Transportation Demand Management Plan

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Prepared for:

The Branson School

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Executive Summary

This report presents Branson's proposed Transportation Demand Management Plan (TDMP), which is designed at a minimum to result in no net increase in traffic when Branson phases in 100 additional students. This TDMP would be implemented upon approval of the 100-student increase, and would keep Branson's vehicular traffic at the main campus from exceeding current levels at a 320 student enrollment.

The Branson campus generates on average 2.69 total trips per enrolled student on weekdays. With the proposed 100-student expansion, there is a potential for up to 270 additional weekday trips, all of which can be mitigated using the measures discussed herein.

Below are six broad strategies, each with a variety of more-specific transportation demand management measures, *all* of which will be implemented upon the initial increase of students:

- Strategy 1: Creation of a Neighborhood Partnership Group
- Strategy 2A: Increased Remote Drop Off and Pick Up (Remote Parent Drop Off and Pick Up)
- Strategy 2B: Increased Remote Drop Off and Pick Up (School Bus and Shuttle & Marin Bus Starting Year 3)
- Strategy 3: Investments in Bike Program
- Strategy 4: Creating Employee Incentives (To Use Alternative Modes)
- Strategy 5: Formalizing Carpooling Requirements
- Strategy 6: Weekend and Special Event Management

Under the most conservative estimates, the use of these strategies will result in net-neutral traffic compared to current conditions. Less conservative estimates suggest that these measures will actually reduce traffic to a level below current conditions. Specifically, the anticipated range of trip reduction resulting from these measures is from 270 to 367 trips per day.

To ensure the efficacy of this plan, Branson is committed to a traffic monitoring program with annual independent compliance review in years 1-4, during which enrollment would increase by 25 students annually, and then biennial independent compliance review in years 5 through 10 (years 6, 8, and 10).

This TDMP was developed by Branson in consultation with a Neighborhood Working Group made up of Ross residents that live in close proximity to the school. Through a series of meetings held in October and November of 2020, the school was able to ascertain, and respond to, specific

concerns of the working group. The recommendations from the group that are now incorporated into this Plan include Branson's commitment to substantial increases in monitoring, more off-campus student drop-offs and pickups, additional shuttles and buses, closer neighbor coordination, and greater incentives for those who bike, walk, or carpool to school, and, perhaps most significantly, the immediate implementation of all of the trip reduction measures, as opposed to a previously considered phased approach.

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1. Introduction and Purpose

The Branson School (Branson) is located at 39 Fernhill Avenue and situated on 16 acres within the Town of Ross. Branson has been in Ross since 1920, and has operated as both a primary and secondary school throughout the years. The school now serves as a coeducational preparatory high school for students in grades 9-12.

On May 11, 1978, the Town Council adopted Resolution L042 approving a Use Permit for the operation of Branson as a private, coeducation secondary school with an enrollment of up to 320 students.

In 2020, an Initiative was approved by the voters of Ross to allow Branson to seek to increase of the student enrollment cap up to 420 students. Branson now seeks an enrollment increase of 100 students phased over four years at 25 students each year.

This report presents Branson's proposed Transportation Demand Management Plan (TDMP), which would be implemented upon approval of the phased 100-student increase, in order to keep Branson's vehicular traffic to and from the main campus from exceeding daily baseline traffic volumes under its current 320 student enrollment. At a minimum, implementation of this TDMP will result in no net increase in Branson campus traffic over existing conditions. Less conservative estimates suggest that this plan will actually reduce traffic to a level below current conditions.

This document also proposes a monitoring plan for Branson to demonstrate that the reduction strategies utilized are resulting in trip counts equal to those measured prior to the enrollment increase, thereby keeping traffic net neutral. This report also presents additional measures that Branson, with neighborhood approval and in conjunction with the Town, could implement to further improve traffic safety near its campus.

2. Existing Campus Trip Generation

For years, Branson has voluntarily employed measures to limit vehicular traffic volumes on local streets near the school. Branson collected comprehensive travel data on trips to and from its campus in 2016, 2018 and 2019. The school's current trip generation was assessed using two methods: vehicle counts collected over five continuous weekdays and on various Saturdays, and travel mode surveys administered to students, staff, and faculty.

Daily Trip Generation

The trip count methodology from the prior years' studies included vehicle counts at both the Branson main campus and at the St. Anselm's parking lot. It should be noted that a vehicle arriving and then departing is counted as two separate vehicle trips. The three-year average of trips to and from both sites is approximately 1,000 daily vehicle trips, with the Branson main campus comprising an average of 860 trips.

Table 1 presents the results of the weekday counts collected since 2016 to and from the Branson main campus. Over the course of 15 separate survey days, Branson generated between 648 and 1,068 vehicle trips, with an average of 860 daily trips to and from its main campus. It is noted that two-thirds of the daily traffic counts were generally between 759 and 961 daily trips, i.e., approximately 12 percent or one standard deviation below and above the average.[1]

Table 1. Branson Main Campus Weekday Trip Generation (2016, 2018 & 2019)

Weekday	2019	2018	2016
Monday	836	786	648
Tuesday	852	830	793
Wednesday	853	914	817
Thursday	827	1,042	844
Friday	915	1,068	880
Weekday Average			**860**
Standard Deviation Range (+/- 12%)			**759-961**

Source: Parisi Transportation Consulting, 2016, 2018 & 2019.
1. 2016 counts occurred on February 29-March 4.
2. 2018 counts occurred on February 26-March 2.
3. 2019 counts occurred on March 18-22.

[1] The standard deviation is a measure of the amount of variation or dispersion of a set of values. A low standard deviation indicates that the values tend to be close to the mean of the set, while a high standard deviation indicates that the values are spread out over a wider range.

The average weekday vehicle trip generation rate is 2.69 trips per student. Providing a trip rate on a per student basis is typical in the traffic planning practice for school land uses. The average rate accounts for the overall sum of students driving, carpooling, being dropped off and picked up by parents, and after school trips, as well as all staff, faculty, facility support, maintenance, and delivery trips.

Table 2 shows the average breakdown of the main campus vehicle trips by time of day. The morning and afternoon commute periods comprise about one half the campus daily trips, while the evenings (after 4 p.m.) generally make up another one-third of the daily trips.

Table 2. Branson Main Campus Weekday Trip Generation by Period (2019)

Time Period	Avg Trips	% of Daily Trips
Before 7 AM ("Morning")	14	1.6%
7-9 AM ("School Commute")	230	26.8%
9-2 PM ("Midday"	110	12.8%
2-4 PM ("Afterschool Commute")	211	24.6%
4-6 PM ("PM Commute")	150	17.5%
After 6 PM ("Evening")	142	16.6%
Totals	**857**	**100%**

Source: Parisi Transportation Consulting, 2019.

Saturday traffic counts were also collected in 2016, 2018 and 2019. Branson generates 346 daily trips on an average Saturday, with two-thirds of daily traffic counts between 243 and 449 daily trips (i.e., approximately 30 percent or one standard deviation below and above the average). Saturday events typically consist of athletic practices, theater rehearsals, and CYO youth basketball practice. The average trip generation rate on Saturdays is 1.08 trips per student.

