DRAFT
TRAFFIC/TRANSPORTATION TECHNICAL STUDY
FOR
RIDGEVIEW HIGH SCHOOL

December 4, 2020

PREPARED FOR:

Paradise Unified School District

PREPARED BY:

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EXECUTIVE SUMMARY

Project Description

The project includes relocating the existing Ridgeview High School (a continuation high school that accommodates up to 150 students) to the east side of Maxwell Drive across from Paradise High School (PHS) and north of Pleasant Lane. Ridgeview High School is currently located in Magalia, approximately 7 miles north of the proposed location in Paradise. An increase in student enrollment within the school district is not expected as a result of the relocation. Since Ridgeview High School is a continuation school, students who attend the school are already enrolled in the school district and would otherwise attend Paradise High School if they were not attending Ridgeview High School. Therefore, the new school would not result in new students or trips within the district, but would instead shift existing trips to the new location.

Trips generation rates from the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* were used to determine trips generated by Ridgeview High School. It is estimated that the school generates approximately 304 Daily trips, 78 AM peak hour trips, and 50 Afternoon peak hour trips. The trips would be made to the new location rather than to the existing school in Magalia.

Baseline Conditions

The study intersections are anticipated to operate at LOS B or better under Baseline and Baseline Plus Project conditions.

Opening Day Conditions

Under Opening Day and Opening Day Plus Project conditions (anticipated for the year 2022), the study intersections are expected to operate at LOS C or better.

Future Year Conditions

Under Future Year (20-year horizon) and Future Year Plus Project conditions, the eastbound approach of the Maxwell Drive/PHS Pick-up/Drop-off Driveway intersection and the Elliott Road/Maxwell Drive intersection are expected to operate at LOS F (without or with the project) during the AM peak hour. The other study intersections are expected to operate at LOS D or better.

Although the eastbound approach of the Maxwell Drive/PHS Pick-up/Drop-off Driveway intersection is expected to operate at LOS F under Future Year and Future Year Plus Project conditions, this movement is within the school property and not part of the public roadway system. Additionally, this LOS F condition is specific to school hours, and only occurs within the peak 15-30 minutes of school traffic. Movements on the public roadway network (i.e. Maxwell Drive) are expected to operate at LOS D or better.

Adding a separate eastbound left-turn pocket and westbound right-turn pocket at the Elliott Road/Maxwell Drive intersection would improve operations at the intersection to LOS C during the AM peak hour in the 20-year horizon. The Town should consider adding improvements at this intersection in the long-term transportation plans.

Impact Analysis/California Environmental Quality Act (CEQA) Compliance

The project impacts related to alternative modes of travel, public transit, design features, and emergency access would be less-than-significant.

The project consists of relocating Ridgeview High School from Magalia to a location more central to the urbanized area of Paradise with direct access to existing bicycle and pedestrian amenities. Additionally, the enrollment at the school is not expected to increase due to the relocation and would not generate new trips in the region. Overall, it is reasonable to estimate that the project would not increase vehicle miles traveled (VMT) per capita compared to existing/baseline conditions and therefore the project would have a less-than-significant impact on VMT.

Recommendations

Overall pedestrian circulation could be improved by constructing a crosswalk across Pleasant Lane between the school site and the existing parking lot south of Pleasant Lane. The crosswalk should be located at Maxwell Drive or an alternate location defined during final site planning. This recommendation is offered only for site planning purposes and should not be construed as a mitigation measure.

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INTRODUCTION

This report presents the findings of a Traffic/Transportation Technical Study completed to assess operations at local intersections adjacent to the Ridgeview High School project in Paradise, California. This technical study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, analyze intersections for long-term planning purposes, identify potential impacts related to vehicle miles traveled (VMT) and other California Environmental Quality Act (CEQA) criteria, document findings, and make recommendations to mitigate impacts, if any are found. This report includes two primary study topics:

- Operations analysis for consistency with General Plan policies
- Evaluation of transportation impacts per CEQA criteria

Project Description

The project includes relocating the existing Ridgeview High School campus (a continuation high school that accommodates up to 150 students) from Magalia to the east side of Maxwell Drive across from Paradise High School and north of Pleasant Lane. Ridgeview High School is currently located in Magalia, approximately 7 miles north of the proposed location in Paradise. An increase in student enrollment within the school district is not expected as a result of the relocation. Since Ridgeview High School is a continuation school, students who attend the school are already enrolled in the school district and would otherwise attend Paradise High School if they were not attending Ridgeview High School. Therefore, the new school would not result in new students or trips within the district, but would instead shift existing trips to the new location.

The location of the project is shown on **Figure 1** and the project site plan is shown on **Figure 2**.

