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MEMORANDUM

To: Anne Muzzini, County Connection

From: Richard Weiner, Paul Supawanich, and Terra Curtis

Date: March 27, 2015

Subject: Lamorinda Service Alternatives for Review

The purpose of this memo is to provide additional detail on each of the service alternatives that were originally presented to the Lamorinda Program Management Committee Technical Advisory Committee (LPMC TAC) on January 21, 2015. This memo includes a description of each alternative, benefits and drawbacks, potential costs, and two funding scenarios.

PROJECT BACKGROUND

The Lamorinda Service Plan is aimed at improving transit ridership, service quality, and cost effectiveness by developing alternative service options in the Lamorinda area. While the focus of the plan is public transportation options, other alternatives have also been considered based on their ability to meet community transportation needs.

Based on initial conversations with local stakeholders and community members, key challenges identified included the following:

- Current transit service works for some, but is not a viable option for most residents within the Lamorinda area
- Vehicle access is limited due to parking constraints at both local BART stations (Lafayette, Orinda) and in downtown Lafayette

A more thorough report on existing conditions and stakeholder feedback can be found in the project's Existing Conditions Report.

ALTERNATIVES SCREENING

Preliminary Development

Three key transportation markets were identified to initiate the process of developing transit service alternatives that could address existing transportation challenges. These markets—areas in which there are unmet transportation needs—emerged through discussions with the LPMC TAC, local transportation providers, and community members. Markets include commute trips, school trips, and mid-day trips. To address the needs of each market, several preliminary alternatives were developed. A full summary of initial concepts is provided in Figure 1.

Figure 1 Summary of Target Markets and Preliminary Service Alternatives

Target Market	Service Alternative
Commute trips	**Increased transit frequency.** Increase the frequency of existing transit in the Lamorinda area (County Connection routes 6 and 25).
	BART feeder services. Provide first/last mile connections to and from BART stations. Could involve ridesharing, shuttles, or a hybrid approach.
	Zone-based services. Also known as "point deviation" service; operate service within a specific service area and specific stops, but deviate based on pre-scheduled trip requests. Serve BART and other major activity centers.
	Marketing efforts. To complement new services and improve usage of existing options, create strategic marketing efforts tailored to specific transportation markets.
	On-demand services. Taxis or peer-to-peer "transportation network company" services to serve immediate on-demand trips within the service area. Potential to serve first/last mile commute trips. Develop strategies to attract drivers to the area.
School trips	**Staggered start times.** Orinda and Moraga schools have staggered start times, which allows school buses to serve multiple schools and can ease the effects of congestion. Explore feasibility of staggered starts in Lafayette.
	Additional resources for Lamorinda School Bus Program. Identify schools and routes with unmet demand for school bus service; find efficiencies between County Connection School Tripper routes and Lamorinda School Bus Program routes.
	On-demand services. Explore the feasibility of using private, child-friendly on-demand transportation services for school trips in the Lamorinda area.
Midday trips (senior mobility and community trips)	**Service routes.** Provide fixed-route transit service between clustered origins and destinations, such as between senior housing facilities and medical centers. Focus is on access rather than service speed or frequency.
	Mobility management. Coordinate existing services for an improved customer experience, and find opportunities for cost efficiencies.
	Flexible service that can deviate off route up to a certain distance to make pre-scheduled pick-ups/drop-offs.
	Non-transportation service options. Create programs that address senior trip needs by bringing services to their homes (e.g., medical care, meal delivery).
	Lunchtime circulators. Provide a lunchtime/midday circulator service in downtown Lafayette.
	On-demand services (transportation network companies). Develop strategies to attract purveyors of private, on-demand transportation that serve seniors.

Prioritization

The consultant team conducted a screening process in January 2015 to prioritize preliminary alternatives based on their potential to meet project goals. The feasibility of each alternative was assessed based on existing services, conditions, and constraints in the Lamorinda area. The resulting set of alternatives was then discussed in greater detail with LPMC TAC staff. Based on this process, a list of prioritized alternatives emerged that warrant additional analysis (Figure 2).

Figure 2 Prioritized Lamorinda Transportation Alternatives

Prioritized Alternatives
▪ BART feeder services ▪ Flexible transit services ▪ School bus program enhancement

Each of the prioritized alternatives has one or more service approaches. The description and goals of each of these alternatives are provided in the next section.

ALTERNATIVES DESCRIPTIONS

This section highlights the three prioritized alternatives and describes several operational options within each alternative. In addition to those listed here, two sub-alternatives were eliminated from consideration based on feedback from the consultant team and the LPMC TAC. A more detailed description of those eliminated can be found in Appendix A.

BART Feeder Services

Given existing BART access constraints (mainly associated with parking capacity), this section describes three services that are designed to provide greater options to and from BART. The proposed options have varying service delivery models, but all are focused on peak commute hours (morning and evening commutes). Two of the three options are geared towards the Moraga Way corridor between Orinda and Moraga for the following reasons:

- Orinda BART has fewer direct access/connections to the adjacent street network as compared to Lafayette BART, meaning it is more reliant on vehicular options to access the station
- Orinda BART serves Lamorinda residents heading westbound, placing it in the path of travel of the dominant commute trip pattern (toward Oakland/San Francisco) from the Lamorinda area
- Channeling more trips (in buses or high-occupancy vehicles) down Moraga Way will help reduce pass-through congestion in downtown Lafayette heading towards the BART system

One of the options is specific to Mount Diablo Boulevard in Lafayette for the following reasons:

- Given the Downtown Lafayette Priority Development Area (PDA), the largest magnitude of residential growth is likely along Mount Diablo Boulevard in Lafayette
- Downtown Lafayette has the largest concentration of commercial activity, meaning that peak-hour services could also serve as last-mile connections for those traveling from BART to their workplaces

Vanpool to BART

Market Focus: Commuters (Moraga to/from Orinda)

Overview

In this option, individual commuters would become vanpool drivers and passengers through a monthly subscription paid by the individual. The vanpool(s) would initially operate between park-

and-ride facilities in Moraga and the Orinda BART station. In the interim, the Moraga Center parking lot could be used as a park-and-ride location.[1] Over time, if subscribers' home locations were sufficiently clustered (within about 5 minutes' drive from one another), subscribers could be picked up at home rather than in any future park-and-ride facilities in Moraga. To assist participants in getting started, various vanpool resources are available through 511 or 511 Contra Costa.

Operational Characteristics

Vans would be rented on a month-to-month basis directly to individual rideshare drivers (each van would also have a backup driver). The number of vans required could change each month and would be determined by the monthly requests. Insurance, maintenance, 24-hour roadside assistance, customer service, web assistance, marketing assistance, towing, and loaner vehicles would be included through the lease.

A group credit card would be established to enable monthly costs to be shared among subscribers. Because vehicles are rented on a month-to-month basis, vehicle sizes could be changed each month to accommodate changing demand. Eight-, nine-, and ten-passenger vans are available through various vanpool vendors.

Estimated monthly costs for this service include the cost to rent the van(s) and the costs to park at BART (see Figure 3). Current BART parking fees are approximately $3 per day.

Figure 3 Summary of Costs

	Estimated Monthly Costs
Monthly van rental (incl. insurance) per van[2]	$620
Monthly fuel costs per van[3]	$63
Monthly BART parking fees per van[4]	$65
Monthly total per van (includes operations, maintenance, and vehicle rental)	$748
Monthly ridership per van[5]	433

Morning Trip(s)

Subscribers would commit to a morning pick-up time and travel together to the Orinda BART station, where they would have guaranteed parking for their rideshare vehicle (this arrangement does not exist today and would need to be coordinated with BART, but there is expressed interest

[1] This location has been identified as a potential park and ride facility. However, no formal discussions with property owners have been discussed at this time. This is however, an existing casual carpool pick-up location. Other potential park-and-ride locations are described throughout this report.

[2] Assumes a 10 passenger van. Limited to 500 miles per month.

[3] Assumes gas mileage of 10 miles per gallon and $3 per gallon fuel price. Monthly mileage based on one morning trip from Moraga park-and-ride to Orinda BART (4.8 miles) and one evening trip from Orinda BART to Moraga park-and-ride (4.8 miles).

[4] As of January 2015, BART parking costs $3/day. This cost assumes 21.67 service days per month. However, it is possible that vanpools could negotiate a reduced parking rate with BART. This has not been negotiated with BART at this time.

[5] Assumes full vans (10 passengers)

in exploring this partnership). The van(s) would remain parked at BART during the day until the return trip in the evening.

Evening Trip(s)

Participants must also agree to an evening departure time linked to a particular scheduled BART train. The driver (or backup driver) would leave from BART and bring passengers back to the park-and-ride. Overnight, the vans would remain at the park-and-ride.

Capital Requirements

There would be no vehicle capital costs in this alternative as vans would be rented from a vanpool provider paid by individual users. The only potential capital costs incurred by a public entity would be associated with park-and-ride locations that might need to be constructed, enhanced (signage, striping), or expanded. It is possible that existing underutilized parking could be used as a park-and-ride facility, but this may require establishing a lease or other shared use agreement with the property owner; any associated fees could be bundled into the participants' subscription fees or paid by a public entity.

Other Policies

Potential vanpool priority parking could be established at BART.

Administration

Typically, vanpool programs are marketed and incentivized through employers. Since there is no program sponsor for this option, it could be jointly marketed by County Connection, BART, and other Lamorinda communities, but administered entirely by the vanpool provider. Alternatively, BART, County Connection, 511 Contra Costa, or another public organization could subsidize the cost of the program for participants through parking facility leases or the subsidies for van leases.

Summary

Figure 4 Summary of Vanpool to BART Benefits and Drawbacks

Benefits	Drawbacks
▪ Rideshare operation handled primarily by individuals; public entity does not have to be involved on a day-to-day basis ▪ BART and/or other public entities may be able to subsidize the service to reduce costs to participants ▪ Concept is simple; easy to communicate the operations to potential rideshare subscribers ▪ Designed specifically for commuters to points west of Lamorinda (Oakland and San Francisco)	▪ Subscribers must commit to both morning and evening departure times ▪ Some subscribers must commit to be drivers ▪ Vehicle rental agreement holders (the driver and/or backup driver) may have to front all or part of the cost of the vehicle rental ▪ Requires a high number of subscribers to enable participants to be picked up from their homes ▪ Limited cost savings to users (but guaranteed access to BART)

Moraga/Orinda BART Shuttle[6]

Market Focus: Commuters (Moraga to/from Orinda)

Overview

As an alternative to a privately-organized vanpool, a public shuttle could be established to help improve access to the BART station and serve satellite park-and-ride lots in Orinda and Moraga. The primary selling point of such a service would be higher service frequency (proposed at 20 minutes during peak hour) and limited-stop service between park-and-ride lots and BART. A shuttle would travel along Moraga Way and could be scheduled to supplement existing Route 6 service on a regular schedule. In addition, the shuttle would provide an opportunity for a route extension to currently underserved areas of both cities. This includes the Larch neighborhood in Moraga and areas north of the Orinda BART station not currently served by transit during peak periods. Conceptual routing of this plan is shown in Figure 6.

A major component of this alternative is the provision of parking as a way to access the shuttle for those who are outside of walking or biking distance. Proposed park-and-ride lots as part of this alternative include some public, private, and religious institutions' parking facilities. At this stage, all proposed parking facilities are conceptual and no property owners have been contacted. A shared-use or lease agreement would be the most likely arrangement to access to these facilities for parking purposes.

Operational Characteristics

Figure 5 provides an overview of the proposed BART shuttle operating characteristics focused on peak-hour commuters. The shuttle would only operate in the morning and evening peak commute periods. On segments that overlap with Route 6 service, frequencies would be approximately 20 minutes. On separate segments (such as Camino Pablo in both Orinda and Moraga), the shuttle would operate every 40 minutes. Twenty minute frequencies enable riders to use transit without relying on a schedule; anything longer usually requires advanced planning.

