PARK CITY COUNCIL MEETING
SUMMIT COUNTY, UTAH
November 2, 2023

The Council of Park City, Utah, will hold its regular meeting in person at the Marsac Municipal Building, City Council Chambers, at 445 Marsac Avenue, Park City, Utah 84060. Meetings will also be available online with options to listen, watch, or participate virtually. Click here for more information.

CLOSED SESSION - 3:15 p.m.

The Council may consider a motion to enter into a closed session for specific purposes allowed under the Open and Public Meetings Act (Utah Code § 52-4-205), including to discuss the purchase, exchange, lease, or sale of real property; litigation; the character, competence, or fitness of an individual; for attorney-client communications (Utah Code section 78B-1-137); or any other lawful purpose.

WORK SESSION

4:15 p.m. - Adjustment or Waiver of Construction and Development and Impact Fees Policy Update

4:45 p.m. - Discuss Clark Ranch Feasibility Study Results

5:15 p.m. - Break

REGULAR MEETING - 5:30 p.m.

I. ROLL CALL

II. RECOGNITION

1. Consideration to Approve Resolution 19-2023, a Resolution Proclaiming November 11, 2023 as a Day to Honor Veterans in Park City, Utah
(A) Public Input (B) Action

III. COMMUNICATIONS AND DISCLOSURES FROM COUNCIL AND STAFF

Council Questions and Comments

Staff Communications Reports

1. 2023 Golf Season Update

2. PC Transit 2023-2024 Winter Service Plan Update

IV. PUBLIC INPUT (ANY MATTER OF CITY BUSINESS NOT SCHEDULED ON THE AGENDA)

V. CONSIDERATION OF MINUTES

1. Consideration to Approve the City Council Meeting Minutes from October 10, 2023

VI. CONSENT AGENDA

1. Request to Authorize the City Manager to Execute a License Agreement, in a Form Approved by the City Attorney, with Toro Blanco Group for Cellular Antenna Installations in the Public Right-of-Way

2. Request to Approve a Final Three-Year Extension to Exhibit E of the Interlocal Agreement with Park City School District for the Joint Use of Facilities for Recreation

3. Request to Approve the Estimating Agreement for a Potential Utility Relocation Project Not To Exceed $150,000 with Rocky Mountain Power in a Form Approved by the City Attorney

VII. OLD BUSINESS

1. Consideration of Deer Valley Development Company's Petition for the City to Vacate Portions of Right-Of-Way on Deer Valley Drive West and South, and to Dedicate Doe Pass Road to the City, as Part of the Snow Park Village Base Area Master Planned Development and Subdivision Application.
   (A) Public Hearing (B) Consider Action or Continue to November 16, 2023

VIII. NEW BUSINESS

1. Consideration to Approve Ordinance No. 2023-51, an Ordinance Amending Sections 4-1-1, 4-3-6, and 4-7-3 of the Municipal Code of Park City, Utah
   (A) Public Hearing (B) Action

IX. ADJOURNMENT

A majority of City Council members may meet socially after the meeting. If so, the location will be announced by the Mayor. City business will not be conducted. Pursuant to the Americans with Disabilities Act, individuals needing special accommodations during the meeting should notify the City Recorder at 435-615-5007 at least 24 hours prior to the meeting.

***Parking is available at no charge for Council meeting attendees who park in the China Bridge parking structure.**

City Council Staff Report

Subject:	**Policy Discussion and Potential Updates - Adjustment or Waiver of Construction, Development, and Impact Fees**
Author:	**JJ Trussell, Deputy Building Official**
Department:	**Building Department**
Date:	**November 2, 2023**
Type of Item:	**Legislative- Work Session**

Recommendation

Review and discuss potential policy updates and provide future guidance on several policy questions regarding construction, development, and impact fees.

Park City has utilized fee waivers for nearly 28 years to help support unfulfilled and/or unmet community goals. Examples of important community projects receiving recent fee waivers include the City's new public bus shelters on Park Avenue, The NAC's Mountain Center, and the Engine House affordable housing project. Fee waivers are standard tools used by cities and towns nationwide to support community needs and partner with the construction and development industry.

Typically, an applicant for a development project would pay planning fees for their land-use application (fee varies depending upon the application type). After land use determinations are settled and plans finalized, applicants apply for a building permit. During the review process, we calculate fees in accordance with the City's adopted fee schedule based upon the scope of the project. Fees for a typical permit would include building permit fees (typically 1.05% of the total construction costs), impact fees (based on the current fee schedule), plan review fees (65% of the permit fee subtotal), and other miscellaneous fees.

Applicants must pay the fees before a building permit is issued. In most cases, an applicant seeking a fee waiver or adjustment pays their fees to obtain a permit and seeks reimbursement after their waiver is considered. Some larger projects apply for and receive the waiver prior to permit issuance.

Background

Municipal Code of Park City 11-12-15 authorizes waiving or adjusting all fees, except Impact Fees, as set forth in the City's Fee Schedule. Implementing this code section, the Administrative Policy for the Adjustment or Waiver of Construction and Development and Impact Fees was last amended on April 13, 2017. Construction, development, and impact fees have a long and somewhat controversial history in the State of Utah and are often a particular focus of the Utah Legislature and powerful trade associations.

On November 17, 2022, the City Council requested additional discussion regarding two main policy areas: application eligibility and the Fee Committee recommendation process. Park City's policy describes its purpose, eligibility requirements, and processes to provide consistent application. Prior to further analysis or discussion, please familiarize yourself with Exhibits A, B, and C: current policy, application, and scoring sheet.

Discussion

- Should "public benefit" be further defined as - *SUBSTANTIAL BENEFIT. Significant improvement or positive effects that will support an unfulfilled community need and/or meet a specified City Council goal and provide a considerable economic, financial, or environmental benefit that does not currently exist. Park City Municipal Code 15-15.*
- Should we clarify "non-profit" in policy - *501(c)3, governmental agency, special service district, or religious group*?
- Should only the portion of fees applicable to voluntary affordable housing units be eligible for a fee waiver instead of the required ones?
- Should the Building Official process all fee waiver applications for Development projects?
- Can ROW bonds [guarantees for work in the public right of way] be waived? – *we recommend that bonds not be eligible for waiver, as they are already reimbursable.*
- Should there be a due date to apply for a fee waiver? For example, *within 90 days of the relevant application*?
- Should we add rigor to the documents we require as attachments to applications (currently only identified on the application):
    - Comprehensive project plans or complete scope of work.
    - Demonstration of eligibility for the fee waiver (organizational).
    - Demonstration of the need for the fee waiver (financial).
    - Should ineligible applications be denied at intake? *We recommend ineligible applications be denied at intake rather than creating a long back and forth.*
- Should the free waiver authority be based on each application's total amount or the current annual total?
    - Currently, the City Manager may waive fees up to $25,000 for individual projects unless the annual total exceeds $200k per fiscal year.
        - After the annual waived fee total reaches $200k per fiscal year, all future waiver requests require Council approval.
    - *With an updated Council Policy, we are comfortable with City Council only reviewing/approving applications that individually exceed $25,000.*
        - *The City Manager would continue to review all requests which individually are less than $25,000.*
        - *We would provide annual totals to the City Manager and/or Council for the benefit of transparency and future policy decision-making, as well as any other budgetary information that helped inform the decision.*
- Should the Fee Waiver Adjustment Committee's scoring process be altered? Currently, the Committee often provides just a scoring sheet breakdown:
    - 30% - Contributing to Council Goals.
    - 25% - Community/Public Benefit.
    - 25% - Demonstrated financial need.
    - 20% - Additional City Benefit/Funding has been provided (indicating the City's commitment to the project).
- Should the Policy be enhanced to include "guardrails" to the above scoring?
    - Option 1: project scores tied directly to recommended waiver amount – 73% score means a recommendation of 73% of fees waived.
    - Option 2: project scores divided into steps. Example:
        - 0-24 points – Eligible for up to 25%
        - 25-49 points – Eligible for up to 50%
        - 50-74 points – Eligible for up to 75%
        - 75-100 points – Eligible for up to 100%

Attachments

EXHIBIT A Current Construction and Development Fee Adjustment Policy
EXHIBIT B Current Construction and Development Fee Adjustment Application
EXHIBIT C Current Fee Waiver Committee Scoring Sheet

Adjustment Or Waiver Of Construction And Development And Impact Fees

A. PURPOSE

The intent of this policy is to effectively and fairly determine the waiver of Park City Municipal Corporation (PCMC) Construction and Development and Impact Fees for regulated development, projects, and events which provide a public benefit including City Projects. The City wishes to reduce the fees on City projects, non-profits, projects that support critical priorities and entities providing a public benefit. Construction and Development and Impact Fees include all fees described in Municipal Code 11-12 and 11-13, including limits of disturbance bonds and the Park City Fee Schedule, Construction and Development Fees.

B. POLICY

The City Manager is authorized to reduce or waive fees for $25,000 or less. All waivers or reductions of fees totaling more than twenty-five thousand dollars ($25,000) on any one project or in excess of two hundred thousand dollars ($200,000) total waivers per fiscal year, excluding fee waivers for City Projects, shall require City Council approval. All fee waivers that require City Council approval shall be reviewed by the Fee Adjustment Committee, who will provide a recommendation on the fee adjustment.

Fee Adjustments shall be considered for all PCMC Construction and Development and Impact related fees for:

1. All **City projects** which generally have a broad public purpose. The City Manager may choose to not waive fees where fees are reimbursable through a grant. The City may waive, adjust, or meet the requirements for guarantees for public improvements or limits of disturbance on City Projects through written agreements between departments. City projects may only be considered for impact fee adjustments if the project provides a broad public purpose. When in accordance with this administrative policy, the waiver of all Building, Planning and Engineering fees (totaling up to $25,000) will be automatic;
    a. Project Managers for all City construction projects with fees in excess of $25,000 shall obtain City Council approval for budget allocation and the fees will be addressed in the Staff Report
        i. Project managers will receive an estimate of the requied fees prior to submitting plans to the Building Department. The Building Department will calculate the estimate from the valuation of the project in accordance with the adopted fee schedule.
        ii. Project managers will request the waiver of fees by action of the City Council prior to or at the time of authorization of the construction agreement for any project.
    b. Project budgets for all construction projects requiring a permit will include the dollar amount of non-waived fees associated with the project.
        i. The project manager will make arrangements with the Finance Department and Building Department to transfer any non-waived fees from the project account to the correct revenue account prior to building permit issuance.
        ii. If the non-waived fees and all construction costs exceed the amount budgeted for the project then the project manager will strategize the best

method to reduce construction costs to meet the budget or request an increase in the budget to meet the costs.

2. **Affordable housing projects** by private developers voluntarily including affordable units. This does not include affordable housing units developed as a result of a housing obligation from MPDs, Annexations or similar obligations. (For clarification, attainable housing does not meet the criteria for "low income housing" as identified by the State Law, therefore attainable housing is not eligible for impact fee adjustments.)
3. **Non-profits** which clearly provide a public benefit such as but not limited to church building improvements, school related events (not meeting the special event criteria), temporary structures to promote educational programs by an organization.

   Impact Fees may be considered for non-profits only if the development activity provides a broad public purpose;
4. Private development receiving a **Park City Historic District Grant**,provided the fee waiver is for the work qualifying for the grant (excluding impact fees);
5. **Youth group** (not acting under the school or non-profit) projects or events (not meeting the special event criteria) requiring building permits which clearly provide a public benefit and are not for profit (excluding impact fees);

C. PROCESS

Waiver of fees for City projects is automatic as outlined above.

All other fee adjustments shall be requested in writing on a fee waiver application and reviewed on a case-by-case basis. All fee waivers that require City Council approval shall be reviewed by the Fee Adjustment Committee, who will provide a recommendation on the fee adjustment. The Committee would consist of several staff members representing multiple departments, who will develop a recommendation for City Council through fee reduction scoring criteria, which had incorporated a weighted scoring system. Development activities would be scored and fee reduction recommendations would be reflective of the applicant's ability to meet the criteria created by the Committee and the Building Department's revenue for that fiscal year, (Or the year prior to ensure adequate data).

Impact fees may be adjusted by any of the mechanisms listed within the Park City Municipal Code 11-13, Including offset, waiver, appeal or independent fee calculation.

D. EFFECTIVE DATE

This policy shall become effective upon adoption.

Executed this 13th day of April, 2017

HISTORY
Adopted by Policy. Fee Waiver Policy on 4/13/2017

Construction and Development
Fee Reduction Application
Park City Municipal Corporation

Please provide two **(2)** hard copies and an electronic copy of this application and all other requested information to the Building Office**.**

(1) Applicant Contact Information

Name _____

Address _____

_____

Phone _____ Fax _____

E-mail _____

Permit(s) _____

(2) Indicate the applicable Criteria for Eligibility:

☐ Affordable Housing Project ☐ Non-Profit

☐ Project Receiving a Historic District Grant ☐ Youth Group

(3) Indicate the applicable items for which a waiver is being requested (all that apply):

☐ Building Plan Review ☐ Annexation Application Fee

☐ Engineering Plan Review ☐ Condo Plat Application Fee

☐ Planning Plan Review ☐ Plat Amendment Application Fee

☐ CUP Application Fee ☐ Historic District Design Review

☐ MPD Application Fee ☐ Water Fees (interior)

☐ Building Permit Fee ☐ Water Fees (exterior)

☐ Parks, Trails, Open Space, Police, Roadway Facilities

☐ Other: Please explain _____

(4) Projected total of all fees: $_____

(5) Total construction cost of subject project: $_____

(6) Project Description: Please provide no more than two pages of narrative addressing the following topics.

a) Contributing to a City Council Goals
Traffic Mitigation, Affordable Housing; Green Construction; Decreased Carbon Emissions; Involved Citizenry; Economic Diversity; Thriving

Mountain Community; Arts & Culture; Preserving and Enhancing the Natural Environment

b) Description of the Public Benefit

c) Demonstrated need for a Waiver

(7) Please attached the following documents:

a) Description of the organization, institution or business entity, how long in business, accomplishments to date, key personnel in organizational leadership. (Information may include partner entities that support or share in the mission of the applicant organization.)

b) Organizational governing documents such as business license, by-laws, and/or incorporation documents.

c) Financial information for your organization including current budget, 2 years of financial statements such as Balance Sheet, Income Statement, Statement of Financial Position, Activity Statement, etc. or include Independent Auditors' Reports.

Signed: _____ **Date:** _____

Construction and Development Fee Adjustment Scoring Sheet

Project Name:

Date:

Committee Member:

	Total Possible	Committee Score	Notes
Contributing to Council Goals	30		
Community/Public Benefit	25		
Demonstrated Need for Waiver	25		
Other City Funding/Benefit Provided	20		
	100	0	

eligible for more than 1 criteria extra pts.

City Council Staff Report

Subject: Clark Ranch Feasibility Study Results
Author: Browne Sebright, Housing Program Manager
Department: Housing
Date: November 2, 2023
Type of Item: Work Session

Recommendation

Receive a presentation from Stereotomic, the Clark Ranch Feasibility Study consultant, review findings, and consider recommendations on future uses for the Clark Ranch property, including affordable housing.

Summary

The Clark Ranch land use feasibility study ("Study") authorized by the City Council on February 16, 2023 (Staff Report, Meeting Minutes) is nearing completion. The Study evaluates future uses of the Clark Ranch property, including affordable housing or City services. The Study includes site analysis, evaluation of potential site density, and draft design concepts. Site constraints such as slopes, access, utilities, and zoning limit the layout but provide options for various uses, unit types, densities, and site design.

In sum, the Study identified several factors that would dictate the type of development that could be accommodated, such as water pressure, sewer capacity, steep slopes, and site access. The Study found that an affordable housing development between 90 and 275 units is possible on 12 limited acres. This option allows the remaining balance of the property to be permanently protected as open space, as contemplated during the property acquisition process.

Background

Park City ("PCMC") owns 344 acres of real property known as Clark Ranch ("Property"), located along both sides of US-40 in the Quinn's Junction[1] area in proximity to Park City Heights, Utah Film Studios, Park City Hospital, and the National Ability Center. The City purchased the Property on December 17, 2014, from the Florence J. Gillmor Estate. The Property was annexed into Park City as part of the Southeast Quinn's Junction Annexation in 2022.[2]

[1] Park City General Plan, p. 257
[2] Ordinance No. 2022-18

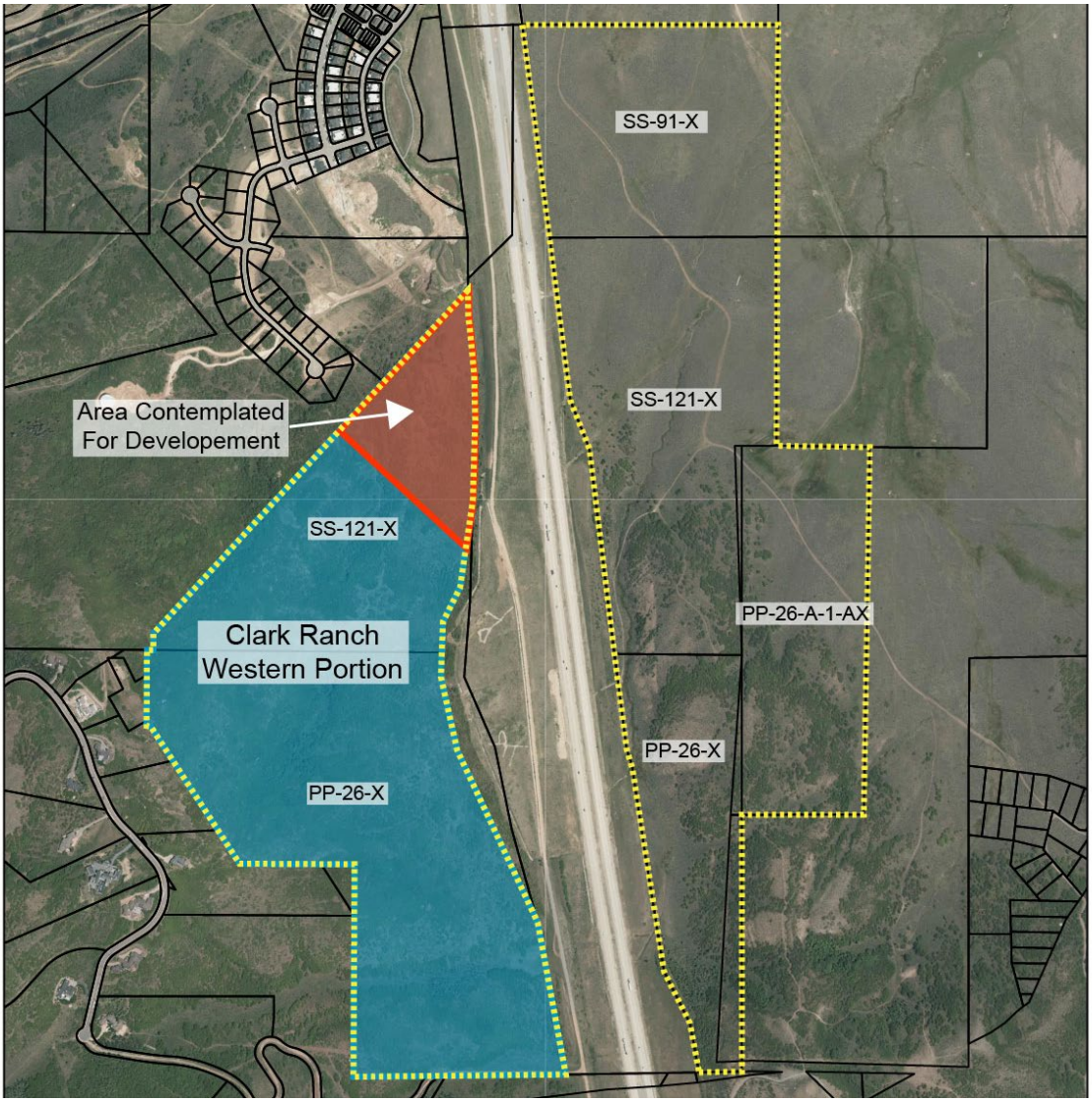


Figure 1. Map of Clark Ranch is outlined in yellow, with the western half highlighted in blue, and the northwest corner identified for potential development ("Steve's Point") highlighted in Red.

In 2016, the Park City Citizens Open Space Advisory Committee ("COSAC") recommended to the City Council parameters and values of the proposed preservation of the Clark Ranch properties.[3] The Committee unanimously recommended that up to 10 acres in the northwest corner of the parcel adjacent to Park City Heights be excluded from the proposed conservation easement to consider senior or affordable housing or essential services, such as a fire station.

In a 2020 City Council work session, a land analysis and a site survey depicting a 10.9-acre area for potential affordable housing were presented. Subsuquently, the Property was annexed into Park City in 2022.

[3] Staff Report, p. 79

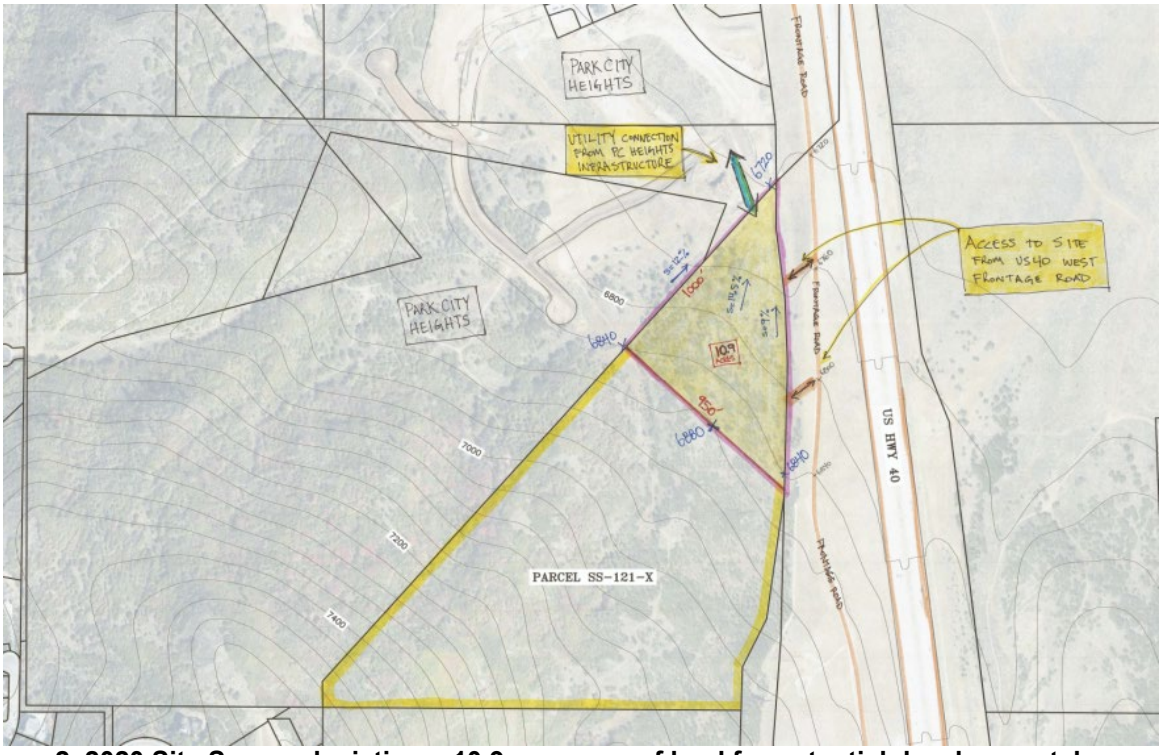


Figure 2. 2020 Site Survey depicting a 10.9-acre area of land for potential development, known as "Steve's Point".

Feasibility Study

On February 16, 2023 (Staff Report, Meeting Minutes), the City Council authorized a contract with Stereotomic, PLLC, for land surveying and consultant services to perform a feasibility study, at a cost not to exceed $88,450. The Study included three phases: site analysis, determination of appropriate site density, and development of concept options. As noted, site constraints include slopes, access, utilities, and zoning, each of which are addressed below.

The primary goals of the Study were to:

- Understand the developable feasibility, including the Sensitive Land Overlay, lot access, utilities, soils, historic structures, mining hazards, and environmental conditions;
- Evaluate appropriate density in accordance with the General Plan and consider potential Community Transition or Residential Development zoning districts or other recommended zoning for affordable housing development with possible residential support commercial uses;
    - Analyze the application of the Land Management Code to the land;
    - Evaluate the feasibility of an Affordable Master Planned Development or Master Planned Development; and
- Present the concept plans and analysis to the City Council for review.

Site Analysis

Survey work was completed for the Property's western half (approximately 125 acres). As recommended by COSAC in 2016, our primary focus was concentrated in the northernmost 10-15 acres of the site depicted on the map. The site survey did not find any encumbrances, such as known contaminated soils or historic sites, that would

impede development. But the slope in this area ranges from 17%-25%. Slopes between 15%-30% are considered Steep Slopes in the Sensitive Lands Overlay, which require 75% of the area to remain as Open Space.

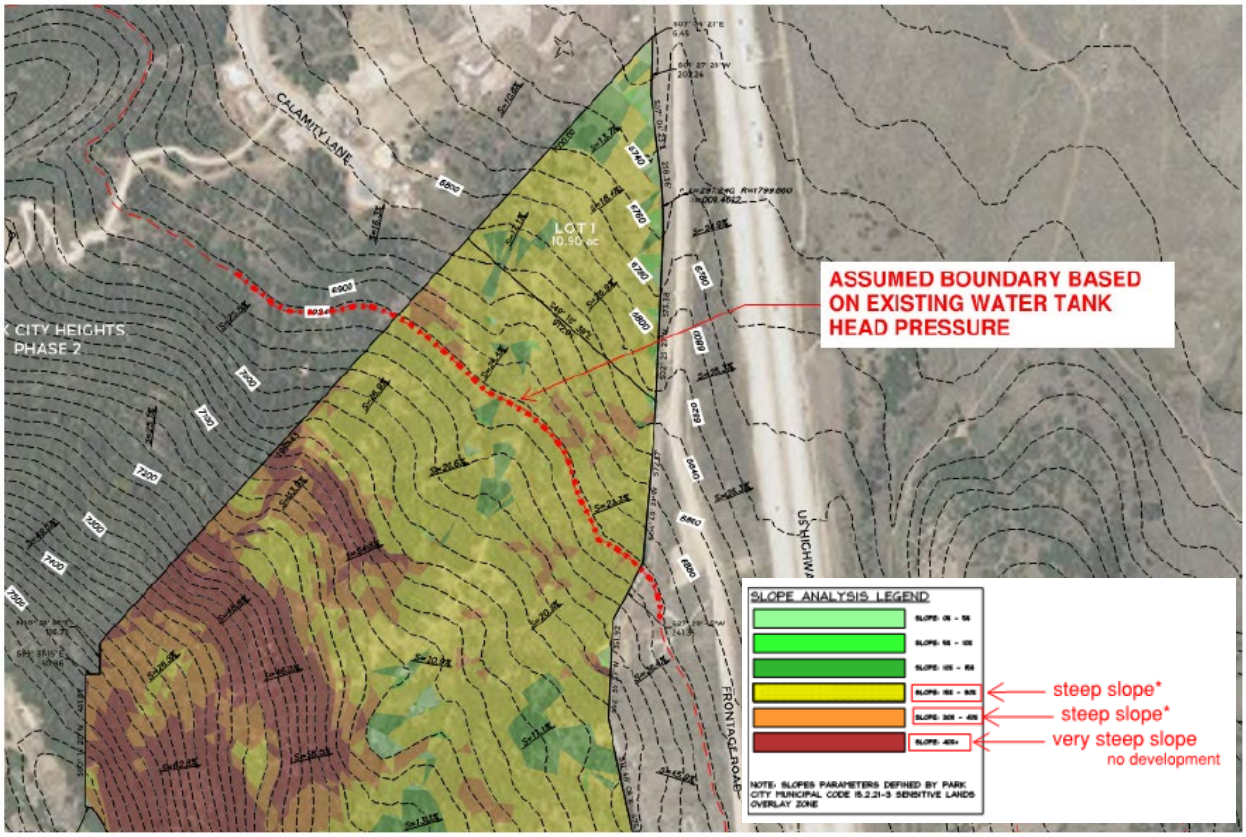


Figure 3. Slope map and assumed boundary of existing water tank head pressure.

Water pressure and sewer capacity also constrain development. The existing Park City Heights water tank can potentially serve additional development on Clark Ranch, but development would be limited to an elevation of 6,917’ to maintain adequate water pressure. There is sewage capacity to support additional residential development. Due to the size of the system in certain areas, new development would likely be capped at approximately 229 “units” (where each unit is equivalent to a 3-bedroom unit) based on standard usage.

However, observed water usage in units in analogous developments in Park City is lower than the standard, and Snyderville Basin Water Reclamation District (SBWRD) may be able to accept a reduction in demand to assess sewer capacity at the time of development. The total carrying capacity of the existing site infrastructure is estimated to be upwards of 275 residential units.

Road Access

The site can be accessed from two points: a primary access point from the Hwy 40 frontage road, which would require improvements and a secondary access point to the existing Park City Heights neighborhood. Park City has been in communication with the developers of Park City Heights to preserve access to Clark Ranch via a stub road that will be platted in the final phase of PC Heights.

The Study identified two potential road layouts to maximize access within the site. Both options can be built in phases, with a lower road segment built in phase 1, and an upper road built in phase 2. Both options consist of a primary road connecting PC Heights and the Frontage Road via a series of large switchbacks.

Figure 4. Road access, Option 1.

Figure 5. Road access, Option 2.

Careful consideration should be applied to the road layout identified in phase 2 of the options. In both options, extending the upper road to the Frontage Road would require significant cuts into the hillside, increasing visual impact.

Sterotomic also evaluated the total trips generated by a potential Clark Ranch residential development, including 1,338 daily trips, 116 AM peak hour trips, and 113 PM peak hour trips if built to the capacity mentioned above. We also estimated the projected peak hour two-way volumes on Richardson Flat Road, determining the Level of Service a “B” or better, indicating that Richardson Flat Road has capacity to receive additional trips from a Clark Ranch residential development.

The study also determined that the Frontage Road must be improved to provide a secondary access point. At minimum, we recommend the road is improved to a 36' paved section with two 12-foot lanes, along with shoulders, curb, and gutter. The cost to improve the Frontage Road is estimated at $1,241,000.

The Study also evaluated internal utility and road infrastructure costs, estimating Phase 1 at $3,852,875 (not including the Frontrage Road). Including the Frontrage Road, Phase 1 infrastructure cost is projected at $5,094,162. We estimate internal utility and road infrastructure costs for Phase 2 an additional $4,759,718. Including the Frontage Road and Phase 1 infrastructure, the estimated cost of all utilities and roads at full buildout is $9,853,880.

Pedestrian and pedestrian access may be challenging due to the site's topography, just over half a mile from an existing #6/silver transit stop. See Exhibit B, attached, for a map of the pedestrian and bicycle connections.

Density Scenarios

The Study identified three density scenarios that illustrate what a future housing development on the site would constitute. These scenarios are intended to provide a point of reference for evaluating the pros and cons of different development parameters and are not intended to represent final design concepts or exact development recommendations. In each option, density is clustered to the corner of the site, and more than 80% of the site is preserved as open space. The northernmost corner of the site is preserved as a public park that doubles as a stormwater retention basin.

	Units	Total SF	Calculated Occupancy*	Parking Spaces	Open Space
Density Option 1	90	115,000	198	115	89.6%
Density Option 2	150	143,700	332	163	89.6%
Density Option 3	230	202,000	498	265	89.6%

Figure 6. Table summarizing the three density options.
***Calculated Occupancy is based on based on Mountainlands Community housing occupancy survey for Western Summit county.**

Density Option 1: Townhomes
This layout contains 90 townhome units scattered on the lower site. The number of units is well below the site's carrying capacity but maintains a similar development pattern to the neighboring community. Parking spaces are located within or immediately adjacent to each townhome. This option has a lower overall construction budget but makes the least efficient use of existing culinary and wastewater capacities.

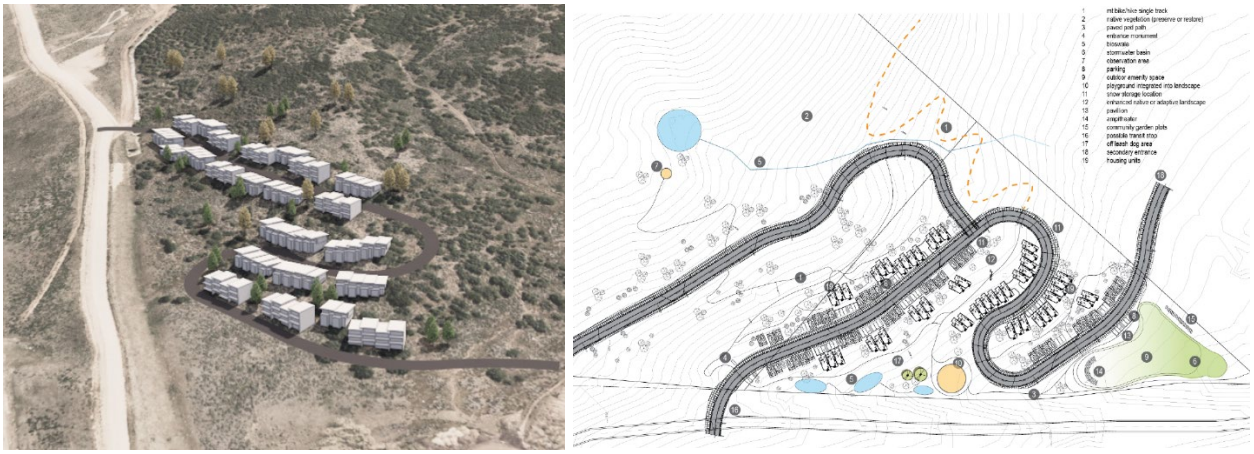


Figure 7. Rendering and site plan for Density Option 1: Townhomes.

Density Option 2: Stacked Flats and Townhomes

This layout contains 150 units in a mix of townhomes and stacked flat multi-family apartments. This plan envisions 3 multi-family buildings that are no taller than 3 stories, with the remaining balance of units as townhomes. The multi-family stacked flat buildings would be clustered at the northern end of the site, placing the closest to the existing bus stop on Richardson Flat Road and to the access point for the Rail Trail.

The number of units is still below the site's carrying capacity but strikes a balance between a larger number of affordable units and maintaining the existing scale of the neighborhood. Parking spaces for the stacked flats are subterranean, below the buildings, and within or immediately adjacent to each townhome.

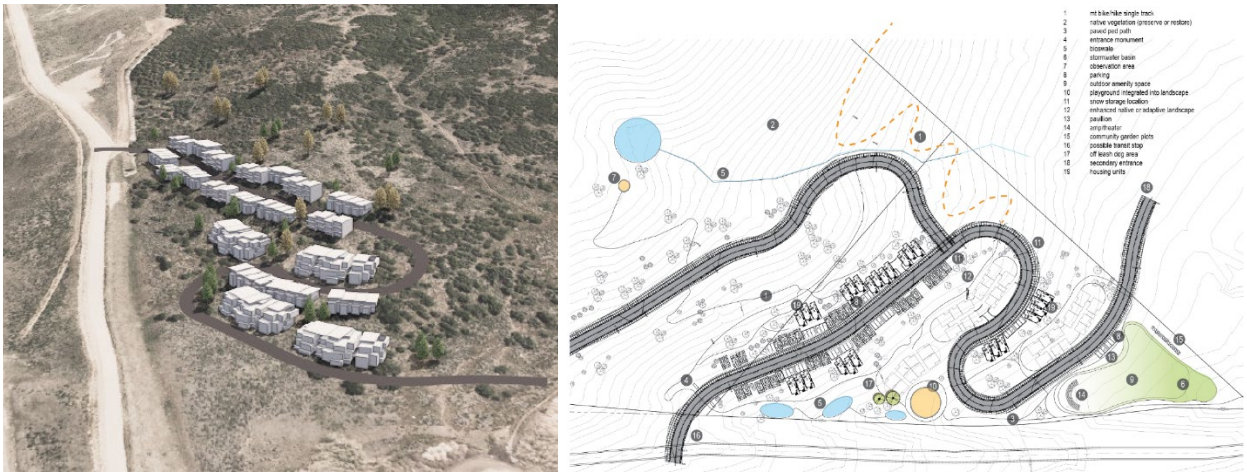


Figure 8. Rendering and site plan for Density Option 2: Stacked Flats and Townhomes.

Density Option 3: Small-Scale Multi-Family

This layout contains 230 units spread over seven multi-family buildings. These buildings are envisioned to follow the contours of the landscape so that they spread and step up with the topography to minimize the visual impact of the development. Each building would be limited to approximately 2 stories above ground. This design delivers the largest number of affordable units and has the additional benefit of being more energy efficient by centralizing massing and allowing for shared heating/cooling systems with a

ground source heat exchange system. Parking would be located within and under each building.

The number of units is comfortably below the assumed carrying capacity of the site. While small-scale multi-family buildings are different than neighboring homes, the limited height and contours following the existing topography may help to reduce the visual prominence of the development.

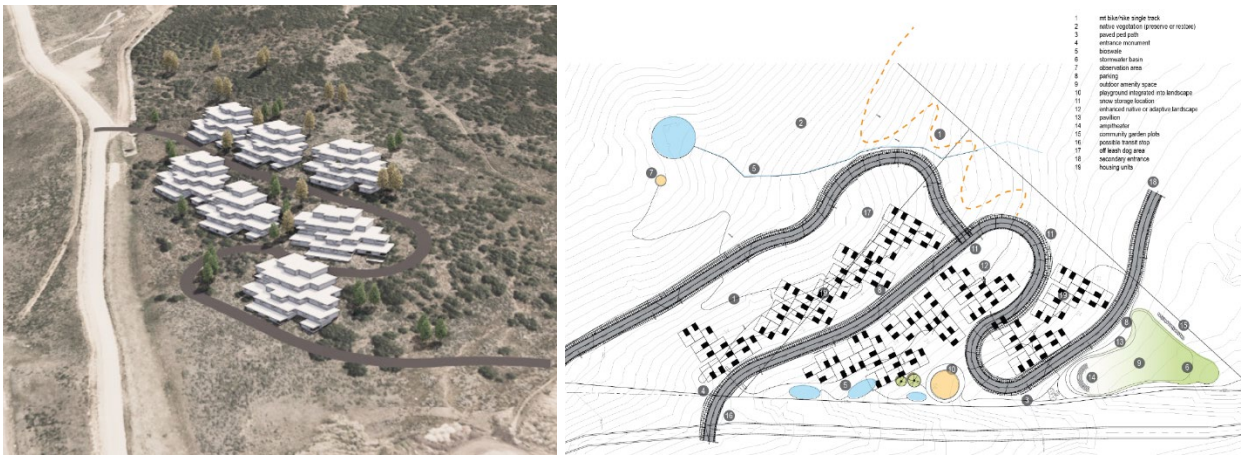


Figure 9. Rendering and site plan for Density Option 3: Small-Scale Multi-Family.

Study Findings

All three density options have a calculated occupancy less than the total of Park City Heights at buildout and below the calculated carrying capacity of existing utility infrastructure. Additionally, because the units are generally envisioned to be smaller than the large single-family homes of PC Heights, the overall square footage of development would be significantly less than the adjacent neighborhood.

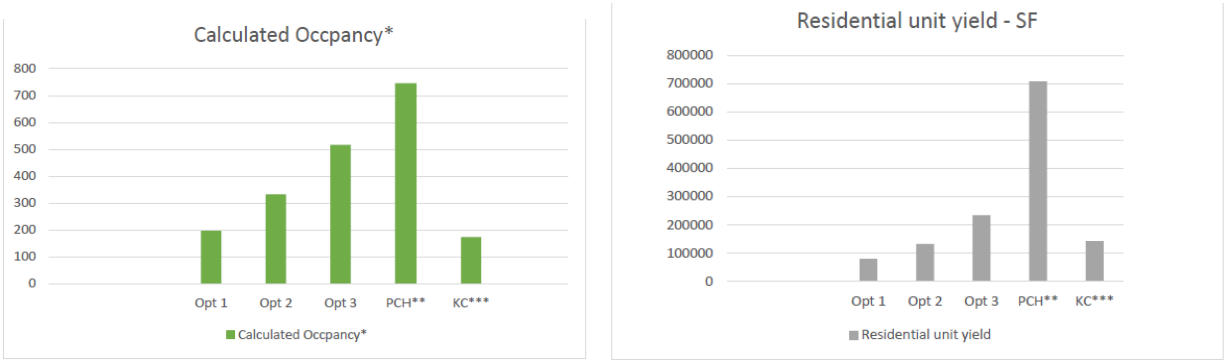


Figure 10. Charts of calculated occupancy and residential unit yield (square footage), comparing the three Clark Ranch density options to Park City Heights and Kings Crown.

As is generally true in residential development, the Study found that there is economic efficiency in developing denser housing, which reduces the development cost per unit. In Figures 11 and 12, the study shows how increasing the number of units reduces the per-unit cost of building the homes and spreads out the cost of site infrastructure across a larger number of residences.

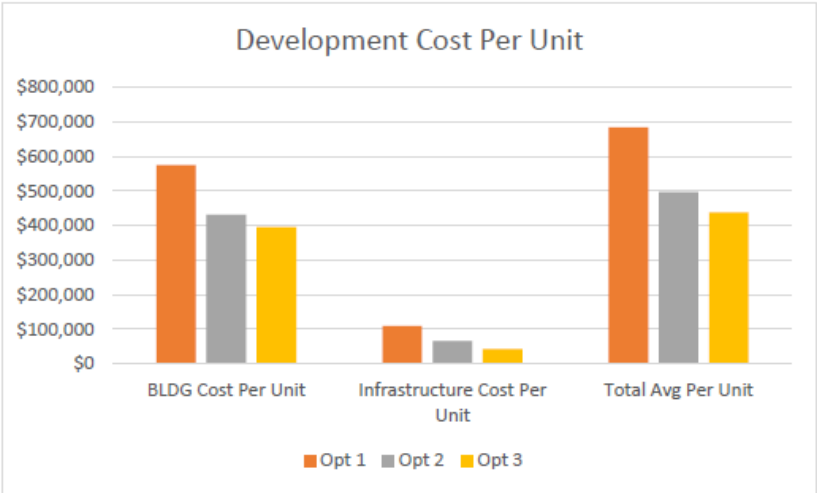


Table 68.2 - Project Development Cost Analysis - Factoring in Building (vertical) Costs as well as Infrastructure (horizontal) costs divided between the total number of units per option. (Stereotomic)

Figure 11. Development Cost Per Unit.

These efficiencies of scale also factor into the projected subsidy required to make the units affordable. The Study found that the least dense option (density option 1: townhomes) would require a subsidy for all target affordability ranges from 30% to 100% of AMI. Conversely, the densest option (density option 3: small-scale multi-family), would require a subsidy for the most deeply affordable targe range (30%-50% of AMI). Still, it could break even or even be profitable for units in the range of 50%-100% of AMI.

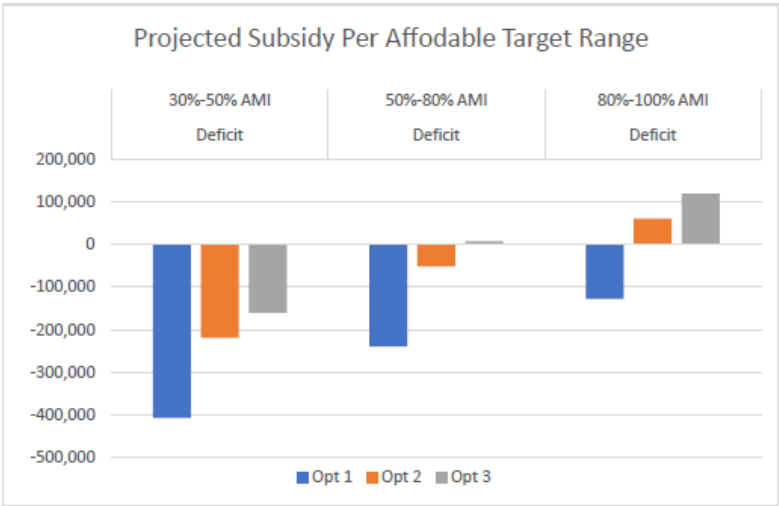


Table 68.3 - Project Development Cost Analysis - Negative numbers denote a financial shortage which would be needed to subsidize the project(Stereotomic)

Figure 12. Projected Subsity Per Affordable Target Range.

The projected subsidy per affordable target range depicted in Figure 12 represents a 100% affordable housing project. The “subsidy” described is on a per-unit cost basis and can be made up through a variety of tools including some portion of market-rate units, tax credit financing, public-private partnerships, or direct City subsidy.

Department Review

While the eastern half Clark Ranch was not included in the scope of the current Study, in 2016, we found that there is potential demand to reserve space for future City uses on the other side of U.S. Route 40 that may warrant further study.

When the City initiated the purchase of Clark Ranch in 2014, it was understood that there was a growing need for additional space for Public Works and other City services. A staff report (beginning on p. 181) from October 9, 2014, notes 10 to 40 acres on the east side of the property that would 'float' and be reserved for Public Works, Water, Transit, and the Fire District ("Clark Ranch Alternative Site").

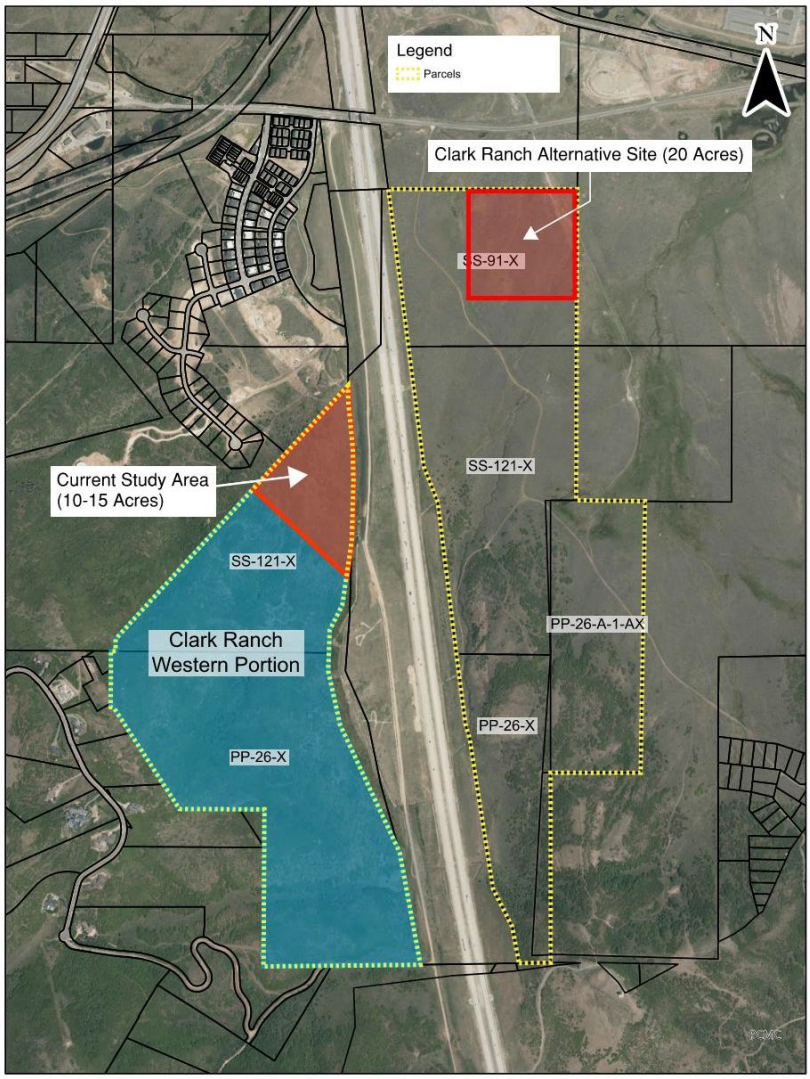


Figure 13. Map illustrating the location of a future Public Works Facility ("Clark Ranch Alternative Site") as depicted in a 2016 exhibit.

The Public Works Department has since identified some 10-20 acres of the eastern property as a potential location for a new public utilities facility. The location and uses of this facility were considered over several meetings in 2016-2017:

- November 10, 2016 – Review the Site Concept Design for the New Public Utilities Facility (Staff Report, p. 16).
- February 2, 2017 – Discuss Public Utilities and Streets Facility - Employee Housing Alternatives (Staff Report, p. 16).
- April 27, 2017 – Discuss Proposed Public Utilities and Streets Facility Project Programmatic Goals and Project Alternatives Relating to Net-Zero Energy Goals, the Incorporation of Transit Housing, and the Project Location and Phasing Plan (Staff Report, p. 10).
- May 11, 2017 – Discuss Proposed Public Utilities and Streets Facility Programmatic Goals and Project Alternatives Relating to Net-Zero Energy Goals, the Incorporation of Transit Housing, the Project Location and Phasing Plan (Staff Report, p. 158).
- December 7, 2017 – Discuss Public Works/ Public Utilities Space Needs and Planning (Staff Report, p. 83).

On October 4, 2023, Public Works, Water, Budget, Trails and Open Space, Police, and the Park City Fire District met to review the Study results and provide comments on their departmental needs. The consensus was that they did not prefer the 12 acres on the western half of Clark Ranch as a future public services facility location. This was due to the site's geography, shape, and indirect access to Richardson Flats Road. However, they reaffirmed their interest in the eastern half of Clark Ranch for a future public services facility.

Recommendation

Staff recommend that Council consider the density scenarios outlined in the Study and assess how to prioritize Clark Ranch for future affordable housing development opportunities. The Study found that affordable housing is feasible on the site and that housing could be accommodated at various densities. Site access may be difficult, but the Study found feasible options for improving site access and providing mobility options for future residents.

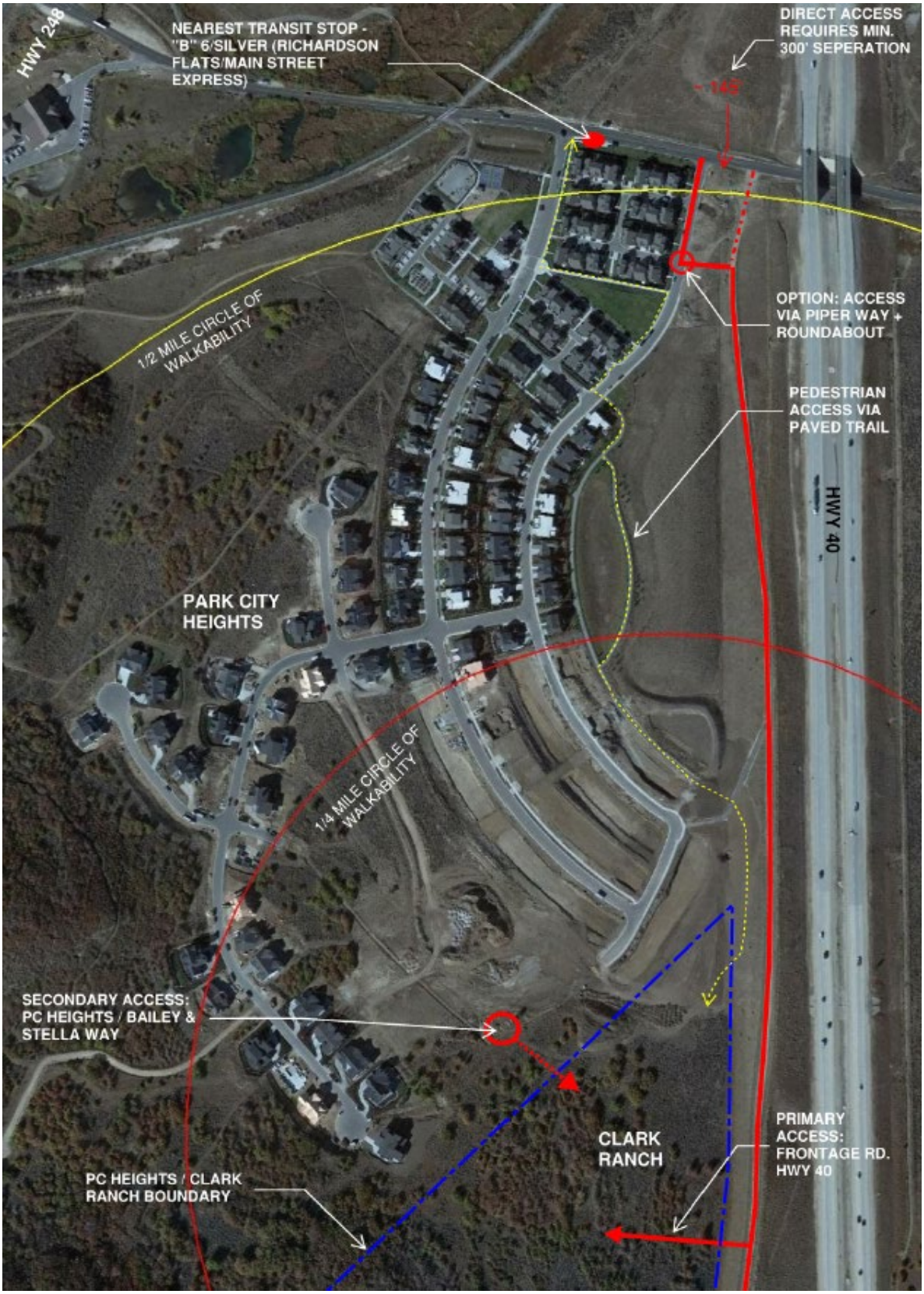
Careful attention should be given to the existing residential neighborhoods in the Park City Heights area and the need for affordable, attainable, and workforce housing opportunities within Park City limits.

Based on the feasibility study findings, the Housing team recommends that the Council consider Clark Ranch as an opportunity for a public-private partnership to develop affordable housing. The next steps would include directing staff to prepare a draft Request for Proposals (RFP) and to return to Council with the draft for your review.

Exhibits

Exhibit A: Clark Ranch Feasibility Study
Exhibit B (Attached): Map of Pedestrian and Bicycle Connections

Exhibit B: Map of Pedestrian and Bicycle Connections



CLARK RANCH

AFFORDABLE HOUSING FEASIBILITY STUDY - DRAFT

SEPTEMBER 19, 2023

HOFFMAN LAW

TALISMAN CIVIL CONSULTANTS

G.B.D

stereotomic

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Introduction

Mr. Browne Sebright
Housing Program Manager
Park City Municipal Corporation
445 Marsac Ave. / P.O. Box 1480
Park City, UT 84060
435-615-5153

Dear Browne,

We appreciate the opportunity to assist in the preliminary planning phases of this exciting new potential to service the community through affordable housing. In an effort to provide the requested data as a means for assisting city staff and elected officials to further define a path forward for the project, we initiated a (3) phase process in an effort to provide clarity.

For the course of the study, we executed an extensive site analysis phase, examining the natural and existing infrastructure statistics surrounding the city owned property identified for development. As well as analyzing two separate entitlements processes; the Master Plan development process and the Affordable Master Plan development process defined by the city's Land Management Code (LMC).

We then established baseline estimates per each of the scenario's outlined in the scope of services, by creating baseline numbers using the optimum unit balance as requested per our various conversations.

The final step included balancing the statistical goals with an architectural test fit, including basic massing studies using computer aided processes.

The results of the steps outlined above are then included in the subsequent pages of this study. As the project is advanced forward, careful development of the site planning, as well as refinement of the visual logic should be carefully considered to provide the type of function and aesthetics which will compliment the existing adjacent open space.

We hope the information contained here will provide significant clarity to you and your team. As always, please feel free to reach out with any questions you may have as you implement the information.

Sincerely,

Principal-in-Charge,
AIA, NCARB, LEED AP, BD+C
Stereotomic Architecture + design

executive summary

The following information provided in the study is presented as a means to help guide city management and elected officials with a basic, high level analysis of the existing Clark Ranch - West Parcel (Clark Ranch West - CRW) and the potential of the site for affordable housing development. The approach utilized a 3 phase approach. Phase I, represented here in the site analysis section, looks to gather critical information on the current site and infrastructure to form a comprehensive understanding of the project constraints and attributes.

The Alta Survey and Title Report do not indicate any encumbrances to the sites development. The topographic survey illustrates the magnitude to which the sloping site will dictate the overall layout. With slopes between 11% to +70%, the land absolutely dictates many aspects to the design. Fortunately, the Topographic site survey and the visual impact analysis show the areas which are the most prime for development coincide with the lowest slopes and the least amount of visual impact. Based on the current Sensitive Lands Overlay defined in the Land Management Code, it would be most advantageous to include a minimum site area of 125 acres to include in any future entitlements procedure even though we've targeted a clustered approach on +/- 12 acres in the northeast corner of the west parcel.

Any pursuit of development entitlements would require a rezone of the property, as the current zoning (RO - Recreation Open Space) do not allow for the addition of residential units. Based on our review of the current zoning and Land Management code, several possible existing zones could be re designated for the site to allow for the options represented here. Of course, there is the possibility of creation of a new zone, but in most instances our team has looked into approaches which could be satisfied with existing zones and regulations already defined by the code.

The overall location and sloping topography of the site provide substantive challenges, both to the overall cost to develop the project as well as structural challenges to provide a simple, yet welcoming environments. With a substantial price tag for the horizontal infrastructure (installation of roads, utilities, storm-water controls, etc...) it challenges the design to develop a site sensitive project which can offset the increased infrastructure costs by maximizing the unit count. The initial carrying capacity of the existing infrastructure (water, sewer, traffic volume) would support upwards of 275 units.

Through our overall analysis, we propose a simplified road layout which balances cut/fill excavation operations. The density options presented range from 90 units of grouped Town-homes, to 230 units of multifamily stacked flat configurations. We purpose the units to be provided through multiple unit types, including a mix of duplexes, town-homes and small to medium scale stacked flats. The Higher unit count maximizes the efficiency of the current carrying capacity of the infrastructure, while provided the best offset on a per unit basis of the overall development costs. The grouping of units in this fashion provide a greater potential for sustainable development (net zero energy & carbon), while still achieving a very human centric built environment.

vision statement

The Clark Ranch study provide a unique opportunity to envision a new model for Park City in the 21st century. As our community continues to grows exponentially, it becomes increasing more important to provide an equitable, sustainable development to ensure a diverse population. At the forefront of this idea is to strike an equal balance between social, environmental and financial constraints. The social aspect looks to maximize accessibility, afford-ability and equity. The environmental leg must exalt the preservation of natural character, and look to provide a regenerative project which limits the carbon and energy usage as a means to protect the future. Last but not least, the project must strike a fiscal balance to guarantee the vision can become reality.

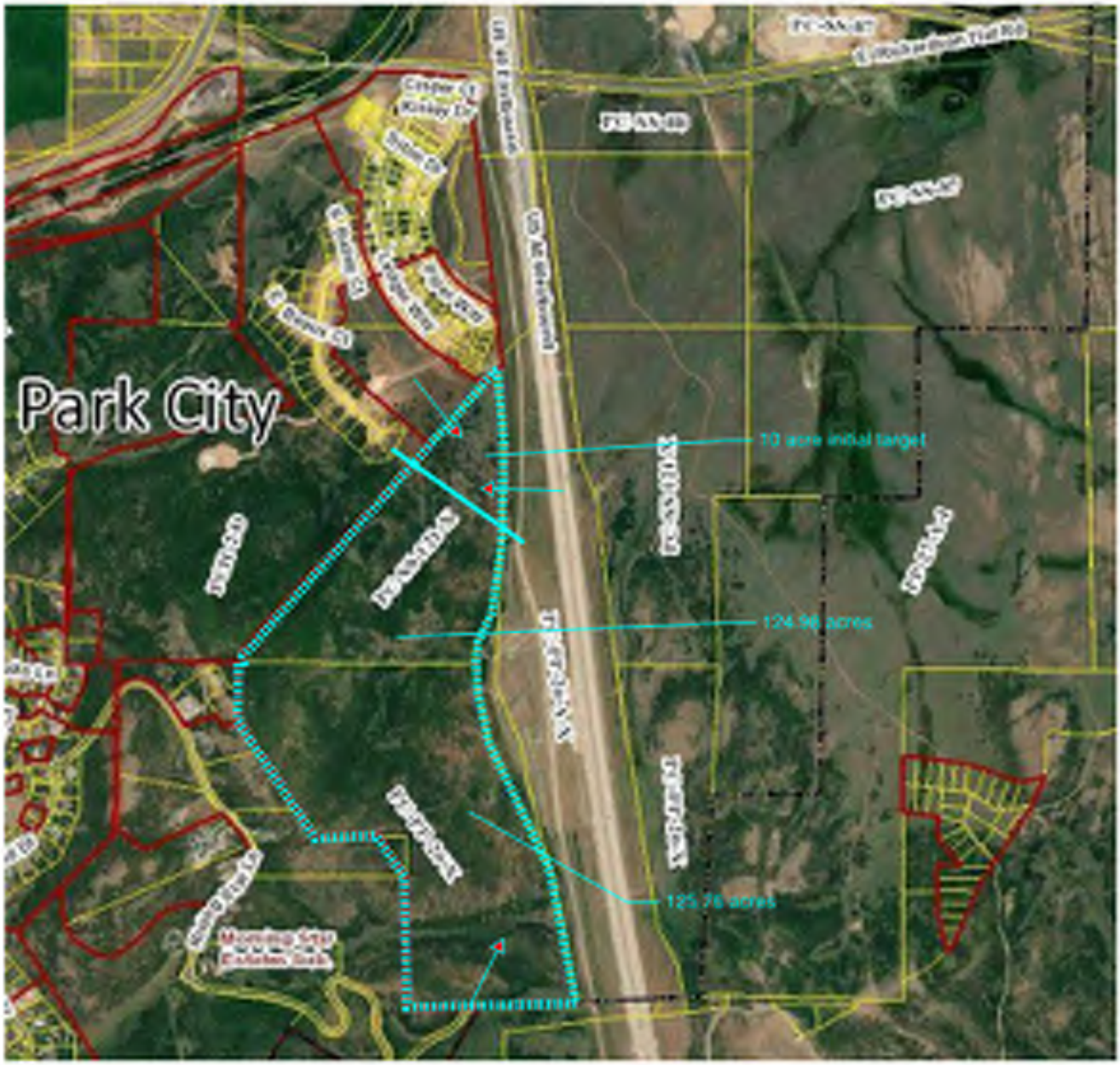
The feasibility study here proposes to aid in creating an increase in available housing targeting the "missing middle". As we've seen the evolution of our economy and the speculative investment in housing rapidly pushes beyond the level of affordable for many in our community, it becomes important to embrace the typologies which suit our current gap.

Our work here proposes to take a "critical regionalist" approach; in which modern ideas and solutions to more urban problems are adapted to our regional locale. This approach looks to define what may be summed up as "Mountain Urbanism".

Site analysis

The first phase for the design team began by making a comprehensive site analysis exercise to understand the physical constraints apparent or deduced for the CRW property. From this exercise, several factors are identified as major constraints and many others are categorized as major & minor considerations, based on the potential impact they hold for future development. The major constraints include: topography, access, infrastructure and visual impact. Major considerations include; potential pedestrian access & accessibility, potential traffic impact, Hazard potential and preservation of natural environment. Minor considerations include; soil characteristics, financial impacts, remediation of potential hazards. The major factors of note are included here as part of the site analysis phase.

Illustration 6.1



site characteristics

Alta Survey

City Staff provided the Title report for the entirety of the City Owned property at Clark Ranch. Talisman Civil Consultants and Hoffman Law provided a review, and noted No notable discrepancies or identified items which would need resolutions.
As part of this study, Talisman Civil Consultants conducted an ALTA/NSPS Land Title Survey dated July 21, 2023. Upon completion of the survey, no remarkable easements, or barriers to development on the northeast portion of the west side parcel were identified. A copy of the completed Survey is included in Appendix A.

Topography / Slope Analysis

Talisman Civil Consultants has developed a preliminary Topography Survey of the parcel utilizing state topography data system. This dataset, although accurate to within 2 feet, was determined this would be the most cost effective given the significant snow cover which persisted late into the spring season.
The results of the study indicate the topography will play a major role in the layout & design of any development targeting for the CRW parcel. The predominant slope descends East through North-East, with very minor discrepancies. Slope angles vary from 11%-15% at the lower and mid elevations on the Northeast, to over 70% on the west side. It should be noted that the average slope encountered in the develop-able target (10 acres in the Northeast tip) is 17%-25% (6:1 – 4:1 ratio). Shallow to moderately shallow drainage pathways exist across the slope.
The slope analysis is key to identifying the amount of available area that can be targeted for development based on the LMC Sensitive Lands Overlay (S.L.O.) guidelines. The SLO identifies the following slope categories and development restrictions on the following slope categories:

Steep Slopes (15% - 30%) – 75% of the area must remain as Open space.
Steep Slopes (30%- 40%) - 75% of the area must remain as Open space.
Very Steep Slopes (+40%) – No Development Allowed

Much of the area targeted for development lies within the Steep Slopes (15%-30%) which require 75% of the area to remain as Open space.

Considering the language of the SLO, section 15-2.21-4 (H) defines the density and outlines the amount of land development which can occur in the Steep Slopes (15%-30%). Section A defines the maximum Density as outlined by the underlying zoning, without significant adverse visual or environmental impacts. Section B recommends several organizational strategies for development, and as such it has

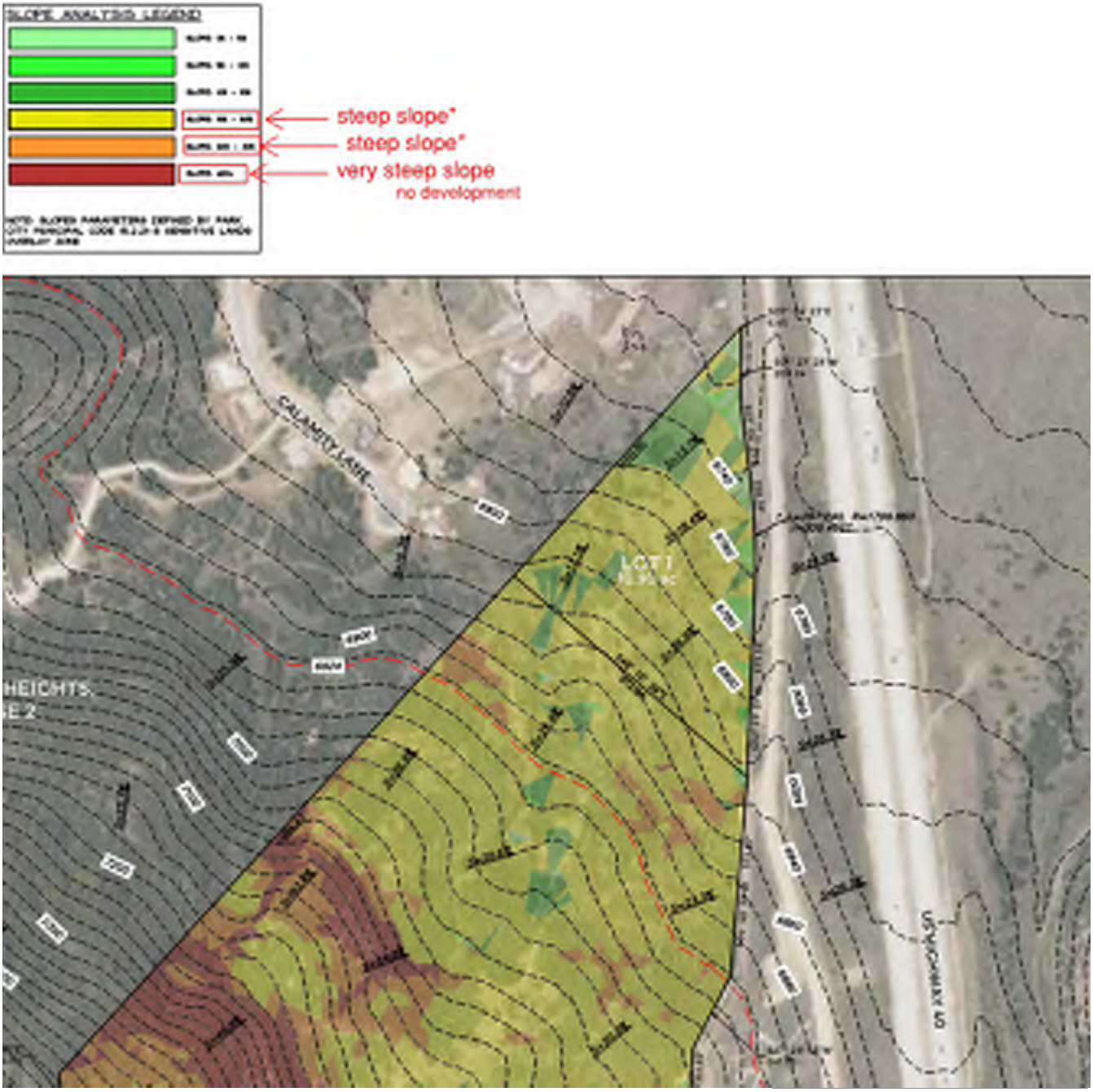


Illustration 8.1

been identified a "Clustered Development" would provide the least intrusive visual and environmental impact on the site. Section C allows for a transfer of density to the "least intrusive portion of the site". In this instance, the Northeast corner of the site provides the "least intrusive" portion of the site, both visually and through horizontal development (grading & cut/fill operations)

Therefore, it should be noted that the full 125 acres of the study parcel should be kept intact, with much of the west – southwest portion of the parcel (which contain the steepest slopes) to be designated as permanent Open space for the benefit of the community as outlined in the SLO

site characteristics

Illustration 9.1

Access Analysis

The evaluation process of the potential access options for the Clark Ranch West parcel identified the existing frontage road grade as the best primary access option. Discussions with the Park City Engineering team offered a solution to the access point from Richardson Flats road, given its close proximity to the Piper Way intersection. (Approx. 145′) A direct access as it intersects Richardson Flats Road is deemed not sufficient in its proximity with Piper way. A 300′ min. separation is suggested to provide the proper safe spacing, which is not possible. An alternate option of utilizing the existing piper way intersection, then adding a roundabout at the intersection of Kinley Way and Piper Way with a spur running to the east connecting to the frontage road grade. The logistics of which would need the endorsements from UDOT, Summit County as well as Park City Engineering.

Based on our discussions with City and county officials, it has been ascertained that Summit County currently is responsible for the existing frontage road grade within the UDOT easement for highway 40. If and when developed, the process would be in cooperation with UDOT, Summit County and Park City Municipal Corporation for design, whereas long term maintenance would fall to Park City as a city public right-of-way.

Based on NFPA (National Fire Protection Assoc) section 1140 “Standard for Wild-land Fire Protection”, the team recommends (2) distinct and separate vehicular access paths. Per section 11.1.4.1, these

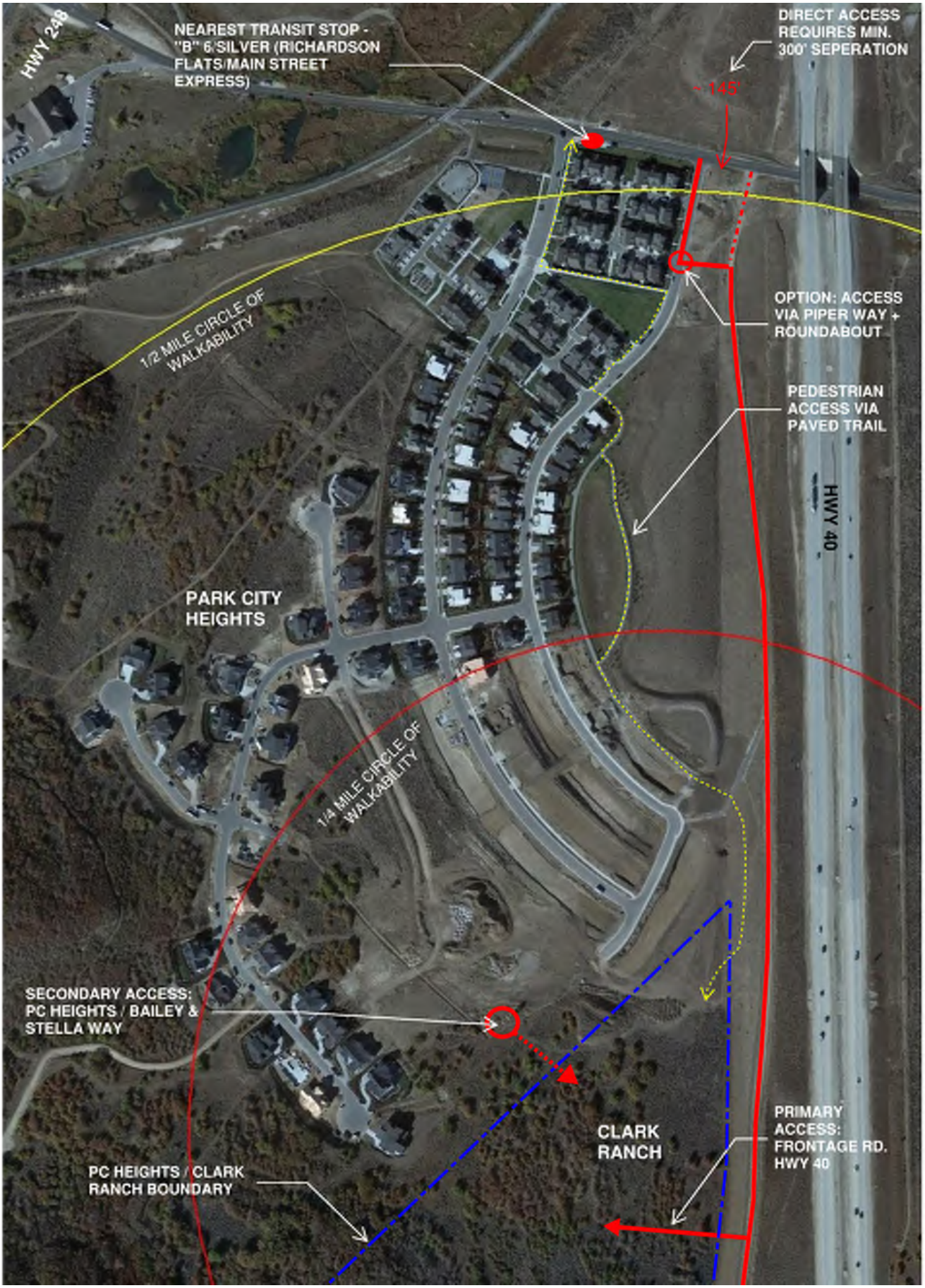


Illustration 10.1

Table 11.1.4.1(a) Required Number of Access Routes for Residential Areas

Number of Households	Number of Access Routes
0–100	1
101–600	2
>600	3

Fig. 11.1 - source National Fire Protection Assoc. (2022) Sect 1140- "Standard for Wild-land Fire Protection"

11.1.4.3 Where multiple means of access are required, one of the means of access shall be permitted to be restricted for emergency use only, when approved by the AHJ.

