September 16, 2021

Ms. Meredith Rupp
Urban Planning Partners, Inc.
388 17th Street, Suite 230
Oakland, CA 94612

Peer Review of the Branson School Transportation Demand Management Plan and Operational Analysis

Dear Ms. Rupp;

W-Trans has completed a peer review of the Transportation Demand Management (TDM) Plan and Level of Service Analysis prepared by Parisi Transportation Consulting (Parisi) relative to the proposed increase of 100 students at the Branson School, as presented in a memorandum dated July 16, 2021. Following are our comments regarding this analysis.

Trip Generation Analysis

The TDM Plan's trip generation analysis examines daily trip generation, trip generation by time period, Saturday trip generation, and travel modes for students and employees during the a.m. and p.m. commute hours. The daily trip generation analysis uses five-day counts from 2016, 2018, and 2019, and examines the overall trip generation average and standard deviation. The average weekday daily vehicle trip generation rate is calculated to be 2.69 trips per student.

With five days of data over three years, the data set is a good sample size and in examining historic weather patterns during those days, it appears there was a representative mix of sunny and inclement weather. The trip generation rate of 2.69 trips per student appears reasonable compared to the standard trip generation rate of 2.03 trips per student published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for "High School" (ITE LU 530) given that the ITE sample is a mix of public and private high schools and Branson, as a private school, is likely to generate more trips. Branson trip generation rates during the a.m. and p.m. commute periods exhibit similar patterns to those reported by ITE. Saturday daily trip generation rates for Branson also appear reasonable, but as the report notes, Saturday counts do not include "outlier" events that generate substantial traffic. For the purposes of determining a "typical" Saturday trip generation rate, it is reasonable to exclude these events, but it is nonetheless important to reduce the traffic effects of outlier events through the TDM Plan.

In general, the analysis of student and employee mode share data appears sufficient although an exact comparison to trip generation by time period is not possible given that the mode share data set includes information from 2016, 2018, and 2019 while the trip generation data by time period is only for 2019. Understanding that mode share and trip generation by time period have different data sets, it is still important to note the large discrepancy between the two in terms of total vehicle trips. According to the study's trip generation by time period analysis, there were an average 150 vehicle trips during the 4 to 6 p.m. commute period. However, the mode share analysis shows a total of 315 vehicle trips (243 student and 72 employee vehicle trips) during the same period. Although the two analyses represent somewhat different data sets, this is a large enough discrepancy to warrant further examination.

Transportation Demand Management Measures

Overall, the TDM measures recommended in the Plan represent a positive approach to reducing vehicle trips. Our findings reveal there are some modifications or additions that could be made to the measures to further reduce trips, as follows.

1. Establish an online presence such as a NextDoor group for Strategy 1, "Create a Neighborhood Partnership Group," to effectively share information and receive input with the community.

2. Reform employee parking pricing. Currently, Branson employees receive free parking on campus and Strategy 4, "Creating Employee Incentives," proposes an increase in the annual employee parking cash-out from $600 to $1,000. Parking demand reduction is better achieved when the user must pay for parking rather than receive a benefit and instead have to opt-out of it for an alternative. A better approach to reducing employee vehicle use while not negatively impacting compensation, is for employees not receive free parking and instead receive salary increases commensurate with the proposed cash-out amount of $1,000. In this way, employees are made financially whole, but must actively choose to purchase a parking permit, which itself can discourage auto use.

3. Introduce a year-round carpool app. Strategy 5, "Formalizing Carpool Requirements," and Strategy 6, "Weekend and Special Event Management," mention the potential to improve carpool participation by facilitating matches and using a carpool matching app for special events. Carpool matching apps are a cheap and effective way to facilitate ridesharing and it is recommended that Branson introduce one that is active year-round for school affiliates.

4. Market the Transportation Authority of Marin (TAM) Emergency Ride Home (ERH) Program. TAM's ERH program offers free reimbursement to employees in Marin County who do not commute in a drive-alone vehicle to return home if an unexpected situation arises. Each employee can be reimbursed up to four trips per year, up to $125 per trip. The ERH program is a cost-effective strategy, and one that is used by other private schools in the Bay Area to support alternative mode use by providing a sort of "safety net" to employees.

5. Developing a Peak Special Event Management Plan. Although the TDM Plan includes Strategy 6, "Weekend and Special Event Management," this strategy may not be sufficient for outlier special event days when data has shown there may be up to 850 daily vehicle trips. These outlier events may be relatively rare but can still affect the surrounding community. The TDM Plan should be augmented to account for the peak special events by introducing more robust measures such as off-site parking with a shuttle, on-campus parking pricing, holding playoff games off-site, or other strategies designed to limit vehicle trips to campus.

