



Pastor Gary Duran
Family Worship Center
1307 I Street
Sanger, California 93657

April 12, 2018

Subject: Traffic Impact Study
Proposed Church
Northwest of the Intersection of Bethel and North Avenues
Sanger, California

Dear Pastor Duran:

1.0 INTRODUCTION

This report presents the results of a traffic impact study for a proposed church (hereinafter referred to as the “Project”) in Sanger, California. The analyses primarily focus on the anticipated effect of vehicle traffic resulting from the Project.

2.0 PROJECT DESCRIPTION

The proposed church will be located northwest of the intersection of Bethel and North Avenues in Sanger, California. A site vicinity map is presented in the attached Figure 1 and a site plan is presented in Figure 2. The church will be constructed in two phases with a possible third phase as follows:

Phase I: a 23,304-square-foot building with 231 parking stalls;

Phase II: a 1,980-square-foot classroom building and a 1,188-square-foot administration building seven parking stalls removed (224 stalls remaining);

Phase III: a future hypothetical phase consisting of a 14,160-square-foot building (including a 10,280-square-foot maximum sanctuary) with 33 new parking stalls (total of 257 parking stalls). This phase is not a part of the current proposal.

Primary site access is proposed via two driveways connecting to Bethel Avenue and one driveway connecting to North Avenue. A loading zone is proposed with access via Lily Avenue.

We understand that the maximum number of seats expected in the sanctuary area will be 450. Sunday school will begin at 10:00 a.m. on Sunday mornings. Sunday services will begin at 11:00 a.m. and will end at approximately 12:30 p.m. Only one Sunday morning service is planned. Weekday operations will be minimal, with the largest regular meeting taking place at 7:00 p.m. on Wednesday evenings.

3.0 STUDY AREA AND TIME PERIOD

The study intersections were determined in coordination with City of Sanger and County of Fresno staff. This report includes analysis of the following intersections:

1. Bethel Avenue and Cherry Avenue
2. Bethel Avenue and Northern Site Access/St. Mary's Site Access
3. Bethel Avenue and South Site Access
4. Bethel Avenue and North Avenue

Sunday school will begin at 10:00 a.m. on Sunday mornings. Sunday services will begin at 11:00 a.m. and will end at approximately 12:30 p.m. Only one Sunday morning service is planned. The web site for the existing St. Mary's Catholic Church on the east side of Bethel Avenue indicates masses start at the following times on Sundays:

- 7:30 a.m. (English)
- 9:00 a.m. (Spanish)
- 11:00 a.m. (English)
- 1:00 p.m. (Spanish)

Based on these schedules, the worst-case time periods are expected to be immediately prior to services beginning at 11:00 a.m. and the period between 12:30 p.m. and 1:00 p.m. Therefore, the following time periods are studied:

- Sunday between 10:30 a.m. and 11:30 a.m.;
- Sunday between 12:15 p.m. and 1:15 p.m.

The study time periods were analyzed for the following scenarios:

- Existing Conditions;
- Existing-Plus-Project Conditions;
- Cumulative (Year 2038) Conditions.

No approved or pending projects in the study area have been identified.

4.0 LANE CONFIGURATIONS AND INTERSECTION CONTROL

The lane configurations and intersection control at the study intersections are illustrated in Figure 3, Existing Lane Configurations. For purposes of these analyses, these configurations are assumed to remain in place through the year 2038.

5.0 EXISTING TRAFFIC VOLUMES

Existing traffic volumes were determined by performing manual turning movement counts at the study intersections during the following time periods:

- Sunday between 10:30 a.m. and 11:30 a.m.;
- Sunday between 12:15 p.m. and 1:15 p.m.

The existing peak-hour turning movement volumes are presented in Figure 4, Existing Peak-Hour Traffic Volumes. The traffic counts data sheets are attached.

6.0 PROJECT TRIP GENERATION

Trip generation rates based on empirical data provided in the Institute of Transportation Engineers *Trip Generation Manual, 9th Edition*, are typically used to estimate the number of trips anticipated to be generated by proposed projects. Table 1 presents trip generation estimates for the proposed church on a Sunday based on the number of seats. Table 2 presents trip generation estimates for the proposed church on a Sunday based on the building area.

