Sutton	Low	-	<i>na</i>	<i>na</i>
Lynwood Elementary	Medium	Yellow Bus	0	98 (+98)
Novato High	High	Supplemental Transit	48	239 (+191)
Olive Elementary	Medium	Yellow Bus	0	136 (+136)
Pleasant Valley Elementary	Medium	Yellow Bus	0	160 (+160)
Rancho Elementary	Low	-	<i>na</i>	<i>na</i>
San Jose Intermediate	High	Yellow Bus or Supplemental Transit	86	231 (+145)
San Marin High	High	Supplemental Transit	56	175 (+119)
San Ramon Elementary	Medium	Yellow Bus	19	167 (+148)
Sinaloa Middle	High	Yellow Bus	52	271 (+219)
TOTAL			290	1,593 (+1,303)

3. Charter school with undefined enrollment boundaries. Absent actual student origin data, demand estimates are not feasible to estimate.

Reed Union School District

Reed School District is a K-8 school district with three schools spaced out along the Tiburon Peninsula east to west. Reed serves grades K-2, Bel Aire serves grades 3-5, and Del Mar serves grades 6-8. Tiburon Boulevard (State Highway 131) is the only east-west roadway along the Peninsula that connects these schools to its residents and students. Most of the residents in Tiburon and Belvedere live on some form of a hillside and are connected to Tiburon Boulevard through a steep and circuitous road, often with limited sidewalks. There is also a significant contingent of students that live in East Corte Madera and attend schools in the Reed district. Aside from Highway 101, the only and most practical connection for these students is via Trestle Glen.

The local conditions create a “high” demand for busing services within the Reed School District. The school district provides busing services to all schools through a yellow bus contract with First Student. An average of

36% of students utilize these services daily. The Town of Tiburon and City of Belvedere have recently put a significant amount of effort into reducing traffic on Tiburon Boulevard by encouraging use of the yellow bus program. Starting in the 2015/16 school year, the busing program was heavily subsidized and restructured to encourage ridership. This new program offered three new routes and approximately 50% more passes were sold. Early results show the increased ridership has help reduce traffic and achieve the goals of the community.

The yellow bus model is the best model for students of this age. Longer term expansion efforts for service should consider the student shuttle model due to the topography of the school district and the potential challenges many large buses may have maneuvering the hills.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Bel Aire Elementary	High	Yellow Bus, Shuttle	221	221 (+0)
Del Mar Middle	High	Yellow Bus or Supplemental Transit, Shuttle	180	180 (+0)
Reed Elementary	High	Yellow Bus, Shuttle	164	232 (+68)
TOTAL			565	633 (+68)

Ross Elementary School District

Ross Elementary District is the smallest school district in the urbanized portion of the County in terms of geographic coverage and students enrolled. The school district has one school, Ross Elementary, and its enrollment boundary straddles Sir Francis Drake and serves the Town of Ross. Roadway conditions vary and many streets lack sidewalks and dedicated biking facilities. The largest barrier to access to the school is crossing Sir Francis Drake, which separates the students that live east of this roadway from the school site.

Due to the compact nature of the school district and the limited roadways operable for large school buses, Ross Elementary has a “medium” demand rating and the recommended type of busing program would be a student shuttle model. A shuttle service would be flexible enough to serve the areas with limited roadway infrastructure and serve the students that may have the greatest obstacles getting to school. Since yellow bus or supplemental was not appropriate for Ross Elementary, it was not included in the study’s countywide busing program.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Ross Elementary	Medium	Shuttle	0	97 (+97)

Ross Valley School District

Ross Valley School District is the K-8 district serving San Anselmo and Fairfax. The school district is situated within a valley and its roadway network mimics this natural structure. Sir Francis Drake provides the only continuous east-west roadway in the school district and many students live along this spine. Other roadways that run north-south, including Butterfield Road, feed into Sir Francis Drake. The elementary schools are generally designed to be neighborhood schools while the one middle school, White Hill, is located on the far west edge of the school district. Hidden Valley is an exception among the elementary schools as its students are pulled from neighborhoods outside the adjacent area.