In addition to the TDM measures, the Plan quantifies the impact of proposed strategies in Appendix 1, showing that there is, at a minimum, a net-neutral impact on vehicle trips. The Plan's estimates of trip reductions appear to be based on current home address and mode split data for students and employees as well as projections of where future affiliates will live. The trip reduction estimates are similar to what other private schools such as Marin Academy, Castilleja School, and Hillbrook School have achieved through their TDM programs. There are some inputs regarding the future home locations of affiliates that appear questionable and are described in more detail in the VMT section below.

Monitoring Plan

The TDM Monitoring Plan spells out a clear set of metrics for Branson to collect and report for seven continuous days in late September or early October of each school year. The monitoring plan is designed to be conducted annually during the first four years of implementation and biennially thereafter. The Plan proposes a vehicle trip cap of 910 daily trips and 398 Saturday trips, figures that are both one-half standard deviation above currently observed averages. If Branson does not meet the trip goals, it will be required to conduct new counts the following quarter with no other actions stipulated.

Based on the experiences of other private schools in the Bay Area such as the Castilleja School, Hillbrook School, and Menlo School, the proposed monitoring plan can be improved in several ways, including the following.

1. Collect information and metrics through a third-party that is mutually agreed upon by Branson and the Town. This helps ensure the impartiality of the collected data.

2. Conduct vehicle counts for two to four continuous weeks, once during the fall semester and once during the spring semester, ideally during late September to mid-October and March to April timeframes when travel patterns are stable, to better ensure ongoing compliance and more immediate action if necessary. An alternative option is to install permanent vehicle counters that provide daily information year-round.

3. Set the vehicle cap at the observed average trip generation. By establishing the vehicle trip cap at one-half standard deviation above currently observed averages, the current monitoring plan does not create a true net-neutral trip effect. The daily and Saturday trip caps should be the observed averages of 860 and 346, respectively.

4. Establish a more defined and robust enforcement program. TDM monitoring plans typically have a clearer schedule and stronger process to correct shortcomings if goals are not met. The monitoring plan should be updated to include annual monitoring for the first ten years and every other year thereafter, a defined timeline (e.g. one year) for Branson to bring their trip thresholds into compliance if thresholds are exceeded, and a follow-up process if Branson remains out of compliance (e.g. fines on a per trip basis over threshold or reducing enrollment).

5. Introduce an annual qualitative survey of students and employees. In addition to analyzing quantitative vehicle trip data, it is also important to understand the reasons why affiliates choose particular modes of transportation. An annual survey of students and employees would allow Branson to better tailor its program for future needs.

Safety Improvements

The TDM report identifies a number of potential measures to improve safety on local streets surrounding the school, including improved school area warning signage, a 15-mph speed limit, traffic calming, additional stop signs, installation of street lighting, and construction of a pedestrian path on Fernhill Avenue. These measures may be welcomed by local residents but given that safety enhancements can change the built environment for the community as a whole, they should be considered in coordination with the neighbors and Town to ensure that any improvements to be implemented are appropriate and context-sensitive. It is noted that for the Town to enforce a 15-mph speed limit it would be necessary to prepare an Engineering and Traffic Survey that justifies the reduced speed limit. If the 15-mph speed limit can be justified based on the existing speed of traffic, traffic calming measures may be unnecessary as the speeds would already be as low as could reasonably be achieved with such measures.

In light of the assumption that some of the new staff would walk or bike to the school, the potential for providing a path on Fernhill Avenue and installing lighting would appear to be necessary to support safe travel for such staff. The roadway system surrounding the school consists of generally narrow, unimproved streets without sidewalk or shoulder areas for use by pedestrians and bicyclists, forcing them to walk in the travel lane. The addition of new pedestrians and bicyclists to such streets, especially during the morning pick-up period when parents and students would be arriving on the uphill climb to the site, would present an impediment that could result in conflicts with drivers if they are trying to hurry. The introduction of a safe pedestrian and bicycle path on Fernhill Avenue is critically important if there is an expectation of more students and employees walking and biking to school. The success of the overall TDM plan is not dependent on the implementation of a new path. However, in the absence of a path, the TDM plan should require those accessing the remote St. Anselm parking lot to use the shuttle to reach campus rather than travel by foot. Alternatively, the potential impact on safety associated with adding pedestrian or bicycle trips to the local streets should be addressed.

Vehicle Miles Traveled Analysis

The approach of the VMT analysis (and subsequent updated VMT analysis including 16 employees) is generally appropriate for Branson given that the Town does not have established criteria for a VMT analysis. There are, however, some improvements that could be made, including the following.