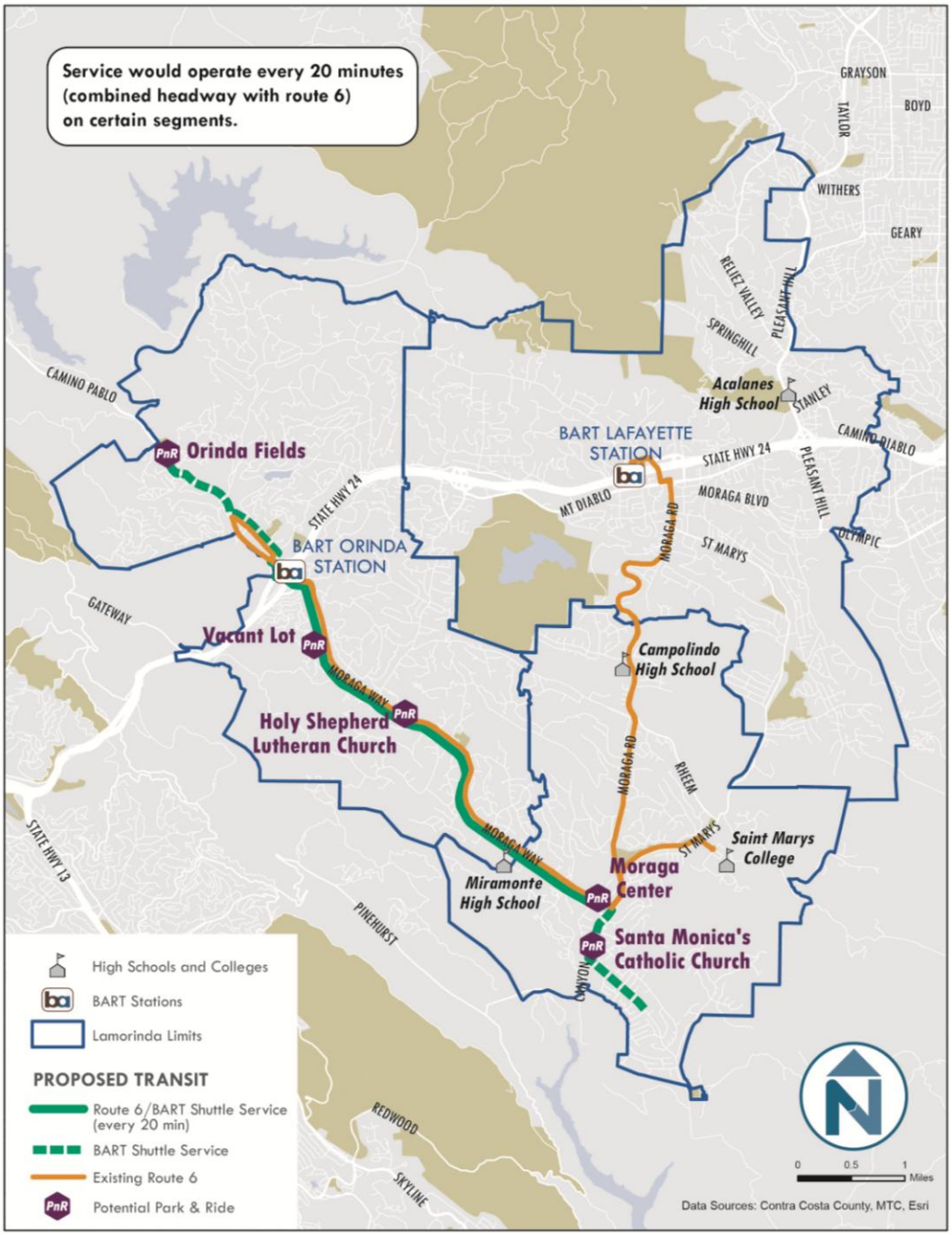
Figure 5 Moraga/Orinda BART Shuttle Operational Characteristics

Morning Service	Evening Service	Service Frequency	Potential Park-and-ride Locations	Additional Stops
6:00 a.m.-9:30 a.m.	4:00 p.m.-7:30 p.m.	40 minutes (20 minutes when paired with Route 6)	▪ Santa Monica's Catholic Church ▪ Moraga Center ▪ Holy Shepherd Lutheran Church ▪ Orinda Fields	▪ Camino Pablo (Moraga Larch Neighborhood) ▪ Camino Pablo (Orinda) ▪ Canyon Road

Figure 6 illustrates the proposed Moraga/Orinda BART shuttle routes alongside existing transit service.

[6] A variation on this alternative would be to simply increase frequencies on Route 6 from the existing 40 minutes in the peak period.

Figure 6 Moraga/Orinda Shuttle Service to BART



These estimates presume a weekday-only service operating 255 weekdays per year. Given the service characteristics, it is estimated that 2 vehicles, each operating 7 revenue hours per day, would be required (14 hours for 2 vehicles). Figure 7 provides a high-level estimate of annual operating costs based on current County Connection costs. Such a service could be operated either by County Connection or a third-party vendor.

Figure 7 Moraga/Orinda BART Shuttle Estimated Resource Needs

Peak Vehicles	Revenue Hours (Daily/Annual)	Estimated Cost (at $75/hour)
2	14 / 3,570	$267,750

Capital Requirements

In addition to operational costs, several capital improvements are necessary to support this alternative, including the purchase of vehicles if they are not already available. As noted in Figure 7, two additional vehicles would be required to operate this service (likely transit-style buses, $415-495K/vehicle).[7] Vehicles may also be leased or included as part of a service agreement with a third-party provider. Vehicles may be branded or marketed in a unique way to reflect the BART-access nature of the service.

Some parcels envisioned as park-and-ride locations are not currently approved as such; some may need site enhancements (e.g. paved parking stalls or safe areas suitable for deploying a wheelchair ramp) or minor improvements like signage. Some locations may also require a lease agreement or payment for ongoing use as a park-and-ride facility.

Figure 8 lists each of the proposed park-and-ride facilities and potential site improvements that may be necessary to facilitate usage by a transit vehicle.

Figure 8 Potential Capital Needs

	Site Enhancement	Lease Agreement	Site Construction
Orinda Fields	X		
Vacant Lot (Approx 175 Moraga Way)	X		X
Moraga Center	X	X	
Santa Monica's Catholic Church	X	X	
Holy Shepherd Lutheran	X	X	

Other Policies

At this stage, there is no pre-defined entity that would operate this service. However, presuming that the service is offered by County Connection, it would hold similar fare rules and accept County Connection fare products.

[7] Based on transit vehicle costs 30'-40', 2013/2014 vehicle costs by type. American Public Transit Association.

Given that current Monthly Reserved Passes for parking at the Orinda and Lafayette BART stations are $105.00 each, a potential marketing campaign could be developed to offer preliminary one-time County Connection Monthly Pass discounts for those who hold Monthly Reserved Passes as a way to encourage mode shift. Free park-and-ride parking is also presumed; riders would simply pay for shuttle access to BART.

Administration

The service could be managed either by County Connection or as a collaborative effort between Moraga and Orinda. If managed by a combination of cities, it is most likely that one city would take on administrative functions and the other community would contribute financially on a regular basis. In terms of operations, potential options include County Connection operating the service or contracting a third-party provider to operate service. In either scenario, vehicles could have the option to be uniquely branded and customized to meet specific service needs.

An additional option that has yet to be tested is the potential of a private company managing and operating the service. In the past few years, several transit-focused start-up companies have emerged that focus on subscription-based shuttle services. While these services currently do not operate in Contra Costa County, they have expressed an interest in doing so in the future if the market would support their services.

Summary

Figure 9 provides an overview of the Moraga/Orinda BART Shuttle alternative including key benefits and drawbacks as compared to the other alternatives.

Figure 9 Summary of Moraga/Orinda BART Shuttle Benefits and Drawbacks

Benefits	Drawbacks
▪ Passengers pay only for their fare; no vehicle rental, fuel, insurance, or maintenance costs to split ▪ Highest level of flexibility for passengers; morning and evening trip times could be flexible due to shuttle frequency ▪ Supplements less frequent County Connection Route 6 service ▪ Expands transit service options to BART system	▪ Limited service area (presuming that many would still drive to access transit) ▪ Service is geared to residents of Moraga and Orinda, though Lafayette may benefit from reduced traffic congestion ▪ Requires additional operational and capital funding ▪ Park-and-ride are conceptual and require further investigation

Lafayette Shuttle[8]

Market Focus: Commuters (Lafayette)

Overview

Based on conversations with City of Lafayette staff, the concept of a downtown Lafayette shuttle has been discussed in various forums. Typically, the purpose of a local circulator shuttle is to benefit and support the community's economic development goals or area parking constraints.

[8] A variation on this alternative would be to simply increase frequencies on Route 6 from the existing 40 minutes in the peak period.

Shuttles also can provide additional access to regional transit providers such as BART. For this reason, a Lafayette shuttle is included as part of the BART Feeder Service alternatives.

A proposed shuttle service would serve the majority of downtown Lafayette, which is also largely encompassed by a "Transit Neighborhood" Priority Development Area. As such, the district is slated to nearly double in population over the next 25 years. A shuttle service during the peak commute periods could ensure last-mile connections to these new residents to/from BART and also ensure workers access to jobs within the same district. Given that most of the growth around downtown Lafayette will be within walking distance of Mount Diablo Boulevard, walking and bicycling are assumed to be the primary modes of access to this service.

Currently, the proposed corridor is also served by County Connection, which has low ridership levels. However, this may be a false reflection of the transit potential of the corridor given that Route 25 operates every hour during peak periods--not nearly frequent enough to provide schedule flexibility to and from BART. A shuttle that operates every 15-20 minutes has the potential to significantly increase demand.

Operational Characteristics

Similar to the Moraga/Orinda shuttle, a Lafayette shuttle would operate during the peak period on weekdays only. A proposed alignment would operate between the Pleasant Hill Road and the Lafayette BART Station with stops along Mount Diablo Boulevard. The route could also potentially provide park-and-ride service to a future facility near the route's terminus.

Figure 10 Lafayette BART Shuttle Operational Characteristics

Morning Service	Evening Service	Service Frequency
6:00 a.m.-9:30 a.m.	4:00 p.m.-7:30 p.m.	20 minutes (presuming 5.2 mile round-trip alignment)

Figure 11 illustrates the proposed Lafayette shuttle, which would run adjacent to County Connection Route 25 along Mount Diablo Boulevard.

Figure 11 Proposed Lafayette Shuttle Service to BART

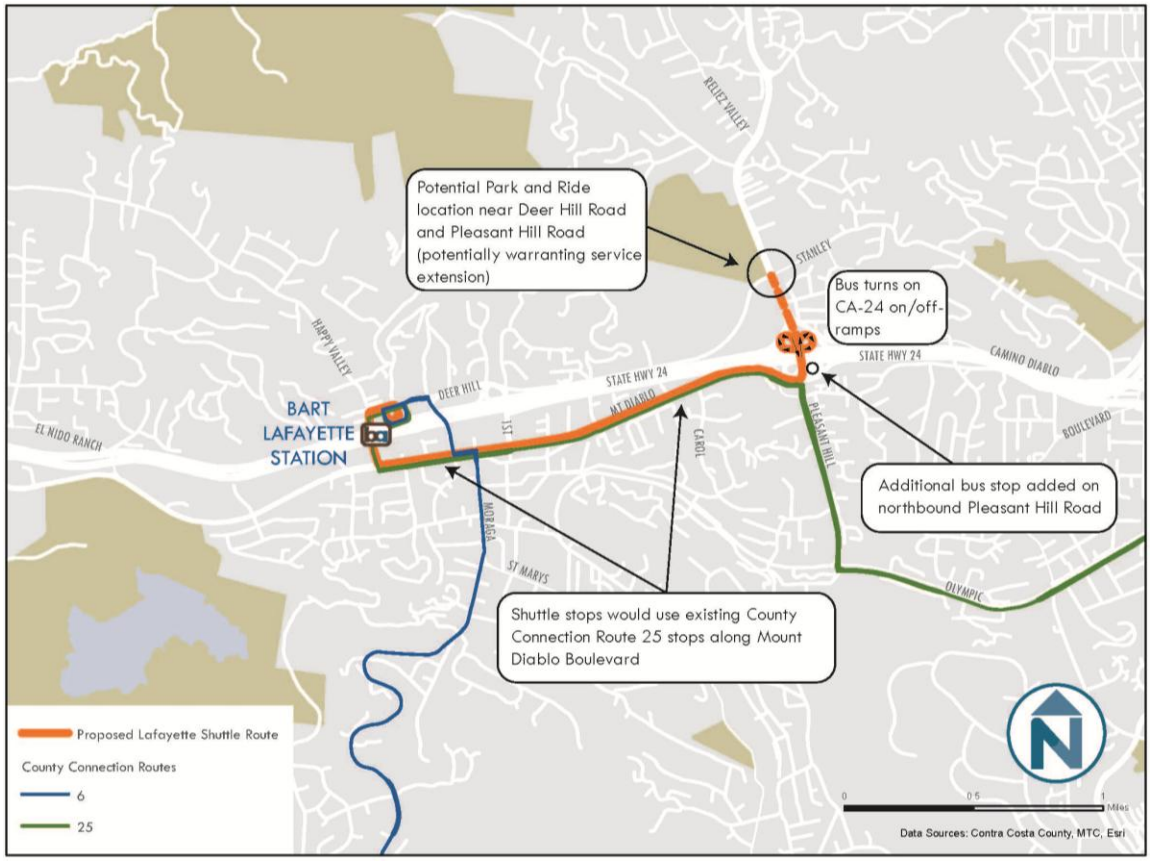


Figure 12 Lafayette BART Shuttle Estimated Resource Needs

Peak Vehicles	Revenue Hours (Daily/Annual)	Estimated Cost (at $75/hour)
2	14 / 3570	$267,750

Capital Requirements

In contrast to the Moraga/Orinda shuttle, the Lafayette shuttle would cater to the downtown area and would be accessed primarily by walking and biking. In the interim, it is not anticipated that a shuttle would serve any dedicated park-and-ride lots, instead focusing on connecting those who live within walking or bicycling distance of the service corridor. In the future, a potential park-and-ride lot could be considered near the route's terminus to increase its catchment area.