Table 3. Branson Main Campus Saturday Trip Generation (2016, 2018 & 2019)

Saturday	2016	2018	2019
Saturday 1	458	332	348
Saturday 2	--	378	204
Saturday 3	--	--	474
Saturday 4	--	--	228
Average			346
Standard Deviation Range (+/- 30%)			243-449

Source: Parisi Transportation Consulting, 2016, 2018 & 2019.
1. 2016 Saturday count occurred on March 19.

2. 2018 Saturday counts occurred on March 3 and17.
3. 2019 Saturday counts occurred on March 2, 9, 16 and 23.

The two dates included in the Saturday trip counts (Table 3) that had more than 450 trips occurred on the final dates of the school play. The school play is a regularly occurring school event and was therefore included in the Saturday trip generation analysis. However, neither count should be considered as "typical," because of the special event that day.

Not included in the data listed in Table 3 are Saturday counts for February 20, 2016, and March 10, 2018. On both days, Branson hosted an on-campus soccer playoff game in addition to other regular events. Neither of these days' counts are included in the average typical Saturday trip generation analysis above because athletic playoff games are not a regularly occurring event. The February 20, 2016 count recorded 850 total vehicle trips. Apart from the soccer playoff game, other events on campus that day included CYO youth basketball practices, and Branson basketball practice. The March 10, 2018 count recorded 778 total vehicle trips. Apart from the soccer playoff game, other events on campus that day included CYO basketball practice and a Branson play rehearsal. The goal of this study was to identify average typical Saturday trip generation and mitigate these trips to neutral or better. Accordingly, outlier events were not included.

STUDENT TRAVEL MODES

Table 4 summarizes the results from student mode share surveys undertaken from 2016 through 2019. Most Branson students arrive in the morning via student-driven carpool trips. The share of student carpools decreases in the afternoon, with students shifting to bus or shuttle or parent pick-up. Student carpools are less feasible in the afternoon due to students' different after school schedules and destinations, however, Branson is providing both an early and late bus to service students with afterschool activities. Parent pickup trips are the most significant in terms of campus trip generation because each drop-off or pick-up trip accounts for two trip ends; a later section of this report proposes remote pickup to reduce afternoon parent pick-up trips.

Table 4. Average Student Mode Share and Commute Trips (2016, 2018 & 2019)

Travel Mode	AM Commute			PM Commute		
	Mode Share	Person Trips	Vehicle Trips	Mode Share	Person Trips	Vehicle Trips
Walk / Bike	3.7%	11.0	0.0	3.0%	10.3	0.0
Bus / Long-distance shuttle	9.0%	28.7	4.0	19.3%	61.7	4.0
Drive & Park	31.7%	102.0	102.0	33.0%	103.0	103.0
Ride & Park[1]	39.7%	127.3	0.0	19.0%	61.0	0.0
Drop-Off / Pick-up (Alone)	9.3%	30.0	60.0	17.0%	54.3	108.0

Drop-off / Pick-up (Carpool)	6.7%	20.7	20.7	8.7%	28.3	28.3
Total	100%	320	187	100%	320	243

Source: Parisi Transportation Consulting, 2016, 2018 & 2019.
1. Student was a passenger in a student-driven carpool that parked on campus or at the St. Anselm's lot.

Staff and Faculty Travel Modes

Table 5 presents the faculty and staff commute mode shares from 2016 through 2019. Most Branson staff arrive and depart by driving alone, although a small and growing number of staff walk or bike to campus.

Table 5. Average Faculty & Staff Mode Share and Commute Trips (2016, 2018 & 2019)

Travel Mode	AM Commute			PM Commute		
	Mode Share	Person Trips	Vehicle Trips	Mode Share	Person Trips	Vehicle Trips
Walk / Bike	14%	11.7	0.0	13%	11.3	0.0
Bus / Long-distance shuttle	3%	2.7	0.0	3%	2.3	0.0
Drive & Park	77%	67.0	67.0	78%	67.7	67.7
Ride & Park	5%	4.0	0.0	4%	3.3	0.0
Drop-Off / Pick-up (Alone)	1%	1.0	2.0	2%	1.7	3.3
Drop-off / Pick-up (Carpool)	0%	0.0	1.0	0%	0.0	0.7
Total	100%	87	70	100%	90	72

Source: Parisi Transportation Consulting, 2016, 2018 & 2019.

Forecast Trip Generation With Enrollment Expansion

As noted in a prior section, the Branson campus generates on average 2.69 trips per enrolled student on weekdays and 1.08 trips per student on Saturdays. The average rate conservatively includes trips that may not necessarily increase proportionally with enrollment, such as faculty, staff, and facility support and delivery trips. Branson is projecting between 10 and 16 additional faculty and/or staff at full expanded enrollment.

With the proposed 100-student expansion, a successful Transportation Demand Management Plan would need to mitigate the potential for up to 270 additional weekday trips in order to result in a net zero increase in vehicle trips. This number is determined as follows for weekdays: 2.69 trips / student x 100 students (or 135 inbound and 135 outbound trips). For Saturdays, the plan needs to mitigate the potential for up to 108 additional Saturday trips (i.e., 54 inbound and

54 outbound). It should be noted that the Saturday trip generation rate is also conservatively high because some recorded trips are associated with the Catholic Youth Organization (CYO) basketball league using the Branson campus.

Various transportation demand management strategies available to Branson to accomplish the necessary reductions are presented in the next sections. As shown below, the potential exists for these measures to reduce trips even beyond net-neutral.

3. Transportation Demand Management Measures

Broadly, transportation demand management (TDM) consists of specific programs, information, encouragement, and incentives by an organization to educate people on available transportation options and ensure said options are utilized. TDM programs are typically designed to encourage modes other than driving alone, and to counterbalance the incentives to drive, like free parking and vehicle-oriented roadway design. There are both traditional and innovative technology-based methods to provide TDM measures. Several private schools throughout Marin County deploy TDM programs to balance traffic demands. These programs have proven themselves to be quite successful.

Current voluntary transportation demand management strategies used at the school include:

- Branson changed its school start time to 8:45 AM in 2017 to reduce vehicle traffic at the typical morning commute peak.
- The school has a limited number of guest parking spots in the upper parking lot and overflow parking is made available on the Branson campus tennis courts when necessary.
- Branson has 100 parking spaces reserved for student drivers. These consist of 50 spaces on the main campus reserved for carpools of three or more and 50 in the St. Anselm's parking lot. Branson's juniors and seniors can drive to campus and are the only students eligible to obtain parking permits. Branson encourages students to form carpools, defined as a driver and at least two passengers. Parking permits for carpools cost less than for single drivers, and preferred parking spots are assigned to carpools that demonstrate higher than typical occupancy (e.g., four or more members).
- Branson provides morning and afternoon shuttles between the St. Anselm's parking lot and the main campus for students who park or are dropped off in the St. Anselm's lot.
- Parent drop-offs and pickups occur at the Branson School back parking lot.
- Branson pays faculty and staff who give up their parking spots on campus $600 per year.

Branson proposes to implement further TDM measures, in addition to those listed above, to ensure that there are no additional vehicle-trips generated with the school's phased increase of 100 additional students and associated staff/faculty. Branson will use all the measures and strategies listed in the menu below to ensure that vehicle-trips do not increase beyond the 2016-2019 baseline volumes.

