TRANSPORTATION IMPACT ANALYSIS GUIDELINES

City of Aspen, CO, September 2025

CITY OF ASPEN

TRANSPORTATION IMPACT ANALYSIS GUIDELINES

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As documented in the Aspen Area Community Plan (AACP), the City is committed to providing an efficient, multi-modal and integrated transportation system that reduces congestion and air pollution.

The City's transportation philosophy, as stated in the AACP, comes from the community's desire to maintain a quality of life that reflects how a small town looks and feels, while accommodating the function of a resort area. Traffic volumes in Aspen should be less than what they are today. Aspen's future should be one in which the automobile plays a smaller role in people's everyday lives. Additional infrastructure should not be built to accommodate more vehicles, but should increase the percentage of trips made via alternative modes of transportation. This can be accomplished by continuing to make mass transit and the pedestrian/bike trail system more convenient, efficient, accessible, affordable and enjoyable.

Transportation is inextricably linked to land use issues. Decisions about development have a direct impact on Aspen's transportation system. In order for transportation impacts of new development to be anticipated and mitigated, it is important to understand how much traffic will be generated by each new development or redevelopment project.

Aspen's long-standing commitment to transportation options helps reduce traffic congestion, improves air quality, reduces greenhouse gas emissions, promotes public health and reduces our dependence on non-renewable resources. Additionally, this commitment ensures that transportation improvements are planned, designed and constructed to encourage walking, bicycling and transit use while promoting safe operations for all users. By evaluating and mitigating transportation impacts the City will ensure that development will achieve the following:

- Plan for, design and construct all new transportation improvement projects to provide appropriate accommodation for pedestrians, bicyclists, transit riders, and persons of all abilities, while promoting safe operation for all users.
- Operate and maintain the transportation network to improve travel conditions for bicyclists, pedestrians, transit, and motorists in a manner consistent with, and supportive of, the surrounding community.
- Improvements will include an array of facilities and amenities including: street and sidewalk lighting; pedestrian and bicycle safety improvements; intersection improvements; access improvements, including compliance with the Americans with Disabilities Act; public transit facilities accommodation including, but not limited, to

pedestrian access improvement to transit stops and stations; street trees and landscaping; drainage; and street amenities.

INTRODUCTION

Transportation impact analysis (TIA) guidelines assist applicants with assessing potential transportation impacts of proposed projects. The following guidelines have been developed to provide a clear and consistent technical approach to transportation impact analysis for development projects within the City of Aspen. This helps to ensure the City continues to meet its longstanding goal of limiting, trips over the Castle Creek Bridge to 1993 levels.

This document establishes protocol for transportation impact analyses and mitigation based on the current state-of-the-practice in transportation planning and engineering. The City expects these guidelines to result in a comprehensive and accurate analysis of potential transportation impacts to City facilities and services. These guidelines outline different tiered levels of TIA requirements and mitigation based on the size and location of a project.

The requirements listed in this document are applicable for specific land use development projects in the City of Aspen. Section 2 identifies specific project parameters or "triggers" that necessitate a TIA. For projects that do not meet the exempt threshold, mitigation for any new trips is required through implementation of Program (Transportation Demand Management [TDM]) and Infrastructure measures. Larger projects, as outlined in the Triggers Section, are required to complete more comprehensive analysis.

The City of Aspen has established Aspen-specific trip generation data for all types of development. Development will use these standardized figures to determine trip generation and mitigation requirements.

DEFINITIONS:

Transportation Impact Analysis (TIA)

A Transportation Impact Analysis (TIA) evaluates the potential adverse effects of proposed projects on surrounding and supporting transportation infrastructure and services. A TIA determines if the adverse effects constitute significant impacts, and, if so, how the significant impacts can be mitigated.

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is the application of strategies and policies to reduce travel demand (specifically that of single-occupancy vehicles)

Intent of Study Guidelines

The purpose of the Transportation Impact Analysis Guidelines is to create a standardized system for developments to determine and mitigate transportation impacts. These guidelines address key elements required for preparing and reviewing transportation impact analyses in the City of Aspen. This document is a resource to be applied in concert with professional judgment. The following major issues are addressed in this document.

- Scope and extent of the required study.
- Transportation Impact Analysis (TIA) triggers and methods.
- Mitigation measure requirements including TDM Programs and Infrastructure.
- Criteria to determine if the transportation-related impacts of a proposed project are significant.
- Monitoring and reporting requirements for mitigation measures.
- Guidelines for submittal.

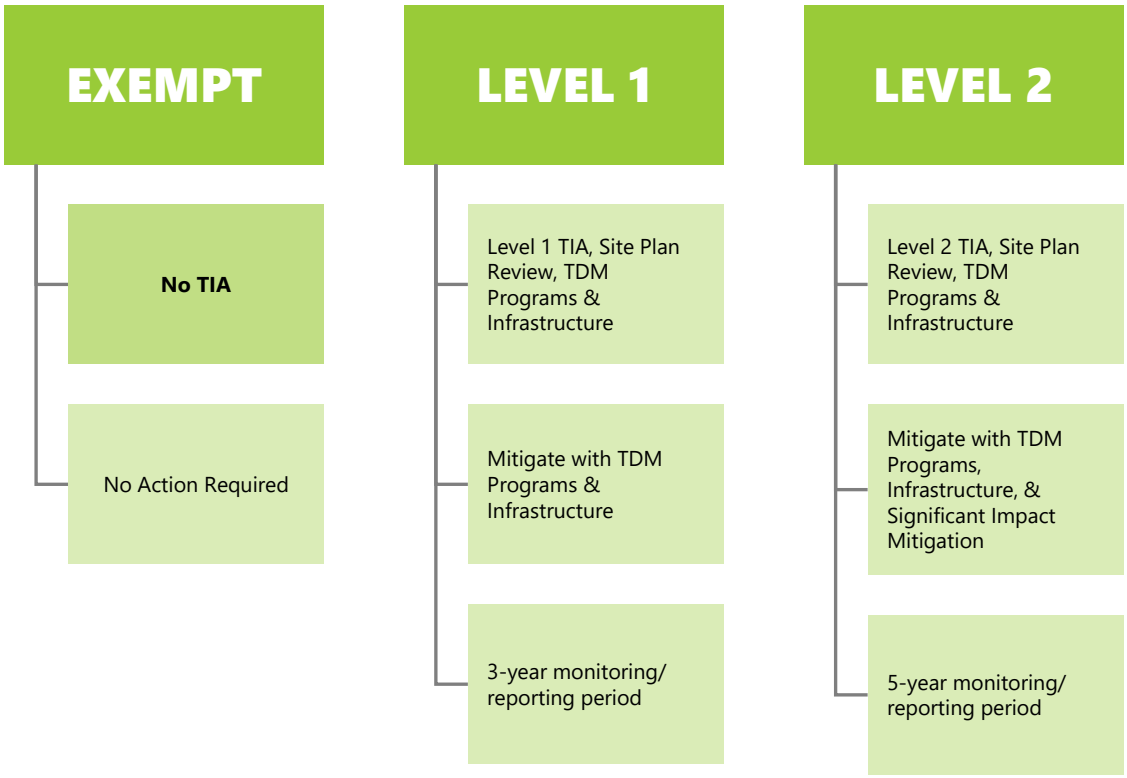
The City of Aspen will primarily review transportation studies and reports based on the guidelines presented in this document. However, each project is unique, and guidelines are not intended to be prescriptive beyond practical. Not all criteria and analyses described in this document will apply to every project. Early and consistent communication with the Engineering and Transportation Departments is encouraged to confirm the type and level of analysis required on a case-by-case basis.

TRIGGERS REQUIRING A TRANSPORTATION IMPACT ANALYSIS

Triggers requiring a TIA are based on the number of peak hour trips the project will generate. Follow the flowchart below and Table 1 to determine the path for your development. Initial trip generation calculations to determine the level of study and mitigation should be made using the Aspen Specific trip generation rates found in Appendix A.

I have a new project in the city of Aspen. What level of TIA do I need?

Calculate trip generation for the proposed development using Aspen-specific trip generation rates and utilizing the Aspen TIA Tool.



Level of Study and Mitigation

The following table shall be used to determine the level of transportation impact study and mitigation required for the proposed development. There are three categories of TIA: Exempt, Level 1, and Level 2.

TABLE 1: TIA STUDY LEVELS

STUDY LEVEL	LEVEL OF STUDY AND MITIGATION	CRITERIA	MONITORING/ REPORTING PERIOD
Exempt	Exempt from TIA requirements and mitigation, and can proceed directly to land use review or building permit (as applicable).	Any development that generates less than 2 vehicle trips during the highest peak hour.	None
Level 1 TIA	Any minor development is required to perform a Level 1 TIA which include capacity analysis, site plan review and mitigation using Aspen specific TDM Programs and Infrastructure tools.	Any development that generates 2 to 25 vehicle trips during the highest peak hour.	Annual reporting for 3 years
Level 2 TIA	Any significant development is required to perform a Level 2 TIA which include capacity analysis and a site plan review. Additionally, the development will mitigate using Aspen specific TDM Programs and Infrastructure mitigation tools in addition to mitigating its significant impacts.	Any development that generates 26 or greater vehicle trips during the highest peak hour.	Annual reporting for 5 years

Level 1 TIA

Qualifying Conditions

A Level 1 TIA, consisting of capacity analysis, TDM Programs, and Infrastructure mitigation, is required for submittal if a proposed development meets the criteria for Level 1 development as shown in Table 1. Copies of the Level 1 TIA are to be submitted as part of the Land Use Application. The report shall be complete and in accordance with these guidelines. The Engineering and Transportation Departments will be referrals for these documents as part of the City's regular land use Development Review Committee (DRC) process.

