



# KITTELSON & ASSOCIATES, INC.

TRANSPORTATION ENGINEERING / PLANNING

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## MEMORANDUM

Date: January 3, 2012

Project #: 12241.0

To: Jay Mazalewski, PE; Teton County

From: Andy Daleiden, PE and Nick Foster

Project: Teton County LDS Church Traffic Study Review

Subject: Findings from Review



This memorandum summarizes the findings of our review of a traffic study prepared by A-W Engineering for a new LDS church site in Teton County, Idaho, north of the city of Victor. The original study, titled *Traffic Study Report, LDS Church Site – Driggs, Idaho Stake*, has been submitted to Teton County on November 22, 2011. This review is being prepared at the request of Teton County. For organizational purposes, our findings are grouped into three areas:

- Data used in the study;
- Data analysis procedures; and
- Findings of the study.

## Study Data

We raise the following concerns with the traffic count and trip generation data used in the study.

1. The average daily traffic (ADT) volume for State Highway (SH) 33 shown is a count from 1999. The Idaho Transportation Department (ITD) has more current count data, from 2010, on its website (Reference 1).
  - a. It is also not clear from the report if the ADT volume shown is from a weekday or a Sunday count. If it is from a weekday, then at an ADT volume of 3500 vehicles, it is lower than the more recent 2010 count that shows an ADT volume of approximately 6000 vehicles.

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- b. Typically, traffic counts are collected within the last 1 to 2 years for a traffic impact study. ITD's *Requirements for Transportation Impact Studies* identifies that traffic volumes can be obtained by setting out traffic recorders or by using existing traffic counts that are not more than one year old (Reference 2).
  2. Increasing the peak hour trip generation estimate by 30% due to the expected larger meeting size is appropriate.
  3. The study notes that the trip generation estimates are based on the Institute of Transportation Engineers (ITE) published reference *Trip Generation, 5<sup>th</sup> Edition*; however the trip generation appears to be based on the Hefron study included in the appendix. The reference to ITE should be removed.
    - a. Use of the Hefron study in lieu of the ITE manual is appropriate since it is use-specific data. However, if the ITE manual were used, the trip generation should be estimated based on the most recent manual edition, 8<sup>th</sup> Edition.
  4. The tables on Page 6 are not clear. They appear to be related to trip generation; however, they should be titled to make it clear to the reader.
    - a. In the first table - The second column heading appears to be mislabeled. The data in this column does not appear to be daily trip data. This should be corrected.
    - b. In the first table - It is confusing how the design totals are arrived at and what purpose they serve as they are not referenced again in the report. This should be clarified.
    - c. In the second table - It is not clear what the information in this table represents or how it has been arrived at. It follows a discussion of how little traffic will be generated during the weekday commuter peak hour leading the reader to believe it is a breakdown of daily trip generation from the site to prove this point. However, the numbers in this table do not appear to be consistent with the data in the Hefron study.
      - i. An estimate of weekday p.m. peak hour trip generation for the site should be provided in the study in order to show whether a study of this time period is warranted.

## Study Analysis Procedures

The following are our findings related to the analysis procedures in the report, or that should be in the report:

1. The study does not analyze traffic operations at the study intersections. The Local Highway Technical Assistance Council (LHTAC) guidelines provided by the County to the applicant indicate that such an analysis should be performed.
  - a. The SH 33/7000 South intersection should be analyzed for a Sunday morning peak hour when the site's trip generation is expected to be the highest. This analysis should be conducted using the current version of the *Highway Capacity Manual* adopted by ITD.
  - b. This analysis should also examine whether or not turn lanes on SH 33 will be warranted with the build-out of the site according to the turn lane warrants contained in Section 450 of the ITD *Traffic Manual*, which can be found here: [http://itd.idaho.gov/manuals/Online Manuals/Traffic/index.htm](http://itd.idaho.gov/manuals/Online%20Manuals/Traffic/index.htm).
    - i. A similar analysis should also be conducted to determine if turn lanes are warranted on 7000 South at the site access driveways.
  - c. These analyses will require that a peak hour traffic volume count be conducted at the SH 33/7000 South intersection.
2. A figure showing the distribution of site-generated traffic onto 7000 South and SH 33 is not provided. The text indicates that all site-generated traffic is expected to use SH 33 to reach the site. However, it should also provide a directional distribution (i.e. the percentage of traffic coming from/going to the north and the percentage coming from/going to the south).

## Study Findings

The following are our comments related to the findings of the study:

1. The study recommends that improvements be made to 7000 South from SH 33 to the site's western access to bring the road up to County standards. This is appropriate.
  - a. However, the report should be revised to indicate whether or not turn lanes are warranted on 7000 South at the site access driveways.

- b. If turn lanes are warranted, the report should indicate the amount of storage space that will be required for queues of turning vehicles.
2. The study indicates that turn lanes will be needed at the intersection of SH 33 and 7000 South (the *SH 33 Corridor Plan* [Reference 3] also indicates that future development will trigger the need for turn lanes at the intersection). It does not, however, indicate whether the project is causing these needs or if they are preexisting conditions. Similarly it does not indicate if the project will be expected to contribute to the construction of these and to what extent it should contribute.
  - a. The report should be revised to clearly estimate the impacts of the project on this intersection, through operational and turn-lane warrant analyses, and from these estimates, provide recommendations for the project's contributions, if any, to these improvements.
  - b. If turn lanes are warranted, the report should indicate the amount of storage space that will be required for queues of turning vehicles.