Table 1
Sunday Project Trip Generation - Based on the Number of Seats

Land Use	Seats	Sunday A.M. Peak Hour					Sunday P.M. Peak Hour				
		Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Church (560)	450	0.61	50:5	138	14	152	0.61	5:50	14	138	152

Reference: *Trip Generation Manual, 9th Edition*, Institute of Transportation Engineers 2012 - adjusted for a single service. An assumption was made that five percent of the trips will make the movement opposite of the majority of trips to account for some vehicles dropping off visitors and leaving the site before the service, or picking up visitors after the service.

Rates are reported in trips per seat In:Out are percentages of the total.

Table 2
Sunday Project Trip Generation - Based on Building Area (Phases I and II)

Land Use	Area	Sunday A.M. Peak Hour					Sunday P.M. Peak Hour				
		Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Church (560)	26,472 sq. ft.	12.04	49:5	157	16	173	12.04	5:51	16	163	179

Reference: *Trip Generation Manual, 9th Edition*, Institute of Transportation Engineers 2012 - adjusted for a single service. An assumption was made that five percent of the trips will make the movement opposite of the majority of trips to account for some vehicles dropping off visitors and leaving the site before the service, or picking up visitors after the service.

Rates are reported in trips per 1,000 square feet of building area
 In:Out are percentages of the total.

Weekday trips are expected to be minimal and are not presented. The largest weekday services are not expected to generate a significant number of trips during the peak hours.

7.0 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The percentage distribution of Project trips to the adjacent streets was estimated based on engineering judgment considering existing traffic volumes, complementary land uses, and available routes. The percentage distribution of Project trips is presented in the Figure 5, Project Trip Distribution Percentages.

The Project trips presented in Table 2 were assigned to the study intersections in accordance with the trip distribution percentages presented in Figure 5. The Sunday peak-hour Project trips at the study intersections are presented in Figure 6, Sunday Peak-Hour Project Traffic Volumes.

8.0 EXISTING-PLUS-PROJECT TRAFFIC VOLUMES

Existing-Plus-Project traffic volumes are presented in Figure 7, Existing-Plus-Project Peak-Hour Traffic Volumes.

9.0 CUMULATIVE YEAR 2038 TRAFFIC VOLUMES

Cumulative traffic volumes for the year 2038 were determined using the Fresno County travel model maintained by the Fresno Council of Governments (COG). The base year and year 2035 model traffic output used in the analyses are attached. The model data was utilized to determine annual growth rates that were applied to the existing traffic volumes through the year 2038. Cumulative With-Project traffic volumes are presented in Figure 8, Cumulative 2038 With-Project Peak-Hour Traffic Volumes.

10.0 SIGNIFICANCE CRITERIA

The Transportation Research Board *Highway Capacity Manual*, 2010, (HCM2010) defines level of service (LOS) as, “A quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler’s perspective and LOS F the worst.”

Automobile mode LOS characteristics for both unsignalized and signalized intersections are presented in Tables 3 and 4.

Table 3
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

Table 4
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is low. Progression is exceptionally favorable or the cycle length is very short.	<10
B	Volume-to-capacity ratio is low. Progression is highly favorable or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable or cycle length is moderate.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

The City of Sanger 2025 General Plan states: *“The City has established a target Level of Service “C” along major streets and highways except that LOS “D” may be allowed at intersections of any major street, highway or along street and highway segments where additional improvements are not feasible.”*

The *Guidelines for the Preparation of Traffic Impact Studies Within the County of Fresno* dated August 2012 identifies LOS A, B, and C as acceptable at County locations and LOS D, E, and F as unacceptable. LOS D is considered acceptable within the spheres of influence of the City of Fresno and the City of Clovis. The County Guidelines state:

A project is considered to have a significant impact if its traffic, when added to the traffic of the without-project condition, would cause any of the changes in traffic conditions described below.

1) *On roadway segments:*

- a) *Cause a roadway that is operating at an acceptable LOS to deteriorate to an unacceptable LOS; OR*
- b) *Cause the V/C ratio (on a directional peak hour basis) to increase by more than 0.05 on a roadway that is already operating at an unacceptable LOS. It should be noted that a decrease from an unacceptable LOS to a lesser LOS (e.g. from LOS D to LOS E in County areas) is not considered an impact unless the corresponding V/C ratio increase is greater than 0.05.*

2) *At signalized intersections:*

- a) *Cause an intersection that is operating at an acceptable LOS to deteriorate to an unacceptable LOS; OR*