11.1.4.4 Where multiple means of access are required, they shall be located as remotely from each other as practical and acceptable to the AHJ.

Fig. 11.2 - source National Fire Protection Assoc. (2022)Sect 1140- "Standard for Wild-land Fire

connections should be located "as remotely from each other as practical".

Secondary access for the development was considered for both safety and functionality, and it was determined that a connection to the existing Park City Heights neighborhood directly to the north would be the most advantageous. Several provisions in the LMC provide for neighborhood connectivity. Section PCMC 15-7.3-4 (A)(1)(d) reads " Proposed Streets shall be extended to the boundary lines of the tract to be subdivided, unless prevented by topography or other physical conditions, or unless in the opinion of the Planning Commission such an extension is not necessary for the coordination of the layout of the Subdivision with the existing layout or the most advantageous future Development of adjacent tracts." Additionally, PCMC 15-7.3-4 (A)(6) "CONSTRUCTION OF DEAD-END ROADS" provides guidelines for fire protection, convenience and efficient utilities by outlining the connections between adjacent developments.

Hoffman Law has conducted a background review and finds no evidence which would preclude development of a secondary connection to the existing planned streets in the Park City Heights neighborhood. There is a stub available for the Clark Ranch West property in the next phase of Park City Heights development, and the roads in the existing neighborhood are public.

illust. 11.3- source: Park City Planning Commission, Park City Heights Plat Map

Pedestrian / Bicycle Access

Pedestrian and bicycle access provide a slight challenge given the nature of the existing topography and distances to existing public transit infrastructure. The current north edge of the proposed CRW parcel lies approximately 1/2 mile from the transit stop for Park City heights. This is what is generally at the acceptable limit for walk-ability; especially considering the elevation gain / loss from the transit stop to CRW.

In discussions with Park City Staff, a combination of micro-transit, and paved walking/biking paths would be planned to connect the north end of the parcel with the existing trail, bus stop at PCH, and eventually the rail trail. A new transit stop for the development could be possible, and would need coordination with transit staff over the logistics.

The main Pedestrian connection would be via a paved 8′ wide trail exiting the Clark Ranch Parcel on the Northeast end, connecting to the existing trails developed as part of the Park City Heights neighborhood. This path would have one road crossing in the Park City Heights development (Piper Way) and it is recommended further study to understand the current traffic volumes at this location. Several upgrades my be advantageous given the current volume of cars passing this location.

Within the plan for the development is a series of single track gravel and multiple use paved trails to be used for distinct pedestrian and bicycle movement between buildings. This provides two advantages; the first by decoupling the automobile traffic from the pedestrian, and second by providing alternative means of ascending and descending the natural slopes of the terrain at lower angles from the road grade with sidewalks adjacent to road.

Initial Traffic volume estimates

As preparation for the validity of our density studies, a simulated trip generation report was completed with analysis from Fehr & Peers traffic engineers. Fehr & Peers collected turning movement counts for a separate project at the SR-248 / Richardson Flat Road Intersection in January 2020. The 2020 counts at the intersection showed two-way volumes on Richardson Flat Road (east of SR-248) of 214 vehicles and 172 vehicles in the AM peak hour and PM Peak Hour, respectively. A high level assessment was performed to ascertain the peak hour trip generation on the Richardson Flat Road. The Roadway Level of Service was estimated based on planning level generalized peak hour two way volumes for roadway capacities.

Level of Service	Peak Hour Traffic Capacity Estimates
	2 Lanes
LOS B or better	≤ 1,098
LOS C	1,099 – 1,215
LOS D	> 1,215

Source: Fehr & Peers, based on FDOT Generalized Peak Hour Two-Way Volumes for developed areas less than 5,000 population, adjusted for non-state signalized roadway.

Fig. 13.1

As a generalized assessment, to preserve the existing Level of Service (LOS) B (or better), the different between the current Peak Hour Two way traffic Thresholds and the observed use from January 2020 is approximately 884 Peak hour two way trips – AM and 926 Peak hour two way trips - PM.

View-shed Corridors / Visual Impact analysis

As outlined in accordance with the "Sensitive Lands Overlay" (SLO) outlined in the Park City Land Management Code (LMC), the visual impacts have been evaluated to understand the areas of the CRW parcel which could hold the least invasive impact to the entry corridor along highway 40 and highway 248. Often considered the "back entrance" to Park City, this corridor is quickly becoming the front door for the increasing number of workers who migrated into town from the Heber valley and eastern summit county.

Along the approach coming south on highway 40, it's obvious the west ridge of the parcel provides the most prominent visual landmark for the area. As one would expect, the closer you get to the subject parcel, the more prominent the lower slopes of the land area become. But, as vehicles become adjacent to the CRW study area, the lower grades on the Northeast tip become obscured by the elevated grade of the Highway 40 corridor. This reinforces the initial identification of the Northeast corner of the parcel to be the least invasive for development.

Illust. 14.1 - Clark Ranch West Parcel as viewed from Hwy 40 Southbound

Illust. 14.2 - Clark Ranch West Parcel as viewed from Hwy 40 Southbound; as you approach from the north

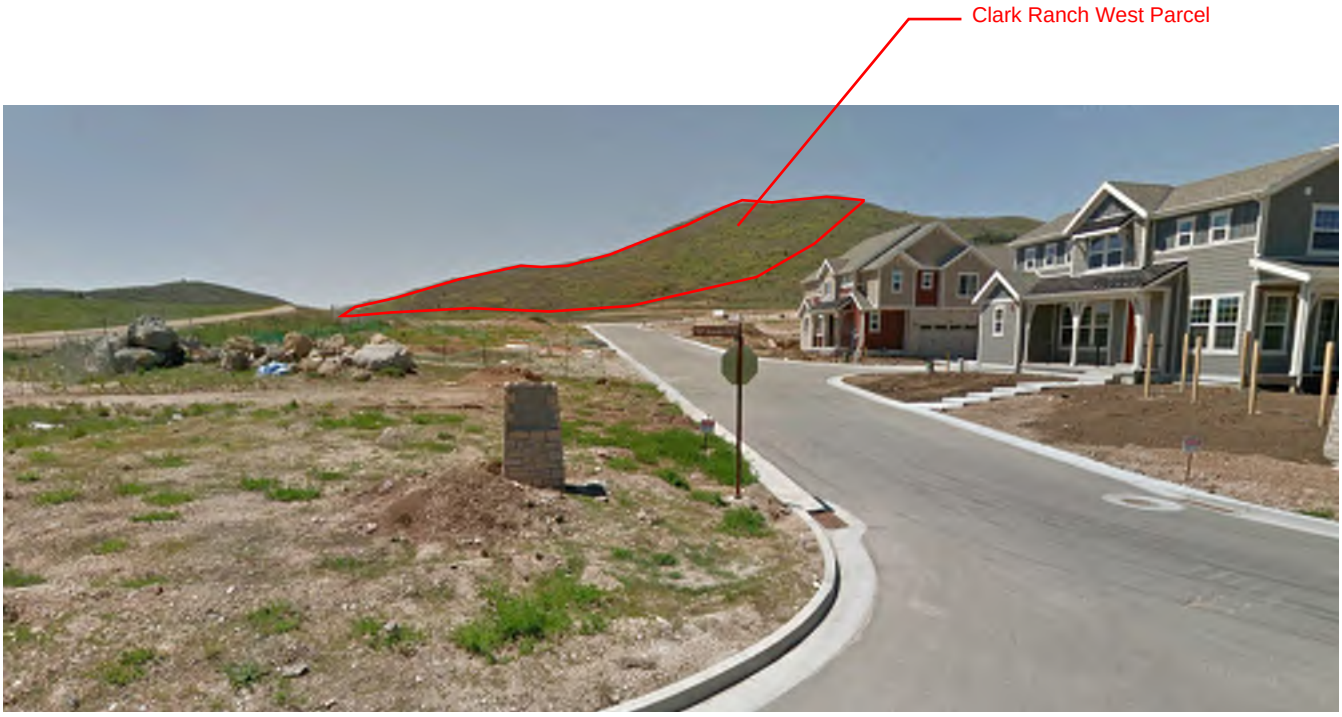
Illust. 14.3 - The Clark Ranch West Parcel s Northeast corner becomes obscured by the grading for HWY 40 in close proximity

As you approach traveling northbound on Highway 40 from the south, the topography makes a transition from a easterly slope to more Northeast facing slope. This transition in terrain obscures the view of the lowest most elevations on the parcel, which correspond to the same area in the northeast quadrant as identified by traveling in the southern direction.

As illustrated by the following illustrations, the lower Northeast corner of the site is the location of least visual impact from a variety of different locations in the vicinity.

Illust. 15.1 - The North portion of Clark Ranch West Parcel as viewed from HWY 248 near the Par k City Film Studios

Illust. 15.2 - The North portion of Clark Ranch West Parcel as viewed from the roundabout at the Park City Hospital



Illust. 16.1 - The North portion of Clark Ranch West Parcel as viewed from the intersection of Piper Way and Richardson Flat Road

Illust. 16.1 - The North portion of Clark Ranch West Parcel as viewed from the intersection of the rail-trail and Richardson Flat Road

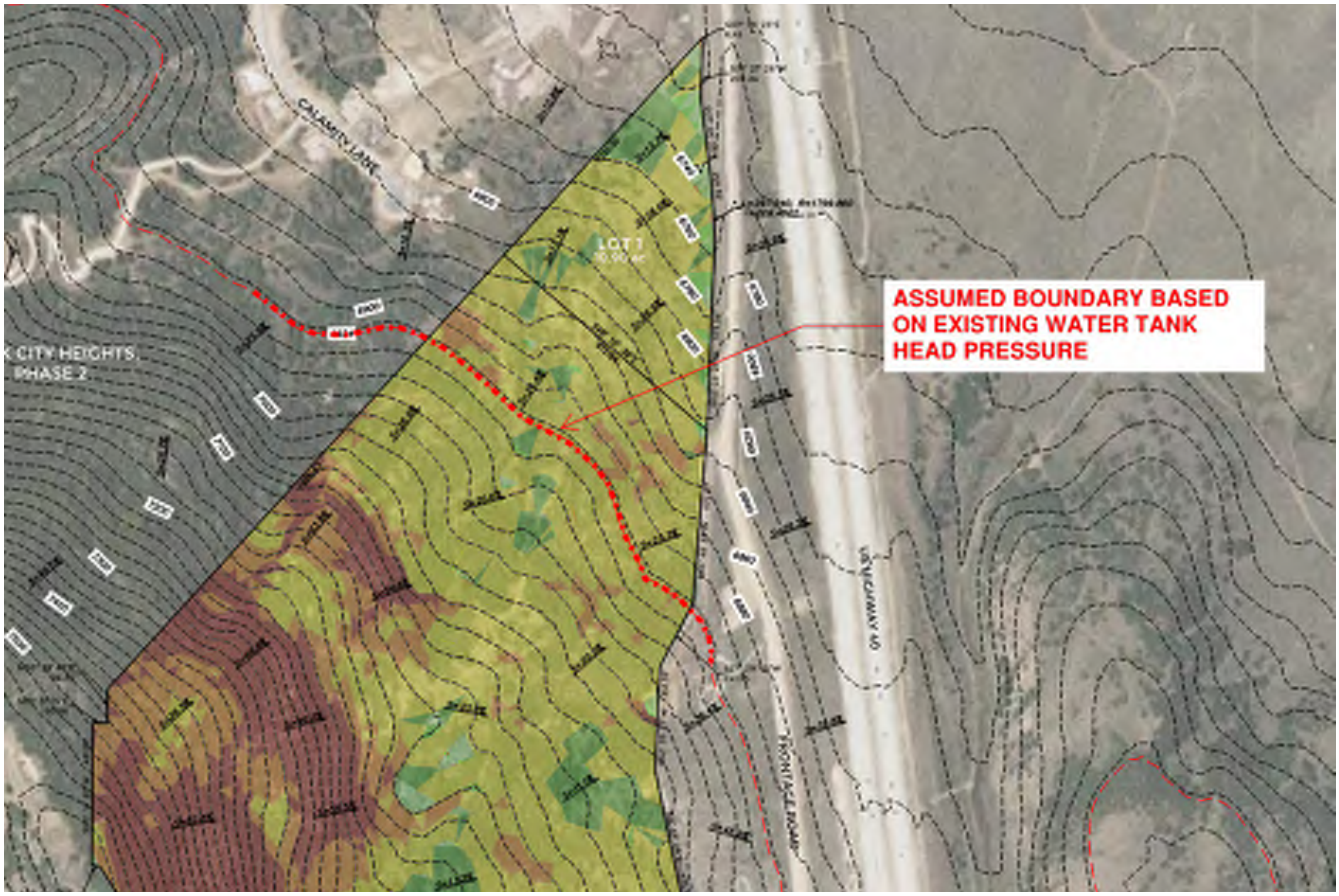
Utilities - Preliminary Assessment

Culinary water

The culinary water system is owned, operated, and maintained by Park City's Water Division. The Equivalent Residential Connection (ERC) is a unit of measurement that represents water demand per household. Utah Administrative Code: R309-510-7 defines peak day demand to be 800 gallons per day per ERC. Utah Administrative Code: R309-510-7 also provides guidance for outdoor irrigation demand. The proposed Clark Ranch Development is located in Map Zone 2 for "Low" Normal Annual Effective Precipitation. The corresponding irrigation demand per Table 510-3 is 2.8 gpm per irrigated acre Water access to the site is through the city's municipal water supply. The current holding tank located above and directly west of Park City Heights would be the supply branch to service any new development in the Clark Ranch Area. Currently, an existing 2,000,000-gallon storage tank services Park City Heights. The existing elevation of the storage tank is at elevation 7,017 feet. To maintain a minimum service pressure of 40 psi without booster pumps, the development of Clark Ranch may not exceed an elevation of 6917'. The proposed culinary water system for Clark Ranch will connect to an assumed 8"

Illust. 17.1 - Conceptual Water Connection layout

stub off the cul-de-sac of Calamity Lane in Phase 5 of Park City Heights. From the connection in the Calamity Lane, the proposed culinary water runs 2,331 linear feet of 10" C-900 PVC pipe the entire length of the new roadway, reconnecting at an intersection of the new road to provide a water loop. The development also requires a pressure reducing valve station to mitigate high water pressure due to elevation drop in the new water system.



Illust. 18.1 - Assumed boundary based on existing water tank head pressure

Sanitary Sewer

Talisman Civil Consultants estimates that the Clark Ranch Development will require approximately 2,300 linear feet of 8" SDR-35 PVC pipe. See Exhibit 1 in the Appendix. The proposed sanitary sewer infrastructure will connect to existing manhole #23 and run the length of Piper Way in Park City Heights. See Figure 2 below. The conveyance system would ultimately direct wastewater flow to the Silver Creek Water Reclamation Facility where it is treated and returned to Silver Creek before eventually flowing to Echo Reservoir. According to discussions with SBWRD, the existing sewer line between manholes #58 and #59 limits the available capacity at 54.3 gpm. The existing sewer system has enough capacity to serve 229 units without requiring upgrades to the existing infrastructure. If the Clark Ranch Development were to build greater than the baseline of 229 units, the existing sewer line between manholes #8 to #58 to #59 must be upsized from an 8" pipe to a 12" pipe. Improvements to the sewer line between manhole #8 and #40 require special attention. The existing sewer line is shallow in slope

and also makes an aerial crossing over a natural waterway which will complicate design solutions.

Illust. 19.1 - Existing Sanitary Sewer map for the Park City Heights Development

Storm-water Management

The Park City Storm-water Management Program and the Park City Storm-water Drainage Design Manual dictates the parameters used to evaluate requirements for the Clark Ranch storm drain system. Important design parameters from these documents include but are not limited to:

- Pipe shall be designed to convey the 10-year storm recurrence interval
- Detention ponds shall be designed for the 100-year storm recurrence interval
- The allowable post-development discharge rate must be less than or equal to the pre-development discharge rate
- The minimum storm drain pipe diameter shall be 15"
- The source for precipitation data is NOAA Atlas 14

As of July 1st, 2020, the Utah Division of Water Quality has implemented a requirement to retain and infiltrate the 80th percentile storm event for new development projects that disturb greater than or equal to 1 acre. The 80th percentile storm depth for Park City is approximately 0.47".

Preliminary Soils Evaluation

A custom soil resource map for the CRW project area was included as part of a larger soils study on the adjacent Park City Heights project. As identified in the report, the majority of the soil consists of Loam/Clay/Cobbly Loam / Stony Loam – clay. The general depth to restrictive soils formation (Lithic Bedrock) was identified as 40"-60", with locally variable differences.
Although a complete Geotechnical report of the soils for this parcel has not been conducted, the data from the adjacent parcel for Park City Heights identified the following characteristics:

"The subsurface sequence generally consists of surficial clays underlain by clayey gravels with some sands and generally occasional cobbles. The clays generally extend to depths ranging from 2.5 – 9.5 feet....are moderately to highly plastic. These soils exhibit high expansive characteristics." Topsoil has been identified as 6"-12", containing major roots and organic materials.... Clays below the loose surface zone exhibit moderate strength and compressibility characteristics....Bedrock appears to consist of quartzite with relatively high strength and low compressibility characteristics."

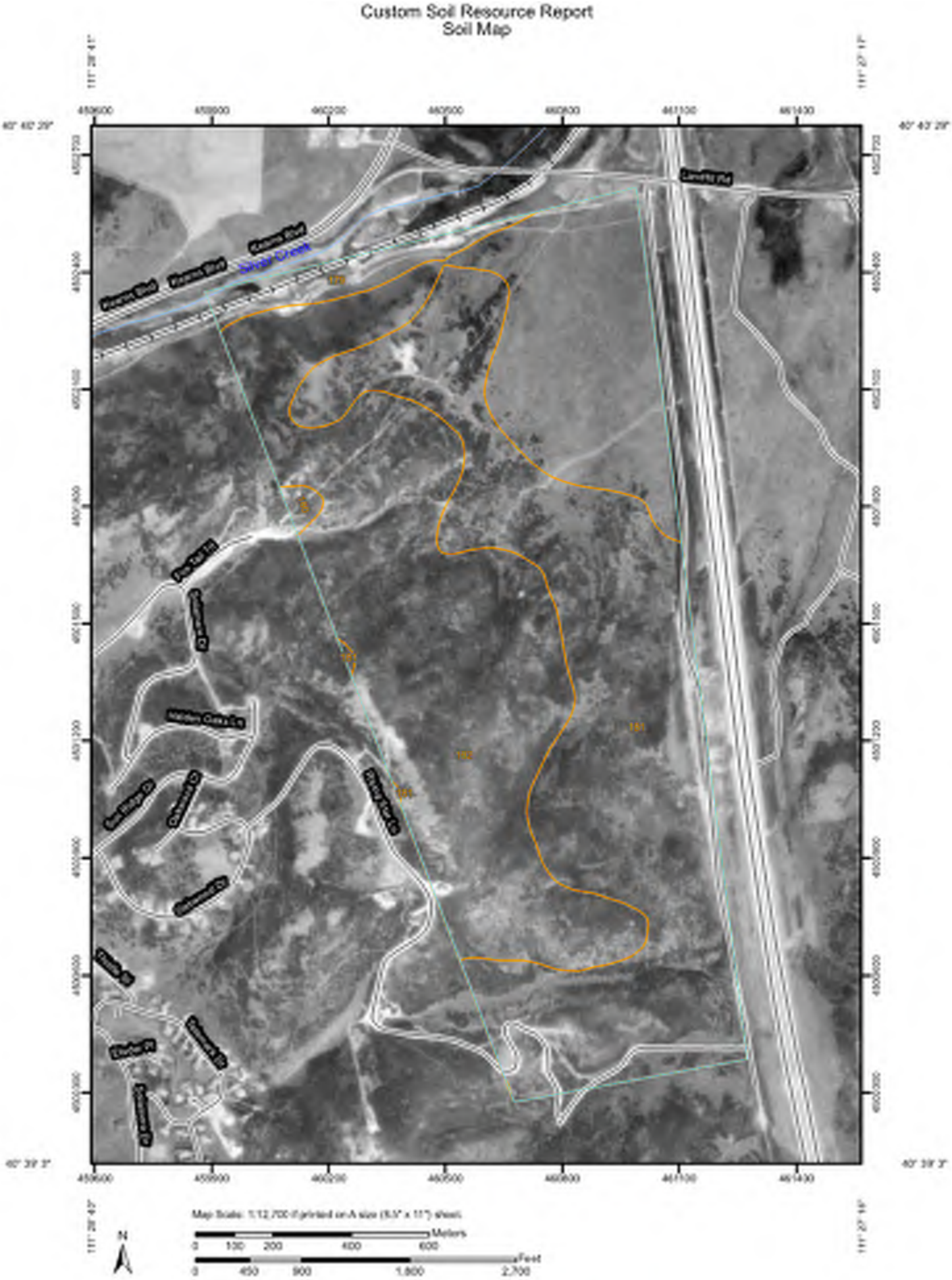
A full copy of the preliminary soils investigations are available in appendix H.

As of this study, no evidence has been found of significant soils contamination. The CLR parcel lies outside of the established Park City Soils Remediation boundary. It should be noted further exploration of development should include a soils management plan. The plan would need to be coordinated with the soils management team at Park City Municipal Corporation, and include, as a first step, a coordinated testing protocol which follows the established method outlined by the city.

Map Unit Legend

Summit Area, Utah, Parts of Summit, Salt Lake and Wasatch Counties (UT613)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
179	Wanship-Kovich loams, 0 to 3 percent slopes	14.8	3.1%
180	Yeates Hollow-Henefer complex, 3 to 15 percent slopes	2.1	0.4%
181	Yeates Hollow-Henefer complex, 15 to 30 percent slopes	205.3	42.9%
182	Yeates Hollow-Henefer complex, 30 to 60 percent slopes	256.9	53.6%
Totals for Area of Interest		**479.1**	**100.0%**

Fig. 20.1-Major soils composition for the Clark Ranch West Parcel Source: "Custom Soil Resource Report for ...Park City heights Soil Survey", 01/2011, USDA / Natural Resources Conservation Service



Illust. 21.1 - map illustrating the major soils composition for the Clark Ranch West Parcel; Source: "Custom Soil Resource Report for ...Park City heights Soil Survey", 01/2011, USDA / Natural Resources Conservation Service

Environmental Analysis / Hazardous assessment

The property consists of currently undeveloped lands adjacent to other residential developments and transportation infrastructure. Ground cover on the property consists mainly of grasses, sagebrush, gamble oak and small clusterings of Pine near the ridge on the far west side. The existing use of the property is primarily open space, with a small collection of trails which traverse the upper portions (west side) of the study parcel.

The primary historical use of the property has been for livestock grazing for 3 to 4 generations. The property was originally owned by the Clark family, and subsequently purchased by the Gilmor family around the 1940's, who had previously leased the property for their livestock operations.

General indications and research suggest no direct contamination could be anticipated from the site (The Clark Ranch West Parcel). Although the Clark Ranch Conservation Resources Inventory mentions a EPA Phase 1 Environmental Assessment from 2015 (by Kleinfelder) for the Clark Ranch parcels, a grama request to Park City Municipal produced no results. The Conservation Resources Inventory makes mention of reported higher than normal lead levels (pg 9), and mentions the proximity is "… located directly south of the Richardson Flats Tailings facility…" Therefore, it is assumed this is in reference to the east parcel of the Ranch. It should be of note, the western parcel, due to its proximity of the property to the Richardson Flat tailings site as well as to the Park City Heights (with historical slurry transfer ditch containing trace tailings as well as lead containing soil and cement debris), a site specific Phase I environmental site assessment should be conducted prior to any anticipated development.

Wildlife – Due to the encroaching infrastructure, the potential for wildlife habitat fragmentation is high. The Clark Ranch Conservation Resources inventory lists the parcels as a migratory area for Mule deer, Elk, and Moose. It is also listed as a potential habitat for Sage grouse, which is listed as a "Species of Concern" by the BLM and US Forest service. Although the last documented sighting of the Greater Sage Grouse is listed as 2008. It is recommended that any development be clustered to reduce habitat fragmentation, although encroachment of development to natural habitats is always a threat to the existing wildlife using the parcel. It is recommended the city "closely manage and regulate" the areas where domestic dogs may be off leash, and "actively develop" trail connectivity and discourage rouge trails from old trails and road cuts. (Wheeler, Morris and Coles-Ritchie, "Clark Ranch Conservation Resources inventory" 2015)

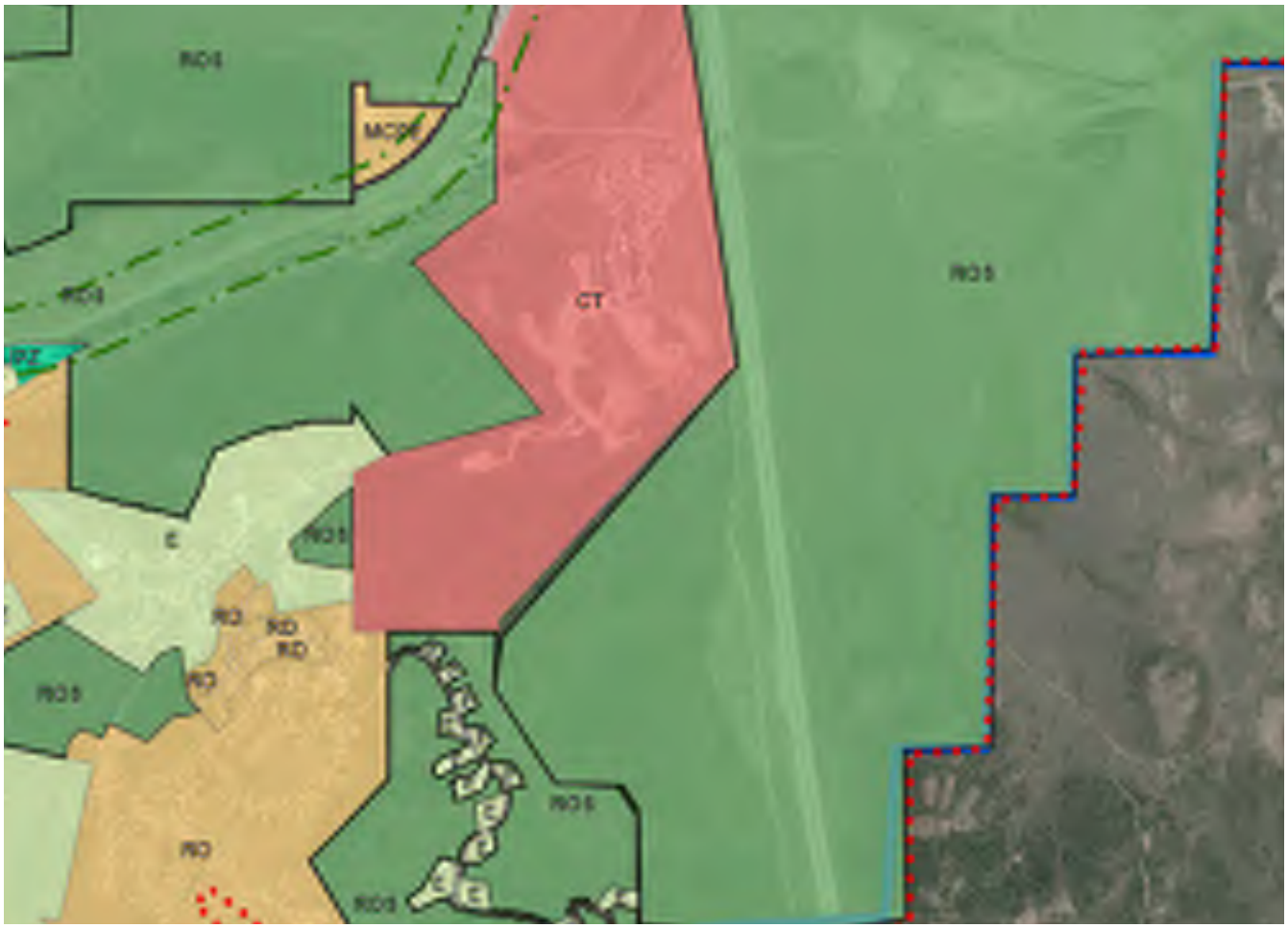
Vegetation – Similar threats to the native vegetation exist in parallel to those of the wildlife threats. A secondary consideration is the potential spread of noxious weeds, which can be exacerbated by grubbing, clearing and excavation activities.

Historical Analysis

There are currently no historical structures or significant sites listed on the Clark Ranch open space parcels on file with the park city planning department. The historical uses of the property include use as grazing grounds for livestock and a dairy farm operated by the Clark Family for 3 to 4 generations prior to the purchase of the property by the Gilmor Family in the early 1940's. There are mention of existing concrete slabs on the east parcel, remnants of the structures associated with the dairy barn and farm structures prior to the 1940's.

Current Zoning & LMC assessment

The Park City "Clark Ranch" property on the west side of Highway 40 is comprised of 2 parcels of roughly equal size, totaling over 250 acres, in the Recreation Open Space (ROS) zone (the "Clark Ranch West parcels"). The ROS zone does not allow for any residential uses and is not compatible with the Affordable Master Planned Development (AMPD) provisions in the Park City Code. Any affordable project on this property would need to be re-zoned to a zone that is compatible with the AMPD provisions or utilize an entirely new zone.



Illust. 23.1 - map illustrating the current zoning district for Clark Ranch West Parcel; Source: Park City Planning Department map gallery

Our team has developed 3 different density and site plan layouts, all of which can be accommodated through the existing AMPD process, once the subject property is re-zoned to an underlying zone that allows for the AMPD process. Any specific issues or requested changes to the AMPD provisions can be effectuated via a text amendment to the AMPD requirements. For example, in the layouts provided by our team that utilize a more dense, multi-family concept, the "10-foot step back" requirements that then allow an applicant to "earn" a maximum height of 45 feet for a given building could be removed or amended through a text amendment for projects with at least 90-95% open space. Due to the unique nature and sheer size of this property, the City could tailor the amendments to the AMPD process to impact only this project, or to incentive well-clustered, affordable housing projects on the perimeter of ROS zoned land within the City. The most accommodating zone for this project is the Residential Multiple (RM) zone. It provides the most regulatory flexibility for a clustered, affordable, development.

The entitlements process we envision for development of the property into a viable affordable housing project would involve at least sixteen steps, in the following general sequence: (1) Council's decision to include of one or both of the Clark Ranch West parcels in the proposed project (a total project size of roughly 125 acres if one parcel is included, or 250+ acres, if both parcels are included); (2) Council's initial decision regarding proposed subsidies for the affordable components of the project; (3) the selection of a private development partner who would serve as the project applicant; (4) negotiation and memorialization of the terms of a public/private partnership (Public/Private Partnership Agreement); (5) further refinement of project parameters with input from the private partner; (6) staff review, input, and eventual endorsement; (7) negotiate and draft an initial Development Agreement as a condition of rezoning to constrain the proposal to the negotiated configuration, design, cost, construction timing, and density, (8) Planning Commission review and recommendation to rezone and AMPD to correspond to the Development Agreement; (9) modification of the project based on Planning Commission input; (10) Council input and ultimate rezone, subject to the Development Agreement; (11) as the LMC currently reads, a likely a second AMPD Development Agreement within six (6) months of the Planning Commission's approval of the AMPD; (12) a Development Improvement Agreement, infrastructure assurance, and recordation of affordable housing deed restrictions; (13) horizontal infrastructure installation; (14) vertical construction; (15) selection of qualified tenants; and (16) occupancy. This sequencing analysis assumes no text amendments to streamline the process to assure maximum public participation and scrutiny.

Once the initial Development Agreement has been negotiated with the chosen private developer, and the parcel has been rezoned to an accommodating zone, the applicant would then pursue an AMPD process with the Planning Commission to effectuate the disturbance of, and development on, only +/- 12 acres in the northeastern most portion of the property, with the remainder of the property (110 - 238+ acres) fully deed restricted as open space. This process ensures that a portion of the property can be developed as affordable housing, with most (90-95%) of the Clark Ranch West parcels remaining as open space.

Illust. 25.1 - one option for access to the Clark Ranch West parcel. Source: Talisman Civil

The road layout developed as part of option A includes a balance of cut and fill operations, while selecting the most efficient and effective circulation option. This option allows the project to be phased, with the lower section of the road to be completed first, and the potential to be built out completely before the upper phase 2 is added. All of the slopes are compatible with the utility infrastructure, while maintaining lower slopes to the road sections providing slightly more linear road distances for the location of residential units.

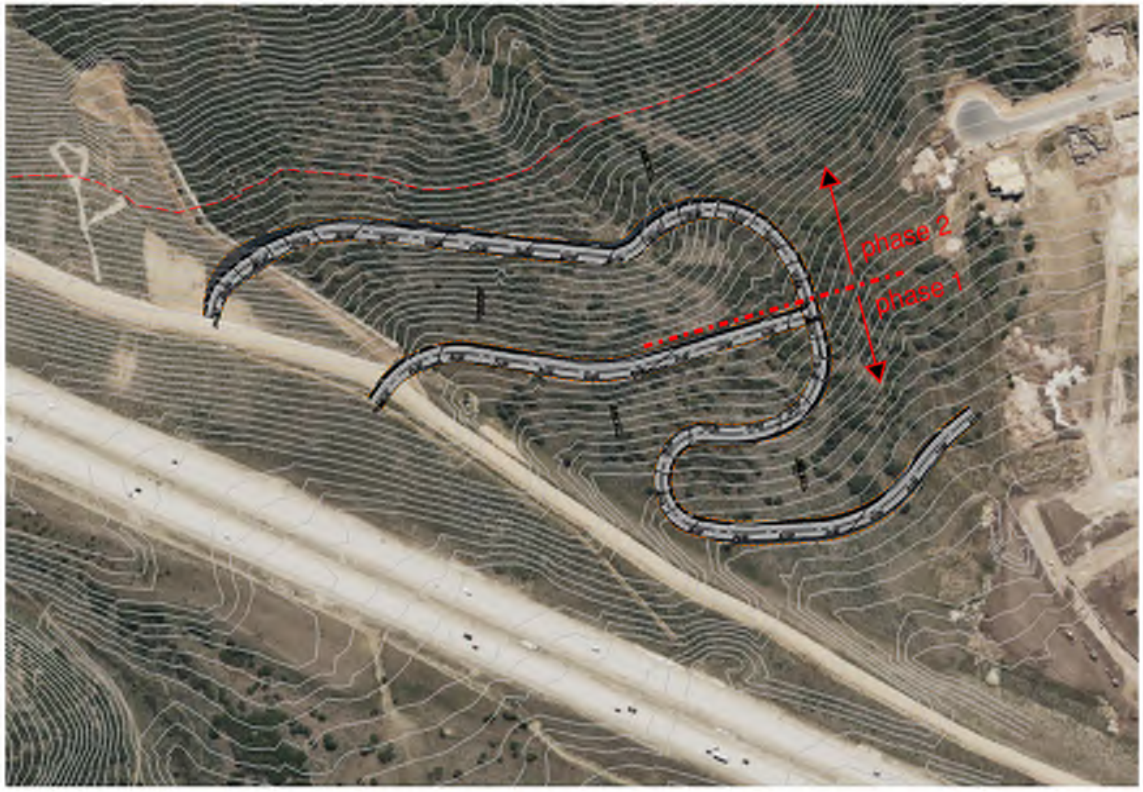
site circulation option A

Illust. 26.1 - second option for access to the Clark Ranch West parcel. Source: Talisman Civil

The road layout for option B looks to reduce the amount of overall site retain-age, while striking a balance between cut and fill operations. Due to the increased grading which happens at each road intersections, this option simplifies the connection and grading at the intersection of the middle access road. All of the slopes are compatible with the utility infrastructure. There is an increase in the linear distance to which this layout runs perpendicular with the topography, which slightly limits the street frontage available for the location of residential units.

site circulation option B

Illust. 27.1 - phasing illustration for the selected road layout Source: Talisman Civil



Illust. 27.2 - phasing illustration for the selected road layout Source: Talisman Civil

Part II - Conceptual Density Plan Proposals & Evaluation

Concept Density Plans

Illust. 29.1 - Illustration of the town-home unit typologies as part of the overall site design (stereotomic)

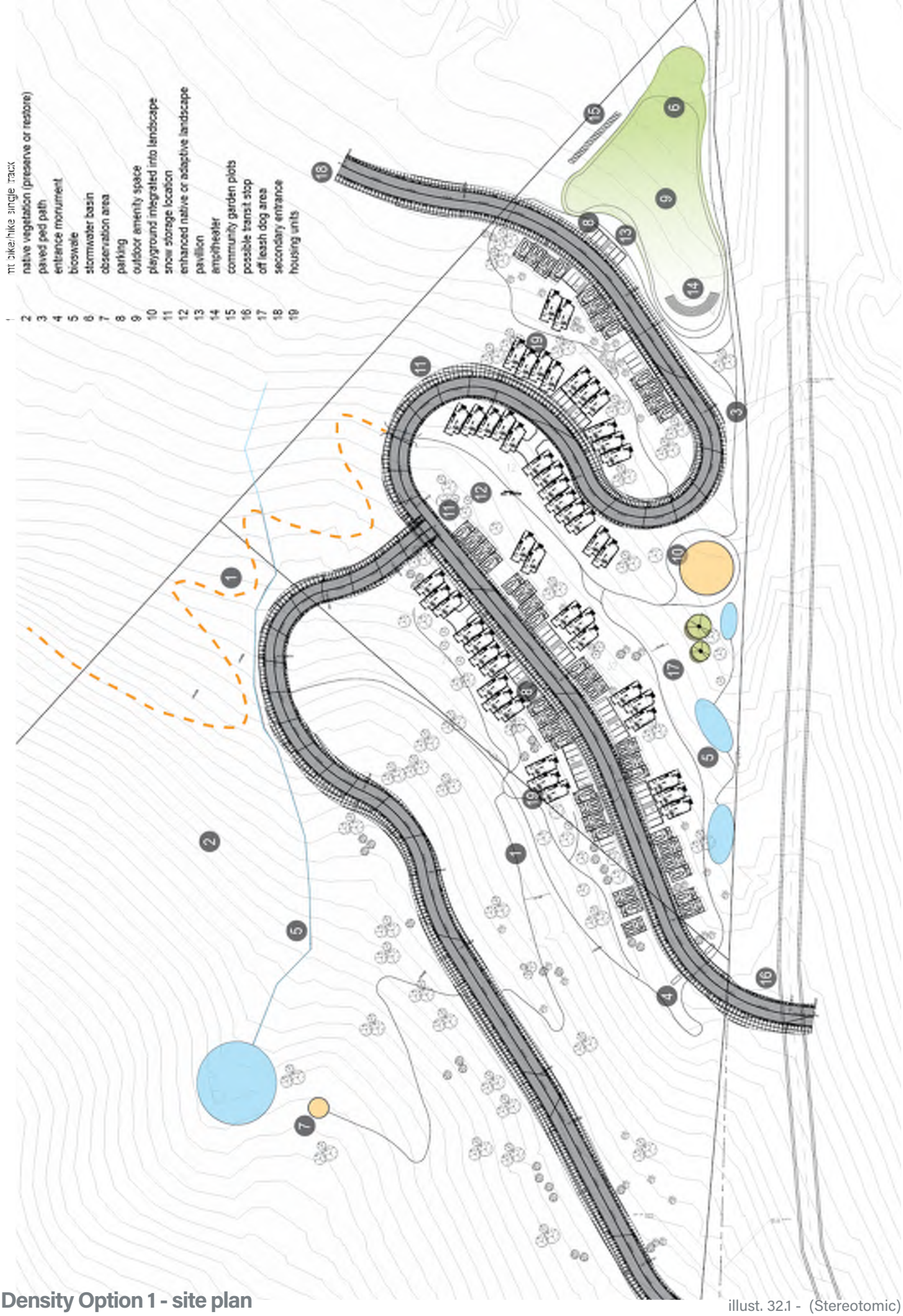
Density Option 1

The first density option plan proposes to provide a bridge between the single family & cottage typologies of the adjoining Park City Heights Development. The 90 Units proposed in this option represent the least dense option; which utilizes only a fraction of the capacity the existing infrastructure. The material and massing represent a unique approach which upholding the existing character of Park City. While providing a human centric focus to increased density, the row of town-homes is moderately spaced along the minimal road access being conscious and working in harmony with the steep topography. The overall character of the site and inherent characteristics of the parcels drive the

illust. 30.1 - conceptual visualization of the town-homes typology with shared entry access. The open areas between the units provide a unique approach to walk-ability by decoupling the pedestrian paths from the roadways. (Stereotomic)

Illust. 31.1 - Conceptual visualization of the smaller scale town homes with shared entry and shared parking as part of the overall plan. Shared open spaces allow generous access to the natural landscape and promote a sense of community (Stereotomic)

design to be sensitive to the existing open space by clustering the development to the lower north east corner of the site. The major constraints (topography, access, infrastructure and visual impact) drive the overall layout. Units are stretched along the existing topography, and provide much of the retaining necessary to install the roadways. This allows abundant green-space and pedestrian trails to weave in and out of the units, provide visual and audible access in close proximity to all units.



Density Option 1 - site plan

illust. 32.1 - (Stereotomic)

Illust. 33.1 - conceptual images to illustrate the option of public park / gathering spaces which double as retention pond areas - public art benches and / or amphitheater options

illust. 33.2

Simplified road layouts and amplifying infrastructure to double as outdoor amenity spaces work to nestle the development deep into the natural fabric of the lots. By utilizing the topography to define the characteristics of the development, a unique, park city centric design emerges to embrace what it means to live efficiently in the mountain west.

While this option is test fit across phase I of the development, phase 2 could be developed to provide additional units or used to reduce the developed area density by dispursing 90 units across both phase I and phase II.

The total density (90 units total, 0.72 units / acre) make the least efficient use of the carrying capacity of the site (culinary & wastewater capacities) with a trade-off of lower overall budget to construct, and the least overall scale of the massings.

illust. 34.1

illust. 34.2 - conceptual images to illustrate the option of public park / gathering spaces which double as retention pond areas - public art benches and / or amphitheater options Source: Stereotomic Arch & Design

illust. 35.1 - east view of the massing as it relates to the lower hillside (Stereotomic)

illust. 35.2 - south birdseye view looking north east towards the junction of hwy 248 & hwy 40 (Stereotomic)

illust. 36.1 - West view of the massing as it relates to the lower hillside (Stereotomic)

illust. 36.2 - north birdseye view looking south along hwy 40 (Stereotomic)

Density Option 1 Statistics

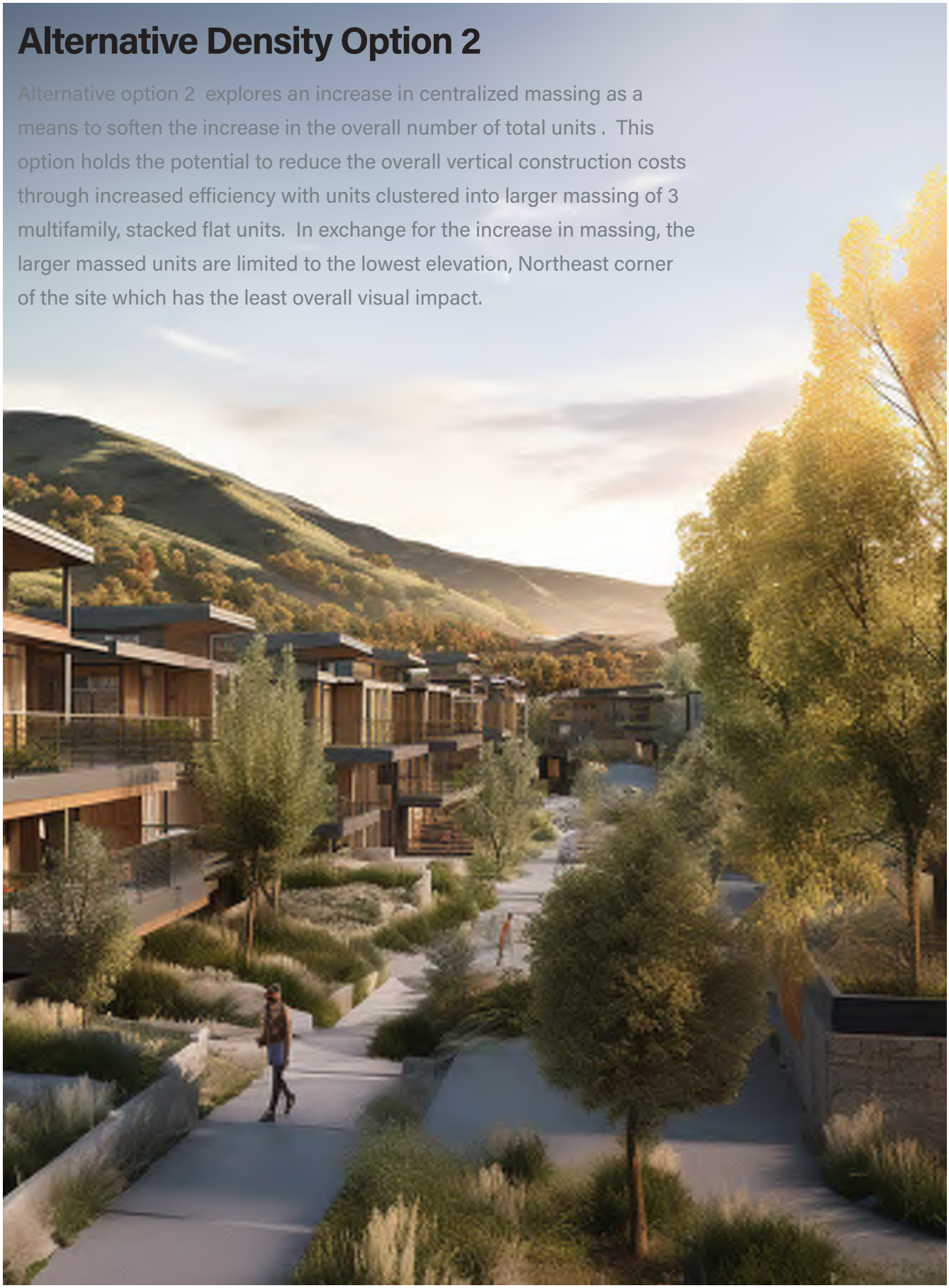
Density	**Unit size (SF)**	# of units		Units per acre	**0.72**	
Parcels		acre				
PC-SS-121-X	5455377	124.98				
	0					
Open Space		112		89.6%		
Developed area		12.98		10.4%	6.9	
	5,455,377	124.98		**124.98**		
Units total					**90**	
Parking total (req'd)					**115**	
Total F/A/R					**0.02**	
Open Space						
Unit distribution					***PARKING PER MPD**	****PARKING PER AMPD**
MF Units			**SF subtotal**			
studio	400	0	0	0%	0.0	0
1 bdr	600	0	0	0%	0.0	0
2 bdr	900	0	0	0%	0.0	0.5
3 bdr	1100	0	0	0%	0.0	1
bldg units		**0**				
bldg park required					**0**	**2**
bldg park provided						
Townhome units						
3+ bdr	1800	5	9000	6%	5	0
1 bdr	900	30	27000	33%	30	0
2 bdr	1300	30	39000	33%	30	0.5
3 bdr	1600	25	40000	28%	50	1
bldg units		**90**				
bldg park required					**115**	**2**
bldg park provided						
Total Residential		**90**	**115,000.00** SF		**115**	**3**
Commerical			**0** SF		**0**	**0**
Total SF			**115,000**			
Max F/A/R					**5,455,377**	**124,681**
					5,340,377	**9,681**
Total Parking, Req'd					**115**	**3**
Total Parking, Potential					**0**	**0**
Total F/A/R			**0.02**			

Preliminary Budget	$ / sf		Per Unit Avg
	450	**$51,750,000.00**	**$575,000.00**
	350	**$40,250,000.00**	**$447,222.22**

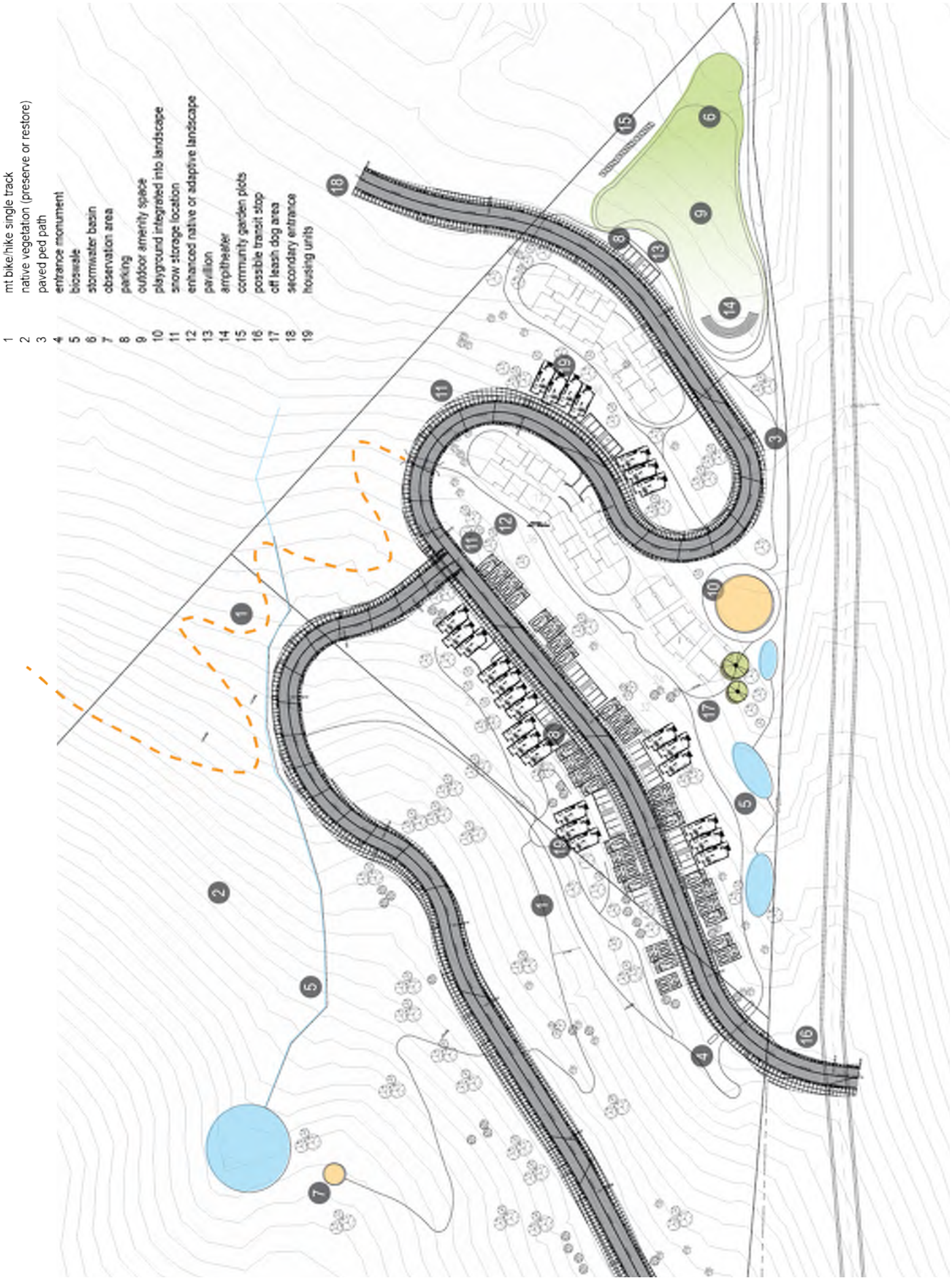
fig. 37.1 - (Stereotomic)

Alternative Density Option 2

Alternative option 2 explores an increase in centralized massing as a means to soften the increase in the overall number of total units . This option holds the potential to reduce the overall vertical construction costs through increased efficiency with units clustered into larger massing of 3 multifamily, stacked flat units. In exchange for the increase in massing, the larger massed units are limited to the lowest elevation, Northeast corner of the site which has the least overall visual impact.



illust. 38.1 (Stereotomic)



Alternative Density Option 2 - site plan

illust. 39.1 (Stereotomic)

The second option in this feasibility plan provides 150 units, consisting of both town-home units and stacked flat units. The Stacked flats would be constructed of 3 stories or less above ground, with the potential for structured parking on the lowest level which could be contained fully subterranean. This unit yield is currently distributed across the first phase of the road layout, and a phase II could provide either an increase in units or spread the units out over a larger land area. The overall character of the site and inherent characteristics of the parcels drive the design to be sensitive to the existing open space by clustering the development to the lower north east corner of the site. The major constraints (topography, access, infrastructure and visual impact) drive the overall layout. Units are stretched along the existing topography, and provide much of the retaining necessary to install the roadways. This allows abundant green-space and pedestrian trails to weave in and out of the units, provide visual and audible access in close proximity to all units.

While this option is test fit across phase I of the development, phase 2 could be developed to provide additional units or used to reduce the developed area density by dispursing the total (150) units across both phase I and phase II.

illust. 40.1 - conceptual visualization of the medium scale multifamily structures with shared entry and shared parking. (Stereotomic)

illust. 41.1 - The larger units of stacked flats occupy the lowest, North east corner of the sight with the least visual impact on the community. (Stereotomic)

illust. 42.1 - West view of the massing as it relates to the lower hillside (Stereotomic)

illust. 42.2 - north birdseye view looking south along hwy 40 (Stereotomic)

illust. 43.1 - east view of the massing as it relates to the lower hillside (Stereotomic)

illust. 43.2 - south birdseye view looking north east towards the junction of hwy 248 & hwy 40 (Stereotomic)

Alternative Density Option 2 Statistics

Density	**Unit size (SF)**	# of units		Units per acre	1.20	
Parcels		acre				
PC-SS-121-X	5455377	124.98				
	0					
Open Space		112		89.6%		
Developed area		12.98		10.4%	11.6	
	5,455,377	124.98		**124.98**		
Units total					150	
Parking total (req'd)					163	
Total F/A/R					0.03	
Open Space						
Unit distribution					***PARKING PER MPD**	****PARKING PER AMPD**
MF / stacked flat Units			**SF subtotal**			
studio	400	9	3600	9%	9.0	0
1 bdr	600	35	21000	37%	35.0	0
2 bdr	900	35	31500	37%	35.0	0.5
3 bdr	1100	16	17600	17%	24.0	1
bldg units		**95**				
bldg park required					**103**	**2**
bldg park provided						
Townhome Units						
3+ bdr	1800	10	18000	18%	10	0
1 bdr	900	20	18000	36%	20	0
2 bdr	1300	20	26000	36%	20	0.5
3 bdr	1600	5	8000	9%	10	1
bldg units		**55**				
bldg park required					**60**	**2**
bldg park provided						
Total Residential		**150**	**143,700.00** SF		**163**	**3**
Commerical			**0** SF		**0**	**0**
Total SF			**143,700**			
Max F/A/R					**5,455,377**	**124,681**
					5,311,677	**-19,019**
Total Parking, Req'd					**163**	**3**
Total Parking, Potential					**0**	**0**
Total F/A/R			**0.03**			

Preliminary Budget	$ / sf		Per Unit Avg
	450	**$64,665,000.00**	**$431,100.00**
	350	**$50,295,000.00**	**$335,300.00**

fig. 44.1 - (Stereotomic)

Alternative Density Option 3

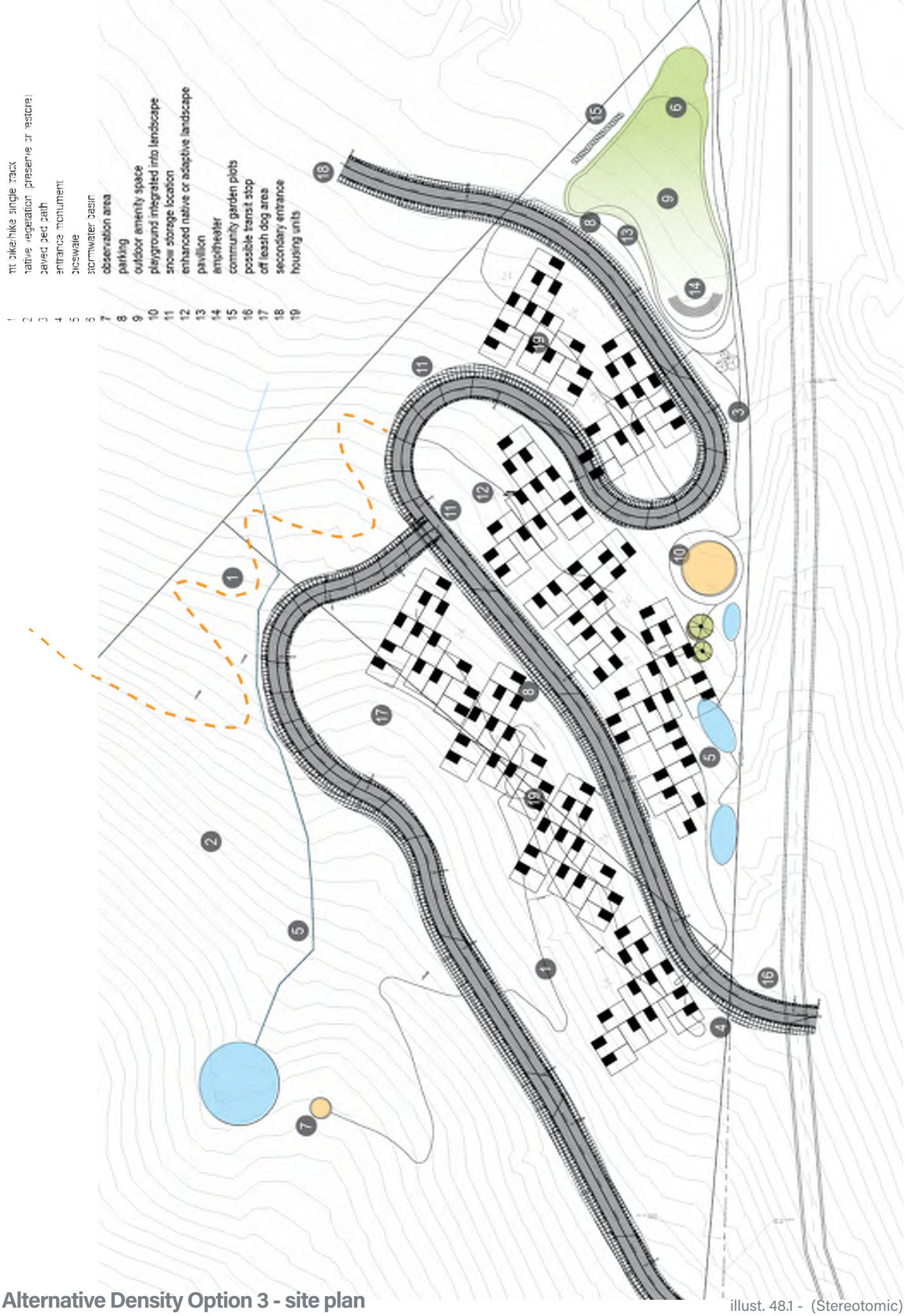
Density Option 3 provides a smaller scale alternative to increased unit counts. Spreading and staggering the units across the land, while stepping the massing complimentary with the landscape, allows a reduction in the overall massing while occupying a higher percentage of the overall developable area. The unit typology is a morphed version of the standard stacked flats typology. While the overall number of units is increased to 230 total units, the majority of the units are smaller in scale and area. The overall massing of the units and the amount of relief in the massing is increased to minimize the scale of the visual impact. This option may have the highest upfront cost to develop, it would be more financially effective, as it is assumed this unit type will generally be more cost effective to build.

illust. 45.1 - (Stereotomic)

Several optimization strategies could be used within this scheme to not only increase the overall energy efficiency, but significantly offset the carbon footprint. Shared, or chained, heating/cooling systems utilizing a ground source heat exchange system hold the potential to decrease the overall energy use by up to 50%. Prefabricated elements could be used to lower the overall cost to produce, as well as minimize the time to erect on site. The massings for this option would be limited to generally 2 stories or less, and offset with the topography to lower the overall footprint.
This option incorporates both Phase I & Phase II of road development. Access to the upper portions of the residential units would be required for adequate fire protection access.

illust. 46.1 - conceptual visualization of the scale of the multifamily structures with shared entry and shared parking. The low profile structures with shared open areas between the units provide a unique approach to walk-ability and close access to nature. (stereotomic)

illust. 47.1 - Conceptual visualization of the smaller scale express of the increased density, 230 units total. (stereotomic)



Alternative Density Option 3 - site plan

illust. 48.1 - (Stereotomic)

illust. 49.1 - east view of the massing as it relates to the lower hillside (Stereotomic)

illust. 49.2 - south birdseye view looking north east towards the junction of hwy 248 & hwy 40 (Stereotomic)

illust. 50.1 - West view of the massing as it relates to the lower hillside (Stereotomic)

illust. 50.2- north birdseye view looking south along hwy 40 (Stereotomic)

Alternative Density Option 3 Statistics

Density	**Unit size (SF)**	# of units		Units per acre	**1.84**	
Parcels		acre				
PC-SS-121-X	5455377	124.98				
	0					
Open Space		112		89.6%		
Developed area		12.98		10.4%	17.7	
	5,455,377	124.98		**124.98**		
Units total					**230**	
Parking total (req'd)					**265**	
Total F/A/R					**0.04**	
Open Space						
Unit distribution					***PARKING PER MPD**	****PARKING PER AMPD**
BLDG - Stacked Flats			**SF subtotal**			
studio	400	20	8000	11%	20.0	0
1 bdr	600	65	39000	35%	65.0	0
2 bdr	900	60	54000	32%	60.0	0.5
3 bdr	1100	40	44000	22%	60.0	1
bldg units		**185**				
bldg park required					**205**	**2**
bldg park provided						
BLDG - Townhomes						
MF Units	1800	0	0	0%	0	0
1 bdr	900	15	13500	33%	15	0
2 bdr	1300	15	19500	33%	15	0.5
3 bdr	1600	15	24000	33%	30	1
bldg units		**45**				
bldg park required					**60**	**2**
bldg park provided						
Total Residential		**230**	**202,000.00** SF		**265**	**3**
Commerical			**0** SF		**0**	**0**
Total SF			**202,000**			
Max F/A/R					**5,455,377**	**124,681**
					5,253,377	**-77,319**
Total Parking, Req'd					**265**	**3**
Total Parking, Potential					**0**	**0**
Total F/A/R			**0.04**			

Preliminary Budget	$ / sf		Per Unit Avg
	450	**$90,900,000.00**	**$395,217.39**
	350	**$70,700,000.00**	**$307,391.30**

fig. 51.1 - (Stereotomic)

Density Option Comparisons

To frame the scale of each density option presented as part of the study, two distinct precedents have been analyzed, to provide a context to the proposed density relative scale. The Kings Crown development adjacent to Park City Mountain Resort was selected based on the similarity to the sloped topography to Clark Ranch West as well as the moderate density. Park City Heights was selected

KINGS CROWN - 2019

illust. 52.1 - (https://www.parkcitykingscrown.com/

PARK CITY HEIGHTS - 2013

illust. 52.2- (https://ivoryhomes.com/community-details/)

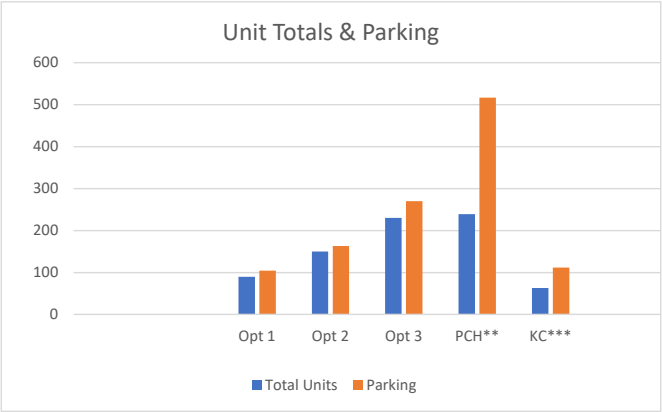
because of its relative proximity to the project, and its context, which includes a significant open space contained on 2 sides of the development.

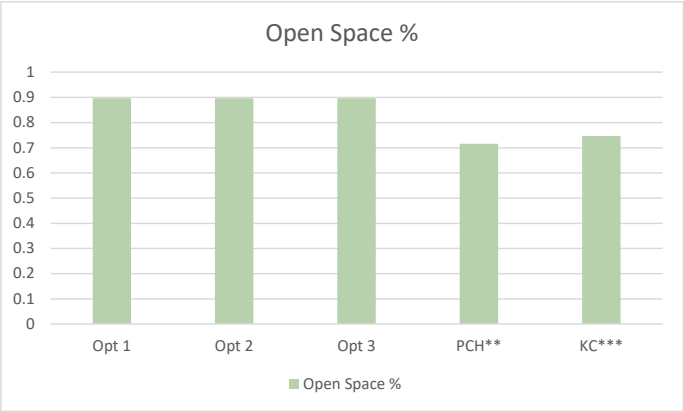
As figure 52.3 illustrates, both Kings Crown and Park City Heights include a significant portion of the overall land included as dedicated open space. All three options for Clark Ranch included as part of this study increase the dedicated open space to more than 89% (given the 125 unit parcel PC-SS-121-X is included as a minimum). This increase of open space comes with a trade-off; the units used for comparison for Clark Ranch are significantly smaller in overall scale. A second strategy to maximize the open space is the density of units within the developed area. This measurement is a means to understand the compactness of the density proposed. All but density option 3 are lower in the number of units per developable area when compared to Kings Crown. All of the density options are higher in the number of units per developable area when balanced against Park City Heights.

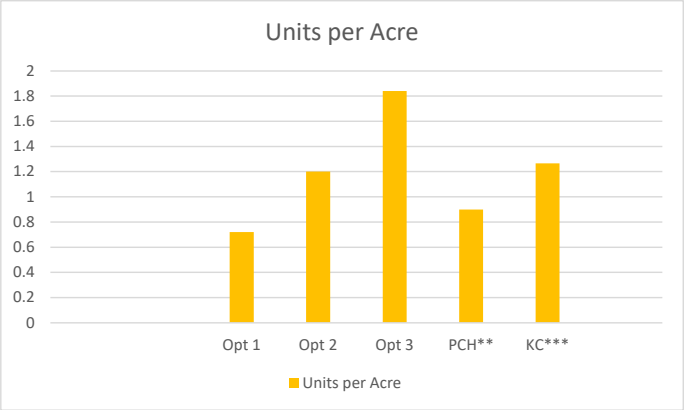
There are 2 decisive factors which must be considered when using this stat as a comparison. The first is the average unit size; even option 1 of this feasibility study, which has the highest average square foot per unit, is less than half (56%) of the Kings Crown Development. The second consideration is the steep topography of the site, and the SLO considerations. Both the moderate slopes and the Sensitive

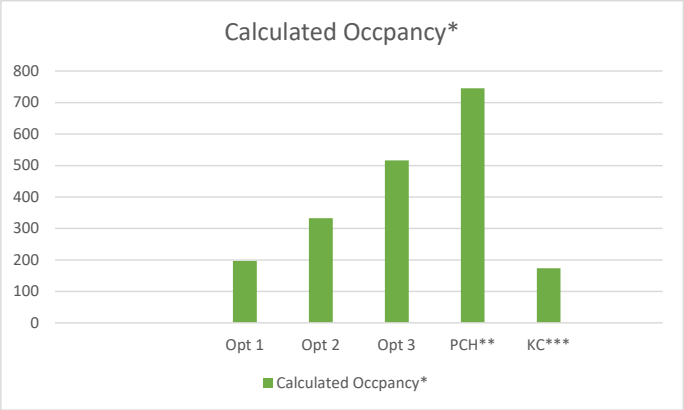
Comps	Total Units	Parking	Residential unit yield	Units per Acre	Avg SF per Unit	Calculated Occpancy*	Open Space %	Units per Developed Area
Opt 1	90.00	115	115,000	0.72	1,277.78	198.00	89.61%	6.93
Opt 2	150.00	163	143,700	1.20	958.00	332.40	89.61%	11.56
Opt 3	230.00	265	202,000	1.84	878.26	498.00	89.61%	17.72
PCH**	239.00	517	707,000	0.90	2,958.16	745.20	71.55%	3.51
KC***	63.00	112	142,129	1.27	2,256.02	174.00	74.67%	16.58

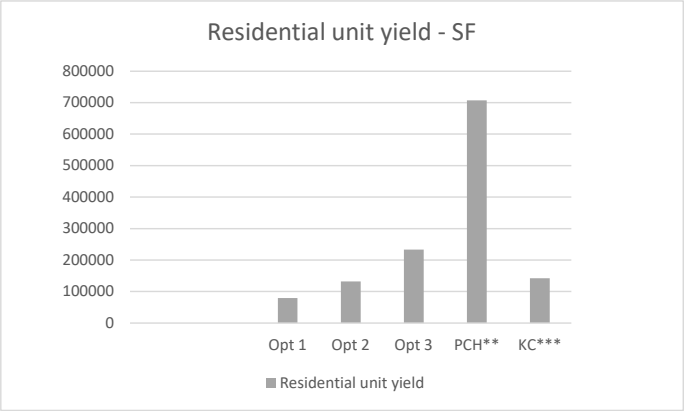
fig. 52.3 (Stereotomic)

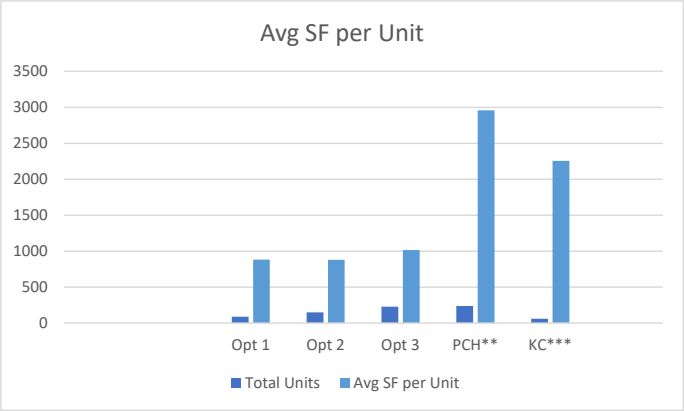












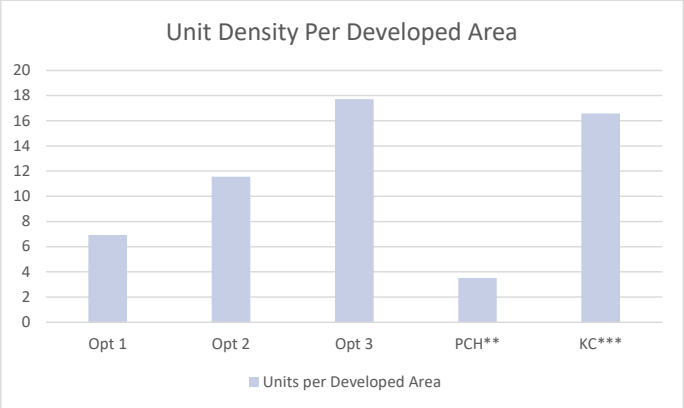


fig. 53.1 the Graphs Above illustrate the comparisons of Each Density Option with the Existing Kings Crown and Park City Heights developments (Stereotomic)

Lands Overlay Zone constrain the amount of area which should be developed. This compliments the current idea to preserve as much of the Clark Ranch Acreage as dedicated open space. We are suggesting a concentration of small units into a smaller area, as opposed to spreading larger units over a significant area.

Feasibility Infrastructure Assessment

The following sections describe proposed utility infrastructures for the Clark Ranch Development including culinary water, sanitary sewer, storm-water, electrical, and communications. Natural gas is not included in this infrastructure assessment as the project stakeholders do not intend to use gas as part of this project.

Culinary Water Infrastructure

The Equivalent Residential Connection (ERC) is a unit of measurement that represents water demand per household. Utah Administrative Code: R309-510-7 defines peak day demand to be 800 gallons per day per ERC. For this analysis, it is conservatively estimated that 1 unit is equal to 1 ERC.
Utah Administrative Code: R309-510-7 also provides guidance for outdoor irrigation demand. The proposed Clark Ranch Development is located in Map Zone 2 for "Low" Normal Annual Effective Precipitation. The corresponding irrigation demand per Table 510-3 is 2.8 gpm per irrigated acre.
The densest Clark Ranch Development concept comprises 230 units (or ERCs) and an estimated 5 acres of irrigable outdoor space. At 800 gpd per ERC, the indoor demand for the proposed units is 184,000 gpd, or 127.78 gpm. The outdoor water demand for 5 irrigable acres is estimated to be 24,408 gpd, or 16.95 gpm.

The total peak water demand for the Clark Ranch Development is conservatively estimated to be 208,408 gpd, or 144.73 gpm.

Additionally, Utah Administrative Code R309-510-8 requires 400 gallons of storage per ERC (indoor demand), and 1,873 gallons of storage per irrigated acre (outdoor demand) per Table 510-5 of Map Zone 2. For 230 ERC's, the indoor storage requirement is 92,000 gallons. The outdoor storage requirement for 5 acres is 9,365 gallons.

The total indoor and outdoor storage requirement is 101,365 gallons.
The culinary water system is owned, operated, and maintained by Park City's Water Division. Currently, an existing 2,000,000-gallon storage tank services Park City Heights. Park City Water Division determined that the existing storage tank has adequate source and storage capacity to provide additional service to the Clark Ranch Development's 230 units and 5 acres of irrigable outdoor space. It is assumed that the existing tank has enough fire flow storage to allow for 2 hours of flow at 2,000 gpm.

The existing elevation of the storage tank is at elevation 7,017 feet. To maintain a minimum service pressure of 40 psi without booster pumps, the development of Clark Ranch may not exceed an elevation of 6917.'

table 55.1 - Clark Ranch Culinary Water Demand & Storage Estimates (Talisman Civil)

Indoor Demand					
ERC's	Peak Day Demand per ERC	Peak Day Demand (GPD)	Peak Day Demand (GPM)	Storage per ERC (Gal)	Required Storage (Gal)
230	800	184,000	127.78	400	92,000
Outdoor Demand					
Acres	Demand Per Acre (GPM)	Peak Day Demand (GPD)	Peak Day Demand (GPM)	Storage Per Acre (Gal)	Required Storage (Gal)
5.00	3.39	24,408	16.95	1,873	9,365

	GPD	GPM
Indoor Demand	184,000	127.78
Outdoor Demand	24,408.00	16.95
Total Demand	**208,408**	**144.73**

Indoor Storage	92,000
Outdoor Storage	9,365
Total Required Storage (Gal)	**101,365**

The proposed culinary water system for Clark Ranch will connect to an assumed 8" stub off the cul-de-sac of Calamity Lane in Phase 5 of Park City Heights.