Near-term capital requirements would be in the form of signage or bus stop infrastructure along the route. Existing infrastructure along County Connection Route 25, such as stops and signage, could be used for both services.

Other Policies

The Lafayette shuttle would have policies similar to those of the Moraga/Orinda shuttle.

Administration

The Lafayette shuttle would have administration similar to that of the Moraga/Orinda shuttle.

Summary

Figure 13 provides an overview of the Lafayette shuttle alternative, including key benefits and drawbacks as compared to the other alternatives.

Figure 13 Summary of Lafayette BART Shuttle Benefits and Drawbacks

Benefits	Drawbacks
▪ Supports increased development along Mount Diablo Boulevard and existing businesses/employers ▪ Enables additional transit options for those living along Mount Diablo Boulevard (and near intersection with Pleasant Hill Road) ▪ Supplements less frequent County Connection service (Route 25)	▪ Limited service area along Mount Diablo Boulevard ▪ Currently, only proposed to operate during peak commute hours (give focus of study) ▪ Shuttle access is still contingent on safe pedestrian access and connections across Mount Diablo Boulevard

In addition to the sub-alternatives presented here, a fourth "Hybrid" model was also considered in which members of the public and hired drivers operate shared vans between Orinda BART and Moraga. This alternative was de-prioritized due to its complexity and limited feasibility. A full description can be found in Appendix A.

Flexible Transit Services

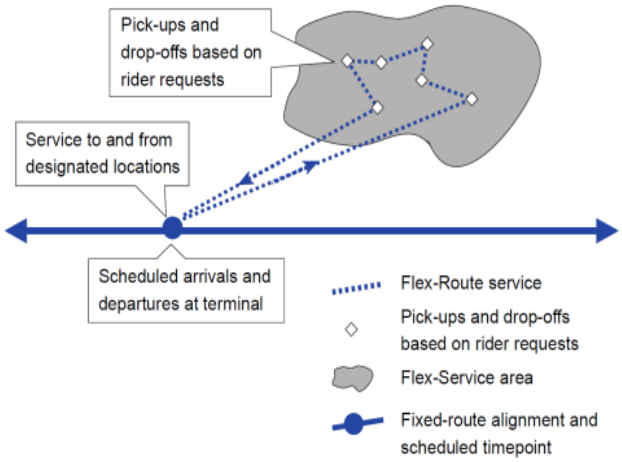
Lamorinda's low residential density and hilly topography are challenges for traditional fixed-route transit, but offer an opportunity for flexible public transportation services. Many areas of Lamorinda remain at an access disadvantage due to narrow, hilly, or dead-end streets. Further, many locations throughout Lamorinda do not have sidewalks. Nonetheless, there are still many feasible bus stop locations along hilly residential streets (including existing School Tripper stops). Two flexible transit service models were explored in the Lamorinda service area, including a zone-based and a deviated fixed-route service.

Zone Services

Market Focus: Commuters, Senior Mobility

Overview

Zone-based transit services (point-deviation services) are suited for areas like Lamorinda, with low-density land uses, a circuitous street network, and several major activity centers (e.g. shopping and BART). Zone-based services do not follow a specific corridor, but do have one-to-two regular time-points to enable transfers to other transit services or to serve frequently visited locations.



Conceptual Diagram of Zone services

A zone service in each city (Lafayette, Moraga, and Orinda) could improve general access to public transportation. Zone services are not intended to be fast or direct, but could be a suitable fit given that each city has one or more major activity centers. If focusing specifically on zone services, each city could operate service independently, each with a designated time-check point, to provide connections to local or regional transit providers.

Operational Characteristics

Zone services in the Lamorinda context could have many different variations depending on the desired level of service. On one end of the spectrum, each city could operate a zone service for a full service day. Alternatively, each city could provide service for a limited span to cover midday trips with a focus on seniors and for those who would not otherwise be able to access BART due to parking constraints. However, it is presumed that each proposed zone would operate one vehicle at most and would have a designated time-point each hour within the service span.

Figure 14 Zone Services Characteristics

Service Span	Service Frequency	Potential Service Zones and Time-points[9]
Varies, but could complement BART shuttle service	Pick-ups by request only, estimated hourly frequency at one-two time-points	▪ Orinda (BART station) ▪ Moraga (Moraga Center – timed transfer with Route 6) ▪ Lafayette (BART station)

Given the variability of potential service levels and areas, it is challenging to provide an accurate estimate of operating cost. However, Figure 15 provides an estimate based on the assumption that costs would be on par with current County Connection LINK (paratransit) costs per hour ($45/hour). These estimates envision weekday-only service.

Figure 15 Zone Services Estimated Resource Needs per Vehicle (Weekday Only)

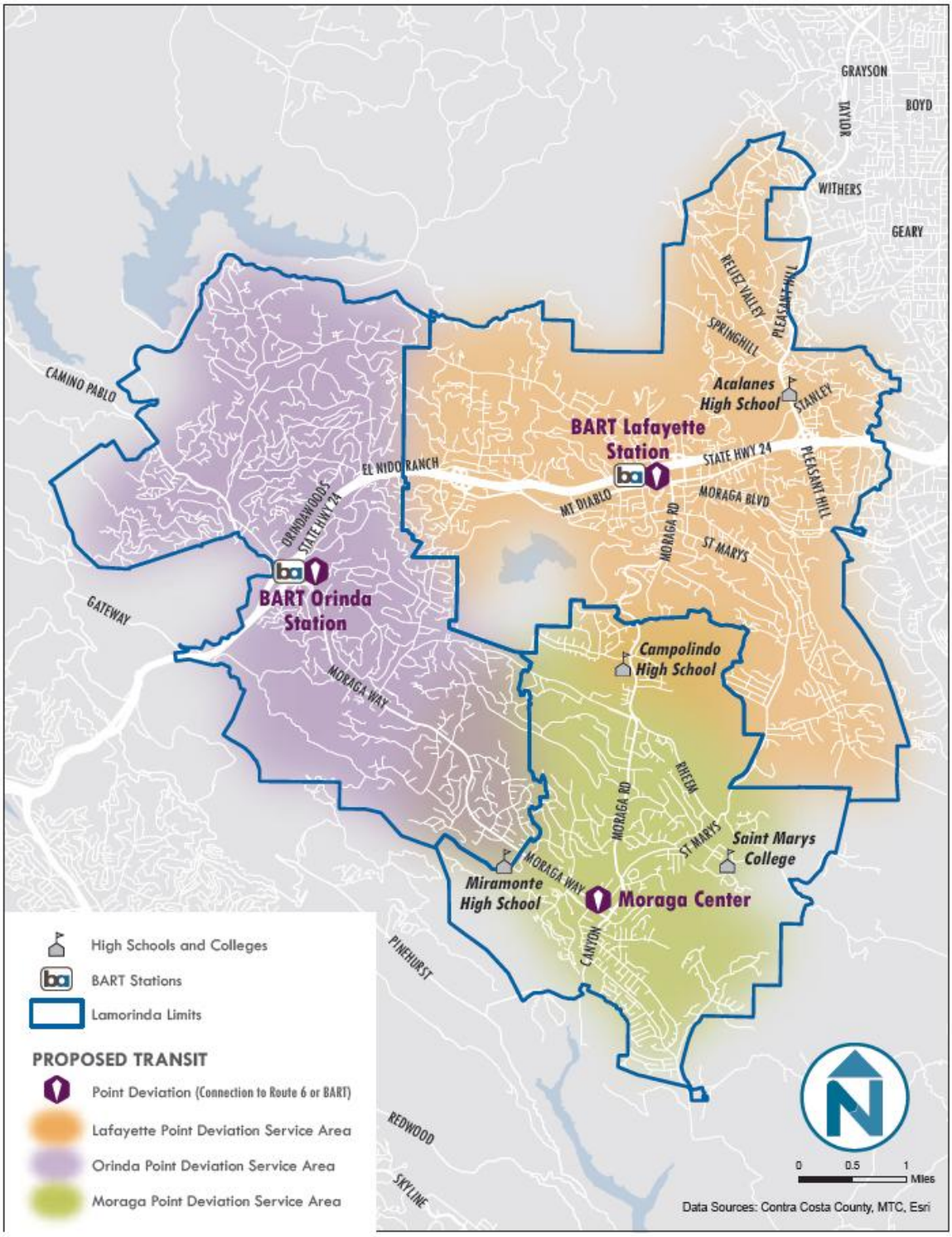
Proposed Service Span	Revenue Hours (Daily/Annual) per Vehicle	Estimated Annual Cost (at $45/hour) per Vehicle
6 a.m. – 8 p.m. (14 hours)	14 / 3,570	$160,650
9:30 a.m. – 4 p.m. (6.5 hours)	6.5 / 1,586	$71,370
10 a.m. – 2 p.m. (4 hours)	4 / 1,020	$45,900

Capital Requirements

Given that zone services operate with smaller vehicles and do not necessarily use formal bus stops, this alternative requires few on-the-ground capital needs. However, this proposal would require additional vehicles and bus stop improvements at regular time-point locations. Each zone would require at minimum one vehicle (potentially more depending on service expectations and demand). A smaller "cutaway" vehicle could be used for each of these services and could be purchased outright or as part of a third-party service agreement. Estimated costs for such a vehicle range from $65,000-$85,000. The number of vehicles is dependent upon the number and size of service zones.

[9] Please note these service zones are conceptual and may likely change over time based on travel patterns and demand

Figure 16 Proposed Zone Services



Other Policies

If the service is open to the general public, a fare is warranted given its higher level of customization than fixed-route service. While a specific fare is not suggested at this time, it should be structured to incentivize use of the fixed-route system for those who are able. Thus, any fare for a zone service should be higher than the existing $2 fixed-route fare. The fare could be subsidized by the community to aid access for seniors, those with disabilities, or others.

Administration

Given the level of scheduling and administrative overhead necessary for this type of service, it would likely be more cost effective for County Connection to administer the service and utilize existing scheduling/dispatching capabilities and for the LINK paratransit service. Existing transportation service providers could also be capable of operating a similar type of service in the future.

Summary

Figure 17 provides an overview of the zone services alternative, including key benefits and drawbacks as compared to the other alternatives.

Figure 17 Summary of Zone Services Benefits and Drawbacks

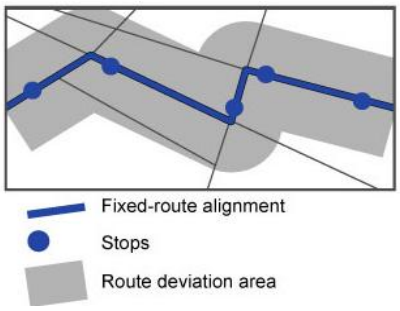
Benefits	Drawbacks
▪ Provides basic level of access to the transit system across a wide service area ▪ Effectively serves as a community general public Dial-a-Ride (with specific time-points) ▪ Increases transit access to BART and other community services	▪ Service quality (speed) is limited based on the wide service area and deviations ▪ Unlikely to be a productive (passengers per hour) service

Deviated Fixed-Route Services

Market Focus: Commuters, Senior Mobility

Overview

Deviated fixed-route service is very similar to zone service in that it does not follow a specific route for every trip. Where it differs is that it has designated stops along a route and will deviate off the route within a certain distance for each trip.



Conceptual Diagram of Deviated Fixed Route Service

The advantage of a deviated fixed-route service is that it can be more productive in terms of passengers per hour than zone service. This is possible so long as there are two strong destinations "anchoring" both ends of the route.

In Lamorinda, there is potential for this type of service between the Orinda and Lafayette BART stations, primarily for residents living north of Highway 24. Such a service would follow a general path (along Orindawoods Drive, El Nido Ranch Road, and Mt. Diablo Boulevard) with the

opportunity to deviate up to a mile off the route to make pick-ups and drop-offs. Figure 20 illustrates the general alignment and service area of the proposed service.

Operational Characteristics

Deviated fixed-route services are scheduled in a similar fashion to fixed-route services. However, "slack time" is built into the schedule to allow for deviations to pick up passengers off the route. Given the potentially large area (up to one mile off the route) that would be within the service area, an hour to travel between the two BART stations is proposed. Two vehicles (traveling in opposite directions) may be needed to operate the service on this schedule. Each vehicle would cover either the north or south side of Highway 24 on its journey to the BART station.

Figure 18 Deviated Fixed-Route Characteristics

Service Span	Service Frequency	Primary Service Corridors
Varies, but could complement BART shuttle service	Estimated hourly service on the main route. Deviation pick-ups may vary.	▪ Orindawoods Drive ▪ El Nido Ranch Road ▪ Mt Diablo Boulevard

Potential operational cost estimates are provided in Figure 19. These estimates presume weekday-only service at $45/hour.