- b) Cause the average delay to increase by more than 5.0 seconds at a signalized intersection that is operating at an unacceptable LOS. It should be noted that a decrease from an unacceptable LOS to a lesser LOS (e.g. from LOS D to LOS E in County areas) is not considered an impact unless the corresponding delay increase is greater than 5.0 seconds.*
- 3) *At unsignalized intersections, including all-way stop, minor approach stop, and roundabouts:*
 - a) Cause a movement or approach that is operating at an acceptable LOS to deteriorate to an unacceptable LOS; OR*
 - b) Cause the average delay to increase by more than 5.0 seconds on a movement or approach that is operating at an unacceptable LOS. It should be noted that a decrease from an unacceptable LOS to a lesser LOS (e.g. from LOS D to LOS E in County areas) is not considered an impact unless the corresponding delay increase is greater than 5.0 seconds.*
- 4) *On roadways with traveled way width of less than 18 feet (essentially one-lane roadways assuming a minimum of 8 feet per travel direction for vehicle width and edge-of-traveled-way clearance, plus 2 feet clearance between vehicles traveling in opposite directions.)*
 - a) Cause a roadway that already carries 100 vehicles per day (vpd) or less to carry more than 100 vpd; OR*
 - b) Cause a roadway that already carries more than 100 vpd to carry any additional traffic.*

The County Guidelines also contain the following statement: “Although queuing is not included as a significance criterion, the TIS shall include a queuing analysis when appropriate, particularly (but not limited to) left-turn pockets at signalized intersections. The TIS shall include recommendations to correct excessive queuing, blocking, operational problems, or storage deficiencies related to queuing.”

11.0 INTERSECTION ANALYSES

The intersection levels of service (LOS) were determined using the computer program Synchro 9, which is based on 2010 *Highway Capacity Manual* procedures for calculating levels of service. The intersection analysis sheets are attached.

Tables 5 through 7 present the results of the intersection analyses. For all-way stop-controlled intersections, the overall intersection level of service and the average delay per vehicle are presented. For one-way and two-way stop-controlled intersections an overall intersection level of service is not defined by the 2010 *Highway Capacity Manual*. Therefore, for one-way and two-way stop-controlled intersections the level of service and average delay per vehicle for the approach with the greatest delay is reported. Delays and the associated levels of service that are below the significance criteria threshold are presented in bold type.

Table 5
Intersection LOS Summary – Existing Sunday Peak Hours

Intersection	Control	A.M.		P.M.	
		Delay (sec)	LOS	Delay (sec)	LOS
Bethel / Cherry	Two-way stop	15.9	C	22.8	C
Bethel / North Access / St. Mary's	One-way stop	9.7	A	11.4	B
Bethel / South Site Access	Does not exist				
Bethel / North	All-way stop	9.4	A	11.8	B

Table 6
Intersection LOS Summary – Existing-Plus-Project Sunday Peak Hours

Intersection	Control	A.M.		P.M.	
		Delay (sec)	LOS	Delay (sec)	LOS
Bethel / Cherry	Two-way stop	17.9	C	26.5	D
Bethel / North Access / St. Mary's	Two-way stop	12.6	B	17.0	C
Bethel / South Site Access	Does not exist	10.4	B	12.1	B
Bethel / North	All-way stop	10.0	A	13.5	B

Table 7
Intersection LOS Summary – 2038 With-Project Sunday Peak Hours

Intersection	Control	A.M.		P.M.	
		Delay (sec)	LOS	Delay (sec)	LOS
Bethel / Cherry	Two-way stop	33.9	D	91.7	F
Bethel / North Access / St. Mary's	Two-way stop	17.0	C	37.7	E
Bethel / South Site Access	Does not exist	12.3	B	17.9	C
Bethel / North	All-way stop	15.1	C	51.7	F

The results of the intersection operational analyses include an estimate of the 95th-percentile queue lengths. The existing storage capacity and the calculated 95th-percentile queue lengths are presented in Tables 8 and 9. A key to descriptors in the tables is presented below.

Key to Tables 8 and 9

- L: Left-turn lane
 - R: Right-turn lane
 - LT: Shared left/through lane
 - TR: Shared through/right lane
 - LTR: Shared left/through/right lane
 - DNS: Does not stop
 - * Connects to a two-way left-turn lane that provides additional storage
- All lengths are reported in feet.

The storage capacities reported in Tables 8 and 9 are based on measurements from available aerial photographs.