What is Transportation Demand Management?

Transportation Demand Management (TDM) is the application of strategies and policies to reduce travel demand (specifically that of single-occupancy vehicles)

The City is committed to complete analysis for all modes of travel. This section provides the framework for the scope and methodology used to apply and assess TDM Programs and Infrastructure for the City of Aspen.

Preparation of the Level One TIA

The Project Applicant shall use the Aspen-Specific trip generation figures and calculations described in Appendix A, Table A-1 and A-2 to determine the existing baseline number of vehicle trips as well as the anticipated vehicle trips created by the project. These are based on AM and PM peak hour. The Aspen TIA Tool, found on the City's website (https://www.aspen.gov/FAQ.aspx?QID=184), should also be utilized to help calculate the number of vehicle trips and requirements for mitigation.

The Project Applicant is required to use the Aspen TIA Tool to identify TDM Programs and Infrastructure measures that reduce vehicle trips equal to or greater than the new peak hour trips generated by the project and that address negative impacts to transportation infrastructure. It is up to the Project Applicant to choose the measure(s) that will be compatible with the intended purpose of the project.

Selected TDM Program and Infrastructure measures should be reviewed and approved by the City. A Project Applicant is welcome to contact Engineering or Transportation Department staff with questions regarding the appropriateness of chosen mitigation measures.

Level 1 TIA Outline

In addition to a printed version of the Aspen TIA toolkit a project applicant of a Level 1 TIA shall submit a written document and site plan with the following general outline:

1) Introductory Items

- Front Cover / Title Page
- Table of Contents, List of Figures, and List of Tables

2) Introduction

- Project Description
- Project applicant/contact info
- Location map (include major streets, study intersections, and neighboring zoning and land uses)

3) Copy of completed Aspen TIA Tool spreadsheet

- Project Trip Generation using the City of Aspen specific trip generation figures (Table A-1 and A-2 in Appendix A). These numbers are automatically calculated in the Aspen TIA toolkit.
- AM Peak Trips by Land Use and for entire Project
- PM Peak Trips by Land Use and for entire Project
- Proposed TDM Program and Infrastructure Mitigation Program (Based on the Aspen TIA Tool)
  a) TDM Program Measure Details (including location and description of measures)
  b) Infrastructure Measure Details (including location and description of measures)
  (The TIA tool spreadsheet provides a response cell for the descriptions of each measure. If more space is needed, please attach a Word document.)

4) Site Plan

- Site plan (include proposed driveways, roadways, traffic control, parking facilities, emergency vehicle access, and internal circulation for vehicles, bicyclists, and pedestrians). Specifically call out on the site plan where each infrastructure selected measure is located. For example, if the project proposes an enhanced access point, add a call out on the site plan where the enhanced access point is located.

5) Monitoring and Reporting Requirements

- Scheduling and implementation responsibility of mitigation measures
- Results of implemented measures (what is working and not working
- Assessment of Compliance with Guidelines
- Identify Additional Strategies
- Annual Report Submittal
- Enforcement & Financing

Trip Generation

The peak hour trip generation for a Level 1 TIA is based on Aspen specific trip generation rates and does not require an engineer to calculate. The Aspen specific trip generation rates are located in Appendix A in Tables A-1 and A-2 and can also be calculated by utilizing the Aspen TIA Tool. The Aspen specific trip generation rates were validated for winter and summer season conditions for the following land uses: commercial, residential multifamily (free-market) housing, residential multifamily (affordable) housing, lodging, essential public facility, and mixed-use (included restaurant, residential, and commercial). The City Engineer should be consulted if the proposed development land use is not included in the validated land use categories listed in Tables A-1 and A-2.

Mitigation Measures

All projects shall use the Aspen TDM Programs and Infrastructure mitigations found in the Aspen TIA Tool to determine mitigation measures that will be used for a project. The tool assigns a percent reduction in vehicle trips (TDM Programs) and point values (Infrastructure) to specific measures used to **offset the largest peak hour trip generation**. For example, if a project adds 10 Peak Hour AM trips and 9 Peak Hour PM trips, it will start with -10 points and will need to mitigate at least 100% of the new trips (10 trips) in the Aspen TIA Tool.

Copies of the completed TDM Programs and Infrastructure selections delineating the applicants chosen measures to mitigate at least 100% of the new trips must be provided to the City of Aspen with the completed TIA.

The Aspen TIA Tool provides a list of mitigation measures and the percent trip reduction/points available for each measure.

Proposed TDM Program or Infrastructure mitigation measures should primarily occur on or immediately adjacent to the project site. For instance, a project may include mitigation measures within the right-of-way adjacent to the property, if the measures are approved by the City Engineer. Any development requesting a TDM Program or Infrastructure mitigation measure that will be located off-site shall be approved by the Transportation and Engineering Departments. In such a case, the TDM Program and Infrastructure plan shall include the following information:

1) Off-Site Infrastructure Measures:
    a) Existing roadway system within project site and within the project's walk shed. The walk shed shall be defined as a 250 foot radius from the project site. This includes on-street parking configuration, sight distance limitations, location of driveways.
    b) Location and routes of nearest public transit system serving the project.
    c) Routes, location and width of pedestrian and bicycle facilities within the walk shed serving the project.
2) Off-Site TDM Program Measures:

a) Existing transportation system within the transit shed of the project. The transit shed shall be defined as a ¼ mile radius of the project site. This includes transit service and facilities, carshare, and bikeshare (WE-cycle) facilities.

Mitigation measures that are approved and implemented for a development must be ongoing for the occupied life of the development. Changes to specific on-site measures may be amended over time, as long as they result in trip mitigation equal to or greater than the original approval. Off-site Infrastructure measures may not be changed. Changes must be approved by the Engineering and Transportation Departments to ensure the proposed change is appropriate given the site's context. Any change that results in the same number of trips mitigated may be approved administratively. Any major change to the development that reduces the amount of trips to be mitigated shall be approved by the body (City Council, HPC, or P&Z) that approved the original measures.

Capital, Operational, and Maintenance Contributions

The City of Aspen's preference for new trip mitigation is through the mitigation measures identified in the Aspen TIA Tool. However, there is also the opportunity for capital, operational, and maintenance contributions.

Should a project be unable to mitigate its trips to the acceptable level, discussion may be had regarding possible monetary contributions to capital, operations, and/or maintenance of appropriate measures or programs (i.e. purchase of a car for the car share program, purchase of a bike for the bike share program, etc.). An appropriate contribution could be assigned trip reduction credits at the discretion of the City of Aspen after review by Engineering, Transportation and Community Development staff. Most often, these contributions will be applicable to projects or programs identified in Transportation/Engineering long range plans and within the City's Asset Management Plan.

Examples of appropriate financial contributions include:

- **Concurrent Offsite Mitigation Projects:** A project cannot effectively mitigate trips within its own site, but a good opportunity is available at another location which can be funded by a financial contribution.

- **Mitigation Funds:** A project cannot effectively mitigate trips within the menu options available and instead provides a financial contribution for the commencement, continuing operation, maintenance, or improvement of an existing project or program.

- The **capital, operations, and maintenance contributions** would be a one-time contribution at the discretion of the City of Aspen.

TDM Program Mitigation Measures:

TDM Programs are the application of strategies and policies to reduce travel demand (specifically that of single-occupancy vehicles).

The Aspen TIA Tool shall be utilized to determine a project's required mitigation for peak hour new trips added to the transportation system. This section delineates and summarizes the Aspen TDM approaches organized by category and setting that are included in the Aspen specific TDM toolkit. The toolkit can be used to identify appropriate TDM approaches.

The Aspen TIA Tool can be accessed here:

https://aspen.gov/DocumentCenter/View/1781/TIA-Toolkit

Neighborhood/Site Enhancement

- **Point-to-Point Employee Shuttles** – The successful project will operate and/or subsidize a door-to-door home-to-work shuttle service to encourage employees to reduce SOV trips utilizing an employer owned vehicle.

Transit System Improvement

- **Last-Mile Shuttles** – The successful project will operate and/or subsidize shuttle service to a transit center or park and ride lot with an employer owned vehicle. Additional credit is available for projects that purchase or lease a safe, convenient remote parking lot to which they provide shuttle service. (See also: Remote Parking and Shuttle Service.)

- **Remote Parking and Shuttle Service** – The successful project will purchase or lease a safe, convenient remote parking lot to which they provide shuttle service. "Last-Mile Shuttles" must be selected to receive credit for this strategy.

Trip Reduction Program

- **Transit Fare Subsidy** – The successful project will provide subsidized/discounted daily or monthly public transit passes for the RFTA system. These passes can be partially or wholly subsidized by the project, with greater trip reductions resulting from larger subsidies.

- **Workplace Parking Pricing** – The successful project will implement workplace parking pricing utilizing private parking at its employment centers. This may include explicitly charging for employee parking and/or implementing above market-rate pricing. Adjacent parking (lot or street) must be paid and/or time-limited with regular enforcement in order to take credit for this strategy.

- **Telecommuting and Compressed Work Weeks** – The successful project will allow employees to telecommute 1.5 or more days per week or work a compressed work week schedule (9/80 or 4/40). This eliminates the need for work-related travel on the days not worked, thus reducing SOV trips.