Sanitary Sewer Infrastructure

The sanitary sewer infrastructure in this area is and will be owned, operated, and maintained by Snyderville Basin Water Reclamation District (SBWRD). Per Utah Administrative Code R317-3, Residential Equivalent (RE) is a unit of measurement that represents the volume of wastewater per residential connection. SBWRD considers an RE to be 100 gpd per person, with an average of 3.2 people per household such that 1 RE is equal to 320 gpd demand of wastewater.

Wastewater demand is based off the estimated occupancy rates for each unit. Local occupancy ratios were provided by Park City and Mountainlands. For this analysis, we have utilized an occupancy ratio of 1.2 occupants per bedroom, which while being more conservative, is also consistent with observed occupancy levels in affordable housing projects across Utah. See Table below.

table 55.2 - Clark Ranch Sanitary Sewer Demand per occupancy equivalent (Talisman Civil)

Unit Type	# of Occupants per Unit (Local)	# of Occupants per Unit (Clark Ranch Analysis)
Studio	1.2	1.2
1 Bedroom	1.1	1.2
2 Bedroom	1.9	2.4
3 Bedroom	N/A	3.6
Multi Family (4BR)	3.7	4.8

The densest Clark Ranch Development concept comprises 230 units total. Of these, there are 10 studios, 80 one-bedroom units, 80 two-bedroom units, and 60 three-bedroom units. There are an estimated 516 occupants. At 100gpd/person, the wastewater demand is conservatively estimated at 516,000 gpd or 161.25 REs or. See Table 56.1

table 56.1 - Clark Ranch Sanitary Sewer Demand Calculation, for highest proposed density (230 units) (Talisman Civil)

Unit Type	Unit Count	Occupants per Unit	# of Occupants	Demand (GPD) (100gpd/occupant)	Demand (GPM)	Demand (RE)
Studio	10	1.2	12	1,200	0.83	3.75
1 Bedroom	80	1.2	96	9,600	6.67	30
2 Bedroom	80	2.4	192	19,200	13.33	60
3 Bedroom	60	3.6	216	21,600	15.00	67.5
Multi Family (4BF)	0	4.8	0	0	0.00	0
Total			**516**	**51,600**	**36**	**161.25**

It is intended to connect the Clark Ranch wastewater system into the existing system in Park City Heights. according to discussions with SBWRD, after the full build out of Park City Heights, the limiting factor in the existing wastewater system lies between manholes #58 and #59 with an available capacity at 229 REs or 50.89 gpm.

The wastewater demand for 230 units from the densest Clark Ranch concept is conservatively estimated at 36 gpm, far less than the 50.89 gpm of available capacity. Therefore, it is estimated that the existing sewer system has enough capacity to accommodate the Clark Ranch Development without requiring upgrades to the existing infrastructure.

If the Clark Ranch wastewater demand were to exceed 51gpm or 229 REs, the existing sewer line between manholes #59 & Manhole #8 must be upsized from an 8" pipe to a 12" pipe. Improvements to the sewer line between manholes #40 and #8 require special attention. The existing sewer line is shallow in slope and makes an aerial crossing over a natural waterway which will complicate design solutions.

It is also worth discussing reducing wastewater demand requirements from 100gpd per person to 75gpd per person, or 320 gpd per RE to 240 gpd per RE. This number is based off analogous developments in Park City which have received such a reduction. If SBWRD accepts a reduction in demand, the existing sewer system capacity of 50.89 gpm could support 305 RE's, which is nearly double the densest Clark Ranch development concept.

TCC estimates that the Clark Ranch Development will require approximately 2,300 linear feet of 8" SDR35 PVC pipe. See Exhibit X101 in the Appendix. The proposed sanitary sewer infrastructure will connect to existing manhole #23 and run the length of Piper Way in Park City Heights. The conveyance system would ultimately direct wastewater flow to the Silver Creek Water Reclamation Facility where it is treated and returned to Silver Creek before eventually flowing to Echo Reservoir.

Storm-water Infrastructure

The Park City Storm-water Management Program and the Park City Storm-water Drainage Design Manual dictates the parameters used to evaluate requirements for the Clark Ranch storm drain system.

Important design parameters from these documents include but are not limited to:

- Pipe shall be designed to convey the 10-year storm recurrence interval.
- Detention ponds shall be designed for the 100-year storm recurrence interval.
- The allowable post-development discharge rate must be less than or equal to the predevelopment discharge rate.
- The minimum storm drain pipe diameter shall be 15".
- The source for precipitation data is NOAA Atlas 14.

As of July 1st 2020, the Utah Division of Water Quality has implemented a requirement to retain and infiltrate the 80th percentile storm event for new development projects that disturb greater than or equal to 1 acre. The 80th percentile storm depth for Park City is approximately 0.47".

Using the above criteria along with a hydraulic model based on SCS curve number methodology, TCC calculates that the densest Clark Ranch Development concept disturbs approximately 400,000 square feet and must be able to retain 15,666 cubic feet and detain approximately 45,000 cubic feet of storm drain runoff. The open space in the northern corner of the Clark Ranch Development is relatively flat and sufficient in area for a basin with the capacity to detain and retain runoff for the entire site.

illust. 57.1 - Clark Ranch Detention Basin (Talisman Civil)

The detention pond will maintain water quality and control discharge to the greater storm-water system in Highway 40. It may also serve as a secondary recreational purpose for the surrounding community when not detaining storm-water.

TCC also anticipates incorporating bio swales throughout the project which will capture a portion of runoff and reduce the required capacity of the detention basin.

There are limited areas where the proposed road profile slopes toward Frontage Road, storm-water will be unable to drain to the detention basin. UDOT may grant permission for runoff to flow downhill to the UDOT storm drain system in US-40, in which case discharge will be limited to 0.2 cfs/acre.

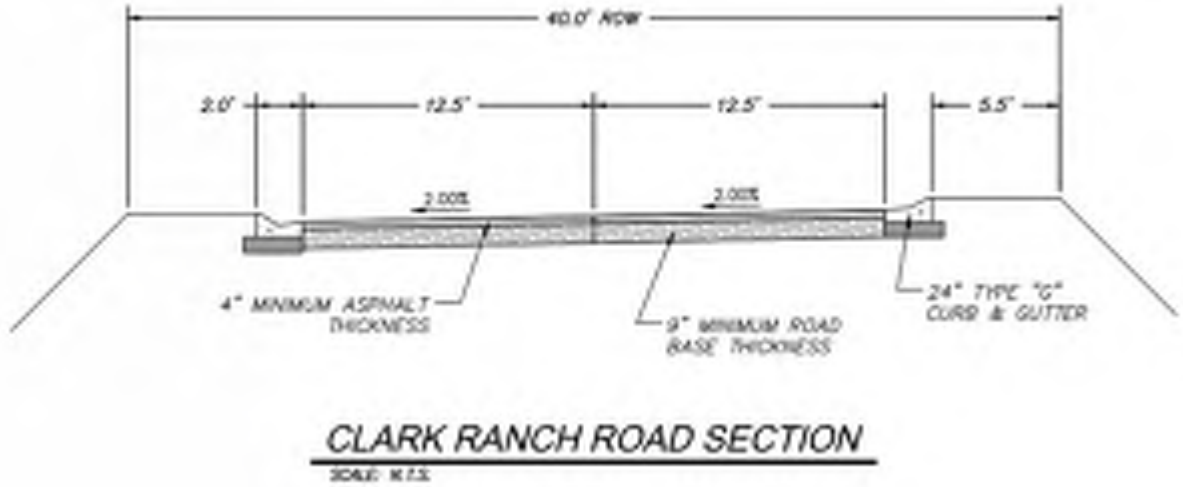
ROADWAY INFRASTRUCTURE

The following sections describe roadway infrastructure for the Clark Ranch Development.

Roadway Design Parameters

TCC proposes the design of two new roads in the Clark Ranch Development – Phase 1, which consists of "Road 1" the lower road that connects to Park City Heights and the frontage road, and Phase 2 which consists of "Road 2" which sits above Road 1. The design for both roadways adhere to Park City Engineering standards and AASHTO guidelines for a 25 mph design speed. Park City's Engineering Department has also specified the cross-section widths as follows:

- 40' Right-of-Way Width
- 25' of Asphalt Surface
- 24" Type "G" Curb and Gutter on Either Side
- 5.5' of Landscaped Shoulder
- No Sidewalk
- Able to Support an 80,000 lb Fire Truck



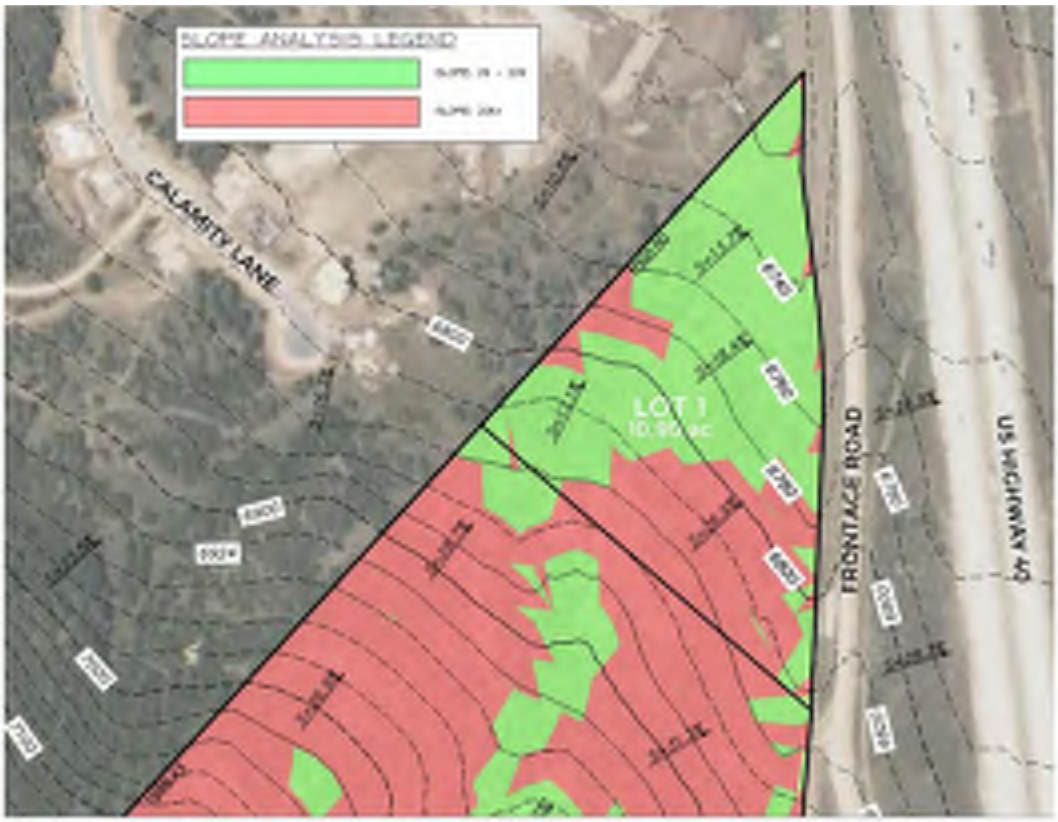
illust. 58.1 - Clark Ranch Road Section (Park City Municipal Corp.)

The road will feature a minimum of 4″ thick asphalt on a minimum of 9″ thick commercial road base. See Figure 4 below:

Regarding life safety, Road 2 which provides the second connection to Frontage Road could be designed as a dead-end, however Park City Municipal Code 15-7.3-4 stipulates that,
For greater convenience to traffic and more effective police and fire protection, permanent dead-end Streets shall, in general, be limited in length to six hundred and fifty feet (650′).

Appendix D of the International Fire Code would also require a 70′ hammer head or other acceptable turnaround for fire apparatus access for any dead end greater than 150′ in length. Furthermore, the Park City Fire District will have the final say and may require at least two roadway entrances/exits to both Phase 1 and Phase 2 of the Clark Ranch development.
The primary road alignment and associated right-of-way is the main conduit for the primary utilities listed in Section 2.0 that service the Clark Ranch Development.

A slope analysis exhibit shows that the existing topography is steep in areas with slopes that exceed 25%.



illust. 59.1 - Clark Ranch Slope Analysis (Talisman Civil)

The horizontal road design intends to mitigate steep slopes by utilizing oblique approaches to the topography where possible, small radius curves, and a 2.0% cross-slope over the roadway width. The maximum centerline profile grade of the roads does not exceed the 10% prescribed by Park City Engineers. Due to the steep nature of the topography and the profile design limits, TCC anticipates areas where significant retaining walls greater than 10′ will be necessary. For this analysis, TCC assumes using concrete retaining walls, however a variety of slope treatments may be considered at varying costs.

The frontage road providing access to Clark Ranch will also need to be developed. Assuming a 36′ paved section (2x12′ lanes with 6′ shoulders & curb and gutter) it is estimated improvements to the frontage road will cost around $1.25M see table 4.0d below.

Pedestrian Circulation

The Park City Engineering Department has specified that, due to the steep slopes of the vertical road alignments, sidewalks would not be practical and therefore are not to be included in the road cross section. Instead, as the design for the entire project continues to develop, TCC anticipates incorporating pedestrian walkways throughout the Clark Ranch Development between proposed units, to access existing trailheads, and community recreation spaces.

Preliminary Traffic Assessment

The proposed development will be composed of affordable multifamily housing units, and is in the process of determining land use numbers. Currently the following three options are in consideration:

- Option 1: 90 - 160 total dwelling units
- Option 2: 150 - 225 total dwelling units
- Option 3: 230 - 290 total dwelling units

To assess the greatest impact, option 3 with up to a maximum of 290 dwelling units was analyzed for this study (site plan attached in Appendix). Fehr & Peers used trip generation rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021, to estimate trip generation rates for this study. The following ITE land use code was assumed for the proposed Clark Ranch development.

- Multifamily Housing (Mid-Rise) (ITE Land Use 221) – 290 dwelling units

The ITE Trip Generation includes a land use code for affordable housing. However, it is a new land use code with a low sample size and limited data. Therefore, the affordable housing land use code was not used for this study.

Fehr & Peers submitted a Trip Generation Memo for the Ski Rail Housing in August, 2023. The proposed development for that included 10 studio apartments and 192 dormitory-style bedrooms, and unique elements to significantly reduce the vehicle trips generated. To account for the unique characteristics of that project site, Fehr & Peers estimated the trip generation using the ITE land use codes for Multifamily Housing (Mid-Rise) (ITE Land Use 221) for the studio apartments and Off Campus Student Apartment (ITE Land Use 226) for the dormitory-style bedrooms. The proposed Clark Ranch development does not include the unique characteristics and restrictions imposed by the Ski Rail Housing, so the Off-Campus Student Apartment land use was not used for this study.

The calculated trip generation for the proposed Clark Ranch development is shown below in Table 1.

Table 601 - Clark Ranch Trip Generation

Land Use[1]	Number of Units	Unit Type	Daily Trip Generation[2]	% Entering[3]	% Exiting[3]	Trips Entering	Trips Exiting	New Daily Trips
Multifamily Housing (Mid-Rise) (221)	290	Dwelling Units	1,338	50%	50%	669	669	1,338
Net Weekday Trips						669	669	1,338
Land Use[1]	Number of Units	Unit Type	AM Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]	Trips Entering	Trips Exiting	New AM Peak Hour Trips
Multifamily Housing (Mid-Rise) (221)	290	Dwelling Units	116	23%	77%	27	89	116
Net Weekday AM Peak Hour Trips						27	89	116
Land Use[1]	Number of Units	Unit Type	PM Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]	Trips Entering	Trips Exiting	New AM Peak Hour Trips
Multifamily Housing (Mid-Rise) (221)	290	Dwelling Units	113	61%	39%	69	44	113
Net Weekday PM Peak Hour Trips						69	44	113

1 (xxx) indicates ITE land use code. Land Use Code from the Institute of Transportation Engineers - 11th Edition Trip Generation Manual (ITE Manual)

2 Traffic Generated by the development according to trip generation rates provided in the ITE Manual

3 Percentage of trips Entering and Exiting the development according to the ITE Manual

SOURCE: Fehr & Peers

As shown in Table 1, the proposed Clark Ranch development is estimated to generate 1,338 daily trips, 116 AM peak hour trips, and 113 PM peak hour trips.

PROJECT IMPACTS

Fehr & Peers collected turning movement counts for another project at the SR-248 / Richardson Flat

Road intersection in January 2020 (attached in Appendix). The 2020 counts at the intersection showed two-way volumes on Richardson Flat Road (east of SR-248) of 214 vehicles and 172 vehicles in the AM peak hour and PM peak hour, respectively.

Fehr & Peers performed a high-level assessment of the project impacts of the peak hour trip generation on the roadway capacity of Richardson Flat Road. The roadway Level of Service (LOS) was estimated based on planning level generalized peak hour two-way volumes for roadway capacities. These volumes are published by the Florida Department of Transportation (FDOT) based on planning applications of the Highway Capacity Manual (HCM) and are widely used for planning level evaluation of roadway capacity. Table 2 below shows the peak hour two-way capacity estimates for a 2-lane undivided roadway in developed areas less than 5,000 population.

Table 61.1 - Roadway Level of Service Peak Hour Two-Way Traffic Thresholds

Level of Service	Peak Hour Traffic Capacity Estimates
	2 Lanes
LOS B or better	≤ 1,098
LOS C	1,099 – 1,215
LOS D	> 1,215

Source: Fehr & Peers, based on FDOT Generalized Peak Hour Two-Way Volumes for developed areas less than 5,000 population, adjusted for non-state signalized roadway.

Table 3 below shows the projected peak hour two-way volumes on Richardson Flat Road with the proposed Clark Ranch development.

Table 61.2 - Peak Hour Two-Way Volumes on Richardson Flat Road

Peak Hour	Background[1]	Project[2]	Plus Project
AM	214	116	**330**
PM	172	113	**285**

1. From turning movement counts at the SR-248 / Richardson Flat Road intersection counted in 2020.
2. Estimated for proposed Clark Ranch development, as shown in Table 1.

Source: Fehr & Peers

As shown in Table 3, the AM and PM peak hour estimated trips on Richardson Flat Road are 330 vehicles and 285 vehicles, respectively, with the proposed Clark Ranch development. This is well below the LOS B threshold as shown in Table 2.

CONCLUSION

Fehr & Peers evaluated the total trips generated by the proposed Clark Ranch development. The estimated trips generated by the development are 1,338 daily trips, 116 AM peak hour trips, and 113 PM peak hour trips. Fehr & Peers also estimated the projected peak hour two-way volumes on Richardson Flat Road with the proposed development. The estimated trips are 330 vehicles and 285 vehicles in the AM peak hour and PM peak hour, respectively. This is well below the LOS B threshold, indicating that Richardson Flat Road has the capacity to receive the additional trips from the proposed Clark Ranch development.

Preliminary Cost Analysis

HORIZONTAL INFRASTRUCTURE

Based on the roadway alignment and assumption that utilities generally run parallel to the roadway centerline, TCC calculated the following quantities and associated cost estimates for the proposed Clark Ranch Development. The Phase 1 costs consisting of Road 1 and associated utilities is found below.

Table 64.1 - Clark Ranch Phase i Estimate / Horizontal Infrastructure (Talisman Civil)

Clark Ranch, Phase 1 Estimate					
	Item	**Unit**	**Unit Price**	**Quantity**	**Cost**
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$2	110,645	$221,290
				Subtotal	**$221,290**
Site Improvements					
2	Cut	C.Y.	$20	3,737	$74,740
3	Fill	C.Y.	$10	8,653	$86,530
4	4" Asphalt Paving	S.Y.	$27	6,264	$169,128
5	9" Road Base Material	C.Y.	$52	1,566	$81,432
6	Type "G" Curb and Gutter - Catch	L.F.	$28	2,286	$64,008
7	Type "G" Curb and Gutter - Spill	L.F.	$28	2,155	$60,340
8	Retaining Walls (Concrete)	S.F.	$50	21,194	$1,059,700
9	Shoulder Landscape	S.F.	$2	24,298	$48,596
				Subtotal	**$1,644,474**
Utility Improvements					
10	Connect to Existing Water Stub	Each	$2,000	1	$2,000
11	10" C-900 PVC Pipe	L.F.	$125	2,221	$277,625
12	PRV Station	Each	$100,000	1	$100,000
13	Connect to Existing Sewer Stub	Each	$2,000	1	$2,000
14	8" SDR-35 PVC Pipe	L.F.	$100	2,218	$221,800
15	Sewer Manhole	Each	$5,000	5	$25,000
16	15" Class III RCP Pipe	L.F.	$150	2,215	$332,250
17	Detention/Retention Volume	C.Y.	$20	2,250	$45,000
18	Storm Drain Inlet	Each	$5,000	9	$45,000
19	4" PVC Electrical Conduit	L.F.	$10	2,214	$22,140
20	4" PVC Communications Conduit	L.F.	$10	2,215	$22,150
21	Additional Electrical Appurtenances	L.S.	$250,000	1	$250,000
				Subtotal	**$1,344,965**
	Sub Total	$3,210,729			
	20% Contingency	$642,146			
	Total	**$3,852,875**			

The second phase comprises the development of remaining Road 2 and associated utilities.

Table 64.1 - Clark Ranch Phase II Estimate / Horizontal Infrastructure (Talisman Civil)

Clark Ranch, Phase 2 Estimate					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$2	99,980	$199,960
				Subtotal	$199,960
Site Improvements					
2	Cut	C.Y.	$20	32,275	$645,500
3	Fill	C.Y.	$10	1,228	$12,280
4	4" Asphalt Paving	S.Y.	$27	4,375	$118,125
5	9" Road Base Material	C.Y.	$52	1,094	$56,888
6	Type "G" Curb and Gutter - Catch	L.F.	$28	1,533	$42,924
7	Type "G" Curb and Gutter - Spill	L.F.	$28	1,619	$45,332
8	Retaining Walls (Concrete)	S.F.	$50	37,226	$1,861,300
9	Shoulder Landscape	S.F.	$2	17,239	$34,478
				Subtotal	$2,816,827
Utility Improvements					
10	Connect to Existing Water Stub	Each	$2,000	1	$2,000
11	10" C-900 PVC Pipe	L.F.	$125	1,615	$201,875
12	Connect to Existing Sewer Stub	Each	$2,000	1	$2,000
13	8" SDR-35 PVC Pipe	L.F.	$100	1,598	$159,800
14	Sewer Manhole	Each	$5,000	4	$20,000
15	15" Class III RCP Pipe	L.F.	$150	1,583	$237,450
16	Storm Drain Inlet	Each	$5,000	9	$45,000
17	4" PVC Electrical Conduit	L.F.	$10	1,574	$15,740
18	4" PVC Communications Conduit	L.F.	$10	1,578	$15,780
19	Additional Electrical Appurtenances	L.S.	$250,000	1	$250,000
				Subtotal	$949,645
		Sub Total	$3,966,432		
		20% Contingency	$793,286		
		Total	$4,759,718		

The following table shows the combined total of Phase 1 and Phase 2.

Table 65.1 - Clark Ranch Total combined Estimate / Horizontal Infrastructure (Talisman Civil)

Clark Ranch Total Estimate					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$2	210,625	$421,250
				Subtotal	$421,250
Site Improvements					
2	Cut	C.Y.	$20	36,012	$720,240
3	Fill	C.Y.	$10	9,881	$98,810
4	4" Asphalt Paving	S.Y.	$27	10,639	$287,253
5	9" Road Base Material	C.Y.	$52	2,660	$138,320
6	Type "G" Curb and Gutter - Catch	L.F.	$28	3,819	$106,932
7	Type "G" Curb and Gutter - Spill	L.F.	$28	3,774	$105,672
8	Retaining Walls (Concrete)	S.F.	$50	58,420	$2,921,000
9	Shoulder Landscape	S.F.	$2	41,537	$83,074
				Subtotal	$4,461,301
Utility Improvements					
10	Connect to Existing Water Stub	Each	$2,000	2	$4,000
11	10" C-900 PVC Pipe	L.F.	$125	3,836	$479,500
12	PRV Station	Each	$100,000	1	$100,000
13	Connect to Existing Sewer Stub	Each	$2,000	2	$4,000
14	8" SDR-35 PVC Pipe	L.F.	$100	3,816	$381,600
15	Sewer Manhole	Each	$5,000	9	$45,000
16	15" Class III RCP Pipe	L.F.	$150	3,798	$569,700
17	Detention/Retention Volume	C.Y.	$20	2,250	$45,000
18	Storm Drain Inlet	Each	$5,000	18	$90,000
19	4" PVC Electrical Conduit	L.F.	$10	3,788	$37,880
20	4" PVC Communications Conduit	L.F.	$10	3,793	$37,930
21	Additional Electrical Appurtenances	L.S.	$500,000	1	$500,000
				Subtotal	$2,294,610
	Sub Total	$7,177,161			
	20% Contingency	$1,435,432			
	Total	$8,612,593			

The electrical costs in Section 4.0 include proposed electrical conduit for a total of $37,880. This excludes costs for conductors, transformers, or other electrical equipment. For the purpose of this report, TCC estimates remaining electrical infrastructure improvements to be roughly $250,000 for each phase, or $500,000 total. This assumes existing Rocky Mountain infrastructure in the area such as substations, etc., will not require a significant upgrade to service the Clark Ranch Development. TCC

recommends further coordination with Rocky Mountain Power and performing an Electric Service Study (ESSA), and System Impact Study, to determine any necessary upgrades.

The frontage road providing access to Clark Ranch will also need to be developed. Assuming a 36' paved section (2x12' lanes with 6' shoulders & curb and gutter) it is estimated improvements to the frontage road will cost around $1.25M see table 4.0d below.

Table 66.1 - Clark Ranch Frontage Road Improvements Cost Estimate (Talisman Civil)

Frontage Road					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$1	208,747	$208,747
				Subtotal	$208,747
Site Improvements					
2	4" Asphalt Paving	S.Y.	$27	15,289	$412,803
3	9" Road Base Material	C.Y.	$52	3,823	$198,796
4	Type "G" Curb and Gutter	L.F.	$28	7,645	$214,060
				Subtotal	$825,659

Sub Total	$1,034,406
20% Contingency	$206,881
Total	$1,241,287

SUMMARY & CONCLUSION

In summary, the total estimated costs of utility and road infrastructure for the Clark Ranch Development is conservatively estimated at $8,600,000. Improvements to the frontage road will cost an additional $1,250,000. It is important to note that the retaining walls contribute a large portion of the overall cost. Due to the steepness of the overall project topography, maintaining a maximum road grade of 10% will have a significant impact on the height and quantity of retaining walls.

At a conceptual level, even for the densest Clark Ranch Development Option, there is adequate source and storage capacity for water infrastructure, and adequate capacity within the existing sewer infrastructure in Park City Heights. Storm drain infrastructure will be addressed by an 45,000 cubic feet detention and 15,666 cubic feet retention ponds built on-site, and ultimately discharging to the UDOT drainage system in US-40.

VERTICAL INFRASTRUCTURE

Given the very preliminary nature of the density studies included here, and the volatile nature of the construction environment in the last 2 years, the following estimates are for comparisons only. The process for deriving the following estimates included proposing a basic unit type breakdown, and

assigning a rough estimate of typical square footages for each unit size.

By using a total rough estimate in each density summary, the total square footage estimates then allows us to assign a basic cost per square foot number. For general comparison, we have assumed the high end costs to be $450 per square foot cost. To generate a range, and to help understand the shifting nature of the current economy and potential economies of scale, a $350 per square foot cost has been assigned for the low end. The result of the totals generates a range of anticipated costs for this type of project.

In the summary, the total estimated costs and the breakdown for comparisons assumes the high end of the range.

Based on the Low and High cost ranges, we have estimated the following basic cost parameters for each of the density options illustrated previously.

Infrastructure Costs					
	Frontage road	Roads	Utilities	Misc	Total
	$1,241,287	$4,882,551	$2,294,610	$1,435,432	$9,853,880

Building Costs					
	Low Range $350	High Range $450	BLDG Cost Per Unit	Infrastructure Cost Per Unit	Total Avg Per Unit
Opt 1	$40,250,000	$51,750,000	$575,000	$109,488	$684,488
Opt 2	$50,295,000	$64,665,000	$431,100	$65,693	$496,793
Opt 3	$70,700,000	$90,900,000	$395,217	$42,843	$438,060

Table 67.1 - Clark Ranch Vertical & Horizontal Construction Cost Estimate (Talisman Civil & Stereotomic)

The projected lowest cost option would be option 1, (90 units of town-homes) which could range from $40.2 mil to $51.7 mil. The Highest cost option 3, ranges from $70.7 mil to $90.9, consists of Multifamily units of stacked flat apartments.

Total Development							
	bldg cost		infrastructure cost			totals	
	Low Range ($350 sf)	High Range ($450)	utilities	roads	misc.	low	high
Opt 1	$40,250,000	$51,750,000	$2,294,610	$6,123,838	$1,435,432	$50,103,880	$61,603,880
Opt 2	$50,295,000	$64,665,000	$2,294,610	$6,123,838	$1,435,432	$60,148,880	$74,518,880
Opt 3	$70,700,000	$90,900,000	$2,294,610	$6,123,838	$1,435,432	$80,553,880	$100,753,880

Table 67.2 - Clark Ranch Total Construction Cost Estimates (Talisman Civil & Stereotomic)

When factoring in the associated horizontal costs, we arrive at the general projected “total development” costs. These costs do not include the cost of the land, as well as hard and soft costs associated with the pre-development (testing, further analysis, and entitlements process) as well as the design and engineering costs, utility infrastructure fees, and associated soft costs.

As anticipated, Option 1 is the lowest cost option for total development while Option 3 is the largest. Although Option 3 has the largest total cost of development, it also has the greatest value when considering the average cost per unit. The average cost per unit does not account for different sizes

and unit types, but is a simple calculation of total development costs divided by the units provided in the scenario.

Further analysis gives a clear picture on the nature of our tight affordable housing situation. The following table illustrates three (3) distinct affordable housing ranges, (30%-50% AMI, 50%-80% AMI, & 80%-100% AMI) and compares the cost to develop the project (on a per unit basis), with the maximum mortgage loan amount calculated for each affordable category.

Affordable Unit Cost Limit+						
	30%-50% AMI		50%-80% AMI		80%-100% AMI	
	Max. Mortgage Loan Amt	Deficit	Max. Mortgage Loan Amt.	Deficit	Max. Mortgage Loan Amt.	Deficit
Opt 1	278,650	-$405,838	$445,780	-$238,708	557,270	-$127,218
Opt 2	278,650	-$218,143	$445,780	-$51,013	557,270	$60,477
Opt 3	278,650	-$159,410	$445,780	$7,720	557,270	$119,210

Table 68.1 - Clark Ranch Affordable Unit Cost Comparison table. This table assumes all the units developed as part of each of the density options would be affordable units. The "Maximum Mortgage Loan Amount" is referenced from Afford-ability Calculator from the Utah Afford-ability Housing Forecast tool, 2021 - Table 6, "Park City's Housing Needs Assessment 2021" prepared by Wood, James. pg 24 (Talisman Civil & Stereotomic)

Based on the assumptions outlined previously, all the options would need significant subsidies to be financially viable. Only Option 2 and Option 3 become financially viable without subsidies when targeting the 80%-100% AMI income level.

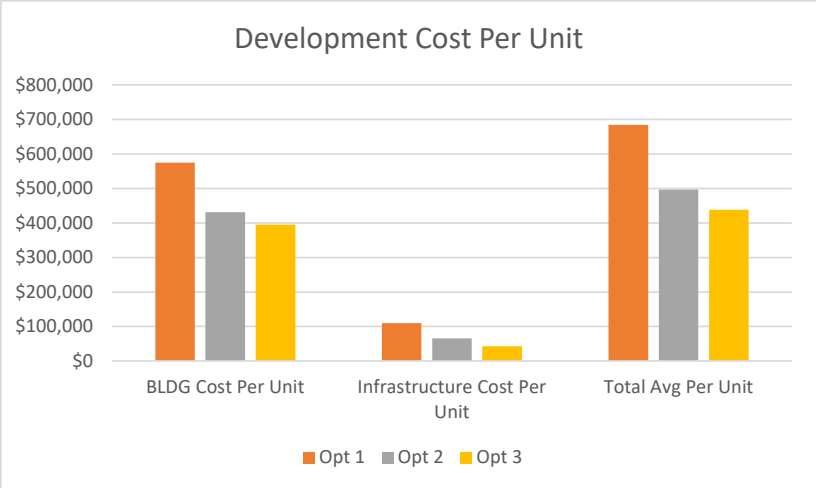


Table 68.2 - Project Development Cost Analysis - Factoring in Building (vertical) Costs as well as Infrastructure (horizontal) costs divided between the total number of units per option. (Stereotomic)

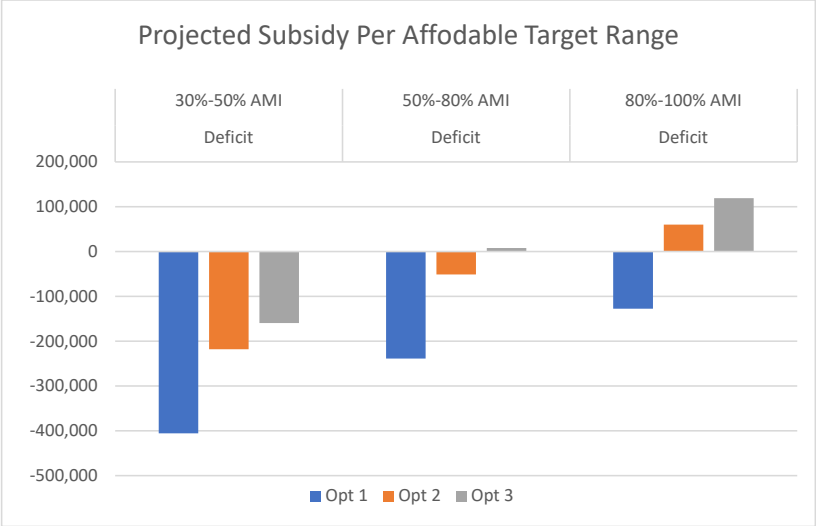


Table 68.3 - Project Development Cost Analysis - Negative numbers denote a financial shortage which would be needed to subsidize the project(Stereotomic)

Financing Options

Through a public-private partnership between the City and a private developer, there are several financing strategies that could promote development of an affordable project on this site.

Public Options

First, the City could dedicate the land necessary to the affordable project, through a Development Agreement (a Development Agreement is a requirement in the AMPD process). Second, the City can dedicate and/or construct all, or a portion, of the infrastructure required for the project. Third, the City can apply for Federal infrastructure grants, like grants available through the Inflation Reduction Act or through remaining opportunities in the COVID-19 relief funds and dedicate the revenues from such grants to the affordable portions of the project. Fourth, if the City retains ownership of certain units, the City can use general fund monies to subsidize the project. Fifth, the City can waive fees such as building permit fees, plan check fees, and impact fees for the affordable project. And finally, the City can encourage other service providers, such as the Snyderville Basin Water Reclamation District, to waive impact fees.

Private Options

The City's private developer partner can further take advantage of Low-Income Housing Tax Credits (LIHTCs) from the federal government and either use the tax credits internally, to offset ordinary income or capital gains generated by that business or sell such credits to interested parties. The proceeds of such tax credits sale or utilization would then be applied to offset a portion of the affordable development.

There are two types of LIHTCs, a 4% tax credit, which typically offsets 30% of the gross construction cost of the affordable units, and a 9% tax credit, which offsets roughly 70% of the gross construction cost of the affordable units. The 4% LIHTC is not competitive, meaning: if applied for, a qualifying project will receive the 4% LIHTC.

The 9% LIHTC is competitive annually among a variety of LIHTC applicants across the state. Not all applicants receive requested tax credits. The 9% LIHTC is prioritized for "higher needs" or "very low-income" populations. Projects that utilize LIHTCs are required to include at least: (1) 20% of units rented to families or individuals who earn less than 50% AMI; or (2) 40% of units rented to families who earn less than 60% AMI. (Units up to 80% AMI are allowed in option 2 if the average income of all subsidized units is not more than 60%). LIHTCs can be applied for on a building-by-building basis, so that an entire project would not be required to meet the LIHTC occupancy requirements, only the portion subsidized by the LIHTC.

On larger affordable housing projects, a private developer can pair a LIHTC with a tax-exempt bond to further subsidize the project. Tax exempt bonds for low-income housing have the same AMI occupancy requirements as LIHTCs. Typically, tax exempt bonds for low-income housing cost at least 5-6% in fees for offerings in excess of $5 Million.

Additionally, Council should be aware that all federally assisted new construction of five (5) or more residential units must construct at least 5% of units as Americans with Disabilities Act accessible.

Density Scenario - Pros and Cons Comparison		
	Con's	Pro's
Opt 1	Highest cost per unit	Lowest density per developable acres
	Least efficient use of existing infrastructure	lowest footprint on the land
	Highest level of finanacial subsidies required for affordable prices	Ability to develop only Phase 1
Opt 2	Mix of medium sized MF stacked flat massings	Balance between Density and infrastructure cost
	Requires financial subsidies to provide affordable prices	Stacked flat massing in the least intrusive portion of lot
	groups unit types together (townhomes vs stacked flats)	Highest density with 1 Phase
Opt 3	Requires Ph 1 & Ph 2 to achieve full unit count	Lowest cost per unit
	Highest density per developable area	Makes the most of the existing site / infrastructure
	Stepped massing is complex to build	Potential for positive cash flow (no subsidies)

Table 70.1 - Project option Pro vs. Con for each scenario (Stereotomic)

Appendices

Appendix A - ALTA / NSPS Land Title Survey

Appendix B - Topographic Slope Analysis

Appendix C- Clark Ranch Conservation Resources Inventory, 2015

Appendix D- Clark Ranch Management Plan, 2015

Appendix E - Traffic - Trip Generation Memorandum

Appendix F - Access Road Layouts and Profiles

Appendix G - Storm-water Retention Pond Exhibit

Appendix H - Soils Survey - Park City Heights / Clark Ranch

Appendix I - Environmental Assessment / Phase 1 - Park City Heights

Appendix J - Clark Ranch Infrastructure Assessment, Talisman Civil

- end -

City Council Staff Report

Subject: Veterans Day Resolution
Author: Michelle Downard, Resident Advocate
Department: Executive
Date: November 2, 2023
Type of Item: Legislative

Summary Recommendation

Approve a resolution recognizing November 11, 2023, as Veterans Day to honor the service and sacrifice of veterans who have honorably served in the United States Armed Forces. As an organization, Park City Municipal has many veterans within its internal teams, divisions, and departments. As a result, each year we pay special thanks and respect to our colleagues for their military services.

Background

Armistice Day was initially celebrated in the United States on November 11, 1919, to recognize the end of World War I. Armistice Day was renamed Veterans Day on June 1, 1954, in honor of all people who have served in the United States Armed Forces.

Analysis

Park City is a community that welcomes all individuals and recognizes the benefit of diverse backgrounds and experiences. Veterans provide valuable skill sets, work ethics, core values, and experiences that strengthen our community.

Park City recognizes the sacrifice of veterans who risk their safety and dedicate their service to our country.

Consistent with City Council's Protocols, the Mayor informally polled the City Council and the majority of Council agreed to placing this resolution on the meeting agenda.

A Veteran's Day 2023 Resolution demonstrates Park City's support for veterans who have served our country with honor and deserve our gratitude. Council joins the community in honoring our veterans this Veterans Day.

Exhibit A- Veteran's Day 2023 Resolution

Resolution No. 19-2023

RESOLUTION PROCLAIMING NOVEMBER 11, 2023 AS A DAY TO HONOR VETERANS IN PARK CITY, UTAH

WHEREAS, the Congress and President of the United States have designated November 11, as Veterans Day to honor the service and sacrifice of the many Veterans who have safeguarded our country; and

WHEREAS, Veterans Day was originally proclaimed in 1919 as Armistice Day, recognizing the end of World War I; and

WHEREAS, in 1954 Armistice Day was changed to Veterans Day as a day to honor all veterans; and

WHEREAS, Park City residents have served in conflicts around the world, including World War I, World War II, Korea, Vietnam, Iraq, and Afghanistan; and

WHEREAS, Park City is proud to have local Veterans with valuable skill sets, work ethics, core values, and experiences that strengthen their communities.

NOW, THEREFORE BE IT RESOLVED that the Mayor and City Council hereby proclaim November 11, 2023, as a day to honor and recognize the valor and sacrifice of all our veterans. All residents are also asked to pay tribute to our wounded, our missing, our fallen, and their families—men and women who have known the true costs of conflict and deserve our deepest respect. These commitments to those who have served are commitments we must honor not only on Veterans Day but every day. As we do so, let us reaffirm our promise that when our troops finish their tours of duty, they come home to an America that gives them the benefits they have earned, the care they deserve, and the fullest opportunity to keep their families strong and our country moving forward.

PASSED AND ADOPTED this 2nd day of November, 2023.

PARK CITY MUNICIPAL CORPORATION

_____
Mayor Nann Worel

Attest:

_____
Michelle Kellogg, City Recorder

City Council
Staff Communications Report

Subject: 2023 Golf Season Update
Author: Vaughn Robinson, Golf Course Manager
Department: Golf Course
Date: November 2, 2023

Each year, a significant amount of preparation is invested into the opening day of the Park City Golf Course. The golf course opened on May 19, roughly one month later than normal. Despite this delay, the golf course's 2023 season was successful and revenue was consistent with prior seasons. Rate increases in green fees positively impacted yearly gross revenues despite the late opening.

Green Fees

- Resident 18 Hole - $42.00 (an increase of $2.00 from 2022)
- Utah Resident 18 Hole - $57.00 (an increase of $7.00 from 2022)
- Non-Resident 18 Hole - $67.00 (an increase of $7.00 from 2022)
- Lodging/Pre-book 18 Hole - $100.00 (an increase of $10.00 from 2022)
- Golf Car 18 Hole - $18.00 (an increase of $2.00 from 2022)

Golf Rounds

At the time that this staff report was drafted, golf rounds were on pace for a 7% decrease from 2022. If you factor in the late start, these numbers are similar to the previous couple of seasons.

- 2019 golf season - 28,384 eighteen-hole rounds.
- 2020 golf season - 40,409 eighteen-hole rounds.
- 2021 golf season - 33,861 eighteen-hole rounds.
- 2022 golf season - 33,620 eighteen-hole rounds.
- In the 2023 golf season, we have had 28,784 eighteen-hole rounds as of October 19, 2023.

Tee Times

Tee time intervals are 9 minutes apart. This is based upon creating the most opportunity for people to play, revenues, and pace of play. Tee times can be reserved 8 days in advance online and 7 days inadvance over the phone. To help maintain availability for daily fee golf, Tournaments were limited to the same groups from the previous year, no new large groups were booked. Next year, we are discussing additional reductions in outside tournament play to continue to support the availability for local tee times.

Golf Cars

In August of 2021, we received our new golf car fleet (75 cars). We typically keep our fleet for 4 to 5 years, pending battery life and wear and tear on the cars themselves. The rental fee was increased by $1.00 per nine holes this season.

- In 2019, we had 21,947 golf car rentals for $255,000 in revenues.
- In 2020, we had 27,992 golf car rentals for $328,000 in revenues.
- In 2021, we had 25,970 golf car rentals for $336,000 in revenues.
- In 2022, we had 25,572 golf car rentals for $332,068 in revenues.
- In 2023, we have had 24,519 golf car rentals for $327,134 in revenues.

Retail Merchandise
The golf course is still experiencing a strong demand for merchandise. We plan to continue to diversify and expand this offering as the demand is clearly shown below.
- 2019 Retail Sales - $194,106
- 2020 Retail Sales - $202,688
- 2021 Retail Sales - $265,085
- 2022 Retail Sales - $262,403
- 2023 Retail Sales - $282,398 (through mid-October)

Food and Beverage
Initially, the beverage cart was leased out to a vendor for approximately $2,400 per golf season. Due to complaints about the cart not being on the course enough and the feeling we could provide a higher level of service, we brought the service in-house in 2014. No prepared foods are sold on the beverage cart, only packaged goods including nuts and candy as well as Water, Powerade, Coke, and Beer.
- 2019 Gross Sales - $53,155
- 2020 Gross Sales - $36,409
- 2021 Gross Sales - $67,683
- 2022 Gross Sales - $71,799
- 2023 Gross Sales - $58,778
- Total Gross Sales since 2014 - $595,106

Factors contributing to lower sales this year include regular afternoon rain showers, a late start to the season, and staffing issues leading to occasional missed shifts or combined shifts during the day.

Staffing
The golf course has always been proud to have high seasonal staff retention. The majority of staff, including key personnel, returned this season. We had minimal issues hiring our seasonal employees. Moving forward and to keep pace with demand, we will likely request additional personnel in next year's budget process, offset with increases in the golf fee schedule.

Pink Snow Mold
Pink Snow Mold is a challenge we face every spring. The snow during the winter, elevation, age of the greens, and Poa Anua grass are some of the factors contributing to this. Tony Larsen, Golf Course Superintendent, performs routine checks during the winter months, looking for signs of snow mold.

This past year, we discovered snow mold in April and there was still over 4 feet of snow on every green. Thanks to Jarren Chamberlain and the Parks Department, the Golf Course could borrow a snow blower attachment for the skid steer to clear most of the snow off the greens. Golf Maintenance and Golf Shop staff cleared the remaining snow by hand.

These efforts successfully halted the mold progression and minimized the resulting damage. A few weeks after opening, the greens were back to normal playing condition. The Golf Course would not have been able to open when it did without these staff members' dedication and hard work. In-season rates were delayed a week primarily due to the substantial snow accumulation and winter weather impacts, not snow mold.

Revenues
This year's total revenues are on pace to be similar to last season.

- 2017 - $1,621,361
- 2018 - $1,705,400
- 2019 - $1,583,147
- 2020 - $1,972,049
- 2021 - $2,145,681
- 2022 - $2,191,690
- 2023 - $2,232,817 (through mid-October)

RAP Tax Grant
Golf Staff was awarded a RAP Tax grant for $168,000 for 2 Fully Electric Greens Mowers. These mowers arrived and have been in use since July. We are grateful for the assistance of the RAP Tax and its impact on our operations.

Parking Management/Long-Term Solutions

- The Golf Course complied with its parking requirements this year, thus, not allowing any overflow parking along the Thaynes Canyon Drive
- We continued to incentivize groups with multiple tee times to carpool
- Company tournaments/Large events were encouraged to carpool
- Mens/Ladies League Tournaments were encouraged to carpool
- Emails were sent to Mens and Ladies League encouraging carpooling or alternative transportation
- Our Website was updated, encouraging carpooling or alternative transportation
- Periodic tee times were also proactively blocked out during peak times to limit the number of people needing parking
- Range balls were given (when they informed staff) to those who carpooled

Long-term solution discussions to address parking are ongoing between the Hotel, HOA, and the Golf Course yet nothing substantive has materialized to date. Multiple options, impacts, costs, and potential feasibility will be brought to the City Council at the March 14, 2024, City Council meeting.

While the Golf Course would love additional parking, we understand the complexity and cost of that type of initiative. The options likely vary in implementation timeline between a few months or, more likely, several years. The primary goal of the long-term parking discussion is to identify a long-term parking solution acceptable to the impacted stakeholders, including the HOA, guests, and neighboring residents.

Given the issue's complexity requires thoughtful consideration and time to identify the best long-term solution, we are not optimistic. Instead, we are coordinating and working to make the existing parking sufficient for our needs. For example, the Golf Course and Hotel will continue managing on-site parking through education, incentives, modifying tee times, and enforcement.

City Council
Staff Communication Report

Subject: PC Transit 2023-2024 Winter Service Plan
Author: Kim Fjeldsted, Transit Manager
Scott Burningham, Transit Service Planner
Department: Transportation
Date: November 2, 2023
Type of Item: Staff Communication

This report outlines the final plan for PC Transit's Winter Service Plan. The 2023/24 Winter Transit Service Plan begins on December 10th and ends March 30th.

On September 28, 2023, the City Council discussed a proposed winter service in a work session. On October 5, 2023, the City Council received an updated informational report on the Richardson Flat (Richardson) service plan detailing new express routes to Deer Valley and Park City Mountain. Based on feedback from the City Council and targeted public outreach, the following 2023/24 Winter Transit Service Plan will begin on December 10th, 2023.

Below are highlights of the Plan:

More Efficient Service on the 2 Green and 3 Blue
Routing modifications for the 2 Green and 3 Blue routes are planned to provide more direct service to Main St. and Deer Valley for the Park Meadows neighborhood. From 8:00 a.m. to 5:00 p.m., these routes will maintain a 20-minute frequency. From 6:00 a.m. 8:00 a.m. and 5:00 p.m.-11:00 p.m., a 30-minute frequency will be provided.

1 Red, 4 Orange, 5 Yellow, 9 Purple, 10 White, 50 Teal, Trolley, and the Citywide
Routes and frequency will remain the same as last winter.

8 Brown (Richardson Flat to Deer Valley Snowpark)
Stops: Richardson – PC Heights – Iron Horse – Snowpark – Old Town Transit Center (OTTC) – Iron Horse – PC Heights – Richardson at a 20-minute frequency 5:45 a.m. – 6:15 p.m.

7 Grey (Richardson Flat to Park City Mountain (PCM)
Stops: Richardson – PC Heights - High School – PCM – High School – PC Heights - Richardson at a 20-minute frequency 5:45 a.m. – 6:15 p.m.

6 Silver (Richardson Flat to OTTC)
Route and frequency will remain the same as last year, yet a minor change in operating hours will occur (6:15 p.m. – 11:05 p.m.).

Microtransit
Citywide microtransit service will continue through this winter. PC Transit will return to Council on December 5th with a summer/fall performance report. We plan to continue to push microtransit marketing and advertising.

Communication Plan
Information on all routes and timetables can be found on the PC Transit webpage. We will publish a printed rider's guide and update the app and the website prior to the start of winter service. We are excited to begin winter service, and planning and preparations are well underway.

JOINT PARK CITY AND SUMMIT COUNTY COUNCIL MEETING MINUTES - DRAFT
1885 WEST UTE BLVD
PARK CITY, SUMMIT COUNTY, UTAH 84098

October 10, 2023

The Councils of Park City and Summit County, Utah, met in open meeting on October 10, 2023, at 9:00 a.m. at the Sheldon Richins Building.

JOINT PARK CITY COUNCIL AND SUMMIT COUNTY COUNCIL SPECIAL MEETING

Park City Council Attendee Name	Status
Mayor Nann Worel Council Member Ryan Dickey Council Member Max Doilney Council Member Becca Gerber Council Member Jeremy Rubell (via Zoom) Council Member Tana Toly Matt Dias, City Manager Margaret Plane, City Attorney Paige Galvin, Deputy City Recorder	**Present**
None	**Excused**

Summit County Council Attendee Name	Status
Chair Roger Armstrong Vice Chair Malena Stevens Council Member Canice Harte Council Member Chris Robinson Shane Scott, County Manager Janna Young, Deputy County Manager Helen Strachan, Deputy County Attorney	**Present**
Council Member Tonja Hanson	**Excused**

REGIONAL HOUSING AUTHORITY UPDATE

Discuss Potential Regional Housing Authority:
Jeff Jones, Summit County Economic Development and Housing Director, and Jason Glidden, Park City Municipal Affordable Housing Manager, summarized where the

housing authority formation process was and asked for direction on the goals of the housing authority. Dan Nackerman, an advisor, also joined the discussion.

County Council Member Harte was overwhelmingly in favor of pursuing the authority as there was interest in the community. He felt if there was no housing authority in place, they wouldn't be in a position to benefit from vouchers if there were changes to that program in the future, plus there were plenty of other things a housing authority could benefit from. He knew the budget was the big question.

Park City Council Member Toly agreed that this was the right direction and concurred that budget was the big question, along with the model; either the county umbrella or the multi-entity housing authority. County Council Member Harte clarified that the housing authority would have its own mission statement and townships would not be forced into joining or contributing to the housing authority. Park City Mayor Worel inquired if there was any interest from other municipalities in joining and it was indicated other entities were learning and watching.

Park City Council Member Gerber stated that she had been cautioned about going down this path because it was one more hoop to jump through administratively. She suggested an overall strategic housing plan would be beneficial, and pointed out that housing authorities generally always needed funding and didn't fund themselves. Nackerman revealed that most mid- to large-sized housing authorities didn't get direct city or county funding and operated autonomously because they were a separate entity, but smaller agencies relied on special funding at times.

County Council Member Stevens asked for definitions of small and medium housing authorities and Nackerman indicated the HUD defined a small agency as one that managed up to 400 units. He predicted this authority would start out small and grow over the years. Jones suggested that a difference between the two models would be how the boards were structured, however, the attorneys would need to advise on tradeoffs.

Park City Council Member Dickey requested information at a future meeting about how a board could be structured in Summit County versus each town/city structuring their own board with an interlocal agreement to work together. County Chair Armstrong questioned the benefit for a large authority being able to apply for larger amounts of funding and asked if there would be competition with each other as small individual housing authorities applied for funding. Nackerman reported it wouldn't impact the qualifications to apply for certain funding. Further, he believed that being a true regional partnership might make the entity more qualified to apply for certain funding.

County Council Member Robinson was in favor of a housing authority but believed the County ought to have some way to co-develop, own and benefit from appreciation, cash flow and long-term return of affordable housing. He was concerned about creating another layer of organization and duplicating efforts with other agencies that were doing

the same thing, and questioned what the real benefits would be. Jones responded that school districts felt like they were pushed into being their own developer because there wasn't a way for them to secure units for their employees. Interviews with private developers gave them a lot of information and he noted the benefit depended on the kind of expertise of the regional housing authority executive director. If the focus was specific to development, long term ownership and the ability to capture investment, then that expertise would be necessary to help structure that authority.

Park City Council Member Doilney remarked that there was a regional need for housing that was not being met and the reason they were there was because it was decided they needed a group with a single purpose. He believed that they would be going backward if they said they already had a group doing this work. He heard a housing authority could give clear direction to all the different entities and there could be efficiency and consistency there. He thought the umbrella model made the most sense. To answer Park City Council Member Toly's request, he answered 100% in the rental unit market and 90% employment assisted housing. They needed a single purpose, and a housing authority was the best option on the table.

County Council Member Stephens wondered what it would cost each organization to bring this work in-house, produce housing plans and focus on the work with the developers, and thought the answer could change the conversation. County Council Member Harte clarified that the primary focus of this process had been the formation of a housing authority, its structure and funding. At the same time, they found overwhelming support from the stakeholders for the focused, regional housing authority plan and the ability to harness the power of all the organizations.

County Council Member Robinson asked for a list of stakeholders. The following stakeholders participated: Mountainlands Community Housing Trust, Habitat for Humanity, Park City Community Foundation (PCCF), Christian Center of Park City (CCPC), Garbett Homes, J Fisher, Henry Sigg, Tony Tyler, Park City Board of Realtors, Cowboy Partners, the Chamber of Commerce, Vail, Utah Preservation Fund, Peter Tomai, Rory Murphy, and the three school districts.

City Council Member Gerber asked if there were additional federal funds, besides the federal vouchers, worth pursuing with a housing authority if there were no federal vouchers available. County Council Member Harte indicated that the choice vouchers were the only ones not available, but all the other funding mechanisms would still be available. Park City Council Member Dickey queried if we were building more bureaucracy without much benefit. County Chair Armstrong was not quite ready to support the remaining funding questions. Further, he wondered if the school districts had a source of funding at the legislative level to provide employee housing and whether those were relationships that could be leveraged. He asked for direction to continue to move forward with this proposal with its feasibility and budget questions. He also asked if there was support for one authority or focused internal operations.

County Council Member Stephens urged a pros and cons list to help guide this discussion in the future and County Council Member Robinson agreed. Park City Mayor Worel asked what would happen to the existing deed restricted housing stock each entity had if a regional authority was formed. County Council Member Harte asserted each entity would retain them and they would not be transferred to the housing authority. Furthermore, if a housing authority existed, it would not preclude entities from pursuing internal projects and noted not every housing project had to be within the regional housing authority boundaries. It was decided to continue to move forward with this process.

CHILDCARE UPDATE

Michelle Downard, Park City Municipal Resident Advocate, along with Park City Human Resources Director Sarah Mangano, presented this item. Downard indicated that they were currently working on a draft childcare recommendation for City Council for November, put forth by the working group which would include the recommendation to establish a task force to decide next steps to build capacity and address affordability. Park City Mayor Nann Worel proposed that this working group be expanded county-wide to include school districts, the Chamber and Summit County to partner with and look at long-range goals to increase capacity and a sustainable funding source, since it was not only a Park City boundary issue.

County Chair Armstrong stated the County discovered that their impact fees for childcare facilities came in extremely high so they cut those a lot to make it easier to get a facility open and noted that there were things the County could do in the permitting process as well to encourage new facilities to open. He also emphasized the push for businesses to provide childcare, whether onsite if they were able, or to subsidize childcare for their employees. He directed the County Manager to look at subsidizing childcare and/or providing childcare for their own employees as a benefit and to include it in the budget process. He noted that there were a lot of big developments coming and suggested getting them to think about developing a childcare space.

Park City Council Member Gerber noted federal funding for childcare was cut and the childcare centers were feeling that pinch right now. There were two phases in the City plan: stabilization and capacity building. It was always more expensive to create something than to stabilize it, however, the $1,000,000 in funding was not enough. Many childcare providers she had spoken with were approaching retirement age and they noted that it was too hard to continue. She conceded that there were some large businesses who might be able to provide childcare, however, it was the small businesses that would struggle to provide it.

PEAK WINTER TRAFFIC MITIGATION EFFORTS UPDATE

Andrew Leatham from PCMC Traffic presented results of the traffic study. Park City Council Member Toly asked if left-hand turns onto Shortline Road would be allowed and he clarified they hadn't seen a lot of those so far, but they could use signage and Wavz/Google to show the route out of the resort as a turn at Park Avenue rather than

the Bonanza turn. He indicated these changes were attempts to improve traffic flow and they would be piloting this on December 8-9 so they could adjust things before Christmas.

WRAP UP COMMENTS AND SCHEDULE NEXT JOINT MEETING

The Councils agreed to continue the regional housing authority discussion on November 7th at 9:00 a.m. at Park City Hall.

ADJOURNMENT

With no further business, the meeting was adjourned.

_____
Paige Galvin, Deputy City Recorder

City Council Staff Report

Subject:	**License Agreement with Toro Blanco Group for Antenna Installations in Public Right-of-Way**
Authors:	**Becky Gutknecht, P.E., Public Improvements Engineer** **John Robertson, P.E., City Engineer**
Department:	**Engineering**
Date:	**November 2, 2023**
Type of Item:	**Consent**

Recommendation

Consider a request to authorize the City Manager to execute a license agreement, in a form approved by the City Attorney, with Toro Blanco Group for cellular antenna installations in the public right-of-way.

Executive Summary

Toro Blanco Group, a design firm that provides solutions for infrastructure tailored for Fifth-generation (5G) wireless applications, approached the City with a proposal for a license agreement for cellular antenna installations in the public right-of-way on Main Street. Toro Blanco has a history including similar installations in historic districts such as the French Quarter in New Orleans. When completed, the several antenna installations along Main Street will create a distributed antenna system to provide service along this corridor, which wireless providers can use without needing to install additional antennas or small wireless facilities (SWF). After review with the Engineering and Legal Departments, the proposed license agreement has been developed to ensure compliance with State Senate Bill 189 (SB189), City codes and SWF Standards. Adherence to these adopted local standards provides the best opportunity to comply with SB 189 without compromising Main Street aesthetics.

Background

The passage of SB 189 by the Utah State Legislature in 2018 provides for the placement of SWF within a city's public right-of-way subject to the city's zoning regulation and administrative review. SWF are generally installed on new or existing utility poles but can also be attached to buildings.

5G wireless utilizes a complex web of "small cells." These SWF are sometimes advertised as "the size of a backpack," although the entire support system is often larger (the claimed size is only the size of the antenna and does not account for associated infrastructure such as junction boxes, electrical, and fiber connections). Each SWF can send and receive a large amount of data over a short distance using high-frequency radio waves. This system can be used by multiple cellular providers (such as Verizon and AT&T) simultaneously to provide 5G connectivity without the need for additional hardware installation. Each SWF is connected to an underground fiber connection, a wireless tower, or another small cell.

These SWF are often "collocated" on an existing utility pole or other such structure in the public right-of-way. Toro Blanco's proposed 5G antennas will be attached to the top of existing street poles and will be "concealed" in accordance with the City's design guidelines.

The Utah legislature responded to FCC 18-133 (Order) in 2018 Utah with the passage of SB 189 (now codified as Utah Code Section 54-21-101 et seq.) to implement the Order at the state level, but it takes things a step further. It severely limits a local jurisdiction's ability to regulate the placement of SWF within the public right-of-way. Generally, SB 189 authorizes wireless providers to install, within the public right-of-way, SWF on existing structures, "monopoles" supporting small cells, and new and replacement utility poles.

After a thorough review from the Historic Preservation Board and City Council, in December 2021, the City Council approved Ordinance No. 2021-51, amending Park City Code Title 14 Trees/Landscaping; Streets; Sidewalks and Stairs; Streetcuts; Snow Removal; Street Address System; News Racks and approving Design Standards, an application and a general Master License Agreement (MLA).

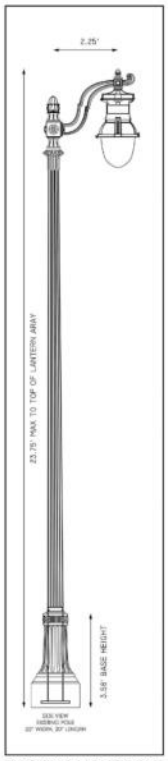
Upon review of the MLA against the system proposed by Toro Blanco Group, it was determined that a separate license agreement would best serve the interests of the City. After multiple rounds of negotiation, the City staff and Toro Blanco have agreed on the terms of the license agreement being presented here (Exhibit A).

The agreement proposes the collocation of low-profile antennae on Main Street streetlamps with fiber optic connections head room adjacent to China Bridge. The antennae are designed in such a way as to minimize the aesthetic impact on the historic streetlamps.

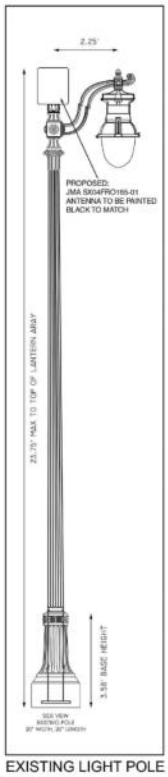
Section 14-7 of the Park City Municipal Code details the City's requirements for Small Wireless Facilities in the Public Right-of-Way. The license agreement, as written, complies with the requirements of the code.

Analysis

The staff has evaluated the proposed license agreement for compliance with the City Code. The license agreement, as written, will allow the Toro Blanco Group to install small wireless facilities in the City right-of-way in a way that complies with the City ordinances and design standards. Toro Blanco will be renting public assets, including but not limited to conduit, light poles, and head-end room, per the approved Municipal Code Fee Schedule (see Exhibit C).



EXISTING LIGHT POLE



EXISTING LIGHT POLE w/ PROPOSED ANTENNA ATTACHMENT

The Staff believes there is good cause to approve the proposed license agreement as it will comply with State and Federal laws governing the installation of small wireless facilities, allowing for improved wireless service and maintaining compliance with City ordinances and design standards. Wireless providers will be able to use these SWF without needing to install additional antennas. Toro Blanco has a demonstrated history of SWF installation in other cities including installations in the French Quarter of New Orleans in which they navigated similar historic design constraints. Staff recommends Council authorize the City Manager to execute the attached license agreement (Exhibit A) with Toro Blanco for cellular antenna installations in public right-of-way on Main Street.

Attachments

Exhibit A – License Agreement with Toro Blanco Group for Antenna Installations in Public Right-of-Way
Exhibit B – Location Map
Exhibit C – Fee Schedule

LICENSE AGREEMENT FOR ANTENNA INSTALLATIONS IN PUBLIC RIGHT-OF-WAY

This License Agreement For Antenna Installations in the Public Right-of-Way is between PARK CITY MUNICIPAL CORPORATION ("Licensor" or "City") and TORO VERTICAL, LLC, a Delaware limited liability company ("Licensee").

Licensee wants to install and operate Antennas and supporting infrastructure on and near certain existing Wireless Support Structures in the City's public rights-of-way to allow wireless providers to propagate their frequencies to provide wireless phone and video service to the surrounding areas, upon the terms and conditions set forth below.

Licensee also wants to utilize City property to install infrastructure that will support it Antenna system.

The City is willing to accommodate Licensee's non-exclusive use of its Wireless Support Structures, public rights-of-way, and property in accordance with Laws and the terms and conditions of this Agreement to allow wireless providers to provide better service to residents and visitors while minimally impacting Park City's Historic Main Street.

The Parties therefore agree as follows:

1. DEFINED TERMS.

As used herein, the following capitalized terms in the Agreement have the meaning ascribed to them below.

"Abandon" means to permanently relinquish ownership of an Antenna in its then existing location.

"Affiliate" means any entity that controls, is controlled by, or is under common control with a Party.

"Agreement Initial Term" means an initial term of fifteen years.

"Antenna" means communications equipment that transmits or receives an electromagnetic radio frequency signal used in the provision of a wireless service. For the purposes of this contract, "Antenna" includes the associated improvements and equipment in the public right-of-way.

"Casualty Event" means any casualty, fire, act of God, or other harm affecting a Wireless Support Structure that has an Antenna installed on it or the associated improvements and equipment in the public right-of-way.

"Commencement Date" means the earlier of the first day of the month following (i) the day Licensee commences installation of the Antennas on the Wireless Support Structures or (ii) 365 days following the Effective Date.

"Days" means calendar days. If deadline or other date falls on a non-business day (including weekends, holidays recognized by the federal government, and holidays recognized by the state of Utah), that date shall be extended to the next business day.

"Default" means the failure by a Party to (1) perform any obligation or condition of this Agreement, or (2) refrain from performing any action prohibited by this Agreement, where in either case such failure continues for a period of more than 30 Days after receipt of written notice from the other Party of such failure identified with reasonable specificity as to the obligation, prohibition, or condition of this Agreement which the Party is alleged to have failed to perform. Notwithstanding the foregoing, no Default will be deemed to exist if a Party has commenced to cure the alleged failure to perform within the 30 day period, and thereafter such efforts are completed with reasonable diligence. Delay in curing an alleged failure to perform will be

excused if due to causes beyond the reasonable control of the Party against whom the failure to perform has been alleged.

"Effective Date" means the latest date in the signature blocks in the Agreement.

"Emergency" means a situation in which there is an imminent threat of injury to person or property, or loss of life.

"Event of Force Majeure" means any act of God, strike, civil riot, fire, flood, material or labor shortage, restriction by governmental authority, and any other cause not within the reasonable control of the Party whose performance is required under the Agreement.

"FCC" means the Federal Communications Commission.

"Headend Room" means the space allocated to house the centralized control unit and associated equipment.

"Interference" means any material and adverse physical obstruction of, or impairment of, radio signals or operation of the Antennas as well as any emissions, radiation, or induction that endangers the functioning or seriously degrades, obstructs or repeatedly interrupts telecommunication users.

"Laws" means all federal, state, and local laws, orders, rules, and regulations applicable to Licensee's ownership or use of an Antenna on a Wireless Support Structure, including associated improvements or equipment, in the public right-of-way.

"Licensee Indemnitees" means Licensee, its employees, affiliates, officers, directors, successors and assigns.

"Licensor Indemnitees" means Licensor, its officers, officials, employees, and volunteers.

"Parties" means Licensor and Licensee collectively.

"Party" means individually Licensor or Licensee.

"Permitted Site" means the area of Licensor's public right-of-way approved for Licensee's installation of Antennas on Wireless Support Structures, as shown on Schedule 1.

"Permitted Use" means the transmission and reception of communications signals, and the installation, construction, modification, maintenance, operation, repair, replacement or upgrade of Antennas on Wireless Support Structures at the Permitted Sites.

"Person" means and includes any natural person, partnership, firm, association, public utility company, corporation, company, organization, or entity of any kind.

"Public Improvement Project" means any construction or expansion of roads, streets, sidewalks, curbs, gutters, storm drainage facilities, sewer lines, water utility lines or other capital improvement project within Licensor's jurisdiction undertaken by or on behalf of Licensor. Public Improvement Project does not include work undertaken for the benefit of a non-governmental entity, even if such work is performed by Licensor.

"Rate Schedule" means the schedule of all application fees and annual fees, as adopted by the City. All fees shall comply with the provisions of Utah Code Annotated § 54-21-501 as amended.

"Relocation Notice" means a written notice delivered to Licensee at least 180 Days prior to the date of Licensor's desired relocation deadline.

"RF" means radio frequency.

"Substantial Modification" means a modification or replacement of an Antenna that:

- Results in an Antenna that is materially larger in size, including if the Antenna has a 10% or greater size differential in any dimension from the originally accepted Antenna, or
- Has a significantly different visual impact, as determined by the City.

"Technical Grounds" means, in light of prevailing industry engineering standards, reasons of insufficiency of capacity, safety, reliability and/or generally applicable engineering purposes consistent with applicable Laws.

"Term" means the Agreement Initial Term and any Renewal Terms exercised pursuant to Section 3 of this Agreement.

"Termination Date" means the final day on which this Agreement is valid and binding and is the final day of the Agreement Initial Term subsequent to the Effective Date, or the final day of any Renewal Term subsequent to a renewal date pursuant to Section 3 of this Agreement.

"Wireless Support Structure" means Licensor's decorative light poles located in the public right-of-way on Main Street in Park City, Utah.

2. GRANT OF LICENSE. To the extent not already governed by Laws, and subject to the terms and conditions of this Agreement, the City hereby grants Licensee: (i) the right to install, construct, repair, replace, reconstruct, maintain, upgrade, and remove Antennas on the Wireless Support Structures at the Permitted Sites set forth on Schedule 1, (ii) approximately one hundred and seventy five (175) square feet of space at a mutually agreeable location for the Headend Room shown on Schedule 1, (iii) the non-exclusive right to install, construct, repair, replace, reconstruct, maintain, upgrade and remove utility and fiber lines within Licensor's existing conduit running to and from the Permitted Sites as shown on Schedule 1; and (iv) the right to allow wireless providers by way of sub-license or other instrument the right to propagate their frequencies from such Antennas to provide wireless phone and video service to the surrounding areas. The license granted herein is revocable only in accordance with the terms and conditions of this Agreement. No use by Licensee of any City-owned property under this Agreement shall create or vest in Licensee any ownership or property rights in such property. Nothing in this Agreement grants Licensee the right to install, modify, or operate any Small Wireless Installation, or to install any other facilities, that do not conform to this Agreement.

3. TERM. This Agreement shall commence on the Effective Date and remain in full force and effect for the Agreement Initial Term. With the consent of the City, which may not be unduly withheld, Licensee may extend this Agreement for four, five-year renewal terms (each, a "Renewal Term"). Prior to the expiration of the Agreement Initial Term or applicable Renewal Term, Licensee shall notify Licensor of Licensee's desire to extend this Agreement. Licensor shall, within forty-five days following receipt of Licensee's notice, notify Licensee of Licensor's decision to extend this Agreement.

4. CHARGES, BILLING AND PAYMENT.

4.1 Fees. Starting on the Commencement Date, Licensee shall pay to Licensor an Annual Fee for this Agreement as set forth on Schedule 2. The Annual Fee shall be based on the City's Fee Schedule in effect when the fee is due, and Schedule 2 will automatically be updated to reflect the then-current fee schedule. The Annual Fee shall be payable within thirty (30) days following the Commencement Date and the start of each license year.

4.2 Timing of Payment. Licensee shall pay the Annual Fee within 30 Days following the start of each license year.

4.3 Billing and Payment Generally. All bills and other requests for payment to Licensor under this Agreement (other than the payment of the Annual Fee), if any, shall be presented in writing to Licensee and accompanied with reasonable substantiation of the costs incurred by Licensor. Properly presented invoices shall be paid by Licensee within 30 Days of receipt of invoice accompanied by such substantiation. All charges payable under this Agreement shall be billed by Licensor within one year from the end of the calendar year in which the charges were incurred. Any charges beyond such period shall not be billed by Licensor and shall not be payable by Licensee.

5. INSTALLATION PLANS AND MODIFICATIONS.

5.1 Technical Requirements and Specifications. At its own expense, Licensee shall erect, install, repair, and maintain the Antennas and Headend Room in safe condition and good repair in accordance with this Agreement, Laws, and the plans and specifications detailed on Schedule 1 (the "Installation Plans"). Licensor makes no guarantees regarding the existing subterranean conditions or locations of existing utilities. Should Licensee require relocation of utilities or obstructions for the installation of Licensee's antennas or related infrastructure, the relocations must be performed by licensed contractors at the sole expense of Licensee, only after gaining written permission from the owners of the equipment to be relocated. Licensee acknowledges that removal, remediation, or disposal of contaminated soil arising from their construction efforts is at their own expense and shall be performed in accordance with Park City's Soil Ordinance, and state and federal regulations. Prior to Licensee allowing a wireless provider to propagate frequencies from an Antenna, Licensor has the right to require the wireless provider to submit proof of compliance with Federal Law including proof of compliance with federal RF-emission laws and regulations.

5.2 Modifications and Replacements. Licensee may only make Substantial Modifications with the written approval of the modification by Licensor, which may be approved or denied at Licensor's sole discretion. Licensor shall respond to Licensee's written request to perform a substantial Modification within 30 days following Licensor's receipt of such request and the detailed materials therefor. If a modification, replacement, or upgrade to an Antenna does not involve a Substantial Modification, Licensee shall provide written notice to Licensor and that notice shall include detailed information about the proposed modification. If Licensor determines that the modification is not a Substantial Modification, which determination shall be provided to Licensee within 30 days following Licensor's receipt of Licensee's written notice to Licensor, Licensor may perform such modification, replacement, or upgrade without Licensor's approval.

6. GENERAL LICENSEE OBLIGATIONS.

6.1 No Liens. Licensee will not allow the placement of any lien with respect to any Licensor-owned property or facility, including Wireless Support Structures, resulting from any work performed by or on behalf of Licensee pursuant to this Agreement, or any act or claim against Licensee or any of its contractors, agents, or customers. Licensee will, at its sole expense, promptly bond or otherwise discharge any such lien within 30 Days of the lien being recorded on such property.

6.2 Worker Qualifications; Responsibility for Agents and Contractors. Each Party shall ensure that its employees, agents, or contractors which perform work in furtherance of this Agreement are adequately trained and skilled to perform work in the public right-of-way, including work on associated structures such as Wireless Support Structures in the public right-of-way, in accordance with all applicable industry and governmental standards and regulations.

7. UTILITIES. Licensee shall be responsible for arrangement and payment for electric service for the operation of the Antennas.