OPERATIONS ANALYSIS FOR GENERAL PLAN CONFORMANCE

Study Area and Evaluated Scenarios

The project includes relocating the existing Ridgeview High School (a continuation high school) to accommodate up to 150 students. The new school will be located on the east side of Maxwell Drive across from Paradise High School and north of Pleasant Lane and the existing school parking lot. The study intersections were identified based on scoping conversations with school district and Town of Paradise staff and are shown on **Figure 1**. The following intersections are included in this study:

- Skyway/Maxwell Drive
- Maxwell Drive/Paradise High School (PHS) Pick-up/Drop-off Driveway
- Maxwell Drive/Pleasant Lane

- Maxwell Drive/East Parking Lot Driveway (South)
- Elliott Road/Maxwell Drive

This study includes analysis of both the weekday AM and Afternoon (when school is dismissed) peak hours as these are the periods of time in which peak traffic is anticipated to occur. The evaluated development scenarios are:

- Existing Conditions
- Existing Plus Project Conditions
- Opening Day (Year 2022) Conditions
- Opening Day Plus Project Conditions
- Future Year (20 year horizon) Conditions
- Future Year Plus Project Conditions

Analysis Methodology

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows.

Intersections

The complete methodology for intersection level of service analysis is established in the *Highway Capacity Manual (HCM) 2010*, published by the Transportation Research Board (TRB). **Table 1** presents the delay thresholds for each level of service grade at signalized and unsignalized intersections.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: Highway Capacity Manual (2010), Chapters 18 through 21

Level of service calculations were performed for the study intersections using the Synchro software package with analysis and results reported in accordance with *HCM 2010* methodology.

Level of Service Policy

Town of Paradise

The *Paradise General Plan (1994)* Circulation Element includes the following level of service policies:

> *CP-1 The town shall strive to maintain a level of service (LOS) "D" or better as the standard for new and existing roadways in the Paradise planning area. LOS "D" or better should be maintained on all local streets within the town limits, and LOS "C" or better should maintained whenever feasible.*
>
> *CP-17 Whenever LOS "D" is reached on roadways within Paradise, the town shall explore all feasible alternatives for improving traffic flow, rather than automatically implementing a road widening project.*

Butte County

The *Butte County General Plan 2030* includes the following level of service policies:

> *CIR-P6.1 The level of service for County-maintained roads within the unincorporated areas of the county but outside municipalities' sphere of influences (SOIs) shall be level of service (LOS) C or better during the PM peak hour. Within a municipality's SOI, the level of service shall meet the municipality's level of service policy.*
>
> *CIR-P6.2 The level of service on State Highways should at least match the concept level of service for the facility, as defined by Caltrans.*

The study intersections are located within the Town of Paradise boundaries and are subject to the Town's LOS policies. LOS D was used as the threshold for this project related to General Plan conformance review. However, with the implementation of SB 743, a level of service policy exceedance is not deemed an environmental impact.

Existing Conditions

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

Skyway is the main thoroughfare that connects Paradise and the "Upper Ridge" (Magalia, Stirling City, etc.) to Chico. Skyway is classified as a "Major Roadway" in the Butte County General Plan 2030. Through Paradise, Skyway generally has five lanes (two lanes in each direction and a two-way left-turn lane) with some sections that have fewer lanes. The posted speed limit in the project area is 30 mph.

Elliott Road is a two-lane, east-west minor roadway that connects Skyway to Sawmill Road. The posted speed limit on Elliott Road ranges from 25 to 30 mph. The speed limit at Maxwell Drive is 30 mph.

Maxwell Drive is a two-lane roadway that connects Elliott Road to Skyway. Maxwell Drive is primarily a north-south roadway that makes a 90-degree turn at the north end to intersect Skyway as the east leg of the intersection. The posted speed limit on Maxwell Drive is 25 mph.

Bicycle & Pedestrian Facilities

In the immediate project vicinity, there are northbound and southbound bicycle lanes on Maxwell Drive for its entire length. Elliott Road does not have designated bicycle lanes, however there are wide shoulders on both sides of the roadway that could accommodate cycling from Skyway to Clark Road.

In the project area, sidewalks exist along the west side of Maxwell Drive and on the north side of Elliott Road.

Transit Facilities

B-Line (Butte Regional Transit) operates fixed route bus service throughout Butte County. There are three routes that operate in Paradise, Routes 31, 40, and 41, as shown in **Exhibit 1**.