The school district has a robust SR2S program and a significant number of students walk and bike to these schools. A significant number of students also use the bus, especially at White Hill where over 60% rely on busing services daily. Until recently, these busing services were provided as supplemental transit services by Marin Transit through its contract with Golden Gate Transit. This model switched in the 2015/16 school year when Marin Transit moved to a contract with Michael's Transportation for yellow bus services. The switch occurred for a number of reasons, but the logic proposed in this report, which is based on student age and geographic location of the school relative to students home, supports the decision to transition to yellow bus services.

White Hill and Hidden Valley are rated as "high" demand busing schools and current service should be maintained. The transition to yellow bus will offer a new opportunity to evaluate performance and ridership to refine the schools' services. The other elementary schools in the school district, except Brookside, are rated as "medium" need for busing and expansion of yellow bus should be considered in the future. The proposed student shuttle model offers application in Ross Valley due to the challenging topography of much of the school district and should be offered if and when the program is formed.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Brookside Elementary	Low	na	na	na
Hidden Valley Elementary	High	Yellow Bus, Shuttle	26	156 (+130)
Manor Elementary	Medium	Shuttle	2	147 (+145)
Wade Thomas Elementary	High	Yellow Bus, Shuttle	0	126 (+126)
White Hill Middle School	Medium	Yellow Bus, Shuttle	405	405 (+0)
TOTAL			433	834 (+401)

San Rafael Elementary School District

San Rafael Elementary school district serves the central and southern portions of the city and is a K-8 district. The school district poses a number of barriers to student travel, including Highway 101, the Canal waterway, and the soon-to-be active SMART railroad tracks. The schools were designed to be neighborhood schools but disproportionate growth in the Canal has forced students from this neighborhood to attend schools outside their neighborhood.

San Rafael Elementary District currently relies heavily on a yellow bus program to get students to school. All schools except Bahia Vista have at least one route serving its campus. The demand for busing varies between schools but some, like San Pedro Elementary, have over 90% of their students transported daily on yellow bus. The school district provides these busing services under contract to First Student and subsidizes the program to make it affordable to those paying and available to students on the free/reduced lunch programs.

Two schools within the San Rafael district were rated as “high” demand schools, including Davidson Middle School and San Pedro Elementary. Students at these schools currently use the yellow bus service at a higher levels than almost any other school in the County. The yellow bus model works well and is an appropriate model for serving these students.

The remaining six schools in the District demonstrate a “medium” demand for busing. Yellow bus service should be further supported for these schools. Due to the significant amount of yellow bus service offered within this school district, San Rafael could especially benefit from the longer-term program that invests the capital needed to support countywide yellow bus program. Student shuttle offerings in a longer-term scenario could also offer new options for those currently not served by the yellow bus services.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Bahia Vista Elementary	Low	<i>na</i>	<i>na</i>	<i>na</i>
Coleman Elementary	Medium	Yellow Bus, Shuttle	48	133 (+85)
Glenwood Elementary	Medium	Yellow Bus, Shuttle	43	145 (+102)
Davidson Middle	High	Yellow Bus or Supplemental Transit, Shuttle	312	330 (+18)
Laurel Dell Elementary	Medium	Yellow Bus	63	63 (+0)
San Pedro Elementary	High	Yellow Bus, Shuttle	358	358 (+0)
Short Elementary	Medium	Yellow Bus, Shuttle	80	80 (+0)
Sun Valley Elementary	Medium	Yellow Bus, Shuttle	75	173 (+98)
Venetia Valley Elementary	Medium	Yellow Bus, Shuttle	188	243 (+55)
TOTAL			1,167	1,525 (+358)

San Rafael High School District

San Rafael has two high schools, San Rafael and Terra Linda, which serve all students from the San Rafael Elementary school district and the Dixie School District. In addition, a third school located on the campus of San Rafael High, Madrone, offers continuing education for students who do not finish high school. Students going to high school in San Rafael can choose between either school and are not limited by geography. Similar to these K-8 feeder districts, the high school district has many barriers that limit student mobility. In addition, the high schools pull from a much larger catchment area, therefore student trips are longer.

These conditions place both high schools in San Rafael as “high” demand busing schools. Factoring the age of high school students and the location of these schools relative to the public transit network, supplemental transit service is the best model for current service and future expansion. Supplemental services are offered to both schools today and these schools rate #1 and #3 countywide in participation in Marin Transit’s Youth Pass program.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
San Rafael High <i>(including Madrone)</i>	High	Supplemental Transit	222	222 (+0)
Terra Linda High	High	Supplemental Transit	125	195 (+70)
TOTAL			347	417 (+70)

Sausalito Marin City School District

Sausalito Marin City School District is a K-8 district that includes Bayside MLK Academy and a public charter school, Willow Creek Academy, whose students live within and outside Sausalito and Marin City. Bayside MLK is the assigned public school for this southernmost area of the County but Willow Creek offers priority to students living in the school district to attend their school.

