TRAFFIC IMPACT STUDY GUIDELINES

This section describes the traffic impact study requirements of the Associated Highway Districts of Kootenai County. Traffic impact study requirements will be identified by individual Highway District staff during pre-application and submittal will be required prior to project approval. Improvements or strategies identified by the traffic impact study to mitigate traffic and transportation impacts may be a condition of any approval or permit, and shall be constructed prior to the issuance of said permit; unless specified otherwise by the agency.

An applicant wishing to pursue a land use action within a Highway District shall first submit a ***trip generation and distribution letter*** for review. The Highway District will use this letter to help determine whether a ***traffic impact study*** should be required for the proposed land use action/project.

Trip Generation and Distribution Letter

A Trip Generation and Distribution (TG&D) letter may be required of an applicant wishing to pursue land use actions. This includes actions for both new and redevelopment land use actions. The purpose of the TG&D letter is intended to help the staff determine whether a traffic impact study will be required for the development. The letter should be submitted shortly following pre-application discussions/interviews, as to provide the applicant sufficient time to develop a traffic impact study, if required by the Highway District, prior to project approval. The information provided within a TG&D letter should include:

- **Project Location.** A written description of the project location in relation to state highways, major, and/or minor arterials located within the vicinity of the project site. The site should also be displayed graphically on an attached figure.
- **Project Action.** A written description of the land use actions should be provided. The description should include: use and size of the project (both site area and, as available, building area); existing and proposed zoning; project access locations; and development/phasing and completion schedules. A graphical site plan is desired as an attached figure, when possible.
- **Trip Generation.** The study should identify the number of trips anticipated with project development. Trip generation should be determined based upon the methodologies of the most current, Institute of Transportation Engineers (ITE) Trip Generation Manual (current edition); unless trip generation data more applicable to the proposed land use can be presented by the applicant. The Highway District staff will determine whether supplemental trip generation data can be utilized. When relevant, total project trips will be separated into trip types (i.e. new, pass-by, diverted, and shared) to better describe the traffic characteristics of retail and commercial developments. Trip types shall also be identified using ITE resources or some other means acceptable to the Highway District staff. Project trip generation shall be provided for the typical weekday, weekday AM peak hour, and weekday PM peak hour only; unless the Highway District staff specifies some other time period for analysis (i.e. Saturday or Sunday peak hours).
- **Trip Distribution and Assignment.** A description of project trip distribution and assignments will be provided in the study. The methodologies used to distribute and assign project trips will be discussed/provided in the TG&D letter. As a guide, trip assignments should be provided for site access and key intersections located within the direct vicinity of the site, and for those key intersections projected to support more than 25 peak hour trips beyond the immediate site vicinity during the typical weekday or other time period specified by the Highway District staff.

Traffic Impact Study

A Traffic Impact Study (TIS) is intended to forecast and, as needed, provide improvements to mitigate the transportation and traffic impacts of a proposed land use development or redevelopment project. A TIS will be required at the discretion of the Highway District; however, the Highway District may typically require a TIS when one or more of the following conditions are met:

- Project is projected to generate more than 50 trips during the AM and/or PM peak hours (or some other time period specified by the Highway District).
- The Highway District anticipates that project driveway trips will significantly impact traffic operations on adjacent arterials.
- The project is proposed along a route(s) that historically experiences or is projected to experience traffic safety issues.
- The project is proposed within the vicinity of a school, community park, or some other area with high levels of pedestrian and neighborhood activity.

The scope and extent of the TIS is also established at the discretion of the Highway District. Generally, the TIS will address traffic conditions/operations during the single hour of peak traffic activity during the typical weekday (i.e. peak "rush hour") on adjacent streets. In some instances, adjacent street activity will not vary significantly throughout the day, thus requiring the analysis of multiple peak hour conditions. Similarly, the project may generate significant levels of traffic during multiple periods of the day; thus, requiring additional analysis periods. The Highway District also may request an analysis of other time periods such as peak hours during the typical Saturday or Sunday, when relevant.