- **Employer Sponsored Carpool/Vanpool Matching** – The successful project will provide a ridesharing (carpool and/or vanpool) matching service for employees. Ridesharing must be promoted through a multi-faceted approach, such as providing an app or website to coordinate rides, dedicating desirable parking spaces, or providing passenger loading areas for ridesharing vehicles. Facilitating the formation of employee carpool and vanpool groups is a method of reducing SOV trips. Cannot be selected with Employer Subsidized Carpooling/ Vanpooling.

- **Employer Subsidized Vanpooling** – The successful project will provide a vanpool matching service for employees and will also subsidize vanpooling costs. Cannot be selected with Employer Sponsored Carpool/Vanpool Matching. Facilitating the formation of employee carpool groups is a method of reducing SOV trips.

- **Subsidized Carshare Program (Employees)** – The successful project will provide subsidized carshare memberships to employees and is located within walking distance of the CarToGo service area. Carshare programs have been linked to increased use of alternative transportation modes and reduced SOV trips. Trip reduction potential will depend on the level to which the development participates.

- **Subsidized Carshare Program (Residents)** – The successful project will provide subsidized carshare memberships to residents and is located within walking distance of the CarToGo service area. Carshare programs have been linked to increased use of alternative transportation modes and reduced SOV trips. Trip reduction potential will depend on the level to which the development participates.

- **Self-Funded Emergency Ride Home** - The successful project will provide and fully fund an emergency ride home program for employees who commute by transit, carpooling, bicycling, or walking. Emergency Ride Home programs reduce barriers associated with alternative commute modes, thus reducing SOV trips.

- **Trip Reduction Incentive Program** - The successful project will provide direct cash payments to employees who commute by carpooling, transit, walking, and/or bicycling. Subsidies encourage the use of non-SOV commute modes. This strategy cannot be applied alongside transit or vanpool subsidies unless cash payments are offered over and above those subsidies.

Infrastructure Mitigation Measures:

Similar to many cities throughout the United States, the City of Aspen desires to evaluate transportation services of roadways from a multimodal perspective. This section delineates and summarizes the infrastructure approaches organized by transportation mode and setting that are included in the Aspen TIA Tool.

Projects will only receive credit for new proposed mitigation measures. A site cannot receive credit for an existing condition.

The Infrastructure portion of the Aspen TIA toolkit must be completed in entirety. If the completed toolkit results in negative points, as a result of not meeting minimum performance measures, these points, in addition to peak additional trip points, must be mitigated. The Aspen TIA Tool can be accessed here:

https://aspen.gov/DocumentCenter/View/1781/TIA-Toolkit

Neighborhood/Site Enhancement

- **On-Site Servicing** - The project will provide two or more of the following services onsite: Staffed retail store, grocery store, restaurant, café, childcare, recreation rental, or dry cleaning. Reduction of up to 3% for on-site services at non-hotel developments, and up to 10% for on-site services at hotels.

Pedestrians

- **Detached Sidewalk along Project Frontage** – The project proposes to install a detached sidewalk where an attached sidewalk currently exists. The proposed sidewalk must meet standard minimum sidewalk widths: 8' commercial/residential, 6' multi-family, 5' residential, and a minimum landscape buffer width of 5'. The landscape buffer is the area between the sidewalk and back of curb. Points are assigned for meeting the minimum sidewalk and buffer widths for the entire project frontage/perimeter. A percentage of the project may be eligible for credit or additional points may be available for a wider landscape buffer or space for snow storage from the right-of-way at the discretion of the City Engineering Department.
- **Detached Sidewalk on Adjacent Block** – The project proposes to install a detached sidewalk where an attached sidewalk currently exists alongside an adjacent property or block. The proposed sidewalk on the adjacent property/block must meet standard minimum sidewalk widths: 8' commercial/residential, 6' multi-family, 5' residential, and a minimum landscape buffer width of 5'.
- **Improved Crosswalk** – The project proposes an improved crosswalk. Improved crosswalks must get City Engineering Department approval prior to being selected. An improved crosswalk includes: raised crosswalks, adding a median with refuge, curb ramp improvements, incorporating a corner bulb out, defining a crosswalk

path with colored concrete, or an improved crosswalk realignment. Simply re-striping a crosswalk will not receive credit.

- **Landscape Buffer** – The project proposes to install a landscape buffer with a width that is a minimum of one foot greater than the standard minimum width for the entire project frontage. Additional points may be available for a wider landscape buffer or space for snow storage, at the discretion of the City Engineering Department.
- **Large-scale Landscaping** – The project proposes new large-scale landscaping that improves the pedestrian experience. This measure is only applicable to large scale projects and requires more extensive landscaping then a few plantings or lawn area. The project shall establish extensive landscaping which significantly benefits the site and improves the pedestrian comfort and experience. Solely establishing a 5' landscape buffer between the sidewalk and roadway does not receive credit in this category. Properties within the Core are not eligible to receive credit in this category.
- **Slopes of Curb and Sidewalk** – The project proposes ADA compliant sidewalks to make it easier for travelers of all ages and abilities. Proposed sidewalk slopes will not exceed 2% cross slope and 5% running slope. This complies with local standards for sidewalks and curbs and not meeting the standard will result in negative points.
- **Sidewalk Curbs** – The project's proposed sidewalk height will not exceed 6" and will comply with local standards for sidewalk curbs. Not meeting this standard will result in negative points.
- **Driveway Removal** – The project proposes to remove existing driveways along areas that are used by pedestrians. Driveways should be placed along alleys and driveways removed from alleys will not receive credit.
- **Pedestrian/Vehicle Visibility** – The proposed project improves visibility at access points that help address conflicts and help enhance the comfort of the walking environment.
- **Driveway Grade** – The proposed project provides walkways with 2% cross slope across proposed driveways within the pedestrian zone to make it easier for travelers of all ages and abilities.
- **Enhanced Pedestrian Access** – The proposed project provides improved pedestrian and bicyclist access to the site from the right-of-way. This could include adding additional access points, improvements to the project's ADA ramps in the right-of-way, and improvements to existing access points.
- **Enhanced Pedestrian/Bicyclist Driveway** – The proposed project provides enhanced interaction at driveways or alley crossings. There must be an existing deficiency on the proposed site to select this measure. If the project will increase interaction between pedestrians and vehicles at a driveway then that should be mitigated by implementing improvements to that area.

- **Improve Pedestrian Directness Factor** – Pedestrian Route Directness (PRD) is the ratio of route distance to straight-line distance for two selected points. The lowest possible value is 1.00, where the route is the same distance as the "crow flies" distance. Numbers closer to 1.00 indicate a more direct route, representing a more connected network. A project would provide a pedestrian access network to link areas of the Project site that encourages people to walk instead of drive, thus reducing Single Occupancy Vehicles (SOV) trips. This is calculated by measuring the distance for a selected origin and destination "as the crow flies" and then comparing that total length to the distance along the street network. Projects, such as modifications to the pedestrian network, removing barriers, relocating access points, or designing more direct walking paths can help improve route directness.
- **Traffic Calming** – Providing traffic calming measures encourages people to walk or bike instead of using a vehicle, resulting in decreased SOV trips. All traffic calming features must be pre-approved by the City. Eligible features include islands, medians, raised crosswalks, speed humps, and rapid flashing beacons.
- **Additional Minor Improvements** – The project would work with staff to identify an acceptable minor improvement. A minor improvement is viewed as an improvement with an estimated cost greater than $18,000 but less than $60,000.
- **Additional Major Improvements** – The project would work with staff to identify an acceptable major improvement. A major improvement is viewed as an improvement with an estimated cost greater than $60,000.

Bicycles

- **New Bicycle Path** – A project would work with City staff to develop a City-approved design, consistent with the City's project list, that identifies gaps and locations eligible for improvements. This measure is only applicable to large scale projects which have an opportunity to establish new bike path routes.
- **Improve Existing Bicycle Path** – A project would work with City staff to identify landscaping, striping, or signage improvements to an existing bicycle path. Eligible improvements must be coordinated through City of Aspen's engineering department.
- **Bicycle Parking** – A project would work with City staff to identify bicycle parking locations within property boundaries. Bicycle parking provides end-of-trip facilities that can encourage bicycle activity through secure storage.

Transit

A project is responsible for determining the existing number of points at each bus stop within the study area, identifying the level of improvement required to meet Aspen's basic amenities standard, and implementing or funding the

implementation of the improvements. At a bus stop, the project may elect to provide an enhanced amenity in-lieu of meeting the minimum amenity standard, per discussions with City staff. All bus stop modifications should be compliant with City of Aspen and/or RFTA bus stop standards (depending on location).