The communities of Sausalito and Marin City are built along steep hillsides and have limited flat areas for good roadway connectivity. Bridgeway provides the only north-south connection within Sausalito and the connection between this community and Marin City is challenged by the intersection of Highway 101. Although topographic challenges exist, the community is relatively compact and roadways provide accommodations including sidewalks and bike facilities.

The current enrollment profile shows nearly all Bayside MLK Academy students living within the Marin City area. Busing needs for this campus is estimated as low. The needs of Willow Creek are somewhat unknown as data was not provided for this study showing home locations of students. Since the charter school has no defined catchment area for its student population, it is challenging to know where its students reside. It is known that some Willow Creek students live within Marin City and many of these students take the public bus.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Bayside MLK Academy	Low	-	<i>na</i>	<i>na</i>
Willow Creek Academy	Unknown ¹	Yellow Bus, Student Shuttle	15	Unknown

1. Charter school with undefined enrollment boundaries. Absent actual student origin data, demand estimates are not feasible to estimate.

Tamalpais Union School District

Tamalpais Union School District includes all public high schools in the urbanized areas of the County outside Novato and San Rafael. In total, nearly 4,000 students attend one of the three schools in this District. Students live throughout the southern portions of the County including Sausalito, Marin City, Mill Valley, Tiburon,

Belvedere, Corte Madera, Larkspur, San Anselmo, Ross, Fairfax, and areas of West Marin. Due to the size of this district, it is estimated that nearly 90% of all students live more than half a mile from their school site.

Compared to elementary and middle schools in Marin County, high schools within Tamalpais Union display low rates of walking and biking and high rates of drive alone. A higher than average percent of students use the public transit services and there is strong potential to increase this behavior if additional resources were available.

School	Busing Demand	Appropriate Type of Bus Program (if applicable)	Estimated Number of Current Riders	Estimated Number of Potential Riders
Redwood High	High	Supplemental Transit	176	302 (+126)
Sir Francis Drake High	High	Supplemental Transit	54	165 (+111)
Tamalpais High	High	Supplemental Transit	102	185 (+83)
TOTAL			332	652 (+320)