For those land use projects that generate between 50 and 99 peak hour trips, the Highway District will typically require the TIS to address traffic operations/conditions at site driveways and at key intersections located immediately upstream/downstream of the project site. For those projects that generate greater than 100 peak hour trips, the Highway District may elect to include additional intersections that experience a net increase of more than 25 peak hour trips.

The TIS, if required, will be developed and submitted prior to project approval. Any improvements/mitigations required of a project will be completed prior to the issuance of a building and/or occupancy permit as project phasing thresholds are realized or the project is completed and ready for occupancy. Project mitigations will be required at the discretion of the Highway District; however, the Highway District will work to assure that improvements are proportionate to the level of the project's impact. Typically, the applicant can expect one or more of the following:

- **Frontage Improvement:** Frontage improvements provide the Highway District the opportunity to progress road, drainage, and pedestrian/bicycle accommodations in a manner consistent with current Associated Highway Districts Highway Standards. Frontage improvements would extend along roadways within, or along, project boundaries and can include, but would not be limited to, half-road improvements, sidewalk/pathway construction, bike lanes, parking lanes, drainage areas, and landscape buffers.
- **Direct Mitigation:** The Highway District may require a project to directly improve a street or intersection that experiences a proportionate increase of traffic, as the result of project development. Typical improvements may include, but are not limited to, channelization/turn lane

construction/extension, signal implementation, road widening, sidewalks, bike lanes, parking lanes, drainage areas, etc.

- **Partial Mitigation.** The Highway District may allow an applicant to participate proportionately with other applicants and/or other public entities to construct improvements that are not exclusively the responsibility of any single applicant or entity. The applicant could share a proportionate percentage of the costs associated with turn lane construction, signal implementation, road widening, sidewalks, bike lanes, parking lanes, drainage areas, etc. The project's proportionate share of an improvement is typically determined by dividing project trip assignments along a roadway section or at an intersection by total projected volumes.

In addition to the project location, project action, trip generation, and trip distribution/assignment information required of the TG&D letter, a TIS report must also include the following:

- **Introduction.** The introduction must define the purpose of the TIS, provide a project description, discuss the scope and extent of the study, and discusses methodology and assumptions. The introduction should also provide the site location and description information, as highlighted by the TG&D section, for the TIS. Site location and site plan figures are required with the TIS.
- **Roadway Inventory.** A TIS must provide a description of the transportation network located within the project study area, as established by the Highway District. These descriptions include roadway classifications, roadway channelization, speed limits, intersection controls (signal, stop-controlled, traffic calming techniques, etc.), intersection channelization (includes turn lane storage), etc. A figure highlighting roadway characteristics (class, lanes, and speeds) and intersection channelization and controls is recommended.
- **Traffic Counts.** Recent weekday and peak hour traffic counts must be secured for study of arterials and intersections. Average daily traffic/24-hour (weekday) counts must be secured for at least one location on primary study arterials. Intersection turn movement counts must be obtained for study of intersections identified by the Highway District for peak study hours. Counts conducted 2 years prior to study initiation cannot be used in the TIS and must be updated. A figure that summarizes existing turn movement counts is required in the TIS. Weekday counts can either be summarized graphically or in a table within the TIS. Raw count data should be included in an appendix to the TIS.
- **Accident Histories (Discretionary).** The Highway District may require collision histories for roadways and intersections located within the study area. Typically, the most current 3-year period of collision activity is requested from ITD and/or local officials. The data is examined to summarize accident and severity activities; highlight the reoccurrence of particular accident types; and sometimes to examine accident frequency/rates as compared with Idaho State averages.
- **Programmed Improvements.** The TIS must describe any improvements that are programmed by agencies or other developments, as they may influence travel patterns or capacity within the study area. Programmed improvements must be factored, as necessary, within traffic forecasts and the future operations analysis. A figure highlighting programmed improvements is recommended. Kooenai County, ITD District 1, local transportation improvement program documentation, Kootenai Metropolitan Planning Organization, and other TIS traffic studies are typical resources to identity future improvements. The source for each improvement must be identified within the TIS.
- **Baseline (Without-Project) Forecasts.** Baseline traffic volumes should be developed for the forecast horizon/build-out year of the proposed project. Forecast traffic volumes will be developed by using a specific annual growth rate, as identified through historical traffic counts and confirmed by the Highway District staff or as obtained directly from the Highway District. As necessary, the trips generated by recently approved, concurrently developing projects should be included into baseline