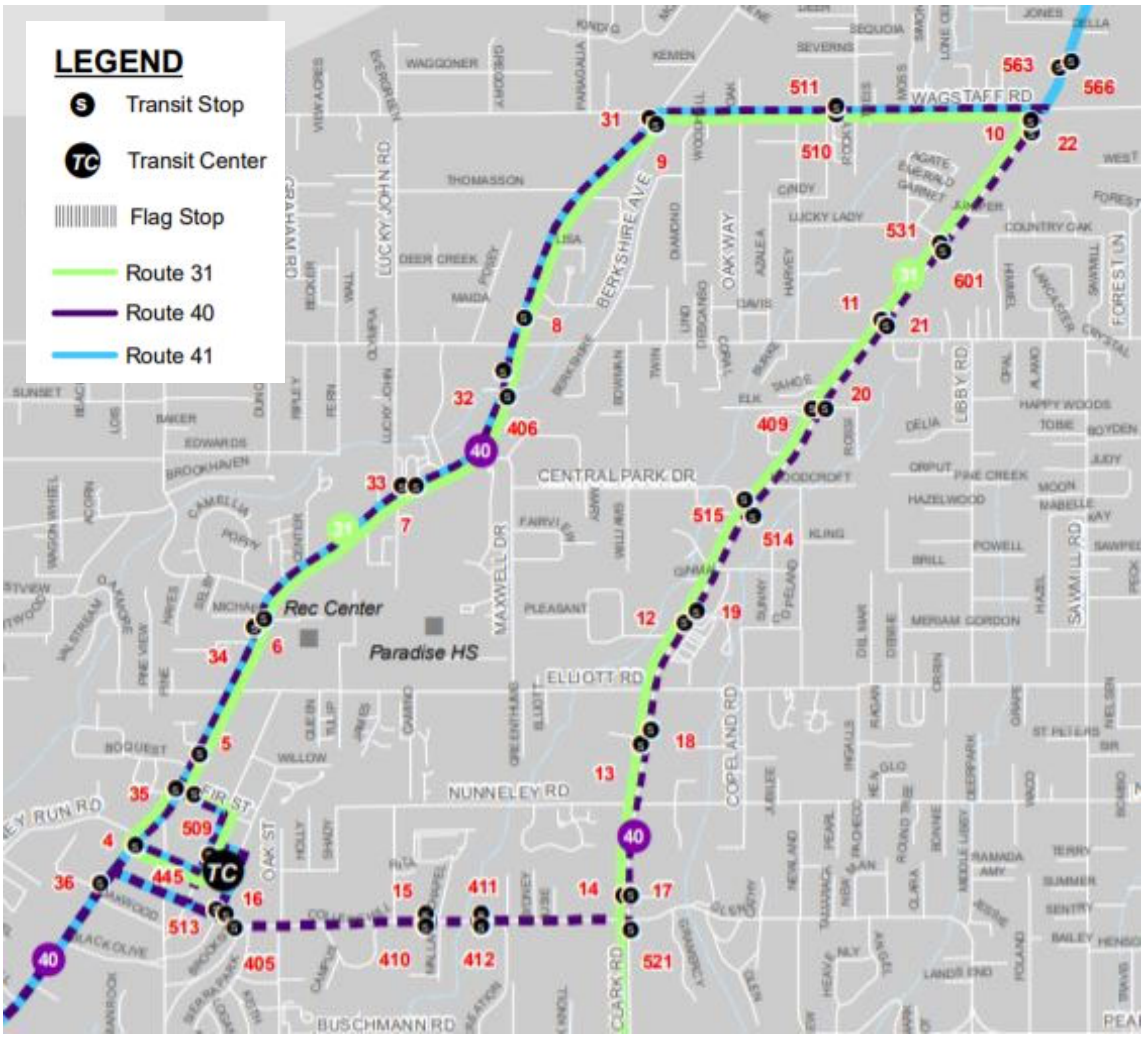
Route 31 provides service between Paradise and Oroville and runs along Clark Road, Wagstaff Road, and Skyway. Service is provided during the morning and evening peak commute periods, from 6:45 AM to 7:30 AM and from 5:05 PM to 6:00 PM Monday through Friday. According to the B-Line website, Route 31 service is temporarily suspended due to the Camp Fire.

Route 40 provides service between Paradise and Chico and runs along Clark Road, Wagstaff Road, Pearson Road, and Skyway. Service is provided from 5:50 AM to 7:00 PM Monday through Friday and from 9:45 AM to 6:00 PM on Saturday. Sunday service is not provided.

Route 41 provides service between Paradise Pines (Magalia) and Chico and runs along Skyway. Service is provided from 6:00 AM to 7:30 PM Monday through Friday, from 7:50 AM to 7:00 PM on Saturday, and from 9:50 AM to 6:00 PM on Sunday.

According to the B-Line website, Routes 40 and 41 are running on a modified schedule due to the Camp Fire.

Exhibit 1: B-Line Transit Map in Paradise



Source: http://www.blinetransit.com/; November 2020

Baseline Traffic Volumes

Existing AM (7:30 AM to 8:30 AM) and Afternoon (2:00 PM to 3:00 PM) peak hour traffic volumes were collected at the study intersections in July 2020. Paradise High School (PHS) was not in session that day, however, due to COVID restrictions student attendance and traffic conditions in 2020 are not typical as schools are operating on restricted schedules with students "distance learning" at home. This situation is a temporary condition, therefore the existing traffic volumes were adjusted to represent "normal" operating conditions (without COVID restrictions).

