



City of Pullman
Public Works Department
MEMORANDUM

TO: Pete Dickinson, City Planner
FROM: Mark D. Workman, P.E.; Public Works Director MW
RE: Proposed LDS Church Traffic
DATE: February 15, 2008

At your request I have performed a cursory analysis of the likely traffic impacts to the local streets from the proposed Church of Jesus Christ of Latter-Day-Saints (LDS) on Park View Drive. Typically, a Traffic Impact Analysis first determines the existing traffic as the background traffic in one-hour blocks, then superimposes the anticipated additional traffic from the proposed development and classifies the impact in terms of Level of Service (LOS) with A as the highest, free flowing condition to F as the lowest, grid lock condition. This is typically done for the peak traffic hour during a typical weekday, which is usually the p.m. "going home from work" traffic, such as between 5 p.m. and 6 p.m.

In general, traffic counts are made by our Engineering Division on arterial streets on a somewhat rotating basis from year to year and only rarely on local streets. However, it so happens that a three-day traffic count was performed on Robert Street at Terre View Drive in September, 2007 so we do have some indication of the background traffic. A copy of the raw count data by hour is attached for reference. As can be seen, the traffic is quite light, only 339 Average Daily Traffic with a pm peak hour count of 32 vehicles.

In reviewing the traffic data provided by the applicant, a copy of which is attached, it appears that the generated traffic can generally be expected to be as follows:

Sundays

15 vehicles entering from 7 a.m. to 8 a.m.
75 vehicles entering from 8 a.m. to 9 a.m.
150 vehicles from 12 noon to 1 p.m. (75 exiting and 75 entering)
75 vehicles exiting from 3 p.m. to 4 p.m.
15 vehicles exiting from 4 p.m. to 5 p.m.

LOS is typically determined at intersections and is a function of the amount of time a driver has to wait to enter traffic. Sunday traffic on Robert Street and other local streets, and on Terre View Drive for that matter, is extremely light with little, if any, delay expected due to LDS traffic. The LOS for all time periods on Sunday is anticipated to be high because of the low background traffic.

School Days

20 vehicles entering from 6 a.m. to 7 a.m.

20 vehicles leaving from 7 a.m. to 8 a.m.

Adding this traffic to the assumed background traffic results in 26 vehicles from 6 a.m. to 7 a.m. and 47 vehicles from 7 a.m. to 8 a.m. Neither of these volumes is considered significant and the LOS at affected intersections should be high because of the low background traffic and should not change more than one increment, i.e., from A to B for a time period not exceeding 15 minutes.

One Evening per Week

40 vehicles entering from 6 p.m. to 7 p.m.

40 vehicles leaving from 7 p.m. to 8 p.m.

Adding this traffic to the assumed background traffic results in 64 vehicles from 6 p.m. to 7 p.m. and 55 vehicles from 7 p.m. to 8 p.m. As with the school day traffic, the impact to the LOS of affected intersections should not change more than one increment for a short period of time and should be high because of the low background traffic.

In conclusion, based on the information available and my knowledge of the area, while the existence of traffic generated by the proposed LDS Church will likely be noticed by the residents in the immediately surrounding neighborhood, the effect of said traffic on the LOS of the public street system will be negligible and short lived for any one occurrence. Should a connection to Valley View Drive also be constructed, LDS traffic will be diluted in some proportion which will further lessen the impact to the LOS of the public street system. In my opinion, traffic impacts from the proposed development will not create a significant adverse environmental impact and mitigation or rejection of the proposal is not warranted.

Weekly 24 Hour Volume Report: ROBE---TERR07

Info Line 1 : Robert St. at Terre View Dr.
 Info Line 2 :
 GPS Lat/Lon :