forecast projections. The Highway District will identify these "pipeline" projects and should typically be able to provide trip assignments from other relevant TIS studies. In some instances, pipeline trip assignments may need to be assumed for the study area. A figure that summarizes pipeline project locations and pipeline project trip assignments is required with the TIS. A figure that highlights future baseline traffic volumes is also required.

- **Future Project Volumes.** Project trip generation, distribution, and assignment must also be summarized in the TIS, as specified by the TG&D section. Future 'with-project' traffic volumes will be developed by combining project trip assignments with baseline traffic volumes. Figures that highlight project trip assignments and future 'with-project' traffic volumes are required with the TIS.
- **Traffic Operations.** Traffic operations shall be gauged according to the intersection/driveway level of service (LOS) methodologies of the most current Highway Capacity Manual (HCM), as developed by the Transportation Research Board. A range of software options is acceptable for LOS calculations so long as methodologies are consistent with the HCM. LOS worksheets providing summary assumptions (channelization, controls, peak hour factors, heavy vehicle assumption, etc.) must be provided in the appendix to the TIS.

  The LOS analysis will be provided for the existing, future baseline, and future with and without project conditions at site driveways and at study intersections. Note that LOS C is the threshold for traffic operations at signalized intersections, unsignalized intersections, and at project driveways unless specified otherwise by the Highway District.
- **Capacity Improvements.** As needed, improvements shall be recommended to mitigate capacity issues within the study area (those intersections/driveways projected to operate below LOS C). The estimated project's responsibility towards improvements should be provided based upon the general criteria summarized previously by this document. MUTCD (Manual on Uniform Traffic Control Devices) warrants should be utilized to support the need for 4-way stops and signals, as needed. AASHTO (American Association of State Highway and Transportation Officials, current edition) and/or ITD (Idaho Transportation Department) standards should be used to support the need for acceleration/deceleration lanes.
- **Queuing Analysis.** 95th-percentile queues should be summarized for existing and proposed intersection turn lanes based upon the future project and improved/mitigated conditions. Per the discretion of the Highway District staff, turn lanes would be extended, as necessary, to accommodate forecast traffic volumes with the development of the project. The project plus 5-year analysis is only required for those lanes or intersections that are proposed for improvement.
- **Additional Analysis (Discretionary).** The Highway District may require additional analyses with the TIS that may include, but would not be limited to, weekday traffic forecasts, turn lane warrants, sight distance assessment, heavy vehicle characteristics (forecasts, operating times, turning pathways, etc.), special analysis conditions, pedestrian/bicycle facilities, air quality, noise, etc.
- **Summary and Conclusion.** The TIS must contain a summary section that clearly highlights the conclusions and recommendations of the study. This summary section should, if separated from the document for cursory review by members of the public or a public agency, provide sufficient detail to convey a description of the project, provide a summary of trip generation and study results, and provide a clear understanding of proposed improvements and requirements/conditions of the project.

The attached spreadsheet summarizes the primary checklist that will be used for reviewing TIS reports. The spreadsheet also shows the preferred contents of a TIS.

