



PARK CITY MUNICIPAL CORPORATION TRAFFIC IMPACT STUDY GUIDELINES



TECHNICAL MEMORANDUM

DATE: June 23, 2023
TO: John Robertson, PE
FROM: Kyle Stahley, PE
Charles Allen, PE, PTOE
SUBJECT: Transportation Impact Study Guidelines

This memorandum includes the transportation impact study guidelines prepared for Park City. The guidelines are based on recommendations from the ITE Recommended Practice manual for *Multimodal Transportation Impact Analysis for Site Development* along with guidance from the UDOT *Traffic Impact Study Requirements*. The guidelines were reviewed and revised by Park City staff and a third-party engineering consultant.

PARK CITY TRANSPORTATION IMPACT STUDY (TIS) GUIDELINES

The following guidelines have been approved by the City Engineer's Office of Park City Municipal Corporation and reviewed by the Planning Commission to provide a framework for when a transportation impact study may be required for new land use developments or redevelopments in Park City. The required contents of the transportation impact study are also provided in these guidelines.

Transportation impact studies should be submitted to the City concurrent with or prior to submittal of the development application as action will not be taken on the application until final approval of the transportation impact study. Along with the transportation impact study, the intake checklist attached at the end of this document should be completed and included with the submittal.

Project Scoping Memo

A scoping memo should be prepared and submitted to the City Engineering department prior to beginning the transportation impact study to clarify the proposed development project details. The scoping memo should include the following items:

- Description of the proposed development's land uses,
- Anticipated construction schedule,
- Preliminary site plan,
- Project location and site access,
- Estimated vehicular trip generation and mode share assumptions,
- Project trip distribution,
- Proposed study intersections,
- Proposed traffic volume growth rates, and
- Any other relevant project-specific information.

Given the unique nature of vehicle traffic and seasonal patterns in Park City, city staff may amend the impact study requirements on a project-by-project basis.

Study Requirement Threshold

A transportation impact study is required when a proposed development or redevelopment will generate 25 or more net new vehicle trips during the weekday AM or PM peak hour or other analysis hour at the discretion of Park City staff.

Table 1 shows the approximate land use size that would generate 25 new vehicle trips during the weekday PM peak hour. In addition to the weekday PM peak hour, the weekday AM peak hour should also be reviewed to estimate the trip generation of the proposed development. Studies are only required to analyze the peak hours in which the proposed project would be anticipated to generate 25 or more vehicle trips. Proposed developments may take credit for the vehicle trips generated by existing land uses to be replaced on the project site.

Table 1. Approximate Size of Development to Generate 25 Weekday PM Peak Hour Trips

Land Use	ITE Land Use Code	Land Use Size
Single Family Detached Housing	210	25 dwelling units
Single Family Attached Housing	215	45 dwelling units
Multifamily Housing (Mid-Rise)	221	60 dwelling units
Hotel	310	40 rooms
General Retail	822	3,000 sf
Office	710	15,000 sf
Sit-Down Restaurant	932	2,500 sf
Fast Food / Fast Casual Restaurant	934	800 sf

Source: ITE *Trip Generation*, 11th Edition

Study Area Intersections

All transportation impact studies will analyze at least five main intersections in Park City, including the following:

- Park Avenue / Kearns Boulevard,
- Bonanza Drive / Kearns Boulevard,
- Comstock Drive / Kearns Boulevard,
- Park Avenue / Deer Valley Drive, and
- Bonanza Drive / Deer Valley Drive.

In addition to the required intersections listed above, the study should also analyze the site access driveway to the public roadway and intersections based on the following criteria:

- Roundabouts or traffic signals impacted by 20 or more new weekday peak hour vehicle trips,
- Stop-controlled intersections impacted by 20 or more combined new weekday peak hour vehicle trips on stop-controlled approaches, and
- Any additional study intersections (including side-street stop-controlled intersections) at the discretion of city staff based on the proposed project’s location, size, or land use type.

Study Time Period

The design day for the transportation impact study should reflect a typical Friday during the peak winter (January to mid-March) period. Friday was chosen as the design day due to the combination of typical day-to-day traffic

including school and employment as well as increased weekend visitor traffic. The required study time periods include the highest one hour of adjacent street traffic during the AM (8-10 a.m.) peak and PM (3:30-5:30 p.m.) peak hours.

Traffic Data

Existing traffic data will be collected by Park City at the five core signalized intersections (listed above) during the peak winter period and provided to the project developer for each of the required peak study periods. Traffic data at additional locations should be collected by the project developer at each intersection for each required peak period and adjusted using seasonal adjustment factors shown in Table 2. At some intersections, it may be appropriate to increase or decrease specific movements (e.g., those which would or would not be affected by seasonal traffic) by higher percentages than others; however, the total entering intersection volume should be adjusted consistent with the seasonal adjustment factor shown. The methodology used to factor intersection traffic volumes should be described in detail in the transportation impact study.

Proposals to use alternate traffic count data or alternate seasonal adjustment factors should be clearly stated with justifying information in the project scoping memo for approval by City Engineering staff.