Traffic volumes were adjusted based on the following:

1. Traffic volume data comparing pre-COVID volumes to COVID-restricted volumes. Based on comparison, the existing volumes were factored up by 10 percent.

2. Trip generation estimates for PHS were calculated using ITE trip generation rates to develop school trips for 1660 students (the current enrollment). Detailed trip generation calculations are provided in **Appendix A**.
3. The High School trip generation from Step 2 was added to the increased traffic volumes from Step 1 to develop Baseline conditions traffic volumes.

Figure 3 shows the Baseline conditions AM and Afternoon peak hour traffic volumes at the study intersections.

Baseline Intersection Level of Service Analysis

AM and Afternoon peak hour intersection level of service analysis was performed for the study intersections based on the Baseline conditions traffic volumes (shown on **Figure 3**) and the existing lane configurations (shown on **Figure 4**). **Table 2** shows the level of service results and the technical calculations are provided in **Appendix B**.

Table 2: Baseline Intersection Level of Service

Intersection	Control	AM		Afternoon[1]	
		Delay[2]	LOS	Delay[2]	LOS
1. Skyway/Maxwell Dr	Signal				
Overall		8.4	A	7.8	A
2. Maxwell Dr/PHS Pick-up/Drop-off Dwy	Side Street Stop				
a. Northbound Left[3]		4.4	A	3.3	A
b. Eastbound Approach		14.1	B	11.1	B
3. Maxwell Dr/Pleasant Ln	Side Street Stop				
Westbound Approach		13.3	B	10.8	B
Southbound Left		8.5	A	7.8	A
4. Maxwell Dr/East Parking Lot Dwy (S)	Side Street Stop				
Westbound Approach		12.7	B	11.4	B
Southbound Left		8.2	A	7.6	A
5. Elliott Rd/Maxwell Dr	All Way Stop				
Overall		10.1	B	9.4	A

Notes: 1. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
2. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the worst approach/movement for side street stop controlled intersections.
3. The northbound left-turn delay and LOS is based on *HCM 2000* reports because *HCM 2010* does not report intersection results for intersections without any control.
Source: Headway Transportation, 2020

As shown in the table, the study intersections operate at LOS B or better under Baseline conditions.

Project Conditions

Project Description

The project includes relocating the existing Ridgeview High School (a continuation high school that accommodates up to 150 students) to the east side of Maxwell Drive across from Paradise High School and north of Pleasant Lane. Ridgeview High School is currently located in Magalia, approximately 7 miles north of the proposed location in Paradise. An increase in student enrollment within the school district is not expected as a result of the relocation. Since Ridgeview High School is a continuation school, students who attend the school are already enrolled in the school district and would otherwise attend Paradise High School if they were not attending Ridgeview High School. Therefore, the new school would not result in new students or trips within the district, but would instead shift existing trips to the new location.

Project Access

Access to the school is provided via Maxwell Drive and Pleasant Lane. Parents and students would use the drop-off loop at PHS (on the west side of Maxwell Drive) or the parking lot south of the project site. There is an existing crosswalk on Maxwell Drive south of the drop-off loop entrance and north of Pleasant Lane that would provide access from the existing drop-off loop to Ridgeview HS (see the project site plan on **Figures 2** and **2a**).

Trip Generation

Trip generation rates from *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE) were used to determine trip generation estimates for Ridgeview High School using the standard High School rates. **Table 3** shows the Daily, AM peak hour, and Afternoon peak hour trip generation estimates. Detailed calculations are provided in **Appendix A**.

Table 3: Trip Generation Estimates

Land Use (ITE Code)	Size	Trips[1]				
		Daily	AM	AM In/Out	Afternoon[2]	Afternoon In/Out
High School (530)	150 students	304	78	52 / 26	50	16 / 34

Notes: 1. Trips were calculated based on the following rates per student: Daily – 2.03; AM – 0.52 (67% in / 33% out); Afternoon – 0.33 (32% in / 68% out)
2. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
Source: Headway Transportation, 2020

As shown in the table, it is estimated that the school generates approximately 304 Daily, 78 AM peak hour, and 50 Afternoon peak hour trips at the new site. The trips would be made to the new location rather than to the existing school in Magalia.

Trip Distribution

The distribution of trips to the adjacent roadway network was determined based on existing traffic volumes and travel patterns. Project trips were distributed as follows:

- 45% to/from the north via Maxwell Drive
  - 5% to/from the east via Central Park Drive
  - 25% to/from the south via Skyway
  - 15% to/from the north via Skyway
- 55% to/from the south via Maxwell Drive
  - 30% to/from the west via Elliott Road
  - 25% to/from the east via Elliott Road

The new peak hour project trips at the study intersections are shown on **Figure 5**.