- **Basic Amenities** - Transit patron experiences are enhanced by the provision of amenities at bus stops that provide seating, protection from the elements, way finding, transit system information, trash cans, and design elements that facilitate access to the bus. A project would identify eligible treatments and locations for respective treatments, using the City of Aspen's pre-approved map/list of eligible treatments at locations near the project (available upon request from the City of Aspen's Engineering Department):
    - Seating/bench – a project would use City of Aspen map/list to identify eligible treatments and locations for seating.
    - Trash receptacle – a project would use City of Aspen map/list to identify eligible treatments and locations for trash receptacles.
    - Transit system information – a project would use City of Aspen map/list to identify eligible treatments and locations for transit system information.
    - Transit shelter/shade – a project would use City of Aspen map/list to identify eligible treatments and locations for transit shelter or shade.
    - Enhanced pedestrian-scale lighting – a project would use City of Aspen map/list to identify eligible treatments and locations for pedestrian scale lighting.
    - Bicycle parking/storage – a project would use City of Aspen map/list to identify eligible treatments and locations for bicycle parking storage.
    - ADA improvements – a project would use City of Aspen map/list to identify eligible treatments and locations for ADA improvements.
- **Enhanced Amenities** - General purpose vehicles and transit vehicles typically share right-of-way and drive on the same roads and lanes; however, in some instances there are modifications that could potentially improve the quality of service for vehicles in general, and for both individual motorists and/or the transit vehicles and associated patrons. A project would use City of Aspen's pre-approved map/list to identify eligible treatments and locations for respective treatments:
    - Bus pull-out – a project would use City of Aspen map/list to identify eligible treatments and locations for bus pull-outs.
    - Relocation of bus stop – a project would use City of Aspen map/list to identify eligible bus stop relocations.
    - New bus stop – a project would use City of Aspen map/list to identify eligible new bus stop locations and treatments.

City Comments and recommendations

Copies of the completed TIA tool spreadsheet must be provided to the City as part of the TIA. The city will evaluate the selected measures and comments will be provided to the developer/permittee. Subsequent analysis may be requested regarding specific transportation issues. In some cases, minor comments raised by City staff may be addressed in an addendum letter.

Monitoring and Reporting Requirements

Following the implementation of Mitigation Measures, the property owner will be required to monitor whether the Program and Infrastructure measures are having the intended effect. Minor developments will be required to assess and report their compliance each year for three years. If an applicant fails to assess and report their compliance, the timeline for reporting will be extended one year. Monitoring and Reporting requirements go with the property and must be provided regardless of change in ownership.

Property owners will need to survey homeowners, tenants, employees and customers to determine level of participation and success of measures. Traffic counts and analysis will not be required for Level 1 TIAs but can be used as an alternate assessment tool. Traffic counts and analysis will be paid for by the development applicant.

The process is illustrated in the flow chart below. Each project will collect the necessary data specific to their chosen measures and assess their compliance. The project will submit a report to the City Transportation Department to document the monitoring process and results. Details of each step are documented below.

Assessment of Compliance with Guidelines

Surveys will be conducted to assess whether measures are being maintained and if participation levels meet critical mass. If the measures are not successfully implemented and maintained, the project will be responsible to refine its program. If applicant intends

to collect vehicle trip data then they must follow the Vehicle Trip Data Collection guidelines located in the Level 2 TIA section of this document.

Identify Additional Strategies

An annual employee, tenant, visitor, customer and/or homeowner survey is an important element of the monitoring program. Conducting an annual survey will provide insight into the success of various TDM programs and infrastructure improvements. It will provide the project and the City with guidance on how to change unpopular strategies and expand upon successful ones.

It is recommended that each project review the TIA Tool in conjunction with the annual survey results to identify if refinements to existing strategies and new strategies to implement are necessary. The project will also identify a timeline for making changes to existing strategies and implementing new strategies.

Annual Report Submittal

A monitoring report, submitted at least annually to the City of Aspen, will be developed by the project and the independent transportation firm. The report will include the following elements:

1) Status of all existing TDM programs and infrastructure improvements – including any data on participation rates
2) Status of all recommended TDM programs from prior monitoring report (if applicable) – including any available data on participation rates
3) Data collection methodology
4) Survey results
5) Evaluation of performance compared to TDM plan
6) Conclusion of whether compliance is met
7) Next steps (if needed) – future modifications and enhancements of TDM Program, including time frame of implementation

Parking Requirements

Land Use Code Chapter 26.515, Transportation and Parking Management, outlines the parking requirements for developments in the City of Aspen. Assessing the parking requirements is unique to each development, as various factors determine the requirements that must be met. These factors include the location of the development (inside the Aspen Infill Area or outside of it), the use of the development (commercial, residential, hotel/lodge, and other uses), and the net leasable space or the number of bedrooms or dwelling units. Table 26.515-1 in the Land Use Code outlines these factors to help with calculating the parking requirement per development.

Parking requirements can be met through four different methods, Cash-in-Lieu, Provision of Off-Street Parking, Shared Parking Spaces, and Mobility Measures. Each of these methods have certain conditions and that are defined in different sections within the chapter. Mobility Measures are an important way that the requirements in the TIA are linked to the provision of parking. Projects that are subject to a Level 1 or Level 2 TIA will use the tool to select additional measures. Exempt projects will also use the tool in order to determine how many points, or Mobility Commitments in the language of the Land Use Code, will be used to off-set a parking requirement. Depending on the location of the project and the zoning it falls under, there are different options and combinations of the four methods that can be used to meet the requirements. These are detailed in Table 26.515-2.

Level 2 TIA

If the proposed development meets the criteria shown next to Level 2 in Table 1, a Level 2 TIA is required for submittal as part of the Land Use application. The contents and extent of a Level 2 TIA depends on the number of trips generated by the project and the prevailing conditions in the surrounding area. At a minimum, a Level 2 TIA shall include a Site Plan Review, Trip Generation Numbers, Capacity Analysis, TDM Program, Infrastructure, and significant impact Mitigation Measures.

The developer/permittee is responsible for the preparation of a Level 2 TIA. The study is applicable through a project's vesting period.

The project applicant shall retain a professional traffic engineer to conduct the transportation impact analysis. It is recommended that the applicant's consultant conduct the work in the following phased manner and seek City acceptance before initiating the next task. In some cases, review by other affected jurisdictions will be required.

- **Transportation Analysis Scope of Work** detailing project description, site location, analysis method, area-wide assumptions, study intersections and/or roadways, peak hours for analysis, and traffic data collection.
- **Project Trip Generation and Trip Distribution** documenting all key technical assumptions, data sources, and references.
- **Administrative Draft Transportation Study Report** prepared according to the Scope of Work, Project Trip Generation, and Trip Distribution approved by the City Engineer.
- **Draft Transportation Study Report** addressing the City's comments on the Administrative Draft Report.
- **Final Transportation Study Report / Response to Public Comments** addressing comments from the City (and, if applicable, other jurisdictions – i.e. Pitkin County, CDOT, neighboring cities, etc.)

Level 2 TIA Outline

Details on requirements for the Level 2 TIA outline items are defined later in this section. The Level 2 TIA shall follow this general outline:

1. **Introductory Items**
    - Front Cover / Title Page – signed and sealed by a registered Colorado Professional Engineer
    - Table of Contents, List of Figures, and List of Tables
    - Executive Summary
2. **Introduction/Background**
    - Project description
    - Project applicant/contact info
    - Type and size of development
    - Site plan (include proposed driveways, roadways, traffic control, parking facilities, emergency vehicle access, and internal circulation for vehicles, bicyclists, and pedestrians)
    - Location map (include major streets, study intersections, and neighboring zoning and land uses)
3. **Existing Conditions**
    - Existing roadway system within project site and within the walk shed (within 250 ft radius)
        - On-street parking configuration
        - Sight distance limitations
        - Location of driveways
    - Location and routes of nearest public transit routes serving the project
    - Routes, location and width of nearest pedestrian and bicycle facilities serving the project
    - Figure of study intersections with seasonally adjusted AM and PM peak hour turning movement counts, lane geometries, signal timings, and traffic control
    - Crash data on study roadways and intersections
    - Map of study area showing average daily traffic of the study roadways
    - Table of existing AM and PM peak hour average vehicle delay and LOS
4. **Existing Plus Project Conditions**
    - Table of trip generation for Project Trip Generation using the City of Aspen specific trip generation figures (Table A-1 and A-2 in Appendix A)
    - Figure/map of trip distribution (in percent)
    - Maps of study area with applicable peak hour turning movements (Project Only and Existing Plus Project)
    - Table of Existing and Existing Plus Project intersection peak hour average vehicle delay and LOS

- Table of Existing and Existing Plus Project assessment of programs and infrastructure strategies for pedestrians, bicycles, and transit
- Traffic signal and other warrants
- Findings of project impacts
- Access and Circulation Design
  - Sight distance limitations
  - Dimensions from adjacent driveways and intersections
  - Potential for shared access facilities
  - Demonstration that the number of proposed driveways is the fewest necessary
  - Evidence that the access points will provide safe and efficient multi-modal (traffic, pedestrian, bicycle and transit) flow
  - Internal circulation design, including adequacy of queuing (stacking) at site access points and other features that may affect traffic operations and safety
  - Pedestrian circulation system on-site and along frontage

5. Future Background Conditions

- Table of trip generation for approved project(s) – when applicable, apply reduction for pass-by trips, transit, internal capture, and other modes
- Figure and/or table of approved projects trip distribution (in percent)
- Map of study area with applicable AM and PM peak hour turning movements (Approved Projects Only)
- Table of intersection peak hour average vehicle delay and LOS
- Traffic signal and other warrants

6. Future Background Plus Project Conditions

- Similar content to Existing Plus Project Conditions

7. Proposed Mitigation Program

- Copies of completed Aspen TIA Tool spreadsheets
- TDM Program Measure Details (including location of measure)
- Infrastructure Measure Details (including location of measure)
- Enforcement & Financing
- Scheduling and implementation responsibility of mitigation measures
- Proposed Significant Impact Mitigation

8. Conclusion and Recommendations

- Summary of results, findings, and recommended mitigation measures

9. Monitoring and Reporting Requirements

- Vehicle Trip Data Collection

- Assessment of Compliance with Guidelines
- Identify Additional Strategies
- Annual Report Submittal

10. Appendices

- Traffic counts
- Technical calculations for all analyses

Scope of Study

The contents and extent of a Level 2 TIA depend on the number of peak hour vehicle trips created by the project, the prevailing conditions in the surrounding area, and the technical questions being asked by decision makers and the public.