Last Connected Device Type : Unic-L
 Serial Number : 87361
 # Lanes : 1

Lane #1 (Bothways) Weekly Data 09/17/2007 to 09/23/2007

Time	09/17 MON	09/18 TUE	09/19 WED	09/20 THU	09/21 FRI	Weekday Average	09/22 SAT	09/23 SUN	Weekend Average	Week Average
- AM -										
12 - 1		0	0	0		0				0
1 - 2		0	0	0		0				0
2 - 3		0	0	5		2				2
3 - 4		2	3	0		2				2
4 - 5		2	3	3		3				3
5 - 6		8	5	9		7				7
6 - 7		6	9	4		6				6
7 - 8		29	23	30		27				27
8 - 9		37	25	30		31				31
9 - 10		8	10	19		12				12
10 - 11		15	12	14		14				14
11 - 12		16	19	24		20				20
- PM -										
12 - 1		26	24	24		25				25
1 - 2		26	13	39		26				26
2 - 3		8	22	15		15				15
3 - 4		19	32	25		25				25
4 - 5		33	26	17		25				25
5 - 6		19	36	40		32				32
6 - 7		25	18	28		24				24
7 - 8		19	17	9		15				15
8 - 9		10	16	10		12				12
9 - 10		15	5	8		9				9
10 - 11		5	2	4		4				4
11 - 12		5	3	2		3				3
TOTALS :		333	323	359		339				ADT 339
% Avg Day :		98%	95%	106%		100%				

AM (12am-10am) Peak Volumes					
15 Minute :	14	8	13	10	10
One Hour :	37	30	41	34	34
P.H.F. :	0.66	0.94	0.79	0.85	0.85
PH Begins :	7:45am	7:45am	7:30am	7:45am	7:45am
Mid (10am-2pm) Peak Volumes					
15 Minute :	10	9	13	7	7
One Hour :	33	26	39	27	27
P.H.F. :	0.82	0.72	0.75	0.96	0.96
PH Begins :	12:45pm	11:30am	1:00pm	12:45pm	12:45pm
PM (2pm-12am) Peak Volumes					
15 Minute :	9	12	17	9	9
One Hour :	33	36	40	32	32
P.H.F. :	0.92	0.75	0.59	0.89	0.89
PH Begins :	4:00pm	5:00pm	5:00pm	5:00pm	5:00pm

Pullman
Moscow, Idaho Stake
Church of Jesus Christ of Latter-Day Saints

Location: Park View Drive, Pullman (Northwest hill)

Traffic impacts

Background

The new church location will house one of the Pullman wards or congregations. The building will likely eventually have two units meeting there.

These existing Pullman units are currently meeting in the church building near the campus of the University.

The following summary of anticipated traffic is based upon other, similar units located in Spokane. There, actual counts were taken on a Sunday to determine the typical amount of traffic. These counts were not done by traffic engineers, but were broken into time segments of 15 minutes each. Because of our familiarity with the church programs, we did not do 24 hour counts, but concentrated on the periods when the maximum traffic flow would be occurring, i.e., just before and just after the meeting times, as people are arriving and leaving.

Church activities vs. traffic impacts

To properly understand the potential impacts of the Church traffic on the existing traffic and streets, it is important to review how and when the Church operates. This operation can then be superimposed over the current peak traffic hours.

Church attendance. In contrast to many other churches, the Church of Jesus Christ of Latter-Day Saints uses a centralized authority to assign members to ward units by geographic boundaries. It is infrequent to rare that members living in one ward area will attend another ward's meetings.

Sunday

Each ward or congregation meets for a 3-hour block on Sunday. When two or more units are using the same building, their respective meeting "block" times are assigned. In the Pullman building, one ward will meet from 9:00 AM to 12:00 Noon and the other from 12:30 PM to 3:30 PM. There is normally a ½ hour or 1-hour break between the finishing time of the first ward and the starting time of the other. With a one-hour separation, the overlapping traffic is almost completely eliminated. With a ½ hour separation, the majority of the first ward traffic is gone before the next arrives, but there is an overlap. Such overlap, however, is all in one ward exiting and the other arriving.

The Church is completely run by lay member leadership. A small number of cars (5-15) will arrive approximately 1 to 2 hours prior to the main meeting time. These represent the bishop and his counselors, clerks, etc., in preparation for the meetings.

A similar number of cars will remain on site up to an hour after the end of the block meeting time.

Sunday evenings also have occasional meetings, such as firesides, when 20 to 30 vehicles would arrive and leave. Such activities are normally held at 7:00 pm to 8:00 pm (approximate).

Actual Count

A count of traffic arriving and departing for each of the two ward meeting blocks (Deer Park and Clayton Wards) was made on June 10, 2007. Because the vast majority of vehicles arrive shortly before and leave shortly after the start and end times, the count was made for 45 minute windows (30 minutes before meeting start to 15 minutes after meeting start, and, then, from the meeting closing time for 45 minutes after), ignoring the minor numbers during the times the ward is meeting (from 15 minutes after start time to closing time).