Six broad strategies, each with a variety of specific transportation demand management measures, will be implemented:

- Strategy 1: Creation of a Neighborhood Partnership Group
- Strategy 2A: Increased Remote Drop Off and Pick Up (Remote Parent Drop Off and Pick Up)
- Strategy 2B: Increased Remote Drop Off and Pick Up (School Bus and Shuttle & Marin Bus Starting Year 3)
- Strategy 3: Investments in Bike Program
- Strategy 4: Creating Employee Incentives (To Use Alternative Modes)
- Strategy 5: Formalizing Carpooling Requirements
- Strategy 6: Weekend and Special Event Management

As stated in a prior section, if Branson increased enrollment by 100 students and associated staff/faculty without any new or expanded transportation demand mitigation measures in place, the projected result could be the addition of up to 270 vehicle-trips (135 inbound and 135 outbound) over the course of a weekday. Based on the forecasts shown on Table 6 and Table 7, the Branson TDMP would reduce at a minimum approximately 270 daily trips, which would hold the vehicle trips equal to the 2016-2019 average. Less conservative estimates suggest these measures could reduce up to 367 trips per day, resulting in a net reduction from existing conditions of nearly 100 daily trips.

Table 6 presents a summary of the projected four-year trip reduction ranges resulting from the TDMP.

Table 6. TDMP Trip Reduction Summary

	Additional Students	Trips to Reduce (2.7 trips / student)	Potential Trip Reduction Outcomes		Difference
			Net-neutral	Better than Net-neutral	
Year 1	25	68	68	112	Up to 44 fewer than existing
Year 2	50	135	144	222	Up to 87 fewer than existing
Year 3	75	203	212	292	Up to 89 fewer than existing
Year 4	100	270	279	367	Up to 97 fewer than existing

Table 7 illustrates the efficacy of the various measures that will be used to achieve net-neutral traffic at a minimum. Not all Strategies listed in this plan are quantified for trip reduction effect; some, like Strategy 1 Create a Neighborhood Partnership Group, are supportive measures to ensure compliance with other Strategies. A more detailed version of this table is provided in the

appendix that includes details such as estimated participants, the trip reduction factor for each measure and trips reduced by time of day.

Table 7. Sample TDM Strategies to Reduce Vehicle Trips with Proposed Enrollment Increase

#	TDM Strategy	Total Trips Reduced
Year 1 (25 additional students)		
	Trips to Reduce (25 students x 2.7 trips / student)	68
Net-neutral TDMP Measures		
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use)	68-81
	Net-neutral Trip Reduction Total	**68-81**
Net-neutral Plus TDMP Measures		
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	10
3	Investments in bike program	14
4	Creating employee incentives	10
5	Formalizing carpool requirements	10
	Net-neutral Plus Trip Reduction Total	**112**
	Net-neutral Plus Trips Reduced Beyond Student Increase	**44**
Year 2 (50 additional students)		
	Trips to Reduce (50 students x 2.7 trips / student)	135
Net-neutral TDMP Measures		
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use)	135
	Net-neutral Trip Reduction Total	**135**
Net-neutral Plus TDMP Measures		
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	20
3	Investments in bike program	27
4	Creating employee incentives	20
5	Formalizing carpool requirements	20
	Net-neutral Plus Trip Reduction Total	**222**
	Net-neutral Plus Trips Reduced Beyond Student Increase	**87**
Year 3 (75 additional students)		
	Trips to Reduce (75 students x 2.7 trips / student)	203
Net-neutral TDMP Measures		
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use, additional Marin bus)	176
3	Investments in bike program	32

#	TDM Strategy	Total Trips Reduced
	Net-neutral Trip Reduction Total	**208**
Net-neutral Plus TDMP Measures		
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	30
4	Creating employee incentives	24
5	Formalizing carpool requirements	30
	Net-neutral Plus Trip Reduction Total	**292**
	Net-neutral Plus Trips Reduced Beyond Student Increase	**89**
Year 4 (100 additional students)		
	Trips to Reduce (100 students x 2.7 trips / student)	270
Net-neutral TDMP Measures		
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use, additional Marin bus)	216
3	Investments in bike program	41
4	Creating employee incentives	30
	Net-neutral Trip Reduction Total	**287**
Net-neutral Plus TDMP Measures		
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	40
5	Formalizing carpool requirements	40
	Net-neutral Plus Trip Reduction Total	**367**
	Net-neutral Plus Trips Reduced Beyond Student Increase	**97**

1. Branson's student forecasts indicate the need to run a second Marin bus at the beginning of the third expansion year, which would result in more students riding the bus exclusively or as part of a drop-off/pick-up trip.

The next sections of this Transportation Demand Management Plan describe elements of the various strategies that would successfully decrease vehicle-trips to and from the Branson campus.

Strategy 1: Create a Neighborhood Partnership Group

In response to feedback relating to ongoing neighbor engagement and communication, Branson is committed to creating and helping to facilitate a new Neighborhood Partnership Group via the following measures.

- Organize an ongoing Neighborhood Partnership Group to enhance community relations and communications. Branson commits to meetings with the Neighborhood Partnership Group once each semester.
- Establish a traffic hotline to facilitate communications to a point person at Branson.
- Provide traffic communications to families twice annually to communicate traffic rules and regulations. Require student drivers to e-sign acknowledgment and adhere to rules with appropriate penalties. Share these communications with the Neighborhood Partnership Group.
- Commit to actively participate with neighbors, the Neighborhood Partnership Group and Town of Ross to identify and support new traffic safety measures. See Chapter 5 for potential safety measures identified by Branson.

Strategy 2A: Increased Remote Drop Off and Pick Up (Remote Parent Drop-off & Pick-up)

Based on 2016-2019 data, approximately 50 students are dropped off by a parent in the morning and 80 are picked up in the afternoon (Table 4). Single-student morning drop-off trips are 50 percent higher than parent carpool drop-offs (30 vs. 20 students). In the afternoon, single-student pickup trips are nearly double the number of parent carpool pickup trips (54 vs 28 students). As previously mentioned, single student on-campus parent drop-off and pick-up trips are the most impactful on a vehicle trip generation basis because each drop-off or pick-up trip constitutes two recorded vehicle trip ends (arrival and departure).

In response to the working group's preference for increased remote drop-offs and pick-ups, Branson is committed to requiring more campus restrictions, off-campus options, and shuttles. New restrictions would include the following:

- No parent drop-offs of solo student trips to campus between 8:00am and 9:00am
- No parent pick-ups of solo students on campus between 2:30pm and 3:30pm

See Strategy 2B for related measures that could be used by Branson to reduce parent drop-off and pick-up trips. Remote parent drop-off and pickup is one of the strategies expected to be most effective in reducing Branson vehicle trips in combination with rolling bus/shuttle fees into overall tuition.

To illustrate the potential effect of one or more of these management strategies, if 30 Branson families pick up students at a remote location, the number of daily vehicle trips would be reduced by 80 trips per day on average.