How do I determine the study area?

Study Area Boundary

Careful consideration of all modes and facilities (i.e., transit, pedestrian, bicycle, vehicle, etc.) is required when selecting the study area boundary.

How many traffic analysis scenarios are required?

The scope of the study area is ½ mile. The City Engineer must approve study locations before traffic data collection and analysis commences. Additional facilities may be studied based on circumstances unique to the site. Applicants should consult with the City Engineer early regarding any additional study locations based on local or site-specific issues, especially those related to pedestrians, bicycles, and transit.

Analysis Scenarios

The transportation analysis scenarios are listed below. Additional analysis scenarios may be required in the transportation impact analysis dependent on project conditions and setting. For example, other scenarios may be needed to test phasing or other interim conditions, at the discretion of the City Engineer.

PRESENT CONDITIONS

- **Existing Conditions** represented by transportation conditions for all travel modes in the study area based on recent field observations. Traffic volumes for roadway analysis should be based on recent count data (see Transportation Analysis Time Periods section below).
- **Existing plus Project Conditions** represented by project changes to existing transportation conditions for all travel modes in the study area. Traffic volume forecasts for roadway analysis should reflect existing conditions plus traffic generated by the proposed project. For re-use or conversion projects, this will involve accounting for any existing use of the site that remains or will be discontinued.

FUTURE CONDITIONS (If required by City Engineer)

- **Future Background Conditions** represented by transportation conditions for all travel modes in the study area reflecting all approved projects plus pending projects or expected development of other areas of the City designated for growth.

In most cases, the project site will likely be vacant under this scenario. In some cases though, this scenario may need to account for any existing uses on the site that could continue and potential increases in development allowed by ministerial approvals only.

- **Future Background plus Project Conditions** represented by Future Background Conditions plus changes to these conditions caused by the proposed project. This scenario needs to account for whether the project is changing any existing or planned land uses on the site.

Analysis Time Periods

What time periods need to be analyzed?

The determination of analysis time periods will depend on the travel modes being evaluated. For vehicular analysis, at a minimum, weekday AM and PM peak hour traffic volumes will be used in determining compliance with the vehicle level of service (LOS) standard. For recreational and other non-typical peak hour uses, weekday afternoon, weekday late evening, or weekends shall be considered.

Based on the land use of the proposed project and upon consultation with the City, the study shall analyze traffic operations during the peak hour of the following time periods. The weekday time periods must occur on a Tuesday, Wednesday, or Thursday.

- Weekday morning peak (7:00 – 9:00 AM)
- Weekday evening peak (4:00 – 6:00 PM)

For some projects, the City may substitute or require additional peak hour analysis for the following time periods.

- Weekday mid-day peak (12:00 – 2:00 PM)
- Weekday afternoon peak (2:00 – 4:00 PM)
- Friday evening peak (5:00 – 7:00 PM)
- Weekend midday peak (11:00 AM – 1:00 PM)
- Weekend evening peak (4:00 – 7:30 PM)

The determination of study time periods should be made separately for each proposed project based upon the peaking characteristics of project-generated traffic and peaking characteristics of the adjacent street system and land uses. The time period(s) that should be analyzed are those that exhibit the maximum combined level of project-generated traffic and adjacent street traffic.

Traffic Data Collection

Accurate data is essential to achieve a high level of confidence in transportation analysis results. Existing traffic conditions data shall be collected using the guidelines set forth in Table 2. The collected data will then be used to perform the respective analyses per the TIA guidelines.

TABLE 2: EXISTING CONDITIONS DATA COLLECTION PROTOCOL

Data Set	Procedure
Peak period turning movement counts	• New traffic counts shall be collected if existing counts are more than two years old. Counts shall only be collected in winter months (December 15th through March 30th) and summer months (June 15th through Labor Day). No traffic count data should be collected outside these dates unless agreed upon by the City of Aspen. The peak hour traffic volumes should be seasonally adjusted to represent the typical average day of the year (the 30th highest hour across the Castle Creek bridge). • Traffic counts shall be collected over a two-hour period between 7-9 AM and 4-6 PM and the highest hour used for the existing counts. • Collect data for all study intersections on a Tuesday, Wednesday, or Thursday. • Care should be taken to collect data on days when schools are in session. • Bicycles and pedestrians should be included in all counts. • Some projects may require vehicle classification or occupancy counts. Consult with the City on a case-by-case basis.
Daily traffic counts	Collect data for all study roadway segments using the parameters described above for peak period turning movement counts with the exception of collecting bicycle and pedestrian data.
Multi-Modal Facilities	Establish existing geometrics from a combination of aerial photography, as-built plans, and site visits. Map existing bicycle and pedestrian facilities within the study area (include sidewalks, crosswalks, signal heads, push buttons, related signing and striping). Document barriers, deficiencies, and high-pedestrian demand land uses including schools, parking, senior housing facilities, and transit stops or centers. The City of Aspen's GIS department can provide this information.
Travel time and speed	If necessary, travel time and speeds may be measured using radar, Bluetooth detectors, GPS probe vehicles (i.e., floating car survey), or other validated methodology.
Signal timing	Request timing from the City and other operating agencies such as CDOT. Verify timing in the field.
Crash data	Obtain crash data through the local law enforcement or CDOT if on Highway 82.
Mode split	Summarize daily and peak hour mode split from study area or communities adjacent to study area.
Transit routes and use	Map existing transit routes and stops serving the study area and identify service hours and levels of use. Document amenities (benches, shelters, bicycle parking, etc.) available at transit stops and centers within ¼-mile of non-residential projects and a ½-mile of residential projects. Complete MMLOS analysis per TIA guidelines.

Trip Generation

How do I determine how many vehicle trips my project will generate?

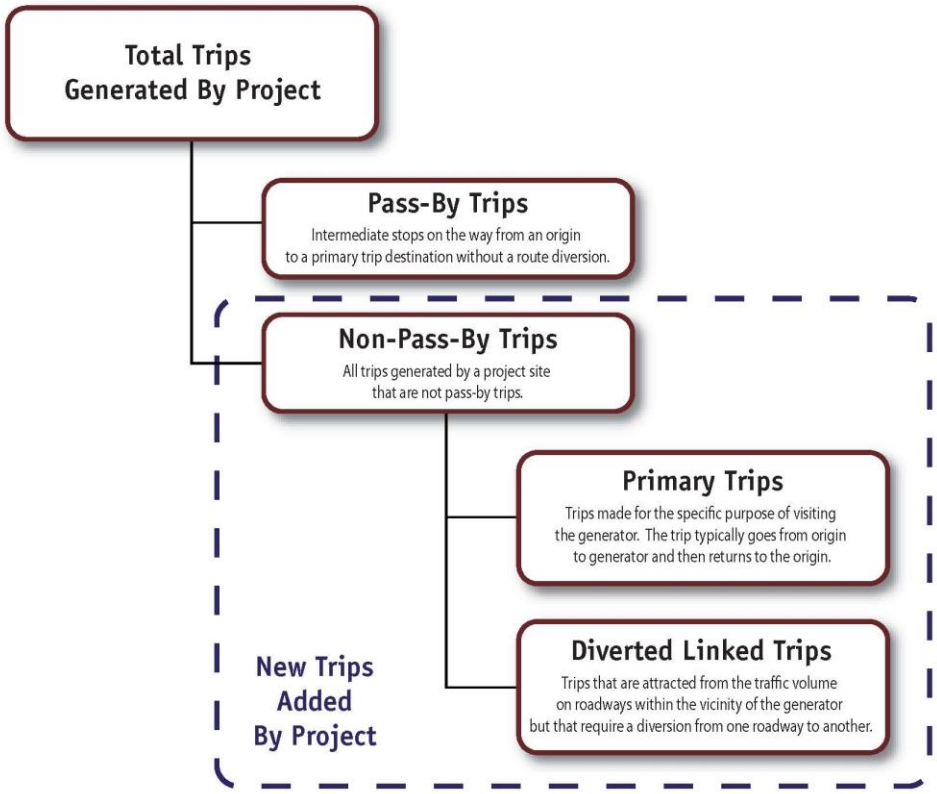
Applicants required to complete a Level 2 TIA are required to submit a trip generation analysis that identifies the number of new daily and peak hour vehicle-trips added by the proposed project. The trip generation estimation for all new or proposed development projects shall include the summation of primary trips and diverted linked trips.

The estimation of new trips generated by the proposed development project may include credit for trips associated with existing uses on the site. Existing uses are those actively present on the project site at the time data is gathered for the Traffic Impact Analysis.

The final estimate of new daily and peak-hour trips associated with a proposed development project should represent the net contribution of the proposed project. The City will review the trip generation analysis and determine if additional analysis is required.