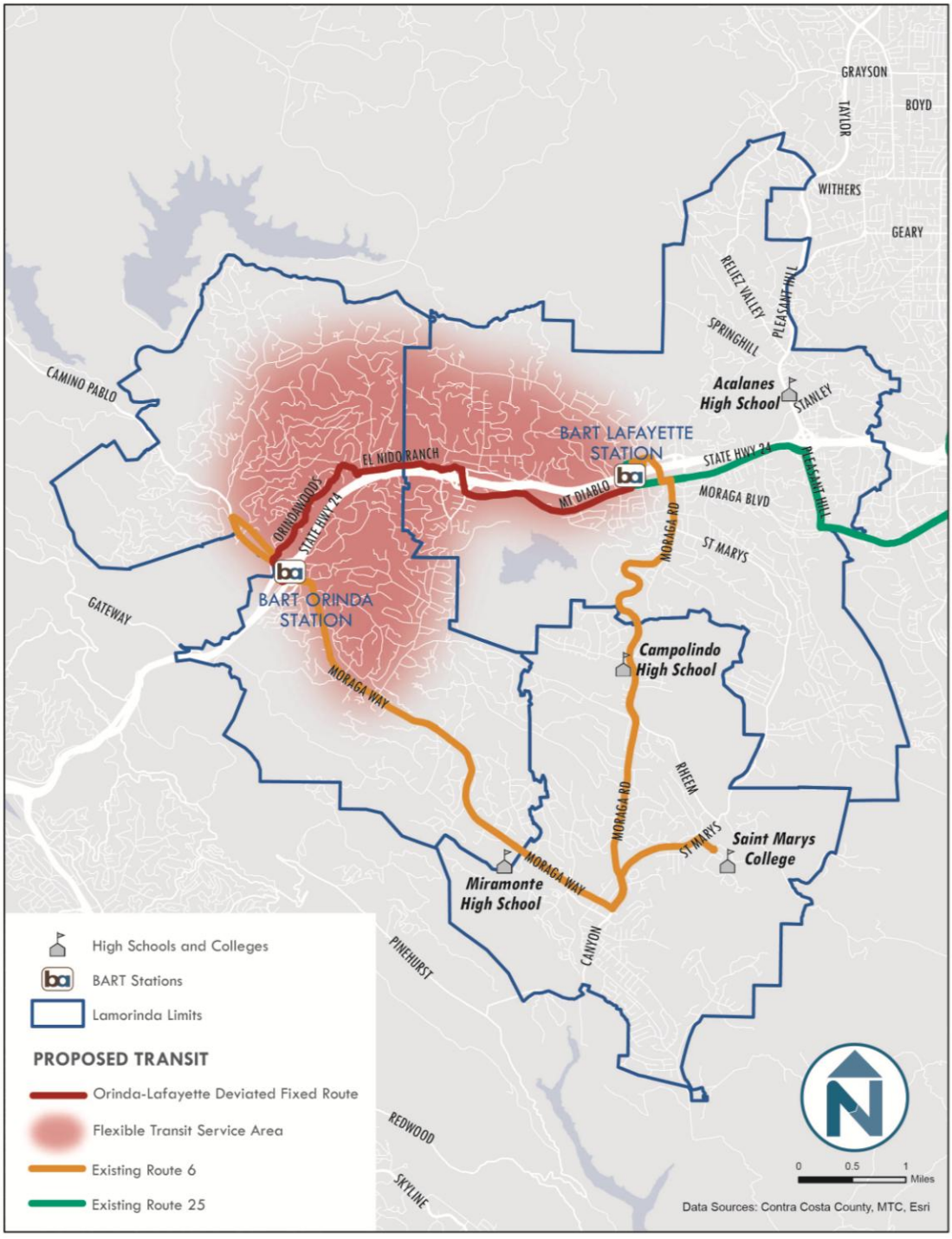
Figure 19 Deviated Fixed-Route Estimated Resource Needs (Weekday Only)

Proposed Service Span	Vehicle Needs (Hourly Service)	Revenue Hours (Daily/Annual)	Estimated Cost (at $45/hour)
6 a.m. – 8 p.m. (14 revenue hours)	2	28 / 7,140	$321,300
9:30 a.m. – 4 p.m. (6.5 revenue hours)	2	13 / 3,315	$149,175
10 a.m. – 2 p.m. (4 revenue hours)	2	8 / 2,040	$91,800

Capital Requirements

Deviated fixed-route services could also operate with smaller vehicles and would not necessarily use formal bus stops for deviations. However, bus stop improvements would be required where there are regular stops along the alignment. Each of the proposed service span scenarios described above would require the addition of two vehicles to operate this service. Per vehicle costs would range from $65,000-$85,000 based on the vehicle type.

Figure 20 Proposed Deviated Fixed-Route Services



Other Policies

Deviated service would have fare policies similar to the zone service alternative.

Administration

Deviated service would have administrative options similar to the zone service alternatives.

Summary

Figure 21 provides an overview of the deviated fixed-route alternative, including key benefits and drawbacks as compared to the other alternatives.

Figure 21 Summary of Deviated Fixed-Route Services Benefits and Drawbacks

Benefits	Drawbacks
▪ Opportunity to provide transit service to residents north of CA-24 ▪ Likely to be more productive than zone services ▪ Increases transit access to BART and other community services	▪ Service quality (speed) is limited based on deviations ▪ Unlikely to be a productive (passengers per hour) service, but more so than zone service alternatives

School Services

The two primary school transportation services in Lamorinda are provided by County Connection's School Tripper bus routes and the Lamorinda School Bus Program (LSBP)—a consortium of three communities (Lafayette, Moraga, and Orinda) and four school districts focused on providing transportation for students from kindergarten through 8th grade and some high schools.

Though the LSBP and School Tripper services provide transportation for approximately 1,500 students every year (about 1,200 with LSBP and an additional 300 on County Connection), many students do not or cannot utilize these services due to bus capacity issues or a lack of service to particular schools or neighborhoods. There are approximately 6,800 K-8 and over 5,000 high school students in Lamorinda. Thus, approximately 10-15% of area students use current school transportation services.[10]

Figure 22 shows an overview of the service currently provided by these two programs and the neighborhoods they serve. One notable difference is the neighborhood penetration provided by LBSP as opposed to County Connection's trunk line-type service. Some schools have no service from LSBP. As compared to the LSBP, County Connection School Trippers provide service to BART, which enables access for many students who come from outside the immediate service area.

Figure 23 illustrates each service's ridership. Ridership on each of County Connection's four School Tripper routes varies between about 20 and 250 students per day. This is in contrast to each route within the school bus system, which serve between 2 and 50 students daily. However,

[10] Tyson, Cathy. *School Enrollments are Growing*. Lamorinda Weekly: January 14, 2015. https://www.lamorindaweekly.com/archive/issue0823/print/SchoolEnrollmentsareGrowing.html

with 38 total routes, the program serves about four times as many students as County Connection's School Trippers.

Appendix B of this document highlights different schools in the study area and service provided by either LSBP or County Connection School Trippers.

Two additional transportation programs related to students include the Student Transit Ticket Program—which provides a limited number of free transit tickets to any student who applies—and the High School Carpool to School Program—which encourages students to carpool through incentives such as gas cards and gift cards. These two programs are administered by the Southwest Area Transportation Committee (SWAT), which is part of 511 Contra Costa.

To address existing gaps in school transportation in the Lamorinda area, this section considers two options for future school transportation programs and services:

- Expansion of the Lamorinda School Bus Program
- Increased coordination between the providers of existing programs and services

A third option of consolidating LSBP and County Connection School Tripper services was also considered, but de-prioritized due to limited feasibility and funding complications. This alternative is described in more detail in Appendix A.

Expansion of the Lamorinda School Bus Program

Market Focus: School Trips

Overview

Given that there is unmet demand for school bus service, a goal to reduce traffic congestion by reducing school trips, and capacity constraints on existing school bus routes, this alternative focuses on expanding LSBP services in Lamorinda. LSBP currently runs 21 buses through a contract with First Student. Fourteen of those buses serve multiple schools and about 20% of their 38 routes are subscribed to at least 70% capacity.

In addition to constrained existing capacity, LSBP administrators are concerned about the potential for growing student enrollment over the next decade coupled with existing traffic congestion, which already causes delay for buses. To address these concerns and needs, additional service to the following schools is considered in this alternative:[11]

- Orinda Intermediate School and Stanley Middle School (to address capacity issues)
- Lafayette Elementary, Del Rey Elementary, Miramonte High School, and Happy Valley Elementary (potential new service)
- Campolindo High School (expand existing limited service)

In addition, given requests from parents, there is interest in investigating other transportation options for after-school activities. Potentially, these trips could be served using the additional vehicles described in this alternative.

[11] Specific schools for which additional service is needed were obtained from LSBP staff

Figure 22 School Service in Lamorinda (LSBP and County Connection)

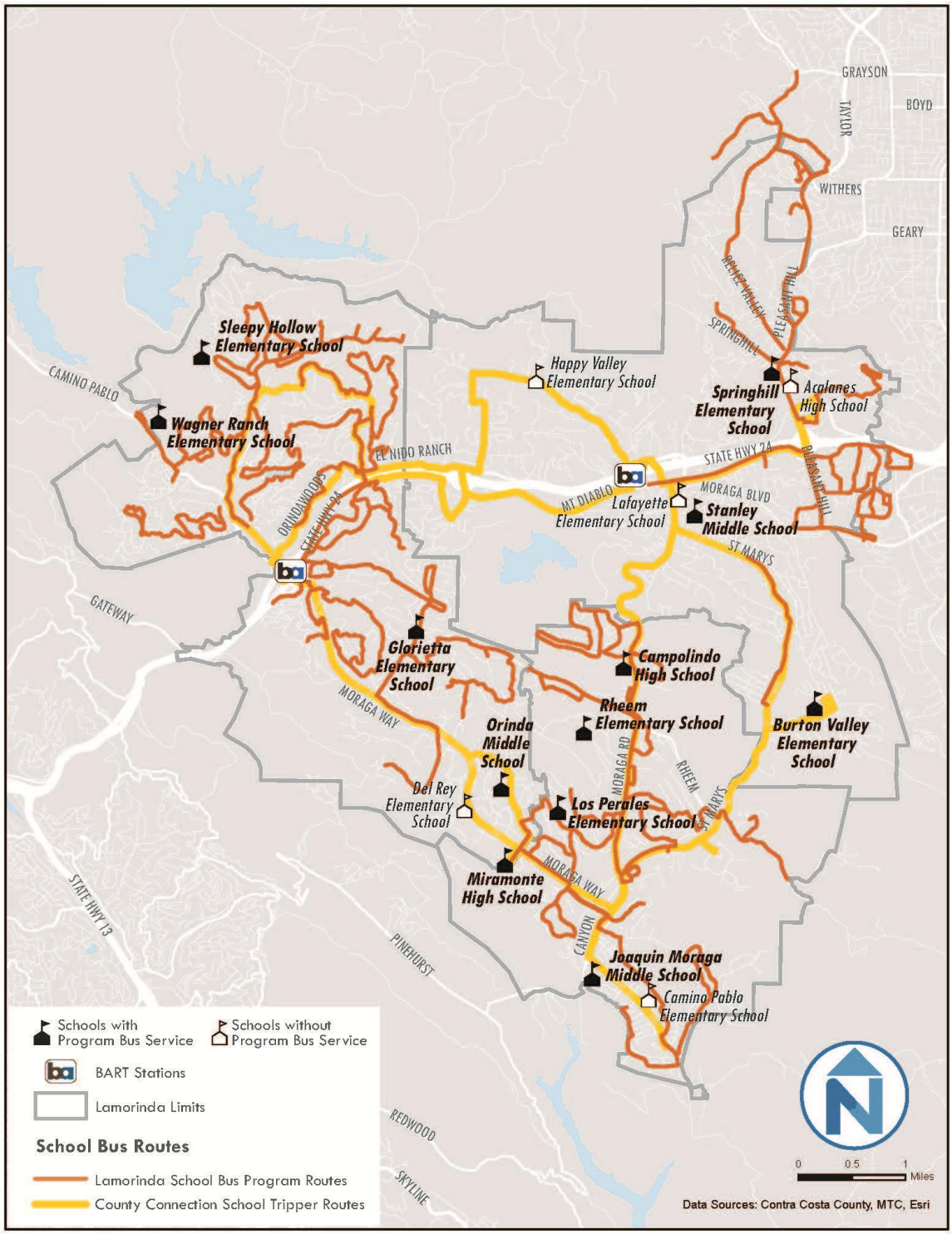


Figure 23 School Service Daily Ridership (round trip equivalents)[12]

[12] For each School Tripper route, several one-way trips occur in both the morning and evening. This number reflects the sum of the time period (morning, evening) with the highest number of total boardings. This methodology was selected to most closely match the round trip equivalent that is used by the LSBP.