STRATEGY 2B: INCREASED REMOTE DROP OFF AND PICK UP (SCHOOL BUS AND SHUTTLE RIDERSHIP & MARIN BUS STARTING YEAR 3)

Based on 2016-2019, approximately 29 students ride a bus or long-distance shuttle in the morning, and 62 students make the return trip in the afternoon on either the early afternoon or evening buses. The long-distance bus services students in San Francisco and makes one stop at Strawberry in the morning, and two stops in Marin at College of Marin and Strawberry in the afternoon. Branson also provides an East Bay shuttle that picks up from several BART stations and a shuttle from the San Rafael SMART train station; both shuttles are used by students, faculty, and staff. According to Branson, approximately 150 students and 35 staff live in an area serviced by the Branson buses or shuttles (San Francisco, Kentfield and the East Bay), meaning that the share of students using these modes could be substantially increased.

In response to the working group's preference for increased remote drop-offs and pick-ups, the School is committed to requiring more campus restrictions, off-campus options, and shuttles using the following management strategies.

- Route the San Francisco and/or Marin bus to pick up and drop off students on Sir Francis Drake Blvd. at Golden Gate Transit stops near the corners of Bon Air, Laurel Grove, and Lagunitas.
- Route the San Francisco and/or Marin bus to COM for sports practice and remote pick up in afternoon
- Add evening shuttles from campus to St. Anselm's parking lot between 5:00 - 6:00pm service (looping, similar to morning/afternoon shuttles) to deter students from moving car up to campus at 3:30pm

In year 3 of the annually phased 25 student increase and beyond, Branson is dedicated to introducing a Marin bus in addition to the existing San Francisco bus with one morning route, and two afternoon routes

Branson plans to incorporate part or all of bus/shuttle fees into tuition to encourage more bus ridership. In 2019, the cost to ride the San Francisco bus was $3000 if busing was the students' full-time commute mode. Rolling bus/shuttle fees into overall tuition is a near-term strategy that can yield increased shuttle and bus ridership and is one of the strategies expected to be most effective in reducing Branson vehicle trips. Bus and shuttle ridership would further increase when Branson provides a new Marin bus/shuttle route; the timing for this measure will depend on student enrollment and ridership demand but is anticipated at year 3.

To illustrate the potential effect of one or more of these management strategies, increasing student bus and shuttle ridership by 20 percent of the student population, either as a primary

mode trip or as part of a remote parent drop-off or pickup trip (Strategy 2A), would constitute an increase of more than 80 students riding buses or shuttles. This ridership increase would constitute an increase of up to 120 percent over the current bus and shuttle ridership, depending on time of day (Table 4). Eighty additional students riding the bus or shuttle would result in a trip reduction of more than 200 daily trips. Some of these trips would be diverted from existing student carpools, but also have the potential to result in long-term behavior changes where students from outlying areas defer driving and ride the bus or shuttle instead.

Strategy 3 & 4: Investments in Bike Program / Creating Employee Incentives

Based on recent data, 10 students and 12 staff currently walk or bike to school (Table 4 and Table 5). Branson's enrollment records indicate that between 20 and 28 students and 14 staff live in Ross, meaning that the share of students walking or biking could substantially increase. As a way to get students and employees out of their cars, particularly those living close to the campus, Branson is investing in a bike program with the following strategies:

- Invest in a bike program by providing up to $750 to help students and employees purchase a bike that must be ridden to school for most school commute trips.
- Increase the payment to faculty/staff for giving up their parking space from $600 to $1000 annually.
- Prohibit students that live within two miles of campus from driving to school except when they present a compelling justification.

To illustrate the potential effect of one or more of these management strategies,

- Fifteen more students walking or cycling each day would result in a reduction of 40 or more vehicle trips on average.
- Fifteen more faculty/staff walking or cycling on a daily basis, as a result of travel or housing incentives, would result in 30 fewer vehicle-trips on average.

Strategy 5: Formalizing Carpooling Requirements

Branson has 100 parking spaces reserved for student drivers. These consist of 50 spaces on the Branson campus and 50 in the St. Anselm's parking lot. Branson's juniors and seniors can drive to campus and are the only students eligible to obtain parking permits. Parking permits for carpools cost less than for single drivers, and preferred parking spots are assigned to carpools that demonstrate higher than typical occupancy (e.g., four or more members). Annual fees for on-campus parking permits are $550 for cars of three, $275 for cars of four and free for cars of five or more. Only vehicles with parking permits can park on campus in assigned spaces; this regulation is heavily monitored and strictly enforced by the school. Overflow carpools, as well as single student drivers, are assigned to the St. Anselm Church's parking lot. Staff and faculty are provided free parking on campus.

Based on recent data, between 160 and 230 students (afternoon and morning peak, respectively) and approximately 67 Branson staff drive and/or carpool to campus (Table 4 and Table 5); this equates to an average carpool occupancy of 2.47 students per vehicle in the morning and 1.72 students in the afternoon. Most staff and faculty are single-occupant drivers.

Branson's voluntary carpool requirements have proven effective and, as part of the application process, the school will formalize these measures within the TDMP.

- Restrict on-campus parking to student carpools at all times of three or more drivers. See related Strategy 2B (evening shuttles to St. Anselm's).
- No sophomore drivers or drivers with fewer than 12 months with a driver's license may drive a carpool.

Branson can improve the carpool participation rate by facilitating matches by student residences and afterschool schedules. Driving restrictions to prohibit sophomore student drivers would also shift students into buses and shuttles.

To illustrate the potential effect of one or more of these management strategies, increasing the number of students carpooling by 20 (five percent of the expanded enrollment) during each commute period would modestly increase carpool occupancy to 2.9 students per vehicle in the morning and to 1.9 students per vehicle in the afternoon. The resulting trip reduction would be more than 40 vehicle trips per day on average.

Increasing the student carpooling share will be more attainable in the final year of the proposed enrollment expansion because the initial cohort of additional students will be seniors eligible to drive other students.

STRATEGY 6: WEEKEND AND SPECIAL EVENT MANAGEMENT

Branson generally does not restrict driving onto campus for evening events or on weekends except for graduation when Branson provides a bus service onto campus. Branson's largest special event days are typically their open houses and Parents' Day during the fall semester; during these events, Branson allows parking on the athletic field.

The following measures will be used by Branson to reduce driving trips during special and weekend events:

- Hold the number of on-campus events to current baseline levels, as shown in the 2018-2019 school calendar.
- Promote carpooling by students and parents for sporting and special events using a carpool matching app.

To illustrate the potential effect of one or more of these management strategies, if 15 Branson families commit to traveling to evening and weekend events in carpools, the number of daily

vehicle trips would be reduced by 30 trips per day on average. Whether family carpools are successful depends on residence matching, vehicle size, and family size.

4. TDM Monitoring Plan

This Transportation Demand Management Plan will be implemented by the Branson administration. An annual evaluation will be conducted to assess the TDMP's success in achieving its goals. Each year a report will be prepared and submitted by Branson to the Town reporting the following:

1. Current student enrollment,
2. Numbers of faculty and staff,
3. Academic calendar and calendar of afterschool and weekend events,
4. TDM measures deployed the prior year, and
5. Campus vehicle trip generation via a campus-wide count.

Branson's campus-wide vehicle trip count shall be conducted annually using the methodologies deployed in the 2016-2019 trip generation studies. Branson shall place traffic counting hoses and video cameras, as appropriate, to record movements into and out of the main Branson campus for seven continuous days in late September or early October of each school year. The results of the survey will be summarized and provided to the Branson administration and the Town of Ross and its residents as part of the annual evaluation report.