The counts were tallied in 15-minute segments.

(Note: in a building with two wards, the meeting times are separated, as explained above. In the existing building on Riverside Avenue in Spokane, three units are meeting, requiring an overlapping schedule. This is a big part of the justification for constructing the new building – to reduce the number of units in the buildings. It is for this reason that the following counts illustrate an overlapping schedule. The third ward, Riverside Ward, was not counted in this exercise.)

Time Period	Entering vehicles	Exiting Vehicles	Comments
8:30 AM – 8:45 AM	36		Arrival of 1 st ward totals 78 during 45 minute period
8:45 AM – 9:00 AM	36		
9:00 AM – 9:15 AM	6		
10:30 AM – 10:45 AM	28		Arrival of 2 nd ward totals 76 during 45 minute period
10:45 AM – 11:00 AM	44		
11:00 AM – 11:15 AM	4		
12:00 PM – 12:15 PM		29	Departure of 1 st ward totals 74 during 45 minute period
12:15 PM – 12:30 PM		38	
12:30 PM – 12:45 PM		7	
2:00 PM – 2:15 PM		31	Departure of 2 nd ward totals 79 during 45 minute period
2:15 PM – 2:30 PM		39	
2:30 PM – 2:45 PM		9	

The impacts of these vehicle movements on the other street traffic is more difficult to assess on Sunday, as the Sunday peak traffic times are not fixed nor high volume.

Week days

Church activities during the week are varied. Very few of them occur during the traditional Peak Traffic hours of 7:00 AM to 8:00 AM and 5:00 PM to 6:00 PM.

Weekday church activities include the following:

Seminary

This is an early-morning religious instruction held each school day for high school students. This is often held in the church buildings. Since the proposed building is located close to the existing High School, this may be the case. The hours are typically 6:30 AM to 7:30 AM, but may vary because of the high school hours. Seminary is attended by up to 30 students and two instructors. Some traffic is single-occupant vehicles, but much of it is carpools. It is estimated that the seminary traffic would involve 12 to 20 vehicles. Arrivals are not during the peak hour. Departures are mostly directly to the high school, which is close to the building site.

Youth Activity night

One evening each week is scheduled for youth (12-18 years) activities, per ward. These include Boy Scouts and are held from 7:00 PM to 8:30 PM. Again this is outside of other peak traffic hours on the streets. Traffic will typically involve 30 to 40 cars for this evening.

Special Events

Monthly

Women's Auxiliary

One evening per month, per ward, is scheduled for a women's activity. It, too, is from 7:00 PM to 8:00 PM or later and may involve up to 50 vehicles.

Cub Scouts

Pack meetings are typically held at the church buildings on a monthly basis and are normally evening activities. These are traditionally attended by complete families and the number of vehicles is similar to a youth or women's activity night.

Youth Dances

These may be held at this building and may not. Typically held on a monthly basis, dances are held at the church building on Saturday evenings from approximately 8:00 PM to 11:30 PM. Traffic counts could be up to 80 or 100 cars. Again, this is during a relatively low traffic period on the streets.

Other Activities

Church experience has shown that other special events, such as funerals for well-known individuals and the initial dedication meeting when the building is completed will result in large crowds. For this purpose, the Church designs these buildings with a target of 200 parking spaces. Again, it is unlikely that these activities will occur during traditional peak traffic hours.

Summary

The buildings of the Church of Jesus Christ of Latter-Day Saints are well used facilities. There are many other, small meetings and activities held at the buildings that we have not attempted to identify nor to quantify the traffic involved. However, the vast majority of the traffic to and from these buildings is outside of normal community traffic planning peak hours. We have concentrated on the major uses and primary sources of traffic and traffic impacts. Our goal is to help the City staff understand the uses and probable impacts of the facility on traffic.

It has been said and agreed in many municipalities that the traffic volumes and impacts for the church buildings on existing traffic patterns and streets is significantly less than if the same property were developed into single-family residences.

While we cannot guarantee that the traffic for the new Pullman building will be exactly that presented above, we feel these counts are typical and give a good approximation of the anticipated traffic.

George Stecker, AIA
Architect