Appendix B: Funding Sources

FEDERAL FORMULA¹

Name	Source	Administrator	Purpose and Distribution	Use	Applicability	Allocation Method (Competitive/Formula)	Funding Availability and Planned Uses	Annual Estimate	Funding Timeline
FTA Section 5307 Urbanized Area Formula Program	FTA	MTC	Large urbanized area funds can be used for transit capital purposes only. MAP-21 allows Job Access Reverse Commute (JARC) program activities, including operating assistance, with a 50% match. Recipients must expend at least 1% of their 5307 apportionment on "associated transportation improvements" formally classified as "enhancements."	Capital and Operating	MTC prioritizes the funds with the region's transit operators through the Transit Capital Priorities process. There are currently 22 operators in the Bay Area.	Formula	About \$200 million to the Bay Area annually. Marin County allocation fully committed through SRTP		Annual
FTA Section 5339 Bus and Bus Facilities Program	FTA	MTC	Provides capital assistance for new and replacement buses, related equipment, and facilities. Part of the Transit Capital Priorities process.	Capital	Distributed to regions on an urbanized area formula.	Formula	\$427.8 million nationwide (FY14); \$12.9 million to Bay Area (FY14). Marin County allocation fully committed through SRTP.		Annual
FTA Section 5311: Rural Area Formula	FTA	Caltrans	These funds are available for capital and operating expenses for general public transportation services in rural areas, that is, any area outside designated urbanized areas	Capital and Operating	Distributed to regions by formula based on nonurbanized area population and nonurbanized area route miles	Formula	\$459,000 for 2 Year Estimate (Marin Transit). Marin County allocation fully committed through SRTP		
Congestion Management and Air Quality Improvement Program (CMAQ)	FHWA/FTA	MTC	Transportation projects and programs that reduce congestion and improve air quality. MTC develops a regional framework on how to allocate the region's funds roughly every three years. Earliest availability would be for FY2015-16 funds, and projects would need to be consistent with new priorities as developed by MTC. The CMA program is administered through the OneBayArea Grant Program (see local/regional funding).	Capital and Operating (with restrictions)	Caltrans assigns significant portions this program to MPOs. MTC uses the funds to target Bay Area transportation needs according to priorities established in the Regional Transportation Plan, Plan Bay Area.	Funding allocated to region by formula, competitive selection of projects within region	MTC has programmed the most recent cycle of STP/CMAQ funds through FY2015-16. Of the \$795 million available, \$475 million is directed to continuing existing regional programs and \$320 million is directed to CMA's for local decision making under the OBAG program.	Funneled into other programs for distribution	FY15-16 cycle
Surface Transportation Program (STP)	FHWA/FTA	Caltrans / MTC	To preserve and improve conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. MTC develops a regional framework on how to allocate the region's funds roughly every three years. Earliest availability would be for FY2015-16 funds, and projects would need to be consistent with new priorities as developed by MTC. The CMA program is administered through the OneBayArea Grant Program (see local/regional funding).	Transit Capital	Largely funds elements in the OBAG Regional programming performed by MTC. Caltrans assigns significant funds to MTC, who targets Bay Area transportation needs according to priorities established in the Regional Transportation Plan, Plan Bay Area.	Funding allocated to region by formula, competitive selection of projects within region	MTC has programmed the most recent cycle of STP/CMAQ funds through FY2015-16. Of the \$795 million available, \$475 million is directed to continuing existing regional programs and \$320 million is directed to CMA's for local decision making under the OBAG program.	Funneled into other programs for distribution	FY15-16 cycle

NOTES

¹ Federal Funding: In order to receive federal funding, the project must be in the Transportation Improvement Program (TIP)/Federal Transportation Improvement Program (FTIP)

FEDERAL COMPETITIVE¹

Name	Source	Administrator	Purpose and Distribution	Use	Applicability	Allocation Method (Competitive/Formula)	Funding Availability and Planned Uses	Annual Estimate	Funding Timeline
Transportation Alternatives Program (TAP)	FHWA/FTA	Caltrans	Set aside of the apportionment of several fund programs. Eligible activities consist of: Transportation Alternatives, Recreational Trails, Safe Routes to School, Planning/Design/Construction of roadway in right of way of former highways.		Local governments, regional transportation and transit authorities, natural resource of public land agencies, school districts, local education agencies or schools, tribal governments, any other local or regional governmental entity with responsibility for oversight of transportation or regional trails	Nationally competitive	\$800,000 nationally	TBD	
FTA Section 5312 Research, Development, Demonstration, and Deployment: Low or No Emission Vehicle Deployment Program	FTA	FTA	The main purpose of the LoNo Program is to deploy the cleanest and most energy efficient U.S.-made transit buses that have been largely proven in testing and demonstrations but are not yet widely deployed in transit fleets. The LoNo Program provides funding for transit agencies for capital acquisitions and leases of zero emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities such as recharging, refueling, and maintenance facilities.		FTA 5307 eligible recipients. MPO submits application.	Regionally submitted but nationally competitive	\$52.5 million nationwide (FY14)	TBD	Project requests are due 11/23/2015

NOTES

¹ Federal Funding: In order to receive federal funding, the project must be in the Transportation Improvement Program (TIP)/Federal Transportation Improvement Program (FTIP)