## Conclusion

We recommend the applicant revise the traffic study as noted above. Please do not hesitate to contact us with any questions or comments.

## References

1. Idaho Transportation Department. *Highway Data Quest* application.  
<http://www3.idaho.gov/cgi-bin/webster.cgi>. Accessed December 21, 2011.
2. Idaho Transportation Department. *Requirements for Transportation Impact Studies*.  
<http://itd.idaho.gov/highways/ops/Traffic/PUBLIC%20FOLDER/Traffic%20Impact%20Study/Traffic%20Impact%20Study%20Requirements.pdf>. 2011.
3. W&H Pacific and KMP Planning. *SH 33 Corridor Plan – US 20 to Wyoming Border*. 2002.



Teton County Engineer

January 27, 2012

AW Engineering  
PO Box 139  
255 S Main Street  
Victor, ID 83455

RE: for Blackfoot Farms (Driggs Stake)-Traffic Study Report review findings

Dear Mr. Woolstenhulme,

The following comments pertain to the revised Traffic Study Report dated 1/10/2012. This report addressed many but not all of the items identified in the January 3, 2012 Kittelson & Associates review of the original Traffic Study Report dated 11/22/2011.

Kittelson & Associates Comments dated 1/3/2012:

Study Data

1. Addressed
  - a. Addressed
  - b. Addressed
2. The report states the Heffron Study data result were increased by 30%. However it does not appear that the 30% was applied to the anticipated trip generation for Sundays. Additionally the source for the anticipated weekday trip generation should be clarified
3. Addressed
  - a. Addressed
4. See itemized comments
  - a. The Heffron Traffic Data table is still mislabeled
  - b. Addressed
  - c. Addressed

Study Analysis Procedure

1. Addressed
  - a. Addressed
  - b. Addressed (see attached telephone call summary with ITD)
    - i. Addressed
  - c. Addressed
2. No figures were provided.

Study Findings

1. W7000S Improvements

- a. Addressed
  - b. No storage space/queuing calculations were provided.
2. Addressed (see attached telephone call summary with ITD)
    - a. Addressed
    - b. No storage space/queuing calculations were provided.

Additional Comments from Teton County Engineer

1. Page 2 Table: The current county road names should be used (500W & 7000S)
2. Page 5, 2<sup>nd</sup> & 3<sup>rd</sup> Tables: Please label the traffic directions for the Highway 33
3. Page 6, 1<sup>st</sup> Table:
  - a. The 3<sup>rd</sup> column is mislabeled (see Kittelson Comments above)
  - b. The report states a 30% increase was added to the Heffron data, however only a 5% increase is shown in this table.
4. Page 6 3<sup>rd</sup> Table: Please indicate the data source for the 50vph generated by the church.
5. Page 7: Please clarify the data source for the project generated "250 vph peak traffic".
6. The figures provided show a turn lane on 7000S to the east access only. Per the report, traffic will equally split between both accesses on 7000S. Based on these assumptions is a turn lane will be required for the east and west accesses?

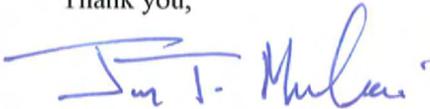
Conclusion

The revised report identifies the impacts of the proposed project and proposes solutions to mitigate these impacts. The proposed improvements for the 7000S/Hwy 33 intersection are, in general, acceptable to the Idaho Transportation Department (see attached correspondence). The proposed improvements for 7000S are, in general, acceptable to me, with the exception that an additional turn lane at the west access appears to be needed. The applicant will need to continue to work with county regarding the design of these improvements. Additionally, all of the proposed improvements should be required as part of the County approval process.

The report contains some technical issues, noted above, that require clarification. The report should be updated to addresses all of the items noted. A final completed report should be submitted with the design plans for the improvements.

If you have any questions or comments, please call.

Thank you,



Jay T. Mazalewski, PE  
Teton County Engineer

Cc:  
Teton County Planning Department  
City of Victor  
NBW Architects  
Blackfoot Farms, LLC

## Jay Mazalewski

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**From:** Jay Mazalewski  
**Sent:** Thursday, January 26, 2012 3:33 PM  
**To:** 'Matt Davison'  
**Cc:** Wendy Danielson; Curt Moore  
**Subject:** Hwy 33 & W7000S - Teton County

Matt,

Thank you for taking the time to speak with me today. I hope this email summarizes our conversation, if I have missed anything please let me know.

You reviewed the revised Traffic Study Report dated 1/10/12 for the LDS Church-Driggs Stake. In general, you agreed with the recommended improvements for the W7000S and Highway 33 Intersection. Although the study did not provide all of the requested information, the study contained enough information to warrant the recommended turn lanes. Therefore an update of the study at this time is not necessary from your view. ITD would like to team up with the applicant and Teton County to ensure the design and construction meets ITD Standards.

ITD may be willing to assist with the intersection design as part of the collaboration.

The level of detail in the construction drawings will depend on who is constructing the intersection.

Some ways the County may assist is through project oversight, inspection, or materials.

ITD will look to the county to ensure that the recommended improvements are constructed as part of this project.

ITD will wait for the County to initiate negotiations regarding collaboration on the intersection improvements.

If you have any questions, please call.

Thank you,  
Jay

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