Trip generation analysis should be primarily based on Aspen specific trip generation rates. The Aspen specific trip generation rates and the respective directional distributions for the AM and PM peak hours are located in Appendix A in Tables A-1 and A-2. The Aspen specific trip generation rates were validated for winter and summer season conditions for the following land uses: commercial office, commercial retail, free-market housing, affordable housing, lodging, essential public facility, and mixed-use (included restaurant, residential, and commercial). The City Engineer should be consulted if the proposed development land use is not included in the validated land use categories listed in Tables A-1 and A-2.

The following figure describes trip types relevant to trip generation and the difference between the total trips generated by the project versus new trips added by the project.



Vehicle Level of Service

Historically, vehicle levels of service (LOS) thresholds have been the prevailing criteria applied to transportation projects. The City of Aspen recognizes that vehicle LOS is one performance measure that needs to be carefully weighed against other City objectives to balance the preservation of community values with a safe and efficient circulation system. Vehicle LOS only assesses traffic operations from a driver's perspective. It does not capture the perspective of pedestrians and bicyclists nor does it recognize potential impacts of driving on air pollution or other environmental resources. As such, potential impacts identified based on the following City LOS thresholds will need to be weighed against other community values and objectives in developing mitigation acceptable to the City.

- LOS C or better during peak hours is acceptable within the City of Aspen.
- For individual turning movements, LOS D, E and F may be acceptable for left-turns or for minor street unsignalized movements; however some mitigation may be necessary.
- In instances where the existing LOS is already less than LOS C, the project should include mitigation to maintain the LOS and not degrade it further. Mitigation preferences should focus on reducing vehicle trips, improving the bicycle and walking network, improving transit services or facilities, and modifying traffic control operations (i.e., signal timings).

Traffic operations analysis methodology used to calculate LOS shall be based on the latest version of the Highway Capacity Manual (HCM).

If the TIA study area extends into an adjacent jurisdiction, their LOS threshold shall be used for the impact significance criteria for analysis locations in that jurisdiction. The applicant is responsible for analyzing project impacts against appropriate jurisdictional standards; however, impacts will be mitigated consistent with City TDM program and infrastructure standards.

Analysis Parameters

Analysis parameters (e.g., signal phasing, conflicting pedestrian volumes, etc.) for Existing and Existing plus Project conditions shall be based on field measurements taken during traffic count collection and field observations. This typically applies to Future Background and Future Background plus Project analysis.

In the absence of field data or for some future conditions analysis, the parameters in Table 3 may be used with City consultation.

TABLE 3: ANALYSIS PARAMETER RECOMMENDATIONS

PARAMETER	RECOMMENDATION
Peak hour factor (PHF)	Use measured approach PHF obtained through traffic data collection. For cumulative scenarios and existing conditions where peak hour factors are not available, refer to the HCM and maintain consistency through analysis scenarios and peak hours. • If a simulation model is used for analysis, the PHF should be applied over more than a 15-minute period.
Saturation flow rate	A field measurement of the saturation flow rate is recommended in accordance with procedure in the HCM. For cumulative conditions, use the value recommended in the most recent HCM unless physical conditions and traffic controls warrant a change. The 2010 HCM recommends 1,900 vehicles per hour per lane.
Yellow phase	4 seconds per phase (if traffic signal is present under existing conditions, use existing yellow phase).
All red phase	1 second per phase (if traffic signal is present under existing conditions, use existing red phase). Red phase may be greater on high-speed roadways.
Conflicting pedestrians for signalized intersections	Primarily based on existing pedestrian counts or observations. Otherwise, refer to the most current version of the HCM to determine the amount of pedestrian activations per cycle into appropriate categories. To determine conflicting pedestrians, assume one pedestrian per activation.
Traffic signal cycle lengths	Replicate existing cycle length and phasing (e.g., leading left turns) when possible. For new signalized locations, segment the cycle lengths into the following three categories unless other cycle lengths can be justified through the traffic operations analysis. • In and around downtown – limit signal cycle lengths to less than 90 seconds • In and around suburban areas – limit signal cycle lengths to less than 90 seconds Ensure that minimum pedestrian times are satisfied.
Lane utilization factor	If applicable, adjust lane utilization factors based on field observations.

Analysis Tools and Methods

Traffic operations analysis for local roadways and the state highway shall be conducted using tools and methods approved by the City of Aspen. Recommended analysis tools for Traffic Impact Studies include Synchro, SimTraffic, and VISSIM. Other tools or methods may be used upon receiving approval from the City Engineer.

Congested Conditions

Analysts should note that the HCM recommends the use of simulation models to analyze congested conditions. Since simulation tools can simultaneously evaluate vehicle interactions across a complete network (including the interaction of multiple modes), they can provide a more complete understanding of traffic operating conditions during peak

congested periods and what may happen when a specific bottleneck is modified or eliminated. Recommended analysis tools for simulation analysis include SimTraffic and VISSIM. Other tools or methods may be used upon receiving approval from the City Engineer.

Transit Level of Service

Information relating to the hours of weekday service, frequency of service, travel time, and peak passenger load is helpful for determining the extent and quality of service provided to a given location. The transit system performance measures are to be documented for multi-family housing, hotel/lodging, and commercial/retail developments that fall under the category of Major Development per the TIA guidelines.

TABLE 4: TRANSIT SYSTEM PERFORMANCE METRICS

Level of Service Metric	Standard	Notes
Hours of Weekday Service (number of hours service is provided)	20 Hours	When transit level of service standards are not met, the City of Aspen, RFTA, and project applicant will need to hold discussions regarding potential improvements to the transit system by the project.
Season Frequency of Service (time between bus arrivals at a particular transit stop)	20-30 min peak/60 min off-peak	
Travel Time Factor (transit travel time / auto travel time to three specific destinations that can include popular destinations such as shopping centers, schools, or civic uses)	2.0 X	
Peak Load factor (# of passengers / # of seats)	<1.2	

The overall transit system performance LOS is determined as follows:

TABLE 5: LEVEL OF SERVICE STANDARDS MET

Level of Service Standards Met				
All 4	3 of 4	2 of 4	1 of 4	None
A	B/C	D	E	F

When overall transit system performance is operating at D or worse, the applicant and City staff should engage the transit provider to evaluate the potential for improving transit service for a particular development. This coordination between land use and the transit system is intended to increase the utility and attractiveness of the local transit system to all users.

Site Plan Review

A detailed site review is required for every project and should, as a minimum, cover the items below. Appendix B includes a sample illustration of site review recommendations that should also be considered in the site plan review. Consideration should be given to the following qualitative and quantitative reviews and summarized in the TIA.

- Existence of any current traffic problems in the local area such as a high-accident location, non-standard intersection or roadway, or an intersection in need of a traffic signal.
- Applicability of context-sensitive design practices compatible with adjacent neighborhoods or other areas that may be impacted by the project traffic.
- Close proximity of proposed site driveway(s) to other driveways or intersections.
- Adequacy of the project site design to fully satisfy truck loading demand on-site.
- Adequacy of the project site design to provide at least the minimum required throat depth at project driveways.
- Adequacy of the project site design to convey all vehicle types.
- Adequacy of on-site vehicle, bicycle, and pedestrian circulation and provision of safe pedestrian paths from residential areas to school sites, public streets to commercial and residential areas, and the project site to nearby transit facilities.
- Project site design resulting in adequate emergency access or response times.

Consultation with Other Jurisdictions

If the study area overlaps with other jurisdictions (i.e., CDOT, Pitkin County, etc.), the other jurisdictions should be consulted to verify study locations and to specify the impact significance criteria that should be used in the TIA for these locations. In most cases, overlap will occur for roadway system analysis.

Significant Impact Assessment

Does my project result in a significant impact?

The main intent of the TIA is to determine potential transportation impacts of proposed projects. This information is essential for decision makers and the public when evaluating individual projects. This section explains what operating conditions shall be used when determining an impact. These guidelines also establish criteria for when a project impact is considered significant.

Scenario Evaluation

Transportation impact determination for a proposed development project shall be based upon the comparison of the following scenarios using the significance criteria cited below.

- Existing Conditions vs. Existing Plus Project Conditions
- Future Background Conditions vs. Future Background Plus Project Conditions

Significance Criteria

A project impact is considered significant when it meets the criteria listed in Table 4.