1. Reassess the project's "screening" threshold. The VMT section is correct in stating that projects generating fewer than 110 daily trips are typically screened from further analysis and that those that are 15 percent below the regional or city per capita VMT are also screened (generally applied to residential and employment uses, but the State does not provide guidance on schools). While these metrics are correct, the VMT section incorrectly states that the Branson project would be exempt by being under the 110-trip threshold given the proposed TDM program. In fact, the 110-trip screening threshold assumes an *unmitigated* condition with TDM acting as a way to reduce adverse impacts. The TDM Plan analyzes VMT regardless, but the report should be updated to reflect the intent of SB 743.

2. Adjust some of the future conditions mode split information. The VMT analysis is robust in that it examines student and employee home addresses to the degree feasible and attempts to pair those individuals with particular modes based on the mode split surveys. However, some of the inputs in the future conditions scenario would benefit from further justification. For example, there is an assumption that six of 16 future employees would reside in Ross, thereby increasing the walk/bike/skateboard mode share significantly. Although some employees may currently live in Ross, the present cost of housing in the town combined with the limited supply of housing would make it very challenging for many employees to live there. In addition (as noted above), there is also a general lack of citation or analysis regarding how exactly the TDM measures would cause students or employees to shift modes. Given this lack of information, it is difficult to determine whether the future mode splits for students or employees are valid.

3. Confirm the VMT threshold. Due to the lack of established Town standards and CEQA guidance regarding schools, the VMT analysis attempts to compare total school projected VMT to per resident (14.1) and per employee (23.0) VMT figures for the Town of Ross. An alternative option would be to measure projected VMT using service population (i.e. all students and employees combined). According to the Transportation Authority of Marin Demand Model (TAMDM), the Town's per service population VMT is 29.0 for 2015 and 26.2 for 2040. Either standard can be applied, but the current VMT metrics by resident and employee are more conservative.

As a final note, it is unclear from the VMT analysis if (a) the Bus/SMART shuttle designation is a service operated by Branson or as a public service (it would generate VMT if the former) and (b) the VMT associated with drop off trips are one-way or round trips.

Emergency Access

The CEQA checklist identifies four issues that must be addressed in a traffic impact analysis. While three of these (adherence to policies, VMT, and introduction of hazards) have generally been covered in the traffic study, the potential impact on emergency response was not discussed. It is understood that concerns relative to wildfire evacuation and response are covered under another CEQA topic; however, the potential for ambulances and other emergency response vehicles to have their response times increased should be addressed in the traffic study.

Sensitivity Analysis

The purpose of the sensitivity analysis was to determine if the TDM program can achieve desired results if only a portion of the measures are successful. In terms of VMT, the analysis above demonstrates that even under current conditions, the project is likely to result in less-than-significant impacts when assessed using a VMT per service

population metric. The key question is whether Branson can maintain a net-neutral number of vehicle trips if certain TDM measures fall short.

Understanding that there are questions regarding the citations and analysis of TDM trip reduction calculations, the current program is heavily weighted on Strategy 2, "Increased Remote Drop Off and Pick Up." Using current calculations, the net-neutral trip target can be achieved or missed by the success of that measure alone. Other remote drop-off programs, such as that of the Hillbrook School, have demonstrated that remote drop-off programs can have a profound effect on trip reduction, and it is reasonable to assume the same would hold true for Branson. Realistically, Strategy 2 will have some effect in reducing trips and, in conjunction with the other measures proposed as well as the recommendations above, Branson should be able to achieve a net-neutral trip generation (assuming the Plan's analysis is accurate).

Level of Service Analysis

During conversations with Town staff, it was determined that the areas of concern included several local intersections in the neighborhood surrounding the Branson School. The study prepared by Parisi addresses the potential impacts to three intersections along Sir Francis Drake Boulevard, but no mention is made of the local intersections that were of specific concern to neighbors. Sir Francis Drake/Bolinas Avenue is under both the Town of Ross and the City of San Anselmo's jurisdiction. San Anselmo Avenue/Bolinas Avenue is under the City of San Anselmo's jurisdiction and the remaining two study intersections are under the Town of Ross's jurisdiction. Given that these local intersections carry substantially less traffic than the intersections on Sir Francis Drake Boulevard that were evaluated, it is reasonable to conclude that if the effect of the school's traffic on these major intersections is acceptable, it would likewise have an acceptable effect on the Town's local street intersections.