Operational Characteristics

Six additional buses would need to be contracted to expand services as proposed above. The total cost of these services would be $446,430 annually, which is approximately $3.88 per trip if used at 75% capacity.[13] This is in comparison to total costs of $3.63 per trip for existing LSBP service provided in the fall of 2014. Note that current LSBP costs are inclusive of operations and costs of vehicles.

Figure 24 School Bus Service Expansion Operating Costs

	School Bus Service Expansion
Annual Operating Cost	$446,430
Daily Ridership (Individual Students Served)	452+
Annual Operating Cost per Student Served	$1,317 or less
Average Operating Cost per Trip	$3.88

Figure 25 below provides a breakdown by school of the potential new ridership gains and estimated costs to provide expanded service. This expanded service has potential to absorb some or all School Tripper ridership along all four existing routes, but consolidation between the two programs is not considered here.

Figure 25 New School Bus Service Costs and Ridership Potential[14]

School / Area Served	City	New Ridership Potential (based on bus capacity)	Estimated Annual Operating Cost
Orinda Intermediate School	Orinda	71	6 new buses $74,400 each **$446,400 total estimated annual operating cost**
Stanley Middle School	Lafayette	66	
Del Rey Elementary	Orinda	71	
Happy Valley Elementary	Lafayette	71	
Lafayette Elementary	Lafayette	71	
Miramonte High School	Orinda	51	
Campolindo High School	Moraga	51	
After school programs	Lamorinda	TBD	
Total New Ridership and Cost of New Service		452+	$446,430
Annual Cost per Student Served (new service)[15]		$1,317 or less	
Annual Cost per Student Served (existing service)[16]		$1,306	

[13] Assumes 180 school days per year and two trips per day; current service is used at 88% capacity

[14] Data obtained from the Lamorinda School Bus Program's *Enrollment by Route – Round Trip Equivalents 2013/2014* report.

[15] Current service is at 88% capacity. This calculation assumes new service would operate at 75% capacity.

[16] Calculation based on 1,196 round-trip equivalent riders, 21 buses, annual cost per bus of $74,405

Capital Requirements

None.

Other Policies

Fares for school bus services would be expected to remain approximately the same ($468 for an annual subscription and $3 for each day pass). In addition, the existing program to subsidize or provide free school transportation for qualifying low-income families would remain. In the longer term, additional study may indicate an opportunity to increase ridership through increased subsidy, but that is not being considered at this time.

Administration

No changes to administration would be required.

Summary

Figure 26 provides an overview of the school transportation services options, including key benefits and drawbacks as compared to the other alternatives.

Figure 26 Summary of School Transportation Services Expansion Benefits and Drawbacks

Benefits	Drawbacks
▪ Increased school bus ridership ▪ Potential to reduce school trip-related congestion ▪ Addresses increasing school-aged population in Lamorinda ▪ Easy to implement from an operations standpoint through existing service provider	▪ Additional cost for expanded service

Increased School Transportation Program Coordination

Market Focus: School Trips

Overview

While core transportation service for schools is currently provided by County Connection and the Lamorinda School Bus Program, two other supportive programs—the Student Transit Ticket Program and the High School Carpool Program—offer additional options and incentives. These programs are administered by the Southwest Area Transportation (SWAT) program of 511 Contra Costa.

Very little explicit coordination occurs between the administrators of these programs. Formalizing a setting in which these programs could coordinate may open opportunities for additional cost efficiencies. Two potential coordination activities include:

- Coordinate marketing activities for all existing transportation services (School Tripper, Lamorinda School Bus, Student Transit Ticket Program, and the high school carpool program) so that students understand the unified nature of these options and their alternatives if school buses serve only some of their transportation needs

- Address capacity constraints by sharing knowledge about high-capacity high school bus/School Tripper routes so that these students can be targeted for participation in the carpool program

Operational Characteristics

A bi-annual meeting of staff representatives from the LSBP, County Connection, and SWAT would provide such a forum.

Capital Requirements

None.

Other Policies

None.

Administration

One of the agencies would take the lead in setting bi-annual meeting agendas, coordinating meeting locations and times, and facilitating group discussion outside of such meetings. Agencies could either rotate this responsibility or determine a lead agency.

Summary

Figure 27 provides an overview of the school transportation services options, including key benefits and drawbacks as compared to the other alternatives.

Figure 27 Summary of Increased School Transportation Program Coordination Benefits and Drawbacks

Benefits	Drawbacks
▪ Increased awareness of program changes and offerings among program administrators and parents ▪ Coordination benefits—program changes can leverage other resources, outreach efforts, and strategically coordinate	▪ Requires in-person meetings ▪ Additional administrative burden to organize and attend quarterly or bi-annual meetings

Summary of Alternatives

A summary of the each of the alternatives is shown in Figure 28 and

Figure 29.

Figure 28 Summary of Alternative Benefits and Drawbacks

Service Alternative	Benefits	Drawbacks
Vanpool to BART	▪ Rideshare operation handled primarily by individuals; public entity does not have to be involved on a day-to-day basis ▪ BART and/or other public entities may be able to subsidize the service to reduce costs to participants ▪ Concept is simple; easy to communicate the operations to potential rideshare subscribers ▪ Designed specifically for commuters to points west of Lamorinda (Oakland and San Francisco)	▪ Subscribers must commit to both morning and evening departure times ▪ Some subscribers must commit to be drivers ▪ Vehicle rental agreement holders (the driver and/or backup driver) may have to front all or part of the cost of the vehicle rental ▪ Requires a high number of subscribers to enable participants to be picked up from their homes ▪ Limited cost savings to users (but guaranteed access to BART)
Moraga/ Orinda BART Shuttle	▪ Passengers pay only for their fare; no vehicle rental, fuel, insurance, or maintenance costs to split ▪ Highest level of flexibility for passengers; morning and evening trip times could be flexible due to shuttle frequency ▪ Supplements less frequent County Connection Route 6 service ▪ Expands transit service options to BART system	▪ Limited service area (presuming that many would still drive to access transit) ▪ Service is geared to residents of Moraga and Orinda, though Lafayette may benefit from reduced traffic congestion ▪ Requires additional operational and capital funding ▪ Park-and-ride are conceptual and require further investigation
Lafayette Shuttle	▪ Supports increased development along Mount Diablo Boulevard and existing businesses/employers ▪ Enables additional transit options for those living along Mount Diablo Boulevard (and near intersection with Pleasant Hill Road) ▪ Supplements less frequent County Connection service (Route 25)	▪ Limited service area along Mount Diablo Boulevard ▪ Currently, only proposed to operate during peak commute hours (give focus of study) ▪ Shuttle access is still contingent on safe pedestrian access and connections across Mount Diablo Boulevard
Zone Service	▪ Provides basic level of access to the transit system across a wide service area ▪ Effectively serves as a community general public Dial-a-Ride (with specific time-points) Increases transit access to BART and other community services	▪ Service quality (speed) is limited based on the wide service area and deviations ▪ Unlikely to be a productive (passengers per hour) service
Deviated Fixed-Route	▪ Opportunity to provide transit service to residents north of CA-24 ▪ Likely to be more productive than zone services ▪ Increases transit access to BART and other community services	▪ Service quality (speed) is limited based on deviations ▪ Unlikely to be a productive (passengers per hour) service, but more so than zone service alternatives

Service Alternative	Benefits	Drawbacks
School Transportation Services Expansion	▪ Increased school bus ridership ▪ Potential to reduce school trip-related congestion ▪ Addresses increasing school-aged population in Lamorinda ▪ Easy to implement from an operations standpoint through existing service provider	▪ Additional cost for expanded service
Increased School Transportation Program Coordination	▪ Increased awareness of program changes and offerings among program administrators and parents ▪ Coordination benefits—program changes can leverage other resources, outreach efforts, and strategically coordinate	▪ Requires in-person meetings ▪ Additional administrative burden to organize and attend quarterly or bi-annual meetings

Figure 29 Summary of Prioritized Alternatives

Alternatives	Service Approach	Market Focus
BART Feeder Services	Vanpool to BART	Commuters
	Moraga/Orinda BART Shuttle	Commuters
	Downtown Lafayette BART Shuttle	Commuters
Flexible Transit Services	Zone Service	Commuters, Senior Mobility
	Deviated Fixed Route Service	Commuters, Senior Mobility
School Services	Expansion of School Bus Program	School Trips
	Increased School Transportation Program Coordination	School Trips

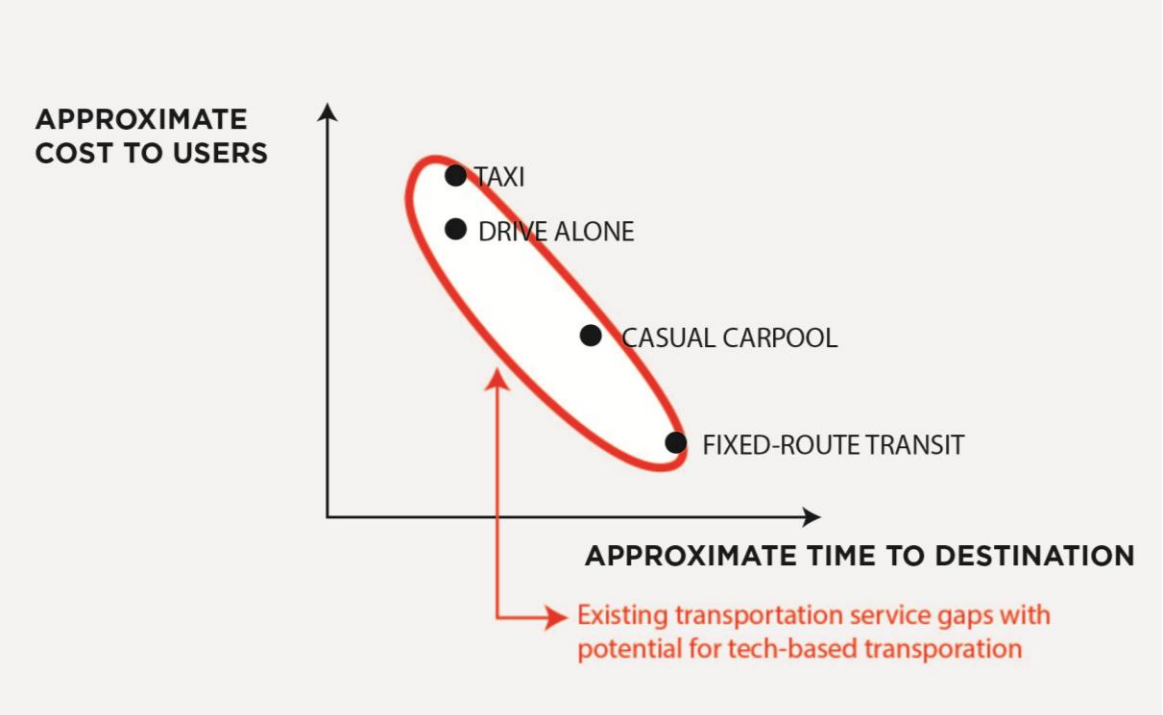
Leveraging New (Technology-Based) Transportation Options

Given the rapid growth of new transportation options supported by mobile phone technology (tech-based transportation), this list of alternatives—with a specific charge to develop effective transit alternatives—would be incomplete without acknowledging new opportunities that might exist for Lamorinda. These new services range from providing on-demand, point-to-point options (also known as "transportation network companies" or "ridesourcing" apps) to private fixed-route services that rely on 15-passenger vans or buses. As a burgeoning industry, many of these companies are young and all of them come from a culture of experimentation, frequent change, and optimization.

Despite the dynamic nature of these companies and their services, many offer transportation options that could benefit the Lamorinda area. As previously mentioned, existing public transportation options only serve a portion of the spectrum of transportation needs—most notably, low-cost, commute type trips. These new private sector transportation options attempt to offer supporting services that address the gaps unfilled by traditional transit.

Figure 30 illustrates the spectrum of existing transportation options (with a focus on commuter trips) and their location on a scale of time and cost.[17] Transportation needs often span a long list of factors. But, simplified to time and money, current options are limited.