Baseline Plus Project Conditions

Baseline Plus Project Traffic Volumes

Project trips (**Figure 5**) were added to the Baseline traffic volumes (**Figure 3**) to develop the Baseline Plus Project conditions traffic volumes, shown on **Figure 6**.

Baseline Plus Project Intersection Level of Service Analysis

AM and Afternoon peak hour intersection level of service analysis was performed for the study intersections based on the Baseline Plus Project traffic volumes and the existing lane configurations. **Table 4** shows the level of service results and the technical calculations are provided in **Appendix B**.

Table 4: Baseline Plus Project Intersection Level of Service

Intersection	Control	Baseline				Baseline Plus Project			
		AM		Afternoon[1]		AM		Afternoon[1]	
		Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Skyway/Maxwell Dr	Signal								
Overall		8.4	A	7.8	A	8.9	A	8.1	A
2. Maxwell Dr/PHS Pick-up/ Drop-off Dwy	Side Street Stop								
a. Northbound Left[3]		4.4	A	3.3	A	4.7	A	3.3	A
b. Eastbound Approach		14.1	B	11.1	B	15.5	C	11.4	B
3. Maxwell Dr/Pleasant Ln	Side Street Stop								
Westbound Approach		13.3	B	10.8	B	14.1	B	11.1	B
Southbound Left		8.5	A	7.8	A	8.7	A	7.9	A
4. Maxwell Dr/East Parking Lot Dwy (S)	Side Street Stop								
Westbound Approach		12.7	B	11.4	B	13.3	B	11.8	B
Southbound Left		8.2	A	7.6	A	8.3	A	7.6	A
5. Elliott Rd/Maxwell Dr	All Way Stop								
Overall		10.1	B	9.4	A	10.5	B	9.6	A

Notes: 1. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
2. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the worst approach/movement for side street stop controlled intersections.
3. The northbound left-turn delay and LOS is based on *HCM 2000* reports because *HCM 2010* does not report intersection results for intersections without any control.
Source: Headway Transportation, 2020

As shown in the table, the study intersections are expected to operate at LOS C or better under Baseline Plus Project conditions. The project would cause only minor delay increases.

Opening Day Conditions

Opening Day Traffic Volumes

Opening Day traffic volumes (anticipated for the year 2022) were developed using linear interpolation (2 of 20 years) between the Baseline and Future Year (2040) traffic volumes described on page 11. **Figure 7** shows the Opening day without project peak hour intersection volumes.

Opening Day Intersection Level of Service Analysis

AM and Afternoon peak hour intersection level of service analysis was performed for the study intersections based on the Opening Day traffic volumes (without project) and the existing lane configurations. **Table 5** shows the level of service results and the technical calculations are provided in **Appendix C**.

Table 5: Opening Day Intersection Level of Service (without Project)

Intersection	Control	AM		Afternoon[1]	
		Delay[2]	LOS	Delay[2]	LOS
1. Skyway/Maxwell Dr	Signal				
Overall		8.9	A	8.1	A
2. Maxwell Dr/PHS Pick-up/Drop-off Dwy	Side Street Stop				
a. Northbound Left[3]		4.8	A	3.3	A
b. Eastbound Approach		15.5	C	11.4	B
3. Maxwell Dr/Pleasant Ln	Side Street Stop				
Westbound Approach		14.2	B	11.1	B
Southbound Left		8.7	A	7.9	A
4. Maxwell Dr/East Parking Lot Dwy (S)	Side Street Stop				
Westbound Approach		13.3	B	11.8	B
Southbound Left		8.3	A	7.6	A
5. Elliott Rd/Maxwell Dr	All Way Stop				
Overall		10.8	B	10.0	A

Notes: 1. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
2. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the worst approach/movement for side street stop controlled intersections.
3. The northbound left-turn delay and LOS is based on *HCM 2000* reports because *HCM 2010* does not report intersection results for intersections without any control.
Source: Headway Transportation, 2020

As shown in the table, the study intersections operate at LOS C or better under Opening Day (without project) conditions.

Opening Day Plus Project Traffic Volumes

Project trips (**Figure 5**) were added to the Opening Day traffic volumes (**Figure 7**) to develop the Opening Day Plus Project conditions traffic volumes, shown on **Figure 8**.

Opening Day Plus Project Intersection Level of Service Analysis

AM and Afternoon peak hour intersection level of service analysis was performed for the study intersections based on the Opening Day Plus Project traffic volumes and the existing lane configurations. **Table 6** shows the level of service results and the technical calculations are provided in **Appendix C**.