8. OPERATION AND MAINTENANCE.

8.1 RF Emissions. Licensee shall ensure that the operation of the Antennas complies with all FCC regulations regarding RF emissions and exposure limitations. Licensee is allowed to install signage as long as it complies with the City's Sign Code and is approved in writing by the City, and other mitigation, such as a power cut-off switch, to allow workers to avoid excess exposure to RF emissions. Except in an Emergency, Licensor's authorized field personnel will contact Licensee's designated point of contact with reasonable advance notice, but in no event less than five business Days in advance, to inform Licensee of the need for a temporary power-shutdown of any of Licensee's Antennas. In the event of an unplanned outage or cut-off of power or an Emergency, the power-down will be with such advance notice as practicable. Once the work has been completed and the worker(s) have departed the exposure area, the Party who accomplished the power-down shall restore power and inform Licensee as soon as possible that power has been restored. The Parties acknowledge that they understand the important nature of Licensee's Antenna operations and agree to limit the frequency of power-downs and to restore power as promptly as reasonably possible.

8.2 Interference.

(a) Licensee shall operate the Antennas in compliance with all FCC regulations regarding Interference with the radio signal transmissions of Licensor and other third parties, provided such transmissions are operated in compliance with Laws.

(b) Licensor will not cause, nor will Licensor knowingly permit its employees, tenants, licensees, invitees, agents or independent contractors to cause, Interference with Licensee's Antennas. If Licensee reasonably determines that Interference is occurring, then Licensor will meet and confer with Licensee within ten Days of Licensor's receipt of notice of Interference from Licensee, and Licensor will diligently work in good faith with Licensee to determine the cause of the Interference and, if reasonably within Licensor's power and authority, to develop solutions to resolve the Interference in a mutually acceptable manner.

8.3 Ownership and Maintenance of Antennas. The Antennas installed by Licensee pursuant to this Agreement shall remain the property of Licensee until Abandoned or removed. Licensee shall be responsible for maintaining the Antennas and their outward appearance, including ensuring that the Antennas conform with the Installation Plans, this Agreement, and Laws, for the duration of the Term.

9. RELOCATION AND ABANDONMENT.

9.1 Relocation for Public Improvement Projects. In the event Licensor desires to replace, relocate, modify, demolish, or in any way alter its property or a Wireless Support Structure in connection with a Public Improvement Project in a manner likely to cause Interference with Licensee's Antennas or Headend Room, Licensor shall have the right to cause Licensee to relocate its Antenna attached to the Wireless Support Structure or the Headend Room subject to the terms and conditions set forth herein; provided, however, Licensor shall use reasonable efforts to fully accommodate Licensee's continuing use of the Antenna on the Wireless Support Structure or the Headend Room without relocation if it is reasonably possible to do so. Licensee assumes all risk and costs of relocation of an Antenna or the Headend Room by entering into this Agreement.

(a) Relocation. If Licensor's Public Improvement Project requires Licensee to relocate its Antenna or Headend Room, Licensor shall have the right to require Licensee to relocate the Antenna or Headend Room upon the following terms and conditions: (i) Licensor shall deliver to Licensee a Relocation Notice to relocate the Antenna or Headend Room; (ii) Licensor and Licensee shall work together to identify

a suitable alternate location or Wireless Support Structure that provides substantially similar signal coverage for the Antenna as that of the Permitted Site being relocated; (iii) the relocation will be performed exclusively by Licensee and Licensee shall bear all costs for the relocation; (iv) Licensee shall have 180 Days from receipt of the Relocation Notice to relocate the Antenna (unless Licensor agrees to a longer time period); (v) Licensee shall have the right to operate a temporary Wireless Support Structure (including a Cell-On-Wheels), if feasible, in a mutually agreeable location in the vicinity of the Permitted Site during such relocation with no additional fee due to Licensor; and (vi) the Annual Fee shall not be proportionately abated, provided that Licensee can operate such a temporary Wireless Support Structure with the same degree of coverage as the Permitted Site being relocated. Licensee shall not be required to pay any additional fees in connection with any relocation initiated by Licensor. If in Licensee's reasonable judgment no suitable Relocation location can be found, then Licensee shall have the right to terminate this Agreement with respect to the applicable Permitted Site upon written notice to Licensor, and without penalty or further obligation, and the Annual Fee shall thereafter be proportionately reduced.

(b) Relocation in the Event of an Emergency. Notwithstanding Section 9.1(a) above, in the event of an Emergency, Licensor will endeavor to provide as much notice to Licensee for the relocation of Antennas as warranted by the circumstances pertaining to the Emergency.

9.2 Decommission by Licensor. If Licensor determines to decommission any Licensor-owned Wireless Support Structure on which an Antenna is installed, then Licensor shall give Licensee at least 90 Days prior written notice of Licensor's intent to take such action. Licensee must remove the Antenna within this 90-Day period, at which time this Agreement shall automatically terminate with respect to the applicable Permitted Site, and without penalty or further obligation, and the Annual Fee shall thereafter be proportionately reduced.

9.3 Abandonment by Licensee. Licensor may deem an Antenna or any associated improvements and equipment Abandoned by Licensee if: (i) use of the Antenna has been discontinued for a continuous period of 18 months; (ii) Licensor has notified Licensee that the Antenna fails to conform with any term of this Agreement, the Installation Plans, or Laws, and such nonconforming condition has not been remedied within 60 Days of notification; or (iii) this Agreement has expired or been terminated with respect to a particular Permitted Site and Licensee has not removed the Antenna therefrom within 60 Days pursuant to Section 12.4 of this Agreement.

9.4 Removal of Abandoned Antennas. If any Antenna is deemed Abandoned under Section 9.3, Licensee shall remove the Antenna and associated improvements and equipment within 90 Days of the Licensor's notice of Abandonment unless Licensor gives written permission that Licensee may leave the Antenna, associated improvements and equipment, or both in place, for Licensor's future use. Licensee shall repair and restore the Wireless Support Structure to a similar condition that existed at the time of the installation, reasonable wear and tear excepted. If Licensee fails to remove the Antenna, Licensor retains the right to do so at Licensee's expense. The City shall have the right to inspect and approve the condition of any Licensor-owned property affected by the Antenna prior to and after its removal. The liability, indemnity, and insurance provisions of this chapter and any security required of Licensee shall continue in full force and effect during the period of removal and until full compliance by Licensee with the terms and conditions of this section.

9.5 Abandonment of System. If Licensee fails to use the Headend Room for its intended purpose for a period of more than 12 months, Licensee will be deemed to have abandoned this Agreement and it will terminate. Licensor shall follow the procedures outlined in Section 12.4 following termination for abandonment.

9.6 Amendment of Permitted Sites. The Permitted Sites, as shown on Schedule 1, will be automatically amended without need for further writing (i) pursuant to Sections 9, 12, and 13 of this Agreement or (ii) if this Agreement is terminated with respect to a particular Permitted Site pursuant to this Agreement. The

Permitted Sites, as shown on Schedule 1, may be amended for any other reason as agreed to by the Parties in writing.

10. INSURANCE AND GUARANTEE.

10.1 Certificate of Insurance. Licensee shall at its sole expense maintain the insurance coverage and limits required by this Section during the Term of this Agreement. Licensee agrees to procure the required insurance from an insurance company having and maintaining an A.M. Best rating of at least A VII and deliver to a Licensor a Certificate of Insurance evidencing the types of insurance and policy limits required.

10.2 Required Insurance.

(a) Workers' Compensation and Employer's Liability insurance, as required by statute, with Employer's Liability limits of $1,000,000 each accident, $1,000,000 by disease policy limits, and $1,000,000 by disease each employee. To the extent allowed by law, the policy must include a blanket waiver of subrogation in favor of Licensor.

(b) Commercial General Liability insurance written on Insurance Services Office (ISO) Form CG 00 01 or a substitute form providing equivalent coverage, with limits of:

$3,000,000 General Aggregate Limit
$1,000,000 Each Occurrence
$1,000,000 Each Occurrence - Personal Injury
$1,000,000 Products/Completed Operations Aggregate Limit

The required Commercial General Liability policy must include Licensor as an additional insured on a primary and non-contributory basis and a waiver of subrogation in favor of Licensor.

(c) Business Automobile Liability insurance with limits of $2,000,000 Combined Single Limit for each Accident for Bodily Injury and Property Damage, extending to all company owned, leased, and non-owned vehicles.

10.3 Notice of Cancellation. Licensee may meet the required insurance coverage and limits with any combination of primary and umbrella/excess liability insurance. Licensee shall provide at least 30 Days advance written notice of cancellation or non-renewal of any required insurance that is not replaced. Notwithstanding the foregoing, Licensee may self-insure the required insurance under the same terms and conditions as outlined above.

10.4 Work in the Right-of-Way Guarantee. Licensee shall obtain a permit or permits to work in the public right-of-way and shall provide a work in the right-of-way guarantee fee for each permitted site according to the City's fee schedule in effect at the time of the application.

11. INDEMNIFICATION.

11.1 Indemnification by Licensee. To the extent permitted by law, Licensee shall indemnify, hold harmless and, at Licensor's sole option, defend Licensor Indemnitees, and each of them, from and against any and all liabilities, damages or claims for damage, including but not limited to all actual and reasonable costs, attorneys' fees, and other charges and expenditures that Licensor Indemnitees, or any of them, may incur, asserted by third parties against Licensor Indemnitees, or any of them, by reason of the installation, operation, use, repair, or removal of any Antenna or breach of the terms of this Agreement by Licensee, including negligent acts or omissions by its agents, contractors, or subcontractors, except to the extent that such liabilities, damages or claims are a result of the negligence or willful misconduct of Licensor Indemnitees, or any of them.

12. DEFAULT AND TERMINATION.

12.1 Licensee's Default and Licensor's Remedies. If Licensee is in Default, pursuant to the defined term, then thereafter Licensor may elect any of the following remedies:

(a) terminate this Agreement, provided that such Default affects this Agreement as a whole or more than half of the Permitted Sites;

(b) if applicable, suspend Licensee's access to the Wireless Support Structure to which the Default pertains;

(c) terminate this Agreement with respect to the applicable Permitted Site to which the Default pertains;

(d) require Licensee's obligation to which the Default has been declared to be specifically performed; or

(e) maintain an action at law against Licensee for damages directly incurred by Licensor arising directly from Licensee's uncured Default.

12.2 Termination by Licensee. Licensee may terminate this Agreement in its entirety or with respect to any particular Permitted Site without cause by providing 60 Days' notice to Licensor. If this is Agreement is terminated with respect to one or more Permitted Sites, the Annual Fee for such Permitted Sites shall be terminated at the start of the following license year.

12.3 Licensor's Default and Licensee's Remedies. If Licensor is in Default, then Licensee may terminate this Agreement if such default affects this Agreement as a whole or with respect to the particular Permitted Site to which the Default pertains and/or elect to pursue any rights or remedies available to Licensee at law or in equity. Should Licensee terminate this Agreement with respect to a Permitted Site to which the Default pertains, the Annual Fee shall be proportionately reduced.

12.4 Removal and Replacement after Termination. Within 60 Days following expiration or early termination of this Agreement as a whole or with respect to one or more Permitted Sites, Licensee shall, as appropriate and unless otherwise approved in writing by Licensor, restore the Permitted Site, including the applicable Wireless Support Structure(s) on which Licensee installed an Antenna and the associated improvements and equipment in the public right-of-way, to the original condition, excluding normal wear and tear, provided, however, Licensee shall not be required to remove any underground vaults, boxes, wires, cables, or conduits.

13. CASUALTY. In the event of damage, to any Licensor-owned Wireless Support Structure on which an Antenna is installed, due to a Casualty Event that cannot reasonably be expected to be repaired within 45 Days following such Casualty Event or which Licensor elects not to repair, or if such Casualty Event can reasonably be expected to disrupt Licensee's operations on the Wireless Support Structure for more than 45 Days, then Licensee may elect from among the following alternatives at any time following such Casualty Event: (i) terminate this Agreement with respect to the applicable Permitted Site upon 15 Days' written notice to Licensor and the Annual Fee shall be proportionately reduced; (ii) place and operate a temporary facility, if feasible and approved by Licensor, at a mutually agreeable location in the vicinity of and reasonably equivalent to Licensee's current use of the Wireless Support Structure until such time as the Wireless Support Structure is restored and the Antenna is returned to full on-air operation in the ordinary course of Licensee's business; or (iii) relocate to a suitable Licensor-approved alternate Wireless Support Structure that provides substantially similar signal coverage for the Antenna. If Licensee elects to terminate this Agreement with respect to the applicable Permitted Site, notice of termination shall cause this Agreement to terminate with respect to the applicable Permitted Site and the Annual Fee shall be proportionately reduced. Licensee will be entitled to collect from its insurer all insurance proceeds payable to Licensee on account thereof, including any portion of any prepaid Annual Fee on a pro rata basis. If Licensee does not elect to terminate this Agreement with respect to the applicable Permitted Site, then the Annual Fee shall fully abate during the period of repair following such Casualty Event until the date that either the temporary facility is placed and operational as provided in (ii) above, or the Antenna is relocated to another Wireless Support Structure as provided in (iii) above.

14. MISCELLANEOUS PROVISIONS.

14.1 Notices. All notices, requests, and demands contemplated by this Agreement will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notices will be addressed to the Parties as follows:

If to Licensee (including invoices): Toro Vertical, LLC 750 Park of Commerce Drive, Suite 200 Boca Raton, FL 33487 Attn: Asset Management Re: Park City Right of Way Facilities	**If to Licensor:** Park City Municipal Corporation ATTN: City Engineer 445 Marsac Avenue PO Box 1480 Park City, Utah 84060
With a copy to the [company] Legal Department: Toro Vertical, LLC 750 Park of Commerce Drive, Suite 200 Boca Raton, FL 33487 Attn: Legal Department Re: Park City Right of Way Facilities	**With a copy to the Park City Attorney's Office:** Park City Municipal Corporation ATTN: City Attorney's Office 445 Marsac Avenue PO Box 1480 Park City, Utah 84060

Contact Number for day to day operation:
Licensor: 435-615-5073
Licensee: _____

Any Party may change its address or other contact information at any time by giving the other Party, and Persons named above, written notice of said change.

14.2 Force Majeure. Time periods for performance under this Agreement shall be deemed extended day for day for time lost attributable to any delay resulting from any Event of Force Majeure.

14.3 Assignment and Transfer. This Agreement shall be binding upon, and inure to the benefit of, the authorized successors and assigns of the Parties. Except as otherwise provided in this Agreement, neither Party shall assign this Agreement or its rights or obligations to any firm, corporation, individual, or other entity, without the written consent of the other Party, which consent shall not be unreasonably withheld. Notwithstanding the foregoing, upon 30 Days' written notice, either Party may assign this Agreement or its rights or obligations (a) to an Affiliate or (b) in connection with the sale or other transfer of substantially all of Licensee's assets in the FCC market area where the Antennas are located whether by way of a business reorganization, merger, or alternative structure.

14.4 Compliance with Laws. Licensee and Licensor agree to comply with Laws. Nothing in this Agreement shall relieve Licensee of any obligation to obtain all other regulatory approvals, permits, authorizations or licenses for the offering or providing of such services from the appropriate Federal, State,

and local authorities. Such obligations include, but are not limited to, licenses from the FCC to operate wireless transmitters or any permit or other authorization required to: conduct business within the City, use property owned by the City or third parties, or excavate or perform other work in or along the City right-of-way.

14.5 Applicable Law. This Agreement shall be interpreted, construed, and enforced in accordance with the laws of Utah without regard to its conflict-of-laws principles, and, where applicable, federal law.

14.6 Alternative Dispute Resolution. If a dispute arises out of or relating to this Agreement, or the alleged breach thereof, and if the dispute cannot be settled through negotiation, the Parties agree first to try in good faith to settle the dispute by mediation before resorting to litigation or some other dispute resolution procedure, unless the Parties mutually agree otherwise in writing. The mediator shall be mutually selected by the Parties. In case of disagreement, the mediator shall be selected by lot from among two nominations of mediators within 20 miles of Park City, Utah provided by each Party. All costs and fees required by the mediator shall be split equally by the Parties, otherwise each Party shall bear its own costs of mediation. If mediation fails to resolve the dispute within 90 Days after the demand for mediation, either Party may pursue litigation to resolve the dispute. Demand for mediation shall be in writing and delivered to the other Party to this Agreement and shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen.

14.7 Exhibits. In the event of any inconsistency between the provisions of this Agreement and any Exhibits attached hereto, the provisions of this Agreement shall supersede the provisions of any such incorporated Exhibits unless such Exhibit specifies otherwise.

14.8 Waiver; Severability. No provision of this Agreement may be waived except in a writing signed by both Parties. The failure of either Party to insist on the strict enforcement of any provision of this Agreement shall not constitute a waiver of any provision. If any portion of this Agreement is found to be unenforceable, the remaining portions shall remain in effect, and the Parties shall begin negotiations for a replacement of the invalid or unenforceable portion.

14.9 Survival. The terms and provisions of this Agreement, that by their nature require performance by either Party after the termination or expiration of this Agreement, shall be and remain enforceable notwithstanding such termination or expiration of this Agreement for any reason whatsoever.

14.10 Entire Agreement; Amendments. This Agreement (including the Exhibits hereto) embodies the entire agreement between Licensee and Licensor with respect to the subject matter of this Agreement and supersedes all prior and contemporaneous agreements and understandings, oral or written, with respect thereto. Each Party acknowledges that the other Party has not made any representations other than those contained herein. This Agreement may not be amended or modified orally, but only by an agreement in writing signed by the Party or Parties against whom any waiver, change, amendment, modification, or discharge may be sought to be enforced.

14.11 Execution in Counterparts. This Agreement may be executed in multiple counterparts, including by counterpart facsimiles or scanned email counterpart signature, each of which shall be deemed an original, and all such counterparts once assembled together shall constitute one integrated instrument.

14.12 Electronic Signatures. This Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the Parties.

[SIGNATURES APPEAR ON FOLLOWING PAGE]

Each party is signing this Agreement on the date stated opposite that party's signature.

TORO VERTICAL, LLC

Date:_____ Signature:_____

Name:_____

Title:_____

PARK CITY MUNICIPAL CORPORATION, a Utah municipal corporation

Date:_____ Signature:_____
Name, Title

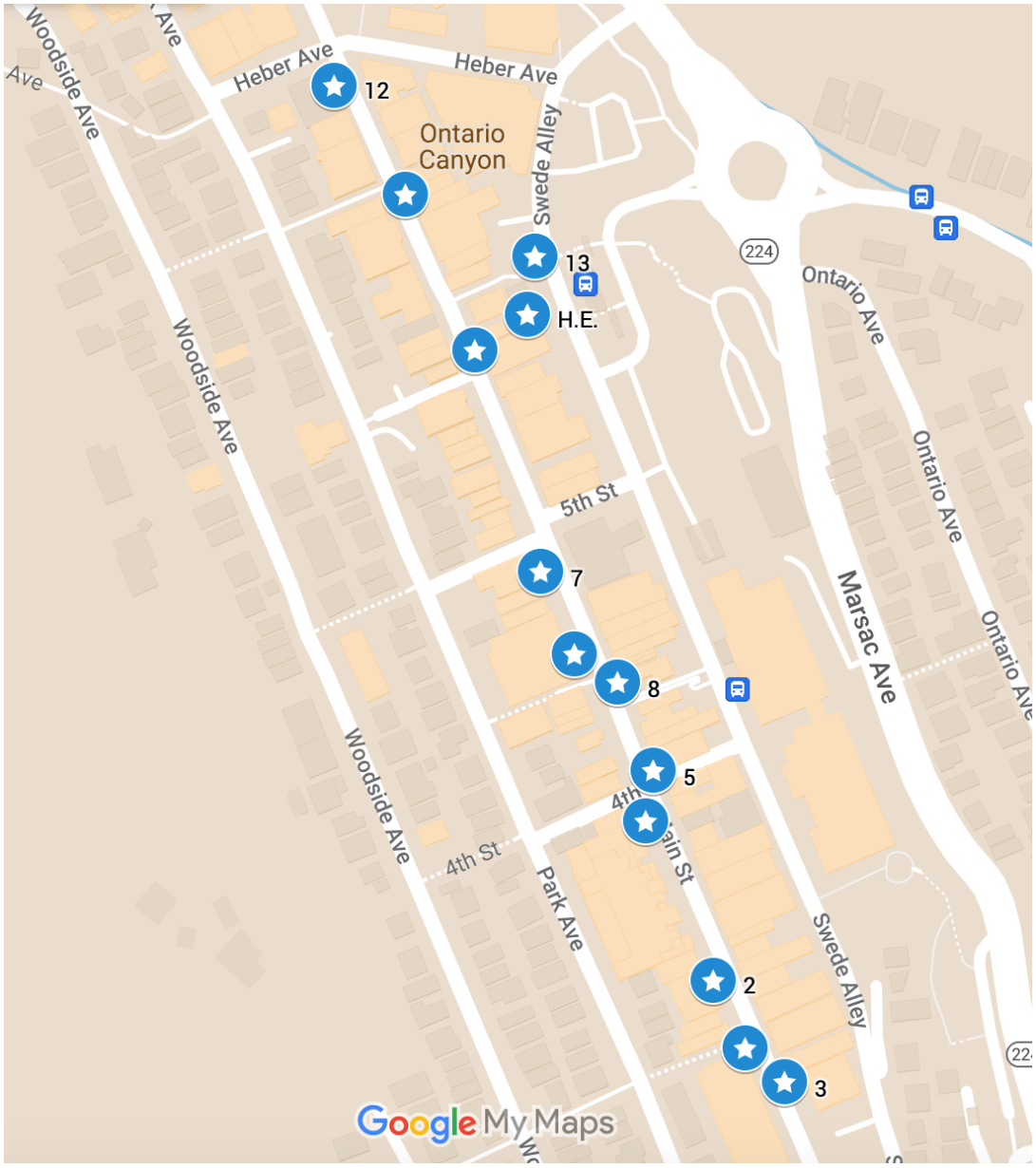
Attest:

_____
City Recorder's Office

Approved as to Form:

_____
City Attorney's Office

Schedule 1
Permitted Sites



Schedule 2
Annual Fees

Use of Public Facilities Fees					
Description	**Quantity**	**Unit**	**Fee Schedule Reference**	**Per Each Yearly Fee as of Fiscal Year 2024**	**Notes**
Collocation of a small wireless facility on an existing utility pole	13	EA	1.3.3.1	$ 50.00	Per each permitted site location.
Headend Room	1	EA	7.10.a	$ 900.00	Calculated as the cost of a special use of public parking for equipment per parking space.
Conduit Space	TBD	LF		$ 1.50	

City Council Staff Report

Subject:	**Joint Use of School Facilities for Recreation ILA Extension**
Author:	**Jenny Diersen, Ken Fisher, Troy Daley, Jarren Chamberlain, Jason Christensen**
Department:	**Special Events, Recreation, Public Works, Parks, Water**
Date:	**November 2, 2023**
Type of Item:	**Consent - Administrative**

Recommendation

Review and consider a request from the Park City School District (PCSD) to approve a final 3-year extension to Exhibit E of the Interlocal Agreement for the Joint Use of Facilities for Recreation Agreement (Exhibit E Facilities ILA) (**Exhibit A**).

Executive Summary

After many years of successful collaboration and partnership, the management and use of shared recreation facilities within Park City have evolved considerably. Over the next three years and after close coordination with the PCSD, we recommend refocusing City resources on PCMC-owned recreation facilities and releasing day-to-day control and management responsibilities over athletic sports fields on the PCSD campus. In addition, the PCSD will proportionally incur the responsibility to pay for its water consumption and manage athletic field scheduling and rentals on their recreational facilities.

Background

The City, PCSD, and Snyderville Basin Special Recreation District have an Interlocal Agreement (ILA) for the Joint Use of Facilities for Recreation. It was originally approved in 2007, and renewed in 2012, and most recently on May 30, 2019 (page. 161).

- This agreement has many exhibits, some of which predate the latest ILA.
- On December 8, 2022 (p. 41), Recreation led a Work Session to provide an overview. The key elements are:
    - Encourage the joint use of fields and facilities;
    - Designate rights and responsibilities of each Party to manage the shared use of fields and facilities effectively;
    - Encourage joint and cooperative ventures, including facilities maintenance and development; and
    - Equitably distribute the time and cost of the use of the fields and facilities.

Exhibit E Facilities ILA (p. 74) is the focus of this report and outlines a standalone Agreement entered on November 20, 1990, between the City and PCSD for a 30-year "Lease and Agreement for Use of School Facilities for Recreation" to create additional playing fields in Park City. At that time:

- The PCSD had centrally located land for recreation fields but lacked funding for construction.

- The City paid approximately $1,000,000 ($2,350,000 in today's value) to build several fields to support recreation and scholastic sports (PCHS Baseball, Softball & Little League, Treasure Mountain Fields, and North 40 Fields).
- The City currently provides maintenance and water at no cost to the PCSD. In exchange, the City:
    - Has unilateral access (and control) over the fields when the PCSD isn't using them and receives 300 hours of gymnasium time from PCSD, at no cost. Over time, the City use of the gymnasium was no longer sought or needed by PC Recreation.
    - Retains field rental revenue, which in FY22 was $31,025.

Analysis

Given the length and overall quality of the long-term partnership, we recommend a final three-year extension to create a seamless transition period to ensure PCSD has adequate time to budget and obtain associated field and maintenance training and personnel. In return, the PCSD requests the following:

- Approve a final and conditional three-year extension (to November 2026);
- This will also provide time for PCSD to get through its Master Planning Process;
- The November 2026 termination will provide a buffer between the end of the fiscal year for both the City, PCSD and the beginning of the school year; and
- Align with the Basin Recreation's ILA expiration date.

The PCSD proposes gradually taking on water consumption costs (see chart below), covering 1/3rd of its field consumption costs in year one, 2/3rd in year two, and its entire cost in year three. By 2026, the PCSD will be responsible for all its water consumption costs, water, field maintenance, and programming. The PCSD commits to coordinating a training transition period and ensuring continued water conservation goals. Neither organization wants to leave any gaps in community services.

Water Fee - Three Year Extension			
	2024	2025	2026
Estimated water costs	$270,557	$270,557	$270,557
City Annual Costs	$180,371	$90,186	$0
School District Annual Costs	$90,186	$180,371	$270,557

Funding

PCSD field maintenance and water costs $424,885 annually. The City received $31,025 in field rental revenue in FY 2022.

Attachments

Exhibit A: Draft Amendment to Exhibit E Facilities ILA

DRAFT - FOURTH AMENDMENT TO AGREEMENT FOR JOINT USE OF FACILITIES FOR RECREATION

This Fourth Amendment ("**Amendment**") is between PARK CITY MUNICIPAL CORPORATION, a Utah municipal corporation ("**City**"), and PARK CITY SCHOOL DISTRICT, a Utah political subdivision ("**District**").

The parties entered into the Agreement for Joint Use of Facilities for Recreation on November 20, 1990 (the "**Original Agreement**"). The parties entered into the First Addendum on December 26, 2019. The parties entered into the Second Addendum on November 18, 2020. The parties entered into the Third Addendum on October 29, 2021.

The term of the Original Agreement, as amended, is due to end on November 8, 2023.

The parties have mutually agreed to extend the term of the Original Agreement and modify the terms to facilitate a transition period of three years, at which time the parties anticipate the Agreement will terminate and the District will assume all of the responsibilities that PCMC currently has under the Original Agreement.

The parties, therefore, agree as follows:

ARTICLE 1 – AMENDMENTS.

A. **EXTENSION OF TERM.** Sections 4.0(a) and (b) of the Original Agreement are hereby amended to read as follows:

(a) Subject to prior termination, as provided, the term of this Agreement ends at midnight on November 8, 2026.

(b) The City, at its sole discretion, may extend the term by sixteen (16) years by providing notice to the District of its intent to extend by November 8, 2026.

B. **WATER.** Section 7.0 of the Original Agreement is hereby amended to include the following, which will take precedence over any conflicting statements in the Original Agreement:

(e) The District shall pay 1/3 of the total cost of water fees related to this Agreement in the year beginning on November 9, 2023, and ending on November 8, 2024. The District shall pay 2/3 of the total cost of water fees related to this Agreement in the year beginning on November 9, 2024, and ending on November 8, 2025. The District shall pay the total cost of water fees related to this Agreement in the year beginning on November 9, 2025, and ending on November 8, 2026.

C. **OTHER TERMS.** Except as modified herein, all other terms and conditions of the Original Agreement, as previously amended, shall remain in full force and effect.

Each party is signing this Amendment on the date stated opposite that party's signature.

PARK CITY MUNICIPAL CORPORATION, a Utah municipal corporation

Date: _____ By: _____
Matt Dias
City Manager

Attest:

_____
City Recorder's Office

Approved as to form:

_____
City Attorney's Office

PARK CITY SCHOOL DISTRICT, a Utah political subdivision
2700 Kearns Blvd
Park City, Utah 84060

Date: _____ By: _____
Andrew Kaplan
Board of Education President

DRAFT

City Council Staff Report

Subject:	**Estimating Agreement for Relocation Work Between Rocky Mountain Power and Park City Municipal Corporation**
Author:	**Luke Cartin**
Department:	**Sustainability**
Date:	**November 2, 2023**
Type of Item:	**Consent - Administrative**

Recommendation

Review and approve the proposed Estimating Agreement for a potential utility Relocation project with Rocky Mountain Power (RMP). This agreement reflects the discussion held at the City Council Retreat.

Executive Summary

The Snyderville RMP transmission circuit traverses the backside of Park City's Boot Hill, crosses the PC Cemetery, and bisects public and private property in the Bonanza District to enter the RMP substation. The vertical infrastructure is considerable, including an aerial easement that limits what can be done near the transmission lines.

The City Council requested the proposed Estimating Agreement for Relocation Work at its recent Retreat. This is potentially the first step to contemplate an iterative relocation project of the Snyderville transmission lines belowground. Gaining the feasibility and estimation information will help the City Council make future public policy decisions concerning potentially removing the aerial restrictions, minimizing visual and viewshed impacts, and reducing wildfire risks. It will also provide important cost estimates for relocation and undergrounding of the Snyderville transmission from the Park City Substation to Boot Hill.

The study will help to identify:

- Potential private and public property easements;
- Type, quantity, and location of RMP utility equipment; and
- A potential new transmission underground alignment.

Importantly, this Agreement does not obligate the City to relocate RMP infrastructure. Instead, in 3-6 months, it will inform the next City Council policy discussion on the topic. This study is a key step in potentially relocating critical RMP infrastructure, and it will help provide detailed information on timing, impacts, and costs. Finally, this information is necessary to generate any additional requests or proposals if City Council decides to proceed with undergrounding and relocating the transmission line. The cost of the study is $150,000.

Department Review

Sustainability, Legal and Executive

Attachment
Exhibit A: Estimating Agreement for Relocation Work

CC:12546 Request #:10086949

ESTIMATING AGREEMENT FOR RELOCATION WORK BETWEEN ROCKY MOUNTAIN POWER AND PARK CITY MUNICIPAL CORPORATION

This ESTIMATING AGREEMENT FOR RELOCATION WORK ("Agreement"), entered into between PacifiCorp, an Oregon corporation doing business in Utah as Rocky Mountain Power ("Rocky Mountain Power"), and Park City Municipal Corporation, a Utah municipality ("Requestor" or "Customer"), for estimating the cost to remove and replace certain Rocky Mountain Power facilities. Rocky Mountain Power and Requestor are each sometimes referred to herein as "Party" or collectively as "Parties."

WHEREAS, Requestor plans to develop an area in or near Park City, Utah on which Rocky Mountain Power has installed certain facilities (the "Existing Facilities"). The Existing facilities must be moved in order for construction to proceed; and

WHEREAS, Requestor desires that Rocky Mountain Power provide a non-binding estimate of the scope and cost for Rocky Mountain Power to remove the Existing Facilities and install new facilities that will not interfere with Requestor's planned construction (the "Replacement Facilities"); and

WHEREAS, Rocky Mountain Power will incur certain costs in developing this estimate, which the parties intend should be borne by Requestor; and

WHEREAS, this Agreement provides only a facilities relocation design and cost estimate without binding either Party to perform the work that is the subject matter of the estimate; and

WHEREAS, the Parties intend that this Agreement more specifically address their responsibilities to one another in this regard.

NOW, THEREFORE, the Parties hereto agree as follows:

SECTION 1: DEFINITIONS

"Completion Date" means the date upon which Rocky Mountain Power tenders to Requestor the Facilities Relocation Estimate.

"Facilities Relocation Estimate" means the design and cost estimate that Rocky Mountain Power will prepare under this Agreement to remove the Existing Facilities and install the Replacement Facilities.

"Existing Facilities" means the Rocky Mountain Power facilities to be removed; the Existing Facilities are identified in Exhibit A.

"Project Costs" means all reasonable costs, charges, and expenses incurred by Rocky Mountain Power in preparing the Facilities Relocation Estimate, including all of Rocky Mountain Power's internal costs, third party costs, an allocation for overhead and administrative expenses, and any other amounts owed to Rocky Mountain Power under the terms of this Agreement.

"Replacement Facilities" means the facilities which Rocky Mountain Power determines would be required to replace the Existing Facilities; the Replacement Facilities will be identified in the Facilities Relocation Estimate.

SECTION 2: PURPOSE; COMPLETION; TERM

2.1 Facilities Relocation Estimate Only. This Agreement provides only for the preparation and delivery of the Facilities Relocation Estimate. It is not intended to obligate the parties to perform the work identified within the Facilities Relocation Estimate. Under this Agreement, Rocky Mountain Power is not obligated to perform construction work, acquire easements or permits, or order materials. In order to obligate Rocky Mountain Power to perform the work contemplated in the Facilities Relocation Estimate, Requestor must enter into a new contract within ninety (90) days after the Completion Date.

2.2 Rocky Mountain Power Obligations. Rocky Mountain Power will use commercially reasonable efforts to develop the Facilities Relocation Estimate in accordance with the Scope of Work attached hereto as Exhibit A, and by this reference made a part hereof. During the course of developing the Facilities Relocation Estimate, Rocky Mountain Power may alter the proposed Replacement Facilities, if any are generally described in Exhibit A, to meet Rocky Mountain Power's engineering standards. Rocky Mountain Power shall tender to Requestor the Facilities Relocation Estimate upon its completion.

2.3 Scope of the Facilities Relocation Estimate. The Facilities Relocation Estimate is not intended to provide a final buildable plan for construction. The Facilities Relocation Estimate shall be based on a reasonable analysis of known conditions. The Facilities Relocation Estimate will not take into account all factors affecting the potential cost of the relocation work, for to do so would (a) require significant additional detailed engineering and design, surveys of actual ground conditions, and right of way acquisition; (b) would add considerably to the cost of the Facilities Relocation Estimate; (c) would take substantially longer to develop; or (d) would require a substantial cost contingency to be added to the Facilities Relocation Estimate. Requestor acknowledges the Facilities Relocation Estimate will provide only an approximation of the actual cost to perform the work described therein and the actual cost is very likely to differ.

2.4 Estimated Time of Completion. Rocky Mountain Power shall use commercially reasonable efforts to complete the Facilities Relocation Estimate, on or before 90 business days after the Agreement is executed by both Parties. Rocky Mountain Power shall not be liable for delays.

2.5 Term of Agreement. This Agreement shall be effective upon the date executed by both Parties and shall terminate upon the Completion Date, unless terminated earlier pursuant to

Section 3.3 or until each Party has satisfied its obligations to the other, including without limitation any payment obligations.

2.6 Third-Party Relocation Costs. The Facilities Relocation Estimate will not contain an estimate to relocate facilities owned by third parties, including third-party equipment attached to the Existing Facilities. Requestor shall be solely responsible for obtaining cost estimates from any third parties and for making all necessary arrangements to transfer third-party facilities to the Replacement Facilities, or any other necessary accommodations.

SECTION 3: COST OF SERVICES

3.1 Estimated Project Costs. Rocky Mountain Power estimates that the Project Costs will be $150,000 (the "Estimated Project Costs"). In the event that actual Project Costs exceed such amount, Rocky Mountain Power shall request written approval from Requestor to proceed with additional work and Requestor shall be responsible for the cost of additional work performed. Requestor shall pay Rocky Mountain Power for all Project Costs incurred, subject to the terms of this Agreement.

3.2 Prepayment. The invoice for the Estimated Costs set forth in Section 3.1 is provided within this Agreement as Exhibit B. Rocky Mountain Power's obligation to proceed with the activities described in Exhibit A shall be contingent upon receipt of such payment. In the event Rocky Mountain Power determines that actual Project Study Costs may exceed the Estimated Costs, Rocky Mountain Power may require an additional prepayment to cover the estimated cost of additional work. After the Completion Date, Rocky Mountain Power shall refund the amount of any prepayments in excess of actual total Project Costs.

3.3 Additional Work. If the parties determine additional work is necessary, Requestor shall provide written approval to proceed with additional work and Requestor shall be responsible for the cost of such work performed. In the event Rocky Mountain Power determines the cost of such work may exceed the Estimated Project Costs, Rocky Mountain Power may require an additional payment to cover the work. After the Completion Date, Rocky Mountain Power shall refund the amount of any payments in excess of actual Project Costs and shall invoice Requestor for any deficiency. Requestor shall promptly pay such invoices.

3.4 Right to Stop Work. Requestor reserves the right, upon seven (7) days advance written notice to Rocky Mountain Power, to require Rocky Mountain Power at any time to stop all work by Rocky Mountain Power pursuant to this Agreement. Issuance of such stop-work order shall terminate this Agreement, subject to the provisions of Section 3. Upon issuance of such stop-work order Requestor shall pay upon demand, without deduction, offset, or allowance, the Project Costs Rocky Mountain Power (a) incurs prior to the stoppage of work, and (b) reasonably incurs in winding up work, including, without limitation, the costs incurred in connection with the cancellation of any third-party contracts.

SECTION 4: LIMITATIONS ON LIABILITY

Under no circumstances shall either Party be liable to the other Party for any lost or prospective profits or any other special, punitive, exemplary, consequential, incidental or indirect losses or damages (in tort, contract or otherwise) under or in respect of this Agreement or for any failure of performance related hereto howsoever caused, whether or not arising from sole, joint or concurrent negligence; and without affecting any other limitations of this Agreement, each Party's liability to each other shall in every event be limited to the payment or refund of amounts due hereunder. Requestor shall indemnify, defend, and hold harmless Rocky Mountain Power with respect to all other claims that arises in any way from preparation or delivery of the Facilities Relocation Estimate.

SECTION 5: FORCE MAJEURE

Neither Party shall be subject to any liability or damages for failure to perform their respective obligations hereunder to the extent that such failure shall be due to causes beyond the control of the Party claiming force majeure protection, including but not limited to the following: (a) the operation and effect of any rules, regulations and orders promulgated by any commission, municipality, or governmental agency of the United States, or subdivision thereof; (b) restraining order, injunction or similar decree of any court; (c) war; (d) flood; (e) earthquake; (f) act of God; (g) sabotage; or (h) strikes or boycotts. The Party claiming Force Majeure under this provision shall make every reasonable attempt to remedy the cause thereof as diligently and expeditiously as possible, <u>except</u> that the obligation to pay amounts due shall not be excused by events of Force Majeure.

SECTION 6: WAIVER OF JURY TRIAL

To the fullest extent permitted by law, each of the parties hereto waives any right it may have to a trial by jury in respect of litigation directly or indirectly arising out of, under or in connection with this agreement. Each party further waives any right to consolidate any action in which a jury trial has been waived with any other action in which a jury trial cannot be or has not been waived.

SECTION 7: NOTICE

Any notice required to be given hereunder shall be deemed to have been given when it is sent, with postage prepaid, by registered or certified mail, return receipt requested, to the Parties hereto at their respective addresses as follows:

To Requestor:

Park City Municipal Corporation
Attention: Luke Cartin
PO Box 1480
Park City, UT 84060

To Rocky Mountain Power:

Rocky Mountain Power
Attention: Andy Badger
Regional Business Manager
70 North 2nd East
American Fork, UT 84003
Phone: (801) 756-1251

SECTION 8: INTEGRATION

This Agreement replaces and supersedes in the entirety all prior agreements among the Parties related to the same subject matter.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized officers as of the dates set forth below.

PARK CITY MUNICIPAL CORPORATION

Signature:

Email: luke.cartin@parkcity.org

Title:

ROCKY MOUNTAIN POWER

Signature:

Email: peter.harker@pacificorp.com

Title:

EXHIBIT A

SCOPE OF WORK AND DESCRIPTION OF THE EXISTING FACILITIES

Scope and estimate Park City Municipal's request to underground a section of the Park City-Snyderville transmission line in Park City, Utah. See map next page.

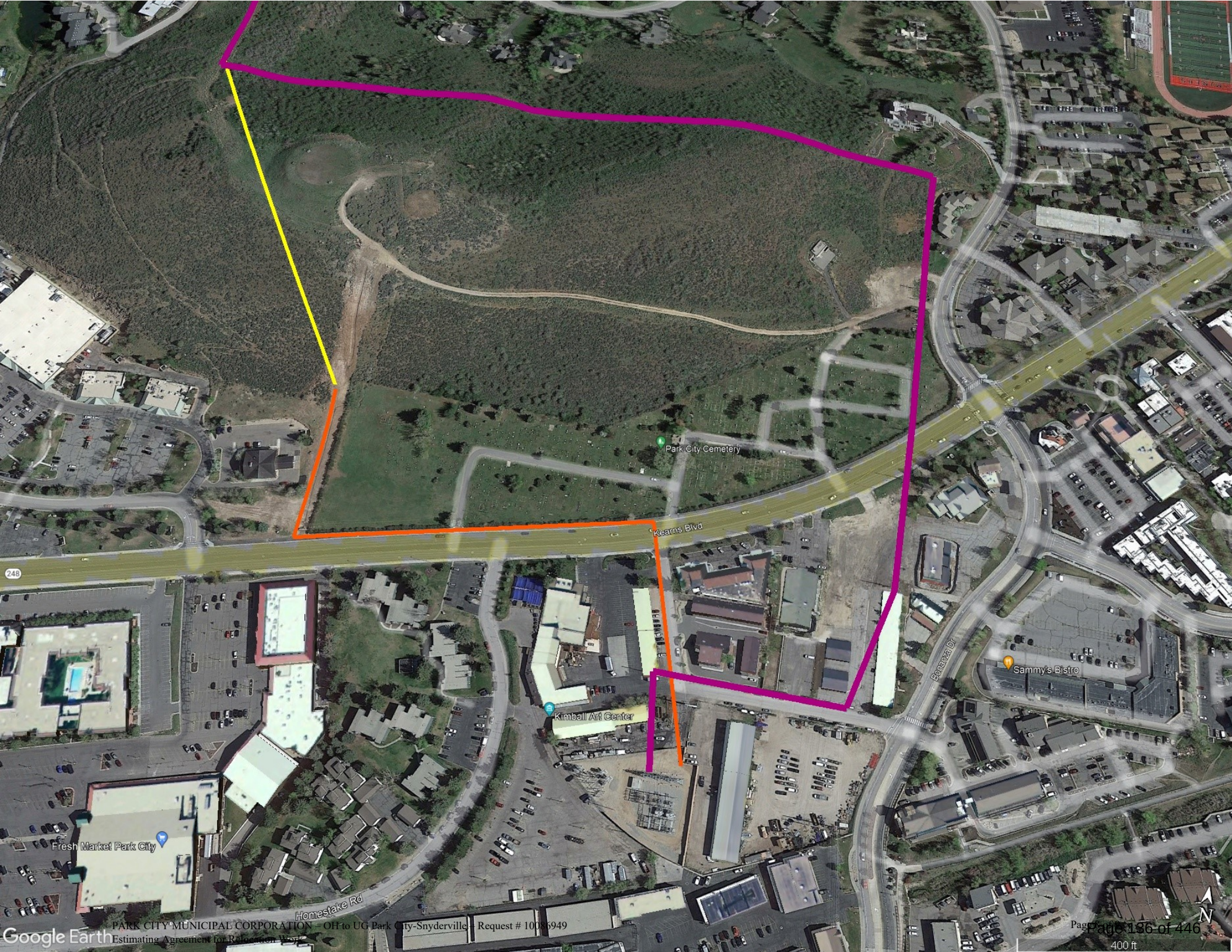

Park City Cemetery
Kearns Blvd
248
Kimball Art Center
Sammy's Bistro
Bonanza Dr
Fresh Market Park City
Homestake Rd
Google Earth
400 ft
N

EXHIBIT B

PACIFICORP

Pacific Power | Rocky Mountain Power

Park City Municipal Corporation

Attn: Luke Cartin
PO Box 1480
Park City,Utah 84060

Invoice Date:	**10/26/2023**
Invoice No.	**CR216974**
Customer No.	**10006311**

DESCRIPTION OF SERVICES RENDERED:

Pursuant to the Estimating Agreement for Relocation Work , Park City Municipal Corporation to remit $150,000.00.

PACIFICORP ORDER: **10086949**

Estimated Project Cost	$	150,000.00
TOTAL	**$**	**150,000.00**

Note: For questions regarding this invoice, please contact: Andy Badger (801) 756-1251

Payment Instructions:

Please reference our invoice number on all payments to assure timely application of your payment.

If paying by check, mail payment to:
PacifiCorp
P.O. Box 5504
Portland, Oregon 97228-5504

If paying by wire transfer:
PacifiCorp
JP Morgan
1 Chase Manhattan Plaza Floor 07
New York, NY 10005-1401
ABA 021000021
Checking Account 5531896

If paying via ACH:
PacifiCorp
JP Morgan
1 Chase Manhattan Plaza Floor 07
New York, NY 10005-1401
ABA 071000013
Checking Account 5531896

City Council
Staff Report

Subject:	**Deer Valley Right-of-Way Vacation Petition to Support the Redevelopment of the Snow Park Village Base Area**
Authors:	**Alexandra Ananth, Senior Planner** **John Robertson, City Engineer** **Jennifer McGrath, Deputy City Manager**
Date:	**November 2, 2023**
Type of Item:	**Public Hearing – Petition to Vacate Public Right-of-Way**

Recommendation

The Applicant, Deer Valley Development Company, Inc. (DVDC), is requesting the City consider the vacation of portions of public Right-of-Way (ROW) (Exhibit A) to expand DVDC's development parcel at the Snow Park Village base area. A new circulation pattern that reroutes traffic from Deer Valley Drive to Doe Pass Road is proposed instead.

Staff recommends the City Council (I) open a public hearing, and (II) consider action, or continue the public hearing to November 16, 2023.

Description

Applicant:	Deer Valley Development Company, Inc. (DVDC)
Location:	2250 Deer Valley Drive
Zoning District:	Residential Development within the Deer Valley Master Planned Development (RD-MPD)
Adjacent Land Uses:	Residential, Resort, Open Space
Reason for Review:	Vacation of public Right-Of-Way requires City Engineer recommendation and City Council action[1]

Exhibits

Exhibit A:	Applicant's ROW Vacation Petition
Exhibit B:	Summary of the Amendments to the DVD MPD
Exhibit C:	Applicant's final Transportation Analysis – SML Alternative
Exhibit D:	WCG's Third Party Transportation Analysis Review

[1] LMC § 15-7-7, Park City Resolution 8-98, and Utah Code § 10-9a-609.5.

Snell & Wilmer
L.L.P.
LAW OFFICES

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Wade R. Budge, P.C.
wbudge@swlaw.com

January 31, 2022

RECEIVED
FEB 08 2022
Park City Municipal Corp.

VIA EMAIL AND US MAIL

Matt Dias
City Manager
Park City Municipal Corporation
445 Marsac Avenue
Park City, UT 84060

Re: Right of Way Vacation Petition - Revised Vacation Descriptions

Dear: Mr. Dias

On behalf of the Deer Valley Resort Company, LLC and Alterra Mountain Company Real Estate Development Inc., the property owners of parcels - PC-745-11, PC-900-4, and PC-900-3,we would like to submit the attached revised legal descriptions to supplement the petition for vacation we submitted to Park City on September 30, 2021. That petition was made pursuant to Utah Code Ann. §10-9a-609.5 and Park City's Land Management Code § 15-7-7, as adopted.

As you recall, we are seeking to vacate portions of Deer Valley Dr. in an effort to redirect traffic patterns to streamline transit access and improve traffic circulation in the Lower Deer Valley neighborhood. In order to accomplish these goals, we are seeking to dedicate public right of way along Deer Valley Drive and Doe Pass Rd, where there currently is no public right of way. The granting of this vacation petition and accepting the dedications we seek to make via the Snow Park Village Plat. We are excited to work with the City through this process in order to start reducing modal conflicts, increasing efficiency for all transportation types, and emphasizing the transit-focused desire of the City.

To supplement the information previously provided and required in Utah Code Ann. §10-9a-609.5, we have included the following as attachments to this letter:

1. Revised maps of the rights-of-ways to be vacated.
2. Revised legal descriptions of the rights-of-ways to be vacated.

There were minor edits to the areas that needed to be vacated as we have worked on the Deer Valley Plat. To ensure the appropriate portions of right-of-way are vacated, we are

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requesting to move forward with the vacation of the attached legal descriptions, as opposed to those that were submitted in September.

We are pleased to have for the opportunity to work with the City through the vacation and platting process. As stated previously, we welcome the opportunity to go before City Council in a work meeting in order discuss some of the details, before holding the public hearing.

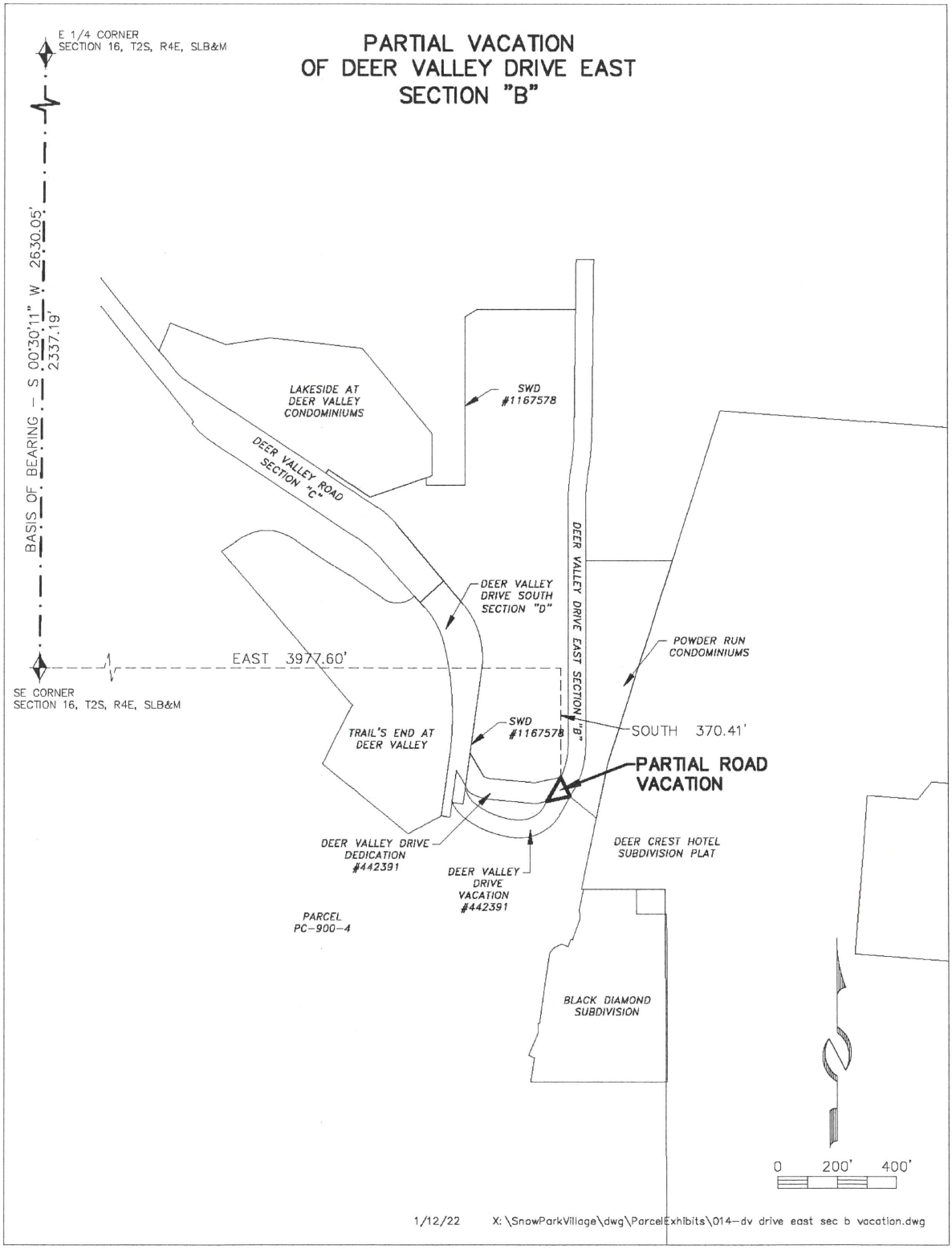
If you have any questions or concerns, please feel free to reach out to us.

Very truly yours,

Wade R. Budge, P.C.

cc: Deer Valley Resort
Mark Harrington, Esq. (via email)

Specific area maps and legal descriptions


PARTIAL VACATION
OF DEER VALLEY DRIVE EAST
SECTION "B"
E 1/4 CORNER
SECTION 16, T2S, R4E, SLB&M
BASIS OF BEARING – S 00°30'11" W 2630.05'
2337.19'
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SNOW PARK VILLAGE

PARTIAL VACATION
OF DEER VALLEY DRIVE EAST
SECTION "B"

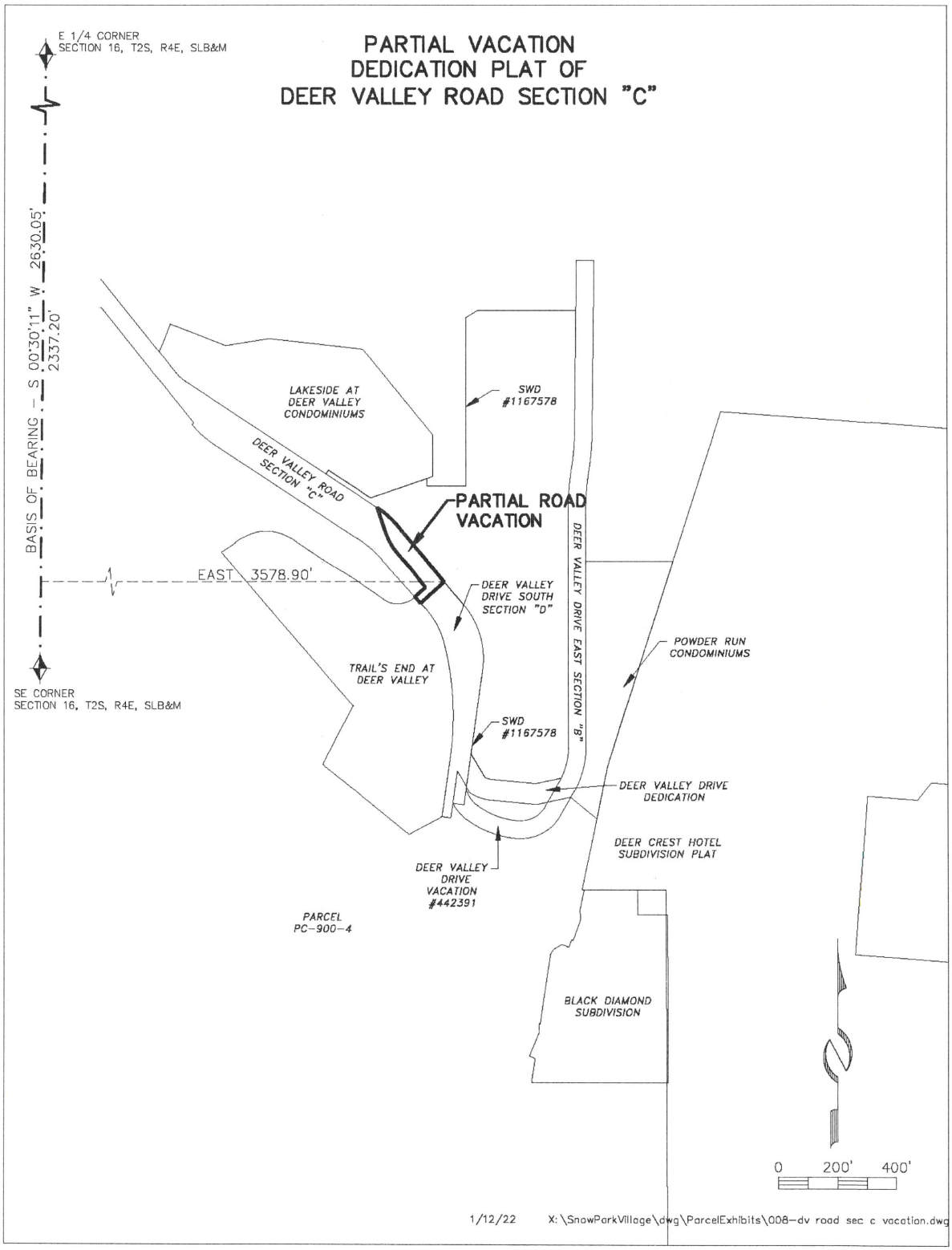
January 13, 2022

A parcel of land located in the northeast quarter of Section 22, Township 2 South, Range 4 East, Salt Lake Base and Meridian, said parcel being described as follows:

Beginning at a point that is East 3977.60 feet and South 370.41 feet from the southeast corner of Section 16, Township 2 South, Range 4 East, Salt Lake Base and Meridian, said point being on the westerly right-of-way of Deer Valley Drive East Section "B", recorded March 1, 1982, as Entry No. 188988 in the Office of the Recorder, Summit County, Utah, and also being the northeasterly corner of the Dedication Parcel in Exhibit C of Ordinance No. 95-59, recorded November 15, 1995, as Entry No. 442391 in the Office of the Recorder, Summit County, Utah; and running thence South 26°45'21" East 72.35 feet to the northeasterly corner of the Vacation Parcel in Exhibit B of Ordinance No. 95-59, recorded November 15, 1995, as Entry No. 442391 in the Office of the Recorder, Summit County, Utah; thence coincident with the northerly boundary of said Vacation Parcel South 78°09'28" West 80.54 feet to the southwesterly corner of the aforementioned Dedication parcel; thence coincident with said Dedication parcel the following two (2) courses: 1) North 30°00'00" East 77.39 feet to a point on a curve to the left having a radius of 249.90 feet, of which the radius point bears North 60°00'00" West; thence 2) along the arc of said curve 16.01 feet through a central angle of 03°40'14" to the point of beginning.

The Basis of Bearing for the above description is South 00°30'11" West 2630.05 feet between the east quarter corner and the southeast corner of Section 16, Township 2 South, Range 4 East, Salt Lake Base and Meridian.

Description contains 0.064 acres.


PARTIAL VACATION
DEDICATION PLAT OF
DEER VALLEY ROAD SECTION "C"
E 1/4 CORNER
SECTION 16, T2S, R4E, SLB&M
BASIS OF BEARING – S 00°30'11" W 2630.05'
2337.20'
EAST 3578.90'
SE CORNER
SECTION 16, T2S, R4E, SLB&M
LAKESIDE AT
DEER VALLEY
CONDOMINIUMS
SWD
#1167578
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DRIVE SOUTH
SECTION "D"
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DEDICATION
DEER CREST HOTEL
SUBDIVISION PLAT
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DRIVE
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#442391
PARCEL
PC-900-4
BLACK DIAMOND
SUBDIVISION
0
200'
400'
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SNOW PARK VILLAGE

PARTIAL VACATION OF
DEDICATION PLAT OF
DEER VALLEY ROAD SECTION "C"

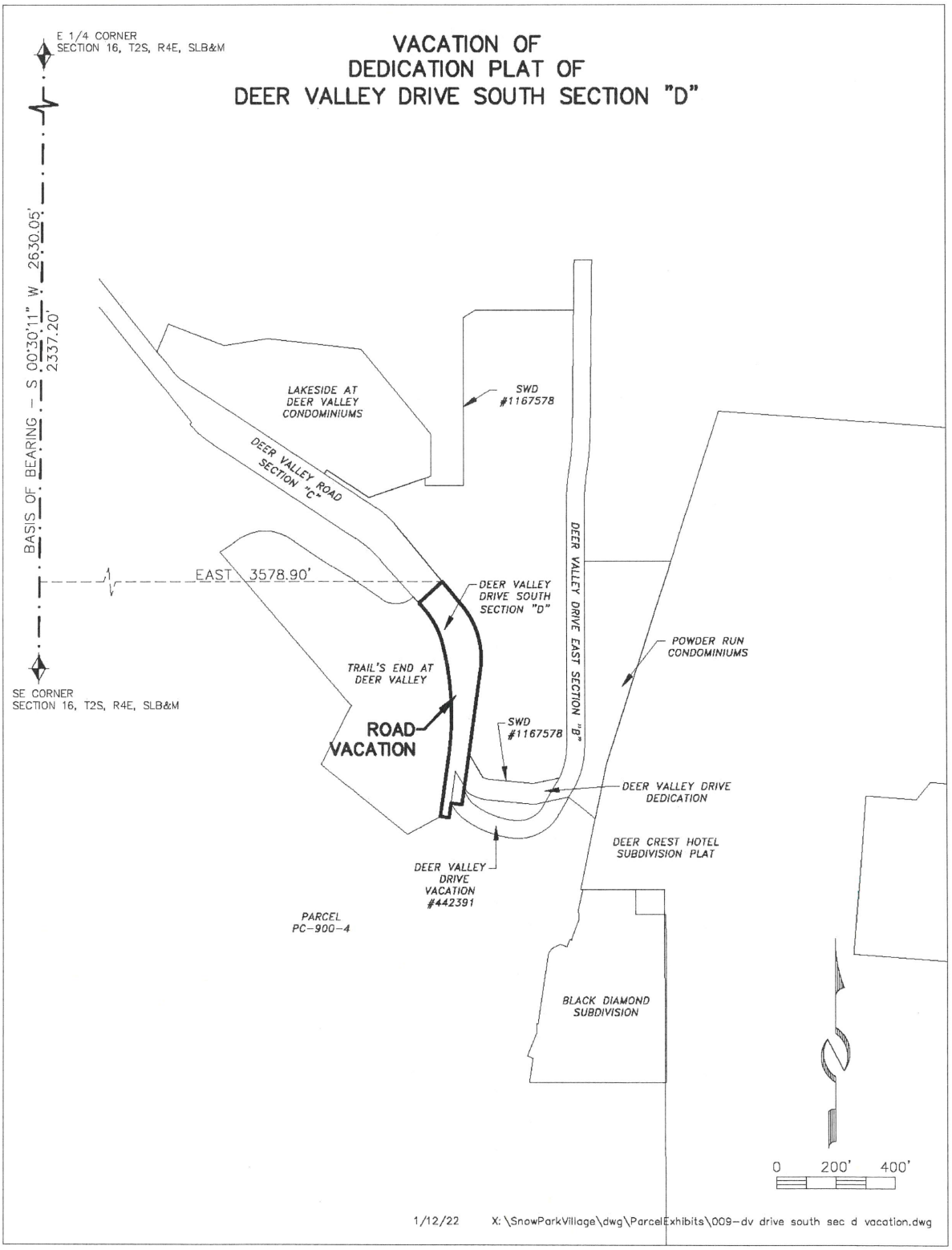
January 18, 2022

A parcel of land located in the southeast quarter of Section 15, Township 2 South, Range 4 East, Salt Lake Base and Meridian, said parcel being described as follows:

Beginning at a point that is South 00°30'11" West 2337.20 feet and East 3578.90 feet from the east quarter corner of Section 16, Township 2 South, Range 4 East, Salt Lake Base and Meridian, said point being the easternmost corner of the Dedication Plat of Deer Valley Road Section "C", recorded April 16, 1980, as Entry No. 165811 in the Office of the Recorder, Summit County, Utah; and running thence coincident with the southeasterly end of Deer Valley Road Section "C" South 47°53'34" West 107.67 feet to the southernmost point of said Deer Valley Road Section "C", said point also being on the easterly boundary of Trail's End at Deer Valley, recorded March 18, 2009, as Entry No. 867530 in the Office of the Recorder, Summit County, Utah; thence coincident with the easterly boundary of Trail's End at Deer Valley North 42°06'26" West 29.08 feet; thence North 47°53'34" East 47.72 feet; thence North 37°30'27" West 67.84 feet; thence North 41°44'02" West 70.59 feet to a point on a curve to the right having a radius of 247.00 feet, of which the radius point bears North 48°15'58" East; thence along the arc of said curve 100.21 feet through a central angle of 23°14'46"; thence North 18°29'16" West 81.14 feet to the northerly right-of-way of said Deer Valley Road Section "C"; thence coincident with the northerly right-of-way of Deer Valley Road Section "C" the following three (3) courses: 1) South 56°25'40" East 2.56 feet to a point on a curve to the right having a radius of 308.53 feet, of which the radius point bears South 33°34'20" West; thence 2) along the arc of said curve 88.46 feet through a central angle of 16°25'40"; thence 3) South 40°00'00" East 249.01 feet to the point of beginning.

The Basis of Bearing for the above description is South 00°30'11" West 2630.05 feet between the east quarter corner and the southeast corner of Section 16, Township 2 South, Range 4 East, Salt Lake Base and Meridian.

Description contains 0.42 acres.


VACATION OF
DEDICATION PLAT OF
DEER VALLEY DRIVE SOUTH SECTION "D"
E 1/4 CORNER
SECTION 16, T2S, R4E, SLB&M
BASIS OF BEARING – S 00°30'11" W 2630.05'
2337.20'
EAST 3578.90'
SE CORNER
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PARCEL
PC-900-4
BLACK DIAMOND
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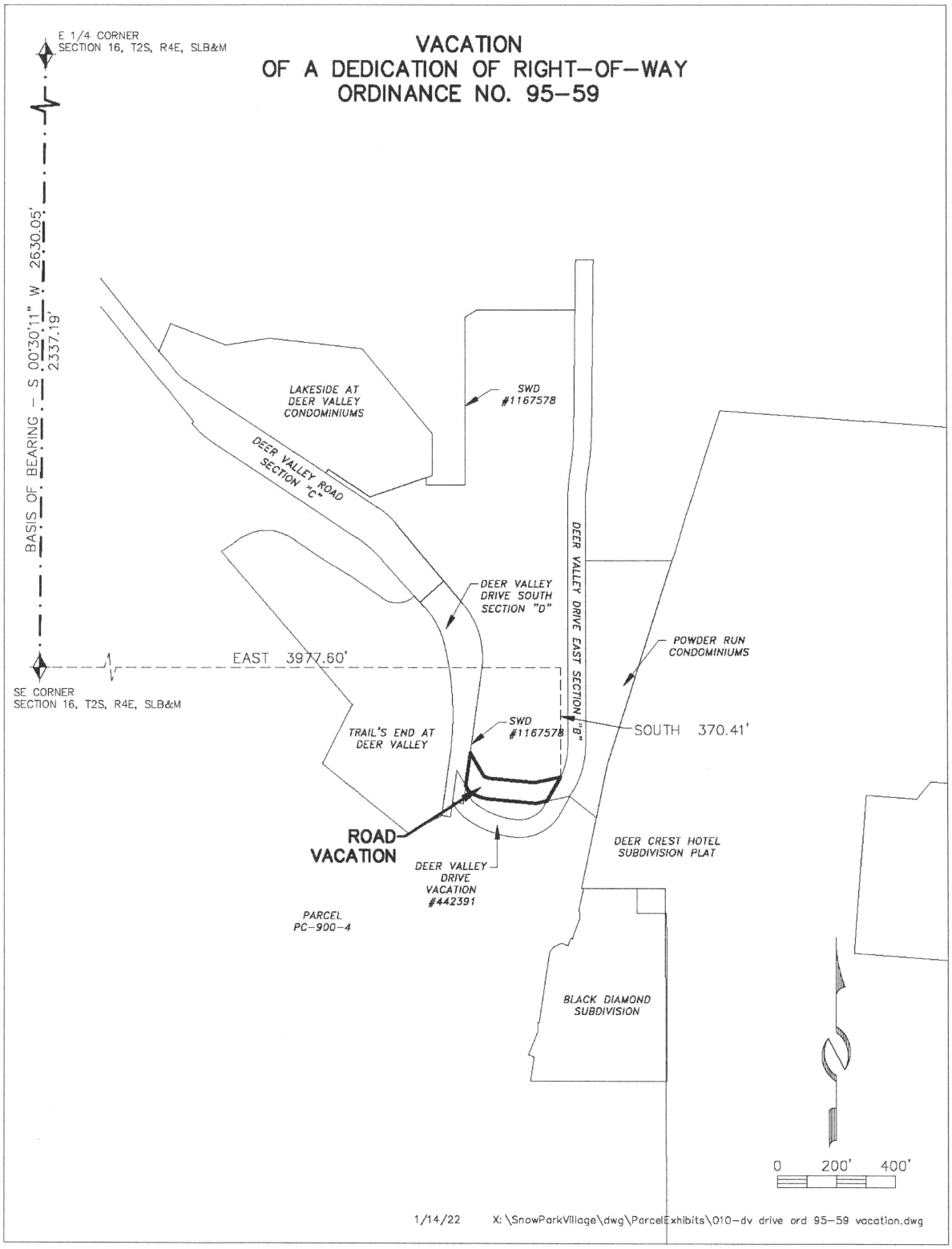
SNOW PARK VILLAGE

VACATION OF
DEDICATION PLAT OF
DEER VALLEY DRIVE SOUTH SECTION "D"

January 12, 2022

Dedication Plat of Deer Valley Drive South Section "D", located in the south half of Section 15 and the north half of Section 22, Township 2 South, Range 4 East, Salt Lake Base and Meridian, recorded March 1, 1982, as Entry No. 188987 in the Office of the Recorder, Summit County, Utah.


VACATION
OF A DEDICATION OF RIGHT-OF-WAY
ORDINANCE NO. 95-59
E 1/4 CORNER
SECTION 16, T2S, R4E, SLB&M
BASIS OF BEARING - S 00°30'11" W 2630.05'
2337.19'
LAKESIDE AT
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SUBDIVISION PLAT
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PC-900-4
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SNOW PARK VILLAGE

VACATION OF
A DEDICATION OF RIGHT-OF-WAY
ORDINANCE NO. 95-59

January 14, 2022

Beginning at a point on the westerly right-of-way of Deer Valley Drive East Section 'B', said point being South 1248.12 feet and East 4008.65 feet from the east 1/4 corner of Section 16, Township 2 South, Range 4 East, Salt Lake Base and Meridian (Basis of Bearing being S00°30'11"E from the east quarter corner of said Section 16 to the southeast corner of said Section 16); thence along said right-of-way, as described on Section 'B' of Deer Valley Drive East plat as recorded in the Summit County Recorder's Office, Entry Number 188988, the following four courses: (1) S00°40'00"W 579.06 feet to a point on an 878.16 foot radius curve to the right (center bears N89°20'00"W); thence (2) along the arc of said curve 127.48 feet through a central angle of 08°19'03" to a point of a reverse curve to the left (center bears S81°00'57"E); thence (3) along the arc of said curve 136.50 feet through a central angle of 08°59'03"; thence (4) South 800.00 feet to a point on a 249.90 foot radius curve to the right (center bears West); thence along the arc of said curve and the western right-of-way of Deer Valley Drive East, 114.84 feet through a central angle of 26°19'46" to the true point of beginning; thence departing from said right-of-way S78°14'07"W 89.60 feet; thence N84°36'26"W 145.24 feet to a point on an 80.00 foot radius curve to the right (center bears N05°23'34"E); thence along the arc of said curve 28.08 feet through a central angle of 20°06'46"; thence N30°26'41"W 92.28 feet to a point on the east right-of-way of Deer Valley Drive South Section 'D' as recorded in the Summit County Recorder's Office, Entry Number 188987; thence along said right-of-way S08°00'00"W 112.58 feet; thence departing said right-of-way S30°26'41"E 21.97 feet to a point on an non-tangent 150.00 foot radius curve to the left (center bears N34°51'45"E); thence along the arc of said curve 77.15 feet through a central angle of 29°28'11"; thence S84°36'26"E 155.80 feet; thence N78°14'07"E 38.33 feet to a point on the westerly right-of-way of said Deer Valley Drive East; thence along said right-of-way the following two courses: (1) N30°00'00"E 77.39 feet to a point on a 249.90 foot radius curve to the left (center bears N60°00'00" W); thence (2) along the arc of said curve 16.01 feet through a central angle of 03°40'14" to the true point of beginning.

Contains 0.52 acres, more or less.

Exhibit B: Deer Valley Special Exception Permit and Amendments Summary

Deer Valley Resort (previously known as Royal Street Land Company) was issued a Special Exception Permit in 1977 (now known as the Deer Valley Master Planned Development (DV MPD)), which has since been amended twelve times, most recently in 2016. The Deer Valley MPD authorizes Densities for the Lower Deer Valley neighborhood, the American Flag Community, the Silver Lake Community, and Commercial and Support Space in the Snow Park and Silver Lake Villages. Phasing and infrastructure improvements are also described. There are 14 technical reports that accompany the Deer Valley MPD.

The Snow Park Village parcel is 14.93 acres and is zoned Residential Development (RD)-MPD. The Deer Valley MPD authorizes 209.75 Unit Equivalents for Snow Park Village, although this has changed over time, and has 21,890 square feet of remaining Commercial and Support Uses to be developed.

The initial Special Exception Permit (SEP), granted on September 27, 1977, authorized approximately 1,815 residential dwelling units to be constructed over a 15-year period. In addition to the residential units, Exhibit 4, Commercial and Support Space, includes a 100,000 square foot sports facility, 44,705 square foot Snow Park Center (including ski rental, gift shop, sports shop, lounge, restaurant, cafeteria, kitchen, restrooms, etc.), a 20,180 square foot guest reception center, 4,000 square feet of ski school and childcare area, and 5,000 square feet of commercial area at Snow Park. Additional square feet of commercial and support space are reserved for Silver Lake. The total Commercial and Support Space for both the Snow Park and Silver Lake Villages totaled 307,766 square feet and is shown in Exhibit 4 of the SEP.

The SEP was first amended on June 27, 1979, to modify the description and Densities permitted on various parcels. There were no increases to the allowed Commercial and Support Space.

In the 2nd Amendment, dated January 27, 1982, Deer Valley Resort Company is named the successor to the rights of Royal Street. The amendment includes a development progress update. Eight Multi-Family parcels around the Deer Valley Loop are authorized 390 units of Density. Total development is listed as 2,237 units. Exhibit 1 lists Development Parcels Sold, and Exhibit 2 lists Development Parcels Unsold, most of which have a Density Range, to be determined by site specific review of project plans. The Snow Park Parking Area south of Doe Pass Road is allocated 0-200 units of Density and the Hotel Parcel north of Doe Pass Road is allocated 75-105 units of Density. There were no changes to the allowed Commercial and Support Space listed in Exhibit 4.

The 3rd Amendment, dated May 17, 1984, again updated Exhibits. This amendment also did not increase the allowed Commercial and Support Space but reduced the Sports Facility from 100,000 square feet to 98,000 square feet and increased the Guest Reception Center from 20,180 square feet to 22,180 square feet.