This annual monitoring process will commence upon initial implementation of the phase-in of the proposed increased enrollment at Branson (i.e., beyond 320 students) for years 1 through 4. After Branson's enrollment has reached its maximum of 420 students, Branson commits to biennial traffic monitoring for years 5 through 10 (years 6, 8, and 10).

Based on the 2016-2019 traffic levels, Branson's five-day weekday counts will be required to show net-neutral traffic:

- A five-day weekday average at or below 910 daily trips (i.e., the 3-year average of 860 trips plus one-half a standard deviation, i.e., 6 percent).
- A Saturday daily count at or below 398 daily trips (i.e., the 3-year average of 346 trips plus one-half a standard deviation, i.e., 15 percent). If the Saturday count exceeds the 398 daily trip threshold, Branson must demonstrate to the Town how the counted Saturday is not reflective of typical conditions and perform a second Saturday count.

If the results of an annual trip counts exceed the above allowances, a supplemental trip count survey shall be conducted the following academic quarter to ensure levels have fallen back to at least net neutral.

In addition to quantitative trip county monitoring and at the suggestion of the neighborhood working group, Branson will implement a system that places school personnel at the following key points for monitoring purposes:

- Front gate monitor (daily)
- Bolinas/Waverly monitor in the mornings to enforce Branson penalties during first week of semester and monthly spot checks
- Fernhill/Shady monitor in the afternoon to enforce Branson penalties during first week of semester and monthly spot checks

Furthermore, Branson will meet with the Neighborhood Partnership Group once each semester to receive neighborhood concerns and develop measures to address their issues (Strategy 1).

5. Transportation Safety Improvements

Branson recognizes that school-related traffic uses local streets, including Fernhill Avenue and Glenwood Avenue. These roadways, like many in the Town of Ross, are peripheral to residential uses and serve multiple uses, including vehicle travel, walking and cycling, and some on-street parking.

Branson, as a neighbor that generates traffic using these streets, will not increase traffic loads through the implementation of this TDMP. However, the school would like to coordinate with the Town of Ross and nearby neighbors of the school to consider the implementation of potential traffic safety measures that would benefit all street users. These include, but are not limited to ideas such as:

- Updating required school area warning signage
- Consider posted speed reductions down to 15 MPH in school areas
- Calming traffic through use of pavement markings and/or speed reduction measures, which could potentially include speed humps
- Exploring additional stop sign controls at intersections
- Installing low profile pedestrian-scale lighting along parts of Fernhill Avenue
- Constructing a pedestrian pathway along one side of Fernhill Avenue

The above measures, as well as potential other ideas, are located within the Town of Ross right-of-way and the implementation of any would require approval by the Town. Branson is committed to working with the Town and its neighbors to identify and implement measures to improve traffic safety measures.

6. Vehicle Miles Traveled Analysis

This analysis was conducted to estimate daily and per capita vehicle miles travelled (VMT) for staff and students for two scenarios: existing conditions and future conditions incorporating TDM strategies and an increased student enrollment. References to "Existing" conditions in this section refer to pre-COVID 19 pandemic conditions.

Vehicle Miles Traveled Standards

In 2013 the State of California established VMT as the environmental impact standard for transportation within the California Environmental Quality Act (CEQA); VMT was adopted as the statewide standard in 2018.[2] Vehicle miles traveled are calculated as the product of vehicle trips and their associated travel distances. Land uses that generate or attract vehicle trips from far away generate high VMTs, whereas land uses that attract local trips or non-driving trips generate low VMT. VMT replaced Level of Service (LOS) as the criterion for transportation-related environmental impact. LOS was calculated based on vehicle delay on roadways and at intersections but tended to encourage development in less dense areas and to promote growth in roadway capacity, both of which tend to increase VMT.

The Town of Ross's General Plan currently does not include criteria for when a VMT analysis is required. However, CEQA guidance for new developments states that projects that generate fewer than 110 trips per day may be assumed to cause a less-than-significant transportation impact and do not require a VMT analysis. Because this Project is designed to produce no new trips, the exemption applies and a VMT analysis is technically not required. The following analysis was nevertheless carried out to confirm that the project's VMT impacts would be minimal.

It should also be noted at the outset that projects generating a per capita VMT that is at least 15% below regional or city per capita VMT are considered to have less than significant transportation impacts, and do not require mitigation measures. As discussed below, in addition to being exempt, the Branson School expansion is at least 15% below the regional per capita VMT, thereby resulting in a less than significant impact even if the Project were not exempt.

Methodology for Calculating VMT

This analysis considers daily VMT, or the number of miles traveled each day by all vehicles used when traveling to Branson, and per capita VMT, or the daily VMT divided by the total number of Branson students and staff. The analysis considers regular commute hours only, and does not include special events, meetings, or other circumstances.

[2] Steinberg, 2013

Daily and per capita VMT were estimated using Branson school staff and student residential addresses and considering their transportation modes for the 2020/2021 school year. The future year analysis accounts for an additional 100 students and 12 staff members at year four of Branson's proposed expansion using travel modes per the TDM plan. Appendix A2 provides the detailed methodology outlining the process and assumptions made for residential addresses and commute modes.

Existing & Future Travel Modes

Table 8 shows estimated existing and future student mode shares based on students' planned commute modes prior to the COVID-19 pandemic. Table 8's data are for a daily average and differ slightly from Table 4 and Table 5, which differentiate between the morning and afternoon periods across three sample years.

Table 8. Estimated Student Mode Shares

Travel Mode	Existing Conditions		Future Conditions	
	Number of Students	Percent	Number of Students	Percent
Walk/Bike/Skateboard	18	5.6%	25	5.7%
Bus/SMART Shuttle	44	13.8%	106	25.2%
Carpool Driver	50	15.6%	62	14.8%
Carpool Passenger	102	31.9%	150	35.7%
Drive Alone	48	15.0%	36	8.6%
Employee Driven	4	1.3%	4	1.0%
Parent Driven – To Branson	54	16.9%	0	0.0%
Parent Driven – Remote Drop-Off	0	0.0%	37	8.8%
Total	320	100.0%	420	100.0%

Source: Parisi Transportation Consulting, 2021.

Under the TDMP, Branson would enact policies to direct students towards active transportation, buses, and increased carpooling. A new Marin bus route would reduce the number of students driving alone or being driven by their parents. Additionally, the TDMP would eliminate all parent trips to the Branson campus, instead directing them to remote drop-off locations located in Ross, at the College of Marin, and at the Bon Air Greenbrae shopping center.

Table 9 shows estimated existing and future mode share for staff based on based on staff's planned commute modes prior to the COVID-19 pandemic. While approximately two-thirds of staff drive alone to Branson, incentives under the TDMP would encourage drivers to shift to

carpooling and active transportation. The proportions of these modes would increase while driving alone would decrease to account for approximately 55% of staff travel modes.

Table 9. Estimated Staff Mode Shares

Travel Mode	Existing Conditions		Future Conditions	
	Number of Staff	Percent	Number of Staff	Percent
Carpool Driver	5	5.7%	5	5.1%
Carpool Passenger	5	5.7%	11	11.1%
Drive Alone	58	66.7%	55	55.6%
Walk/Bike/Skateboard	18	20.7%	27	27.3%
Bus/SMART Shuttle	1	1.1%	1	1.0%
Total	87	100.0%	99	100.0%

Source: Parisi Transportation Consulting, 2021.