Table 6: Opening Day Plus Project Intersection Level of Service

Intersection	Control	Opening Day				Opening Day Plus Project			
		AM		Afternoon[1]		AM		Afternoon[1]	
		Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Skyway/Maxwell Dr	Signal								
Overall		8.9	A	8.1	A	9.6	A	8.4	A
2. Maxwell Dr/PHS Pick-up/ Drop-off Dwy	Side Street Stop								
a. Northbound Left[3]		4.8	A	3.3	A	5.0	A	3.4	A
b. Eastbound Approach		15.5	C	11.4	B	17.4	C	11.8	B
3. Maxwell Dr/Pleasant Ln	Side Street Stop								
Westbound Approach		14.2	B	11.1	B	15.0	C	11.5	B
Southbound Left		8.7	A	7.9	A	8.9	A	8.0	A
4. Maxwell Dr/East Parking Lot Dwy (S)	Side Street Stop								
Westbound Approach		13.3	B	11.8	B	14.1	B	12.2	B
Southbound Left		8.3	A	7.6	A	8.4	A	7.6	A
5. Elliott Rd/Maxwell Dr	All Way Stop								
Overall		10.8	B	10.0	A	11.3	A	10.2	B

Notes: 1. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
2. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the worst approach/movement for side street stop controlled intersections.
3. The northbound left-turn delay and LOS is based on *HCM 2000* reports because *HCM 2010* does not report intersection results for intersections without any control.
Source: Headway Transportation, 2020

As shown in the table, the study intersections are expected to operate at LOS C or better under Opening Day Plus Project conditions. The project would add no more than two seconds of delay at any studied movement.

Future Year Conditions

Future Year Traffic Volumes

Future year (20-year horizon) traffic volume forecasts were developed using historical traffic volume data and information from the BCAG countywide travel demand model. Traffic volume forecasts were developed with the assumption that traffic would return to pre-Camp Fire conditions within the next 20 years. Growth rates were developed considering 2017/2018 (pre-Camp Fire) and 2020 (post fire) traffic volume data.

The Future Year forecast traffic volumes at the study intersections were balanced between intersections as necessary to account for any inconsistencies in the traffic data. **Figure 9** shows the projected Future Year intersection turning movement volumes at the study intersections without the project.

Future Year Intersection Level of Service Analysis

AM and Afternoon peak hour intersection level of service analysis was performed for the study intersections using the Future Year (without project) traffic volume forecasts (shown on **Figure 9**) and the existing intersection lane configurations shown on **Figure 4**. **Table 7** shows the level of service results. The technical calculations are provided in **Appendix D**.

Table 7: Future Year Intersection Level of Service (without Project)

Intersection	Control	AM		Afternoon[1]	
		Delay[2]	LOS	Delay[2]	LOS
1. Skyway/Maxwell Dr	Signal				
Overall		27.1	C	12.3	B
2. Maxwell Dr/PHS Pick-up/Drop-off Dwy	Side Street Stop				
a. Northbound Left[3]		8.2	A	4.2	A
b. Eastbound Approach		**100.0**	**F**	15.9	C
3. Maxwell Dr/Pleasant Ln	Side Street Stop				
Westbound Approach		28.5	D	15.6	C
Southbound Left		10.8	B	8.4	A
4. Maxwell Dr/East Parking Lot Dwy (S)	Side Street Stop				
Westbound Approach		22.6	C	17.7	C
Southbound Left		9.6	A	7.8	A
5. Elliott Rd/Maxwell Dr	All Way Stop				
Overall		**54.4**	**F**	31.5	D

Notes: 1. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
2. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the worst approach/movement for side street stop controlled intersections.
3. The northbound left-turn delay and LOS is based on *HCM 2000* reports because *HCM 2010* does not report intersection results for intersections without any control.
Bold text indicates operations beyond the General Plan policies.
Source: Headway Transportation, 2020

As shown in the table, the eastbound approach of Maxwell Drive/PHS Pick-up/Drop-off Driveway (the exiting driveway of the PHS drop-off loop) is expected to operate at LOS F during the highest 15 minutes of the AM peak hour. Similarly, the Elliott Road/Maxwell Drive intersection is expected to operate at LOS F during the highest 15 minutes of the AM peak hour. The other study intersections would operate at LOS D or better under Future Year (without project) conditions.

Future Year Plus Project Traffic Volumes

Project trips (**Figure 5**) were added to the Future Year traffic volumes (**Figure 9**) to develop the Future Year Plus Project conditions traffic volumes, shown on **Figure 10**.

Future Year Plus Project Intersection Level of Service Analysis

AM and Afternoon peak hour intersection level of service analysis was performed for the study intersections based on the Future Year Plus Project traffic volumes and the existing lane configurations. **Table 8** shows the level of service results and the technical calculations are provided in **Appendix D**.