Table 8
Intersection Queuing Summary – A.M. Peak Hour Scenarios

Intersection	Existing Storage Capacity (feet)	95 th -Percentile Queue Length (feet)		
		Existing	Existing Plus Project	2038
Bethel / Cherry				
Eastbound LTR	-	8	10	25
Westbound LTR	-	5	5	13
Northbound L	120	0	0	0
Northbound TR	-	DNS	DNS	DNS
Southbound L	125	10	10	13
Southbound TR	-	DNS	DNS	DNS
Bethel / North Access / St. Mary's				
Eastbound LTR	-		3	3
Westbound LTR	-	0	3	3
Northbound LTR	-	DNS	3	3
Southbound LTR	-	0	0	0
Bethel / South Access				
Eastbound LTR	-		0	0
Northbound LT	-		3	5
Southbound TR	-		DNS	DNS
Bethel / North				
Eastbound LTR	-	13	15	38
Westbound L	155*	10	10	20
Westbound TR	-	10	18	35
Northbound LTR	-	18	25	65
Southbound LT	150	25	28	93
Southbound R	-	3	3	5

Table 9
Intersection Queuing Summary – P.M. Peak Hour Scenarios

Intersection Approach	Existing Storage Capacity (feet)	95 th -Percentile Queue Length (feet)		
		Existing	Existing Plus Project	2038
Bethel / Cherry				
Eastbound LTR	-	13	15	55
Westbound LTR	-	5	8	18
Northbound L	120	0	0	3
Northbound TR	-	DNS	DNS	DNS
Southbound L	125	10	13	18
Southbound TR	-	DNS	DNS	DNS
Bethel / North Access / St. Mary's				
Eastbound LTR	-		23	55
Westbound LTR	-	8	8	13
Northbound LTR	-	DNS	0	0
Southbound LTR	-	3	3	3
Bethel / South Access				
Eastbound LTR	-		13	25
Northbound LT	-		0	0
Southbound TR	-		DNS	DNS
Bethel / North				
Eastbound LTR	-	15	15	43
Westbound L	155*	20	23	50
Westbound TR	-	38	43	135
Northbound LTR	-	35	40	143
Southbound LT	150	50	85	438
Southbound R	-	3	3	5

12.0 DISCUSSION

12.1 Existing Conditions

The results of the analyses indicate that the study intersections are currently operating at acceptable levels of service with acceptable queuing conditions during the Sunday peak hours.

12.2 Existing-Plus-Project Conditions

The results of the analyses indicate that the study intersections will operate at acceptable levels of service, with the exception that the eastbound approach to the intersection of Bethel Avenue and Cherry Avenue is expected to operate at LOS D for approximately 15 minutes during the Sunday p.m. peak hour. Twenty-two vehicles are expected to turn left or continue eastbound on Cherry Avenue during the peak hour, while seven vehicles are expected to turn right. This low volume of vehicles experiencing the LOS D on the minor approach does not warrant the installation of traffic signals (reference Part 4 of the California Manual on Uniform Traffic Control Devices). The addition of lanes is not expected to alleviate the

delays, and preventing left turns is expected to have a greater negative impact over the course of an entire day. Therefore, it is recommended that the intersection be maintained in its current configuration and traffic signals be installed in the future, if warranted.

12.3 Cumulative (Year 2038) With-Project Conditions

The year 2038 With-Project conditions analyses are based on the assumption that the Project site is developed with the proposed Project and that a substantial amount of regional growth has occurred in the Sanger area. The results of the analyses indicate that three of the study intersections are expected to operate below the target LOS as described below. The intersection of Bethel Avenue and the proposed south site access is expected to operate at acceptable levels of service.

The intersection of Bethel Avenue and Cherry Avenue is expected to operate at LOS D during the Sunday a.m. peak hour and LOS E during the Sunday p.m. peak hour. The substandard levels of service are expected to last approximately 15 to 30 minutes as church traffic occurs in short peaks before and after service or mass. The projected traffic volumes do not satisfy the peak-hour traffic signal warrants; however, traffic signals are expected to result in the most reasonable mitigation measure. The signals should be designed to accommodate weekday traffic volumes and pedestrians. Considering the offset of the Cherry Avenue alignment at Bethel Avenue, split-phase signals should be considered for the eastbound and westbound directions so that the eastbound and westbound movements never occur simultaneously. Consideration should be given to a dedicated pedestrian phase during peak school periods to separate vehicles from pedestrians, which is expected to be safer for pedestrians and would also provide green time for vehicles to proceed (primarily right turns) without conflicting pedestrians. The Project would be responsible for an equitable share of the cost of the traffic signals, and consideration should be given to a reduction in the fair share since the Project operates only one day per week. The mitigated intersection analysis sheets are attached.