The 4th Amendment, dated February 21, 1985, deleted the Silver Lake Village Multi-Family Parcel, and established a separate parcel to be known as the Deer Valley Inn Parcel. No increase to the allowed Commercial and Support Space was made.

The 5th Amendment, dated December 23, 1986, includes nine Multi-Family parcels in the lower Deer Valley neighborhood containing 390 dwelling units, and adds a section on Off-Street Parking. The Off-Street Parking section notes that parking shall be required based on the Park City Land Management Code (LMC) in effect at the time of building permit application and that parking may be reduced in accordance with the LMC Conditional Use Permit process. The Parking section allows for overflow parking up to 10% of the days during any single ski season. No increase to the allowed Commercial and Support Space was made.

The 1st Amendment to the 5th SEP, dated November 29, 1989, replaced Exhibits to reflect completed units. Exhibit 1 shows 1,901 units of approved residential Density. Exhibit 2 shows a similar range of Density for the Snow Park parcels established in the 2nd Amendment, except for the Hotel Parcel which was reduced from 75-105 units of Density to 60-105 units. The Snow Park Parking Area is still allocated 0-200 units of Density.

The 2nd Amendment to the 5th SEP, dated April 11, 1990, also updated Exhibit 1 showing 1,884.5 units of approved Density. No changes were made to the allowed Commercial and Support Space.

The 6th Amendment to the SEP, dated October 10, 1990, further reduces the square feet allocated to the Sports Facility from 98,000 square feet to 62,000 square feet, increases the amount of Snow Park Commercial space from 5,000 to 40,000, and increases the Snow Park Plaza Building from 22,180 square feet to 23,280 square feet. Exhibit 3, the Commercial and Support Space increases from 307,766 square feet to 307,866 square feet, an increase of 100 square feet.

The 7th Amendment replaces the term Special Exception Permit with Master Planned Development Permit (MPD) and is dated April 14, 1993. This Amendment clarifies that the density limitations of the Sensitive Land Overlay (SLO) Zone do not apply to the MPD because the MPD was approved prior to the adoption of the SLO, but that SLO site planning standards can be applied to the extent that they do not reduce vested density, and that limits of disturbance, vegetation protection, and building design standards apply.

The 8th Amendment to the MPD, is dated April 25, 2001. Since the 7th Amendment, the Snow Park Lodge was expanded and 7,645 square feet of General Snow Park Commercial space was transferred to the Snow Park Lodge parcel, reflected in the 8th Amendment. The 8th Amendment is the first to specify an authorized number of Residential Unit Equivalents (RUEs) to the Snow Park Village parcel, which is a combination of the Snow Park Hotel parcel and the Snow Park Parking Area parcel, rather than the previous range of density specified in earlier Exhibits. Snow Park Village

is authorized 212.5 RUEs, which is calculated in accordance with the Unit Equivalent Formula contained in the Land Management Code. Currently, one RUE equals 2,000 square feet. Exhibit 2, Commercial and Support Space, no longer includes the Sports Facility but notes Snow Park Lodge is now 56,350 square feet plus a 5,112 square foot ticket sales building, for a total of 61,462 square feet on the Snow Park Lodge parcel, including some “back of house” space. This reduced the amount of General Snow Park Commercial space remaining by 7,645 square feet from 40,000 to 32,355 square feet.

The 9th Amendment to the MPD, dated June 28, 2006, reduced the authorized number of dwelling units for the nine Multi-Family Dwellings from 390 units to 383.5 units. The Snow Park Village parcel was reduced from 212.5 units to 210.75 residential units due to the Planning Commission’s authorized transfer of 1.75 units from the Snow Park Village parcel to the Stein Eriksen Lodge Multi-Family parcel. Between the 8th and 9th Amendments Snow Park Lodge was expanded and Empire Lodge was constructed.

The 10th Amendment to the MPD, dated August 12, 2009, reflects actions approved by the Planning Commission with respect to amendments to the Silver Lake Community unallocated commercial density and the Royal Plaza Condominium plat, as well as the status of development within the Project. No changes to the Snow Park Village parcel authorized density or Snow Park Commercial and Support Space (Exhibit 2 to the MPD) were made.

The 11th Amendment, dated March 23, 2011, reflects the transfer of one Residential Unit Equivalent from the Snow Park Village parcel to the Silver Baron Lodge parcel, reducing the Snow Park Village Density from 210.75 to 209.75. No changes to Exhibit 2, Commercial and Support Space were made.

The most recent 12th Amendment to the MPD, dated November 30, 2016, reflects the combination of vacant Deer Valley MPD Silver Lake Village Lots F, G, and H into one Lot I, and the transfer of 843 square feet of existing residential density (0.4215 Unit Equivalents) from Deer Valley MPD Silver Lake Village Lot I, to accommodate connection, access, and circulation between the Goldener Hirsch Inn on Parcel D and the Goldener Hirsch Residences on Parcel I. Exhibit 2 of the MPD shows that Snow Park has 21,890 square feet of remaining commercial density to be developed. The other remaining Commercial and Support Space that remains to be developed outside of the Snow Park area totals 31,080 square feet.

Exhibit A: DVD MPD Amendment Summary Table

Disclaimer: This summary is for descriptive purposes only and is not a substitute or amendment to the original documents which speak for themselves. Original approvals will control over any error or conflict in this summary.

Amendment	Year	Snow Park RUEs	Snow Park Commercial & Support Space
SEP	1977	1,815 RUEs	307,766 SF Total Commercial 173,885 SF Snow Park Commercial
1st Amendment	1979	No change	No change
2nd Amendment	1982	2,237 RUEs Snow Park Parking parcel 0-200 RUEs Hotel parcel 75-105 RUEs	No change
3rd Amendment	1984	No change	Transfers 2,000 SF from Sports Facility to Guest Reception Center
4th Amendment	1985	No change	No change
5th Amendment	1986	No change	No change
1st Amendment to 5th SEP	1989	1901 RUEs Hotel parcel reduced 60-105 RUEs Snow Park Parking parcel 0-200 RUEs	No change
2nd Amendment to 5th SEP	1990	1884.5 RUEs	No change
6th Amendment	1990	No change	Transfers Density from Sports Facility to Snow Park Commercial and Snow Park Plaza Building. Total Commercial and Support Space increases 307,866 SF
7th Amendment	1993	No change	No change
8th Amendment	2001	Hotel and Parking parcels combined to Snow Park Village parcel with 212.5 RUEs	Transfers Density from General Snow Park Commercial to Snow Park Lodge parcel
9th Amendment	2006	Transfers 1.75 RUEs from Snow Park Village parcel to Stein Eriksen Lodge parcel leaving 210.75 RUEs	No change
10th Amendment	2009	No change	No change
11th Amendment	2011	Transfers 1 RUE from Snow Park Village parcel to Silver Baron Lodge leaving 209.75 RUEs	No change
12th Amendment	2016	Combines Silver Lake parcels for Goldener Hirsch. **Snow Park Village parcel 209.75 RUEs remaining (No formal site plan approved/established for site)**	No change Silver Lake - 31,080 SF remaining **Snow Park - 21,890 SF remaining**

Snow Park Village

Transportation Analysis – Shared Mobility Lane Alternative

Prepared for:
Deer Valley

April 2023

UT20-2245

FEHR PEERS

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1. Executive Summary

This Traffic Impact Study includes the results of a comprehensive traffic operations analysis for the Snow Park Village project at Deer Valley Resort in Park City, Utah. Snow Park Village is a mixed-use development that will serve as an updated base area village for Deer Valley, and includes hotel, residential, commercial, and event center uses. This report includes the full buildout of the Snow Park base that includes the parking and development both north and south of Doe Pass Road.

The scope of this study analyzes the traffic operations and impacts under the following scenarios:

- Existing (2020) Conditions
- Existing (2020) Plus Project Conditions
- Opening Year (2024) Background Conditions
- Opening Year (2024) Plus Project Conditions
- Future (2040) Background Conditions
- Future (2040) Plus Project Conditions

Existing conditions were based on the traffic counts, which were collected originally in 2020. As this process has continued, Park City Staff have accepted that 2020 counts continue to serve as the foundation for this report with adjustments made for assumed marginal increases in traffic on an annual basis. Traffic operations for these scenarios were analyzed at nine study intersections:

1. Doe Pass Road / Deer Valley Drive East
2. Doe Pass Road / Deer Valley Drive West
3. Deer Valley Drive East / Queen Esther Drive
4. Deer Valley Drive East / Solamere Drive
5. Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West
6. Deer Valley Drive / Marsac Avenue
7. Deer Valley Drive / Bonanza Drive
8. Deer Valley Drive / Park Avenue / Empire Avenue
9. Bonanza Drive / Monitor Drive / SR-248

This circulation plan includes a seasonal one-way Shared Mobility Lane (SML) inbound from the "Y" intersection along Deer Valley Drive West, turn onto Doe Pass Road, and directly access the proposed mobility hub. Outbound transit traffic will have the SML that has transit priority at the mobility hub, then parallels general purpose traffic around the loop to the "Y" intersection, at which point transit traffic would merge with general traffic, generally operating in a counterclockwise direction. After ski season during the

summer months, the SML will be open to bicycle traffic. Management, maintenance, and enforcement will be a City responsibility.

Study intersections 5 and 8 currently operate at Levels of Service (LOS) that do not meet Part City standards, which is LOS D. However, these intersections were analyzed as part of this study to identify Deer Valley's contributions to traffic at key intersections within Park City in support of Park City Municipal Corporation's (PCMC) goals of reducing peak-hour traffic volumes by 20% citywide.

The Plus Project traffic operations analyses include trips generated by the Snow Park Village project. The parking analysis accounts for both physical (structured) and behavioral impacts of the identified resort uses, as well as parking pricing. To present conservative, and thereby overestimated, results in this report, reductions in trip generation and parking demand stemming from proposed enhancements to local transit service, operated by Park City Transit and/or High Valley Transit, or Deer Valley's existing Transportation Demand Management (TDM) program are not included.

1.1 Study Results

In Plus project Conditions, seven of nine study intersections, with recommended mitigations in place, meet the Park City LOS standards. Under existing conditions, the intersection of Deer Valley Drive / Park Avenue / Empire Avenue operates at a LOS of E/F. Given the City's longstanding position on additional mitigations at this intersection, none are recommended. Deer Valley Drive in this area is also SR-224, and therefore managed by the Utah Department of Transportation (UDOT). This includes intersection operations. The deficiencies at the Deer Valley Drive / Bonanza Drive intersection are caused by the queue spillbacks from the upstream intersection at Deer Valley Drive / Park Avenue / Empire Avenue. Therefore, no mitigations are recommended.

Furthermore, the most impacted intersection under current conditions, the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection, which operates today at a LOS below Park City standards, achieves a LOS of D or better under 2040 Plus Project conditions by reconfiguring the intersection and adding signalized traffic control, establishing a new access pattern for visitors while providing safety for pedestrians and bicyclists. The Solamere Drive / Deer Valley Drive East and Queen Esther Drive / Deer Valley Drive East intersections operate at a LOS B with full build-out in 2040 with some lane configuration mitigations.

Parking provided as part of the Snow Park Village Proposal will be provided at full amount as required by code. Reduced parking demand however, will be achieved through the implementation of a paid parking system, and continued operation and refinement of Deer Valley's Transportation Demand Management

program by supporting non-single-occupancy vehicle trips while also actively discouraging driving alone, and through time-of-day sharing of parking for different and complementary uses.

In alignment with Park City's *Transit First* strategy, construction of Snow Park Village will prioritize active transportation and transit as modes for travel to, from, and within the village. To that end, Deer Valley will construct an on-site mobility hub with space for six buses which will be connected to the broader Park City and High Valley Transit networks. One new traffic signal is recommended, at the intersection of Doe Pass Road / Deer Valley Drive East as a mitigation which will include transit signal preemption capabilities to expedite transit service into and out of proposed the mobility hub. Additionally, off-street multi-use paths will be constructed to connect Snow Park to Park City's existing active transportation network.

1.2 LOS Summary

Table 1 reports LOS at the study intersections. For signalized intersections and roundabouts, average vehicular delay and LOS are reported. For unsignalized intersections, the worst movement delay and LOS are reported. Detailed descriptions of the intersection operations can be found in the subsequent chapters. Due to the land use program proposed for Snow Park Village, the net total trips generated by the AM peak hour is 261 trips and the PM peak hour is 322 trips.

Table 1: Snow Park Village Saturday AM and PM Peak Hour Level of Service Summary

Intersection			Ex BG	Ex+P	Ex+P Mitigated[2]	2024 BG	2024+P	2024+P Mitigated[2]	2040 BG	2040+P	2040+P Mitigated[2]
ID	Location	Period	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]	LOS & Sec/Veh[1]
1	Doe Pass Rd / Deer Valley Dr East	AM	-	6 / A	4 / A	-	7 / A	5 / A	-	6 / A	5 / A
		PM	-	7 / A	7 / A	-	7 / A	7 / A	-	**65 / E**	8 / A
2	Doe Pass Rd / Deer Valley Dr West	AM	-	8 / A	12 / B	-	15 / B	10 / B	-	21 / C	13 / B
		PM	-	16 / C	19 / C	-	24 / C	18 / C	-	32 / D	20 / C
3	Queen Esther Dr / Deer Valley Dr East	AM	6 / A	8 / A	5 / A	6 / A	8 / A	5 / A	7 / A	7 / A	6 / A
		PM	9 / A	11 / B	11 / B	8 / A	20 / C	10 / B	9 / A	**>300 / F**	11 / B
4	Deer Valley Dr East / Solamere Dr	AM	7 / A	8 / A	6 / A	6 / A	8 / A	6 / A	8 / A	10 / B	7 / A
		PM	11 / B	13 / B	9 / A	11 / B	**78 / F**	11 / B	15 / C	**>300 / F**	12 / B
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	15 / C	26 / D	9 / A	14 / B	20 / C	9 / A	17 / C	29 / D	11 / B
		PM	**39 / E**	**128 / F**	21 / C	**41 / E**	**126 / F**	22 / C	**112 /F**	**201 / F**	44 / D
6	Deer Valley Drive / Marsac Avenue	AM	11 / B	15 / B	15 / B	11 / B	16 / C	16 / C	16 / C	26 / D	26 / D
		PM	11 / B	15 / B	15 / B	11 / B	16 / C	16 / C	11 / B	20 / C	20 / C
7	Deer Valley Dr / Bonanza Dr	AM	11 / B	11 / B	12 / B	11 / B	12 / B	12 / B	18 / B	21 / C	14 / B
		PM	21 / C	29 / C	38 / D	20 / C	**67 / E**	**76 / E**	**59 / E**	**99 / F**	**117 / F**
8	Deer Valley Dr / Park Ave / Empire Ave	AM	**77 / E**	**75 / E**	**76 / E**	**82 / F**	**80 / F**	**78 / E**	**83 / F**	**91 / F**	**84 / F**
		PM	**84 / F**	**83 / F**	**84 / F**	**85 / F**	**88 / F**	**88 / F**	**90 / F**	**90 / F**	**89 / F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	12 / B	13 / B	13 / B	13 / B	14 / B	14 / B	16 / B	16 / B	15 / B
		PM	20 / C	20 / C	20 / C	20 / C	22 / C	22 / C	28 / C	32 / C	31 / C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. Intersection average LOS and delay for signalized intersections and roundabouts, worst movement LOS and delay for unsignalized intersections.
2. Deer Valley Drive East / Deer Valley Drive West intersection analyzed as a reconfigured signalized intersection, and turn lanes/receiving lanes added to Solamere Drive and Queen Esther Drive intersections as a mitigation.
3. Solamere Drive performs at LOS D as a SSSC. Further analysis shows this intersection operates at LOS A as a signalized intersection, when warranted.

Source: Fehr & Peers.

1.3 Proposed Mitigations

The traffic operations analyses conducted as part of the report indicate that five study intersections will operate at unacceptable LOS in comparison with Park City's standards under 2040 plus project conditions without mitigations. Community input gathered through stakeholder engagement resulted in the community-supported mitigations for identified deficiencies stemming from Snow Park Village-generated traffic shown in **Table 2**.

Table 2: Proposed Mitigations for Snow Park Village-Generated Traffic Impacts

ID	Location	Control	Deficiency[1]	Proposed Mitigations
1	Doe Pass Rd / Deer Valley Dr East	SSSC[2]	N/A	Signal with transit preemption
2	Doe Pass Rd / Deer Valley Dr West	SSSC	N/A	N/A
3	Queen Esther Dr / Deer Valley Dr East	SSSC	LOS F	Southbound-to-eastbound left turn-pocket
4	Deer Valley Dr East / Solamere Dr	SSSC	LOS F	Eastbound-to-northbound left turn-pocket
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	SSSC	LOS F	Signal
6	Deer Valley Drive / Marsac Avenue	Roundabout	N/A	N/A
7	Deer Valley Dr / Bonanza Dr	Signal	LOS F	N/A
8	Deer Valley Dr / Park Ave / Empire Ave	Signal	LOS F	N/A
9	Bonanza Dr / Monitor Dr / SR-248	Signal	N/A	N/A

Notes:
1. LOS for 2040 plus project without mitigations.
2. SSSC = Side Street Stop Control

Source: Fehr & Peers.

1.4 Conclusion / Recommendations

With proposed mitigations in place, all study intersections at which mitigations are feasible operate at acceptable levels of service under all Plus Project analysis scenarios. Through dedicated transit infrastructure, improved active transportation connections between the Project and Park City's existing active transportation network, a fully reworked parking system, extensive wayfinding and monitoring, and management of ongoing TDM offerings in addition to new measures, the Snow Park Village proposal aligns with the City's *Transit First* policy by encouraging travel by means other than driving alone.

Implementing a new traffic signal with transit preemption at the intersection of Doe Pass Road / Deer Valley Drive East will improve traffic operations and support transit. A new traffic signal at the reconfigured Y intersection of Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive west facilitates safer and more efficient movement for all modes. If, and when signal warrants at study unsignalized intersections in this report are met (Solamere), as defined by the Federal Highway Administration's *Manual on Uniform Traffic Control* Devices, the implementation of new traffic signals should be considered for improved traffic circulation for all modes. Deer Valley is committed to a being a partner of the subsequent studies, and if warranted, implementation.

Implementing an off-street, multi-use path around the Deer Valley Drive loop will improve pedestrian and cyclist connectivity adjacent to the project site. Ongoing monitoring of TDM program effectiveness will maintain City-Deer Valley cooperation in pursuit of shared goals.

The traffic volumes used for this overall analysis are conservative and likely represent worst case on the worst day. For example, the assumed background growth rate is from a county-wide travel model that assumes some degree of ambient growth in and around Deer Valley beyond the proposed Snow Park project. Given that the Deer Valley loop area is essentially one big cul-de-sac and generally built out, this background growth is quite conservative.

Other measures that support the conservative nature of the analysis is the Mayflower development interconnecting with Deer Valley. An agreement is under development that will provide parking, lift access and full base amenities to skiers going to Deer Valley at Mayflower base, along US-40. This potential agreement will also provide for employee parking with a shuttle program between Mayflower and Snow Park. The analysis does not account for any trip reductions to Snow Park, which will inevitably occur to due significant travel time reductions from both the Wasatch Front and the Heber Valley.

Last, Deer Valley is committed to supporting other regional traffic mitigation efforts. This includes considerations such as contributing to transit, and robust travel demand reduction program, and paid parking at Snow Park once the project is built. The proposed transit amenities include the mobility hub, a

dedicated Shared Mobility Lane, state-of-the-art wayfinding, and a monitoring program all combine to support the City's transportation goals.

2. Introduction

This study documents the potential transportation-related impacts on local traffic from the proposed Snow Park Village project. The project location is shown in **Figure 1**.

This report is largely unchanged from what was presented in the most recent submittal (November 2022), save for some minor but impactful updates:

1. Analyzed traffic conditions with no reduction in parking supply, providing full parking required by the Park City Land Management Code (LMC). The trip generation was increased from the November 2022 submittal to reflect added peak hour traffic.
2. Traffic distribution assumptions at the Deer Valley Drive East / Deer Valley Drive West intersection were updated to follow traffic patterns similar to current conditions for analysis.
3. Assumptions in the VISSIM simulation model were modified to account for more accurate pick-up/drop-off dwell times, and calibrated vehicle travel times.

Table 3 below shows the in/out traffic for existing and plus project with the proposed development.

Table 3: Snow Park Traffic

	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing Traffic	5,221	5,329	10,550	770	249	1,019	333	903	1,236
New Trips	1,808	1,808	3,616	176	85	261	115	207	322
Total Trips	7,029	7,137	14,166	946	334	1,280	448	1,110	1,558

The scope of this study analyzes the traffic operations and impacts under the following scenarios:

- Existing (2020) Conditions
- Existing (2020) Plus Project Conditions
- Opening Year (2024) Background Conditions
- Opening Year (2024) Plus Project Conditions
- Future (2040) Background Conditions
- Future (2040) Plus Project Conditions

Traffic operations at key intersections, described below in the Scope section, were analyzed under the six scenarios listed above during Saturday AM and PM peak-hour travel periods. Given the nature of ski areas operating as recreational destinations, Saturdays consistently experience the highest traffic volumes, and

focusing on Saturdays for traffic analyses in this report present the most conservative results. The Plus Project analyses include trips generated by the proposed project.

The project team knows that it is important to work with the community to help them better understand the complexity of building out the remaining entitled density at Snow Park and its relation to traffic, and ensuring that the Deer Valley community can contribute to the planning process. Throughout the project's planning process, and with renewed emphasis since the beginning of 2022, Deer Valley has engaged with most of the lower Deer Valley neighborhoods and that communication continues today. Early outreach was done with the Trails End neighborhood in relation to the right of way vacation to gain their support. After the community voiced their opinion in March 2022, the project team opted to hold individual meetings with various homeowner's associations (HOAs) to address concerns and gather feedback. The community's main concerns were the then-proposed bus-only lanes, removal of on-street bike paths, the proposed routing of most traffic on Deer Valley Drive East, construction of new traffic signals, and pedestrian circulation. Coordination meetings with the community continued with nearly one dozen meetings in summer and fall 2022, with more scheduled. This revised traffic circulation plan as submitted is based on the community's input and support, augmented by City staff requests.

2.1 Scope

This study analyzes the traffic impacts of the project in conjunction with nearby intersections. Impacts are specifically addressed at the following study intersections:

1. Doe Pass Road / Deer Valley Drive East (side-street stop-controlled)
2. Doe Pass Road / Deer Valley Drive West (side-street stop-controlled)
3. Deer Valley Drive East / Queen Esther Drive (side-street stop-controlled)
4. Deer Valley Drive East / Solamere Drive (side-street stop-controlled)
5. Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West (side-street stop-controlled)
6. Deer Valley Drive / Marsac Avenue (roundabout)
7. Deer Valley Drive / Bonanza Drive (signalized)
8. Deer Valley Drive / Park Avenue / Empire Avenue (signalized)
9. Bonanza Drive / Monitor Drive / SR-248 (signalized)

For the purposes of consistency, this report refers to two key roadways as Deer Valley Drive East (sometimes called Deer Valley Drive North) and Deer Valley Drive West (sometimes called Deer Valley Drive South). Given that Doe Pass Road carries minimal traffic in its existing configuration, study intersections 1 and 2 are only analyzed under Plus Project scenarios.

Study intersections are shown in **Figure 2**.

Figure 1
Project Location

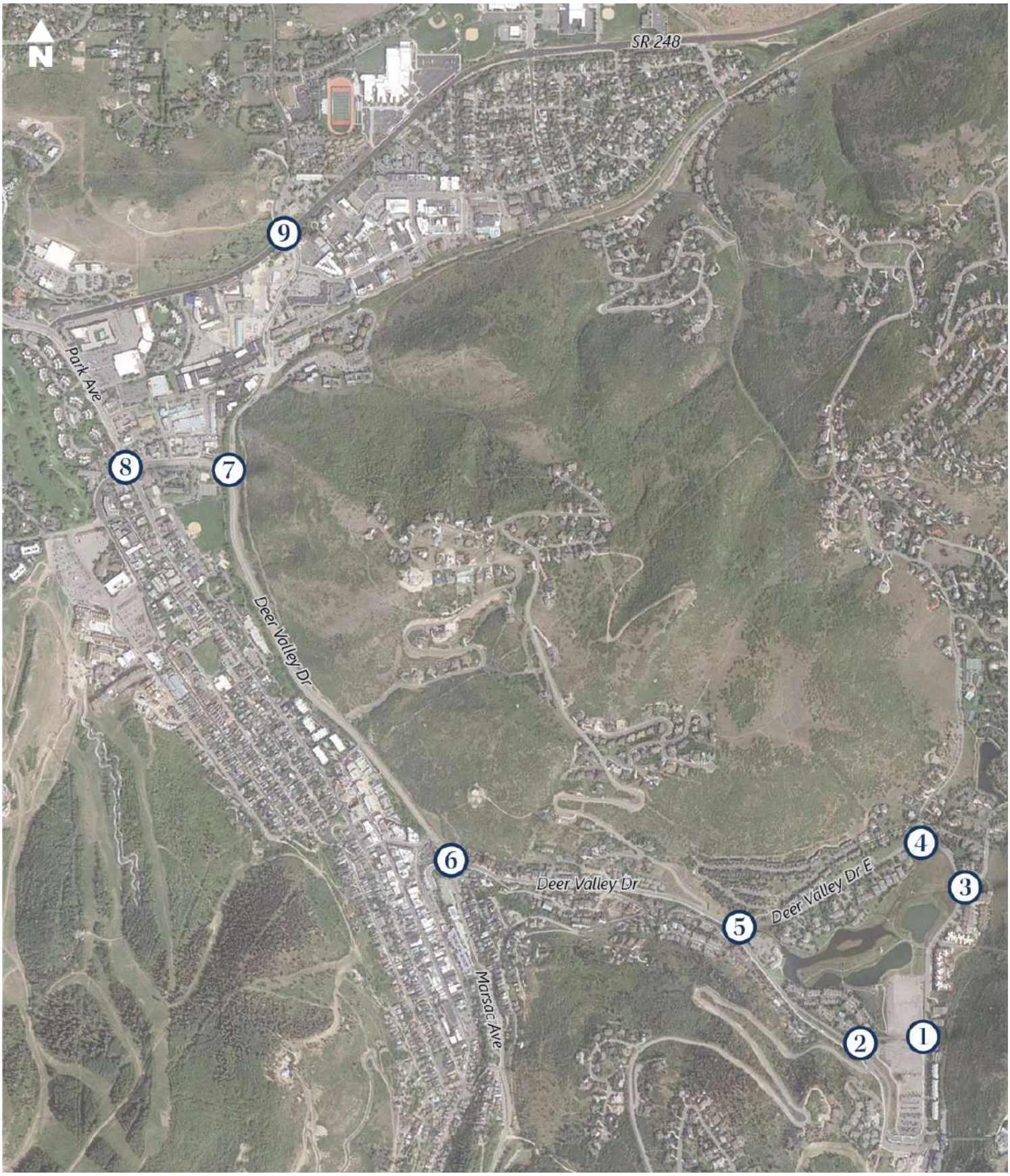


Figure 2

Study Intersections

2.2 Analysis Methodology

"Level of service" (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. **Table 4** provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections. Traffic operations were modeled in SimTraffic, a microsimulation traffic analysis software. SimTraffic results were evaluated under the Highway Capacity Manual 6th Edition (HCM 2016) methodology in this study to remain consistent with "state of the practice" professional standards, and with earlier iterations of this report. Since this study began, a new edition of the Highway Capacity Manual has been published, though application to analyses conducted as part of this study would not change results. For study intersection 4, Deer Valley Drive / Marsac Avenue, the SIDRA analysis software was used as it is accepted as state-of-the-practice for roundabout operations analysis. For signalized intersections and roundabouts, the LOS is provided for the overall intersection (weighted average of all approach delays). Park City Municipal Corporation has an established threshold of acceptable traffic operations as LOS of D for all intersections under its control.

Table 4: Level of Service Descriptions

LOS	Description	Signalized Intersections	Unsignalized Intersections	Roundabouts
		Avg. Delay (sec/veh)[1]	Avg. Delay (sec/veh)[2]	Avg. Delay (sec/veh)[3]
A	*Free Flow / Insignificant Delay* Extremely favorable progression. Individual users are virtually unaffected by others in the traffic stream.	< 10.0	< 10.0	< 10.0
B	*Stable Operations / Minimum Delays* Good progression. The presence of other users in the traffic stream becomes noticeable.	> 10.0 to 20.0	> 10.0 to 15.0	> 10.0 to 15.0
C	*Stable Operations / Acceptable Delays* Fair progression. The operation of individual users is affected by interactions with others in the traffic stream	> 20.0 to 35.0	> 15.0 to 25.0	> 15.0 to 25.0
D	*Approaching Unstable Flows / Tolerable Delays* Marginal progression. Operating conditions are noticeably more constrained.	> 35.0 to 55.0	> 25.0 to 35.0	> 25.0 to 35.0
E	*Unstable Operations / Significant Delays Can Occur* Poor progression. Operating conditions are at or near capacity.	> 55.0 to 80.0	> 35.0 to 50.0	> 35.0 to 50.0
F	*Forced, Unpredictable Flows / Excessive Delays* Unacceptable progression with forced or breakdown of operating conditions.	> 80.0	> 50.0	> 50.0

1. Overall intersection LOS and average delay (seconds/vehicle) for all approaches.
2. Worst approach LOS and delay (seconds/vehicle) only.
3. Overall intersection LOS and average delay (seconds/vehicle) for all approaches.

Source: Fehr & Peers descriptions, based on *Highway Capacity Manual, 6th Edition*.

3. Existing (2020) Background Conditions

The Existing (2020) Background Conditions analysis examines the study intersections and roadways during the AM and PM peak-hours existing traffic and geometric conditions. The existing conditions analyses were performed using traffic data collected in 2020. Subsequent rounds of analysis have used adjusted counts to assume marginal increases in traffic, with growth factors taken from a regional travel model. Through this analysis, existing traffic operational deficiencies can be identified, and potential mitigation measures recommended.

3.1 Roadway System

The primary roadways that will provide access to the project, and their existing configurations, are described below.

- **Deer Valley Drive (SR-224)** is a state-owned and managed facility and is classified as a principal arterial road and has a posted speed limit of 35 mph from Park Avenue to about halfway between Bonanza Drive and Marsac Avenue, and 40 mph to the Marsac Avenue roundabout. SR-224 has a five-lane cross section with two travel lanes in each direction with a two-way left-turn lane north of the Marsac Avenue roundabout.
- **Marsac Avenue (SR-224)** is also a state-owned facility and is classified as a principal arterial road and has a posted speed limit of 25 mph. Marsac Avenue has a two-lane cross section with one travel lane in each direction near the project area.
- **Deer Valley Drive West** is classified as a major collector road and has a posted speed limit of 25 mph. Deer Valley Drive West has a two-lane cross section with one travel lane in each direction near the project area.
- **Deer Valley Drive East** this loop section of Deer Valley Drive is classified as a collector road and has a posted speed limit of 25 mph. Deer Valley Drive East has a two-lane cross section with one travel lane in each direction near the project area.
- **Queen Esther Drive** is classified as a collector road and has a posted speed limit of 25 mph. Queen Esther Drive has a two-lane cross section with one unstriped travel lane in each direction near the project area.
- **Solamere Drive** is classified as a collector road and has a posted speed limit of 25 mph. Solamere Drive has a two-lane cross section, with one travel lane in each direction and a landscaped median near the project area.

- **Doe Pass Road** is classified as a collector road and has a posted speed limit of 25 mph. Doe Pass Road has a two-lane cross section with one unstriped travel lane in each direction near the project area.

3.2 Traffic Volumes

Intersection turning movement counts were collected at the following study intersections to establish a baseline of existing conditions and operations for this study's original scope of work:

- Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West
- Deer Valley Drive / Marsac Avenue
- Deer Valley Drive / Bonanza Drive

Intersection turning movement counts were collected at the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection on Saturday, February 15, 2020 (President's Day weekend) and Saturday, February 29, 2020 for the Saturday AM peak period (7:45 AM – 9:45 AM) and the Saturday PM peak period (3:30 PM – 5:30 PM). Counts collected on February 29, 2020 showed higher peak-hour traffic volumes, and were therefore used as existing traffic volumes for the analysis presented in this study. While it is highly unusual to analyze operations during absolute peak conditions, due to the risk of over-building infrastructure and exaggerating typical issues, this was the request of the City.

Intersection turning movement counts were collected at the Deer Valley Drive / Marsac Avenue roundabout and the Bonanza Drive / Deer Valley Drive intersection on December 19, 2020 for the Saturday AM and PM peak periods.

The original, City-approved scope for this study included study intersections 5, 6, and 7. As a result of requests from the City and their reviewers for expanded traffic operations analysis beyond that included in the original study. As a result, counts were sourced from other, existing work and adjusted to present conservative results.

Roadway vehicle counts are provided by the Utah Department of Transportation (UDOT) Continuous Count Stations (CCS). Data from the past five years as collected at two CCSs in the vicinity of the project site (one on SR-224 just south of Kimball Junction and one on SR-248 just west of Quinn's Junction) were reviewed to determine when during the ski season peak traffic volumes occur. It was observed from the data that the month of January experienced the highest Average Daily Traffic (ADT) volumes of any month of the year. This is likely due to increases in traffic caused by events in the area including the Sundance Film Festival. While January is likely the busiest month for traffic on the outskirts of Park City, traffic volumes in February are nearly as high, and Presidents' Day Weekend is among the busiest weekend of the year for skier traffic.

To account for this, the intersection volumes collected in December were adjusted by a factor of 1.05 (5% higher) to replicate February conditions.

For study intersections 8 and 9, which were not included in this study's original scope, intersection counts were sourced from previous studies with adjustment factors. For the intersection of Deer Valley Drive / Park Avenue / Empire Avenue, counts were sourced from the *Park City Mountain Resort Traffic Impact Study* (August, 2019). Counts for this study were collected on February 18, 2017 and were adjusted by a factor of 1.14 (14% higher) to account for a peak winter day, as described in the August 2019 study. These adjusted counts were used for this study. For the intersection of Bonanza Drive / Monitor Drive / SR-248, no Saturday counts were available. To overcome this challenge, weekday counts collected on February 6, 2018 as part of the *Park City Arts District Traffic Analysis* (September 2019) were used as a foundation. Through reviewing two years of CCS data, weekday-to-weekend adjustment factors of 0.63 (37% lower) for the AM peak hour, and 0.85 (15% lower) for the PM peak hour were applied for this study.

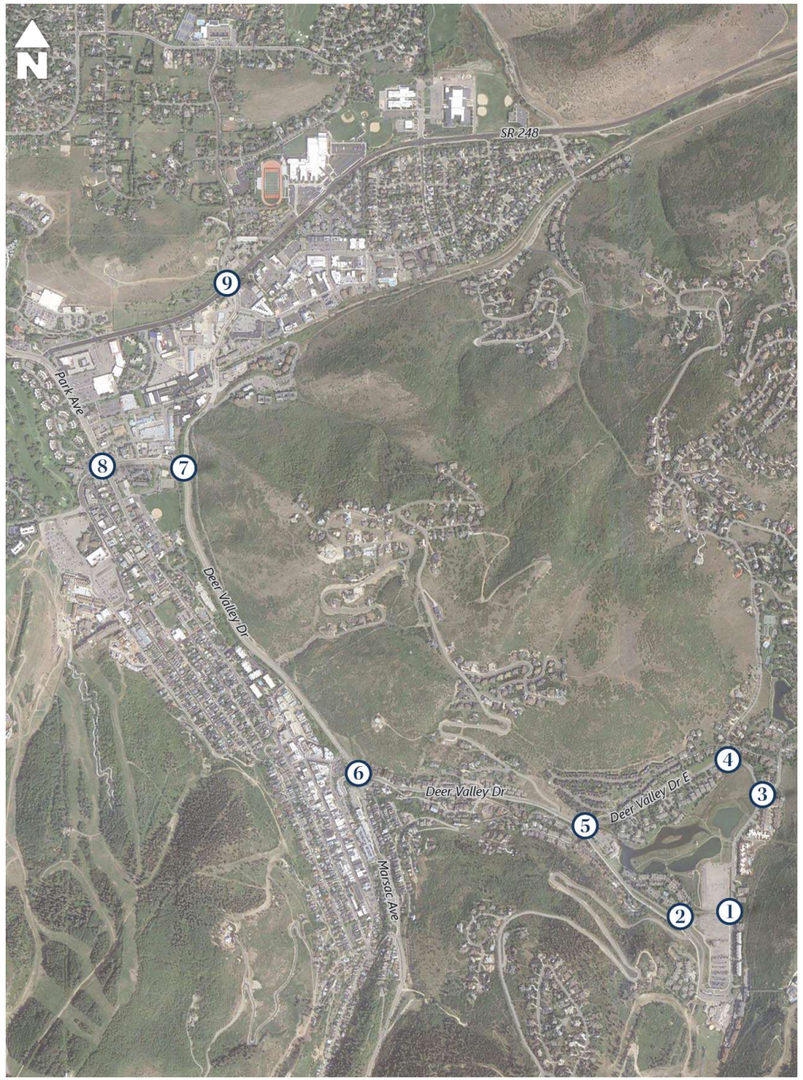
To address comments from City Staff and community members, turning movement counts were collected at study intersections 3 and 4 to better understand how project-generated traffic might affect local intersections not included in the original study scope. The turning movement counts were collected on Thursday-Saturday, March 3-5, 2022, for the AM and PM peak periods. The highest turning movement counts among the three days at each location were used for conservative results.

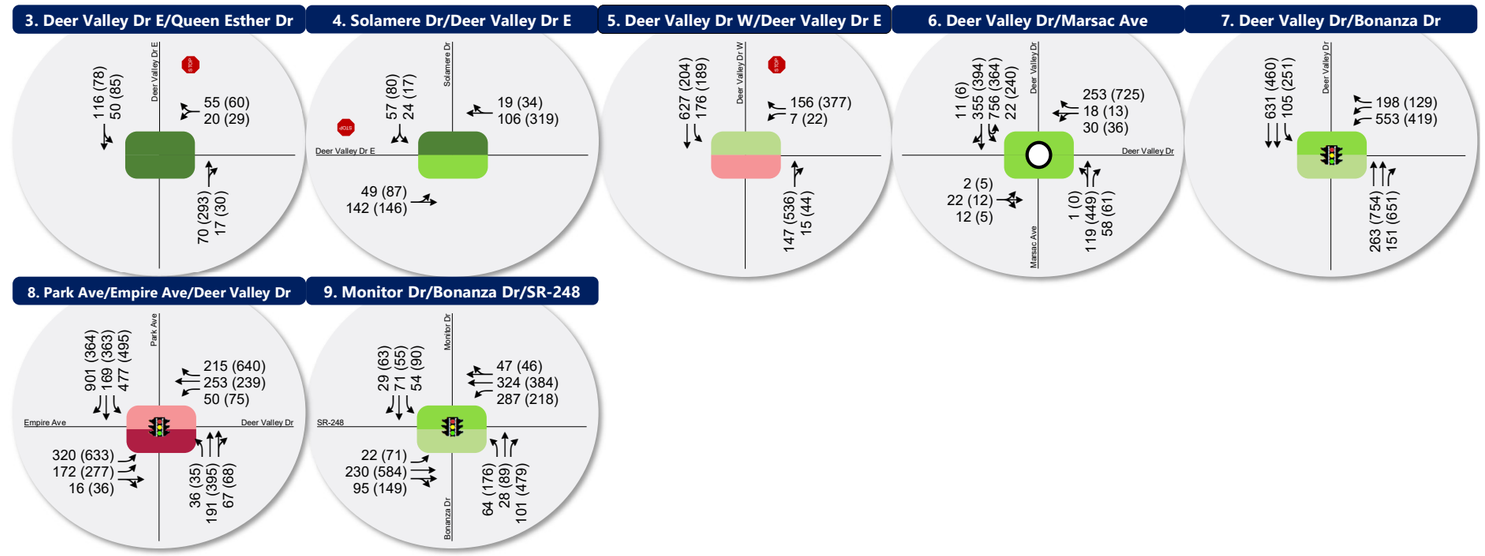
Given that they were not included in the original scope of this study, and the substantial changes proposed along Doe Pass Road, no counts for the intersections of Deer Valley Drive East / Doe Pass Road and Deer Valley Drive West / Doe Pass Road were available, and these intersections were only evaluated in the Plus Project conditions.

The existing 2020 background Saturday AM and PM peak hour volumes are shown in **Figure 3**.

Fehr & Peers also collected Saturday daily roadway counts on February 15, 2020 (President's Day weekend) on the internal Deer Valley Drive roadways at the following locations:

- Deer Valley Drive West – between Royal Street and drop-off/pick-up area
- Deer Valley Drive West – south of the Deer Valley Drive East / Deer Valley Drive West intersection
- Deer Valley Drive East – between Queen Esther Drive and parking lot
- Deer Valley Drive East – east of the Deer Valley Drive East / Deer Valley Drive West intersection





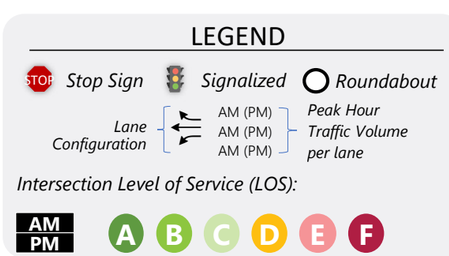


Figure 3

Existing 2020 Background Saturday AM & PM Peak Hour Traffic Conditions

3.3 Level of Service Analysis

Using SimTraffic simulation software (for signalized and unsignalized intersections) and SIDRA software (for the roundabout) and the HCM 6 delay thresholds provided in the Introduction, the existing background Saturday AM and PM peak hour LOS were computed for each study intersection. The results of this analysis for the Saturday AM and PM peak hours are reported in **Table 5** (see Appendix for the detailed LOS report). These results serve as a base for the analysis of the impacts of the proposed Snow Park Village development.

Table 5: Existing 2020 Background Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	SSSC[4]	-	**-**	**-**	-	-
		PM		-	**-**	**-**	-	-
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC	-	-	-	-	-
		PM		-	-	-	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	6	A	-	-
		PM		WB Left	9	A	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	7	A	-	-
		PM		SB Left	11	B	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	SSSC	WB Left	15	C	-	-
		PM		WB Left	**39**	**E**	-	-
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	11	B
		PM		-	-	-	11	B
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	11	B
		PM		-	-	-	21	C
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**77**	**E**
		PM		-	-	-	**84**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	12	B
		PM		-	-	-	20	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle) and is only reported for signalized intersections and roundabouts.
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

As shown in **Table 5**, all study intersections operated within acceptable LOS (LOS D or better), with the exception of the following locations:

- Deer Valley Drive East / Deer Valley Drive West: LOS E in the PM peak hour
  - This is caused by the high volumes of vehicles exiting the Deer Valley Resort area making a westbound right turn onto Deer Valley Drive West. The westbound approach is stop-controlled, making it difficult for vehicles to find a gap and turn onto Deer Valley Drive West.
- Deer Valley Drive / Park Avenue / Empire Avenue: LOS E in the AM peak hour, LOS F in the PM peak hour
  - This is caused by congestion at the signal due to high volumes accessing various ski resorts and downtown Park City.

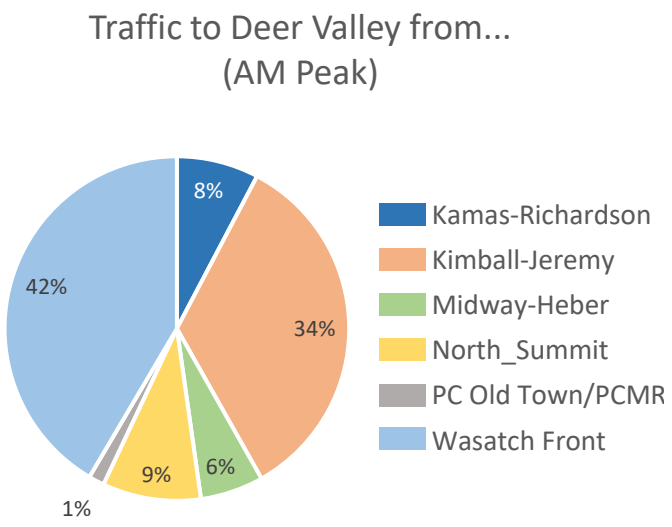
It should be noted that while the Bonanza Drive / Deer Valley Drive intersection operates within acceptable LOS, it is often impacted by vehicle queues spilling back to this intersection from the upstream intersection at Deer Valley Drive / Park Avenue / Empire Avenue in the PM peak hour.

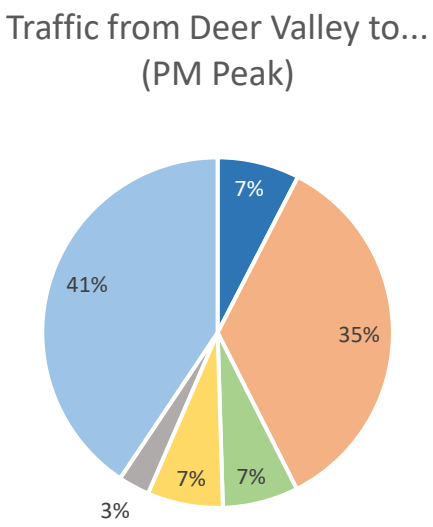
3.4 Mitigation Measures

The concept master plan for Snow Park Village shows reconfiguration and signalization of the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection, which will alter the westbound LOS at this intersection. Therefore, Fehr & Peers does not recommend any mitigation measures for existing background conditions.

3.5 Origin-Destination Data

To understand the distribution of origins from which travelers access Deer Valley, Fehr & Peers employed origin-destination data provided by StreetLight Data. StreetLight Data collects samples of trips using anonymized mobile phone data (location-based services, or LBS) and aggregates it to provide estimates of travel between origin-destination pairs. In this study, trips to and from surrounding areas (Kamas-Richardson, Kimball-Jeremy, Midway-Heber, North Summit County, Wasatch Front, and Park City Old Town/Mountain Resort) were examined. The data sample used in this study was based on 2019 and 2020 observed travel patterns on weekend days during morning and afternoon peak periods (8:00am-10:00am and 3:00pm-5:00pm, respectively) in January and February (peak ski months). The figure below displays the distributions of origins for visitors of the Deer Valley Resort, as also shown in **Figure 4**.





The Wasatch Front contributes the majority of visitors to and from Deer Valley Resort with 42% and 41% in the AM peak and PM peak, respectively. The Kimball-Jeremy area contributes the second-greatest percentage of visitors with 34% and 35% in the AM peak and PM peak, respectively. The vehicular traffic to and from the Kimball-Jeremy area are good candidates to encourage shifting to transit or other modes, especially if improved transit service accessing Deer Valley Resort is provided.

This data represents existing travel patterns and do not account for potential changes in travel following the construction of Snow Park Village; trip distributon and assignment as shown in section 4.4 of this report primarily focuses on new project trips. Furthermore, StreetLight Data can not ditinguish between single-occupancy vehicles and high-occupancy/transit vehicles, and therefor does not account for current carpooling or transit usage.

3.6 Vehicle Occupancy Data

In addition to traffic counts and StreetLight Data, Fehr & Peers collected vehicle occupancy counts for AM peak-period, inbound traffic for the Deer Valley Resort. Vehicle occupancy counts were collected for the following three days:

- Saturday, February 13, 2021
- Tuesday, February 23, 2021
- Saturday, February 27, 2021

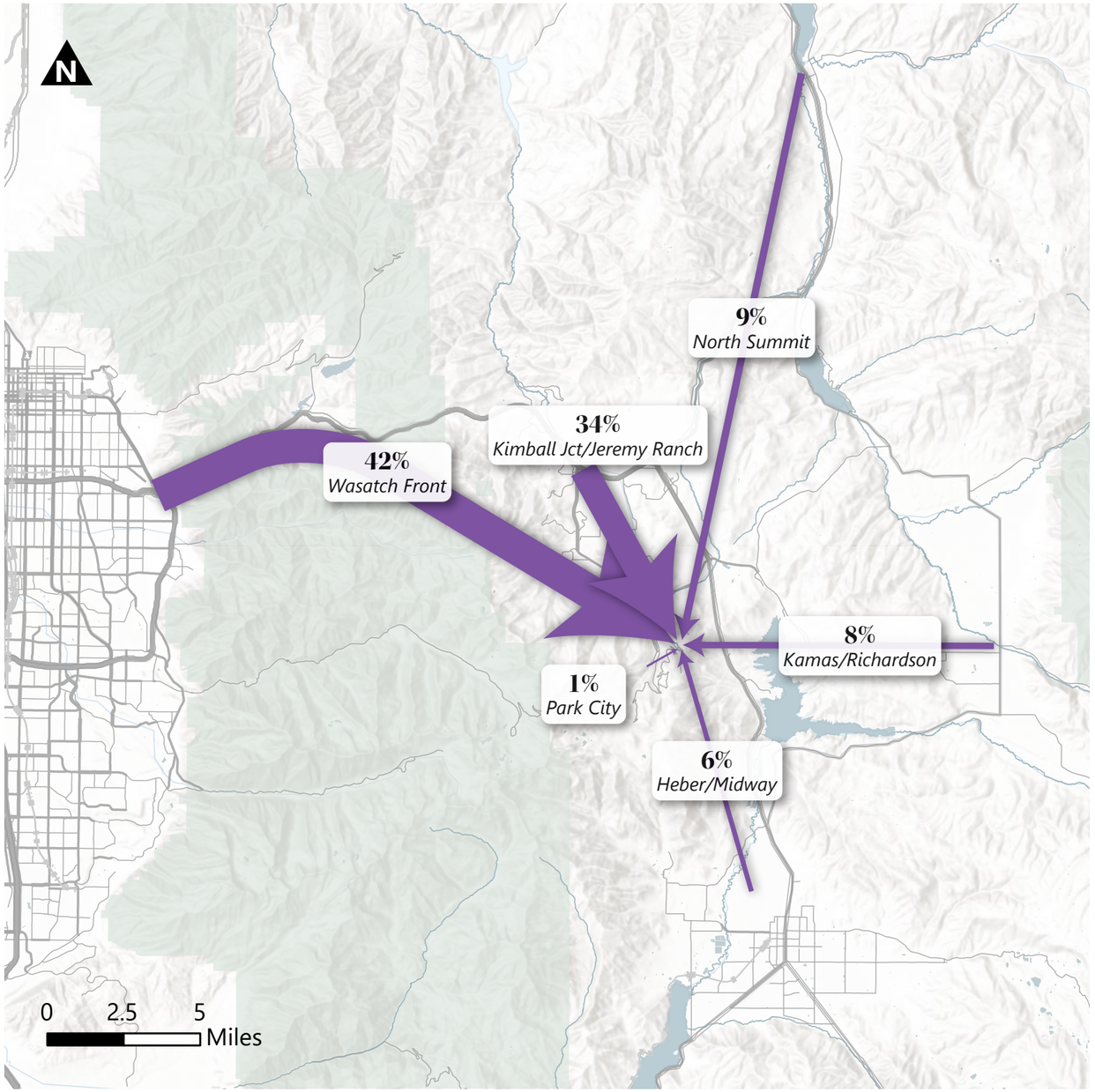
Table 6 presents a summary of vehicle occupancy data, calculated from data collected during the three days listed above. It should be noted that the vehicle occupancy counts were collected during the global COVID-19 pandemic, and the data shown in **Table 6** could be skewed because people are less likely to carpool with individuals outside of their immediate home due to risks presented by Covid-19.

In summary, the average vehicle occupancy for Snow Park Village was observed to be 2.02 occupants/vehicle on Saturday (weighted average of the two sample Saturdays), and 1.90 occupants/vehicle on a weekday (from a single weekday). Also, the percent of single-occupant vehicles was observed to be about 36% on Saturday (weighted average of the two sample Saturdays), and about 38% on a weekday (from a single weekday). Vehicle occupancy is a useful metric to have available for baseline conditions, as it can be used in evaluating how future implementation of potential transportation demand management (TDM) strategies and broader transit network improvements could impact travel behavior. It should be noted that, due to the global Covid-19 pandemic, carpooling may be lower than pre-pandemic levels. However, a return to higher rates of carpooling is expected to be achievable in the near future.

Table 6: Snow Park Village Vehicle Occupancy Summary

Time Period	Total Vehicle Count	Average Occupancy	Single Occupant Vehicles	Percent Single Occupant Vehicles
Saturday, February 13, 2021				
7:45 – 8:00	45	1.76	19	42%
8:00 – 8:15	58	1.84	23	40%
8:15 – 8:30	59	2.12	17	29%
8:30 – 8:45	68	2.09	19	28%
8:45 – 9:00	74	2.04	26	35%
9:00 – 9:15	26	2.12	12	46%
9:15 – 9:30	22	1.95	10	45%
9:30 – 9:45	20	1.95	7	35%
Sum	**372**	**-**	**133**	**-**
Weighted Average	**-**	**1.99**	**-**	**36%**
Tuesday, February 23, 2021				
7:45 – 8:00	15	1.60	6	40%
8:00 – 8:15	32	1.50	22	69%
8:15 – 8:30	48	1.65	24	50%
8:30 – 8:45	56	1.91	17	30%
8:45 – 9:00	63	2.00	23	37%
9:00 – 9:15	48	1.92	16	33%
9:15 – 9:30	43	2.23	11	26%
9:30 – 9:45	24	2.17	5	21%
Sum	**329**	**-**	**124**	**-**
Weighted Average	**-**	**1.90**	**-**	**38%**
Saturday, February 27, 2021				
7:45 – 8:00	41	1.66	20	49%
8:00 – 8:15	77	2.04	24	31%
8:15 – 8:30	100	1.91	38	38%
8:30 – 8:45	93	2.11	28	30%
8:45 – 9:00	120	2.28	40	33%
9:00 – 9:15	133	1.98	61	46%
9:15 – 9:30	129	1.97	39	30%
9:30 – 9:45	38	2.13	10	26%
Sum	**731**	**-**	**260**	**-**
Weighted Average	**-**	**2.03**	**-**	**36%**

Source: Fehr & Peers.



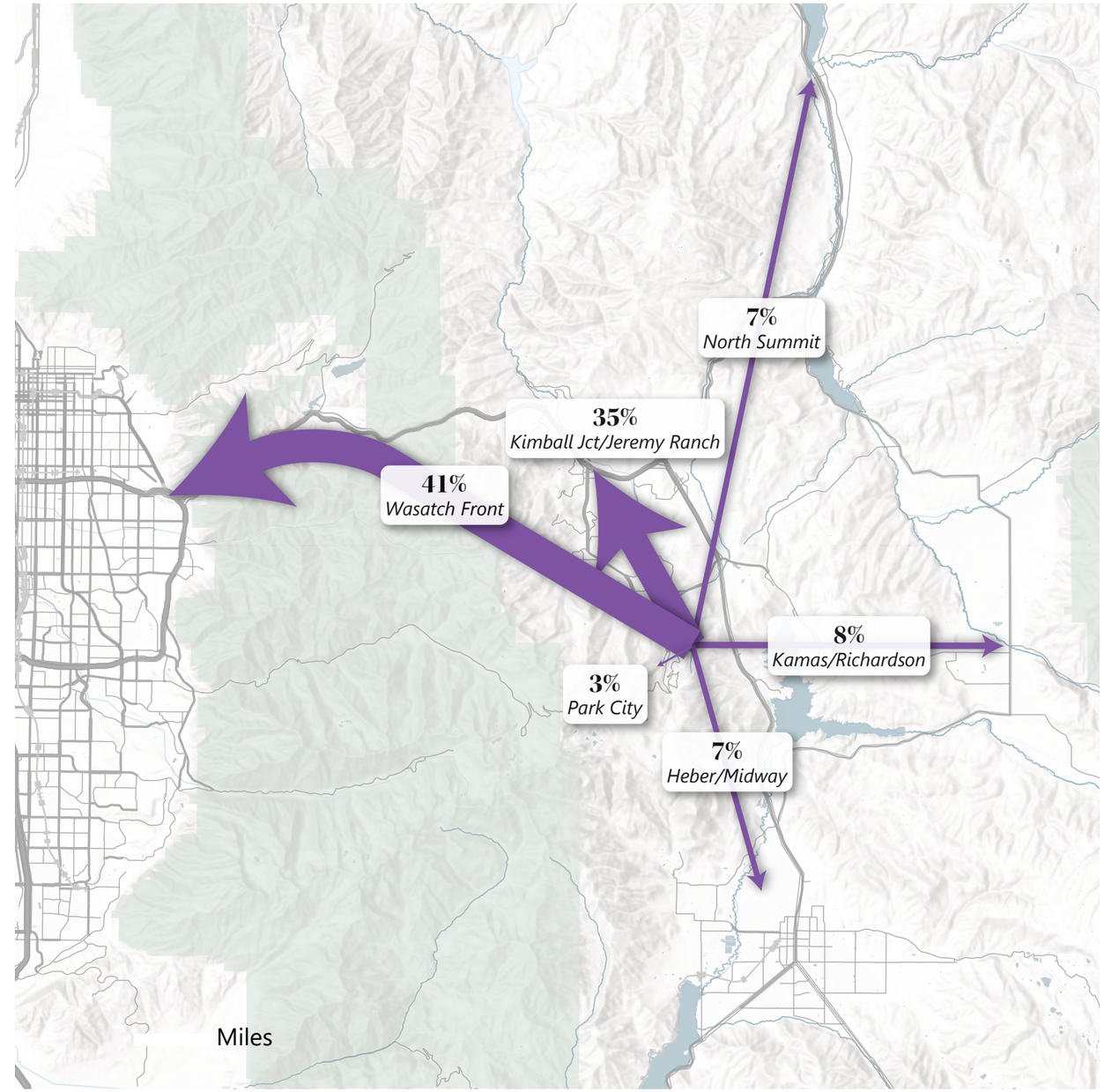


Figure 4

Deer Valley Origin-Destination AM Incoming - PM Outgoing Trends

4. Project Conditions

The Project conditions analysis evaluates the type and intensity of proposed development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in the Introduction. Additionally, Snow Park includes many proposed updates to the roadway network immediately adjacent to the site.

4.1 Project Description

The first phase of the proposed Snow Park Village development will be located at the south parcel of the Deer Valley Resort. The parcel is currently surface parking lots for Deer Valley. Deer Valley resort is in a cul-de-sac type of location, and all trips will access the development through the Deer Valley Drive / Deer Valley Drive East/ Deer Valley Drive West intersections. As a reminder, this traffic report accounts for all future development of the current surface parking lots.

4.1.1 Site Access and Circulation

The Snow Park Village proposal includes mitigations at key intersections to provide better transit access, especially at the transit hub, and improve the traffic flow for visitors traveling by all modes. This circulation plan includes a seasonal one-way Shared Mobility Lane (SML), which prioritizes transit. It will function in a counterclockwise manner. After ski season, the SML will be open to bicycle traffic. Management and enforcement, year-round, will be a City responsibility.

Deer Valley Drive West will be largely left as it is today. The main entrance for day skiers is the western access off Doe Pass Road into the P2 level. The northbound approach at the Doe Pass Road / Deer Valley Drive West intersection will be stop-controlled. To improve pedestrian and bicycle connections, a continuous multiuse path will be constructed along the west curb to connect Snow Park Village to multimodal facilities along Deer Valley Drive and the broader Park City active transportation network. Adjacent to the Snow Park Village site, Deer Valley Drive West will be gated to control access to the Trails End development and to discourage use of the southern terminus of Deer Valley Drive West as a skier drop off area.

Doe Pass Road will be reconfigured to provide access to the parking structure and mobility hub entrances. Doe Pass Road will include two-way general traffic lanes to allow for the movement of public and private vehicles. A continuous sidewalk will be provided on the south side of Doe Pass Road, which will be connected to the multiuse path along the west curb of Deer Valley Drive West by controlled crossings. Two parking accesses, to levels P1 and P2, will be provided on Doe Pass Road. The parking structure will have

internal ramping to allow access between P2 and P3. Both driveways will be controlled with parking management technology, and Deer Valley staff as needed.

Deer Valley Drive East Two general traffic lanes and one transit flex lane will be provided on Deer Valley Drive East. A continuous multiuse path will be provided along the west side, which connects to other similar facilities around the Deer valley Drive loop. Deer Valley Drive East will act as the primary route by which day-skiers depart Snow Park Village, which will be supported by the reconfiguration of the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection and through intuitive, real-time wayfinding. South of its intersection with Doe Pass Road, Deer Valley Drive East will provide access to P2, P3 and P4 parking levels which will primarily serve day skiers. Driveways to these parking levels will be similarly managed through parking technology and Deer Valley staff during periods of peak demand. At its southern terminus, Deer Valley Drive East will be reconfigured into a turnaround drop-off area for day-skier traffic. This drop-off area will be heavily managed, particularly at peak drop-off and pick-up periods with Deer Valley staff directing traffic to ensure smooth operations and safe conditions for users.

A conceptual site plan, showing driveway locations and conceptual roadway configurations is shown in **Figure 5**.

Figure 5
Conceptual Site Plan

4.2 Trip Generation

Much research and case studies have been performed to better understand the transportation benefits of mixed-use development and transit-oriented development (TOD) over the past decade. "D" factors affect the way mixed-use developments generate trips. The "D" factors include:

- Density *(dwellings, jobs per acre)*
- Diversity *(mix of housing, jobs, retail)*
- Design *(connectivity, walkability)*
- Destinations *(regional accessibility)*
- Distance to Transit *(rail and bus proximity)*
- Development Scale *(population, jobs)*
- Demographics *(household size, income)*

Because of the "D" factors, mixed-use developments and TOD have a much higher distribution of mode split (split between walk, bike, transit, and vehicle) and generally result in lower single-occupant vehicle trips and parking demand. Research has shown that mixed-use developments and TOD generate one-third to two-thirds fewer trips than typical state-of-the-practice trip generation methodologies.

Trip generation for the proposed Snow Park Village was obtained from the *Institute of Transportation Engineers – 10th Edition Trip Generation Manual* (ITE Manual) and Fehr & Peers' mixed-use development (MXD+) methodology via MainStreet, a Fehr & Peers web application that captures the traffic benefits of developments by looking at interactions among the mixture of land uses and patron usage of alternative modes (i.e. transit, bicycling, and/or walking). Since the beginning of this effort, a new edition of the *Trip Generation Manual* has been published, however, analyses presented in this report rely on 10th Edition trip generation rates. This is to be consistent with previous drafts, and rates presented in the updated *Trip Generation Manual* would likely lead to marginal ("noise") reductions in trip generation estimates. MXD+ outputs are included in the appendix of this report.

The MXD+ trip generation methodology more accurately captures the trip-reducing benefits of mixed-use development projects and is used throughout the United States to help developers, agencies, and the public to quantify these trip reductions. The MXD+ trip generation model is promoted by the United States Environmental Protection Agency (EPA) and has been adopted by the American Society of Civil Engineers (ASCE), American Planning Association (APA), and many others as a recommended resource for trip generation of smart-growth developments. The MXD+ model uses ITE trip generation rates and applies additional variables to those trip generation rates. Some of the additional variables include:

- Employment

- (Population + Employment) per square mile
- Land area
- Total jobs / population diversity
- Number of intersections per square mile
- Employment within a mile; within
- Employment within a 30-minute trip by transit
- Average household size
- Vehicles owned per capita

Trip generation for the project was computed using trip generation rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, 2017, with trip reductions based on Fehr & Peers' MXD+ methodology to account for the project's many complementary land uses and availability of transit. These reductions were further informed by inputs from the Summit County Travel Demand Model to better tailor results to local travel behavior. Snow Park Village is proposed to include following land uses (taken from the land use program dated October 2021):

- 30,900 square feet of ballroom/event center space
- 143 multifamily housing units
- 193 hotel rooms
- 25,900 square feet of commercial/retail space

The development is proposed to support the current Deer Valley Resort and other land uses in adjacent to the resort. It should be noted that the land uses supporting the ski resort will not be substantial traffic generators; rather, the ski resort will be the primary generator of traffic, and the support land uses serve as accessories to the resort. The current traffic accessing the ski resort were assumed to cover the trip generation for the ski resort and the support land uses independent of the Snow Park Village proposal. **Table 7** presents the Saturday daily, AM peak-hour, and PM peak-hour trip generation estimates for the entirety of the proposed Snow Park Village Project on both parcels north and south of Doe Pass Road, not only the proposed first phase (Village) south of Doe Pass Road.

4.2.1.1 Resort Hotel Trip Generation Rates

Trip Generation estimates for the hotel uses included in the Snow Park Village proposal are based on observed trip generation rates recorded during the development of the 2018 Canyons Village Transportation Master Plan. While there are a handful of key factors that might result in trip generation rates closer to those in the original Snow Park Village Traffic Impact Study, including proximity to the interstate and other complementary land uses, estimates in this memorandum used the local rates recorded at the Canyons.

4.2.1.2 Assumed Mode Shift

To avoid double-counting potential reductions, the trip generation estimates in this memorandum rely solely on mode shift derived from the MXD methodology and underlying assumptions from the regional travel demand model. These reductions, which are shown in the columns titled "% Walk/Bike" and "% Transit," are applied to all proposed land uses. Snow Park Village is proposing to provide full parking supply required by the Park City LMC with no reductions. To account for the availability of parking and potential added incentive to drive rather than use other modes, the reductions for shift to other modes were minimized, assuming half of what was presented in the November 2022 submittal.

4.2.1.3 Reduction in Vehicle Trips due to Implementation of Paid Parking

Charging for parking is a reliable method by which to influence mode choice, and Deer Valley intends to implement paid parking as part of the Snow Park Village proposal. Reductions in trip generation due to the implementation of paid parking at Deer Valley have been scaled back to present a more conservative estimate of how parking pricing will affect trip generation. While many Deer Valley clientele may be much less sensitive to additional costs associated with a day's skiing than the general population, almost 45% of existing trips to and from Deer Valley start and end at points along the Wasatch Front, residents of which are more likely to alter their behavior based on willingness to pay. Lastly, reductions in trip generation due to the implementation of parking pricing are applied only to the resort hotel-, shopping center-, and event center-generated trips, since proposed residential uses at the site are unlikely to require that residents pay for parking on a daily basis.

4.2.1.4 Trip Internalization Derived from MXD

A fundamental element of the Snow Park Village proposal is to provide amenities, services, and entertainment options that complement each other and the ski resort itself. This means that peak-hour trips that might occur without complementary land uses are either delayed (so that they do not occur during the peak hours) or do not require a vehicle trip due to proximity of different uses. Trip internalization rates, presented in **Table 7** under the column heading "% Internal Capture" are applied only to the residential-, resort hotel-, and recreational community center-generated trips, and present a more conservative rate of internalization than presented in the original Snow Park Village traffic impact study.

4.2.1.5 Trip Internalization Derived from Squaw Valley (Palisades Tahoe)

While the residential, hotel, and community center uses are expected to be destinations unto themselves that will generate a measurable number of peak-hour vehicle trips, the food service and retail uses (shown

in **Table 7** as "Shopping Center") are expected to almost exclusively serve guests already at Deer Valley rather than guests traveling to Deer Valley explicitly for those services.

To support this assumption, trip generation estimates for the shopping center uses in this memorandum rely on trip internalization estimates derived from an origin-destination survey conducted at the Squaw Valley, California resort in 2011. Surveys conducted showed that 95-97% of customers at dining and retail uses in a similar context (ski resort base village) were already at the village for other purposes, and did not travel solely for the dining/retail use. Reductions based on the data from Squaw Valley are presented under the column heading "% Resort Int. Capt." And are applied only to the shopping center uses. We assume that employees for these uses will almost exclusively arrive and depart during off-peak periods, resulting in lower reductions for daily trips generated by the shopping center uses.

Trip generation for Snow Park Village is covered in greater detail in **Attachment A**. Detailed MXD+ outputs are also included in the appendix.

Table 7: Snow Park Village Trip Generation

Land Use[1]	Number of Units	Unit Type	Rate[2]	Daily Trip Generation[3]	% Entering[4]	% Exiting[4]	% Walk/ Bike[5]	% Transit[5]	% Paid Parking[7]	% Internal Capture[6]	% Resort Int. Capt.[9]	Trips Entering	Trips Exiting	**New Daily Trips**
(220) - Multifamily Housing Low-Rise	143	Dwelling Unit	8.14	1,164	50%	50%	2.3%	1.5%	-	1.9%	-	549	549	**1,098**
(330) - Resort Hotel	193	Rooms	6.27	1,210	50%	50%	2.3%	1.5%	7.5%	1.9%	-	526	526	**1,052**
(820) - Shopping Center	25.9	1,000 Sq. Ft	46.12	1,195	50%	50%	2.3%	1.5%	7.5%	-	90.0%	53	53	**106**
(495) Recreational Community Center	30.9	1,000 Sq. Ft	9.10	281	50%	50%	2.3%	1.5%	7.5%	1.9%	-	123	123	**246**
Day Skiers[10]	150	Stalls	7.42	1,113	50%	50%	-	-	-	-	-	557	557	**1,114**
Net Weekday Trips				**4,963**								**1,808**	**1,808**	**3,616**
Land Use[1]	Number of Units	Unit Type	Rate[2]	AM Peak Hour Trip Generation[3]	% Entering[4]	% Exiting[4]	% Walk/ Bike[5]	% Transit[5]	% Paid Parking[7]	% Internal Capture[6]	% Resort Int. Capt.[8]	Trips Entering	Trips Exiting	**New AM Peak Hour Trips**
(220) - Multifamily Housing Low-Rise	143	Dwelling Unit	0.46	66	23%	77%	2.8%	1.0%	-	3.7%	-	15	47	**62**
(330) - Resort Hotel	193	Rooms	0.41	79	72%	28%	2.8%	1.0%	7.5%	3.7%	-	49	19	**68**
(820) - Shopping Center	25.9	1,000 Sq. Ft	0.94	24	62%	38%	2.8%	1.0%	7.5%	-	96.2%	1	1	**2**
(495) Recreational Community Center	30.9	1,000 Sq. Ft	1.76	54	62%	38%	2.8%	1.0%	7.5%	3.7%	-	29	18	**47**
Day Skiers[10]	150	Stalls	0.54	82	100%	0%	-	-	-	-	-	82	0	**82**
Net Saturday AM Peak Hour Trips				**306**								**176**	**85**	**261**
Land Use[1]	Number of Units	Unit Type	Rate[2]	PM Peak Hour Trip Generation[3]	% Entering[4]	% Exiting[4]	% Walk/ Bike[5]	% Transit[5]	% Paid Parking[7]	% Internal Capture[6]	% Resort Int. Capt.[8]	Trips Entering	Trips Exiting	**New PM Peak Hour Trips**
(220) - Multifamily Housing Low-Rise	143	Dwelling Unit	0.70	100	60%	40%	1.7%	1.5%	-	10.6%	-	52	35	**87**
(330) - Resort Hotel	193	Rooms	0.70	135	43%	57%	1.7%	1.5%	7.5%	10.6%	-	46	61	**107**
(820) - Shopping Center	25.9	1,000 Sq. Ft	4.50	117	52%	48%	1.7%	1.5%	7.5%	-	96.2%	3	2	**5**
(495) Recreational Community Center	30.9	1,000 Sq. Ft	1.07	33	52%	48%	1.7%	1.5%	7.5%	10.6%	-	14	13	**27**
Day Skiers[10]	150	Stalls	0.64	96	0%	100%	-	-	-	-	-	0	96	**96**
Net Saturday PM Peak Hour Trips				**481**								**115**	**207**	**322**

1. (XXX) Indicates ITE Land Use Code. Land Use Code from the Institute of Transportation Engineers - 10th Edition Trip Generation Manual (ITE Manual)
2. ITE Trip Generation Rates. Hotel rates derived from data collected on Saturday, February 17, 2018, for the Canyons Village Management Association Transportation Master Plan. Day skier rates calculated from existing vehicles/stalls.
3. Traffic Generated by the development according to trip generation rates provided in the ITE Manual (custom rates for Hotel).
4. Percentage of trips Entering and Exiting the development according to the ITE Manual.
5. Percentage of trips that shift to active transportation or transit modes based on data collected by U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.
6. Percentage of trips that are captured internally to the site based on rates published in ITE Manual.
7. Percentage of trips that shift to transit due to parking costs based on Fehr & Peers's Parking Cost Tool. The tool estimates close to 20%; 7.5% assumed for conservative results.
8. Percentage of trips that are captured internally to the site for retail/restaurant based on Squaw Valley winter overnight visitor survey conducted in 2011, for weekend AM and PM peak hours.
9. Daily retail/restaurant internal capture percentage was assumed to be lower than AM and PM peak hours due to employees, which daily travel patterns are not as affected as much as peak hours.
10. Day skiers not included in ITE. The rates for day skiers were derived by calculating the number of existing vehicles with the available 1350 existing stalls.

Source: Fehr & Peers

4.3 Trip Distribution and Assignment

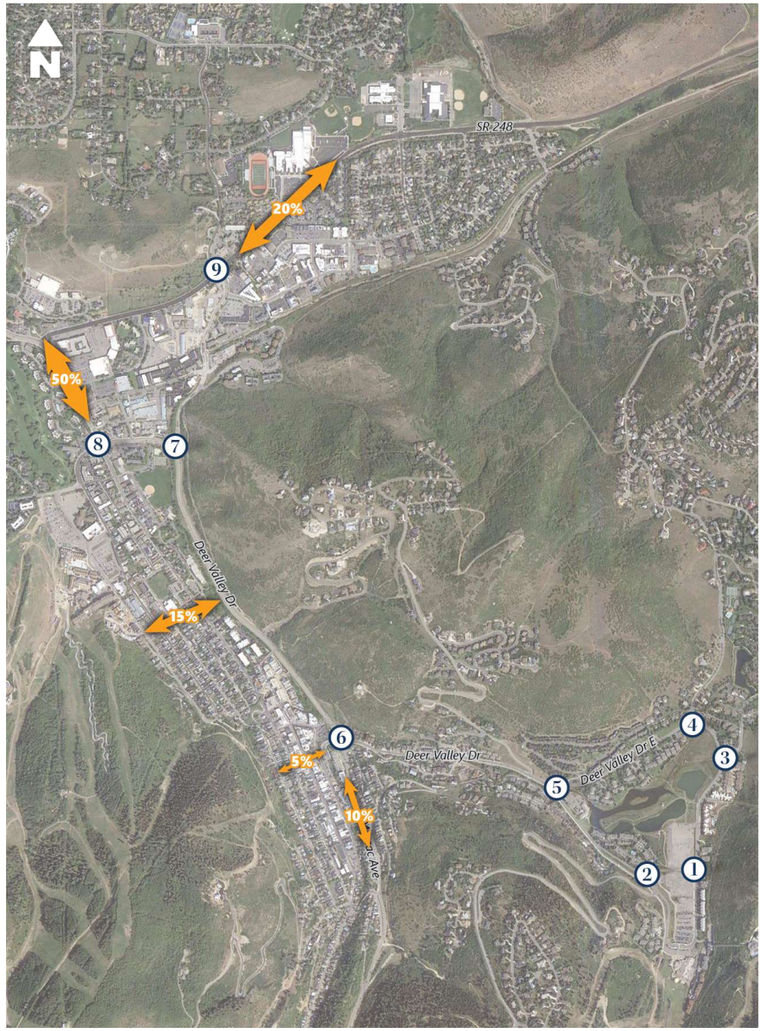
Project traffic was assigned to the roadway network based on the proximity to major streets and freeways, population densities, and local and regional attractions. Existing travel patterns revealed in the Streetlight data, Continuous Count Station (CCS) data collection from UDOT, and observed during data collection also provided helpful guidance to establish these distribution percentages, especially close to the site.