Figure 30 Existing Transportation Market Gaps in Lamorinda



Given the existing gaps and the understanding that new private transportation options have potential to address a range not served on the time and cost scale, the question remains on how public sector entities can engage, guide, attract, and/or support these companies to fill important transportation needs in Lamorinda. Specifically, market opportunities exist for:

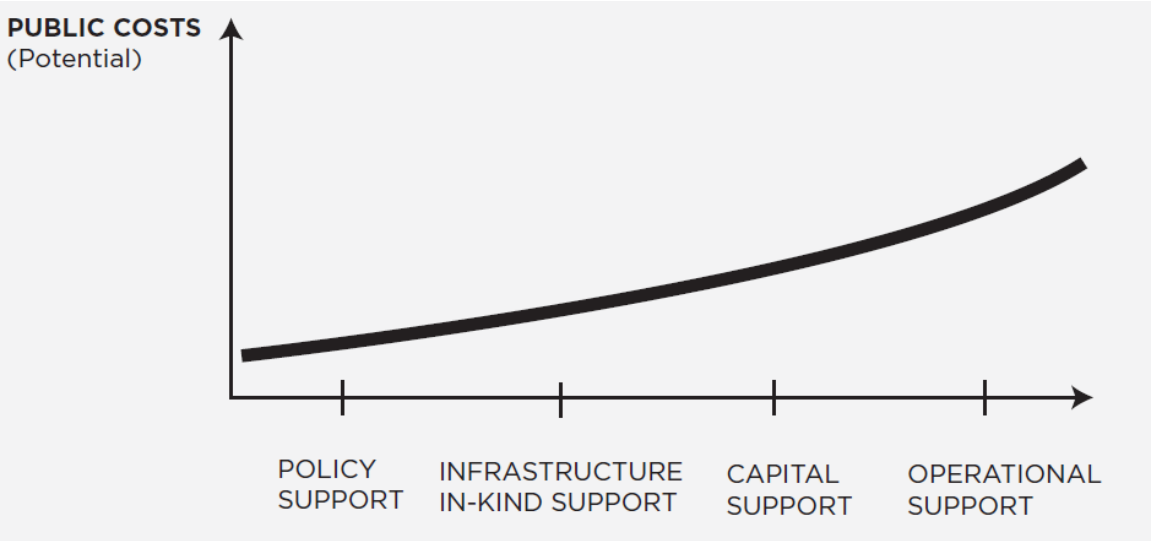
- Faster/more frequent fixed-route transit
- More convenient casual carpool
- Cheaper on-demand, point-to-point transportation

[17] Throughout this section, "new" transportation options will reference service providers that, as of 2015, have not operated in the Lamorinda area for at least five years.

Encouraging/Supporting Tech-based Transportation Services in Lamorinda

Various arrangements are possible and each has potential benefits and drawbacks. It is impossible to predict actual results since there are few case studies of this in practice. Figure 31 describes potential public sector strategies to leverage tech-based transportation services and their associated costs. On the lower end of the cost scale, cities can offer policy support by specifying the "rules of the road" for these new companies; making policy statements that clarify the rules and are supportive of new options may encourage companies to proactively locate services in particular jurisdictions. Higher levels of support would be more costly, such as in-kind support like sharing bus stops and other existing facilities, capital support through vehicles or park-and-ride lots, or operational support by providing drivers or rider subsidies.

Figure 31 Potential Level of Public Investment to Support Tech-based Transportation



Challenges

While there are gaps in existing service offerings in Lamorinda that could be filled by new, smaller transportation services at costs lower for consumers or public entities, the primary challenge is to determine how to "meet in the middle." Companies, the general public, and public entities who govern and/or operate existing transportation services in the area each have their own expectations for service availability and cost. Even if public entities agreed to encourage tech-based transportation (through financial means or otherwise), companies launching new businesses could choose not to respond in particular markets for factors outside the public entity's control.

A second key challenge in finding middle ground between tech-based transportation providers and public agencies is inherent differences in risk-taking and levels of commitment. As a result, using public funds for operational support is unlikely, due both to the public sector's need to tie funding to requirements for serving the public at large and private companies' need for operational flexibility.

Figure 32 provides comparisons in terms of the offerings and desires of technology-based transportation providers, public agencies, and the riding public.

Figure 32 Offerings and Desires of Tech-based Providers, Public Agencies, and the Public

	Tech-based Transportation Providers	Public Agencies	Traveling Public
Offers	• Transportation services that can quickly change, adapt, or grow to meet market demands • Private funding to experiment and refine potential solutions • Willingness to take risks on new service types	• Support mechanisms (policy, in-kind, capital, operational) • Ability to coordinate among other transportation providers	• Financial support (fares) • Supply (drivers) and demand (riders) • Marketing support (word of mouth)
Desires	• Flexible regulatory environment to experiment/innovate • Access to potential markets • Access to flexible funding options	• Stable (long-term) and legal service options • Equitable and accessible service options • Options that support community goals or general public good	• Cost-effective and convenient service • Equitable and accessible service options • Options that support community goals or general public good

Recommendation: Capital and In-Kind Support

Given the challenges discussed above, public sector support for tech-enabled transportation options through the sharing of capital or in-kind facilities (park-and-ride lots, bus stop sharing, bus staging areas) likely is the best strategy to satisfy both the public sector's need to keep costs low and private companies' desire for flexible operations. These strategies keep public and private entities at arm's length while still fostering partnerships.

As the new transportation companies mature and establish a more permanent operating model, public-sector rider subsidies could be offered to increase access to public transportation options in Lamorinda, but it is not recommended at this time. Prior to such an arrangement, policies specifying details such as driver, vehicle, insurance, and pricing requirements may have to be established that take both public safety and private sector constraints into account.

FUNDING SCENARIOS

This section outlines funding scenarios to describe potential resources that are available to fund transportation alternatives. A more comprehensive financial plan that will more closely match costs with expenses will be developed upon refinement of the alternatives.

Each of the alternatives would be considered an expansion of existing service, with the exception of the 100% user-driven vanpool program and increased school transportation program coordination. Two funding scenarios are described: a constrained funding scenario (no new funds) and an expanded funding scenario (new outside funds).

Constrained Funding

The constrained funding scenario only considers existing resources. As mentioned, only two of the service alternatives could be implemented without significant increases in resources or the elimination or modification of existing service. Service alternatives that could be implemented under a constrained funding scenario include the vanpool program and increased transportation program coordination. However, even these services would require nominal staff-time funding (to help administer a program) and potential capital costs (to enhance or construct park-and-ride facilities).

Another strategy to implement various service alternatives under a constrained funding scenario is to modify existing public transit services and redeploy those resources elsewhere. Given the limited number of local services, it is challenging to identify existing Lamorinda transit services (County Connection services) that could be modified to fund new services. It is unlikely that Route 6 could be modified or eliminated given its current productivity (17.6 boardings/hour),[18] service to St. Mary's College, and growing ridership. However, two current Lamorinda services that could be considered for replacement or elimination include:

- Route 25 (9.0 boardings per revenue hour)
- School Trippers (Routes 603, 606, 625, 626), under an assumption that services could be replaced by the Lamorinda School Bus Program or another service

Figure 33 provides a summary of resources for each of these services on an average weekday. Combined, both services equal approximately 31 platform hours (revenue hours plus deadhead). To put things in perspective, current Route 6 service operates approximately 39 platform hours per day.

Figure 33 Potential Resources from Existing Transit Services

Funding Strategy	Average Weekday Platform Hours	Comments
Eliminating Route 25	11:16	Elimination of Route 25 could be offset by potential new services within Lafayette (shuttle)
Eliminating School Trippers (Routes 603, 606, 625, 626)	20:00	This service elimination is unlikely given the importance of School Tripper service, but is shown to reflect order of magnitude of services.
Total	31:16	-

Given their importance, it is unlikely that School Tripper services would be eliminated unless replaced by another service.

Expanded Funding

Given the uncertainty in federal transportation funding, it is unlikely new federal funds would be available for capital or operations investments in the short term. The following alternative funding sources could help fund transportation services in Lamorinda:

[18] September 2014

- **Measure J** (county sales tax revenues) – funds available for bus services, transportation for seniors and people with disabilities, commute alternatives, and safe transportation for children
- **Low Carbon Transit Operations Program (LCTOP funds)** – a new funding category based on cap and trade revenues that would be distributed through Caltrans
- **BART funding** – BART "C-Line" Access Study considered BART funding for shuttles focused on Contra Costa station access
- **Local funds** – funding provided directly by communities or users benefiting from services
- **Local school districts**

While no expanded funding sources are confirmed, these sources are the most likely candidates for funding expanded transit service as presented in this memo. Unless resources become available through elimination or modification of existing service, nearly all service alternatives will require an expansion of funding to be viable.

Specific to school trips, it has been noted by the LPMC TAC that the LSBP may be in the best position to obtain or leverage expanded funding opportunities, potentially through Measure J or other grant opportunities.[19] This expanded funding would be required for LSBP to expand upon its existing service.

PERFORMANCE METRICS

With any new service, well-defined performance metrics will be required to evaluate the success of new options. Tracking of these metrics can provide an understanding of how the service is performing relative to peers and enable the agency to make changes to support the original intent of the program.

This section outlines high-level performance measurement factors based on each target market. As part of our current scope of work, we do not anticipate calculating the results for each of these performance metrics for each alternative. However, we present them as a way to consider the potential for each alternative service approach to meet its goal. Target levels of each metric would need to be defined at a later time.

Commuter Trips

The following performance measures could be used to evaluate alternatives focused on commuter trips.

- **Number of BART parking trips reduced:** What is the effect of the alternative on reducing vehicle trips to a BART station that requires on-site or nearby parking?
- **Expanded capacity to BART system:** How much additional passenger access capacity does this alternative provide to the BART system (as a way to compare resources given to existing parking supply)?

[19] Current school bus funding comes from the following sources (estimated): $1 million from CCTA (Measure J), $575,000 revenues from student subscription fees, $67,000 from the Southwest Area Transportation Committee's (SWAT) Commute Alternatives Program, $32,000 from the Moraga School District

- **Number of transit trips:** How many transit trips (runs) are provided to the BART station each day (e.g., how many opportunities does one have to access BART on the bus)? This is not to be confused with transit passenger trips.
- **Number of non-on-site parking spaces:** In the case of satellite park-and-ride facilities, how many additional parking spaces are added to the BART parking supply at a specific station?

Midday Trips (seniors, shoppers, community trips)

- **Number of households within ¼ mile of transit service**: As compared to existing service, how many new households does the alternative place within ¼ mile of transit service?
- **Cost per passenger and cost per revenue hour:** How cost-effective is the service? These metrics are standard across the transit industry, but have particular relevance for flexible services that are likely to have lower productivity.

School Trips

- **Total seat capacity:** How many total non-driving seats are provided to each school?
- **Number of schools served:** What is the total number of schools served through non-single occupancy vehicle alternatives?
- **Total and percentage of annual student ridership:** What is the total number of students utilizing the alternative? What percentage of the total student population is utilizing the alternative?

NEXT STEPS

This memo outlines various transit service alternatives for the Lamorinda Service Plan. Before completing the Service Plan, we want to ensure that the LPMC and members of the community have an opportunity to provide feedback. As such, anticipated next steps include:

Figure 34 Lamorinda Service Plan – Next Steps

	Task	Description	Timeline
1	Review Service Plan with LPMC	Share service alternatives with the LPMC for preliminary feedback267	Early April
2	Obtain general public input on alternatives	Launch public feedback mechanisms through Nextdoor, Textizen, and potential on-site meetings	April-May (in advance of school closures)
3	Revise alternatives and select preferred alternative(s); develop Implementation Plan	Narrow number of total alternatives and select a final set of alternatives for recommendation. Based on selected alternatives, develop Implementation Plan.	May
4	Develop Draft and Final Report	Finalize recommendations and complete Draft Report followed by Final Report and Executive Summary	May/June

Appendix A Additional Alternatives

Two alternatives were originally analyzed but were not moved forward based on their limited feasibility and lack of broad support. These alternatives are described below.

Hybrid Rideshare/Shuttle Model

Reason for being de-prioritized: Given this alternative's conceptual nature and that it has never been tested in market, there are many variables which impact its potential for future success. As a result of this unpredictability, this alternative was not moved forward.

Market Focus: Commuters

Overview

The "hybrid model" is similar to the vanpool option described above; however, it involves both members of the public and hired operators as drivers of the service. Individuals would subscribe to the service on a monthly basis. To make this service feasible, a basic Class C vehicle (15 passenger van or smaller) must be used so that non-commercial licensed individuals can operate the vehicle. This hybrid model would be a unique and untested model, but conceptually could work to meet the intended goals for BART Commuters.

Operational Characteristics

Compared to other alternatives, the hybrid model is somewhat complicated as it relies on individual rideshare subscribers on the inbound commute and a scheduled service model on the outbound commute.

Individual rideshare subscribers would be drivers in the morning period, when rideshare participants meet in Moraga (potentially at to be determined park-and-ride facilities) and travel together to the Orinda BART station at designated time-points. In the evening, when participants return to the BART station, a hired driver[1] would run a circulator shuttle between BART and the Moraga park-and-ride lot, which eliminates the need for participants to pre-plan the evening meeting time. The evening shuttle could make BART pick-ups at least every 30 minutes.

Morning Trip(s)

Subscribers would meet in Moraga (potentially at several park-and-ride facilities) and travel together to the Orinda BART station. Carpool parking at BART would provide flexibility in the arrival time (BART parking currently fills up around 7:30 a.m.). The van would remain parked at BART throughout the day until the evening trips begin.

One person per vehicle would be designated as a driver and one as a backup for the morning trips. Currently, there is no designated carpool parking at BART, but preliminary discussions indicate there is potential to set this up in support of a commuter vanpool service.