Table 8: Future Year Plus Project Intersection Level of Service

Intersection	Control	Future Year				Future Year Plus Project			
		AM		Afternoon[1]		AM		Afternoon[1]	
		Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Skyway/Maxwell Dr	Signal								
Overall		27.1	C	12.3	B	30.8	C	12.7	B
2. Maxwell Dr/PHS Pick-up/ Drop-off Dwy	Side Street Stop								
a. Northbound Left[3]		8.2	A	4.2	A	8.8	A	4.2	A
b. Eastbound Approach		**100.0**	**F**	15.9	C	**134.1**	**F**	17.0	C
3. Maxwell Dr/Pleasant Ln	Side Street Stop								
Westbound Approach		28.5	D	15.6	C	31.6	D	16.6	C
Southbound Left		10.8	B	8.4	A	11.2	B	8.5	A
4. Maxwell Dr/East Parking Lot Dwy (S)	Side Street Stop								
Westbound Approach		22.6	C	17.7	C	24.6	C	19.0	C
Southbound Left		9.6	A	7.8	A	9.8	A	7.8	A
5. Elliott Rd/Maxwell Dr	All Way Stop								
Overall		**54.4**	**F**	30.9	D	**59.8**	**F**	33.2	D

Notes: 1. The afternoon peak hour is from 2:00 PM to 3:00 PM (when school is dismissed).
2. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the worst approach/movement for side street stop controlled intersections.
3. The northbound left-turn delay and LOS is based on *HCM 2000* reports because *HCM 2010* does not report intersection results for intersections without any control.
Bold text indicates unacceptable operations.
Source: Headway Transportation, 2020

As shown in the table, the eastbound approach of Maxwell Drive/PHS Pick-up/Drop-off Driveway (the exiting driveway of the PHS drop-off loop) is expected to operate at LOS F during the AM peak hour under Future Year and Future Year Plus Project conditions (without or with the project). Additionally, the Elliott Road/Maxwell Drive intersection is expected to operate at LOS F during the AM peak hour under Future Year and Future Year Plus Project conditions (without and with the project). The other study intersections would operate at LOS D or better under Future Year Plus Project conditions.

<u>Discussion of Potential Improvements</u>

The eastbound approach of the Maxwell Drive/PHS Pick-up/Drop-off Driveway intersection is expected to operate at LOS F under Future Year and Future Year Plus Project conditions (without and with the project), however, this movement is within the school property and not part of the public roadway system. Additionally, this LOS F condition is specific to school hours, and only occurs within the peak 15-30 minutes

of school traffic. Movements on the public roadway network (i.e. Maxwell Drive) are expected to operate at LOS D or better. This condition is common at schools given the spikes in traffic volumes and does not warrant improvements for a short duration of congestion.

The Elliott Road/Maxwell Drive intersection is expected to operate at LOS F during the AM peak hour under Future Year and Future Year Plus Project conditions (without and with the project). A separate eastbound left-turn pocket and westbound right-turn pocket would improve operations at the intersection to LOS C during the AM peak hour in the 20-year horizon. The Town should consider adding improvements at this intersection in the long-term transportation plans.

IMPACT ANALYSIS

Thresholds of Significance

Based on CEQA guidelines, the project would create a significant transportation impact if it:

- Adversely affects existing or planned bicycle and pedestrian facilities or fails to adequately provide access for bicycle and walking travel modes
- Adversely affects public transit operations or fails to adequately provide access to transit services
- Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Results in inadequate emergency access
- Creates vehicle miles traveled (VMT) per capita beyond the levels recommended by the California Office of Planning & Research (OPR) guidelines for the subject land use

VMT Criteria

Per SB 743 criteria, as of July 1, 2020, the CEQA guidelines require the evaluation of "vehicle miles traveled" (VMT) as a key criterion to determine potentially significant transportation impacts. Although Butte County and the Town of Paradise do not currently have adopted VMT thresholds, the intent of SB 743 is to reduce VMT compared to current/baseline levels. The *Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018,* published by the Governor's Office of Planning and Research (OPR) includes guidelines for implementation and states:

> *"Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described above [between no increase and a 15% reduction compared to existing levels] for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types."*

> *"Because location within the region is the most important determinant of VMT, in some cases, streamlining CEQA review of projects in travel efficient locations may be the most effective means of reducing VMT."*

Based on OPR's guidance, it is reasonable to set the threshold for school land use projects at no increase above existing VMT per capita. The location of the school site relative to the student population it serves is the key determinant of changes in VMT.

Impact Evaluation

Alternative Transportation Mode Evaluation

The project would not make any changes to existing multimodal facilities or conflict with multimodal transportation plans. The project will make connection to existing bicycle and pedestrian facilities. Therefore, the project would have a less-than-significant impact on alternative transportation modes.