STATE FORMULA

Name	Source	Administrator	Purpose and Distribution	Applicability	Allocation Method (Competitive/Formula)	Funding Availability and Planned Uses	Annual Estimate Marin County	Funding Timeline
Transportation Development Act (TDA)	State Sales Tax / Gasoline Tax revenues	MTC	Transit capital and operating expenses.	Transit operators	Formula	Regional estimate of \$321 million (FY16)	\$12.6million net of administration and Article 3 (FY15)	Annual
State Transit Assistance Funds (STA)	State Sales Tax / Gasoline Tax revenues	MTC	Transit capital and operating expenses.	Transit operators	Formula (population and revenue based formula)	Regional estimate of \$195 million (FY16)	Revenue-Based Allocation Available for Marin: \$1.8 million (FY16) Population-Based Allocation Available for Marin: \$1.1 million (FY16) Lifeline Allocation for Marin: \$796,00 Paratransit Allocation for Marin: \$147,000	Annual
Proposition 1B/PTMISEA	Bond proceeds	Caltrans	Transit rehabilitation or purchase, safety or modernization improvements, capital enhancements or expansions, bus rapid transit improvements or new capital projects.	Transit operators	Formula	Likely none. Proposed budget for FY2015 proposes spending the remaining funds; projects already in the pipeline.	No funding identified in the pipeline	Likely no future calls for projects
TDA Article 3 Funds	State Sales Tax	MTC	Transportation projects. 2% of County funds set aside for bicycle and pedestrian projects that could benefit Safe Routes to Schools programs.	Cities and counties	Formula	Regional estimate of \$12.2 million (FY15)	\$700,000 (FY15)	Annual

STATE COMPETITIVE

Name	Source	Administrator	Purpose and Distribution	Applicability	Allocation Method (Competitive/Formula)	Funding Availability and Planned Uses	Annual Estimate Marin County	Funding Timeline
Safe Routes to School (SR2S)	State	Caltrans	Infrastructure projects within two miles of a school that improve safety and efforts that promote walking and bicycling. May be included in Active Transportation Program in the future.	Cities and counties	Statewide competitive	Cycle 10 SR2S Approved Project List programmed \$48.5 million	TBD	TBD
STIP - RTIP	State Highway Funds	CMAAs/CTC	Local transportation projects programmed at the county level.	Local agencies	Countywide competitive	Net zero STIP. Approximately \$300,000 to Marin County for programming through FY 18/19; however, due to fund availability, may result in projects being delayed.	TBD	RTIP updated every two years for the current 5-year programming period; next RTIP will be in 2016
Cap and Trade Program Statewide Transit and Intercity Rail Capital Program (TIRCP) and Low Carbon Transit Operations Program*	State Cap and Trade Revenues	California State Transportation Agency (CalSTA)	Cap and Trade funds are aimed at the reduction of the region's transportation-related emissions by: Support Communities of Concern (25% of revenues); Supports Transit Core Capacity Challenge Grant Program. The region received roughly 25% of the statewide program,The region received roughly 25% of the statewide program,	Transit operators and local jurisdictions	Statewide Competitive	Anticipated to be \$3.2 billion through 2040	TBD: Currently going through formula review	TBD