Associated Highway Districts Traffic Impact Study Checklist (EXAMPLE)

I. Introduction	Clearly Defined Yes	Clearly Defined No
A. Study Purpose		
B. Project Location		
C. Project Description		
D. Scope of Work		
E. Methodology and Assumptions		

Location:	
Action (Size):	
Access:	
Proposed Zoning:	
Comments:	

II. Existing Conditions	Clearly Defined Yes	Clearly Defined No
A. Roadway/Intersection Network		
B. Existing Volumes		
C. Existing LOS		
D. Collision Histories		

LOS Issues:	
Safety Issues:	
Comments:	

III. Future Baseline Conditions	Clearly Defined Yes	Clearly Defined No
A. Programmed Improvements		
B. Baseline Traffic Volumes		
C. Baseline Level of Service		

Growth Rate:	
Pipeline Projects:	
LOS Issues:	
Comments:	

IV. Future Project Conditions	Clearly Defined Yes	Clearly Defined No
A. Project Trip Generation		
B. Trip Distribution and Assignment		
C. With-Project Volumes		
D. With-Project LOS		
E. Queues		

Trip Generation:	
Trip Distribution:	
LOS Issues:	
Project Impacts:	
Queing Issues:	
Comments:	

V. Improvements and Mitigation	Clearly Defined Yes	Clearly Defined No
A. Improvement Options		
B. Project Contribution		
C. Project Longevity		

Improvements:	
Project Share:	
Comments:	

VI Summary and Conclusions (Project defined, trip generation, LOS Results, safety, improvements, mitigation)	Clearly Defined Yes	Clearly Defined No

Comments:

VII. Other Study Issues:	Clearly Defined Yes	Clearly Defined No
a. Lane Warrants		
B. Sight Distance		
C. Heavy Vehicles		
D. Pedestrian Facilities		
E. Signal Warrants		

Figures:	Provided / Comments
Site Plan	
Site Location	
Channelization	
Existing Volumes	
Pipeline Volumes	
Baseline Volumes	
Project Volumes	

General Study Comments:

(EXAMPLE)

TRIP GENERATION AND DISTRIBUTION LETTER

PURPOSE: The purpose of the Trip Generation and Distribution (TG&D) letter is intended to assist the Highway District staff determine whether a traffic impact study will be required for the proposed Development. This is required for both new and modified existing land use actions.

The information provided within a TG&D letter should include:

PROJECT LOCATION: A written description of the project location in relation to state highways, arterials, and county roads located within the vicinity of the project site.

_____
_____
_____
_____
_____

PROJECT ACTION: A written description of the land use actions and should include the use and size of the project, existing and proposed zoning, project access locations, and development/phasing and completion schedules._____
_____
_____
_____
_____
_____

TRIP GENERATION: Trip Generation should be determined based upon the methodologies of the most current, Institute of Transportation Engineers (ITE) Trip Generation Manual for the weekday AM peak hour and weekday PM peak hour, unless the Highway District specifies some other time period for the analysis.

Typical Trip Generation Rates for Land Use

Land Use	AM Peak Hour Rate	PM Peak Hour Rate	Multiplying Factor
Single Family Detached Housing	0.77	1.02	# of Dwelling Units
Residential Condominium / Townhouse	0.44	0.52	# of Dwelling Units
Mobile Home Park	0.44	0.60	# of Dwelling Units
Residential Planned Unit Development	0.58	0.72	# of Dwelling Units

AM peak vehicles per hour (vph) = _____X_____ = _____(vph)

PM peak vehicles per hour (vph) = _____X_____ = _____(vph)

TRIP DISTRIBUTION AND ASSIGNMENT: A description of project trip distribution and assignments will be provided in the Traffic Impact Study. The methodologies used to distribute and assign project trips will be discussed/provided in the TG&D letter. As a guide, trip assignments should be provided for site access and key intersections located within the direct vicinity of the site, and for those key intersections projected to support more than 25 peak hour trips beyond the immediate site vicinity during the typical weekday or other time period specified by the Highway District staff.

TRAFFIC IMPACT STUDY:

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- The project is proposed along a route(s) that historically experiences or is projected to experience traffic safety issues.
- The project is proposed within the vicinity of a school, community park or some other area with high levels of pedestrian and neighborhood activity.

If you have questions regarding the requirements of a Traffic Impact Study (TIS) you may contact the individual Highway District.