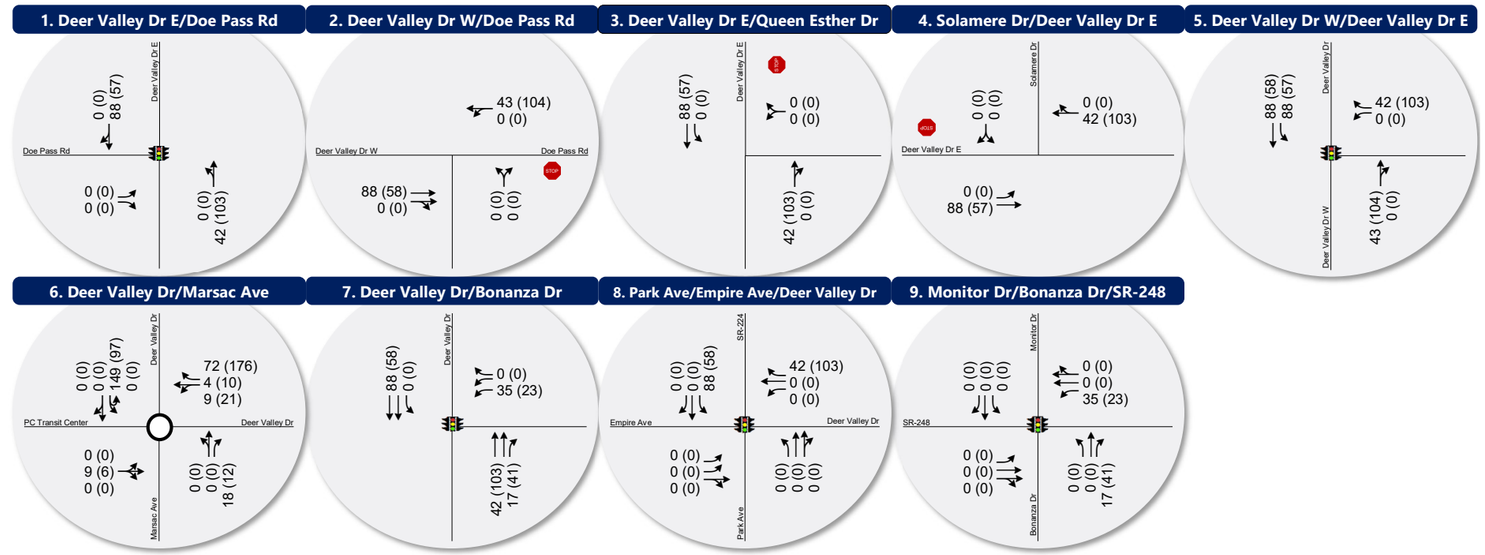
The CCS data from UDOT informed the distribution of trips arriving via SR-224 and SR-248. Closer to the project site, Streetlight data informed the distribution of trips arriving via Marsac Avenue and Deer Valley Drive. Overall, the project-generated trips were distributed to and from these directions in the Existing analysis, in the corresponding percentages:

- 50% North (using SR-224)
- 20% East (using SR-248 via Bonanza Drive)
- 15% West (using any of the accesses along Deer Valley Drive between Bonanza and Marsac)
- 5% West (using the Transit Hub access at the Marsac Roundabout)
- 10% South (using Marsac Avenue)

This trip distribution does not fully align with the origin-destination data presented in **Figure 4** due to the expected differences in trip purpose stemming from the change in land use at Snow Park. The distribution and assignment of new, project-generated trips reflects the assumption that residents and guests of Snow Park Village's hotel and residential uses are more likely to and from Old Town for dining, shopping, or entertainment purposes.

These trip distribution assumptions were used to distribute project-generated traffic to the study area intersections and are shown in **Figure 6**.





LEGEND

STOP *Stop Sign* *Signalized* *Roundabout*

Lane Configuration — AM (PM) / AM (PM) / AM (PM) — *Peak Hour Traffic Volume per lane*

Intersection Level of Service (LOS):

AM / PM — A B C D E F

Figure 6

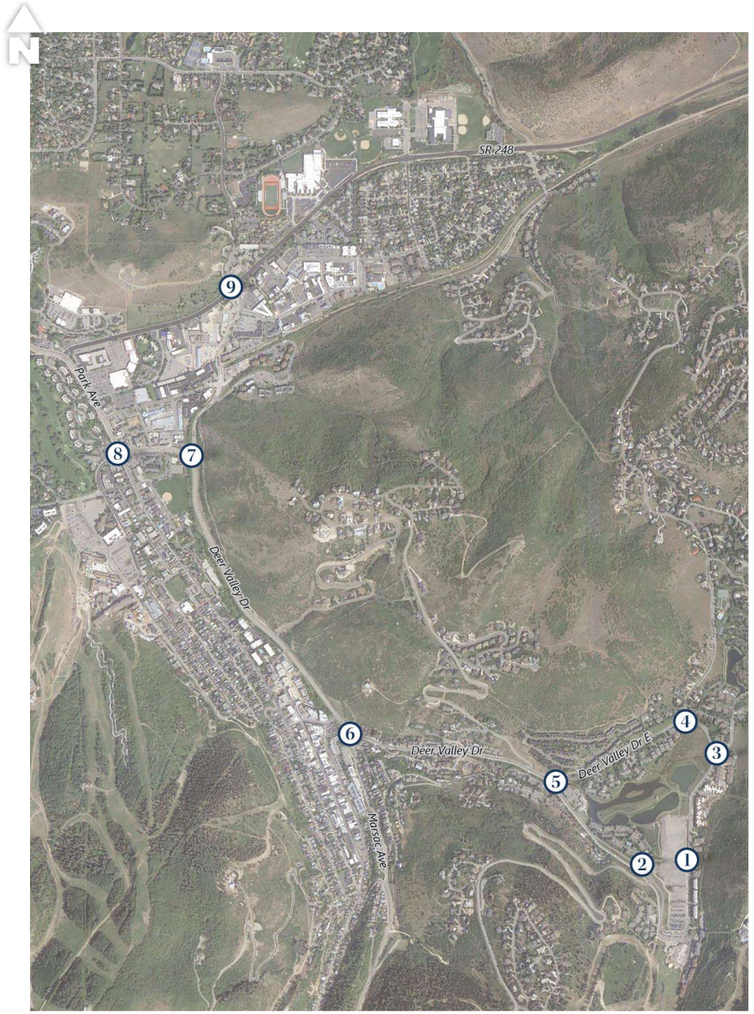
Saturday AM & PM Peak Hour Trip Generation and Distribution

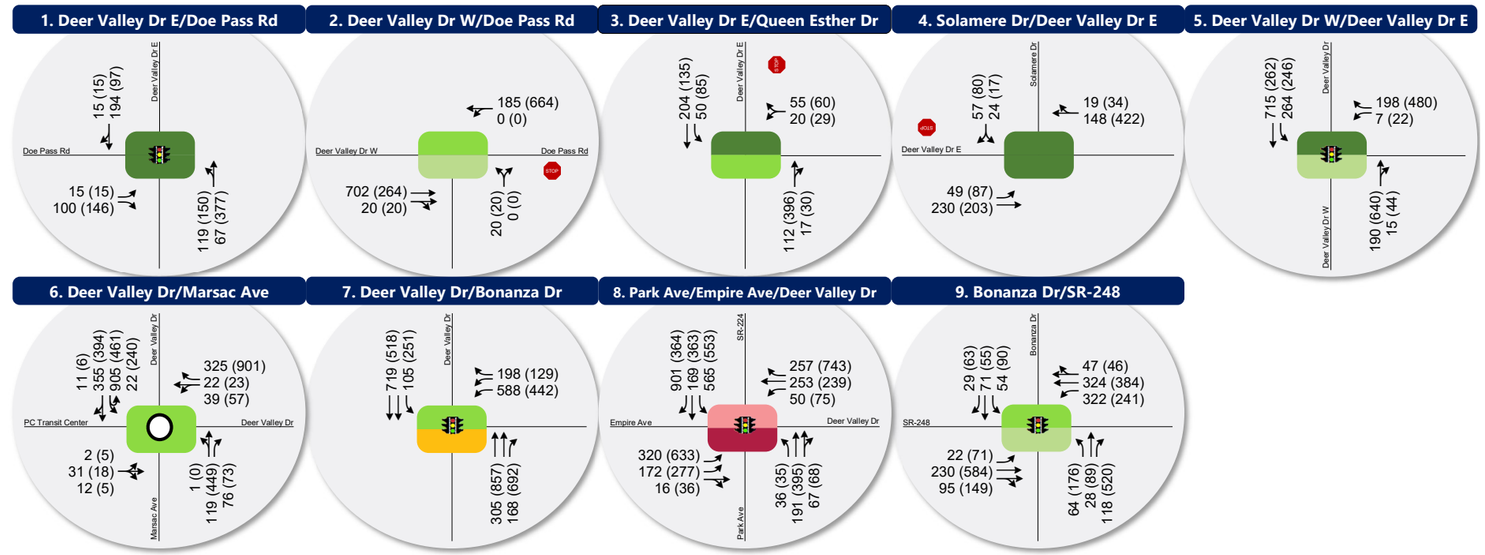
5. Existing 2020 plus Project Conditions

The Existing (2020) Plus Project conditions analysis evaluates the impact of the proposed development-generated traffic on the surrounding roadway network under existing conditions. To analyze this impact, the Saturday peak-hour background traffic volumes were combined with volumes generated by the proposed Project during its Saturday peak hours. Intersection LOS analyses were then performed and compared to the results of the background traffic volumes. This comparison shows the impact of the proposed project.

5.1 Traffic Volumes

Vehicle trips in and out of the existing Deer Valley resort are assumed to be for the ski resort users and were not subtracted out from the background volumes. Project-generated traffic for the additional land uses and development was added to the background volumes to yield Existing (2020) Plus Project peak-hour volumes. The Saturday AM and PM peak-hour traffic volumes at the study intersections are shown in **Figure 7**.





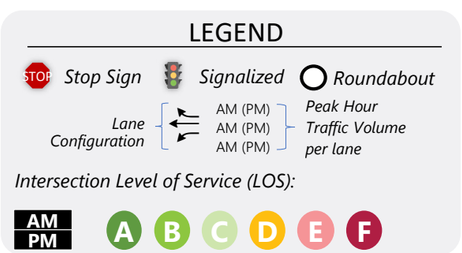


Figure 7

Existing 2020 Plus Project Saturday AM & PM Peak Hour Traffic Conditions

5.2 Level of Service Analysis

Using SimTraffic simulation software (for signalized and unsignalized intersections) and SIDRA software (for the roundabout) and the HCM 6 delay thresholds provided in the Introduction, the existing 2020 plus project Saturday AM and PM peak hour LOS were computed for each study intersection. The results of the analysis are reported in **Table 8** (see Appendix for the detailed LOS report).

Table 8: Existing 2020 plus Project Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	Signal	-	-	-	6	A
		PM		-	-	-	7	A
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC[4]	NB Left	8	A	-	-
		PM		NB Left	16	C	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	8	A	-	-
		PM		WB Left	11	B	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	8	A	-	-
		PM		SB Left	13	B	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	SSSC	WB Left	26	D	-	-
		PM		WB Left	**128**	**F**	-	-
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	15	B
		PM		-	-	-	15	B
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	11	B
		PM		-	-	-	29	C
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**75**	**E**
		PM		-	-	-	**83**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	13	B
		PM		-	-	-	20	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

As shown in **Table 8**, all study intersections operated within acceptable LOS (LOS D or better), with the exception of the following locations:

- Deer Valley Drive East / Deer Valley Drive West: LOS F in the PM peak hour
    - This is caused by the high traffic volumes exiting the Deer Valley Resort on the westbound approach onto Deer Valley Drive. The westbound approach is stop-controlled, making it difficult for vehicles to find a gap and turn onto Deer Valley Drive West.
- Deer Valley Drive / Park Avenue / Empire Avenue: LOS E in the AM peak hour, LOS F in the PM peak hour
    - This is caused by high congestion at the signal due to high volumes accessing various ski resorts and downtown Park City.

It should be noted that the proposed Snow Park Village development introduces various support land uses intended to attract resort users to stay on-site after the ski resort peak hour. This will help distribute the peaking of traffic, reducing delays at the study intersections and roadways. Therefore, the results shown in **Table 8** are likely overstated.

5.3 Mitigation Measures

The Snow Park Village site plan includes realignment of the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection. The intersection is currently a "T"-intersection with free-flow movement north/south along Deer Valley Drive West / Deer Valley Drive, and a stop-control on the approach of Deer Valley Drive East. The proposed plan adds a signal at the intersection, as shown in **Figure 8**. Deer Valley Drive West will serve as a primary transit and auto route to access the proposed transit hub and the main P2 parking level entrance on Doe Pass Road and serve private vehicles accessing Royal Street and the Trail's End community. Deer Valley Drive East will serve as the secondary vehicular route to access the Snow Park drop-off/pick-up area and parking structure accesses that includes day skier spaces, hotel, and residences.

To evaluate how the study intersections would operate if driving behaviors do not change despite development, the traffic distribution of the background traffic at the Deer Valley Drive East / Deer Valley Drive West intersection was not modified, and project traffic was added. This was assumed to account for the historical use patterns and direct routes to the parking garages. This resulted in traffic splits similar to existing conditions at the Deer Valley Drive East / Deer Valley Drive West intersection with roughly 25% using Deer Valley Drive East and roughly 75% using Deer Valley Drive West inbound in the AM peak hour, and roughly 40% using Deer Valley Drive East and roughly 60% using Deer Valley Drive West outbound in the PM peak hour.

Park City has a longstanding position of not mitigating certain deficient intersections within its boundaries due to the impacts of road widening and other potential mitigations to the community. As a result, potential mitigations at the intersections of Deer Valley Drive / Park Avenue / Empire Avenue, Bonanza Drive / Monitor Drive / SR-248 were not analyzed as part of this study, and are therefore not included as recommendations. Further, deficiencies shown at the intersection of Deer Valley Drive / Bonanza Drive are not a result of project-generated trips or operations of the intersection itself; instead they stem from vehicle queues from the intersection of Deer Valley Drive / Park Avenue / Empire Avenue. As a result, mitigations at the intersection of Deer Valley Drive / Bonanza Drive are not recommended as part of this study. As stated earlier, Deer Valley Drive between the roundabout and SR-224 intersection is a UDOT facility. Any efforts to improve traffic will be led by UDOT.

The analysis results with the reconfigured Deer Valley Drive East / Deer Valley Drive West intersection are shown in **Table 9** (see Appendix for the detailed LOS report). As shown in **Table 9**, the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection operates at LOS A and LOS C in the AM and PM peak hours, respectively.

With increased traffic due to the development, the Deer Valley Drive East / Solamere Drive and Deer Valley Drive East / Queen Esther Drive intersections experience increased delays. As a mitigation, the Snow Park Village site plan includes new left-turn pockets at both the Deer Valley Drive East / Solamere Drive and Deer Valley Drive East / Queen Esther Drive intersections to improve traffic operations during peak periods and better facilitate inbound left turns, as well as a receiving lane to allow for two-stage left turns out of Solamere Drive and Queen Esther Drive.

Source: Alliance Engineering Inc

Figure 8

Proposed Reconfiguration of Deer Valley Drive East / Deer Valley Drive West Intersection - Transit Priority Alternative

Table 9: Existing 2020 plus Project Mitigated Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	Signal	-	-	-	4	A
		PM		-	-	-	7	A
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC[4]	NB Left	12	B	-	-
		PM		NB Left	19	C	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	5	A	-	-
		PM		WB Left	11	B	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	6	A	-	-
		PM		SB Left	9	A	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	Signal	-	-	-	9	A
		PM		-	-	-	21	C
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	15	B
		PM		-	-	-	15	B
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	12	B
		PM		-	-	-	38	D
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**76**	**E**
		PM		-	-	-	**84**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	13	B
		PM		-	-	-	20	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound.
4. Side-street stop control.

Source: Fehr & Peers.

6. Opening Year (2024) Background Conditions

The purpose of the Opening Year (2024) Background conditions analysis is to evaluate the study intersections during the peak travel periods of the day under projected 2024 traffic volumes, when the development is projected to open. This analysis provides a baseline condition for the year 2024, which can be used to determine future Project impacts.

6.1 Traffic Volumes

Traffic volumes for 2024 were estimated using traffic counts and forecasted volumes from the Summit/Wasatch Travel Demand Model (September 2020 version) for 2024. This is a regional forecasting model developed with UDOT support to help plan for major infrastructure in the Wasatch Back region. The Summit/Wasatch Travel Demand Model shows a lower annual growth rate in the future by accounting for a higher mode split for non-drive alone modes of transportation – higher usage of transit, walking, and biking than previous versions of travel demand models. The following annual growth rates were used on the following roadways to project 2024 background weekday volumes as shown in **Figure 9**.

- 0.5% on Deer Valley Drive (SR-224) north of Bonanza Drive
- 0.5% on Deer Valley Drive (SR-224) south of Bonanza Drive
- 0.5% on Deer Valley Drive (SR-224) north of Marsac Avenue
- 0.6% on Deer Valley Drive (SR-224) east of Marsac Avenue
- 0.6% on Deer Valley Drive (SR-224) north of Deer Valley Drive West
- 0.4% on Deer Valley Drive (SR-224) south of Deer Valley Drive West
- 1.7% on Bonanza Drive
- 0.3% on Marsac Avenue

6.2 Level of Service Analysis

Using SimTraffic simulation software (for signalized and unsignalized intersections) and SIDRA software (for the roundabout) and the HCM 6 delay thresholds provided in the Introduction, opening year 2024 background weekday peak hour LOS was computed for each study intersection. The results of this analysis for the Saturday AM and PM peak hour are reported in **Table 10** (see Appendix for the detailed LOS report).

Table 10: Opening Year 2024 Background Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	SSSC[4]	-	**-**	**-**	-	-
		PM		-	**-**	**-**	-	-
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC	-	-	-	-	-
		PM		-	-	-	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	6	A	-	-
		PM		WB Left	8	A	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	6	A	-	-
		PM		SB Left	11	B	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	SSSC	WB Left	14	B	-	-
		PM		WB Left	**41**	**E**	-	-
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	11	B
		PM		-	-	-	11	B
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	11	B
		PM		-	-	-	20	C
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**82**	**F**
		PM		-	-	-	**85**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	13	B
		PM		-	-	-	20	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle) and is only reported for signalized intersections and roundabouts.
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

As shown in **Table 10**, all study intersections operated within acceptable LOS (LOS D or better), with the exception of the following locations:

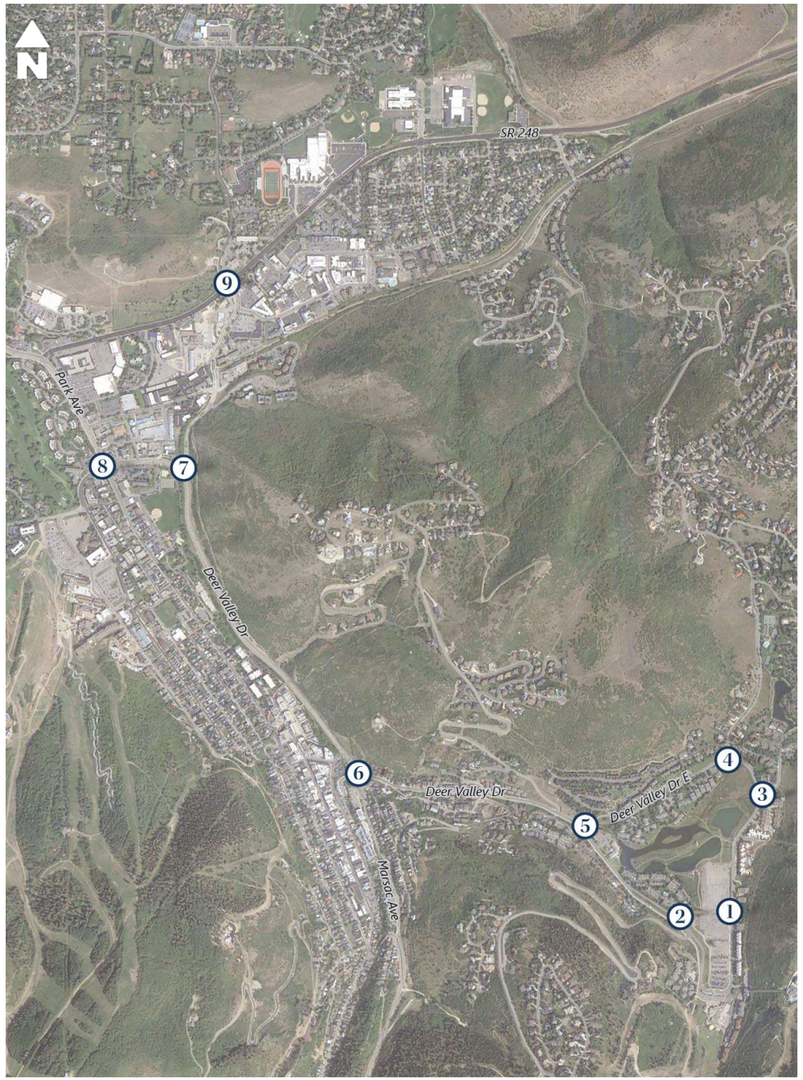
- Deer Valley Drive East / Deer Valley Drive West: LOS E in the PM peak hour
    - This is caused by the high volumes of vehicles exiting the Deer Valley Resort area making a westbound right turn onto Deer Valley Drive West. The westbound approach is stop-controlled, making it difficult for vehicles to find a gap and turn onto Deer Valley Drive West.

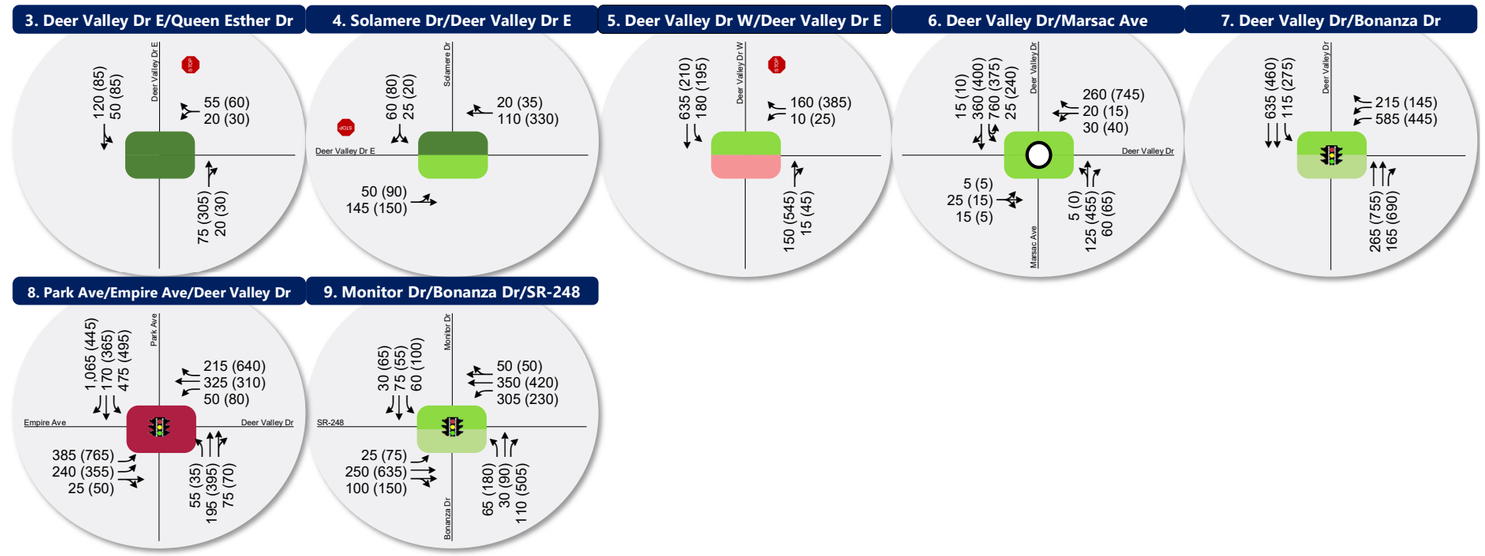
- Deer Valley Drive / Park Avenue / Empire Avenue: LOS F in both AM and PM peak hours
    - This is caused by high congestion at the signal due to high volumes accessing various ski resorts and downtown Park City.

It should be noted that while the Bonanza Drive / Deer Valley Drive intersection operates within acceptable LOS, it is often impacted by vehicle queues spilling back to this intersection from the upstream intersection at Deer Valley Drive / Park Avenue / Empire Avenue in the PM peak hour.

6.3 Mitigation Measures

The concept master plan for Snow Park Village shows re-alignment and signalization of the Deer Valley Drive East / Deer Valley Drive West intersection, which will alter the westbound LOS at this intersection. Therefore, Fehr & Peers does not recommend any mitigation measures for opening year background conditions.





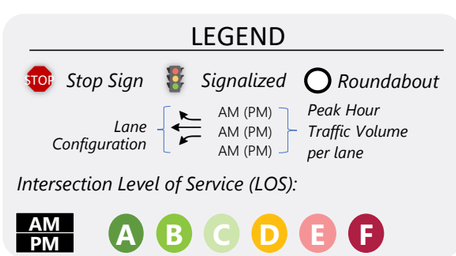


Figure 9

Opening Year 2024 Background Saturday AM & PM Peak Hour Traffic Conditions

7. Opening Year (2024) Plus Project Conditions

The purpose of the opening year 2024 plus project conditions analysis is to evaluate the impact of the proposed development traffic on the surrounding roadway network in the year 2024, the proposed opening year of the development. To analyze this impact, the projected 2024 Saturday AM and PM peak hour background traffic volumes were combined with volumes generated by the development for the Saturday AM and PM peak hours. Intersection LOS analyses were then performed and compared to the results of the background traffic volumes. This comparison shows the impact of the proposed project in opening year 2024.

7.1 Traffic Volumes

Project-generated traffic (**Figure 6**) was added to the opening year 2024 background volumes (**Figure 9**) to yield Opening Year (2024) Plus Project Saturday AM and PM peak-hour traffic volumes at the study intersections as shown in **Figure 10**.

7.2 Level of Service Analysis

Using SimTraffic simulation software (for signalized and unsignalized intersections) and SIDRA software (for the roundabout) and the HCM 6 delay thresholds provided in the Introduction, opening year 2024 plus project Saturday AM and PM peak hour LOS were computed for each study intersection. The results of the analysis are reported in **Table 11** (see Appendix for the detailed LOS report).

Table 11: Opening Year 2024 plus Project Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	Signal	-	-	-	7	A
		PM		-	-	-	7	A
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC[4]	NB Left	15	B	-	-
		PM		NB Left	24	C	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	8	A	-	-
		PM		WB Right	20	C	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	8	A	-	-
		PM		SB Right	**78**	**F**	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	SSSC	WB Left	20	C	-	-
		PM		WB Right	**126**	**F**	-	-
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	16	C
		PM		-	-	-	16	C
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	12	B
		PM		-	-	-	**67**	**E**
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**80**	**F**
		PM		-	-	-	**88**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	14	B
		PM		-	-	-	22	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

As shown in **Table 11**, all study intersections operated within acceptable LOS (LOS D or better), with the exception of the following locations:

- Deer Valley Drive East / Solamere Drive: LOS F in the PM peak hour
  - This is caused by the queues at the stop-controlled westbound approach at the Deer Valley Drive East / Deer Valley Drive West intersection extending past Solamere Drive, making it difficult for the southbound vehicles to turn onto Deer Valley Drive East.
- Deer Valley Drive East / Deer Valley Drive West: LOS F in the PM peak hour

- This is caused by the high traffic volumes exiting the Deer Valley Resort area making a westbound right turn onto Deer Valley Drive. The westbound approach is stop-controlled, making it difficult for vehicles to find a gap and turn onto Deer Valley Drive West.

- Deer Valley Drive / Bonanza Drive: LOS E in the PM peak hour
  - This is caused by vehicle queues spilling back to this intersection from the upstream intersection at Deer Valley Drive / Park Avenue / Empire Avenue.
- Deer Valley Drive / Park Avenue / Empire Avenue: LOS F in both AM and PM peak hours
  - This is caused by high congestion at the signal due to high volumes accessing various ski resorts and downtown Park City

It should be noted that the proposed Snow Park Village development introduces various support land uses intended to attract resort users to stay on-site after the ski resort peak hour. This will help distribute the peaking of traffic, reducing delays at the study intersections and roadways. Therefore, the results shown in **Table 11** are likely overstated.

7.3 Mitigation Measures

The Snow Park Village site plan includes realignment of the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection. The intersection is currently a "T"-intersection with free-flow movement north/south along Deer Valley Drive West / Deer Valley Drive, and a stop-control on the approach of Deer Valley Drive East. The proposed plan adds a signal at the intersection as shown in **Figure 8.** Deer Valley Drive West will serve as a primary transit and auto route to access the proposed transit hub and the main P2 parking level entrance on Doe Pass Road, and serve private vehicles accessing Royal Street and the Trail's End community. Deer Valley Drive East will serve as the secondary vehicular route to access the Snow Park drop-off/pick-up area and parking structure accesses that includes day skier spaces, hotel, and residences.

To evaluate how the study intersections would operate if driving behaviors do not change despite development, the traffic distribution of the background traffic at the Deer Valley Drive East / Deer Valley Drive West intersection was not modified, and project traffic was added. This was assumed to account for the historical use patterns and direct routes to the parking garages. This resulted in traffic splits similar to existing conditions at the Deer Valley Drive East / Deer Valley Drive West intersection with roughly 25% using Deer Valley Drive East and roughly 75% using Deer Valley Drive West inbound in the AM peak hour, and roughly 40% using Deer Valley Drive East and roughly 60% using Deer Valley Drive West outbound in the PM peak hour.

Park City has a longstanding position of not mitigating certain deficient intersections within its boundaries due to the impacts of road widening and other potential mitigations to the community. As a result, potential mitigations at the intersections of Deer Valley Drive / Park Avenue / Empire Avenue, Bonanza Drive / Monitor Drive / SR-248 were not analyzed as part of this study, and are therefore not included as recommendations. Further, deficiencies shown at the intersection of Deer Valley Drive / Bonanza Drive are not a result of project-generated trips or operations of the intersection itself; instead they stem from vehicle queues from the intersection of Deer Valley Drive / Park Avenue / Empire Avenue. As a result, mitigations at the intersection of Deer Valley Drive / Bonanza Drive are not recommended as part of this study. As stated earlier, Deer Valley Drive between the roundabout and SR-224 intersection is a UDOT facility. Any efforts to improve traffic will be led by UDOT.

The analysis results with the reconfigured Deer Valley Drive East / Deer Valley Drive West intersection are shown in **Table 12** (see Appendix for the detailed LOS report). As shown in **Table 12**, the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection operates at LOS A and LOS C in the AM and PM peak hour, respectively.

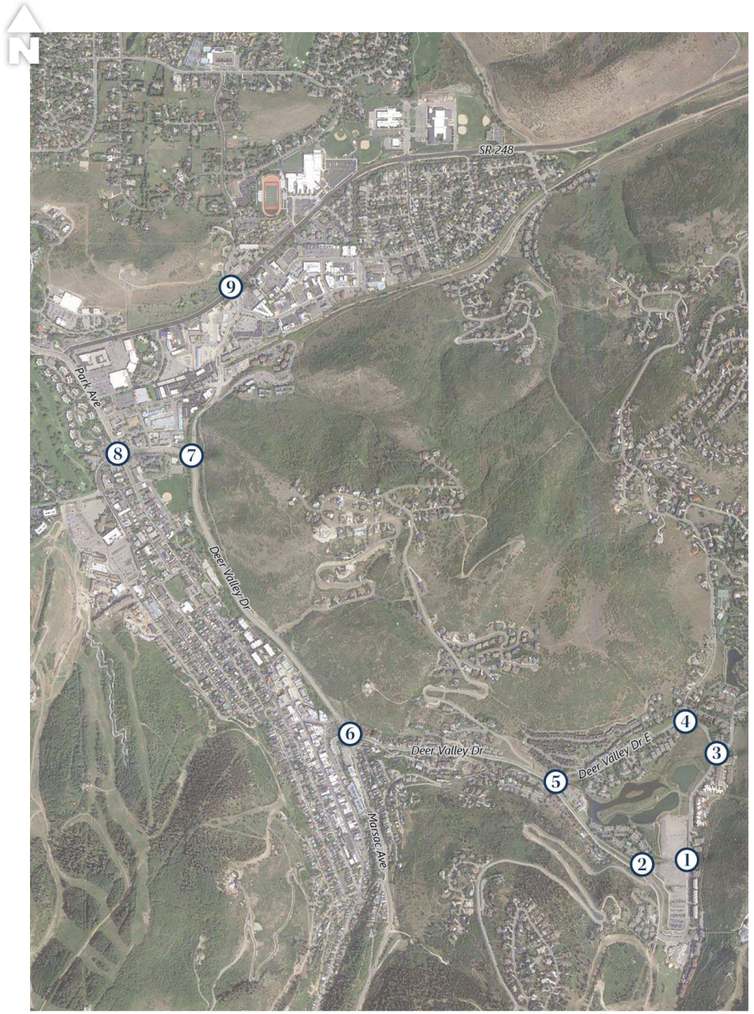
With increased traffic due to the development, the Deer Valley Drive East / Solamere Drive and Deer Valley Drive East / Queen Esther Drive intersections experience increased delays. As a mitigation, the Snow Park Village site plan includes new left-turn pockets at both the Deer Valley Drive East / Solamere Drive and Deer Valley Drive East / Queen Esther Drive intersections to improve traffic operations during peak periods and better facilitate inbound left turns, as well as a receiving lane to allow for two-stage left turns out of Solamere Drive and Queen Esther Drive.

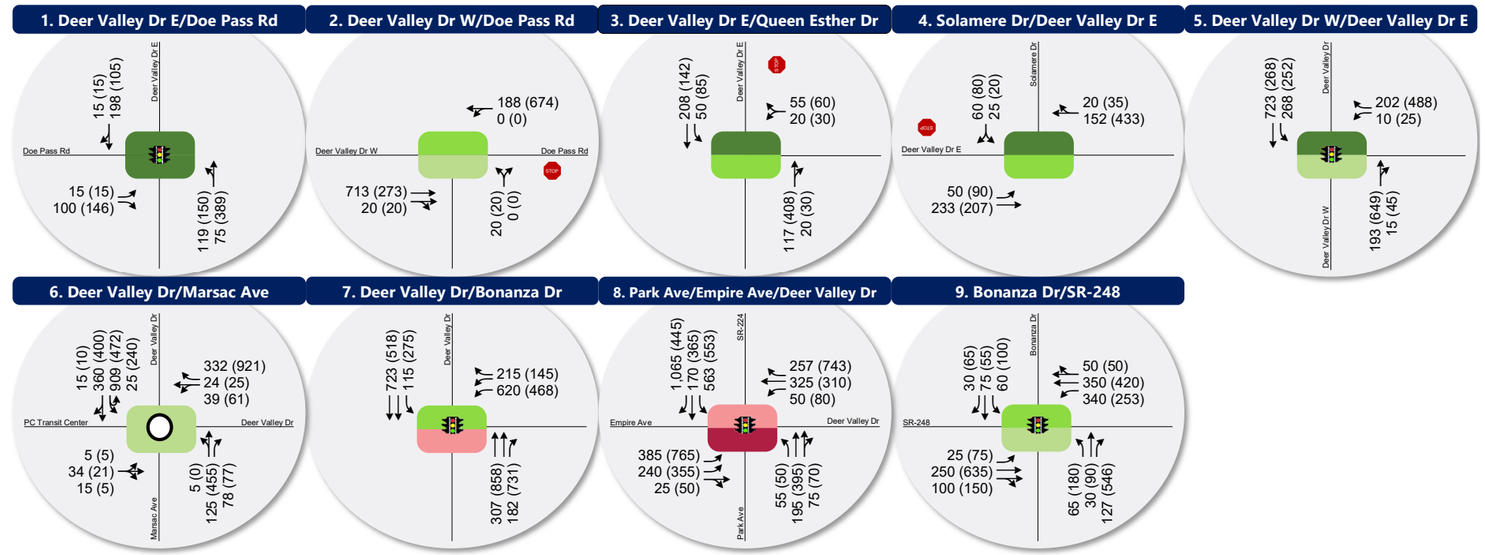
Table 12: Opening Year 2024 plus Project Mitigated Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	Signal	-	-	-	5	A
		PM		-	-	-	7	A
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC[4]	NB Left	10	B	-	-
		PM		NB Left	18	C	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Right	5	A	-	-
		PM		WB Left	10	B	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	6	A	-	-
		PM		SB Left	11	B	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	Signal	-	-	-	9	A
		PM		-	-	-	22	C
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	16	C
		PM		-	-	-	16	C
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	12	B
		PM		-	-	-	**76**	**E**
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**78**	**E**
		PM		-	-	-	**88**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	14	B
		PM		-	-	-	22	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound.
4. Side-street stop control.

Source: Fehr & Peers.





LEGEND

Stop Sign — Signalized — Roundabout

Lane Configuration: AM (PM) / AM (PM) / AM (PM) — Peak Hour Traffic Volume per lane

Intersection Level of Service (LOS):

AM / PM: A B C D E F

Figure 10

Opening Year 2024 Plus Project Saturday AM & PM Peak Hour Traffic Conditions

8. Future 2040 Background Conditions

The purpose of the future 2040 background conditions analysis is to evaluate the study intersections during peak travel periods under projected 2040 traffic volumes. This analysis provides a baseline condition for the year 2040, which can be used to determine future project impacts.

8.1 Traffic Volumes

Traffic volumes for 2040 were estimated using traffic counts and forecasted volumes from the Summit/Wasatch Travel Demand Model (September 2020 version) for 2040. The Summit/Wasatch Travel Demand Model shows a lower annual growth rate in the future by accounting for a higher mode split of transportation – higher usage of transit, walking, and biking than previous versions of travel demand models. The following annual growth rates used on the following roadways to project 2040 background weekday volumes as shown in **Figure 11**.

- 0.3% on Deer Valley Drive (SR-224) north of Bonanza Drive
- 0.7% on Deer Valley Drive (SR-224) south of Bonanza Drive
- 0.6% on Deer Valley Drive (SR-224) north of Marsac Avenue
- 0.9% on Deer Valley Drive (SR-224) east of Marsac Avenue
- 1.0% on Deer Valley Drive (SR-224) north of Deer Valley Drive West
- 0.8% on Deer Valley Drive (SR-224) south of Deer Valley Drive West
- 1.2% on Bonanza Drive
- 0.4% on Marsac Avenue

Based on the understanding that much of the lower Deer Valley is effectively built out, traffic volumes on Solamere Drive and Queen Esther Drive were not increased for future scenarios.

8.2 Level of Service Analysis

Using SimTraffic simulation software (for signalized and unsignalized intersections) and SIDRA software (for the roundabout) and the HCM 6 delay thresholds provided in the Introduction, future 2040 background weekday peak hour LOS was computed for each study intersection. The results of this analysis for the AM & PM peak hour are reported in **Table 13** (see Appendix for the detailed LOS report).

Table 13: Future 2040 Background Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	SSSC[4]	-	-	-	-	-
		PM		-	-	-	-	-
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC	-	-	-	-	-
		PM		-	-	-	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	7	A	-	-
		PM		WB Left	9	A	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	8	A	-	-
		PM		SB Left	15	C	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	SSSC	WB Left	17	C	-	-
		PM		WB Right	**112**	**F**	-	-
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	16	C
		PM		-	-	-	11	B
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	18	B
		PM		-	-	-	**59**	**E**
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**83**	**F**
		PM		-	-	-	**90**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	16	B
		PM		-	-	-	28	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle) and is only reported for signalized intersections and roundabouts.
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

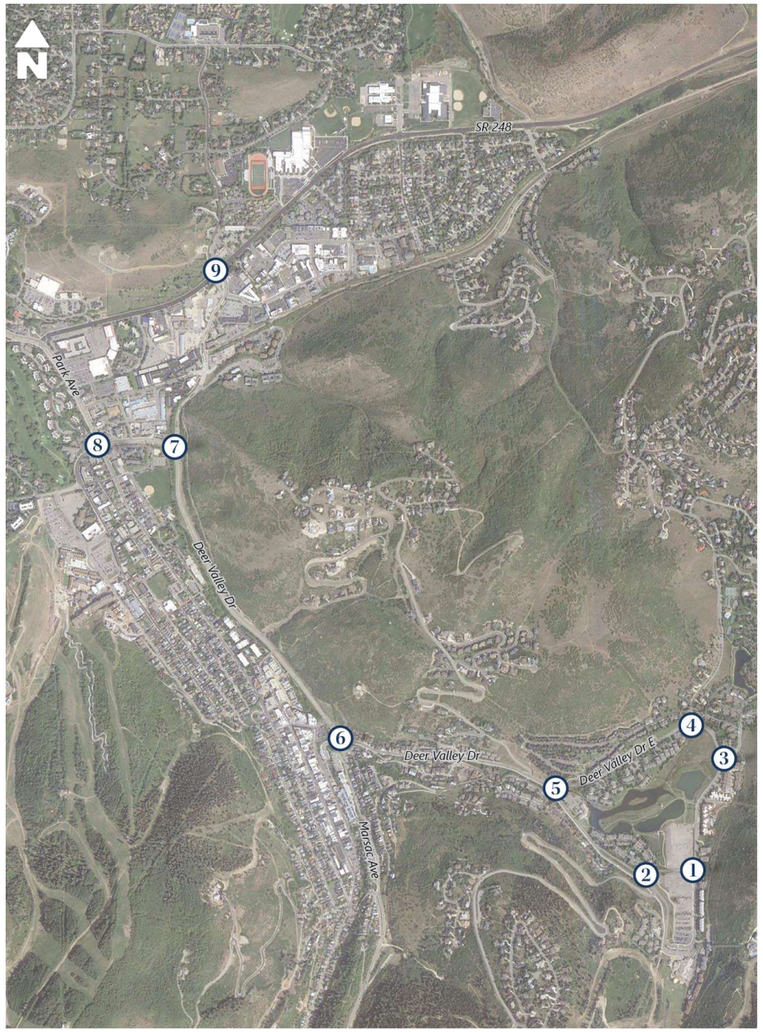
As shown in **Table 13**, all study intersections operated within acceptable LOS (LOS D or better), with the exception of the following locations:

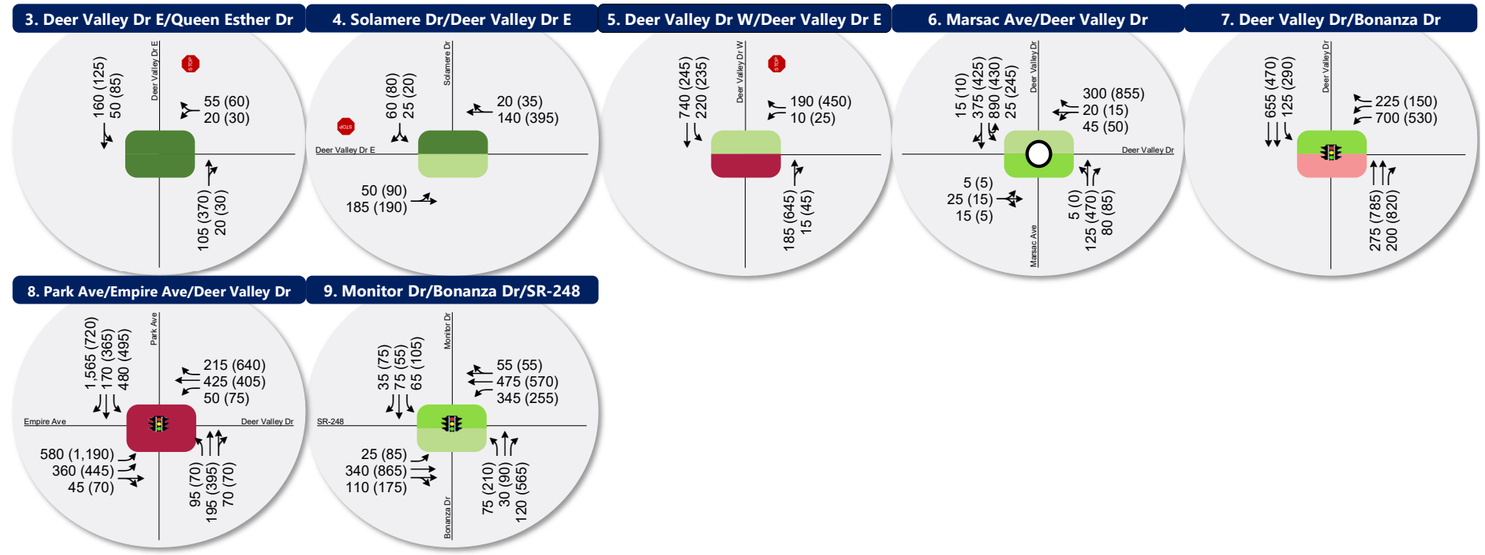
- Deer Valley Drive East / Deer Valley Drive West: LOS F in the PM peak hour
    - This is caused by the high volumes of vehicles exiting the Deer Valley Resort area making a westbound right turn onto Deer Valley Drive West. The westbound approach is stop-controlled, making it difficult for vehicles to find a gap and turn onto Deer Valley Drive West.

- Deer Valley Drive / Bonanza Drive: LOS E in the PM peak hour
    - This is caused by vehicle queues spilling back to this intersection from the upstream intersection at Deer Valley Drive / Park Avenue / Empire Avenue.
- Deer Valley Drive / Park Avenue / Empire Avenue: LOS F in both AM and PM peak hours
    - This is caused by high congestion at the signal due to high volumes accessing various ski resorts and downtown Park City.

8.3 Mitigation Measures

The site plan for the concept master plan for Snow Park Village shows re-alignment and signalization of the Deer Valley Drive East / Deer Valley Drive West intersection, which will alter the westbound LOS at this intersection. Therefore, Fehr & Peers does not recommend any mitigation measures for future 2040 background conditions.





LEGEND

Stop Sign — Signalized — Roundabout

Lane Configuration — AM (PM) / AM (PM) / AM (PM) — Peak Hour Traffic Volume per lane

Intersection Level of Service (LOS):

AM / PM — A B C D E F

Figure 11

Future 2040 Background Saturday AM & PM Peak hour Traffic Conditions

9. Future 2040 plus Project Conditions

9.1 Purpose

The purpose of the future 2040 plus project conditions analysis is to evaluate the impact of the proposed development traffic on the surrounding roadway network in the year 2040. To analyze this impact, the projected 2040 Saturday AM and PM peak hour background traffic volumes were combined with volumes generated by the conceptual development for the Saturday AM and PM peak hours. Intersection LOS analyses were then performed and compared to the results of the background traffic volumes. This comparison shows the impact of the conceptual project in 2040.

9.2 Traffic Volumes

Project-generated traffic (**Figure 7**) was added to the future 2040 background volumes (**Figure 11**) to yield "future 2040 plus project" Saturday AM and PM peak hour traffic volumes at the study intersections as shown in **Figure 12**.

9.3 Level of Service Analysis

Using SimTraffic simulation software (for signalized and unsignalized intersections) and SIDRA software (for the roundabout) and the HCM 6 delay thresholds provided in the Introduction, future 2040 plus project Saturday AM and PM peak hour LOS were computed for each study intersection for the conceptual site development. The results of the analysis are reported in **Table 14** (see Appendix for the detailed LOS report).

Table 14: Future 2040 plus Project Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	Signal	-	**-**	**-**	6	A
		PM		-	**-**	**-**	**65**	**E**
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC[4]	NB Left	21	C	-	-
		PM		NB Left	32	D	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	7	A	-	-
		PM		WB Right	**>300**	**F**	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	10	B	-	-
		PM		SB Right	**>300**	**F**	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	SSSC	WB Left	29	D	-	-
		PM		WB Left	**201**	**F**	-	-
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	26	D
		PM		-	-	-	20	C
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	21	C
		PM		-	-	-	**99**	**F**
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**91**	**F**
		PM		-	-	-	**90**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	16	B
		PM		-	-	-	32	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

As shown in **Table 14**, all study intersections operated within acceptable LOS (LOS D or better), with the exception of the following locations:

- Doe Pass Road / Deer Valley Drive East: LOS E in the PM peak hour
  - The delays at this intersection stem from the queues extending from the Deer Valley Drive East / Deer Valley Drive West, causing northbound delays at this signal.
- Queen Esther Drive / Deer Valley Drive East: LOS F in the PM peak hour

- This is caused by the queues at the stop-controlled westbound approach at the Deer Valley Drive East / Deer Valley Drive West intersection extending past Queen Esther Drive, making it difficult for the southbound vehicles to turn onto Deer Valley Drive East.

- Deer Valley Drive East / Solamere Drive: LOS F in the PM peak hour
  - This is caused by the queues at the stop-controlled westbound approach at the Deer Valley Drive East / Deer Valley Drive West intersection extending past Solamere Drive, making it difficult for the southbound vehicles to turn onto Deer Valley Drive East.
- Deer Valley Drive East / Deer Valley Drive West: LOS F in the PM peak hour
  - This is caused by the high volumes of vehicles exiting the Deer Valley Resort area making a westbound right turn onto Deer Valley Drive West. The westbound approach is stop-controlled, making it difficult for vehicles to find a gap and turn onto Deer Valley Drive West.
- Deer Valley Drive / Bonanza Drive: LOS F in the PM peak hour
  - This is caused by vehicle queues spilling back to this intersection from the upstream intersection at Deer Valley Drive / Park Avenue / Empire Avenue.
- Deer Valley Drive / Park Avenue / Empire Avenue: LOS F in both AM and PM peak hours
  - This is caused by congestion at the signal due to high volumes accessing various ski resorts and downtown Park City.

It should be noted that the proposed Snow Park Village development introduces various support land uses intended to attract resort users to stay on-site after the ski resort peak hour. This will help distribute the peaking of traffic, reducing delays at the study intersections and roadways. Therefore, the results shown in **Table 14** are likely overstated.

9.4 Mitigation Measures

The Snow Park Village site plan includes realignment of the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection. The intersection is currently a "T"-intersection with free-flow movement north/south along Deer Valley Drive West / Deer Valley Drive, and a stop-control on the approach of Deer Valley Drive East. The proposed plan adds a signal at the intersection, as shown in **Figure 8**. Deer Valley Drive West will serve as a primary transit and auto route to access the proposed transit hub and the main P2 parking level entrance on Doe Pass Road and serve private vehicles accessing Royal Street and the Trail's End community. Deer Valley Drive East will serve as the secondary vehicular route to access the Snow Park drop-off/pick-up area and parking structure accesses that includes day skier spaces, hotel, and residences.

To evaluate how the study intersections would operate if driving behaviors do not change despite development, the traffic distribution of the background traffic at the Deer Valley Drive East / Deer Valley Drive West intersection was not modified, and project traffic was added. This was assumed to account for the historical use patterns and direct routes to the parking garages. This resulted in traffic splits similar to existing conditions at the Deer Valley Drive East / Deer Valley Drive West intersection with roughly 25% using Deer Valley Drive East and roughly 75% using Deer Valley Drive West inbound in the AM peak hour, and roughly 40% using Deer Valley Drive East and roughly 60% using Deer Valley Drive West outbound in the PM peak hour.

Park City has a longstanding position of not mitigating certain deficient intersections within its boundaries due to the impacts of road widening and other potential mitigations to the community. As a result, potential mitigations at the intersections of Deer Valley Drive / Park Avenue / Empire Avenue, Bonanza Drive / Monitor Drive / SR-248 were not analyzed as part of this study and are therefore not included as recommendations. Further, deficiencies shown at the intersection of Deer Valley Drive / Bonanza Drive are not a result of project-generated trips or operations of the intersection itself; instead they stem from vehicle queues from the intersection of Deer Valley Drive / Park Avenue / Empire Avenue. As a result, mitigations at the intersection of Deer Valley Drive / Bonanza Drive are not recommended as part of this study. As stated earlier, Deer Valley Drive between the roundabout and SR-224 intersection is a UDOT facility. Any efforts to improve traffic will be led by UDOT.

The analysis results with the reconfigured Deer Valley Drive East / Deer Valley Drive West intersection are shown in **Table 15** (see Appendix for the detailed LOS report). As shown in **Table 15**, the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection operates at LOS B and LOS D in the AM and PM peak hour, respectively.

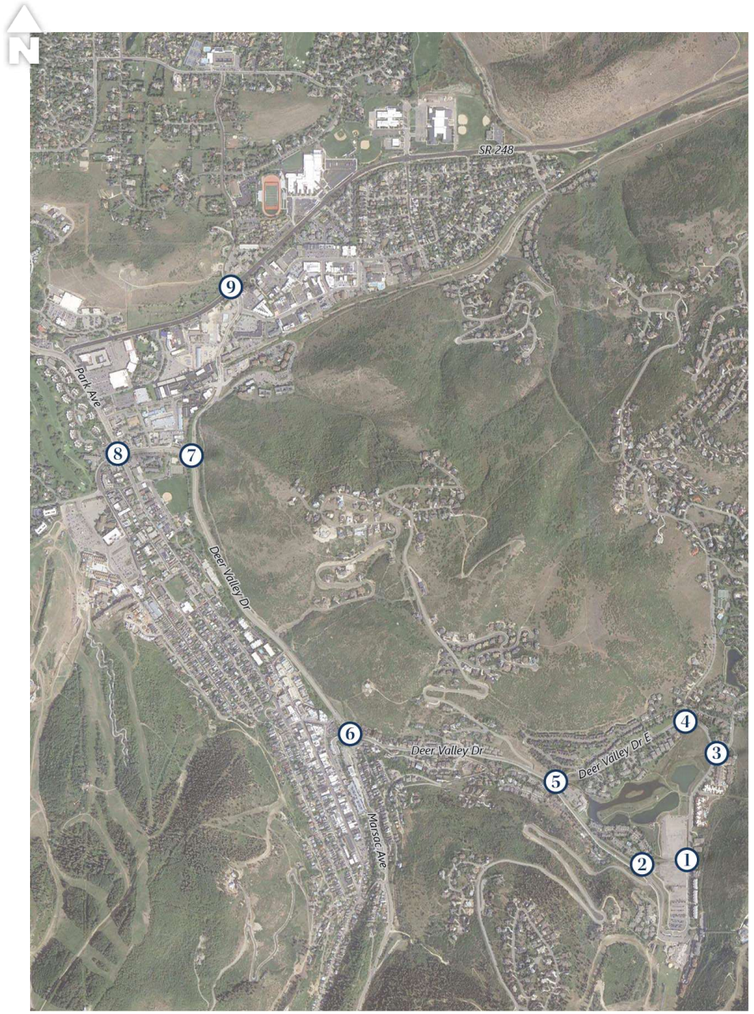
With increased traffic due to the development, the Deer Valley Drive East / Solamere Drive and Deer Valley Drive East / Queen Esther Drive intersections experience increased delays. As a mitigation, the Snow Park Village site plan includes new left-turn pockets at both the Deer Valley Drive East / Solamere Drive and Deer Valley Drive East / Queen Esther Drive intersections to improve traffic operations during peak periods and better facilitate inbound left turns, as well as a receiving lane to allow for two-stage left turns out of Solamere Drive and Queen Esther Drive.

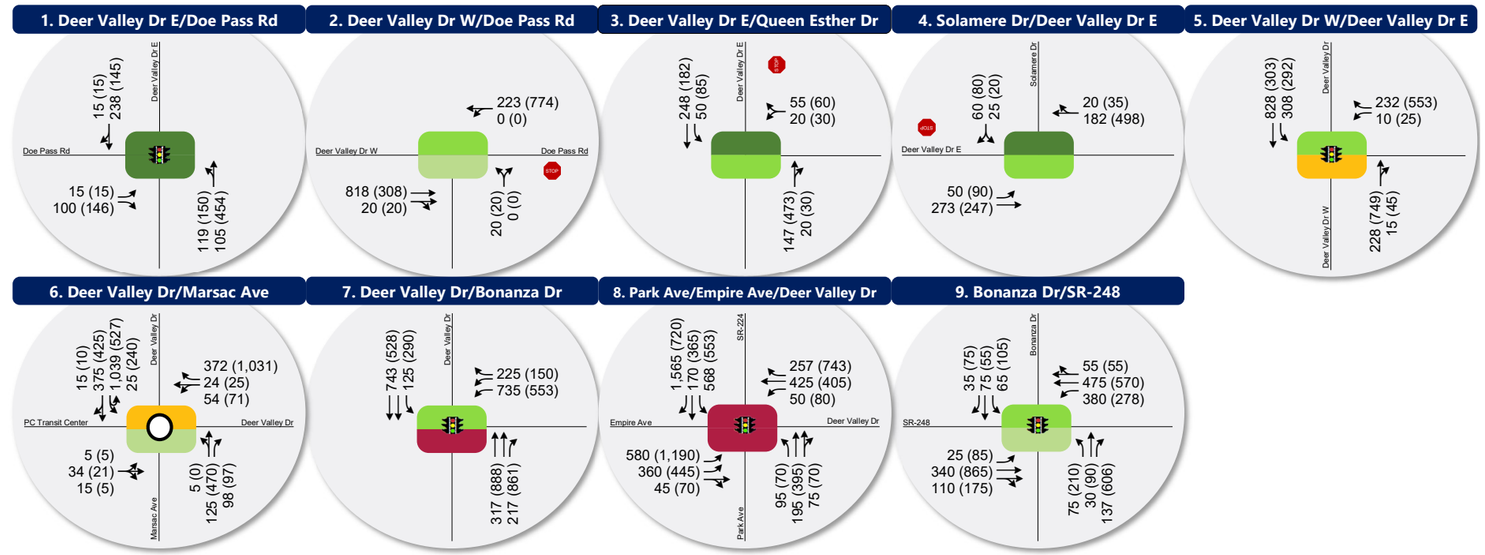
Table 15: Future 2040 plus Project Mitigated Conditions Saturday AM & PM Peak Hour Level of Service

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / Deer Valley Dr East	AM	Signal	-	-	-	5	A
		PM		-	-	-	8	A
2	Doe Pass Rd / Deer Valley Dr West	AM	SSSC[4]	NB Left	13	B	-	-
		PM		NB Left	20	C	-	-
3	Queen Esther Dr / Deer Valley Dr East	AM	SSSC	WB Left	6	A	-	-
		PM		WB Left	11	B	-	-
4	Deer Valley Dr East / Solamere Dr	AM	SSSC	SB Left	7	A	-	-
		PM		SB Left	12	B	-	-
5	Deer Valley Dr / Deer Valley Dr East / Deer Valley Dr West	AM	Signal	-	-	-	11	B
		PM		-	-	-	44	D
6	Deer Valley Drive / Marsac Avenue	AM	Roundabout	-	-	-	26	D
		PM		-	-	-	20	C
7	Deer Valley Dr / Bonanza Dr	AM	Signal	-	-	-	14	B
		PM		-	-	-	**117**	**F**
8	Deer Valley Dr / Park Ave / Empire Ave	AM	Signal	-	-	-	**84**	**F**
		PM		-	-	-	**89**	**F**
9	Bonanza Dr / Monitor Dr / SR-248	AM	Signal	-	-	-	15	B
		PM		-	-	-	31	C

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.





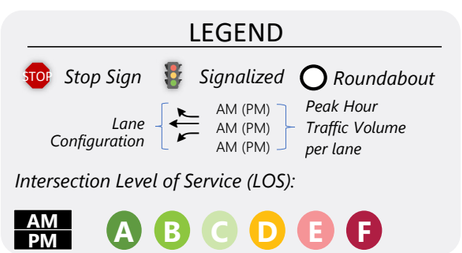


Figure 12

Future 2040 Plus Project Saturday AM & PM Peak Hour Traffic Conditions

10. Roadway Analysis

The purpose of the roadway analysis is to document the Saturday peak hour roadway volumes to determine the LOS of the internal project roadways.

10.1 Analysis Results

The roadway LOS was calculated based on planning level generalized peak hour two-way volumes for roadway capacities, as shown in **Table 16**. These volumes are published by the Florida Department of Transportation (FDOT) based on planning applications of the HCM and are widely used for planning level evaluation of roadway capacity. **Table 16** shows the peak hour two-way capacity estimates for a 2-lane roadway in areas over 5,000 population not in urbanized areas.

Table 16: Roadway Level of Service Peak Hour Two-Way Traffic Thresholds

Level of Service	Peak Hour Traffic Capacity Estimates
	2 Lanes
LOS B or better	≤ 820
LOS C	821 – 1,550
LOS D	1,551 – 2,190
LOS E or worse	> 2,190

Source: Fehr & Peers, based on FDOT Generalized Peak Hour Two-Way Volumes for areas over 5,000 not in urbanized areas.

The same assumption used for previous analyses (similar traffic splits at the Deer Valley Drive East / Deer Valley Drive West intersection as current conditions) were applied for the roadway volumes.

Table 17 shows the peak hour roadway LOS analysis for each scenario. As shown in **Table 17**, all internal roadways are expected to operate at LOS C or better with the current 2-lane configuration for all scenarios.

Table 17: Snow Park Village Roadway LOS Analysis Summary

Scenario	Saturday Peak Hour	Deer Valley Dr W (South of Y-Intersection)		Deer Valley Dr E (East of Y-Intersection)	
		Two-Way Volume[1]	LOS	Two-Way Volume[1]	LOS
Existing	AM	650	A/B	400	A/B
	PM	800	A/B	620	A/B
Existing plus Project	AM	930	C	490	A/B
	PM	970	C	800	A/B
Opening Year 2024 plus Project	AM	950	C	500	A/B
	PM	990	C	810	A/B
Future 2040 plus Project	AM	1,090	C	570	A/B
	PM	1,130	C	920	C

1. Rounded up to the nearest 10.
Source: Fehr & Peers.

Existing roadway count sheets are included in the Appendix.

11. Site Circulation Analysis

The January 2022 Transportation Analysis reported conditions at external intersections, as well as the two proposed intersections on Doe Pass Road at Deer Valley Drive East and Deer Valley Drive West, which were analyzed in SimTraffic simulation software and SIDRA software. Furthermore, microsimulation analysis was conducted to evaluate on-site circulation as part of the proposed Snow Park Village. Due to the limitations of SimTraffic software in evaluating multimodal conditions and garage access operations, VISSIM microsimulation software was used for on-site circulation analysis.

11.1.1 Conditions and Assumptions

The parameters described below were used for analysis as assumptions in the VISSIM model:

11.1.1.1 Volumes

The following high-level assumptions were used to assign volumes to individual driveways and approach routing:

- 2040 Peak-hour volumes as presented in Section 9 of this study
- Trip generation as presented in Section 4 of this study
- Assumed roughly 75%/25% split of traffic using Deer Valley Drive West versus Deer Valley Drive East inbound in the AM peak hour (current patterns)
- Assumed roughly 60%/40% split of traffic using Deer Valley Drive West versus Deer Valley Drive East outbound in the PM peak hour (current patterns)
- Proportion of parking supply by garage level

The assumed intersection and driveway volumes are shown in **Figure 13**. Note that the lane configurations shown on the figure reflect proposed conditions, except for at the P2 and P3 garage accesses, which are proposed to have flex lanes that can be ingress or egress, depending on the peak hour and volume demand.

11.1.1.2 Parking Garage Gate Transaction

Based on input received from WGI, the parking garage design and operations consultant, the following parking garage gate transaction times were assumed in the model:

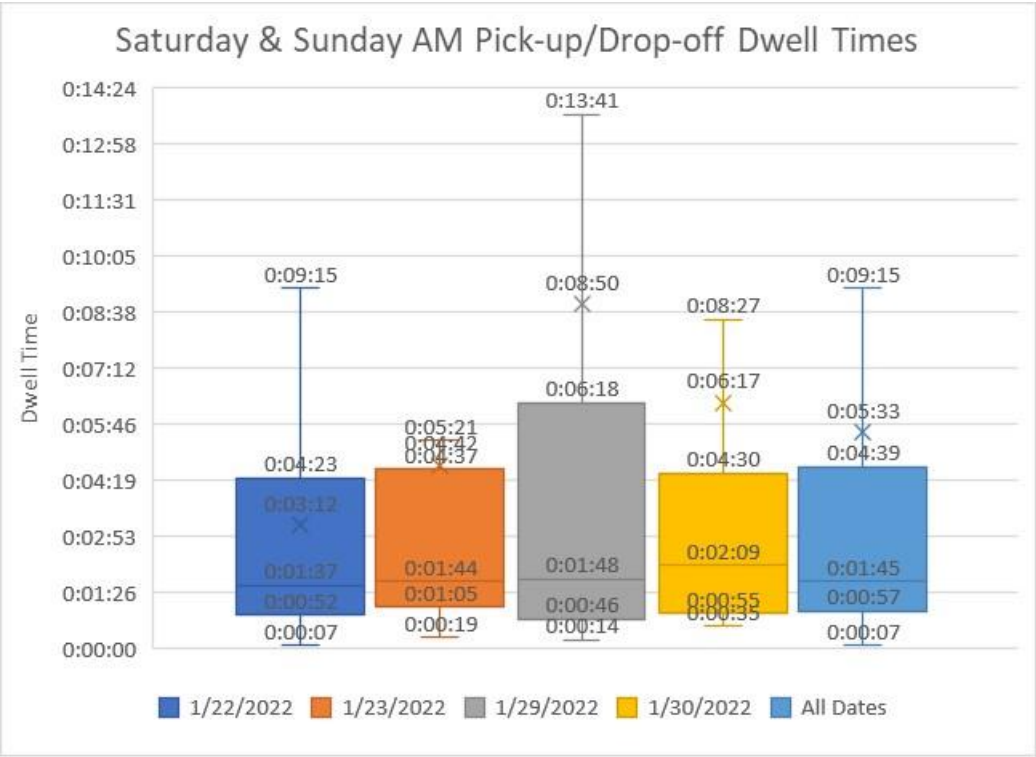
- Average of 4 seconds/vehicle for entry (this was assumed for conservative results, as the development is aiming for a system that would allow free-flow entry)
- Average of 10 seconds/vehicle for exit

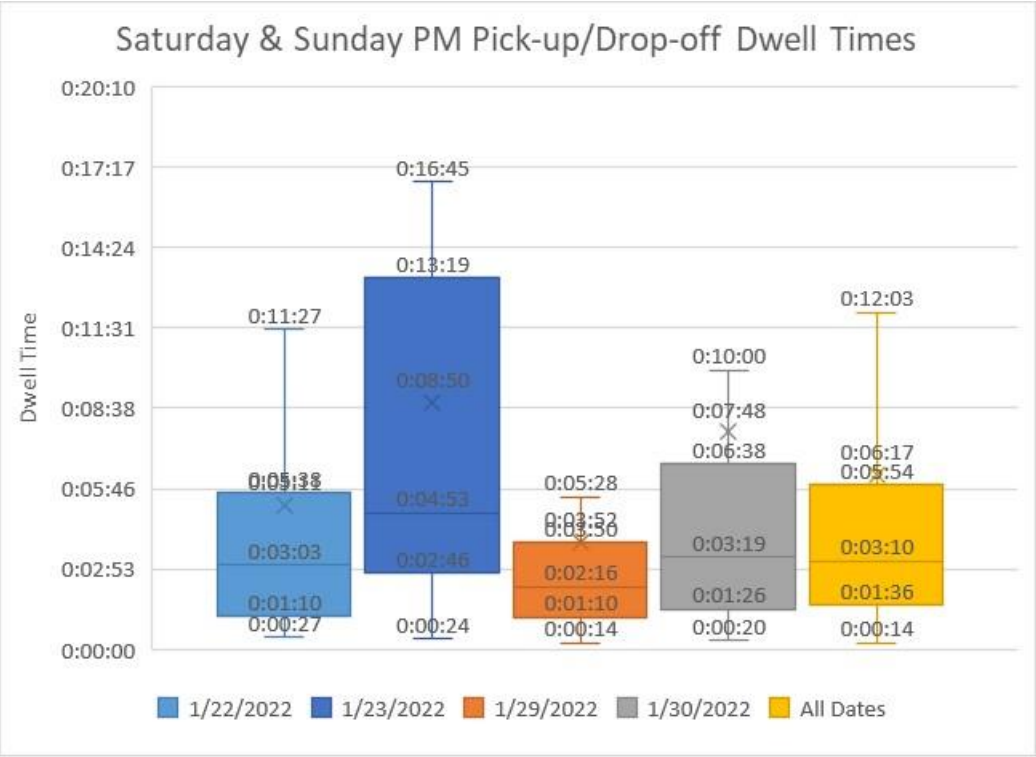
11.1.1.3 Pick-up/Drop-off

The following assumptions were made for the model regarding the proposed new pick-up/drop-off loop in front of Snow Park Lodge at the southern terminus of Deer Valley Drive East:

- 200 vehicles were allocated to use the pick-up/drop-off in both AM and PM peak hours
  - 100 vehicles as pick-up/drop-off
  - 50 vehicles as Transportation Network Company (TNC) users
  - 50 vehicles as Valet users

Video observations were recorded at the current Snow Park Lodge pick-up/drop-off as part of data collection for curbside and pedestrian activity in January 2022. These videos were used to observe a sample of dwell times for the pick-up/drop-off users to assist with the simulation modeling. The charts below show the dwell times for a sample of 100 vehicles and 95 vehicles in the weekend AM and PM peak hour, respectively. The AM peak hour dwell times ranged from 7 seconds to 1 hour 26 minutes 11 seconds, with a median of 1 minute 45 seconds. The PM peak hour dwell times ranged from 14 seconds to 1 hour 1 minute 9 seconds, with a median of 3 minutes 10 seconds. The VISSIM model was modified to reflect the dwell times from these samples at the proposed new pick-up/drop-off zone.





11.1.1.4 Other Considerations

To evaluate conditions under the most conservative analysis scenario, 2040 weekend AM and PM peak hours were analyzed.

11.1.2 Analysis Results

Intersection delay, Level of Service (LOS), and queueing results were evaluated in the VISSIM model at the following locations, as shown in **Figure 13**.

1. Doe Pass Road / P2 Parking Garage Access
2. Doe Pass Road / P1 Parking Garage Access
3. Doe Pass Road / Mobility Hub Entrance
4. Doe Pass Road / Mobility Hub Exit
5. P2 Parking Garage Access / Deer Valley Drive East
6. P3 Parking Garage Access / Deer Valley Drive East
7. P4 Parking Garage Access / Deer Valley Drive East
8. Snow Park Lodge Pick-up/Drop-off

The same analysis methodology (as described in the previous sections) was used for this analysis.

Table 18 below (see Appendix for the detailed LOS reports) shows the intersection delay and LOS results from the VISSIM simulation model. As shown in **Table 18**, all study intersections operate at acceptable LOS with the exception of the following locations:

- Doe Pass Road / Mobility Hub Exit: LOS E in the PM peak hour
  - This is caused by the stop control for the buses exiting the mobility hub onto Doe Pass Road.
- Snow Park Lodge Pick-up/Drop-off: LOS E in both AM and PM peak hours
  - This is caused by delays at the pick-up/drop-off zone that the VISSIM simulation has limitations in simulating efficient operations. This can likely be mitigated by efficient operations assisted by Deer Valley staff.

Table 18: Future 2040 Plus Project Conditions Saturday AM & PM Peak Hour Level of Service Site Circulation Results

Intersection				Worst Movement[1]			Overall Intersection[2]	
ID	Location	Period	Control	Movement[3]	Delay Sec/Veh	LOS	Avg. Delay Sec/Veh	LOS
1	Doe Pass Rd / P2 Parking	AM	SSSC	EB Right	12	B	-	-
		PM		NB Left	11	B	-	-
2	Doe Pass Rd / P1 Parking	AM	SSSC	NB Left	9	A	-	-
		PM		NB Left	10	B	-	-
3	Doe Pass Rd / Mobility Hub Entrance	AM	SSSC	WB Left	2	A	-	-
		PM		EB Right	3	A	-	-
4	Doe Pass Rd / Mobility Hub Exit	AM	SSSC	NB Right	33	D	-	-
		PM		NB Left	**37**	**E**	-	-
5	P2 Parking / Deer Valley Dr East	AM	SSSC	EB Left	9	A	-	-
		PM		EB Left	6	A	-	-
6	P3 Parking / Deer Valley Dr East	AM	SSSC	SB Through	5	A	-	-
		PM		EB Left	9	A	-	-
7	P4 Parking / Deer Valley Dr East	AM	SSSC	SB Through	17	C	-	-
		PM		EB Right	23	C	-	-
8	Snow Park Lodge Pick-up/Drop-off	AM	-	SB Through	**44**	**E**	-	-
		PM		SB Through	**44**	**E**	-	-

Notes:
Bold text indicates intersections operating below Park City's acceptable LOS threshold.
1. This represents the worst approach LOS and delay (seconds/vehicle) and is only reported for side-street stop controlled intersections.
2. This represents the overall intersection LOS and delay (seconds/vehicle) and is only reported for signalized intersections and all-way stop controlled intersections.
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
4. Side-street stop control.

Source: Fehr & Peers.