EXISTING & FUTURE VMT

Overall per capita VMT for students and staff would fall from an average of 13.2 under existing conditions to 10.2 under the implementable actions in the TDMP. According to the Transportation Authority of Marin Demand Model (TAMDM), the Town of Ross has an existing (2015) per resident VMT of 14.1 and per employee VMT of 23.0.[3] In year 2040, with changes in land use and transportation, these VMT are expected to decrease to 12.0 per resident and 12.8 per employee.

Branson's estimated existing per capita VMT is 13.2 and would drop to 10.2 with the TDMP; this student and staff VMT would be exactly 15% below the Town of Ross's 2040 per capita resident VMT (12.0) and more than 15% below the Town's 2040 per capita employee VMT (12.8). The following sections provide more detailed breakdowns for student and staff.

Table 10. Overall Branson Daily & Per Capita VMT

Scenario	Total Students & Staff	Daily VMT	Per Capita VMT
Existing Conditions	407	5,385	13.2
Future Conditions	519	5,291	10.2

Source: Parisi Transportation Consulting, 2021.

[3] Fehr & Peers, 2020. "Table 6-13: Vehicle Miles Travelled Forecasts". p. 127 https://2b0kd44aw6tb3js4ja3jprp6-wpengine.netdna-ssl.com/wp-content/uploads/2021/01/TAMDM_Development_Report_9-1-2020.pdf

STUDENT VMT

Table 11 shows student VMT under existing and future conditions. Under current conditions, Branson School students are responsible for over 3,600 miles driven – equivalent to a per capita VMT of 12.7. Forty percent of students' daily VMT is due to parent-driven trips to campus. Carpool trips account for 27% of daily VMT, while students driving alone make up 24%.

Under future conditions, Branson students would be responsible for approximately 3,500 miles driven each day, with an overall per capita daily VMT of 9.6. This would mark a slight decline in VMT – 157 fewer vehicle miles traveled – from existing conditions. Most notably, the number of parent-driven trips to the Branson campus during regular commute hours would fall to zero, instead replaced by fewer, shorter trips to remote drop-off locations. Note that a small number of parent-driven trips would still be made directly to campus under special circumstances, such as for doctor's appointments: these were not included in this analysis.

Per capita VMT for students would decline as TDM strategies encourage the use of other modes. Student trips would shift to carpooling, active transportation, and an increase in bus service due to the new Marin bus route. Under future conditions, carpooling would account for the highest percentage of student VMT (34%), followed by parent trips to remote drop-off locations (32%) and driving alone (22%). Buses and shuttles, which would serve 25% of students, would account for only 12% of Branson's VMT.

Table 11. Existing & Future Student VMT

Mode	Existing		Future	
	Students	VMT	Students	VMT
Carpool Driver	50	1,108	62	1,353
Carpool Passenger	102	0	150	0
Drive Alone	48	953	36	845
Employee Driven	4	0	4	0
Parent Driven – To Branson	54	1,602	0	0
Parent Driven – Remote Drop-Off	0	0	37	1,308
Walk/Bike/ Skateboard	18	0	25	0
Bus/SMART Shuttle	44	0	106	0
Student Driver Total	**320**	**3,663**	**420**	**3,506**
Shuttle VMT		**417**		**531**
Total Student VMT		**4,080**		**4,037**
Student Per Capita VMT		**12.7**		**9.6**

Source: Parisi Transportation Consulting, 2021.

STAFF & FACULTY VMT

Table 12 presents staff estimated VMT for existing and future conditions. Under existing conditions, staff are responsible for over 1,300 vehicle miles traveled per day, amounting to a per capita VMT of 15.0. Driving alone accounts for 92% of VMT, while the remaining 8% is from carpooling.

The future scenario would see a minor decline in daily and per capita VMT despite an increase in staff. While the proportion of staff driving alone would remain approximately the same, incentives from the TDMP would lead to several staff shifting away from driving alone to carpooling or active transportation.

Table 12. Existing & Future Staff VMT

Mode	Existing		Future	
	Staff	VMT	Staff	VMT
Carpool Driver	5	108	5	108
Carpool Passenger	5	0	11	0
Drive Alone	58	1198	55	1146
Walk/Bike/ Skateboard	18	0	27	0
Bus/SMART Shuttle	1	0	1	0
Total Staff VMT	**87**	**1,306**	**99**	**1,254**
Staff Per Capita VMT		**15.0**		**12.7**

Source: Parisi Transportation Consulting, 2021.

CHANGES TO NUMBER OF TRIPS TO AND FROM BRANSON

Table 13 shows the changes in private vehicle trips to Branson as a result of the proposed expansion and implementation of TDM strategies. Currently, on average 538 student and staff trips are made to or from Branson in a private vehicle per day. This includes 326 trips that either end or begin at the Branson campus itself, while the remaining 212 trips are to or from the St Anselm's lot. This number would be reduced to 316 trips under the future scenario, a decrease of 41%.

Notably, the number of trips to campus would drop significantly as most parent-driven trips during regular commute hours would be shifted to remote drop-off locations; exceptions for special trips like doctor's appointment would be exempt from the remote drop-off or pick-up requirement. This would not only ease traffic in the neighborhood, but also along Sir Francis Drake Boulevard.

While the number of carpool trips would increase, this would result from some students shifting from driving alone or being driven by a parent and would ultimately contribute to the reduction in overall private vehicles and private vehicle trips to Branson.

Table 13. Daily Private Vehicle Trips Beginning or Ending at Branson

Mode	Existing		Future			
	Number of Private Vehicles	Daily Trips	Number of Private Vehicles	Daily Trips	Trip Difference	Trip Percent Change
Drive Alone	106	212	91	182	-30	-14.2%
Carpool	55	110	67	134	+12	+21.8%
Parent-Driven	54	216	0	0	-216	-100.0%
Total	**215**	**538**	**158**	**316**	**-222**	**-41.3%**

Source: Parisi Transportation Consulting 2021

This analysis demonstrates that the Branson School expansion would have no impact on VMT. In fact, like the overall trips, the VMT may actually go down due to the use of the TDM strategies. Under future conditions, an additional 112 students and staff would lead to a small reduction in overall daily campus VMT and a substantial reduction in per capita VMT due to strategies to shift staff and students away from private vehicle trips, especially single-occupancy trips. Instead, most Branson students and staff will commute to campus using carpooling, bus, and active transportation.

Branson's proposed expansion with its Transportation Demand Management Program would generate fewer than 110 trips per day and Branson students and staff would generate a per capita VMT that is at least 15% below regional or city per capita VMT. As such, Branson's proposed expansion would have less than a significant transportation impact both under CEQA, and in regards to real-world experience.