Table 2 indicates that the intersections of Sir Francis Drake/Bolinas Avenue and San Anselmo Avenue/Bolinas Avenue, which are operated by a single signal controller, were considered as one intersection. However, as calculations for both intersections are attached to the memorandum, it is unclear how the number used in the table was derived. It is further noted that eastbound right turns are entered for the intersection of San Anselmo Avenue/Bolinas Avenue even though such a movement is impossible at that location; such turns are made at Sir Francis Drake Boulevard. Despite these minor issues, the calculations appear to be correct overall, resulting in accurate findings that the intersections are operating acceptably under existing volumes. It is, however, suggested that the two intersections on Bolinas Avenue be presented separately as the San Anselmo Avenue intersection is operating at LOS D during the afternoon peak period, and that's an important distinction.

The estimated trip generation used for the proposed 100-student increase is based on use-specific data derived from actual vehicle counts. However, as described above, the methodology behind the TDM analysis does not appear to be supported by a quantitative analysis or citations to support the proposed reductions. It is difficult with the current information available to determine if the reductions granted for each measure are reasonable. If standard trip generation rates were applied, the added 100 students would be expected to generate 81 a.m. peak hour trips and 58 afternoon peak hour trips rather than the 77 and 32 a.m. and p.m. peak hour trips applied in the analysis. Given the results of the analysis presented, it is unlikely that a change in the trip generation would result in any noticeable difference in the delay and the service levels would be unlikely to change, so the analysis as provided is adequate to document that acceptable operation could be maintained at these intersections upon adding trips associated with the proposed expansion of the Branson School body by 100 students.

Conclusions

- The trip generation analysis is reasonable and compares well to ITE standard trip generation rates. Although it is best practice to exclude outlier special events to determine traffic for a "typical" Saturday, it is nonetheless important to address the traffic effects of outlier events through the TDM Plan. In terms of trip generation and mode share by time period, the discrepancy between p.m. commute period figures should be examined.

- The Plan's TDM measures comprise a solid program, but there are improvements that could be made including establishing a stronger online community presence, reforming employee parking pricing, introducing a year-round carpool app, marketing TAM's ERH program, and developing a peak special event management plan.

- The TDM Monitoring Plan can be improved in several ways, including having data collected by a third party, conducting vehicle counts each year during the fall and spring semesters, setting the vehicle cap at the observed average trip generation, establishing a more defined and robust enforcement program, and introducing an annual qualitative survey of students and employees.

- There are a number of potential measures identified to improve safety on local streets surrounding the school but given that safety enhancements can affect the broader community, they should be considered in coordination with local residents and the Town. Further, the addition of new pedestrians and bicyclists to such streets could result in conflicts with drivers, and a new pedestrian and bicycle path on Fernhill Avenue would be an important "first step" safety feature. If a path is not deemed feasible, the TDM plan should require those accessing the remote St. Anselm parking lot to use the shuttle to reach campus rather than travel by foot.

- The approach of the VMT analysis is generally appropriate for Branson given that the Town does not have established criteria for a VMT analysis. However, some improvements could be made, including reassessing the project's "screening" threshold, adjusting some future conditions mode split information, and confirming the VMT projections accordingly.

- The sensitivity analysis shows that the TDM program's success relies heavily on the increase in remote drop off and pick up trips, but that if the remote program is only partially successful, Branson should be able to achieve a net-neutral trip generation (assuming the Plan's analysis is accurate).

- Though the study area does not include any of the local intersections near the school, these locations carry substantially less traffic than Sir Francis Drake Boulevard does, and signalized intersections along such a major arterial typically have the highest delays and lowest service levels for any area. As these signalized intersections are all operating at LOS D or better it is reasonable to assume that all the local intersections are operating acceptably as well.

- Though a minor input error was identified on the calculation for San Anselmo Avenue/Bolinas Avenue, the output provides an accurate assessment of operation whether the project causes an increase in trips or not.

- The primary goal of the TDM Plan should be to achieve a true net-neutral trip threshold in a safe environment. The proposed Plan offers a strong set of potential strategies and although some calculations warrant further examination and other TDM measures can be added, the program as a whole appears adequate to achieve the net-neutral target and can work towards safer routes for pedestrians and bicyclists. It is important that the School have the flexibility to implement, and adjust, measures as necessary to achieve its overall trip objective with the stipulation that there must be a robust monitoring and enforcement plan in place to ensure the ongoing success of the Plan. With this combination of improvements in place, the proposed TDM Plan can reasonably be expected to perform well.

Please call if you have any questions about this information. Thank you for giving us the opportunity to provide these services.

Sincerely,

Brian Canepa, TDM-CP
Principal

Dalene J. Whitlock, PE, PTOE
Senior Principal

DJW/bac/RRS007.L1