Public Transit Evaluation

The project would not make any changes to existing public transit system or conflict with any public transit plans plan. Therefore, the project would have a less-than-significant impact on public transit.

Design Feature Evaluation

Evaluation of the project site plan and the existing roadway network does not indicate any incompatible uses or introduced features significantly affecting safety. Therefore, the project would have a less-than-significant impact related to safety.

Emergency Access Evaluation

The project can be accessed by both Maxwell Drive and Pleasant Lane and would have a less-than-significant impact related to emergency access.

Vehicle Miles Traveled (VMT) Evaluation

OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018* states, "If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate."

Although Butte County does have a travel demand model, the Town of Paradise has changed significantly since the model was built due to the Camp Fire. A significant portion of the town was destroyed by the fire, dramatically reducing traffic volumes, therefore the model no longer represents traffic and travel

patterns accurately. Lacking established thresholds, measurement methods, and a model for quantitative analysis, a qualitative evaluation is presented below.

The proposed project is not a new continuation high school, but a relocation of the existing Ridgeview High School. Ridgeview High School is currently located in Magalia, approximately 7 miles north of the proposed location in Paradise. Since Ridgeview High School is not a new high school and the enrollment is not expected to increase due to the relocation, new vehicle trips and new VMT would not be created in the region. Additionally, the high school is currently located in Magalia, farther from the urbanized area of Paradise, on a two-lane rural roadway with no bicycle or pedestrian amenities. Relocating Ridgeview High School to a location more central to the urbanized area of Paradise would create shorter trips for most students and parents and therefore less VMT. Additionally, Maxwell Drive has bicycle lanes on both sides of the roadway, as well as sidewalks on the west side of the roadway which is more conducive to active transportation modes. Per OPR, the location of a project and proximity to non-auto mode facilities are key elements of VMT management. Both aspects are improved by the new school location.

OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018* also states, "Where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact." Overall, it is reasonable to estimate that the project would not increase VMT per capita compared to existing/baseline conditions and therefore the project would have a less-than-significant impact on VMT.

CONCLUSIONS & RECOMMENDATIONS

The following is a list of key findings:

<u>Operations Analysis/General Plan Conformance</u>

- The project includes relocating the existing Ridgeview High School (a continuation high school that accommodates up to 150 students) to the east side of Maxwell Drive across from Paradise High School and north of Pleasant Lane. Ridgeview High School is currently located in Magalia, approximately 7 miles north of the proposed location in Paradise. An increase in enrollment is not expected with the project as a result of the relocation.
- It is estimated that Ridgeview High School would generate approximately 304 Daily trips, 78 AM peak hour trips, and 50 Afternoon peak hour trips at the new site.
- The study intersections are anticipated to operate at LOS B or better under Baseline and Baseline Plus Project conditions.
- Under Opening Day and Opening Day Plus Project conditions (anticipated for the year 2022), the study intersections are expected to operate at LOS C or better.
- Under Future Year (20-year horizon) and Future Year Plus Project conditions, the eastbound approach of the Maxwell Drive/PHS Pick-up/Drop-off Driveway intersection and the Elliott Road/Maxwell Drive intersection are expected to operate at LOS F (without or with the

project) during the AM peak hour. The other study intersections are expected to operate at LOS D or better.

- Although the eastbound approach of the Maxwell Drive/PHS Pick-up/Drop-off Driveway intersection is expected to operate at LOS F under Future Year and Future Year Plus Project conditions, this movement is within the school property and not part of the public roadway system. Additionally, this LOS F condition is specific to school hours, and only occurs within the peak 15-30 minutes of school traffic. Movements on the public roadway network (i.e. Maxwell Drive) are expected to operate at LOS D or better.
- Adding a separate eastbound left-turn pocket and westbound right-turn pocket at the Elliott Road/Maxwell Drive intersection would improve operations at the intersection to LOS C during the AM peak hour in the 20-year horizon. The Town should consider adding these turn lanes in its long-range transportation planning process.

Impact Analysis/CEQA Compliance

- The project impacts related to alternative modes of travel, public transit, design features, and emergency access would be less-than-significant.
- The project consists of relocating an existing school to a location more central to the urbanized area with direct access to existing bicycle and pedestrian amenities. Additionally, the enrollment at the school is not expected to increase due to the relocation and would not generate new trips in the region. Overall, it is reasonable to estimate that the project would not increase VMT per capita compared to existing/baseline conditions and therefore the project would have a less-than-significant impact on VMT.

Recommendations

Overall pedestrian circulation could be improved by constructing a crosswalk across Pleasant Lane between the school site and the existing parking lot south of Pleasant Lane. The crosswalk should be located at Maxwell Drive or an alternate location defined during final site planning. This recommendation is offered only for site planning purposes and should not be construed as a mitigation measure.