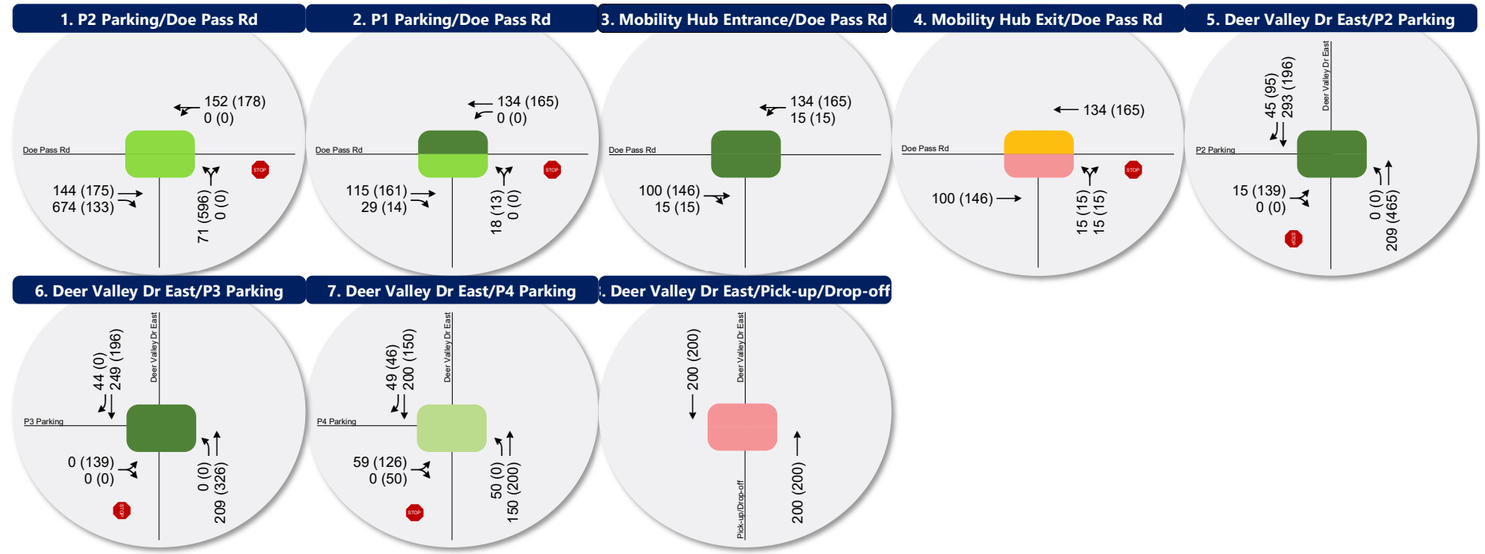
11.1.2.1 Sensitivity Analysis

As described throughout this report, assumptions of traffic distribution at the Deer Valley Drive East / Deer Valley Drive West were made based on patterns similar to current conditions. It is likely that based on driver behavior and expectation, the actual traffic distributions will be different at the time of opening and in subsequent weeks, months, and years as preferences are established and transportation options evolve.

A sensitivity analysis shows that in the AM peak hour, the P2 access on Doe Pass Road becomes a constraint that potentially causes congestion, with inbound queues backing up onto Deer Valley Drive West under traffic conditions similar to the existing conditions (roughly 80% entering via Deer Valley Drive West).

Operations at this key driveway also depend on the transaction time for entry (assumed to be 4 seconds for the purpose of microsimulation analysis in this report, which was validated by a national parking operations consultant). As this entry transaction time is reduced due to improved technology or adjustments to when and how parking is paid for and validated, traffic distributions at the "Y" intersection have less effect on traffic operations.

To provide efficient and safe traffic circulation on-site and on the Deer Valley Drive Loop, Deer Valley and Snow Park Village will be committed to provide extensive wayfinding and traffic monitoring, especially to improve inbound operations where visitors will be informed whether to travel on Deer Valley Drive West or Deer Valley Drive East.



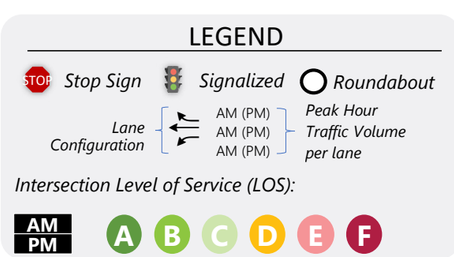


Figure 13
2040 Site Circulation Analysis Intersection LOS Results

Table 19 (see Appendix for the detailed queue report) below shows the average maximum queue for each approach at the study intersections. The following lists locations that the average maximum queue is expected to exceed the storage length in the AM peak hour:

- Doe Pass Road / P2 Parking
  - Eastbound queues occasionally extend past the Doe Pass Road / Deer Valley Drive West intersection. This queue is caused by queue spillback beginning at the gate to enter the P2 Parking Garage Access and the high inbound volumes in the AM peak hour.
- Doe Pass Road / Mobility Hub Entrance
  - Westbound queues occasionally extend past the mobility hub exit. The average queue, however, is 1 feet, and the queue spillback is not expected to be a common occurrence.
- Doe Pass Road / Mobility Hub Exit
  - Westbound queues occasionally extend past the Doe Pass Road / Deer Valley Drive East intersection. The average queue, however, is 2 feet, and the queue spillback is not expected to be a common occurrence.

The following lists locations that the average maximum queue is expected to exceed the storage length in the PM peak hour:

- Doe Pass Road / Deer Valley Drive East
  - Eastbound queues occasionally extend past the Mobility Hub Exit. The average queue, however, is 2 feet, and the queue spillback is not expected to be a common occurrence.
- Doe Pass Road / Mobility Hub Entrance
  - Westbound queues occasionally extend past the mobility hub exit. The average queue, however, is less than 1 feet, and the queue spillback is not expected to be a common occurrence.
- Doe Pass Road / Mobility Hub Exit
  - Westbound queues occasionally extend past the Doe Pass Road / Deer Valley Drive East intersection. The average queue, however, is 2 feet, and the queue spillback is not expected to be a common occurrence.
- Deer Valley Drive East / Deer Valley Drive West

- The simulation shows average maximum queues of over 500 feet for the westbound approach at the new signal. This queue however is not expected to reach the Solamere Drive intersection, especially with signal operations to assist in flushing out the heavy outbound movement via Deer Valley Drive East.

Table 19: Future 2040 Plus Project Conditions Saturday AM & PM Peak Hour Queues Site Circulation Analysis

Intersection				Average Maximum Queues (feet)[2]
ID	Location	Period	Approach[1]	
1	Doe Pass Rd / Deer Valley Dr East	AM	NB	75
			SB	175
			EB	100
		PM	NB	250
			SB	125
			EB	125
2	Doe Pass Rd / Deer Valley Dr West	AM	NB	50
			EB	375
			WB	25
		PM	NB	50
			EB	25
			WB	75
3	Queen Esther Dr / Deer Valley Dr East	AM	NB	0
			SB	25
			WB	100
		PM	NB	0
			SB	25
			WB	100
4	Deer Valley Dr East / Solamere Dr	AM	SB	50
			EB	0
			WB	50
		PM	SB	50
			EB	0
			WB	50
5	Deer Valley Dr East / Deer Valley Dr West	AM	NB	275
			SB	300
			WB	125
		PM	NB	525
			SB	175
			WB	350
6	Doe Pass Rd / P2 Parking	AM	NB	125
			EB	250
			WB	0

Intersection				Average Maximum Queues (feet)[2]
ID	Location	Period	Approach[1]	
		PM	NB	125
			EB	75
			WB	0
7	Doe Pass Rd / P1 Parking	AM	NB	100
			EB	0
			WB	0
		PM	NB	100
			EB	0
			WB	0
8	Doe Pass Rd / Mobility Hub Entrance	AM	EB	0
			WB	125
		PM	EB	25
			WB	125
9	Doe Pass Rd / Mobility Hub Exit	AM	NB	150
			EB	25
			WB	125
		PM	NB	150
			EB	25
			WB	125
10	P2 Parking / Deer Valley Dr East	AM	NB	0
			SB	25
			EB	75
		PM	NB	25
			SB	0
			EB	125
11	P3 Parking / Deer Valley Dr East	AM	NB	50
			SB	75
			EB	0
		PM	NB	75
			SB	50
			EB	125
12	P4 Parking / Deer Valley Dr East	AM	NB	0
			SB	25
			EB	100
		PM	NB	125

Intersection				Average Maximum Queues (feet)[2]
ID	Location	Period	Approach[1]	
			SB	0
			EB	150
13	Snow Park Lodge Pick-up/Drop-off	AM	NB	25
			SB	100
		PM	NB	225
			SB	100

Notes:
1. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound
2. Rounded up to nearest 25'.

Source: Fehr & Peers.

It should be noted that the LOS results and queue results shown in **Table 18** and **Table 19** capture the delays and queues at the side-streets for vehicles turning onto the major road. However, it does not capture the delays and queues for vehicles experienced at the parking gate due to the assumed transaction time. The VISSIM simulation indicates that with the assumed gate transaction times, vehicles are expected to experience over 100 seconds of delay per vehicle to exit the garage in the PM peak hour, with potentially long internal queues.

Figure 14

2040 Site Circulation Analysis Queue Results

12. Parking Analysis

A fundamental aspect of the Snow Park Village proposal is the implementation of a constrained, structured parking supply that will require parkers to pay a daily fee. This strategy is seen as a key disincentive to traveling in Park City by single-occupant vehicle, and aligns with the City's broader mobility goals. However, Snow Park Village proposes no reductions to the parking supply and will build to the Park City LMC requirements.

12.1 Analysis Method

For the shared parking analysis of the updated land use plan, the development is proposed to include 11 buildings which include the following land uses (taken from the land use program dated October 26, 2021):

- 30,900 square feet of ballroom/event center space
- 143 multifamily housing units
- 193 hotel rooms with 4,500 square feet of hotel support uses.
- 25,900 square feet of commercial/retail space

The development is also proposed to include the Deer Valley Ski resort and other land uses in support of the resort. It should be noted that the land uses supporting the ski resort will not be parking generators; rather, the ski resort will be the parking generator, and the support land uses serve as accessories to the resort.

In The most recent submittal (November 2022), Fehr & Peers applied reductions to the recommended parking due to paid parking and shared parking. However, Snow Park Village now proposes to build the full parking supply required by the Park City LMC. From the proposed land uses that generate parking demand as listed above, and the recommended rates from the Park City zoning code, the minimum required parking supply was calculated to be 2,236 stalls.

Table 20 outlines the number of recommended stalls with recommended rates from the Park City zoning code, and the number of stalls proposed by Snow Park Village. Parking calculations are attached in the Appendix. As shown in **Table 20**, the proposed parking supply is sufficient for the proposed land use program. It should be noted that phasing and ongoing refinement of the land use program may adjust the base parking rates and recommendations.

Table 20: Snow Park Village Parking Analysis Summary

Base Recommended Stalls	Proposed Stalls
2,236	**2,262**

Source: Fehr & Peers

12.2 Parking Management

An effective and efficient parking management system is essential to maintain both a high-quality user experience and to minimize traffic impacts on adjacent roadways. An essential element to improve the efficiency of structured parking is to provide real time information regarding parking availability. In addition to implementing payment technology that expedites vehicle ingress at all driveways, Deer Valley will work with relevant partners to ensure more complete information is available to parkers.

The Snow Park Parking Management Plan is included in **Attachment B.**

13. Transit Evaluation

This section includes an evaluation of existing transit service and infrastructure, proposed transit improvements, and description of how the Snow Park Village proposal aligns with Park City's *Transit First* policy.

13.1.1 Existing Transit Service

In addition to a multitude of private shuttles and buses, there are two public transit operators providing transit service to and from Deer Valley: Park City Transit and High-Valley Transit. High Valley Transit operates one route that services Deer Valley:

- 101 – Spiro / 224 Local that services Deer Valley.

Park City Transit operates six routes the service Deer Valley:

- 1 Red: Prospector Square – Deer Valley
- 2 Green: Park Meadows/Thaynes Canyon – Deer Valley
- 3 Blue: Thaynes Canyon/Park Meadows – Deer Valley
- 5 Yellow: Prospector Square – Deer Valley
- 40 Bronze: Main Street – Royal Street – Silver Lake Lodge
- 50 Teal: Prospector Square – Deer Valley

Park City Transit Park City Transit is undergoing a short-range service plan update, with potential changes in transit service to and from Deer Valley expected in the coming year.

Local bus stops are provided along both sides of Deer Valley Drive East and Deer Valley Drive West, allowing transit riders to board buses that are Deer Valley- or Old Town-bound. At the southern end of the Deer Valley Drive loop closest to the existing Snow Park base area, there are bi-directional bus stops that can accommodate up to four buses at once. Aside from the existing bi-directional stops at Snow Park, bus stops do not include shelters. Buses providing service to Deer Valley travel in mixed traffic.

13.2 Proposed Transit Improvements

A proposed six bus-bay mobility hub at the northeast corner of Snow Park Village will provide a comfortable and appealing transit facility on-site that provides direct access to the project and relocated ski lift bases. The mobility hub will also include accommodations for cyclists and allow for electric bus charging

infrastructure. This mobility hub will allow for increased frequency of transit service which will be essential to incentivizing transit service.

To further support transit service as part of the Snow Park Village proposal, a new traffic signal with transit preemption capabilities is proposed at the Doe Pass Road / Deer Valley Drive East intersection. This will help ensure that transit vehicles accessing and exiting the proposed mobility hub with limited conflicting traffic.

Furthermore, this circulation plan includes a proposed seasonal one-way Shared Mobility Lane (SML) inbound from the Deer Valley Drive East / Deer Valley Drive West intersection along Deer Valley Drive West, accessing the mobility hub. Outbound transit traffic will have the SML which parallels general purpose traffic around the loop on Deer Valley Drive East to the Deer Valley Drive East / Deer Valley Drive West intersection. After ski season during the summer months, the SML will be open to bicycle traffic. Management, maintenance, and enforcement, year-round, will be a City responsibility.

The VISSIM simulation presented previously in chapter 11 simulates the SML and captures the impacts of the design. The simulation shows traffic circulation with minimal delays with the proposed configuration in peak ski season conditions. Because of the lack of congestion, the buses simulated in this analysis travel in near free-flow conditions. This was due to the models being calibrated to typical travel times. Bus and vehicle travel time measurements were provided by Deer Valley and Park City, which showed several outlier days with excessive travel times. However, the calibrated VISSIM model travel times were closer to the median travel times observed from the data. The Shared Mobility Lane proposed in this alternative will likely improve bus travel times in more congested conditions, such as special events, snow conditions, etc.

14. Transportation Demand Management

Park City, through its ongoing Transportation Master Plan update, has identified the laudable and ambitious goal of reducing vehicle trips by 20% throughout Park City. The City is tackling this challenge through a variety of strategies, including but not limited to the following:

- Updates to the local and regional transit system
- Coordination with partner agencies to implement greater park-and-ride capacity
- Expansion of high-quality active transportation facilities throughout Park City
- Partnerships with private developments to implement and operate comprehensive Transportation Demand Management (TDM) programs

Furthering the City's broader trip reduction goal, Deer Valley will continue to operate its TDM program, and expand on current offerings, to better align with the adopted PCMC TDM Plan (2016). A high-level summary of the Deer Valley TDM Plan is shown below in **Table 21**.

Table 21: Deer Valley TDM Measures

Measure	Status	Description
Transit pass subsidy	Existing Program	Subsidized UTA transit passes for Deer Valley employees living in Salt Lake Valley and Utah Valley
Bicycle Amenities and Perks	New Program	Bicycle repair tools and dedicated bicycle parking at key locations
Education and Promotion	Existing Program	Educational and promotional events to encourage travelers to use by modes other than driving alone.
Parking Management	New Program	Efficient, constrained, and priced parking to discourage drive-alone trips
Employee Transit	Existing Program	Operate designated employee transit to facilitate efficient employee commutes through an appealing alternative until such time as Park City Transit and/or High Valley Transit meets this need
Real-Time Messaging	New Program	Communicate traffic conditions in real time to travelers
Appoint a TDM Coordinator	New Program	Identify a staff member to oversee the TDM program

Source: Fehr & Peers.

14.1 TDM Monitoring

As the transportation landscape in Park City and Summit County changes, monitoring the use and effectiveness of Deer Valley's TDM program will be crucial to its success. In alignment with requests from Park City staff, Deer Valley will implement an annual monitoring program consisting of the following elements:

- One nine day period of vehicle counts at all Snow Park Village driveways, to be analyzed and summarized by a third-party consultant. This data will be analyzed and summarized by a third-party consultant;
- Average vehicle occupancy collected on one weekday and one weekend day, collected by a third-party vendor, to be analyzed and summarized by a third-party consultant;
- A permanent traffic count station implemented at the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection, installed and maintained by Deer Valley for year-round monitoring of traffic conditions;
- Ski season transit ridership, summarized at the stop and daily levels and provided by transit operators, to be analyzed and summarized by a third-party consultant;
- Available data regarding program utilization from the *Ride On Park City* platform, to be analyzed and summarized by a third-party consultant.

Analysis of this data will be submitted in an annual monitoring memorandum for City staff review and will be supported by semiannual coordination meetings with City staff and other major employers in Park City. This monitoring program will be used to enhance program offerings and avoid redundancy of service where public and private options overlap.

14.2 Regional Considerations

Park City Municipal Corporation has a stated goal of reducing traffic volumes by 20% from existing traffic volumes (the specific, reference time period is to-be-defined). Deer Valley has operated an effective and comprehensive TDM program for years in support of this goal, and the proposed opening of an additional portal to Deer Valley via Mayflower Resort will improve access to Deer Valley to any skiers visiting from the Wasatch Front or Back and not require a trip through Park City. While this change will not solve all of Park City's traffic challenges, it will likely divert a substantial portion of traffic destined for Deer Valley.

The Deer Valley TDM Plan is presented in full in **Attachment C**.

15. Conclusion/Recommendations

With proposed mitigations in place, all study intersections at which mitigations are feasible and supported by the community operate at acceptable levels of service under all Plus Project analysis scenarios. Through dedicated transit infrastructure, improved active transportation connections between the Project and Park City's existing active transportation network, a fully reworked parking system, and management of ongoing TDM offerings in addition to new measures, the Snow Park Village proposal aligns with the City's *Transit First* policy by encouraging travel by means other than driving alone.

Implementing a new traffic signal with transit preemption at the intersection of Doe Pass Road / Deer Valley Drive East will improve traffic operations and support transit. A new traffic signal at the reconfigured Y intersection of Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West facilitates safer and more efficient movement for all modes. Implementing an off-street, multi-use path around the Deer Valley Drive loop will improve pedestrian and cyclist connectivity adjacent to the project site. Ongoing monitoring of TDM program effectiveness will maintain City-Deer Valley cooperation in pursuit of shared goals.

Appendix

L2 Data Collection

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Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
Page No : 1

Groups Printed- General Traffic

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
07:45 AM	71	123	0	194	19	4	0	23	2	18	0	20	237
Total	71	123	0	194	19	4	0	23	2	18	0	20	237
08:00 AM	110	101	0	211	34	2	0	36	5	21	1	27	274
08:15 AM	124	70	0	194	29	2	0	31	5	26	0	31	256
08:30 AM	117	55	0	172	53	10	0	63	4	29	0	33	268
08:45 AM	125	46	0	171	48	7	0	55	6	32	4	42	268
Total	476	272	0	748	164	21	0	185	20	108	5	133	1066
09:00 AM	111	35	0	146	54	7	0	61	2	31	0	33	240
09:15 AM	94	27	0	121	51	6	0	57	4	31	0	35	213
09:30 AM	77	42	0	119	55	13	0	68	4	43	0	47	234

Total	282	104	0	386	160	26	0	186	10	105	0	115	687

03:30 PM	81	47	0	128	67	4	0	71	13	69	0	82	281
03:45 PM	55	50	0	105	81	7	0	88	16	98	3	117	310
Total	136	97	0	233	148	11	0	159	29	167	3	199	591
04:00 PM	66	41	0	107	83	8	0	91	11	130	0	141	339
04:15 PM	46	49	6	101	73	3	0	76	18	155	0	173	350
04:30 PM	46	68	0	114	104	2	0	106	13	109	1	123	343
04:45 PM	54	58	0	112	71	5	0	76	13	91	2	106	294
Total	212	216	6	434	331	18	0	349	55	485	3	543	1326
05:00 PM	42	51	0	93	89	2	0	91	11	95	4	110	294
05:15 PM	30	55	0	85	63	4	0	67	9	78	0	87	239
Grand Total	1249	918	6	2173	974	86	0	1060	136	1056	15	1207	4440
Apprch %	57.5	42.2	0.3		91.9	8.1	0		11.3	87.5	1.2		
Total %	28.1	20.7	0.1	48.9	21.9	1.9	0	23.9	3.1	23.8	0.3	27.2	

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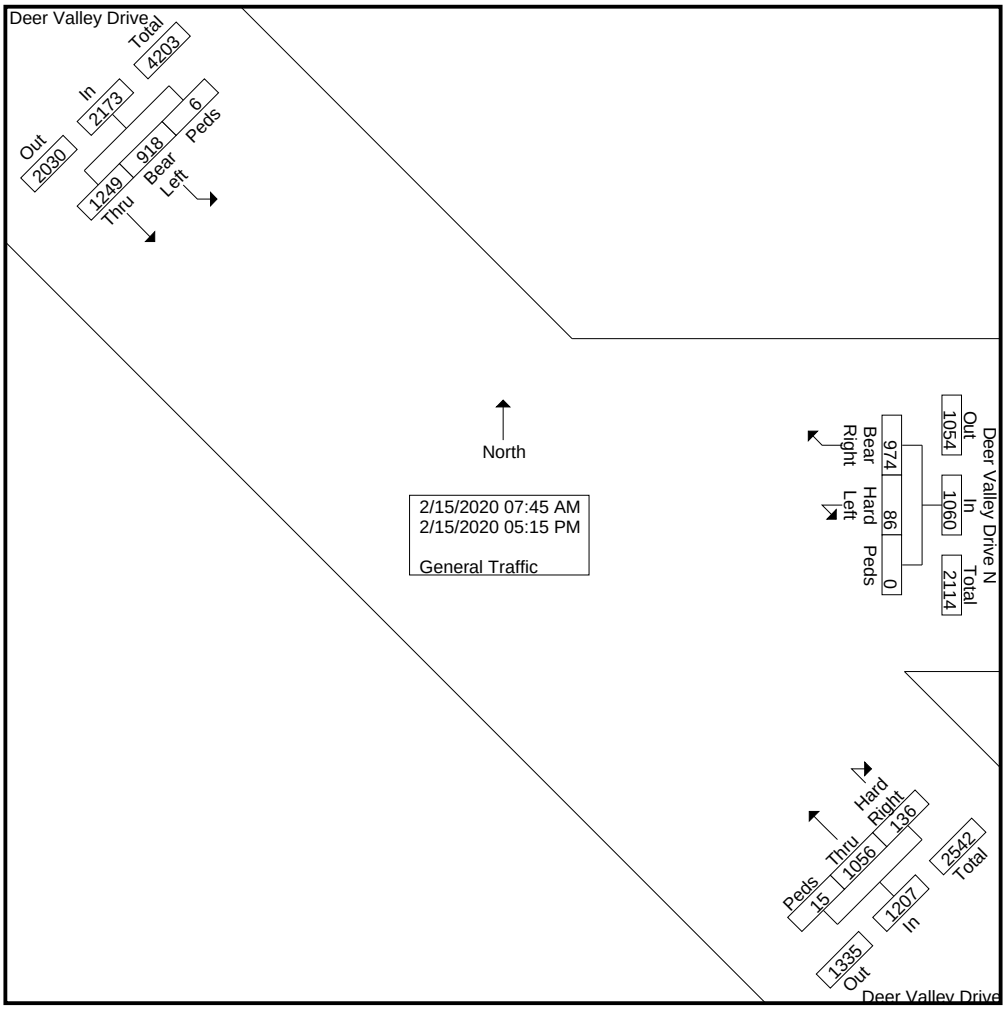
File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
Page No : 2



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City, State: Deer Valley, Utah
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File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
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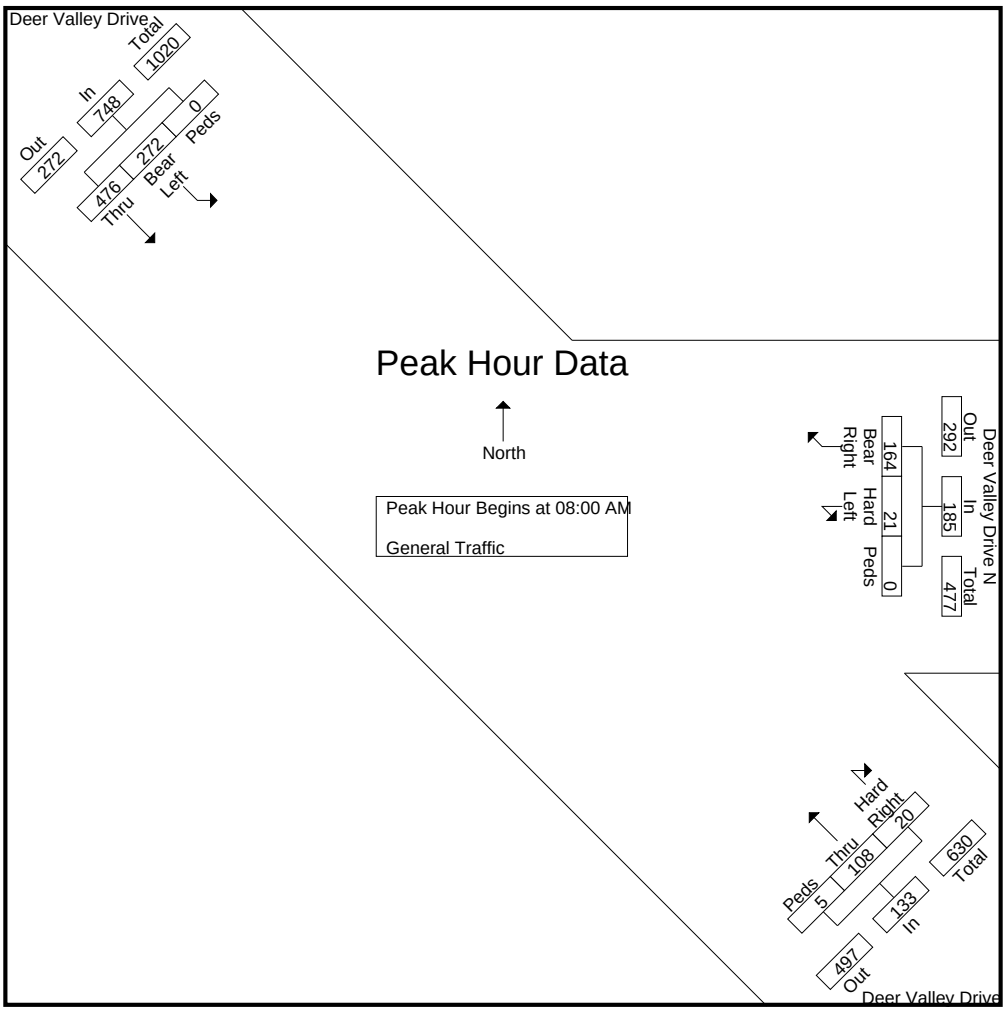
	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	110	**101**	0	**211**	34	2	0	36	5	21	1	27	**274**
08:15 AM	124	70	0	194	29	2	0	31	5	26	0	31	256
08:30 AM	117	55	0	172	**53**	**10**	0	**63**	4	29	0	33	268
08:45 AM	**125**	46	0	171	48	7	0	55	**6**	**32**	**4**	**42**	268
Total Volume	476	272	0	748	164	21	0	185	20	108	5	133	1066
% App. Total	63.6	36.4	0		88.6	11.4	0		15	81.2	3.8		
PHF	.952	.673	.000	.886	.774	.525	.000	.734	.833	.844	.313	.792	.973



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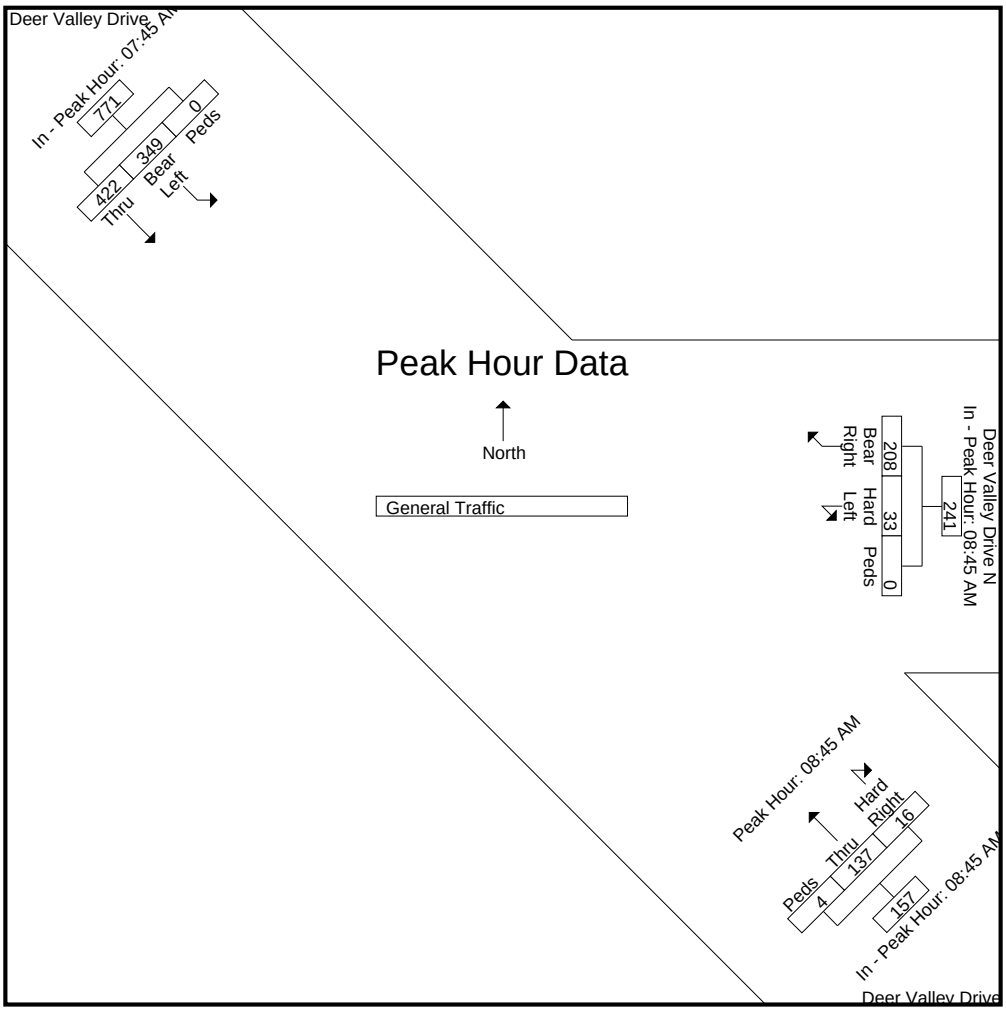
Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
Page No : 4

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:45 AM				08:45 AM				08:45 AM				
+0 mins.	71	**123**	0	194	48	7	0	55	**6**	32	**4**	42	
+15 mins.	110	101	0	**211**	54	7	0	61	2	31	0	33	
+30 mins.	**124**	70	0	194	51	6	0	57	4	31	0	35	
+45 mins.	117	55	0	172	**55**	**13**	0	**68**	4	**43**	0	**47**	
Total Volume	422	349	0	771	208	33	0	241	16	137	4	157	
% App. Total	54.7	45.3	0		86.3	13.7	0		10.2	87.3	2.5		
PHF	.851	.709	.000	.914	.945	.635	.000	.886	.667	.797	.250	.835	



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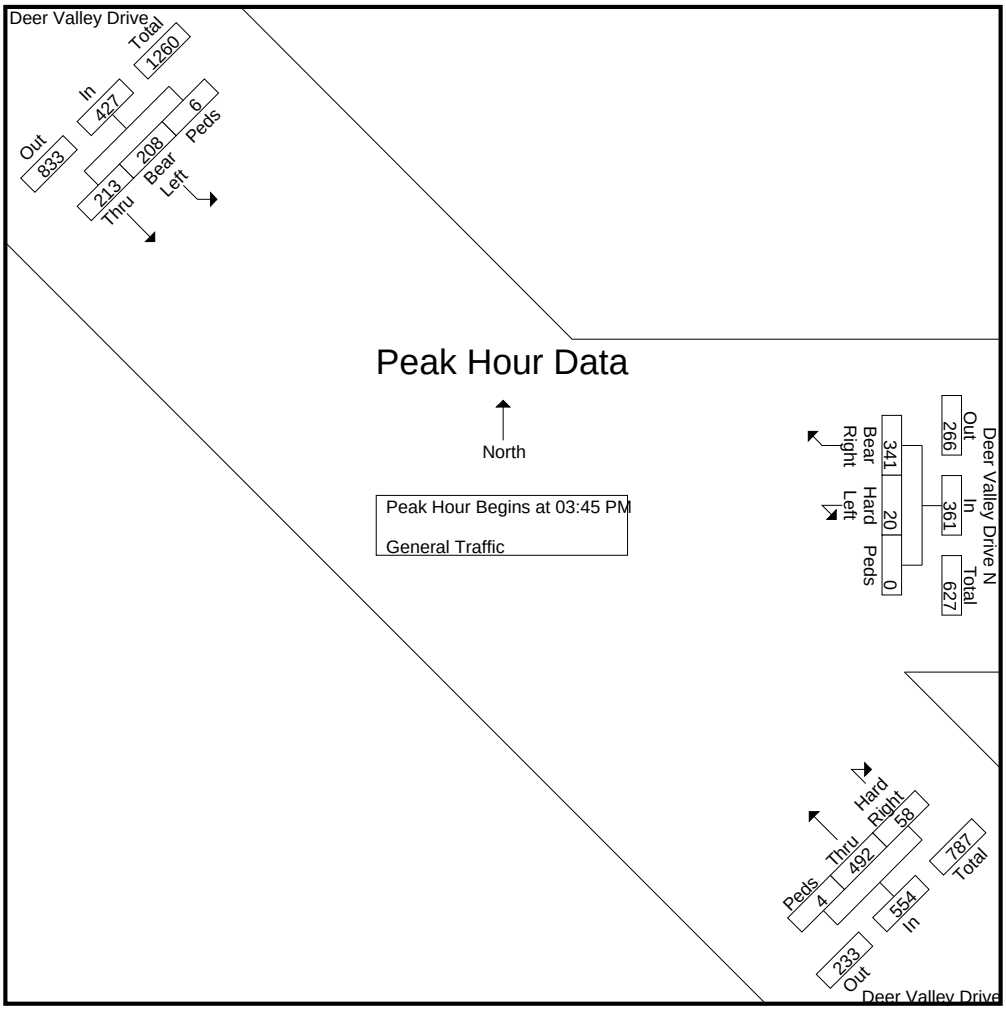
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
Page No : 5

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:45 PM													
03:45 PM	55	50	0	105	81	7	0	88	16	98	**3**	117	310
04:00 PM	**66**	41	0	107	83	**8**	0	91	11	130	0	141	339
04:15 PM	46	49	**6**	101	73	3	0	76	**18**	**155**	0	**173**	**350**
04:30 PM	46	**68**	0	**114**	**104**	2	0	**106**	13	109	1	123	343
Total Volume	213	208	6	427	341	20	0	361	58	492	4	554	1342
% App. Total	49.9	48.7	1.4		94.5	5.5	0		10.5	88.8	0.7		
PHF	.807	.765	.250	.936	.820	.625	.000	.851	.806	.794	.333	.801	.959



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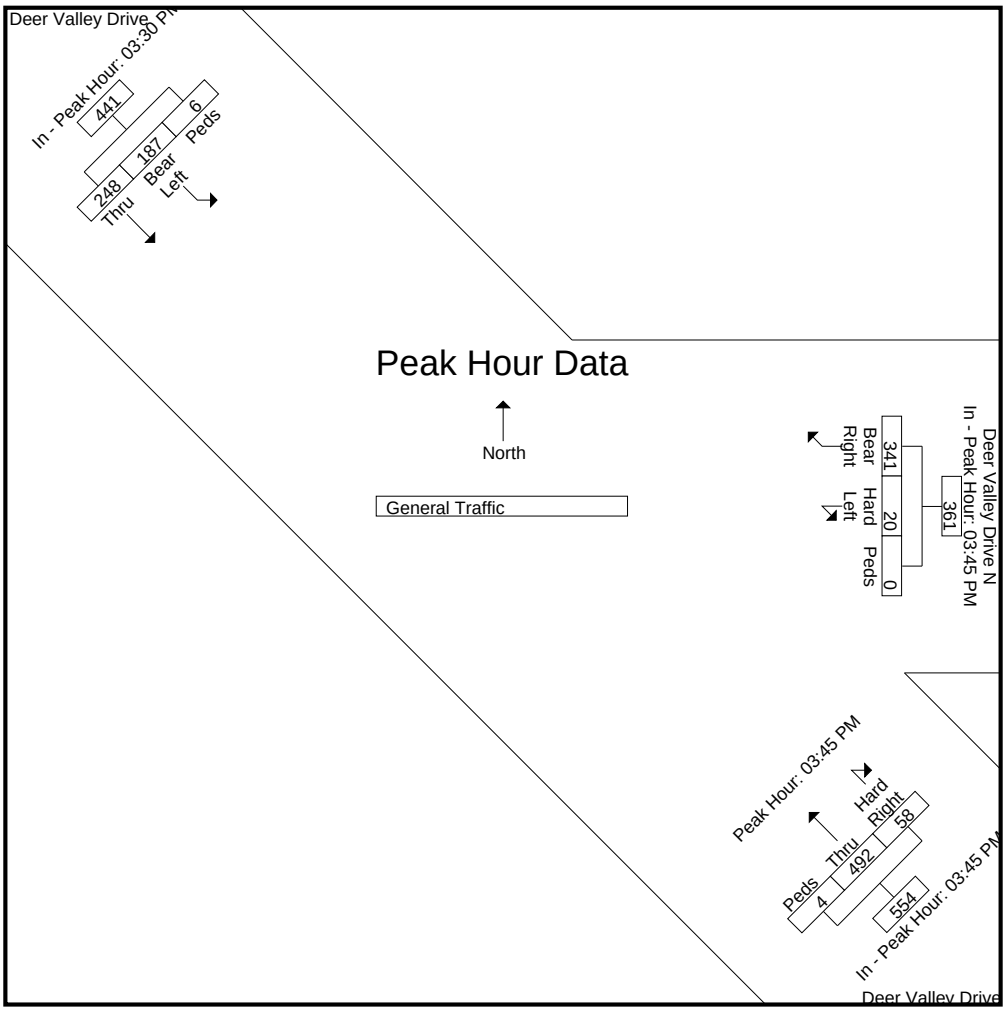
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
Page No : 6

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	03:30 PM				03:45 PM				03:45 PM				
+0 mins.	**81**	47	0	**128**	81	7	0	88	16	98	**3**	117	
+15 mins.	55	**50**	0	105	83	**8**	0	91	11	130	0	141	
+30 mins.	66	41	0	107	73	3	0	76	**18**	**155**	0	**173**	
+45 mins.	46	49	**6**	101	**104**	2	0	**106**	13	109	1	123	
Total Volume	248	187	6	441	341	20	0	361	58	492	4	554	
% App. Total	56.2	42.4	1.4		94.5	5.5	0		10.5	88.8	0.7		
PHF	.765	.935	.250	.861	.820	.625	.000	.851	.806	.794	.333	.801	



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Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D1
Site Code : Day 1
Start Date : 2/15/2020
Page No : 7

Image 1

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Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 1

Groups Printed- General Traffic

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
07:45 AM	53	73	0	126	21	1	0	22	2	21	0	23	171
Total	53	73	0	126	21	1	0	22	2	21	0	23	171
08:00 AM	104	59	0	163	38	0	0	38	2	19	0	21	222
08:15 AM	150	70	0	220	32	1	0	33	3	19	0	22	275
08:30 AM	160	35	0	195	36	5	0	41	5	33	0	38	274
08:45 AM	173	39	0	212	38	1	0	39	2	48	0	50	301
Total	587	203	0	790	144	7	0	151	12	119	0	131	1072
09:00 AM	144	32	0	176	50	0	0	50	5	47	1	53	279
09:15 AM	128	36	0	164	53	4	0	57	2	42	0	44	265
09:30 AM	149	35	0	184	43	5	0	48	2	31	1	34	266

Total	421	103	0	524	146	9	0	155	9	120	2	131	810

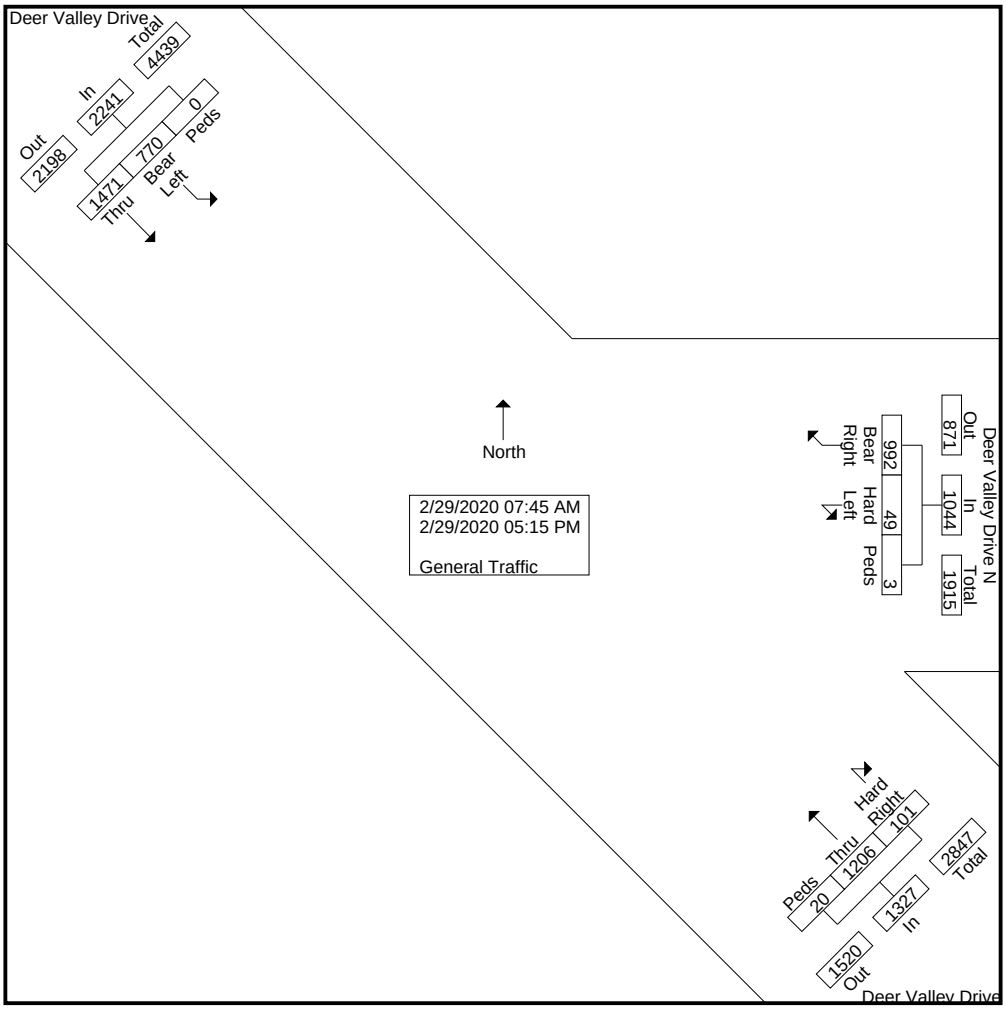
03:30 PM	66	48	0	114	103	3	1	107	10	111	0	121	342
03:45 PM	51	54	0	105	95	4	0	99	10	116	1	127	331
Total	117	102	0	219	198	7	1	206	20	227	1	248	673
04:00 PM	43	45	0	88	102	8	0	110	12	159	1	172	370
04:15 PM	63	52	0	115	76	8	2	86	9	140	0	149	350
04:30 PM	47	38	0	85	104	2	0	106	13	121	1	135	326
04:45 PM	57	61	0	118	66	2	0	68	6	97	4	107	293
Total	210	196	0	406	348	20	2	370	40	517	6	563	1339
05:00 PM	52	44	0	96	80	4	0	84	11	113	2	126	306
05:15 PM	31	49	0	80	55	1	0	56	7	89	9	105	241
Grand Total	1471	770	0	2241	992	49	3	1044	101	1206	20	1327	4612
Apprch %	65.6	34.4	0		95	4.7	0.3		7.6	90.9	1.5		
Total %	31.9	16.7	0	48.6	21.5	1.1	0.1	22.6	2.2	26.1	0.4	28.8	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 2



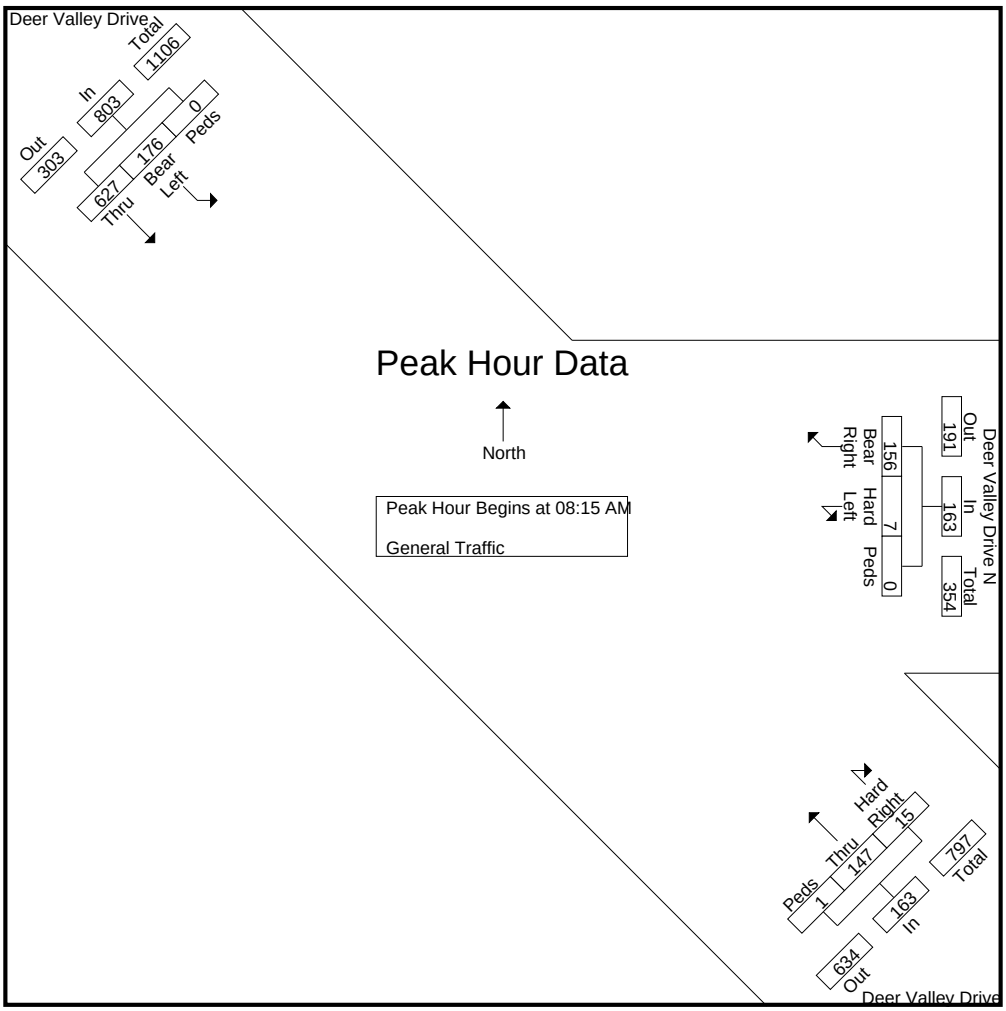
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 3

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:15 AM													
08:15 AM	150	**70**	0	**220**	32	1	0	33	3	19	0	22	275
08:30 AM	160	35	0	195	36	**5**	0	41	**5**	33	0	38	274
08:45 AM	**173**	39	0	212	38	1	0	39	2	**48**	0	50	**301**
09:00 AM	144	32	0	176	**50**	0	0	**50**	5	47	**1**	**53**	279
Total Volume	627	176	0	803	156	7	0	163	15	147	1	163	1129
% App. Total	78.1	21.9	0		95.7	4.3	0		9.2	90.2	0.6		
PHF	.906	.629	.000	.913	.780	.350	.000	.815	.750	.766	.250	.769	.938



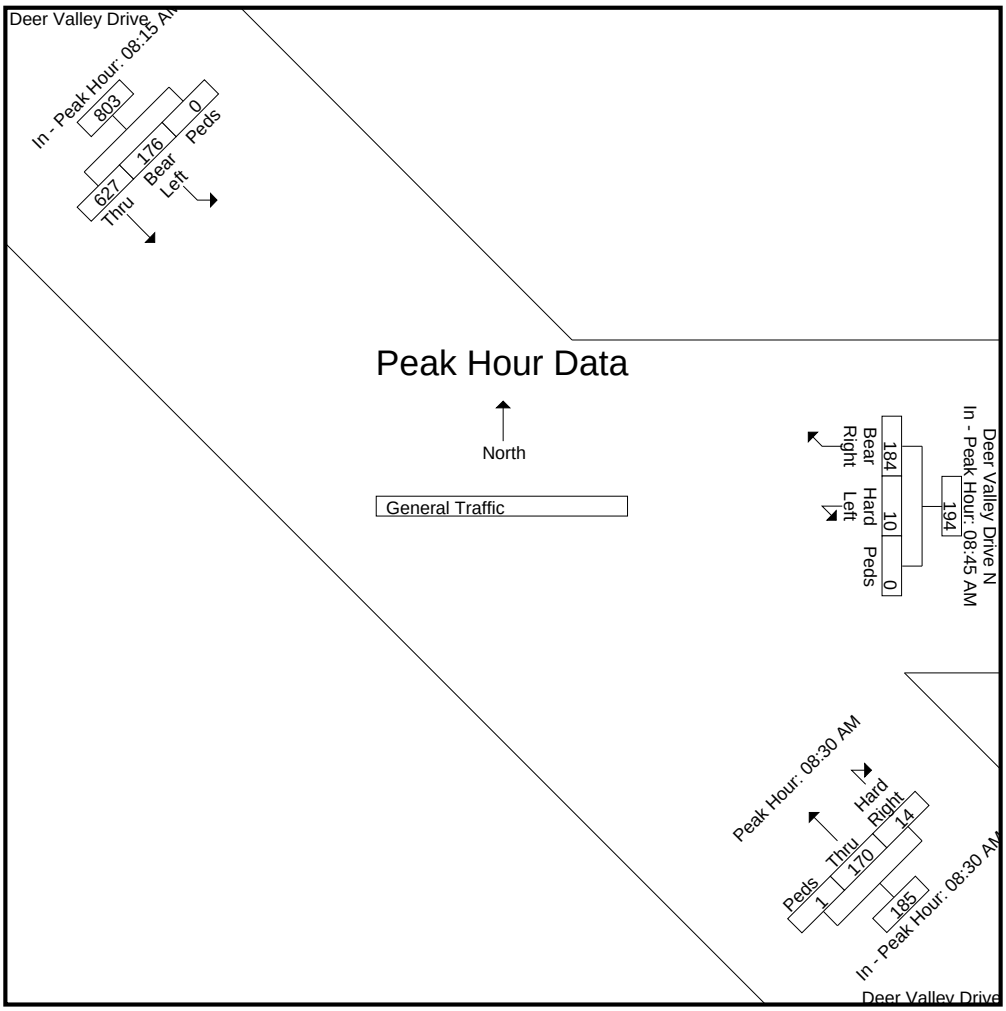
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 4

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	08:15 AM				08:45 AM				08:30 AM				
+0 mins.	150	**70**	0	**220**	38	1	0	39	**5**	33	0	38	
+15 mins.	160	35	0	195	50	0	0	50	2	**48**	0	50	
+30 mins.	**173**	39	0	212	**53**	4	0	**57**	5	47	**1**	**53**	
+45 mins.	144	32	0	176	43	**5**	0	48	2	42	0	44	
Total Volume	627	176	0	803	184	10	0	194	14	170	1	185	
% App. Total	78.1	21.9	0		94.8	5.2	0		7.6	91.9	0.5		
PHF	.906	.629	.000	.913	.868	.500	.000	.851	.700	.885	.250	.873	



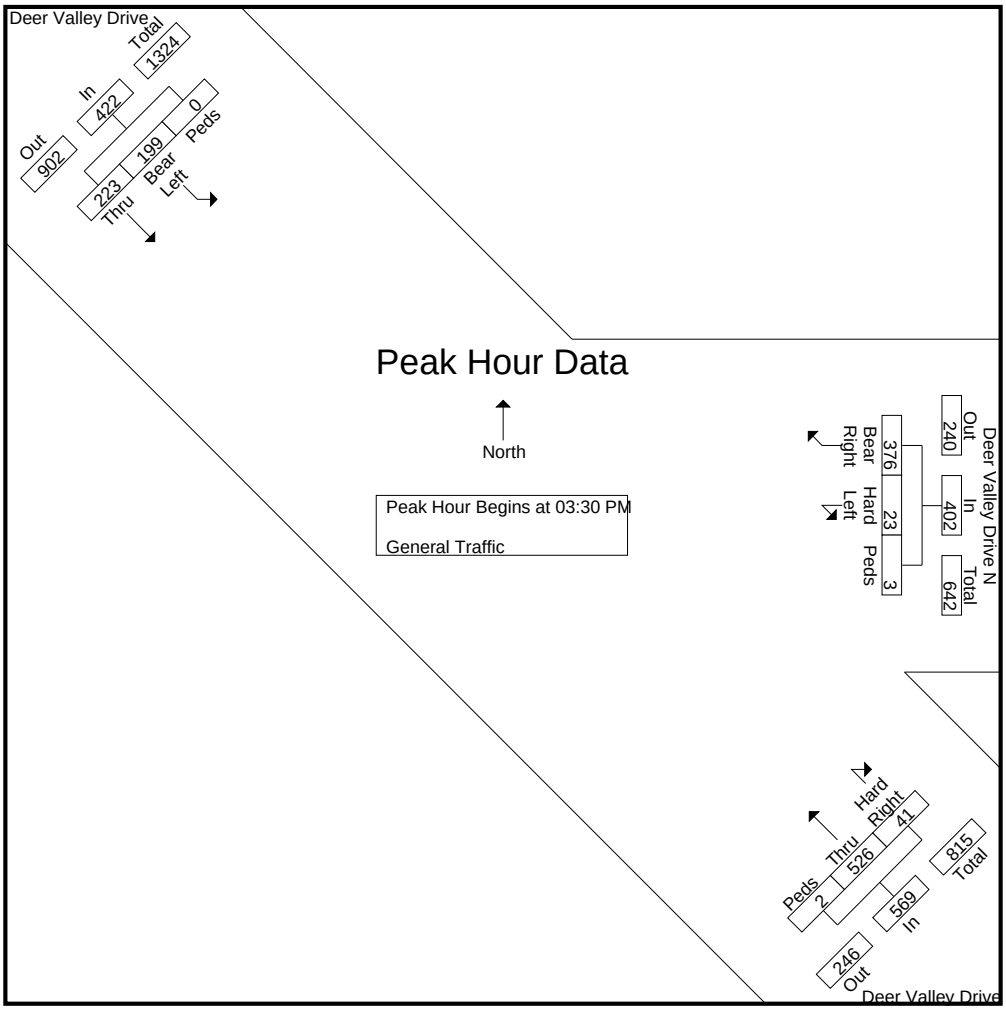
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 5

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	**66**	48	0	114	**103**	3	1	107	10	111	0	121	342
03:45 PM	51	**54**	0	105	95	4	0	99	10	116	**1**	127	331
04:00 PM	43	45	0	88	102	**8**	0	**110**	**12**	**159**	1	**172**	**370**
04:15 PM	63	52	0	**115**	76	8	**2**	86	9	140	0	149	350
Total Volume	223	199	0	422	376	23	3	402	41	526	2	569	1393
% App. Total	52.8	47.2	0		93.5	5.7	0.7		7.2	92.4	0.4		
PHF	.845	.921	.000	.917	.913	.719	.375	.914	.854	.827	.500	.827	.941



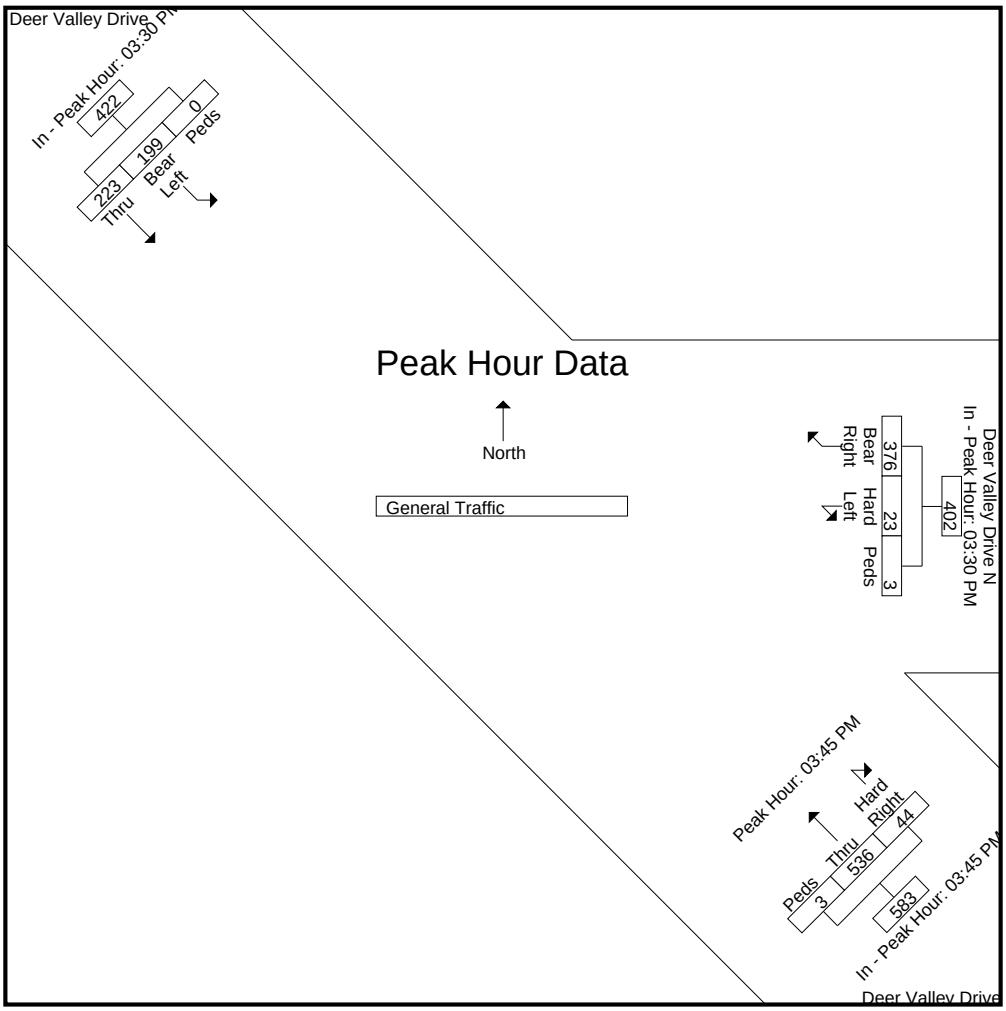
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 6

	Deer Valley Drive From Northwest				Deer Valley Drive N From East				Deer Valley Drive From Southeast				
Start Time	**Thru**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Thru**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	03:30 PM				03:30 PM				03:45 PM				
+0 mins.	**66**	48	0	114	**103**	3	1	107	10	116	**1**	127	
+15 mins.	51	**54**	0	105	95	4	0	99	12	**159**	1	**172**	
+30 mins.	43	45	0	88	102	**8**	0	**110**	9	140	0	149	
+45 mins.	63	52	0	**115**	76	8	**2**	86	**13**	121	1	135	
Total Volume	223	199	0	422	376	23	3	402	44	536	3	583	
% App. Total	52.8	47.2	0		93.5	5.7	0.7		7.5	91.9	0.5		
PHF	.845	.921	.000	.917	.913	.719	.375	.914	.846	.843	.750	.847	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Intersection:Deer Valley/ Deer Valley N
City, State: Deer Valley, Utah
Control: Stop Sign

File Name : Deer Valley Dr & Deer Valley Dr N - D2
Site Code : Day 2
Start Date : 2/29/2020
Page No : 7

Image 1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 1

Groups Printed- General Traffic - Turns

	Deer Valley Drive From North					Deer Valley Drive From East					Marsac Avenue From South					To Swede Alley (Buses Only) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:45 AM	1	105	141	0	247	37	2	5	0	44	3	19	0	1	23	1	3	1	0	5	319
Total	1	105	141	0	247	37	2	5	0	44	3	19	0	1	23	1	3	1	0	5	319
08:00 AM	2	59	173	0	234	30	2	1	0	33	12	23	0	1	36	1	3	0	1	5	308
08:15 AM	3	78	171	0	252	46	3	4	0	53	12	22	0	1	35	0	3	0	2	5	345
08:30 AM	1	79	171	0	251	39	4	11	0	54	13	22	0	2	37	3	7	0	1	11	353
08:45 AM	2	74	178	0	254	55	4	6	2	67	16	26	1	3	46	3	6	1	4	14	381
Total	8	290	693	0	991	170	13	22	2	207	53	93	1	7	154	7	19	1	8	35	1387
09:00 AM	3	70	140	0	213	74	4	4	2	84	8	31	0	8	47	4	3	1	6	14	358
09:15 AM	1	74	114	3	192	63	2	6	2	73	9	31	0	1	41	0	4	0	1	5	311
09:30 AM	1	66	116	0	183	75	0	2	2	79	7	35	0	0	42	0	3	1	1	5	309

Total	5	210	370	3	588	212	6	12	6	236	24	97	0	9	130	4	10	2	8	24	978

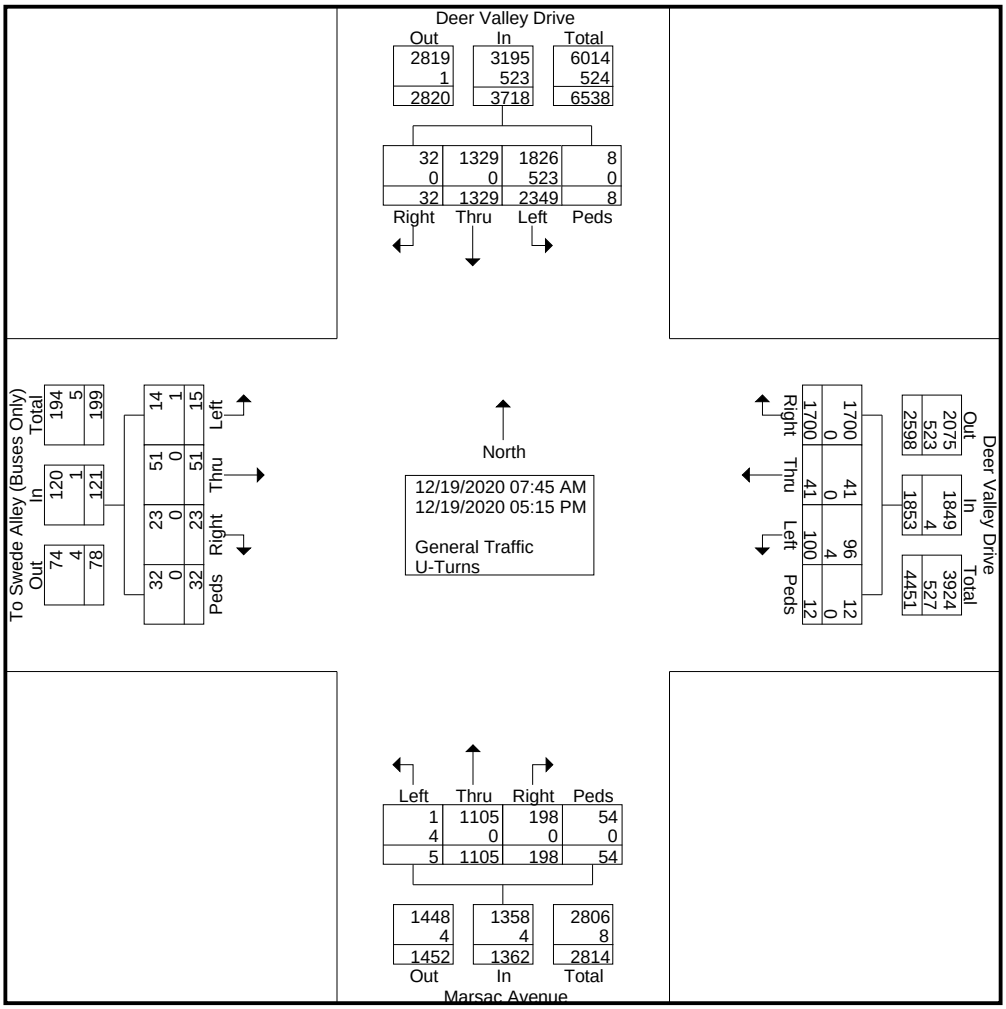
03:30 PM	5	97	155	0	257	155	2	7	0	164	18	97	0	5	120	4	0	3	0	7	548
03:45 PM	2	90	162	0	254	157	4	9	0	170	17	116	0	7	140	2	4	1	4	11	575
Total	7	187	317	0	511	312	6	16	0	334	35	213	0	12	260	6	4	4	4	18	1123
04:00 PM	1	101	141	0	243	177	1	12	0	190	9	106	1	7	123	1	2	0	3	6	562
04:15 PM	1	93	129	5	228	180	3	9	1	193	16	106	1	2	125	0	3	0	2	5	551
04:30 PM	2	91	144	0	237	176	4	5	0	185	16	100	0	7	123	2	2	4	1	9	554
04:45 PM	3	83	145	0	231	139	3	10	0	152	16	135	1	3	155	0	4	1	0	5	543
Total	7	368	559	5	939	672	11	36	1	720	57	447	3	19	526	3	11	5	6	25	2210
05:00 PM	1	74	135	0	210	129	3	5	1	138	11	104	0	3	118	1	2	1	2	6	472
05:15 PM	3	95	134	0	232	168	0	4	2	174	15	132	1	3	151	1	2	1	4	8	565
Grand Total	32	1329	2349	8	3718	1700	41	100	12	1853	198	1105	5	54	1362	23	51	15	32	121	7054
Apprch %	0.9	35.7	63.2	0.2		91.7	2.2	5.4	0.6		14.5	81.1	0.4	4		19	42.1	12.4	26.4		
Total %	0.5	18.8	33.3	0.1	52.7	24.1	0.6	1.4	0.2	26.3	2.8	15.7	0.1	0.8	19.3	0.3	0.7	0.2	0.5	1.7	
General Traffic	32	1329	1826	8	3195	1700	41	96	12	1849	198	1105	1	54	1358	23	51	14	32	120	6522
% General Traffic	100	100	77.7	100	85.9	100	100	96	100	99.8	100	100	20	100	99.7	100	100	93.3	100	99.2	92.5
U-Turns	0	0	523	0	523	0	0	4	0	4	0	0	4	0	4	0	0	1	0	1	532
% U-Turns	0	0	22.3	0	14.1	0	0	4	0	0.2	0	0	80	0	0.3	0	0	6.7	0	0.8	7.5

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 2



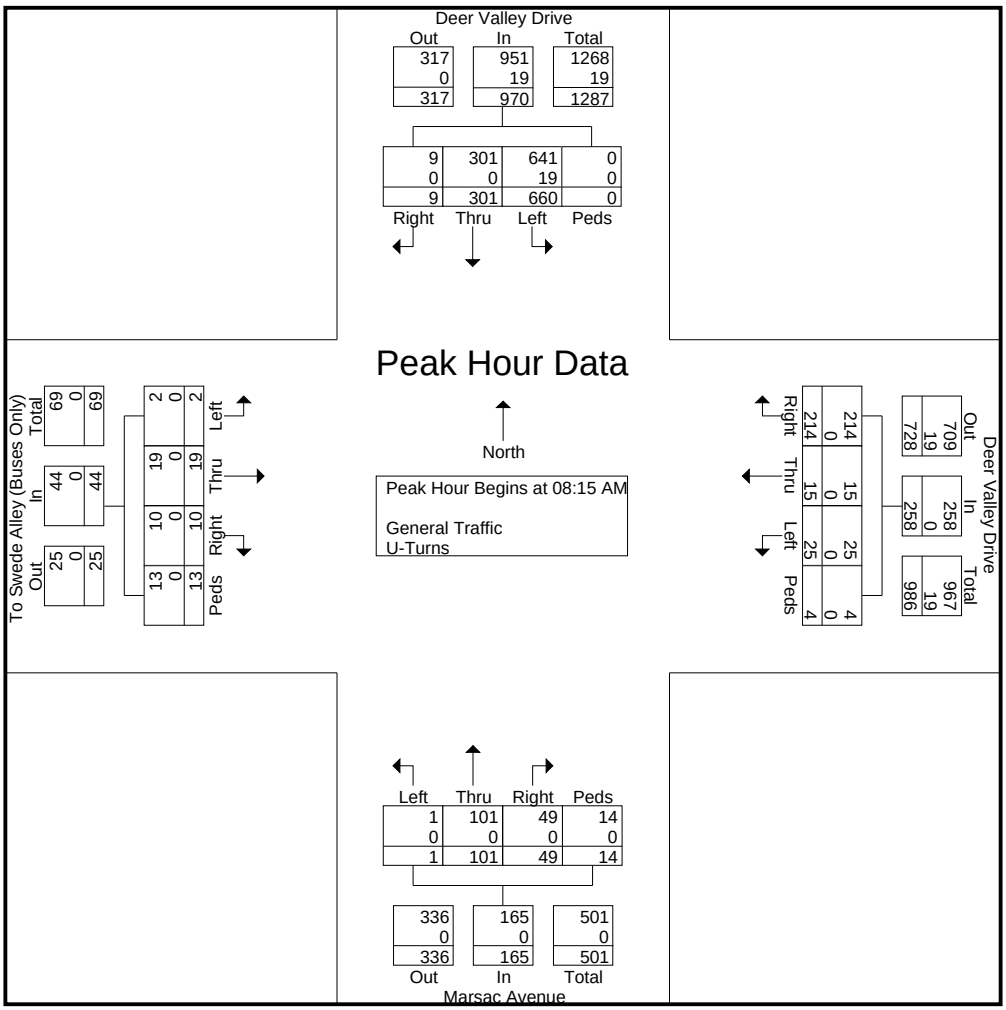
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 3

	Deer Valley Drive From North					Deer Valley Drive From East					Marsac Avenue From South					To Swede Alley (Buses Only) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	**3**	78	171	0	252	46	3	4	0	53	12	22	0	1	35	0	3	0	2	5	345
08:30 AM	1	**79**	171	0	251	39	**4**	**11**	0	54	13	22	0	2	37	3	**7**	0	1	11	353
08:45 AM	2	74	**178**	0	**254**	55	4	6	**2**	67	**16**	26	**1**	3	46	3	6	**1**	4	**14**	**381**
09:00 AM	3	70	140	0	213	**74**	4	4	2	**84**	8	**31**	0	**8**	**47**	**4**	3	1	**6**	14	358
Total Volume	9	301	660	0	970	214	15	25	4	258	49	101	1	14	165	10	19	2	13	44	1437
% App. Total	0.9	31	68	0		82.9	5.8	9.7	1.6		29.7	61.2	0.6	8.5		22.7	43.2	4.5	29.5		
PHF	.750	.953	.927	.000	.955	.723	.938	.568	.500	.768	.766	.815	.250	.438	.878	.625	.679	.500	.542	.786	.943
General Traffic	9	301	641	0	951	214	15	25	4	258	49	101	1	14	165	10	19	2	13	44	1418
% General Traffic	100	100	97.1	0	98.0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98.7
U-Turns	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
% U-Turns	0	0	2.9	0	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3



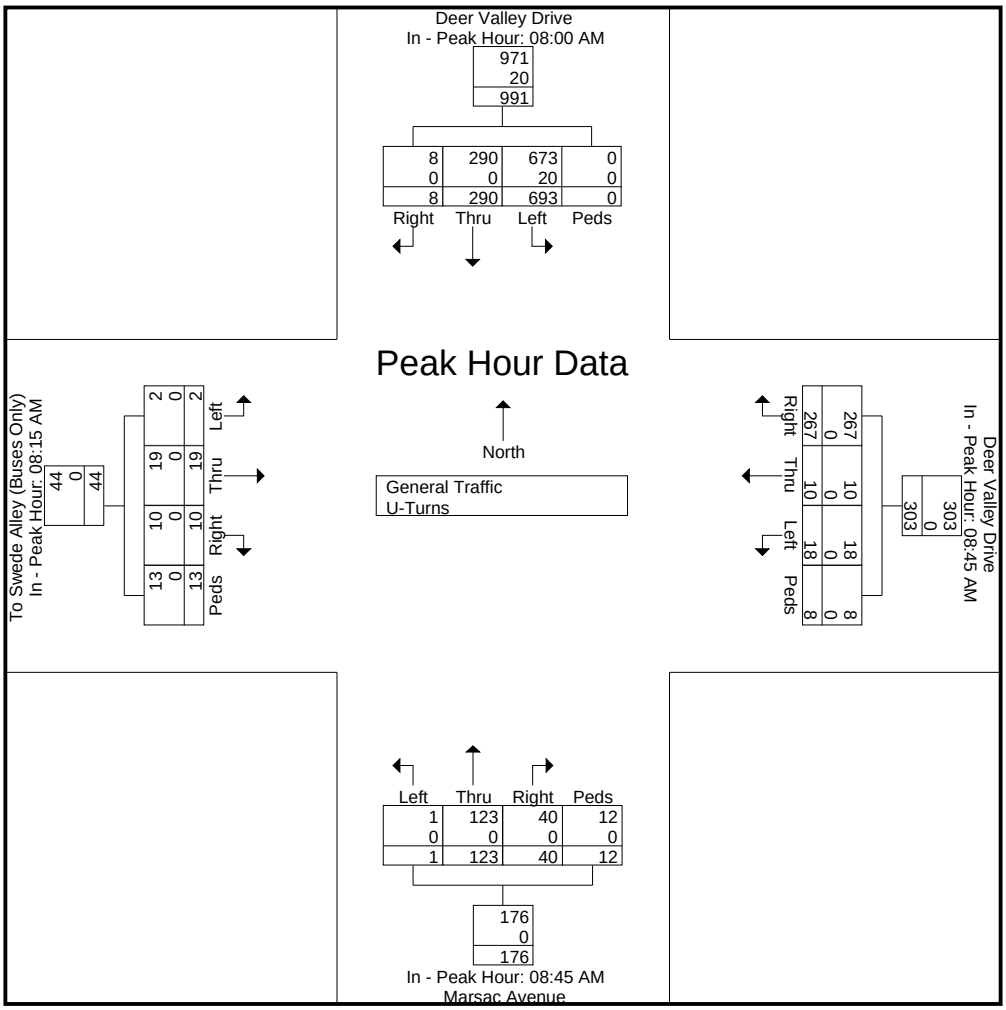
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 4