Evening Trips

Commuters often find it more difficult to commit to an evening meeting time than a time in the morning. This can be due to changes in schedule, commute delays, and evening plans. To

[1] Currently, it is undetermined if a driver would be hired through the designated vanpool vendor or another third-party.

overcome this barrier to a hybrid subscription service, a hired driver would use existing vanpool vehicles to operate a circulator shuttle between BART and cars parked in Moraga in the evening. If sufficient subscribers exist to warrant multiple vans for the morning trip, a "rebalancer" would also have to be hired to help return the vans to the park-and-ride lot at the end of each evening shift. Any remaining vans at BART would be parked overnight a Moraga Park-and-Ride lot for use the next day.

Operationally, this alternative would require some level of daily coordination to ensure evening shuttles can adequately meet evening demand and that no subscriber or van is "left behind" at the Orinda BART station.

Figure 1 presents potential monthly operational costs for this alternative.

Figure 1 Summary of Costs

	Monthly Costs
Van lease (10-passenger)	$595
Monthly fuel per van	$250-300
Driver/Assistance Staff wages ($15/hour)	$1,300
BART parking fees	$65
Total Operations & Maintenance per month	$2,260

Operations and maintenance costs could be offset through subscriber fees. Fares of approximately $5 round-trip would be adequate to cover the estimated monthly costs of operations, assuming vans are used to capacity. Fares would be paid to a combination of the vehicle vendor and/or the entity paying staff to help manage/rebalance the system.

Capital Requirements

Vehicles would be rented or leased through a vanpool provider or similar. Typically in longer-term lease-type situations, a public entity (e.g. County Connection, BART, or the City of Moraga) would be the leaseholder of the vans. In others, rental agreements could be taken on by the participants in the program. Additional potential capital costs could include costs associated with providing Park-and-Ride facilities which would include similar costs to those described in the BART Shuttle alternative.

Other Policies

Individual participants who serve as morning drivers would need to sign an agreement with the leaseholder that covers liability and any cost-sharing arrangements.

Administration

The vehicle leaseholder would be responsible for administering the operations, obtaining vehicle insurance, and setting up agreements with subscriber drivers.

Summary

Figure 2 below provides an overview of the hybrid alternative, including key benefits and drawbacks as compared to the other alternatives.

Figure 2 Summary of Hybrid Rideshare/Shuttle Model Benefits and Drawbacks

Benefits	Drawbacks
▪ Offers multiple evening trip times to increase flexibility for riders ▪ BART and/or other public entities may be able to subsidize the service to reduce costs for participants ▪ Designed specifically for commuters to points west of Lamorinda, including Oakland and San Francisco	▪ Subscribers have to commit to a morning departure time ▪ Requires a high number of subscribers to enable participants to be picked up from their homes ▪ Conceptually complicated—may be a difficult sell if the idea cannot be communicated simply to potential riders and drivers ▪ Requires public entity to hold insurance; drivers would be a mix of hired operators and individual subscribers (may increase insurance rates) ▪ With one van, the hired driver would begin their work session at the BART station and finish at the Moraga park-and-ride; there may be additional costs associated with the driver's return trip to their private vehicle ▪ With multiple vans, requires two hired operators to enable the van to be returned to the park-and-ride location

Consolidating County Connection School Trippers into the LSBP

Market Focus: School Trips

Reason for being de-prioritized: Given the complexity in funding requirements for both programs and the potential personal financial challenges that may be involved if school trips were only provided by the LSBP, this alternative was selected to not be moved forward.

Overview

This option would involve serving existing School Tripper routes through the LSBP. Because the School Trippers serve schools and BART stations, some route modifications might need to be considered to maintain BART access. As of the fall of 2014, each School Tripper run was serving an average of zero to three boardings or alightings at the Orinda and Lafayette BART stations.

Operational Characteristics

As shown in Figure 3, the LSBP could require an additional $445,500 annually to cover the costs of absorbing existing School Tripper service, assuming no cost efficiencies could be achieved through consolidation. However, given the overlap of some routes, some existing school bus program capacity could be used to serve former School Tripper passengers, resulting in a cost savings for school transportation in Lamorinda. The maps in this Appendix demonstrate locations with geographic overlap between the two systems for routes that serve the same schools. Further analysis of existing capacity constraints on the school bus system is needed to identify if existing School Tripper ridership could be absorbed into existing School Bus service along these overlapping routes, or if additional capacity would need to be added to LSBP.

The average operating cost per trip is slightly cheaper for LSBP than School Tripper service.

Figure 3 Comparison of School Services Costs and Ridership

	Existing School Bus Service	Existing School Tripper Service
Annual Operating Cost[2]	$1,562,505	$445,500
Daily Ridership (approximate individual students served or "round trip equivalents")	1,196	316[3]
Annual Operating Cost per Student Served	$1,306	$1,409
Average Operating Cost per Trip[4]	$3.63	$3.92

Capital Requirements

No capital costs would be associated with the consolidation of routes assuming the LSBP would be the operator. The LSBP provides all service through a contract provider; both operations and capital are included as part of the contract, and any additional service would utilize the same contractor.

The reduction or complete consolidation of School Tripper services would enable County Connection to redistribute operating and capital resources to provide other service alternatives proposed within this plan.

Other Policies

The consolidated School Tripper services would no longer be available to the public at large. All riders on LSBP routes would have to be subscribed students. Secondly, pricing for school bus routes is based primarily on an annual subscription fee whereas School Tripper routes charge a fare for each trip. New routes would rely on the annual subscription model.

Administration

All administration of the new routes would be the responsibility of the LSBP.

Summary

Figure 4 provides an overview of the consolidated school service alternative including key benefits and drawbacks as compared to the other alternatives.

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[2] The School Bus Program contracts First Student to provide vehicles and drivers at a rate of $413.36 per vehicle per day or $74,405 per vehicle per year. There are 180 school days per year and 21 vehicles currently in use.

[3] For each route, several one-way trips occur in both the morning and evening. This number reflects the sum of the time period (morning, evening) with the highest number of total boardings. This methodology was selected to most closely match the round trip equivalent that is used by the LSBP.

[4] Assumes 180 school days per year and two trips per day per rider

Figure 4 Summary of Consolidated School Services Benefits and Drawbacks

Benefits	Drawbacks
▪ Reduces cost to provide the same types of services ▪ Provides a standard price structure for all services providing school trips in Lamorinda ▪ Increases effectiveness of available service capacity (reducing excess supply)	▪ May impact some who prefer pay-as-you-go service or those who currently use the School Trippers to access BART ▪ May limit usage of those who were using the transit ticket program

Appendix B School Tripper and LSBP Overlapping Service Areas

The maps in this section identify various schools in the Lamorinda area and existing school-specific services provided by the Lamorinda School Bus Program or County Connection School Trippers.