APPENDIX 1

Table A1. Sample TDM Strategies to Reduce Vehicle Trips with Proposed Enrollment Increase

#	TDM Strategy	Partici-pants	Trip Factor	Trips Reduced			
				Total Trips	Morn-ing	After School	Even-ing
Year 1 (25 additional students)							
	Trips to Reduce (25 students x 2.7 trips / student)			68	--	--	--
Net-neutral TDMP Measures							
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use)	25-30	2.7	68-81	34-41	34-40	--
	Net-neutral Trip Reduction Total	**25**		**68-81**	**34-41**	**34-40**	**--**
Net-neutral Plus TDMP Measures							
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	5	2	10	5	2	2
3	Investments in bike program	0-5	2.7	14	7	7	--
4	Creating employee incentives	5	2	10	5	5	--
5	Formalizing carpool requirements	5	2	10	5	5	--
	Net-neutral Plus Trip Reduction Total	**45**		**112**	**56**	**53**	**2**
	Net-neutral Plus Trips Reduced Beyond Student Increase			**44**	**--**	**--**	**--**
Year 2 (50 additional students)							
	Trips to Reduce (50 students x 2.7 trips / student)			135	--	--	--
Net-neutral TDMP Measures							
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use)	50	2.7	135	68	67	--
	Net-neutral Trip Reduction Total	**50**		**135**	**68**	**67**	**--**
Net-neutral Plus TDMP Measures							
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	10	2	20	10	5	5
3	Investments in bike program	10	2.7	27	14	13	--
4	Creating employee incentives	10	2	20	10	10	--
5	Formalizing carpool requirements	10	2	20	10	10	--
	Net-neutral Plus Trip Reduction Total	**90**		**222**	**112**	**105**	**5**
	Net-neutral Plus Trips Reduced Beyond Student Increase			**87**	**--**	**--**	**--**
Year 3 (75 additional students)							
	Trips to Reduce (75 students x 2.7 trips / student)			203	--	--	--
Net-neutral TDMP Measures							
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup;	65	2.7	176	88	88	--

#	TDM Strategy	Partici-pants	Trip Factor	Trips Reduced			
				Total Trips	Morn-ing	After School	Even-ing
	increased bus & shuttle use, additional Marin bus)						
3	Investments in bike program	12	2.7	32	16	16	--
	Net-neutral Trip Reduction Total	**77**		**208**	**104**	**104**	**--**
Net-neutral Plus TDMP Measures							
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	15	2	30	15	8	7
4	Creating employee incentives	12	2	24	12	12	--
5	Formalizing carpool requirements	15	2	30	15	15	--
	Net-neutral Plus Trip Reduction Total	**119**		**292**	**146**	**139**	**7**
	Net-neutral Plus Trips Reduced Beyond Student Increase			**89**	**--**	**--**	**--**
Year 4 (100 additional students)							
	Trips to Reduce (100 students x 2.7 trips / student)			270	--	--	--
Net-neutral TDMP Measures							
2A/ 2B.1	Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use, additional Marin bus)	80	2.7	216	108	108	--
3	Investments in bike program	15	2.7	41	21	20	--
4	Creating employee incentives	15	2	30	15	15	--
	Net-neutral Trip Reduction Total	**110**		**287**	**144**	**143**	**--**
Net-neutral Plus TDMP Measures							
2B.2	Increased remote drop-off & pickup (St. Anselm's shuttle)	20	2	40	20	10	10
5	Formalizing carpool requirements	20	2	40	20	20	--
	Net-neutral Plus Trip Reduction Total	**150**		**367**	**184**	**173**	**10**
	Net-neutral Plus Trips Reduced Beyond Student Increase			**97**	**--**	**--**	**--**

1. Branson's student forecasts indicate the need to run a second Marin bus at the beginning of the third expansion year, which would result in more students riding the bus exclusively or as part of a drop-off/pick-up trip.

Appendix 2: Branson VMT Data Analysis Methodology

1. Introduction

This document provides a detailed methodology for the Branson School VMT analysis. Data on current student and staff home addresses and transportation modes were provided by the Branson School. The methodology is provided for analysis of existing conditions as of the 2020/2021 school year, and future conditions incorporating transportation demand management (TDM) strategies and an increased student enrollment.

2. Existing Conditions

2.1 Data Cleaning & Assumptions

Transportation Mode Standardization

Modes were standardized for simplification. Dual modes (e.g. carpool passenger AM/Marin Bus PM) were assigned to the first mode listed. As most were combinations of non-private vehicle modes, this did not affect the analysis. The following were the Assigned Modes:

- Carpool Driver
- Carpool Passenger
- Drive Alone
- Employee Driven
- Parent Driven
- EB Bus
- SF Bus
- SMART/Transit
- Walk/Bike/Skateboard
- WFH

"Part Time" students were assigned Drive Alone mode.

"Staying Home" students were assigned WFH.

Students who were registered as Marin Bus riders were labeled as SF Bus, as Marin bus stops are served via the San Francisco route.

Staff Address Assignments for Existing Conditions

87 staff were listed in the Master spreadsheet: none of these included addresses. Meanwhile, 86 anonymized staff addresses were listed in the Employee Address list for CUP 20210112 spreadsheet. The following assumptions were made when assigning addresses to staff:

- Two staff with Parking Spot # 71 Fernhill were given San Rafael addresses, as this was the most common city of residence for staff
- All unassigned walk/bike/skateboard and e-bike users (18) were given Ross addresses
- Part-time staff (3) were given Coach persona addresses
- EB Shuttle staff (1) was given a Berkeley address
- The remaining staff were randomly assigned addresses from the Employee Address list for CUP 20210112 spreadsheet.

No PO box addresses were assigned to staff; in some instances, this required duplicating existing addresses. Care was taken to ensure that the assigned employee locations matched the current breakdown provided by Branson School staff:

- 19% East Bay
- 70% Marin
- 11% San Francisco

Staff who commute by means other than private vehicles were assigned addresses so that the overall location distribution could be checked. These addresses were not used in the analysis itself.

Students with Nonstandard Addresses

Twenty-three students had PO boxes listed for addresses, while one did not specify a street or city. Addresses were assigned in the following way:

- Students listed as Carpool Passengers (8), Public Transit (1), and Walk/Bike/Skateboard (8) were not assigned an address, as these would be excluded from the VMT analysis due to not using a private vehicle.

- Students listed as Carpool Driver (1), Drive Alone (4), and Parent Driven (2) were assigned the addresses nearest to the zip code centroid per Google Maps.

Mode Assignments for Existing Conditions

To better approximate normal existing conditions, all students and staff with WFH designations were assigned to other modes based on the existing mode share from the Branson TDM Report.

Five students and 53 staff did not have a transportation mode listed. These were assigned based on the following assumption.

Students

- One student with a Ross address was assigned to Parent Driven.
- One student with a San Francisco address was assigned to carpool passenger, as this was the most common mode for students from San Francisco.
- One student with a Novato address was assigned to SMART, as this was the most common mode for students from Novato.
- One student from San Rafael was assigned to Parent Driven, as this was the most common mode for students from San Rafael.

- One student from Mill Valley was assigned to Carpool Passenger, as this was the most common mode for students from Mill Valley

Staff

- Staff with a WFH assignment or without an assigned mode were assigned to different modes based on existing mode share from the Branson TDM Report.

Existing transportation modes provided by the Branson School were validated against existing three-year average mode shares presented in Table 4 and Table 5, aiming for similar mode share percentages.