*Also see Cap and Trade in Local Regional Programs

LOCAL/REGIONAL *

Name	Source	Administrator	Purpose and Distribution	Applicability	Allocation Method (Competitive/Formula)	Funding Availability and Planned Uses	Annual Estimate	Funding Timeline
Property Tax	Countywide Property Tax Allocation	County	Property tax dedicated to Marin Transit for operating services	Counties, Transit Agencies and Special Districts	Formula	As defined in Marin Transit Short Range Transit Plan	\$3.4 Million in 2015	Annual
Sales Tax Measure A	Countywide sales tax	TAM	Sales tax dedicated to transportation projects and programs within Marin County, including: Mass transit, improved roadway infrastructure, local streets and roads improvements, bicycle and pedestrian safety improvements, safe route to schools, school bus operations, congestion relief	Local transit agencies and jurisdictions	Formula and Competitive	As defined in Expenditure Plan	\$16 million annually; \$331 million over 20 years	Sunsets in 2024 (?)
Measure B Vehicle Registration Fee	Vehicle Registration Fee	TAM	\$10 fee on motor vehicles registered in Marin County, vehicle registration fee	Local transit agencies and jurisdictions	As defined in Expenditure Plan	As defined in Expenditure Plan	Approximately \$2,300,000 annually for all elements	Sunsets in 2021
User Fees (pass sales, student fees)	Users		User fees vary depending on the agency and can be used to offset the cost of providing transportation of school children. This includes monthly passes for general transit access (such as on local buses and/or school trippers) or annual student passes or fees to pay for yellow bus service provided by individual schools or districts.	Transit Agencies or School Districts	N/A	To offset or pay for operating services		
Regional Safe Routes to Schools	Federal	MTC	Capital Infrastructure projects that improve safety and efforts that promote walking and bicycling, within two miles of a school.	Cities and counties.	Regionally competitive	\$20 million available in region in Cycle 2.	Approximately \$600,000 in Cycle 2 beginning in FY 16/17	TBD
Lifeline Transportation Program	Federal 5307 JARC; STA; Prop 1 B	MTC/TAM	The Lifeline Transportation Program is intended to fund projects that result in improved mobility for low-income residents of the nine San Francisco Bay Area counties. Fund sources for the Cycle 4 Lifeline Transportation Program include State Transit Assistance (STA), Proposition 1B - Transit, and Section 5307 Job Access and Reverse Commute (JARC 2) funds. Cycle 4 will cover a three-year programming cycle, FY2013-14 to FY2015-16. Portions of the funding can be used for operating	Transit Operators	Formula	\$65 million (FY14) regionally	Three projects in Marin County were funded in 2015 totaling approximately \$500,000, including operation of shuttle and/or other services.	Current funding cycle closed.
Active Transportation Program	Federal and state funds	MTC	Consolidation of previous bicycle and pedestrian funding programs that is designed to promote active modes of transportation (walking and biking) and to ensure disadvantaged communities share fully in the program. Includes regional priorities related to bikes and trails and Safe Routes to Schools. School bus operations are not eligible, but other ancillary pedestrian activities are.	Capital project that advances active transportation and Safe Routes to Schools.	Regionally competitive	\$20.9 million in MTC region (FY15) and \$10 million in (FY16)	ATP Cycle 2 included \$1.3 million for Novato Transit Facility (Ped safety and access improvements)	Applications closed June 2015 for Cycle 2
Cap and Trade Program Statewide Program	State Cap and Trade Revenues		Cap and Trade funds are aimed at the reduction of the region's transportation-related emissions by: Support Communities of Concern (25% of revenues); Supports Transit Core Capacity Challenge Grant Program, Transit Operating and Efficiency Program, OneBayArea Grant program; Climate Initiatives Program, including Safe Routes to Schools, and goods movement projects.	Transit operators and local jurisdictions	Formula and Competitive	Anticipated to be \$3.2 billion through 2040	TBD: Currently going through formula review	TBD

Cap and Trade--Low Carbon Transit Operating Program	State Cap and Trade Revenues	MTC	LCTOP provides operating and capital assistance to reduce greenhouse gas emissions and improve mobility. Framework includes a formula that provides 40% of the funding to AC Transit, BART and SFMTA, with 60% to the remaining transit operators per formula (50% based on ridership; 25% based on low income ridership and 25% based on minority ridership).	Transit operators	Formula (STA Formula)	\$835 million for Revenue based funds \$302 million for Population Based funds	TBD: Currently going through formula review	TBD: Currently going through formula review
One Bay Area Grant Program	Multiple sources including, Federal STP/CMAQ funds, bridge tolls, and local sales taxes	MTC and TAM	Integrates multiple funding sources to comply with California's climate law. Includes Transportation for Livable Communities, Safe Routes to School, Regional Planning, and Bus and Rail Transit Rehabilitation. Rewards counties that plan for and produce affordable housing.	Public agencies	Formula and Competitive	\$790 million over 4 years in OBAG 2 (2017 through 2021) \$354 million for local programs (SRTS) \$436 for regional programs (including: Transit Performance Initiative)	\$10 million over 4 years	Preparing for OBAG 2 currently
BAAQMD Transportation Fund for Clean Air (TFCA)	Motor vehicle surcharge	Bay Area Air Quality Management District and CMAs	Implementation of the most cost-effective projects in the Bay Area which will decrease motor vehicle emissions and improve air quality. School Bus replacement program is intended to help replace aging diesel fleets. Shuttle service grants are intended to be used for trip reduction to areas not well served by transit otherwise.	Public agencies	60% Regional Share Competitive; 40% County Share by Formula	\$18.8 million for Bay Area in 2015 (60%)	\$400,000 (FY15) from 40% County Share	The FYE 2016 cycle closed on September 1, 2015.
LCFF (Local Control Formula Funding)	State Department of Education	Local and State Departments of Education	LCFF funding is based on a transitional formula stemming from the 2013/14 Budget Act that re-designated how schools would receive funds. LCFF funding allocations include "Add-on" funds for Home to School Transportation and Small School District Bus Replacement, which were eliminated with the passage of the LCFF. Amounts for these "Add-on" program remain as a holdover from previous funding formulas. Funds can be used for operating, fare subsidy, or bus replacement, depending on the allocation.	Schools and School Districts	Formula	Funds are allocated to local schools and districts based on prior LCFF and the Principle Apportionment	Approximately \$2 million annually for Home to School Transportation for Districts/Schools in Marin County	Annual
McKinney Vento Grant	Federal Department of Education	Local and State Departments of Education	Marin County receives grant funding from the U.S. Department of Housing & Urban Development (HUD) through the Continuum of Care program, which is designed to address the needs of homeless families. Providing transportation to and from the school of origin for homeless students when requested is an LEA responsibility mandated in the McKinney-Vento Act. As such, using LEA transportation or general funds to provide transportation for homeless students is an acceptable, and often necessary, option.	Local Educational Agencies (LEAs) and State Educational Agencies (SEAs)	Formula (grant and sub-grant)	Estimates for grant awards are made upon numbers of homeless children and youth. Cannot be used to supplant existing federal, local or state sources of funds.	TBD	FY 2016 Call for Grants anticipated in early 2016
Cap and Trade--MTC Funding Framework (Low Carbon Transit Operating Program)	State Cap and Trade Revenues	MTC	MTC is reevaluating the Cap and Trade framework for the Low Carbon Transit Operating Program (LCTOP). Current recommendations include two alternatives. Alternative 1 would maintain the existing framework with remaining funds for Transit Performance Initiative investments and regional coordination programs (like 511). Funding is assigned based on the revenue and population-based State Transit Assistance formula. Alternative two would distribute 1/3 of the funds to the North County/Small Operators (distributed by populations based formula, as a complement to revenue based funds) , 1/3 to regional programs and 1/3 to TPI investments.	Transit operators	Formula (STA Formula)	\$835 million for Revenue based funds \$302 million for Population Based funds	TBD: Currently going through formula review	