Figure 5 LSBP and School Tripper service to Burton Valley Elementary

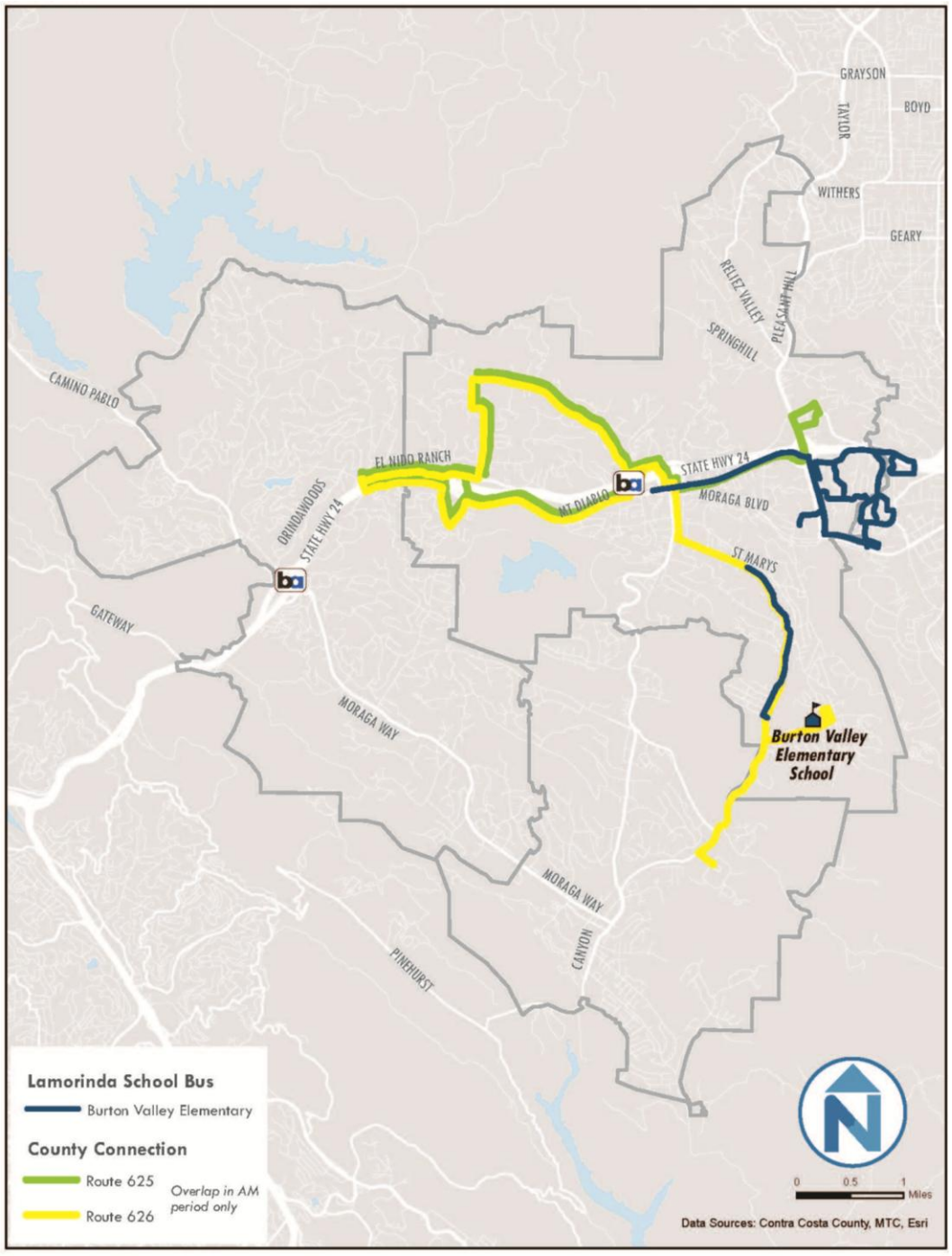

Figure 6 LSBP and School Tripper service to Campolindo High School

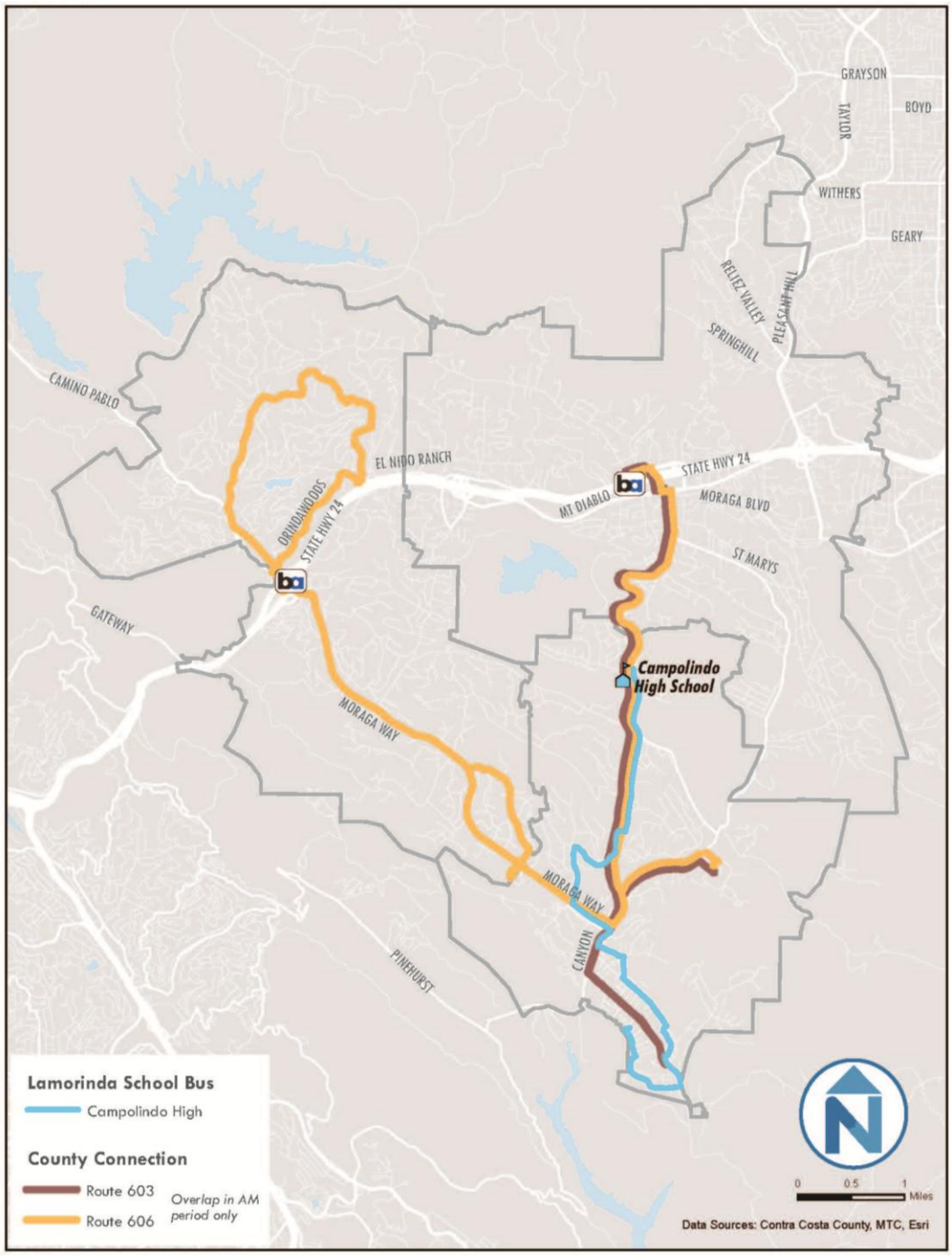

Figure 7 LSBP and School Tripper service to Joaquin Middle School

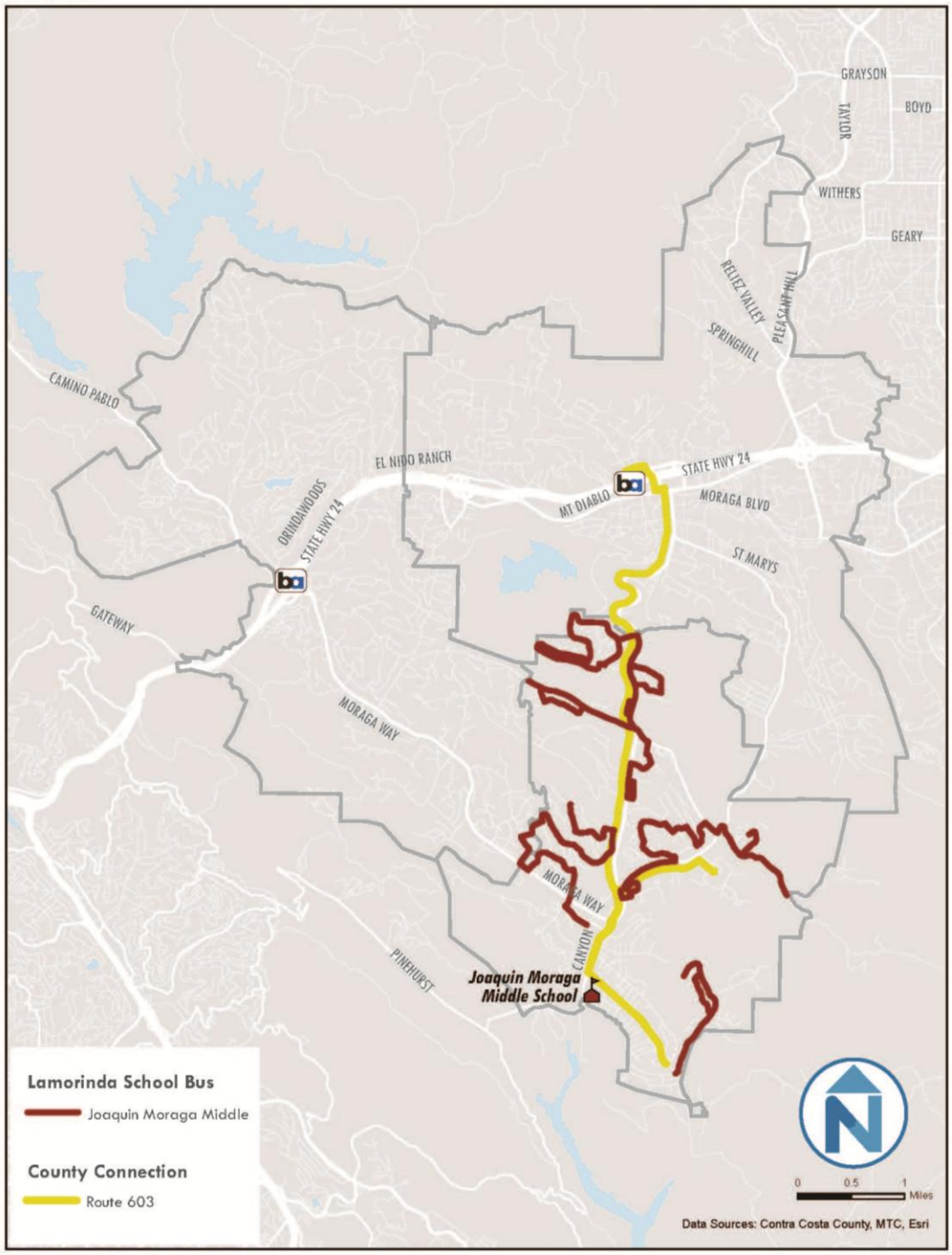

Figure 8 LSBP and School Tripper service to Miramonte High School

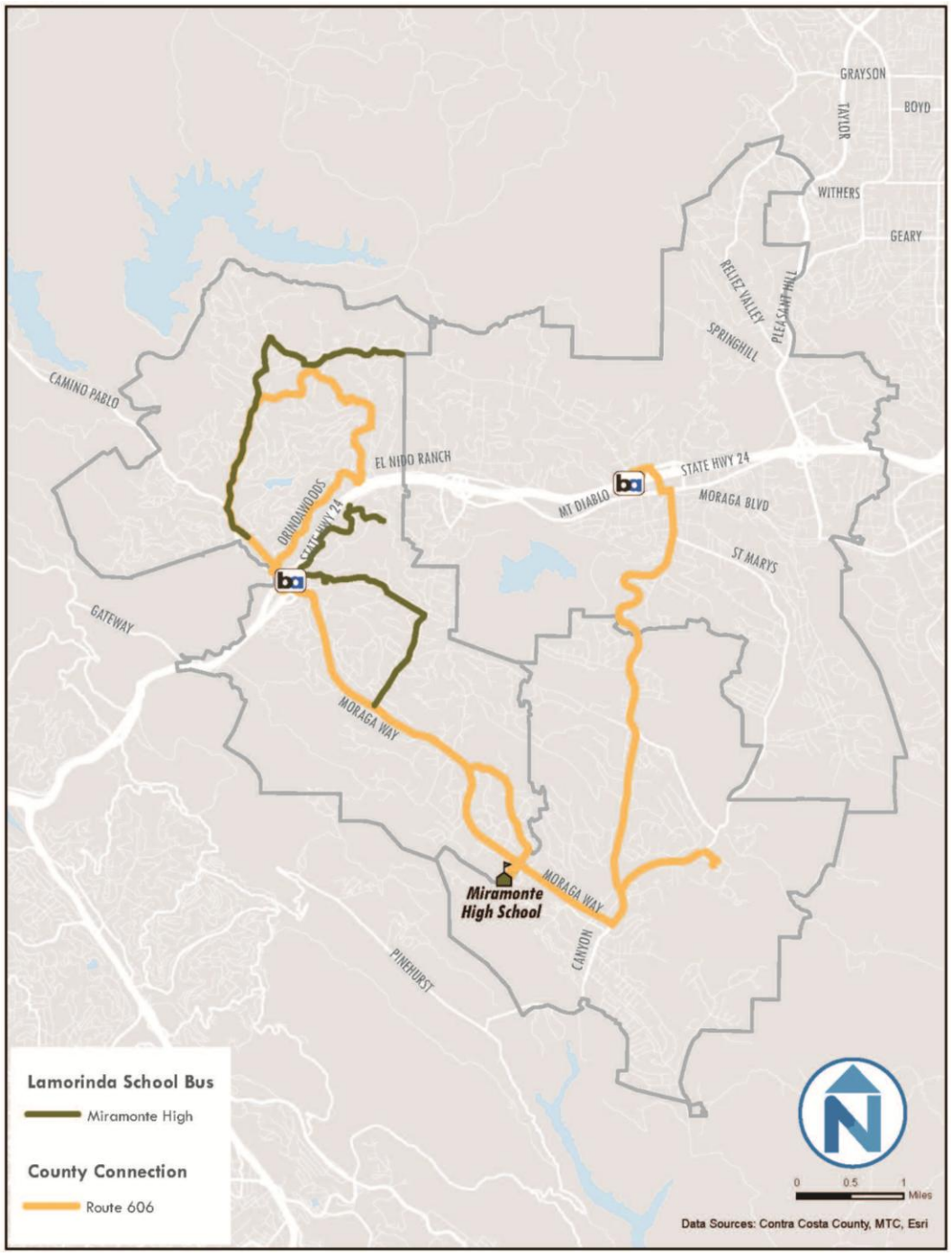

Figure 9 LSBP and School Tripper service to Orinda Intermediate

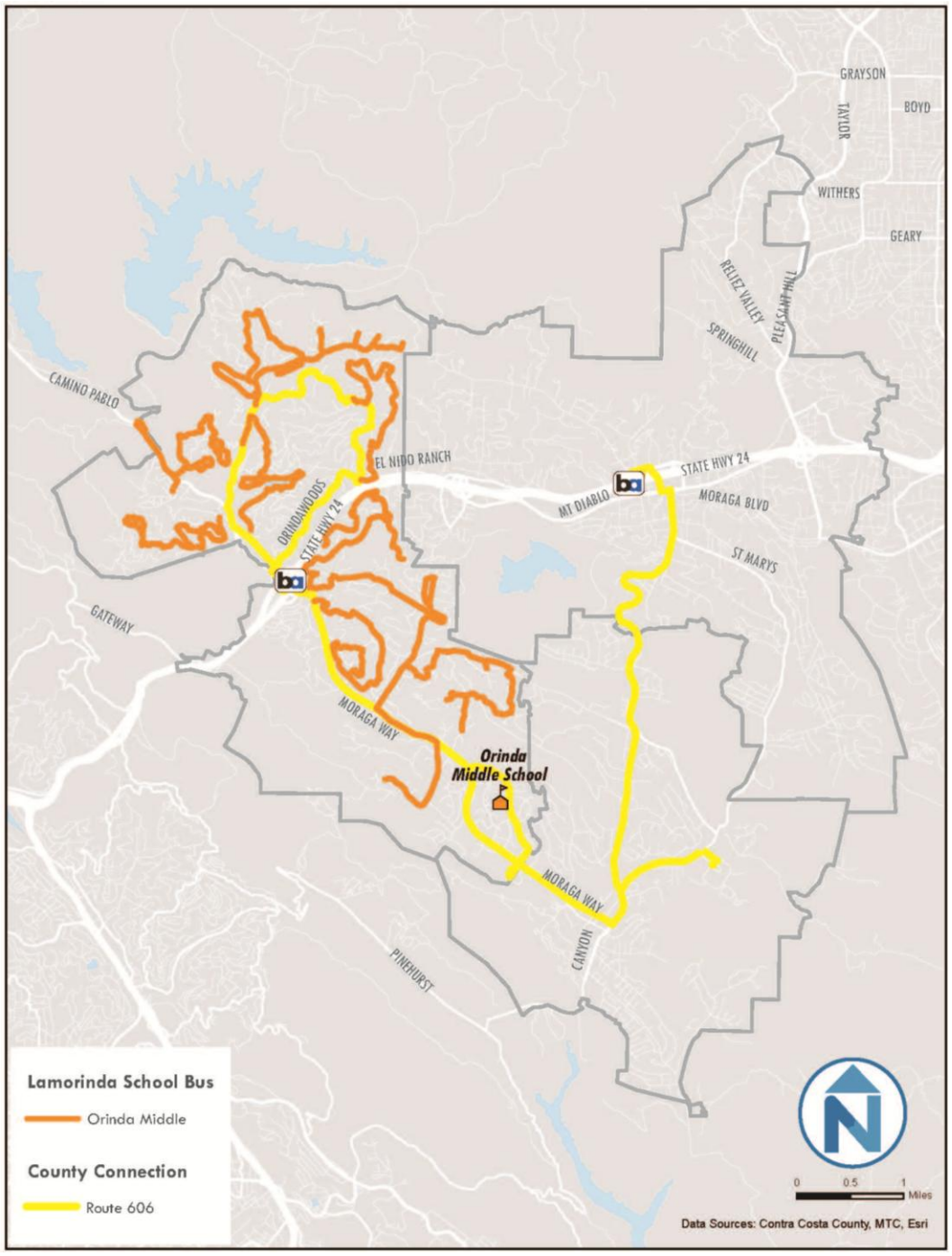

Figure 10 LSBP and School Tripper service to Stanley Middle School