The eastbound approach to the intersection of Bethel Avenue and the northern Project site access is expected to operate at LOS E during the Sunday p.m. peak hour as visitors leave the proposed church. This is an expected condition at most churches or at any venue where an event ends and a group of people leave at approximately the same time, especially where the primary movement out of the site is a left turn. This condition is not considered a significant impact because the visitors expect such conditions, the delays are on site, the visitors can control the time at which they decide to leave the site to avoid congestion, and motorists can turn right instead of left if desired. The intersection would not be a candidate for traffic signals. To further alleviate congestion at the site exit, it is recommended that a driveway connecting to North Avenue be included in the first phase of the Project.

The intersection of Bethel and North Avenues is expected to operate at LOS F during the Sunday p.m. peak hour. It is anticipated that traffic signals would eventually be required based on weekday peak hour conditions, and traffic signals would mitigate the traffic impacts that occur on Sunday. The Project would be responsible for an equitable share of the cost of the traffic signals, and consideration should be given to a reduction in the fair share since the

Project operates only one day per week. The mitigated intersection analysis sheets are attached.

12.4 Discussion of Ultimate Bethel Avenue Cross Section

The City of Sanger General Plan designates Bethel Avenue north of North Avenue as a four-lane arterial. City of Sanger Standard Detail ST-3 suggests that an arterial street may have either a continuous turning lane (two-way left-turn lane, or TWLTL) or a 16-foot-wide median, and both configurations are expected to be suitable on Bethel Avenue between North Avenue and Cherry Avenue. Such improvements may not be feasible at North Avenue until a southbound-to-eastbound left-turn lane can be constructed, which would require widening on Bethel Avenue south of North Avenue to align the through lanes.

A TWLTL is recommended in the ultimate condition because the pavement has already been constructed and it maximizes ease of access to the existing church and the proposed church. If a TWLTL is implemented, it is recommended it connect to dedicated left-turn lanes at North Avenue and at Cherry Avenue in accordance with Figure 3B-7(CA) of the California Manual on Uniform Traffic Control Devices for unlimited storage. It is recommended that the 100-foot minimum left-turn length shown in Figure 3B-7(CA) be increased for the southbound-to-eastbound left-turn lane at North Avenue to extend as far north as the southern access driveway of the proposed church (approximately 300 feet) to avoid head-on movements between northbound vehicles that would turn left into the proposed church and southbound vehicles that would turn left into the existing southern driveway at St. Mary's Catholic Church.

If the City determines that a median should be constructed, a median break with dedicated left turn lanes at the northern driveways of the two churches is recommended.

13.0 EQUITABLE SHARE CALCULATIONS

Where required cumulative mitigations are not included in a traffic impact fee to be paid by the Project, the Project's financial responsibility for the mitigations can be determined based on equitable share calculations. Caltrans recommends the following equation as presented in the Caltrans *Guide for the Preparation of Traffic Impact Studies* to determine a project's equitable share of the cost of improvements to State facilities:

$$P = \frac{T}{T_B - T_E}$$

where:

- P = The equitable share of the project's traffic impact;
- T = The project trips generated during the peak hour of the adjacent roadway;
- T_B = The forecasted (cumulative with project) traffic volume on the impacted facility;
- T_E = The existing traffic on the facility plus approved projects traffic.

Table 10 presents equitable share responsibility calculations for the 2038 intersection mitigations based on Sunday p.m. peak hour trips. These fair shares would not be applicable if the mitigation is included in, or added to, a transportation impact fee paid by the Project. The calculated fair share presented in Table 10 is divided by seven because the Project operates only one day per week.

Table 10
Equitable Share Responsibility Calculations – Sunday P.M. Peak Hour

Location	Mitigation	Project Trips	Existing Traffic	2038 Traffic	Calculated Equitable Share (%)	Recommended Equitable Share (%)
Bethel / Cherry	Signals	86	707	1,226	16.6%	2.4%
Bethel / North	Signals	90	679	1,204	17.1%	2.4%

14.0 CONCLUSIONS AND RECOMMENDATIONS

Standard traffic engineering principles and methods were employed to establish the existing conditions, to estimate the number of trips expected to be generated by the Project, and to analyze the traffic conditions expected to occur in the future. The conclusion of the study is that the Project will contribute to significant traffic impacts and may be required to pay an equitable share of future traffic signals on Bethel Avenue at Cherry Avenue and at North Avenue.