Table 4: Transportation, Circulation, and Significance Criteria

ELEMENTS	EVALUATION	SIGNIFICANT IMPACT DETERMINATION
On-site Circulation	Review and evaluate site access locations, driveway throat depths, size of major circulation features with respect to operations and safety, turning movement volumes at site access points, queuing at site access driveways, dimensions of truck loading areas, and emergency access. Address and provide pedestrian and bicycle access to the proposed development. See Appendix B for a sample.	• Project designs for on-site circulation, access, and parking areas fail to meet City or industry standard design guidelines. • Project fails to provide direct pedestrian and bicycle connection to the pedestrian and bicycle facilities on-site. • Project fails to provide adequate accessibility for service and delivery trucks on-site, including access to truck loading areas.
Off-Site Traffic Operations	Conduct intersection and roadway level of service analyses using methods and procedures contained in the latest version of the *Highway Capacity Manual* (HCM) published by the Transportation Research Board.	• A roadway segment or intersection operates unacceptably according to the City of Aspen LOS guidelines (Overall Intersection LOS C or better during peak hours, LOS D, E and F may be acceptable for left-turns or for Minor Street unsignalized movements. In instances where the existing LOS is already less than LOS C, the project should include mitigation to maintain the LOS and not degrade it further) • The project adds 10 or more peak hour trips that cannot be mitigated with TDM or Infrastructure Improvements.
Bicycle Facilities	Identify any existing or planned bicycle facilities that may be affected by the project. Focus on maintaining or enhancing connectivity and completing network gaps. Complete bicycle infrastructure analysis per TIA guidelines.	• A project disrupts existing or planned bicycle facilities or conflicts with adopted City non-auto plans, guidelines, policies, or standards. • The project adds trips to an existing transportation facility or service (e.g., bike path) that cannot be mitigated with TDM or infrastructure measures.
Pedestrian Facilities and Americans with Disabilities Act (ADA) compliance	Identify any existing or planned pedestrian facilities that may be affected by the project. Focus on maintaining or enhancing connectivity, completing network gaps, and removing barriers. Disclose evaluation and documentation of project features (e.g., driveway access points) with likely disparate impact on pedestrians (e.g., longer crossing time, added conflict points, etc.). Complete	• A project fails to provide accessible and safe pedestrian connections between buildings and to adjacent streets and transit facilities. • A project disrupts existing or planned pedestrian facilities or conflicts with adopted City non-auto plans, guidelines, policies, or standards. • The project adds trips to an existing transportation facility or service (e.g.,

	Aspen TIA spreadsheet toolkit analysis per TIA guidelines.	sidewalk) that does not meet current design standards for minimum width and that cannot be mitigated with TDM or MMLOS.
Transit	Identify any existing or planned transit facilities that may be affected by the project. Focus on maintaining or enhancing connectivity and completing network gaps. Complete Aspen TIA spreadsheet toolkit analysis per TIA guidelines.	• A project disrupts or overburdens existing or planned transit facilities and services or conflicts with adopted City non-auto plans, guidelines, policies, or standards.
Intersection Traffic Control	Evaluate unsignalized intersections located within the study to determine appropriate traffic control with or without the project. Evaluate signalized intersections located within the study to determine appropriate signal timing changes needed with or without the project.	• The addition of project traffic causes an all-way stop-controlled or side street stop-controlled intersection to meet Manual on Uniform Traffic Control Devices (MUTCD) signal warrant criteria.
Other Jurisdictional Requirements	In situations where several agencies must approve a development or are responsible for affected roadways, the applicant must contact lead and responsible agencies to determine issues to be addressed, scope of study, etc. In general, the applicant will be responsible for analyzing project impacts against appropriate jurisdictional thresholds; however, the analysis methodology will be determined by the City in compliance with the TIA guidelines and the impacts will be mitigated consistent with City standards.	• The project exceeds established significance criteria thresholds for locations under the jurisdiction of other agencies.

Level 2 Mitigation Measures

All projects shall use the Aspen TIA Tool to determine mitigation measures that will be used for a project. The tools assign a percent reduction in vehicle trips (TDM Programs) and point values (Infrastructure) to specific measures used to offset the largest peak hour trip generation. For example, if a project adds 50 Peak Hour AM trips and 40 Peak Hour PM trips, it will start with -50 points and will need to mitigate 100% of the new trips (50 trips) in the Aspen TIA Tool. Some larger projects may not be able to achieve enough points to mitigate 100% of the peak trips through TDM programs and infrastructure improvements. In these situations, additional mitigation measures are required and must be discussed with and approved by the City of Aspen Engineering and Transportation Departments (see Table 4).

The Aspen TIA Tool provides a list of mitigation measures and the percent trip reduction or percent improved multi-modal infrastructure available for each measure. Mitigation Measures are only cumulative to an extent, so each category also includes a maximum allowable reduction. Because the tool addresses TDM programs and infrastructure measures, the applicant is able to choose which sets of measures make the most sense for their site.

Copies of the completed Aspen TIA Tool delineating the applicants chosen measures to mitigate at least 100% of the new trips must be provided to the City of Aspen with the completed TIA.

TDM Programs and Infrastructure Mitigation measures that are approved and implemented for a development must be site appropriate and on going for the occupied life of the development. Changes to specific on-site measures may be amended over time, as long as they result in the same number of trips mitigated as the original approval. Off-site infrastructure measures may not be changed. Changes must be approved by the Engineering and Transportation departments to ensure the proposed change is appropriate given the site's context. Any change that results in the same number of trips mitigated may be approved administratively. Any change that reduces the amount of trips generated shall be approved by the body (City Council, HPC, or P&Z) that approved the original measures.

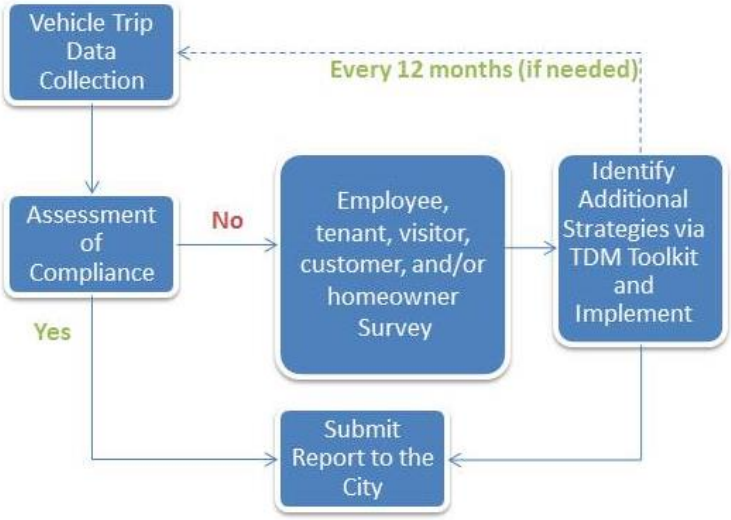
If after TDM Program and Infrastructure mitigation has been applied and the net new trips to the system are not mitigated and/or the project meets the significance criteria in Table 4, additional significant impact mitigation may be required. In consultation with the City of Aspen Engineering and Transportation Departments, the mitigation may include modifications to the site plan to increase pedestrian and bicycle connectivity, signal timing modifications, intersection traffic control modifications, etc. Every effort to mitigate shall first be made by TDM programs and infrastructure measures.

Level 2 Monitoring and Reporting Requirements

Following the implementation of Mitigation Measures, the property owners will be required to monitor motor vehicle traffic to ensure that the TDM Program and Infrastructure Measures are having the intended effect. Level 2 TIA developments will be required to assess and report their compliance each year for five years. If an applicant fails to assess and report their compliance, the timeline for reporting will be extending one year.

Property Owners will need to collect traffic count data to evaluate travel behavior near the development. Traffic counts and analysis will be paid for by the development applicant.

The process is illustrated in the flow chart below. Each project will collect vehicle trip data for their project and assess their compliance. The project will submit a report to the City to document the monitoring process and results. Details of each step are documented below.



Vehicle Trip Data Collection

Data collection will be conducted by an independent transportation firm at least once a year. The data collection should include the following:

1) Selecting a week to conduct the vehicle counts that is consistent with the TIA data collection and prior year's data collection time frame. The selection of the week should be agreed upon by the City's Engineering and Transportation Departments.
2) The driveway counts will be conducted for:
    a) Tuesday, Wednesday, and Thursday of the selected week
    b) Daily (24 hours), morning peak period (7:00 AM to 10:00 AM), and evening peak period (4:00 to 7:00 PM)
    c) For the driveways providing access to the project
3) Field observations will be conducted during the AM and PM peak periods for each of the data collection days to confirm that the survey reflects a typical day.

The independent transportation firm will calculate the AM and PM peak hour vehicle counts entering the specified driveways. The AM and PM peak hour vehicle counts will be an average over the three-day data collection period. If appropriate, the AM and PM peak hour vehicle counts may be adjusted based on field observations (i.e., if employees are parking on the street and thus not captured by the driveway counts).

Assessment of Compliance with Guidelines

The daily, AM, and PM trips will be compared to the submitted Aspen TIA Tool plan within the TIA. If the trip reduction plan is not met, the project will be held responsible to refine the program.

Identify Additional Strategies

If applicable, an annual survey is an optional element of the program. Conducting an annual survey will provide insight into the success of various TDM programs. It will provide the project and the City with guidance on how to change unpopular strategies and expand upon successful ones.

It is recommended that each project review the Aspen TIA Tool in conjunction with the annual survey results to identify refinements to existing strategies and new strategies to implement. The project will also identify a timeline for making changes to existing strategies and implementing new strategies.

Annual Report Submittal

A monitoring report, submitted at least annually to the City of Aspen, will be developed by the project and the independent transportation firm. The report will include the following elements:

- Status of all existing TDM programs – including any data on participation rates
- Status of all recommended TDM programs from prior monitoring report (if applicable) – including any available data on participation rates
- Data collection methodology
- Documentation of trip reduction methodology and results
- Evaluation of performance compared to TDM plan
- Conclusion of whether compliance is met
- Next steps (if needed) – future modifications and enhancements of TDM programs
- Program, including time frame of implemented
- Detail of data collection (including AM, PM, and daily counts)
- Survey results

Level 2 Parking Requirements

Land Use Code Chapter 26.515, Transportation and Parking Management, outlines the parking requirements for developments in the City of Aspen. Assessing the parking requirements is unique to each development, as various factors determine the requirements that must be met. These factors include the location of the development (inside the Aspen Infill Area or outside of it), the use of the development (commercial, residential, hotel/lodge, and other uses), and the net leasable space or the number of bedrooms or dwelling units. Table 26.515-1 in the Land Use Code outlines these factors to help calculating the parking requirement per development.