2.2 ANALYSIS

The existing conditions per capita VMT was calculated using Google Maps to assign the driving routes from each address to Branson School for staff and students who used private vehicles – those who drove alone, drove a carpool, or were driven by a parent. Routes were assessed on a weekday at 11:00AM. Destinations varied depending on the mode of transportation used. The table below shows the destinations by mode for both existing and future conditions.

Mode	Existing Conditions	Future Conditions
Drive Alone (Students)	St. Anselm's Lot	St. Anselm's Lot
Drive Alone (Staff)	Branson Campus	Branson Campus
Carpool Drivers	Branson Campus	Branson Campus
Parent-Driven (To Branson)	Branson Campus	--
Parent-Driven (Remote Drop-Off)	--	Marin Art & Garden Center, College of Marin, or Bon Air Greenbrae
Buses & SMART Shuttle	Branson Campus	Branson Campus

Some special care was taken for records that indicated certain transportation modes. These are discussed below.

Parent-Driven Students

Parent-driven VMT were quadrupled to account for vehicle trips to drop a student off at Branson as well as the parent's return trip. Two Parent-Driven students living at the same address were assumed to be siblings, and only one student was counted for the analysis.

Carpooling

Carpooling Passengers were excluded from the VMT analysis. An additional 10% of each Carpool Driver's mileage was included in the Carpool Drivers' VMT to account for travel to pick up passengers.

Employee-Driven Students

Four students were driven to school by employees. These students were excluded from the analysis, as their trips were accounted for using the employee trips.

Bus/SMART Shuttle

Mileage for buses and the SMART shuttle was not counted per student, but rather per each route as follows. Students listed as Marin Bus were counted as part of the San Francisco bus route.

Route	Round Trip Mileage (Approx.)	AM Frequency	PM Frequency	VMT
East Bay Bus	60	1	2	180
San Francisco Bus	60	1	2	180
SMART Shuttle	6.2	1	2	18.6

St. Anselm's Lot Shuttle

Students driving alone parked at the St. Anselm's off-campus lot and took a shuttle to and from the school. Distances for these students were calculated using the lot location, and additional mileage was added for the shuttle route. It was assumed that the shuttle runs every 10 minutes during the morning commute (7-9AM) and evening commute (4-6PM) periods. Given a round trip of 1.6 miles, this would add an additional 38.4 miles.

Route	Round Trip Mileage (Approx.)	AM Frequency	PM Frequency	Daily VMT
St. Anselm Shuttle	1.6	12	12	38.4

3. Future Conditions

The future scenario includes 100 additional students, 12 additional staff, and implementation of TDM strategies to reduce the number of vehicle trips to the Branson School. The locations and modes of the additional people were first assumed before applying TDM reductions.

3.1 Additional Student Residences

New student residences were estimated based on percentages from the Branson School as follows. Each new student was given a home address corresponding to a city centroid. East Bay students were split between Berkeley and Richmond, as these currently have the highest numbers of East Bay students. Marin students were split between Mill Valley, San Rafael, and Tiburon, the top 3 Marin cities of residence for students. Sonoma was used for North of Marin as several current students from this area reside there.

Location	Percent of Total (Approx.)	Number of New Students	Residence Assignation
East Bay	6%	6	Berkeley centroid (3) Richmond centroid (3)
Marin County	70%	70	Mill Valley centroid (24) San Rafael centroid (23) Tiburon centroid (23)
San Francisco	23%	23	San Francisco centroid
North of Marin	1%	1	Sonoma county centroid
Total	**100%**	**100**	

3.2 Additional Staff Residences

New staff are anticipated to be distributed based on the existing pattern: 19% East Bay, 70% Marin County, and 11% San Francisco. Per school officials, 12 new staff members are expected, residing in the following areas. As with students, city centroid addresses were assigned to new staff.

Location	Percent of Total (Approx.)	Number of New Staff	Residence Assignation
East Bay	19%	3	Berkeley centroid (2) Richmond centroid (3)
Marin County	70%	8	Ross centroid (4) San Rafael centroid (4)
San Francisco	11%	1	San Francisco centroid
Total	**100%**	**12**	

3.3 Initial Mode Assignation

New students and staff were initially assigned travel modes proportionally based on existing modes for staff and students from each city or area of residence. These were then adjusted based on the TDM strategies that will be enacted under the future scenario.

3.4 TDM Participation Assumptions

Participants in Branson TDM strategies were estimated based on the school's Transportation Demand Management Plan (Table A1 Year 4 sample strategies). Strategies and participants are as follows:

Location	Participants
Net-Neutral TDMP Measures	
Increased remote drop-off & pickup (Remote parent drop-off & pickup; increased bus & shuttle use, additional Marin bus)	80
Investments in bike program	15
Creating employee incentives	15
Net-Neutral Plus Trip Reduction Measures	
Increased remote drop-off & pickup (St. Anselm's shuttle)	20
Formalizing carpool requirements	20
Total Participants	**150**

Remote Drop-Off
All parent-driven students will convert to remote drop-off and pick-up. Students were assigned drop-off locations in Ross, College of Marin, and Bon Air Greenbrae based on the closest location to their place of residence.

Shuttle
22 Drive Alone students were reassigned to the new Marin shuttle, which is anticipated to run once in the mornings and twice in the evening.

Bike Program
The analysis assumes that 25 students would bike to school under the new strategy. Seven new students were assigned to Walk/Bike/Skateboard.

Employee Incentives
Fifteen staff who drive alone to work were reassigned to Walk/Bike/Skateboard or carpooling.

Formalizing Carpool Requirements
Branson plans to restrict on-campus parking to carpools of three or more students. Twenty students who drive alone or are parent-driven were reassigned to carpool, and the ratio of carpool drivers to passengers was adjusted to account for all carpools having at least three occupants. As only 93 student parking spaces exist, the number of Drive Alone students was reduced accordingly to ensure that the number of parkers stayed within this limit.

3.5 Analysis

Several considerations were included in the future VMT analysis.

Increased St. Anselm's Remote Drop-Off & Pick-Up
An additional hour of service was added to the VMT calculation and incorporated into per capita VMT for students driving alone. It was assumed that the St. Anselm's shuttle would also

pick-up students at the Ross remote drop-off location, increasing the one-way route length to 1-mile round trip and reducing frequency to every 15 minutes.

Route	Round Trip Mileage (Approx.)	AM Frequency	PM Frequency	Daily VMT
St. Anselm Shuttle	2	8	8	32.0

Remote Drop-Off for Parent-Driven Students

Parent-Driven students were divided between three remote lots – Ross, College of Marin, and Bon Air Greenbrae – based on proximity to these locations. Parent using the College of Marin had their one-way trips reduced by 1.8 miles; trips to the Ross remote drop-off location were reduced by one mile each way; and one-way trips to Bon Air Greenbrae were reduced by 3.1 miles. It was assumed that students dropped off in Ross would use the St. Anselm's shuttle, while students arriving at the College of Marin would use the San Francisco bus for the last part of their commute.

Marin Bus Line

The new Marin bus line was assumed to operate one route in the morning and two in the afternoon, with a one-way mileage of 20 miles and daily VMT of 120 miles.

Route	Round Trip Mileage (Approx.)	AM Frequency	PM Frequency	VMT
East Bay Bus	60	1	2	180
San Francisco Bus	60	1	2	180
SMART/Transit	6.2	1	2	18.6
Marin Bus	40	1	2	120