Existing Conditions

The study intersections are currently operating at acceptable levels of service with acceptable queuing conditions during the Sunday peak hours.

Existing-Plus-Project Conditions

The study intersections will operate at acceptable levels of service, with the exception that the eastbound approach to the intersection of Bethel Avenue and Cherry Avenue is expected to operate at LOS D for approximately 15 minutes during the Sunday p.m. peak hour. Traffic signal warrants will not be satisfied in the near-term Sunday peak-hour condition. The addition of lanes is not expected to alleviate the delays, and preventing left turns is expected to have a greater negative impact over the course of an entire day. Therefore, it is recommended that the intersection be maintained in its current configuration and traffic signals be installed in the future, if warranted.

Cumulative (Year 2038) With-Project Conditions

The intersection of Bethel Avenue and Cherry Avenue is expected to operate at LOS D during the Sunday a.m. peak hour and LOS E during the Sunday p.m. peak hour. The substandard levels of service are expected to last approximately 15 to 30 minutes as church traffic occurs in short peaks before and after service or mass. The projected traffic volumes do not satisfy the peak-hour traffic signal warrants; however, traffic signals are expected to result in the most reasonable mitigation measure. The traffic signals should be split-phased to accommodate the offset configuration of the intersection and should be designed to

accommodate weekday traffic volumes and pedestrians as described in more detail in this report. The Project would be responsible for an equitable share of the cost of the traffic signals.

Motorists are expected to experience delays at the Project site exit during the Sunday p.m. peak hour as visitors leave the proposed church. This is an expected condition at most churches or at any venue where an event ends and a group of people leave at approximately the same time. This condition is not considered a significant impact because the visitors expect such conditions, the delays are on site, the visitors can control the time at which they decide to leave the site to avoid congestion, and motorists can turn right instead of left if desired. The intersection would not be a candidate for traffic signals. To further alleviate congestion at the site exit, it is recommended that a driveway connecting to North Avenue be included in the first phase of the Project.

The intersection of Bethel and North Avenues is expected to operate at LOS F during the Sunday p.m. peak hour. It is anticipated that traffic signals would eventually be required based on weekday peak hour conditions, and traffic signals would mitigate the traffic impacts that occur on Sunday. The Project would be responsible for an equitable share of the cost of the traffic signals.

Ultimate Bethel Avenue Cross Section

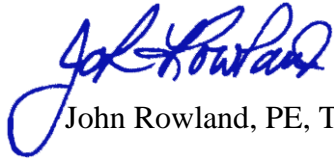
The City of Sanger General Plan designates Bethel Avenue north of North Avenue as a four-lane arterial. City of Sanger Standard Detail ST-3 suggests that an arterial street may have either a continuous turning lane (two-way left-turn lane, or TWLTL) or a 16-foot-wide median, and both configurations are expected to be suitable on Bethel Avenue between North Avenue and Cherry Avenue. Such improvements may not be feasible at North Avenue until a southbound-to-eastbound left-turn lane can be constructed, which would require widening on Bethel Avenue south of North Avenue to align the through lanes.

A TWLTL is recommended in the ultimate condition because the pavement has already been constructed and it maximizes ease of access to the existing church and the proposed church. If a TWLTL is implemented, it is recommended it connect to dedicated left-turn lanes at North Avenue and at Cherry Avenue in accordance with Figure 3B-7(CA) of the California Manual on Uniform Traffic Control Devices for unlimited storage. It is recommended that the 100-foot minimum left-turn length shown in Figure 3B-7(CA) be increased for the southbound-to-eastbound left-turn lane at North Avenue to extend as far north as the southern access driveway of the proposed church (approximately 300 feet) to avoid head-on movements between northbound vehicles that would turn left into the proposed church and southbound vehicles that would turn left into the existing southern driveway at St. Mary's Catholic Church.

If the City determines that a median should be constructed, a median break with dedicated left turn lanes at the northern driveways of the two churches is recommended.

Thank you for the opportunity to perform this traffic impact study. Please feel free to contact me if you have any questions.

PETERS ENGINEERING GROUP



John Rowland, PE, TE



- Attachments:
- Figures
 - Traffic Count Data Sheets
 - Fresno County Travel Model Output
 - Intersection Analyses
 - Mitigated Intersection Analyses