Parking requirements can be met through four different methods, Cash-in-Lieu, Provision of Off-Street Parking, Shared Parking Spaces, and Mobility Measures. Each of these methods have certain conditions and that are defined in different sections within the chapter. Mobility Measures are an important way that the requirements in the TIA are linked to the provision of parking. Projects that are subject to a Level 1 or Level 2 TIA will use the tool to select additional measures. Exempt projects will also use the tool in order to determine how many points, or Mobility Commitments in the language of the Land Use Code, will be used to off-set a parking requirement. Depending on the location of the project and the zoning it falls under, there are different options and combinations of the four methods that can be used to meet the requirements. These are detailed in Table 26.515-2.

Submittal of Level 2 TIA

A copy of the Level 2 TIA shall be submitted as part of the Land Use Application along with other required development documents. The report shall be complete, in accordance with these guidelines, and be stamped and signed by the developer/permittee's transportation consultant engineer.

City Comments and Recommendations

The City will evaluate the TIA and comments will be provided to the developer/permittee. Subsequent analysis may be requested regarding specific transportation issues. In some cases, minor comments raised by city staff may be addressed in an addendum letter.

Appendix A:
Aspen Specific Trip Generation Calculations

The following tables exemplify how trip generation information and assumptions should be prepared and documented for submittal to the City of Aspen.

TABLE A-1: ASPEN SPECIFIC AM PEAK HOUR TRIP GENERATION

Aspen Trip Generation - PM Peak Average			
Land Use	Trip Rate [1]	% Entering	% Exiting
Commercial	2.27	69%	31%
Free-Market Housing	0.67	29%	71%
Affordable Housing	0.75	48%	52%
Lodging [2]	0.25	57%	43%
Essential Public Facility	0.86	62%	38%

[1] Essential Public Facility per thousand square feet for commercial and essential public facility; per unit/occupied room for housing and lodging.

[2] Includes vehicle and shuttle trips.

[*] For mixed-use (residential and commercial) sites, a 14% reduction can be applied to trip generation.

TABLE A-2: ASPEN SPECIFIC PM PEAK HOUR TRIP GENERATION

Aspen Trip Generation - PM Peak Average			
Land Use	Trip Rate [1]	% Entering	% Exiting
Commercial	4.14	40%	60%
Free-Market Housing	0.82	56%	44%
Affordable Housing	0.89	55%	45%
Lodging [2]	0.31	52%	48%

[1] Essential Public Facility per thousand square feet for commercial and essential public facility; per unit/occupied room for housing and lodging.

[2] For mixed-use (residential and commercial) sites, a 14% reduction can be Includes vehicle and shuttle trips .

Sample Trip Generation Table Utilizing the Aspen specific trip generation rates.

Highlighted cells indicate data directly from table a-1 and table a-2.

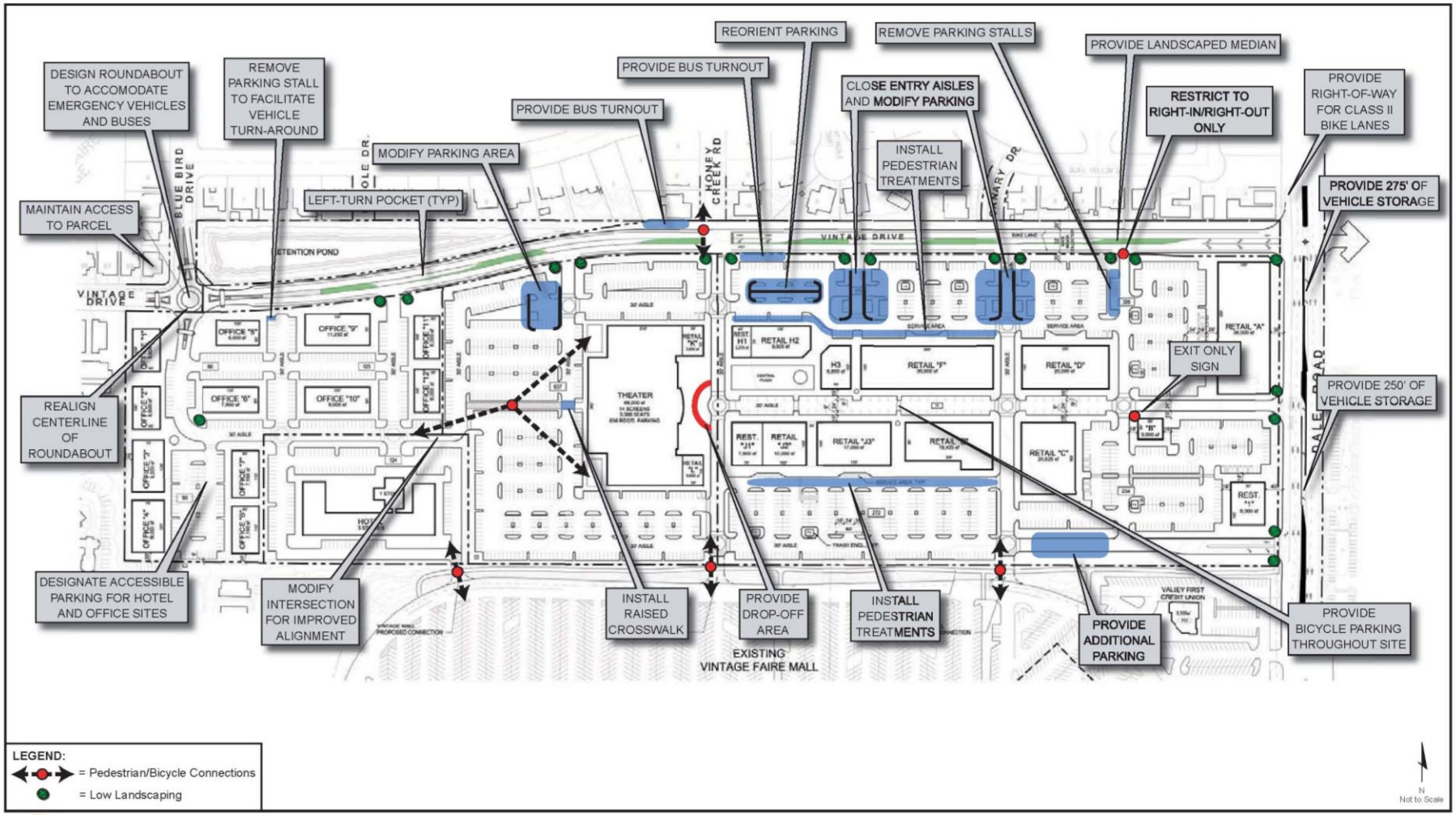
Table 1
Trip Generation Summary - Proposed Development includes a 75 Room lodge + a 25,000 square foot commercial development

Proposed Land Use	Size	Trip Generation Rates[1]		Trips Generated									
				AM Peak-Hour					PM Peak-Hour				
				Entering		Exiting		Total	Entering		Exiting		Total
		AM PEAK	PM PEAK	% Trips[1]	Trips	% Trips[1]	Trips	Trips	% Trips[1]	Trips	% Trips[1]	Trips	Trips
New Aspen Lodge	75 RMS	0.25	0.31	57%	11	43%	8	19	52%	12	48%	11	23
Aspen Commercial Development	25 KSF	2.27	4.14	69%	39	31%	18	57	40%	41	60%	62	103
Total New Trips:					50		26	**76**		53		73	**126**

(Size) x (Trip Generation Rate) x (% Trips Entering) = Peak Hour Entering Trips: I.E: (75) rooms x (0.25) x (57%) = 11 trips for AM Peak entering.

KSF = Thousand Square Feet
RMS = Number of rooms

Appendix B:
Sample Site Plan Review for Level 2 TIA Developments


DESIGN ROUNDABOUT TO ACCOMODATE EMERGENCY VEHICLES AND BUSES
REMOVE PARKING STALL TO FACILITATE VEHICLE TURN-AROUND
MODIFY PARKING AREA
LEFT-TURN POCKET (TYP)
PROVIDE BUS TURNOUT
PROVIDE BUS TURNOUT
REORIENT PARKING
REMOVE PARKING STALLS
PROVIDE LANDSCAPED MEDIAN
CLOSE ENTRY AISLES AND MODIFY PARKING
INSTALL PEDESTRIAN TREATMENTS
RESTRICT TO RIGHT-IN/RIGHT-OUT ONLY
PROVIDE RIGHT-OF-WAY FOR CLASS II BIKE LANES
PROVIDE 275' OF VEHICLE STORAGE
MAINTAIN ACCESS TO PARCEL
EXIT ONLY SIGN
PROVIDE 250' OF VEHICLE STORAGE
REALIGN CENTERLINE OF ROUNDABOUT
DESIGNATE ACCESSIBLE PARKING FOR HOTEL AND OFFICE SITES
MODIFY INTERSECTION FOR IMPROVED ALIGNMENT
INSTALL RAISED CROSSWALK
PROVIDE DROP-OFF AREA
INSTALL PEDESTRIAN TREATMENTS
PROVIDE ADDITIONAL PARKING
PROVIDE BICYCLE PARKING THROUGHOUT SITE
EXISTING VINTAGE FAIRE MALL
BLUE BIRD DRIVE
VINTAGE DRIVE
HONEY CREEK RD
DALE ROAD
THEATER
LEGEND:
= Pedestrian/Bicycle Connections
= Low Landscaping
N
Not to Scale