Table 2. Traffic Count Adjustment Factors (Estimated Percent of Peak)

Count Season	AM Peak Hour	PM Peak Hour
Winter (11/1-4/1)	100%	100%
Spring (4/1-6/15)	70%	70%
Summer (6/15-9/1)	75%	85%
Fall (9/1-11/30)	75%	80%

Source: UDOT Continuous Count Station Data, 2022

Project Trip Generation

Site-generated trips for all modes of travel (e.g., vehicular, walking, bicycling, and transit) expected for the proposed development should be estimated using trip generation rates and methodologies described in the most recent editions of the ITE *Trip Generation* and ITE *Trip Generation Handbook*. Trip generation rates published in *Trip Generation* for the weekday peak hours may be used if Friday-specific data is not available for the project land uses(s). When available, additional information collected from surveys of similar developments, local mode share data, or US Census data can also be utilized to aid in calculations of trip generation and mode split estimates. Assumptions used to determine the trip generation (including transit and non-motorized transportation mode splits), as well as any supplemental backup data, should be clearly described and documented in the project scoping memo for approval and in the completed transportation impact study.

Project Trip Distribution and Assignment

The project trip distribution should be determined using the best available information for the area with project trips assigned to the roadway network using realistic routing estimates. The methodology and assumptions used to develop the project trip distribution should be outlined and documented in the scoping memo and the completed transportation impact study.

Traffic Volumes

Traffic volumes should be developed for the following analysis scenarios:

- Existing,

- Year of project opening (if different from existing) without project-generated traffic volumes (baseline),
- Year of project opening with project-generated traffic volumes,
- Ten years beyond year of project opening without project-generated traffic volumes, and
- Ten years beyond year of project opening with project-generated traffic volumes.

Any intermediate project phases anticipated to be completed and occupied before project buildout should also be evaluated.

Existing traffic volumes should be based on counted and seasonally adjusted traffic data. Future, without-project traffic volumes should be developed using annual growth rates determined from the Summit County Transportation Demand Model as well as include traffic volumes from other in-process developments that have been submitted with complete applications but yet to be constructed. Park City staff will provide a list of in-process projects to be considered.

Traffic Operations Analysis

Traffic operations at study intersections should be analyzed using the most recent *Highway Capacity Manual* methodology. Peak hour factors should be calculated and applied to the intersection as a whole, whereas heavy vehicle percentages should be applied by approach or individual movement. Each study intersection's level of service (LOS) and average vehicle delay should be reported. The City requires an operational standard for intersections that maintains overall steady traffic conditions with higher densities that may experience congestion on critical approaches, equivalent to LOS D or better.

In addition to vehicular level of service, the 50th and 95th percentile queue lengths and available queue storage should be reported for each intersection. At intersections where the 50th percentile peak hour queue exceeds the available storage, the traffic operations analyses should be reviewed to determine if spillback queueing affects the traffic operations at other intersections within the roadway network.

Context-sensitive mitigation measures should be examined for intersections that exceed the level of service standard or produce queues that affect traffic operations at other intersections. These measures may include, but are not limited to, the implementation of transportation demand management and trip reduction agreements, physical roadway improvements, and/or changes to traffic control or optimization of traffic signal timing.

Software files for all analysis and mitigation scenarios should be submitted to the City Engineers office along with the transportation impact study.

Site Access Analysis

The connection of how each vehicular site access connects to the existing roadway system and the level of service at each access point should be evaluated. Include analysis showing the driveway sight triangles meet sight distance requirements published in the *AASHTO A Policy on Geometric Design of Highways and Streets*. The access points for people walking and biking to the proposed development should be described. The location of commercial vehicle access for loading/unloading and deliveries should be evaluated.

Parking

The parking demand for the proposed project should be estimated and compared to the proposed supply and the requirements specified in the Park City Municipal Code. Reductions to the parking supply requirements described in the Park City Municipal Code may be presented for Planning Commission approval. Coordination with Park City planning department staff should be initiated before submittal of the study for any parking reduction requests.

The location, access, and quantity of on-site bicycle parking that is being provided for both short-term users and secure, long-term use should also be documented.

Traffic Safety

Historical crash data should be summarized at each study intersection for the previous five-year period using records from the Numetric database. Crash patterns should be identified and described along with anticipated changes that could occur with the proposed project's development. For any proposed roadway improvements, a safety analysis using crash modification factors as outlined in the AASHTO *Highway Safety Manual* should be conducted to compare the predictive safety of different types of treatments that could be implemented at the location.

Non-Motorized Transportation

The estimated mode share and number of trips for people walking and bicycling to the proposed development, completed as part of the trip generation, should be documented. The pathways and routes people will use to connect to the non-motorized transportation network (including any planned improvements) should be documented.

Transit Access Analysis

Existing transit lines and service headways within one-quarter mile of the proposed project should be documented. The estimated mode share and number of trips for people walking to transit, completed as part of the trip generation, should be described along with evaluating the safe walking route and estimated distance to access the nearby transit stops from the proposed development.

Park City Transportation Impact Study (TIS) Intake Checklist

Project Address: _____

Project Land Use(s) and Quantity: _____

TIS Scoping Memo Submittal Date: _____ Approval Date: _____

ITE *Trip Generation* Edition: _____

Weekday AM Peak Hour Net New Trip Generation: _____

Analysis Required: Yes No

of Study Intersections: _____

Weekday PM Peak Hour Net New Trip Generation: _____

Analysis Required: Yes No

of Study Intersections: _____

Traffic Operations Analysis Software / Edition: _____

AASHTO *A Policy on Geometric Design of Highways and Streets* Edition: _____

ITE *Parking Generation* Edition: _____

Proposed Parking Supply: _____

Estimated Parking Demand: _____

Crash Records Source / Years: _____