*Includes programs that are funded through multiple fund sources, packaged for allocation at the local/regional level.

POTENTIAL NEW SOURCES

Name	Source	Administrator	Purpose and Distribution	Applicability	Annual Estimate for Marin County	Funding Timeline (if approved)
New 10 Cent per Gallon Regional Gas Tax	Fuel Tax	MTC or State	Provide additional funding for transportation investments	If allocation provides for general fund relief, funds can be used to expand services.	\$9.5 Million	In next 5 years
Developer Impact Fees	Developers	Local Jurisdictions	Public facilities necessitated by new development, including roads, sidewalks, schools, sewers and utilities, bus stops or other capital improvements		TBD	
City or School District Contributions	City or School District funds	Local Jurisdictions	Cities or school districts have contributed funds to transit operators to pay for additional service associated with school bells times, or to provide service to out of the way locations. Additionally, universities and colleges have passed Universal Pass Programs that provide a dedicated source of funding to transit operators in exchange for allowing students to ride transit either free or at a discount. This funding can be used for either capital or operating expenses. Unless student population votes are required, these contributions may only require the approval of the school board or city council.	Can be used to fund operating service	TBD	In next 5 years
Parcel Tax	Cities, Counties or Special Districts (Schools)	Entity that places tax measure on ballot.	Cities, counties, or special Districts can place a measure on the ballot to impose a parcel tax to generate funding for specific purposes. These funds typically generate a stable funding source that can be used for capital and operating uses. There is flexibility in use of funds which provides either school districts or other applicable agencies the ability to provide funds where services or capital programs are most needed.	Can be used to fund operating service or capital replacement as determined by the agency.	Dependent upon the size of the per parcel dollar amount on the measure	In next 5 years
New Transportation Sales Tax	Cities, county or Special District	Entity that places tax measure on ballot.	Cities and counties have the ability to put a tax for transportation on the ballot depending upon their need identified in the Expenditure Plan. Funds can be used for operating and capital expenditures. A two-thirds vote of the electorate is required for passage.	As determined by the Expenditure Plan	Dependent upon size of sales tax on measure	In next 5 years
Regional Bridge Toll (RM-3)	Tolls	BATA	If BATA determines that a new Regional Bridge Toll is needed, projects or programs included in the Regional Measure legislations can be added to include home to school transportation, school bus service or vehicle replacement, provided there is a nexus to the bridge operation. This would require a 2/3 voter approval.	As determined by legislation	Dependent upon size of bridge toll measure	In next 5 years