	Deer Valley Drive From North					Deer Valley Drive From East					Marsac Avenue From South					To Swede Alley (Buses Only) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	08:00 AM					08:45 AM					08:45 AM					08:15 AM					
+0 mins.	2	59	173	0	234	55	**4**	**6**	**2**	67	**16**	26	**1**	3	46	0	3	0	2	5	
+15 mins.	**3**	78	171	0	252	74	4	4	2	**84**	8	31	0	**8**	**47**	3	**7**	0	1	11	
+30 mins.	1	**79**	171	0	251	63	2	6	2	73	9	31	0	1	41	3	6	**1**	4	**14**	
+45 mins.	2	74	**178**	0	**254**	**75**	0	2	2	79	7	**35**	0	0	42	**4**	3	1	**6**	14	
Total Volume	8	290	693	0	991	267	10	18	8	303	40	123	1	12	176	10	19	2	13	44	
% App. Total	0.8	29.3	69.9	0		88.1	3.3	5.9	2.6		22.7	69.9	0.6	6.8		22.7	43.2	4.5	29.5		
PHF	.667	.918	.973	.000	.975	.890	.625	.750	1.000	.902	.625	.879	.250	.375	.936	.625	.679	.500	.542	.786	
General Traffic	8	290	673	0	971	267	10	18	8	303	40	123	1	12	176	10	19	2	13	44	
% General Traffic	100	100	97.1	0	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
U-Turns	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% U-Turns	0	0	2.9	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



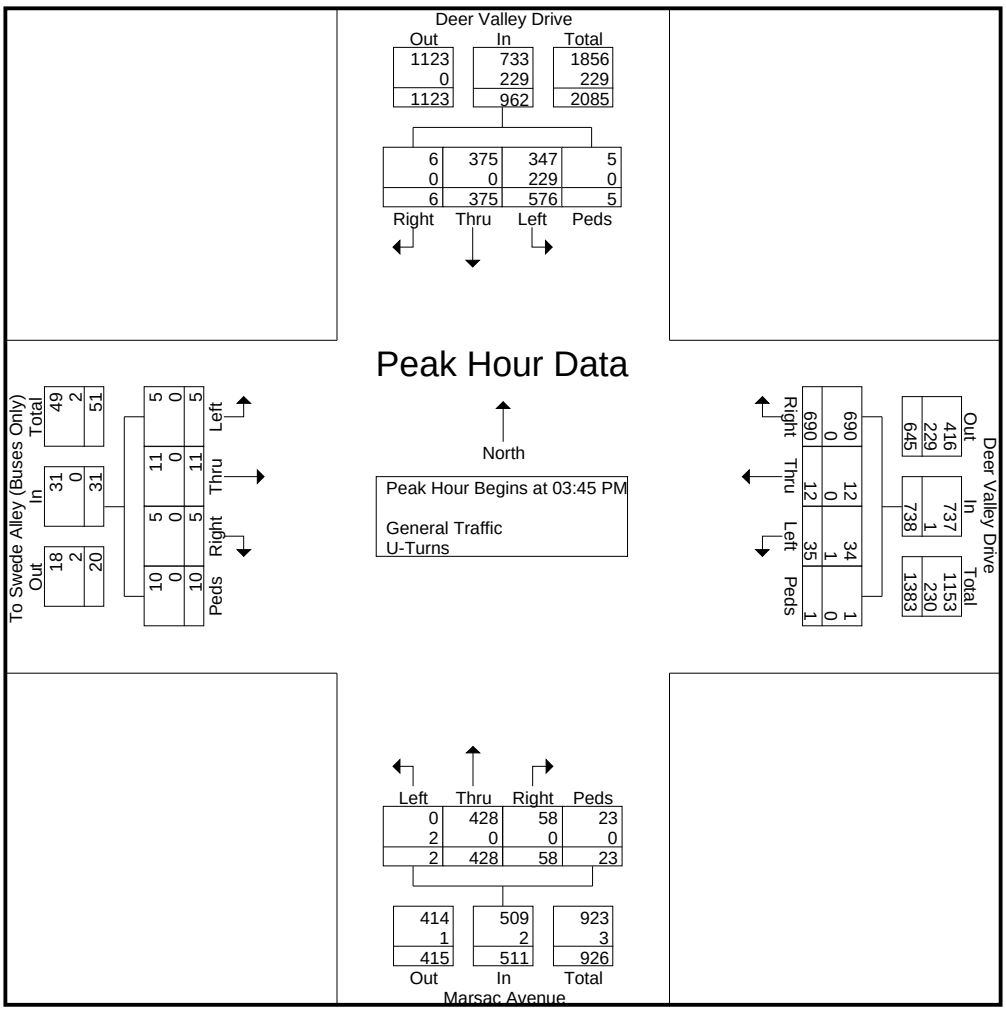
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 5

	Deer Valley Drive From North					Deer Valley Drive From East					Marsac Avenue From South					To Swede Alley (Buses Only) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	**2**	90	**162**	0	**254**	157	**4**	9	0	170	**17**	**116**	0	**7**	**140**	**2**	**4**	1	**4**	**11**	**575**
04:00 PM	1	**101**	141	0	243	177	1	**12**	0	190	9	106	**1**	7	123	1	2	0	3	6	562
04:15 PM	1	93	129	**5**	228	**180**	3	9	**1**	**193**	16	106	1	2	125	0	3	0	2	5	551
04:30 PM	2	91	144	0	237	176	4	5	0	185	16	100	0	7	123	2	2	**4**	1	9	554
Total Volume	6	375	576	5	962	690	12	35	1	738	58	428	2	23	511	5	11	5	10	31	2242
% App. Total	0.6	39	59.9	0.5		93.5	1.6	4.7	0.1		11.4	83.8	0.4	4.5		16.1	35.5	16.1	32.3		
PHF	.750	.928	.889	.250	.947	.958	.750	.729	.250	.956	.853	.922	.500	.821	.913	.625	.688	.313	.625	.705	.975
General Traffic	6	375	347	5	733	690	12	34	1	737	58	428	0	23	509	5	11	5	10	31	2010
% General Traffic	100	100	60.2	100	76.2	100	100	97.1	100	99.9	100	100	0	100	99.6	100	100	100	100	100	89.7
U-Turns	0	0	229	0	229	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0	232
% U-Turns	0	0	39.8	0	23.8	0	0	2.9	0	0.1	0	0	100	0	0.4	0	0	0	0	0	10.3



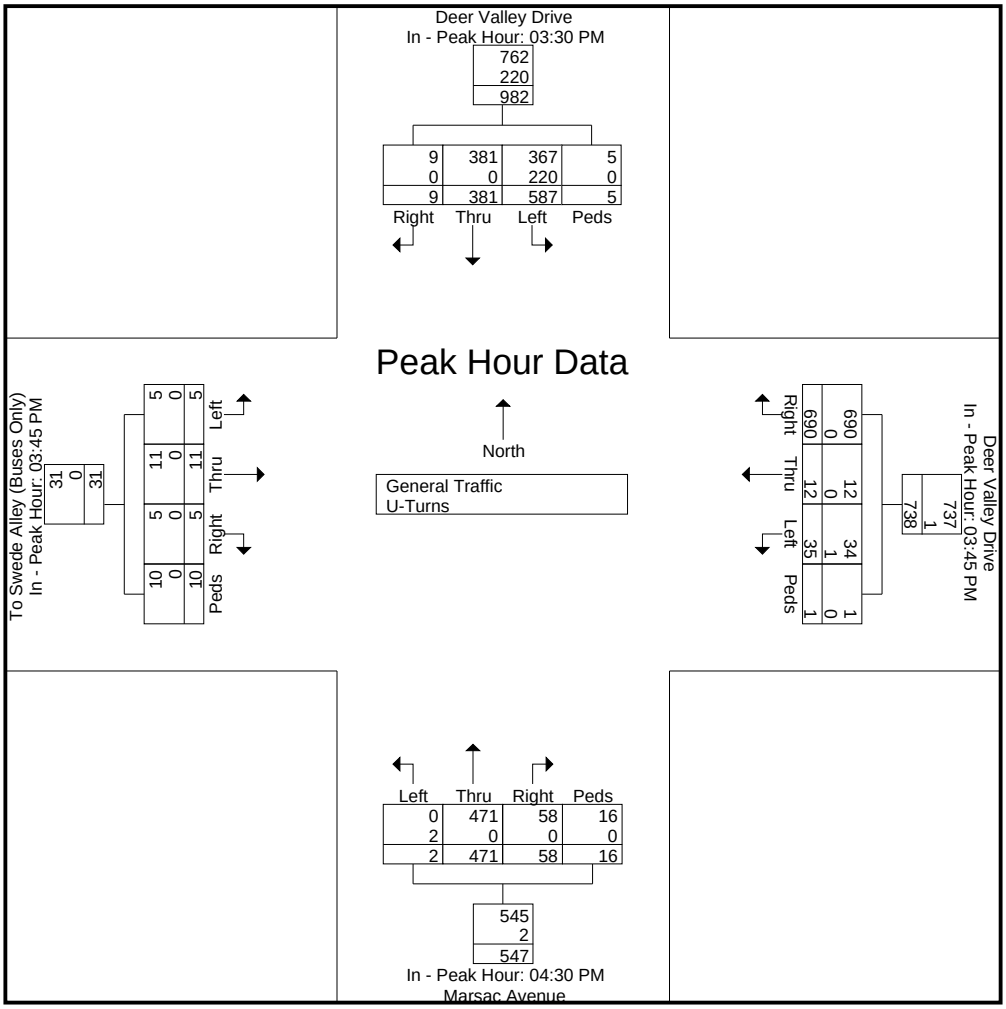
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 6

	Deer Valley Drive From North					Deer Valley Drive From East					Marsac Avenue From South					To Swede Alley (Buses Only) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	03:30 PM					03:45 PM					04:30 PM					03:45 PM					
+0 mins.	**5**	97	155	0	**257**	157	**4**	9	0	170	**16**	100	0	**7**	123	**2**	**4**	1	**4**	**11**	
+15 mins.	2	90	**162**	0	254	177	1	**12**	0	190	16	**135**	**1**	3	**155**	1	2	0	3	6	
+30 mins.	1	**101**	141	0	243	**180**	3	9	**1**	**193**	11	104	0	3	118	0	3	0	2	5	
+45 mins.	1	93	129	**5**	228	176	4	5	0	185	15	132	1	3	151	2	2	**4**	1	9	
Total Volume	9	381	587	5	982	690	12	35	1	738	58	471	2	16	547	5	11	5	10	31	
% App. Total	0.9	38.8	59.8	0.5		93.5	1.6	4.7	0.1		10.6	86.1	0.4	2.9		16.1	35.5	16.1	32.3		
PHF	.450	.943	.906	.250	.955	.958	.750	.729	.250	.956	.906	.872	.500	.571	.882	.625	.688	.313	.625	.705	
General Traffic	9	381	367	5	762	690	12	34	1	737	58	471	0	16	545	5	11	5	10	31	
% General Traffic	100	100	62.5	100	77.6	100	100	97.1	100	99.9	100	100	0	100	99.6	100	100	100	100	100	
U-Turns	0	0	220	0	220	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0	
% U-Turns	0	0	37.5	0	22.4	0	0	2.9	0	0.1	0	0	100	0	0.4	0	0	0	0	0	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Marsac Av
City, State: Park City, Utah
Control: Yields

File Name : Deer Valley Dr & Marsac Ave RDBT
Site Code : Saturday
Start Date : 12/19/2020
Page No : 7

Image 1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 1

Groups Printed- General Traffic

	Bonanza Drive From Northeast				Deer Valley Drive From South				Deer Valley Drive From West				
Start Time	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
07:45 AM	34	138	0	172	21	37	0	58	137	13	0	150	380
Total	34	138	0	172	21	37	0	58	137	13	0	150	380
08:00 AM	26	111	0	137	30	42	0	72	147	8	0	155	364
08:15 AM	49	115	0	164	24	60	0	84	141	14	0	155	403
08:30 AM	51	113	0	164	23	48	0	71	137	23	0	160	395
08:45 AM	40	130	0	170	32	58	0	90	137	23	0	160	420
Total	166	469	0	635	109	208	0	317	562	68	0	630	1582
09:00 AM	28	111	0	139	49	57	0	106	120	29	0	149	394
09:15 AM	22	85	0	107	27	70	0	97	112	34	0	146	350
09:30 AM	26	90	0	116	38	54	0	92	121	30	0	151	359

Total	76	286	0	362	114	181	0	295	353	93	0	446	1103

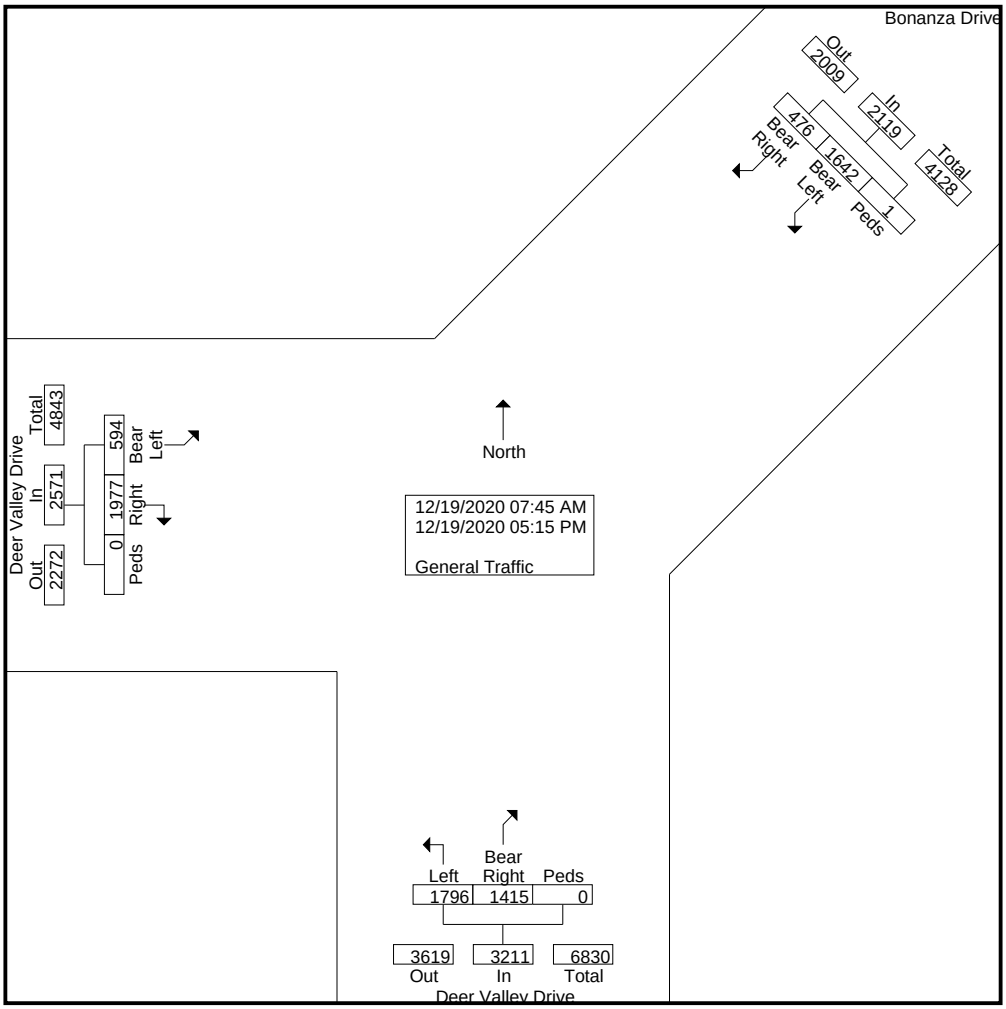
03:30 PM	23	90	0	113	146	174	0	320	120	58	0	178	611
03:45 PM	41	110	1	152	147	184	0	331	110	67	0	177	660
Total	64	200	1	265	293	358	0	651	230	125	0	355	1271
04:00 PM	25	92	0	117	155	175	0	330	119	59	0	178	625
04:15 PM	26	103	0	129	142	177	0	319	110	63	0	173	621
04:30 PM	31	94	0	125	176	182	0	358	99	50	0	149	632
04:45 PM	17	86	0	103	130	166	0	296	121	44	0	165	564
Total	99	375	0	474	603	700	0	1303	449	216	0	665	2442
05:00 PM	21	81	0	102	136	171	0	307	110	41	0	151	560
05:15 PM	16	93	0	109	139	141	0	280	136	38	0	174	563
Grand Total	476	1642	1	2119	1415	1796	0	3211	1977	594	0	2571	7901
Apprch %	22.5	77.5	0		44.1	55.9	0		76.9	23.1	0		
Total %	6	20.8	0	26.8	17.9	22.7	0	40.6	25	7.5	0	32.5	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 2



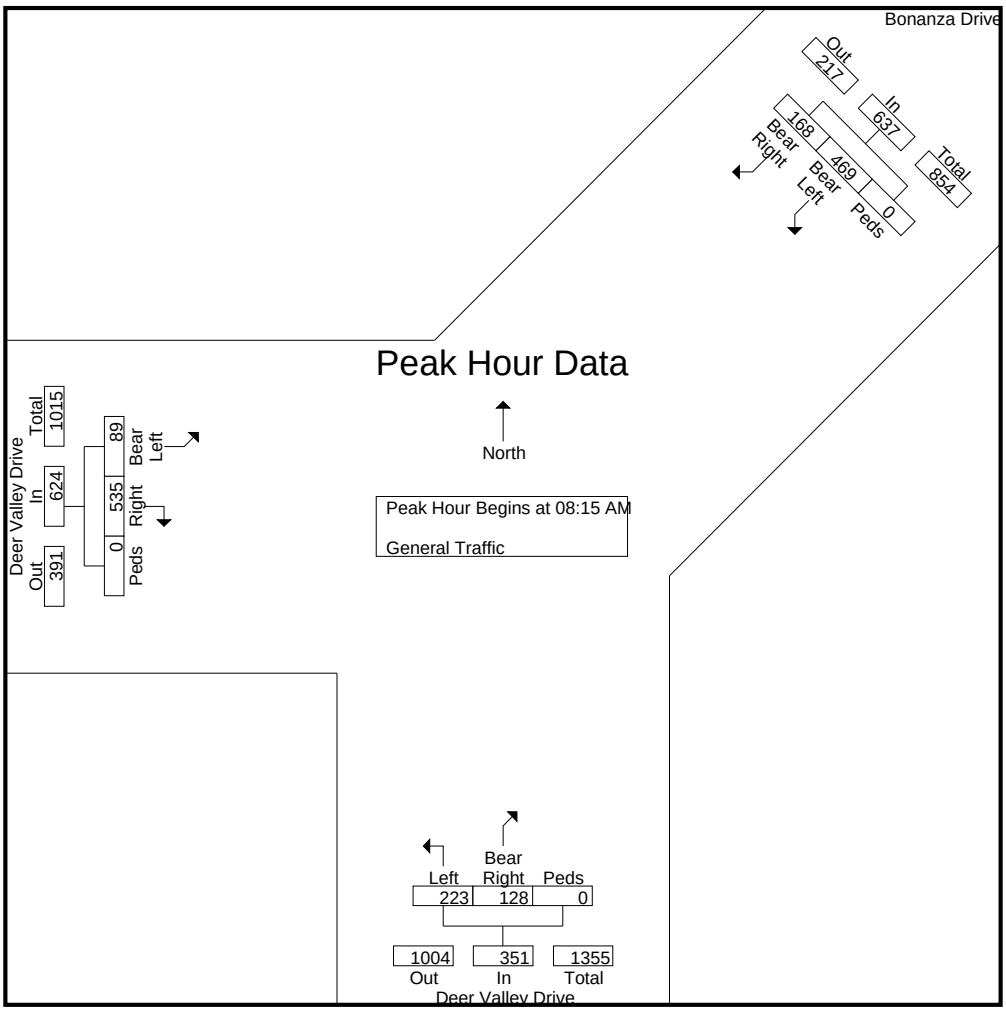
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 3

	Bonanza Drive From Northeast				Deer Valley Drive From South				Deer Valley Drive From West				
Start Time	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:15 AM													
08:15 AM	49	115	0	164	24	**60**	0	84	**141**	14	0	155	403
08:30 AM	**51**	113	0	164	23	48	0	71	137	23	0	**160**	395
08:45 AM	40	**130**	0	**170**	32	58	0	90	137	23	0	160	**420**
09:00 AM	28	111	0	139	**49**	57	0	**106**	120	**29**	0	149	394
Total Volume	168	469	0	637	128	223	0	351	535	89	0	624	1612
% App. Total	26.4	73.6	0		36.5	63.5	0		85.7	14.3	0		
PHF	.824	.902	.000	.937	.653	.929	.000	.828	.949	.767	.000	.975	.960



L2 Data Collection

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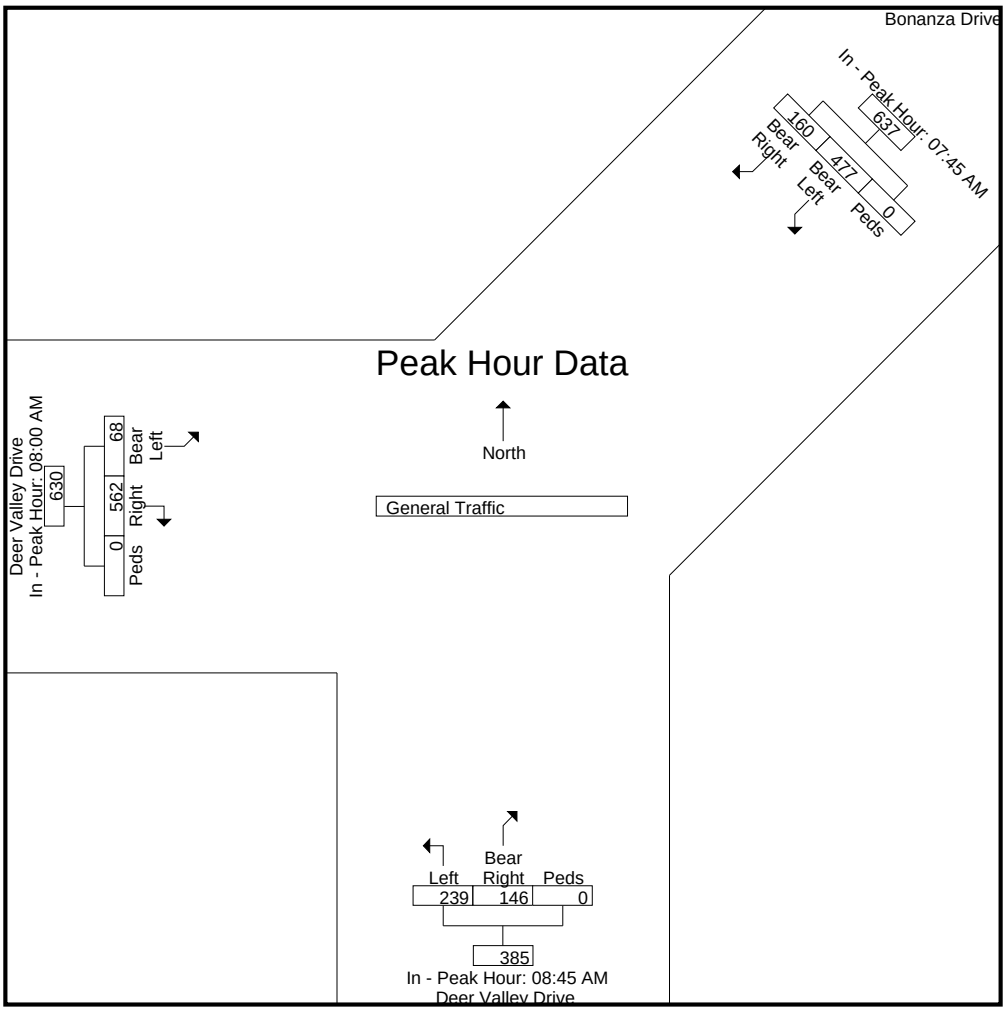
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 4

	Bonanza Drive From Northeast				Deer Valley Drive From South				Deer Valley Drive From West				
Start Time	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:45 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:45 AM				08:45 AM				08:00 AM				
+0 mins.	34	**138**	0	**172**	32	58	0	90	**147**	8	0	155
+15 mins.	26	111	0	137	**49**	57	0	**106**	141	14	0	155
+30 mins.	49	115	0	164	27	**70**	0	97	137	**23**	0	**160**
+45 mins.	**51**	113	0	164	38	54	0	92	137	23	0	160
Total Volume	160	477	0	637	146	239	0	385	562	68	0	630
% App. Total	25.1	74.9	0		37.9	62.1	0		89.2	10.8	0	
PHF	.784	.864	.000	.926	.745	.854	.000	.908	.956	.739	.000	.984



L2 Data Collection

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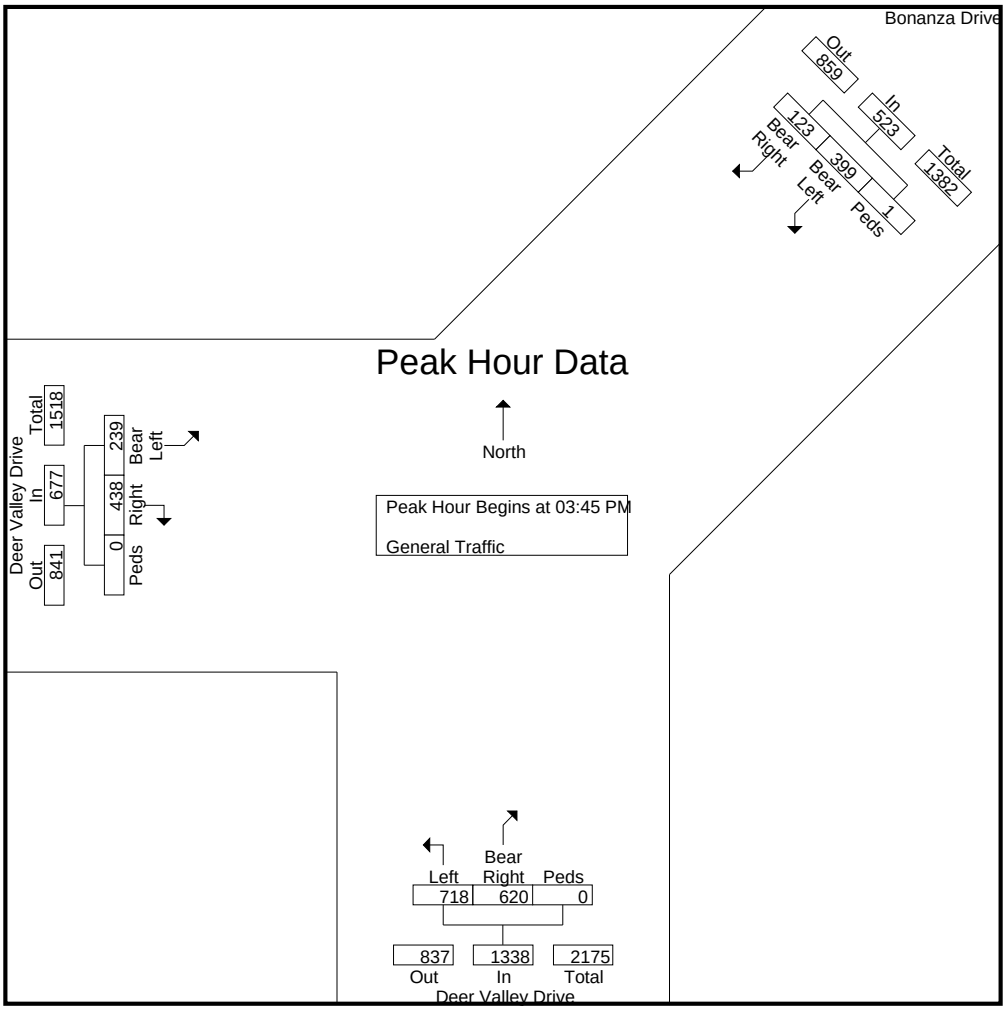
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 5

	Bonanza Drive From Northeast				Deer Valley Drive From South				Deer Valley Drive From West				
Start Time	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:45 PM													
03:45 PM	**41**	**110**	**1**	**152**	147	**184**	0	331	110	**67**	0	177	**660**
04:00 PM	25	92	0	117	155	175	0	330	**119**	59	0	**178**	625
04:15 PM	26	103	0	129	142	177	0	319	110	63	0	173	621
04:30 PM	31	94	0	125	**176**	182	0	**358**	99	50	0	149	632
Total Volume	123	399	1	523	620	718	0	1338	438	239	0	677	2538
% App. Total	23.5	76.3	0.2		46.3	53.7	0		64.7	35.3	0		
PHF	.750	.907	.250	.860	.881	.976	.000	.934	.920	.892	.000	.951	.961



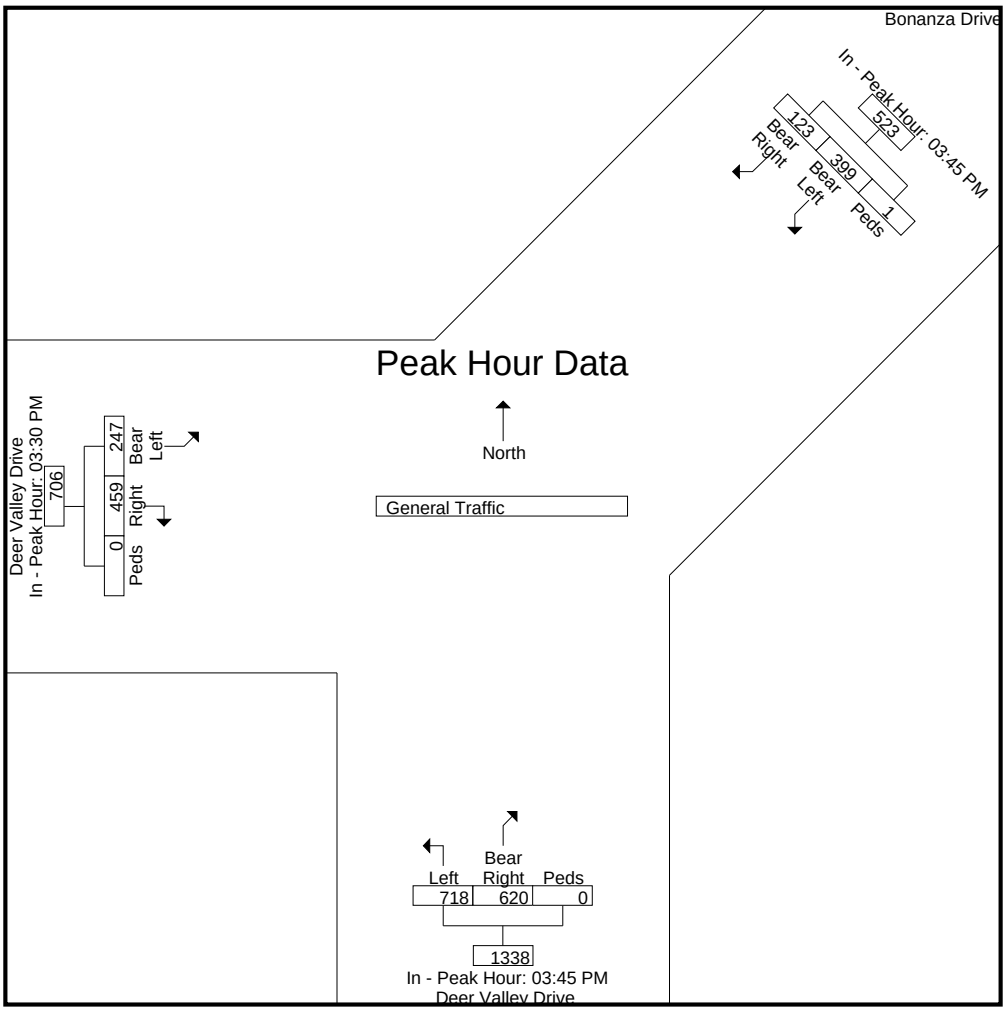
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 6

	Bonanza Drive From Northeast				Deer Valley Drive From South				Deer Valley Drive From West				
Start Time	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	03:45 PM				03:45 PM				03:30 PM				
+0 mins.	**41**	**110**	**1**	**152**	147	**184**	0	331	**120**	58	0	**178**	
+15 mins.	25	92	0	117	155	175	0	330	110	**67**	0	177	
+30 mins.	26	103	0	129	142	177	0	319	119	59	0	178	
+45 mins.	31	94	0	125	**176**	182	0	**358**	110	63	0	173	
Total Volume	123	399	1	523	620	718	0	1338	459	247	0	706	
% App. Total	23.5	76.3	0.2		46.3	53.7	0		65	35	0		
PHF	.750	.907	.250	.860	.881	.976	.000	.934	.956	.922	.000	.992	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0124
Intersection: Deer Valley Dr / Bonanza
City, State: Park City, Utah
Control: Signalized

File Name : Deer Valley Dr & Bonanza Dr
Site Code : Saturday
Start Date : 12/19/2020
Page No : 7

Image 1

FEHR PEERS

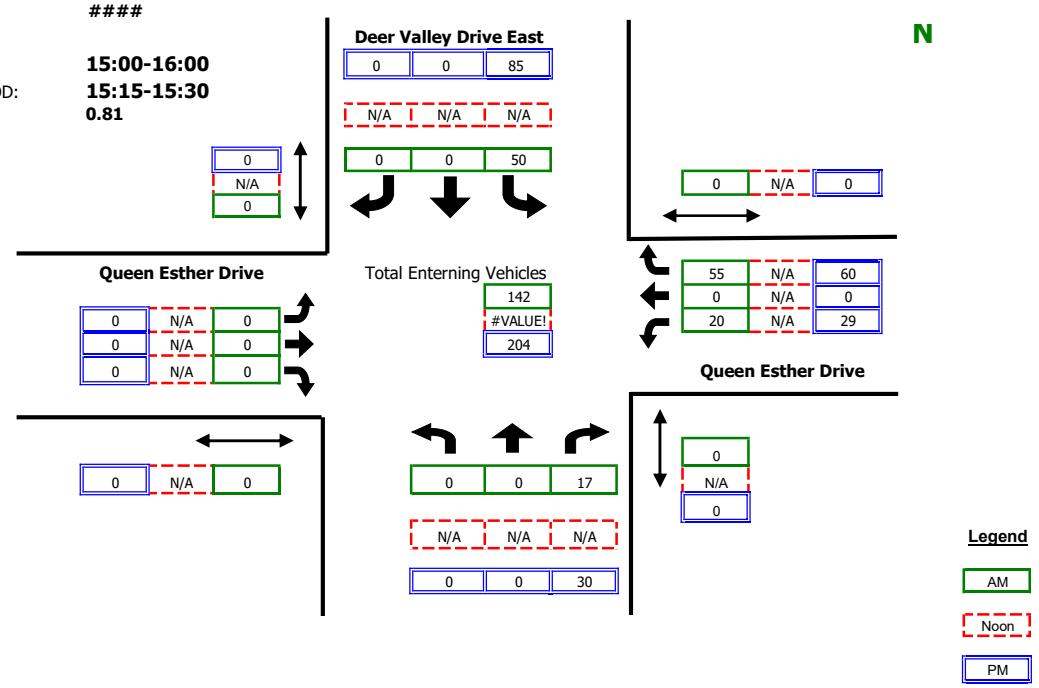
Intersection Turning Movement Summary

Intersection:	**Deer Valley Drive East/Queen Esther Drive**	**Date:**	**3-3-22, Thu**
	North/South: Deer Valley Drive East	**Day of Week Adjustment:**	**100.0%**
	East/West: Queen Esther Drive	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Park City**	**Adjustment Station #:**	
Project Title:	**Snow Park Development**	**Growth Rate:**	**0.0%**
Project No:	**UT20-2245**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD: **9:00-10:00**
AM PEAK 15 MINUTE PERIOD: **9:15-9:30**
AM PHF: **0.99**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: ####

PM PEAK HOUR PERIOD: **15:00-16:00**
PM PEAK 15 MINUTE PERIOD: **15:15-15:30**
PM PHF: **0.81**



RAW COUNT SUMMARIES	Deer Valley Drive East Northbound Left	Thru	Right	Peds	Deer Valley Drive East Southbound Left	Thru	Right	Peds	Queen Esther Drive Eastbound Left	Thru	Right	Peds	Queen Esther Drive Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
8:00-8:15	0	0	0	0	4	0	0	0	0	0	0	0	5	0	4	0	13
8:15-8:30	0	0	8	0	7	0	0	0	0	0	0	0	9	0	13	0	37
8:30-8:45	0	0	6	0	6	0	0	0	0	0	0	0	5	0	11	0	28
8:45-9:00	0	0	2	0	11	0	0	0	0	0	0	0	10	0	9	0	32
9:00-9:15	0	0	5	0	9	0	0	0	0	0	0	0	7	0	14	0	35
9:15-9:30	0	0	5	0	17	0	0	0	0	0	0	0	4	0	10	0	36
9:30-9:45	0	0	2	0	10	0	0	0	0	0	0	0	6	0	18	0	36
9:45-10:00	0	0	5	0	14	0	0	0	0	0	0	0	3	0	13	0	35
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:00-14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15-14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30-14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45-15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00-15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15-15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30-15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45-14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:30-14:45	0	0	9	0	9	0	0	0	0	0	0	0	5	0	14	0	37
14:45-15:00	0	0	5	0	21	0	0	0	0	0	0	0	3	0	17	0	46
15:00-15:15	0	0	5	0	23	0	0	0	0	0	0	0	3	0	18	0	49
15:15-15:30	0	0	9	0	26	0	0	0	0	0	0	0	11	0	17	0	63
15:30-15:45	0	0	6	0	19	0	0	0	0	0	0	0	8	0	9	0	42
15:45-16:00	0	0	10	0	17	0	0	0	0	0	0	0	7	0	16	0	50
16:00-16:15	0	0	5	0	18	0	0	0	0	0	0	0	4	0	13	0	40
16:15-16:30	0	0	7	0	25	0	0	0	0	0	0	0	4	0	8	0	44

FEHR PEERS

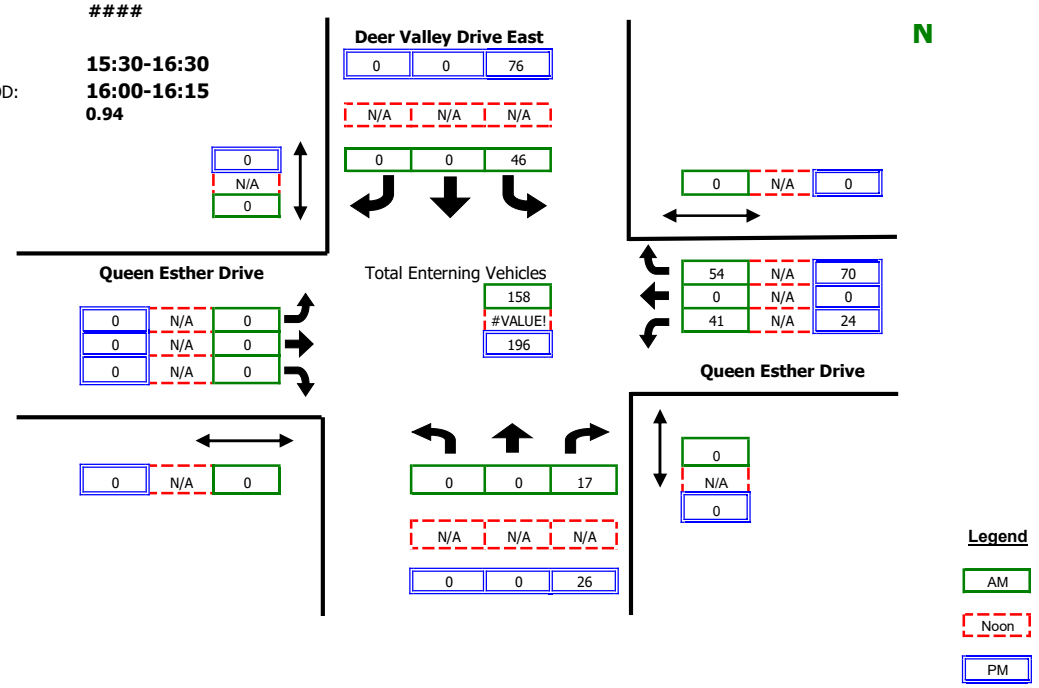
Intersection Turning Movement Summary

Intersection:	**Deer Valley Drive East/Queen Esther Drive**	**Date:**	**3-4-22, Fri**
	North/South: Deer Valley Drive East	**Day of Week Adjustment:**	**100.0%**
	East/West: Queen Esther Drive	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Park City**	**Adjustment Station #:**	
Project Title:	**Snow Park Development**	**Growth Rate:**	**0.0%**
Project No:	**UT20-2245**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD: **8:45-9:45**
AM PEAK 15 MINUTE PERIOD: **8:45-9:00**
AM PHF: **0.77**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **15:30-16:30**
PM PEAK 15 MINUTE PERIOD: **16:00-16:15**
PM PHF: **0.94**



RAW COUNT SUMMARIES	Deer Valley Drive East Northbound Left	Thru	Right	Peds	Deer Valley Drive East Southbound Left	Thru	Right	Peds	Queen Esther Drive Eastbound Left	Thru	Right	Peds	Queen Esther Drive Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
8:00-8:15	0	0	4	0	12	0	0	0	0	0	0	0	3	0	18	0	37
8:15-8:30	0	0	3	0	11	0	0	0	0	0	0	0	10	0	9	0	33
8:30-8:45	0	0	5	0	11	0	0	0	0	0	0	0	6	0	10	0	32
8:45-9:00	0	0	2	0	16	0	0	0	0	0	0	0	13	0	20	0	51
9:00-9:15	0	0	5	0	5	0	0	0	0	0	0	0	7	0	9	0	26
9:15-9:30	0	0	6	0	10	0	0	0	0	0	0	0	5	0	10	0	31
9:30-9:45	0	0	4	0	15	0	0	0	0	0	0	0	16	0	15	0	50
9:45-10:00	0	0	10	0	10	0	0	0	0	0	0	0	7	0	15	0	42
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:00-14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15-14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30-14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45-15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00-15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15-15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30-15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45-14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:30-14:45	0	0	6	0	14	0	0	0	0	0	0	0	5	0	9	0	34
14:45-15:00	0	0	8	0	19	0	0	0	0	0	0	0	6	0	23	0	56
15:00-15:15	0	0	8	0	11	0	0	0	0	0	0	0	8	0	18	0	45
15:15-15:30	0	0	8	0	16	0	0	0	0	0	0	0	7	0	15	0	46
15:30-15:45	0	0	2	0	10	0	0	0	0	0	0	0	8	0	21	0	41
15:45-16:00	0	0	7	0	26	0	0	0	0	0	0	0	3	0	15	0	51
16:00-16:15	0	0	7	0	18	0	0	0	0	0	0	0	7	0	20	0	52
16:15-16:30	0	0	10	0	22	0	0	0	0	0	0	0	6	0	14	0	52

FEHR PEERS

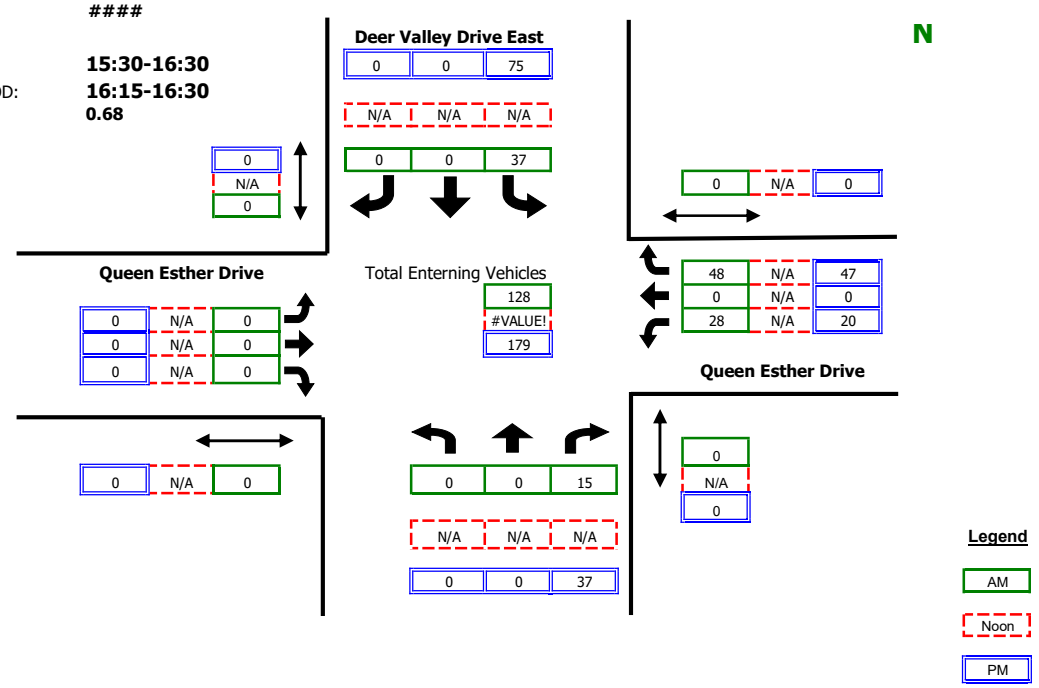
Intersection Turning Movement Summary

Intersection:	**Deer Valley Drive East/Queen Esther Drive**	**Date:**	**3-5-22, Sat**
	North/South: Deer Valley Drive East	**Day of Week Adjustment:**	**100.0%**
	East/West: Queen Esther Drive	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Park City**	**Adjustment Station #:**	
Project Title:	**Snow Park Development**	**Growth Rate:**	**0.0%**
Project No:	**UT20-2245**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD: **8:45-9:45**
AM PEAK 15 MINUTE PERIOD: **8:45-9:00**
AM PHF: **0.86**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: ####

PM PEAK HOUR PERIOD: **15:30-16:30**
PM PEAK 15 MINUTE PERIOD: **16:15-16:30**
PM PHF: **0.68**



RAW COUNT SUMMARIES	Deer Valley Drive East Northbound Left	Thru	Right	Peds	Deer Valley Drive East Southbound Left	Thru	Right	Peds	Queen Esther Drive Eastbound Left	Thru	Right	Peds	Queen Esther Drive Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
8:00-8:15	0	0	6	0	10	0	0	0	0	0	0	0	4	0	4	0	24
8:15-8:30	0	0	1	0	7	0	0	0	0	0	0	0	10	0	4	0	22
8:30-8:45	0	0	7	0	6	0	0	0	0	0	0	0	10	0	10	0	33
8:45-9:00	0	0	5	0	12	0	0	0	0	0	0	0	10	0	10	0	37
9:00-9:15	0	0	4	0	9	0	0	0	0	0	0	0	6	0	10	0	29
9:15-9:30	0	0	3	0	10	0	0	0	0	0	0	0	4	0	9	0	26
9:30-9:45	0	0	3	0	6	0	0	0	0	0	0	0	8	0	19	0	36
9:45-10:00	0	0	4	0	10	0	0	0	0	0	0	0	7	0	9	0	30
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:00-14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15-14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30-14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45-15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00-15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15-15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30-15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45-14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:30-14:45	0	0	7	0	23	0	0	0	0	0	0	0	4	0	10	0	44
14:45-15:00	0	0	4	0	16	0	0	0	0	0	0	0	7	0	15	0	42
15:00-15:15	0	0	2	0	9	0	0	0	0	0	0	0	6	0	7	0	24
15:15-15:30	0	0	4	0	12	0	0	0	0	0	0	0	2	0	11	0	29
15:30-15:45	0	0	6	0	14	0	0	0	0	0	0	0	7	0	9	0	36
15:45-16:00	0	0	5	0	14	0	0	0	0	0	0	0	4	0	11	0	34
16:00-16:15	0	0	11	0	16	0	0	0	0	0	0	0	6	0	10	0	43
16:15-16:30	0	0	15	0	31	0	0	0	0	0	0	0	3	0	17	0	66

FEHR PEERS

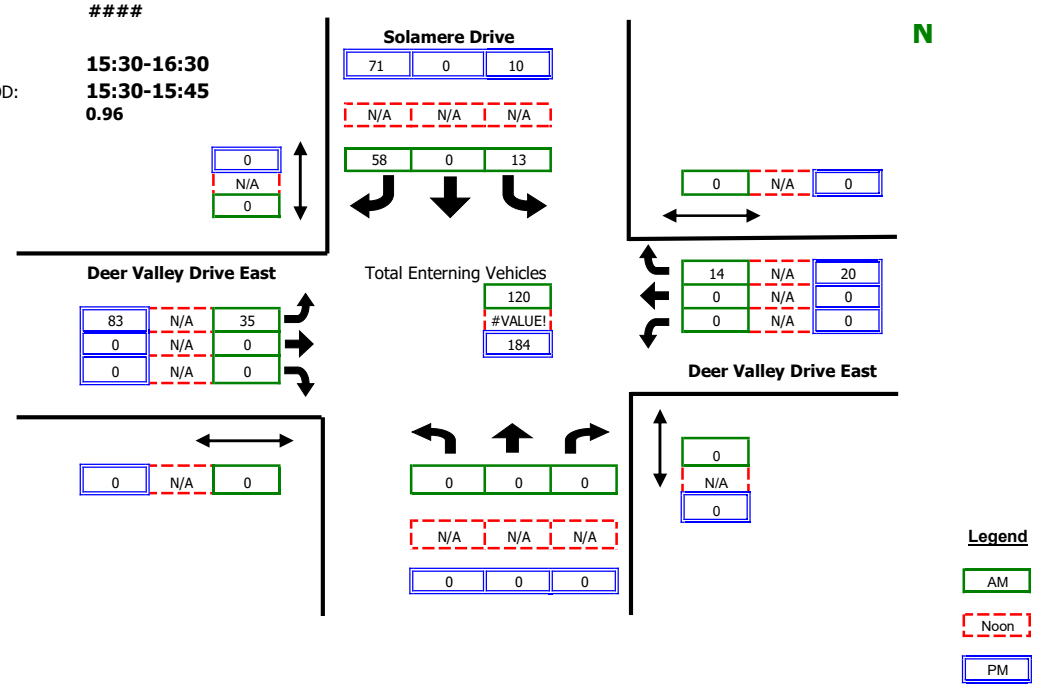
Intersection Turning Movement Summary

Intersection:	**Solamere Drive/Deer Valley Drive East**	**Date:**	**3-3-22, Thu**
	North/South: Solamere Drive	**Day of Week Adjustment:**	**100.0%**
	East/West: Deer Valley Drive East	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Park City**	**Adjustment Station #:**	
Project Title:	**Snow Park Development**	**Growth Rate:**	**0.0%**
Project No:	**UT20-2245**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD: **8:30-9:30**
AM PEAK 15 MINUTE PERIOD: **8:30-8:45**
AM PHF: **0.83**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: ####

PM PEAK HOUR PERIOD: **15:30-16:30**
PM PEAK 15 MINUTE PERIOD: **15:30-15:45**
PM PHF: **0.96**



RAW COUNT SUMMARIES	Solamere Drive Northbound				Solamere Drive Southbound				Deer Valley Drive East Eastbound				Deer Valley Drive East Westbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
8:00-8:15	0	0	0	0	4	0	7	0	11	0	0	0	0	0	0	0	22
8:15-8:30	0	0	0	0	2	0	10	0	10	0	0	0	0	0	1	0	23
8:30-8:45	0	0	0	0	2	0	24	0	7	0	0	0	0	0	3	0	36
8:45-9:00	0	0	0	0	4	0	12	0	9	0	0	0	0	0	3	0	28
9:00-9:15	0	0	0	0	3	0	12	0	7	0	0	0	0	0	5	0	27
9:15-9:30	0	0	0	0	4	0	10	0	12	0	0	0	0	0	3	0	29
9:30-9:45	0	0	0	0	1	0	10	0	17	0	0	0	0	0	3	0	31
9:45-10:00	0	0	0	0	4	0	8	0	9	0	0	0	0	0	4	0	25
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:00-14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15-14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30-14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45-15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00-15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15-15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30-15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45-14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:30-14:45	0	0	0	0	3	0	23	0	16	0	0	0	0	0	6	0	48
14:45-15:00	0	0	0	0	2	0	17	0	16	0	0	0	0	0	4	0	39
15:00-15:15	0	0	0	0	1	0	20	0	19	0	0	0	0	0	3	0	43
15:15-15:30	0	0	0	0	5	0	17	0	18	0	0	0	0	0	7	0	47
15:30-15:45	0	0	0	0	3	0	24	0	14	0	0	0	0	0	7	0	48
15:45-16:00	0	0	0	0	2	0	15	0	25	0	0	0	0	0	2	0	44
16:00-16:15	0	0	0	0	5	0	15	0	20	0	0	0	0	0	4	0	44
16:15-16:30	0	0	0	0	0	0	17	0	24	0	0	0	0	0	7	0	48

FEHR PEERS

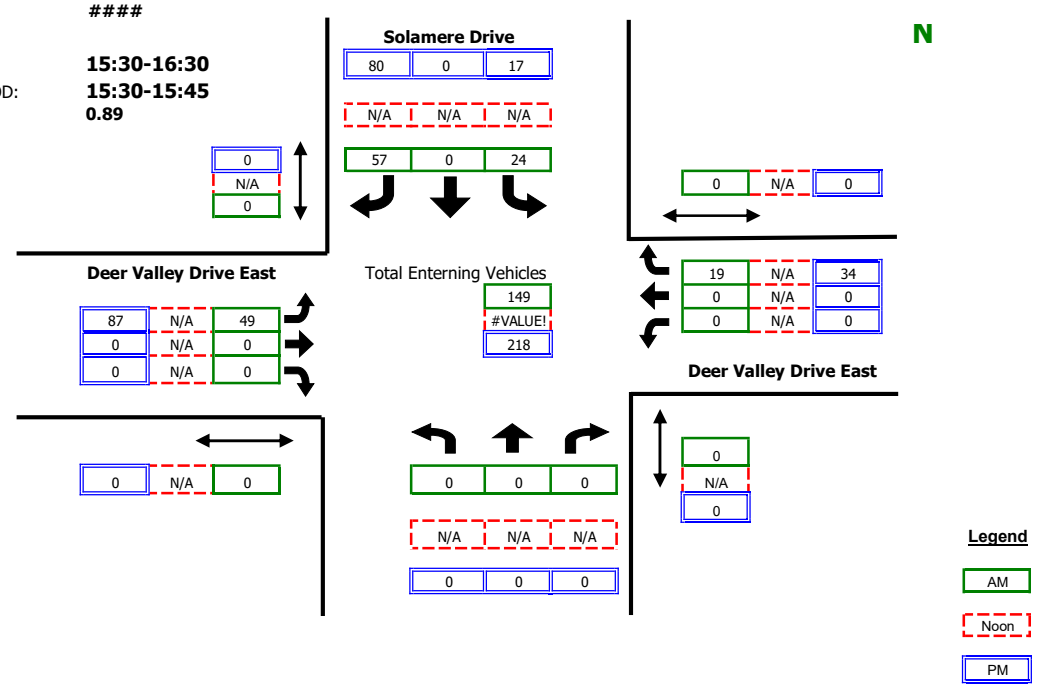
Intersection Turning Movement Summary

Intersection:	**Solamere Drive/Deer Valley Drive East**	**Date:**	**3-4-22, Fri**
	North/South: Solamere Drive	**Day of Week Adjustment:**	**100.0%**
	East/West: Deer Valley Drive East	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Park City**	**Adjustment Station #:**	
Project Title:	**Snow Park Development**	**Growth Rate:**	**0.0%**
Project No:	**UT20-2245**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD: **8:45-9:45**
AM PEAK 15 MINUTE PERIOD: **9:15-9:30**
AM PHF: **0.93**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: ####

PM PEAK HOUR PERIOD: **15:30-16:30**
PM PEAK 15 MINUTE PERIOD: **15:30-15:45**
PM PHF: **0.89**



RAW COUNT SUMMARIES	Solamere Drive Northbound				Solamere Drive Southbound				Deer Valley Drive East Eastbound				Deer Valley Drive East Westbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
8:00-8:15	0	0	0	0	2	0	6	0	6	0	0	0	0	0	1	0	15
8:15-8:30	0	0	0	0	5	0	13	0	9	0	0	0	0	0	2	0	29
8:30-8:45	0	0	0	0	7	0	8	0	9	0	0	0	0	0	2	0	26
8:45-9:00	0	0	0	0	8	0	11	0	11	0	0	0	0	0	7	0	37
9:00-9:15	0	0	0	0	6	0	13	0	11	0	0	0	0	0	3	0	33
9:15-9:30	0	0	0	0	4	0	17	0	16	0	0	0	0	0	3	0	40
9:30-9:45	0	0	0	0	6	0	16	0	11	0	0	0	0	0	6	0	39
9:45-10:00	0	0	0	0	4	0	19	0	10	0	0	0	0	0	2	0	35
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:00-14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15-14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30-14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45-15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00-15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15-15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30-15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45-14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:30-14:45	0	0	0	0	0	0	21	0	15	0	0	0	0	0	1	0	37
14:45-15:00	0	0	0	0	6	0	11	0	20	0	0	0	0	0	1	0	38
15:00-15:15	0	0	0	0	2	0	16	0	17	0	0	0	0	0	7	0	42
15:15-15:30	0	0	0	0	4	0	15	0	19	0	0	0	0	0	1	0	39
15:30-15:45	0	0	0	0	5	0	24	0	20	0	0	0	0	0	12	0	61
15:45-16:00	0	0	0	0	3	0	16	0	17	0	0	0	0	0	5	0	41
16:00-16:15	0	0	0	0	4	0	21	0	21	0	0	0	0	0	8	0	54
16:15-16:30	0	0	0	0	5	0	19	0	29	0	0	0	0	0	9	0	62

FEHR PEERS

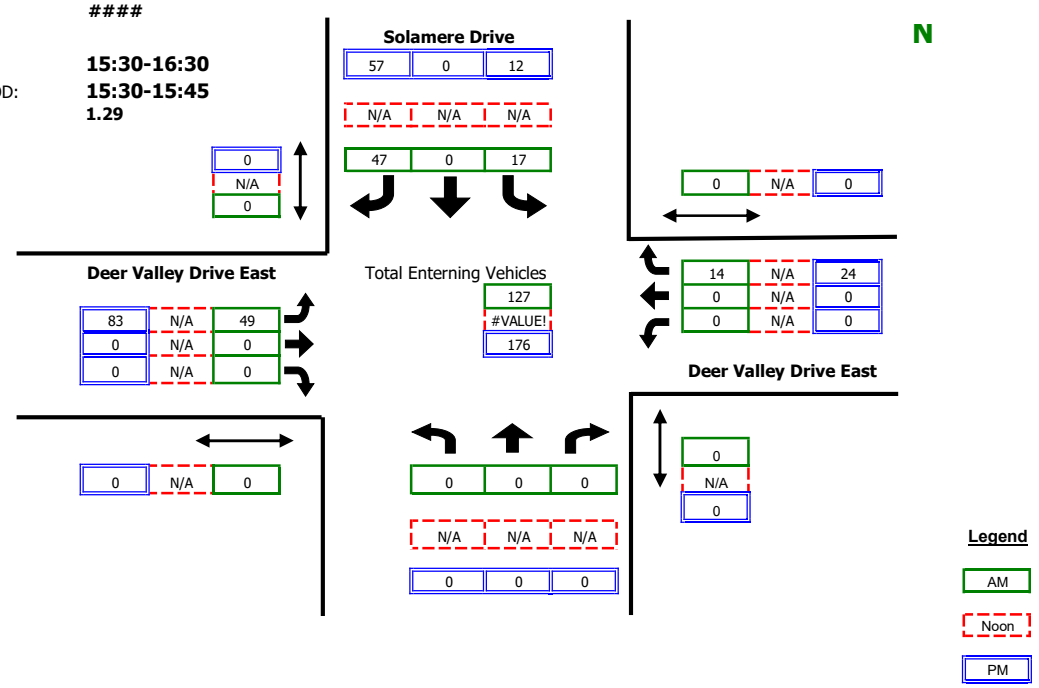
Intersection Turning Movement Summary

Intersection:	**Solamere Drive/Deer Valley Drive East**	**Date:**	**3-5-22, Sat**
	North/South: Solamere Drive	**Day of Week Adjustment:**	**100.0%**
	East/West: Deer Valley Drive East	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Park City**	**Adjustment Station #:**	
Project Title:	**Snow Park Development**	**Growth Rate:**	**0.0%**
Project No:	**UT20-2245**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD: **9:00-10:00**
AM PEAK 15 MINUTE PERIOD: **9:45-10:00**
AM PHF: **0.76**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: ####

PM PEAK HOUR PERIOD: **15:30-16:30**
PM PEAK 15 MINUTE PERIOD: **15:30-15:45**
PM PHF: **1.29**



RAW COUNT SUMMARIES	Solamere Drive Northbound				Solamere Drive Southbound				Deer Valley Drive East Eastbound				Deer Valley Drive East Westbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
8:00-8:15	0	0	0	0	2	0	12	0	4	0	0	0	0	0	2	0	20
8:15-8:30	0	0	0	0	5	0	6	0	5	0	0	0	0	0	1	0	17
8:30-8:45	0	0	0	0	9	0	15	0	8	0	0	0	0	0	0	0	32
8:45-9:00	0	0	0	0	6	0	15	0	4	0	0	0	0	0	6	0	31
9:00-9:15	0	0	0	0	5	0	4	0	8	0	0	0	0	0	2	0	19
9:15-9:30	0	0	0	0	1	0	12	0	13	0	0	0	0	0	5	0	31
9:30-9:45	0	0	0	0	8	0	9	0	14	0	0	0	0	0	4	0	35
9:45-10:00	0	0	0	0	3	0	22	0	14	0	0	0	0	0	3	0	42
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:00-14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15-14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30-14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45-15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00-15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15-15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30-15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45-14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
14:30-14:45	0	0	0	0	4	0	9	0	17	0	0	0	0	0	6	0	36
14:45-15:00	0	0	0	0	3	0	12	0	2	0	0	0	0	0	2	0	19
15:00-15:15	0	0	0	0	3	0	8	0	7	0	0	0	0	0	7	0	25
15:15-15:30	0	0	0	0	2	0	11	0	16	0	0	0	0	0	1	0	30
15:30-15:45	0	0	0	0	2	0	11	0	17	0	0	0	0	0	4	0	34
15:45-16:00	0	0	0	0	5	0	13	0	20	0	0	0	0	0	10	0	48
16:00-16:15	0	0	0	0	3	0	15	0	25	0	0	0	0	0	9	0	52
16:15-16:30	0	0	0	0	2	0	18	0	21	0	0	0	0	0	1	0	42

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Type: Volume / Direction
Tech: Judd / Mosdell / Anderson
Count: Axle Hits / 2

Date Start: 15-Feb-20
Date End: 15-Feb-20
Deer Valley Dr E of the DV Dr Split Intersect VOL D1
DV Dr east of the DV Dr Split Intersect
Deer Valley, Idaho
Site Code: Day 1

Start Time	15-Feb-20 Sat	WB	EB							Total
12:00 AM		*	*							*
12:15		10	8							18
12:30		6	6							12
12:45		6	7							13
01:00		4	2							6
01:15		0	1							1
01:30		3	4							7
01:45		3	6							9
02:00		1	4							5
02:15		0	2							2
02:30		0	0							0
02:45		0	0							0
03:00		0	1							1
03:15		1	0							1
03:30		2	0							2
03:45		0	0							0
04:00		0	0							0
04:15		1	1							2
04:30		1	0							1
04:45		1	0							1
05:00		0	0							0
05:15		1	2							3
05:30		3	0							3
05:45		1	3							4
06:00		0	8							8
06:15		3	1							4
06:30		3	16							19
06:45		9	30							39
07:00		14	38							52
07:15		15	60							75
07:30		22	**94**							**116**
07:45		22	**127**							**149**
08:00		32	**106**							**138**
08:15		29	**64**							**93**
08:30		54	62							116
08:45		48	52							100
09:00		56	32							88
09:15		**51**	26							77
09:30		**65**	46							111
09:45		**68**	36							104
10:00		**66**	29							95
10:15		42	29							71
10:30		61	46							107
10:45		56	36							92
11:00		52	38							90
11:15		54	38							92
11:30		60	34							94
11:45		55	33							88
Total		981	1128							2109
Percent		46.5%	53.5%							
Peak	-	09:15	07:30	-	-	-	-	-	-	07:30
Vol.	-	250	391	-	-	-	-	-	-	496
P.H.F.		0.919	0.770							0.832

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: FEHR0119
Type: Volume / Direction
Tech: Judd / Mosdell / Anderson
Count: Axle Hits / 2

Date Start: 15-Feb-20
Date End: 15-Feb-20
Deer Valley Dr E of the DV Dr Split Intersect VOL D1
DV Dr east of the DV Dr Split Intersect
Deer Valley, Idaho
Site Code: Day 1

Start Time	15-Feb-20 Sat	WB	EB							Total
12:00 PM		90	44							134
12:15		53	30							83
12:30		58	36							94
12:45		84	34							118
01:00		50	50							100
01:15		66	38							104
01:30		48	45							93
01:45		62	40							102
02:00		75	36							111
02:15		66	42							108
02:30		64	37							101
02:45		49	46							95
03:00		61	58							119
03:15		80	48							128
03:30		80	58							138
03:45		**92**	55							**147**
04:00		**100**	52							**152**
04:15		**78**	**64**							**142**
04:30		**109**	**70**							**179**
04:45		72	**62**							134
05:00		84	**59**							143
05:15		64	56							120
05:30		84	58							142
05:45		72	58							130
06:00		73	38							111
06:15		58	59							117
06:30		61	61							122
06:45		51	48							99
07:00		45	53							98
07:15		34	43							77
07:30		42	41							83
07:45		45	36							81
08:00		40	36							76
08:15		32	35							67
08:30		45	40							85
08:45		34	34							68
09:00		36	30							66
09:15		27	30							57
09:30		24	24							48
09:45		34	32							66
10:00		23	24							47
10:15		16	26							42
10:30		20	13							33
10:45		9	10							19
11:00		10	7							17
11:15		*	*							*
11:30		*	*							*
11:45		*	*							*
Total		2500	1896							4396
Percent		56.9%	43.1%							
Peak	-	15:45	16:15	-	-	-	-	-	-	15:45
Vol.	-	379	255	-	-	-	-	-	-	620
P.H.F.		0.869	0.911							0.866
Grand Total		3481	3024							6505
Percent		53.5%	46.5%							

L2 Data Collection

Study: FEHR0119
Type: Volume / Direction
Tech: Judd / Mosdell / Anderson
Count: Axle Hits / 2

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Date Start: 15-Feb-20
Date End: 15-Feb-20
Deer Valley Dr N of Parking & S of Queen Esther VOL D1
DV Dr N 0f Parking & S of Queen Esther
Deer Valley, Utah
Site Code: Day 1

Start Time	15-Feb-20 Sat	SB	NB							Total
12:00 AM		*	*							*
12:15		*	*							*
12:30		3	2							5
12:45		1	2							3
01:00		0	1							1
01:15		0	1							1
01:30		3	2							5
01:45		1	0							1
02:00		1	0							1
02:15		2	0							2
02:30		0	0							0
02:45		0	0							0
03:00		0	0							0
03:15		0	0							0
03:30		0	2							2
03:45		0	0							0
04:00		0	0							0
04:15		1	3							4
04:30		0	0							0
04:45		0	0							0
05:00		2	0							2
05:15		1	1							2
05:30		0	1							1
05:45		1	0							1
06:00		6	0							6
06:15		1	1							2
06:30		9	2							11
06:45		23	4							27
07:00		31	5							36
07:15		61	8							69
07:30		**81**	13							94
07:45		**106**	10							**116**
08:00		**122**	26							**148**
08:15		**73**	25							**98**
08:30		72	48							**120**
08:45		47	44							91
09:00		40	**48**							88
09:15		38	**44**							82
09:30		36	**50**							86
09:45		27	**46**							73
10:00		21	45							66
10:15		20	33							53
10:30		28	38							66
10:45		21	29							50
11:00		22	34							56
11:15		19	23							42
11:30		21	34							55
11:45		19	24							43
Total		960	649							1609
Percent		59.7%	40.3%							
Peak	-	07:30	09:00	-	-	-	-	-	-	07:45
Vol.	-	382	188	-	-	-	-	-	-	482
P.H.F.		0.783	0.940							0.814

L2 Data Collection

Study: FEHR0119
Type: Volume / Direction
Tech: Judd / Mosdell / Anderson
Count: Axle Hits / 2

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Date Start: 15-Feb-20
Date End: 15-Feb-20
Deer Valley Dr N of Parking & S of Queen Esther VOL D1
DV Dr N 0f Parking & S of Queen Esther
Deer Valley, Utah
Site Code: Day 1

Start Time	15-Feb-20 Sat	SB	NB							Total
12:00 PM		22	40							62
12:15		19	28							47
12:30		27	36							63
12:45		19	32							51
01:00		25	26							51
01:15		13	37							50
01:30		20	31							51
01:45		16	41							57
02:00		15	46							61
02:15		21	38							59
02:30		24	44							68
02:45		27	36							63
03:00		28	51							79
03:15		26	56							82
03:30		**47**	62							109
03:45		**44**	**72**							**116**
04:00		**29**	**80**							**109**
04:15		**36**	**82**							**118**
04:30		40	**86**							**126**
04:45		34	52							86
05:00		24	48							72
05:15		22	34							56
05:30		28	62							90
05:45		22	40							62
06:00		14	36							50
06:15		16	33							49
06:30		14	20							34
06:45		16	16							32
07:00		20	23							43
07:15		12	12							24
07:30		8	15							23
07:45		10	16							26
08:00		11	13							24
08:15		8	18							26
08:30		12	15							27
08:45		7	12							19
09:00		15	24							39
09:15		10	13							23
09:30		5	16							21
09:45		5	16							21
10:00		8	17							25
10:15		8	9							17
10:30		4	11							15
10:45		4	8							12
11:00		*	*							*
11:15		*	*							*
11:30		*	*							*
11:45		*	*							*
Total		835	1503							2338
Percent		35.7%	64.3%							
Peak	-	15:30	15:45	-	-	-	-	-	-	15:45
Vol.	-	156	320	-	-	-	-	-	-	469
P.H.F.		0.830	0.930							0.931
Grand Total		1795	2152							3947
Percent		45.5%	54.5%							

L2 Data Collection

Study: FEHR0119
Type: Volume / Direction
Tech: Judd / Mosdell / Anderson
Count: Axle Hits / 2

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Date Start: 15-Feb-20
Date End: 15-Feb-20
Deer Valley Dr S of the DV Dr Split Intersect VOL D1
DV Dr south of the DV Dr Split Intersect
Deer Valley, Utah
Site Code: Day 1

Start Time	15-Feb-20 Sat	SB	NB							Total
12:00 AM		6	10							16
12:15		3	6							9
12:30		2	9							11
12:45		4	2							6
01:00		4	3							7
01:15		3	2							5
01:30		0	2							2
01:45		2	1							3
02:00		4	4							8
02:15		0	3							3
02:30		0	0							0
02:45		1	0							1
03:00		1	1							2
03:15		4	1							5
03:30		1	1							2
03:45		1	0							1
04:00		1	3							4
04:15		0	1							1
04:30		0	0							0
04:45		0	1							1
05:00		4	1							5
05:15		2	3							5
05:30		1	0							1
05:45		1	0							1
06:00		4	4							8
06:15		4	2							6
06:30		21	6							27
06:45		28	10							38
07:00		32	10							42
07:15		36	13							49
07:30		62	26							88
07:45		70	22							92
08:00		**114**	28							142
08:15		**127**	30							**157**
08:30		**129**	38							**167**
08:45		**134**	41							**175**
09:00		113	34							**147**
09:15		98	34							132
09:30		90	**48**							138
09:45		98	**44**							142
10:00		75	**42**							117
10:15		62	**46**							108
10:30		48	43							91
10:45		48	40							88
11:00		54	50							104
11:15		48	40							88
11:30		42	31							73
11:45		66	40							106
Total		1648	776							2424
Percent		68.0%	32.0%							
Peak	-	08:00	09:30	-	-	-	-	-	-	08:15
Vol.	-	504	180	-	-	-	-	-	-	646
P.H.F.		0.940	0.938							0.923

L2 Data Collection

Study: FEHR0119
Type: Volume / Direction
Tech: Judd / Mosdell / Anderson
Count: Axle Hits / 2

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Date Start: 15-Feb-20
Date End: 15-Feb-20
Deer Valley Dr S of the DV Dr Split Intersect VOL D1
DV Dr south of the DV Dr Split Intersect
Deer Valley, Utah
Site Code: Day 1

Start Time	15-Feb-20 Sat	SB	NB							Total
12:00 PM		44	47							91
12:15		46	34							80
12:30		54	25							79
12:45		43	43							86
01:00		46	36							82
01:15		51	39							90
01:30		45	53							98
01:45		42	40							82
02:00		57	54							111
02:15		54	70							124
02:30		53	78							131
02:45		62	66							128
03:00		63	71							134
03:15		**77**	74							151
03:30		**82**	86							168
03:45		**64**	**112**							**176**
04:00		**77**	**146**							**223**
04:15		53	**170**							**223**
04:30		53	**122**							**175**
04:45		60	106							166
05:00		46	108							154
05:15		34	90							124
05:30		52	116							168
05:45		38	116							154
06:00		48	56							104
06:15		38	48							86
06:30		38	34							72
06:45		40	26							66
07:00		30	24							54
07:15		22	38							60
07:30		34	25							59
07:45		40	30							70
08:00		26	22							48
08:15		31	22							53
08:30		11	18							29
08:45		27	22							49
09:00		18	28							46
09:15		16	21							37
09:30		12	12							24
09:45		16	23							39
10:00		10	19							29
10:15		16	24							40
10:30		9	7							16
10:45		*	*							*
11:00		*	*							*
11:15		*	*							*
11:30		*	*							*
11:45		*	*							*
Total		1778	2401							4179
Percent		42.5%	57.5%							
Peak	-	15:15	15:45	-	-	-	-	-	-	15:45
Vol.	-	300	550	-	-	-	-	-	-	797
P.H.F.		0.915	0.809							0.893
Grand Total		3426	3177							6603
Percent		51.9%	48.1%							

MXD+ Vehicle Trip Generation Reduction Percent			
	Daily	AM Peak Hour	PM Peak Hour
Internal Capture	1.9%	3.7%	10.6%
Shift to Transit	3%	1.9%	2.9%
Shift to Walk/Bike	4.6%	5.6%	3.4%

Advanced MXD+ Results

Predicted Probabilities	Daily			AM			PM		
Productions	HBW	HBO	NHB	HBW	HBO	NHB	HBW	HBO	NHB
Internal Capture	4.35%	1.53%	1.45%	5.00%	2.88%	1.52%	21.06%	7.42%	7.04%
Walking External	2.59%	6.40%	0.30%	3.11%	8.32%	0.30%	2.59%	6.40%	0.30%
Transit External	0.25%	3.38%	4.43%	0.35%	3.72%	4.43%	0.35%	3.38%	4.43%
Attractions	HBW	HBO	NHB	HBW	HBO	NHB	HBW	HBO	NHB
Internal Capture	4.28%	1.51%	1.45%	5.00%	2.88%	1.52%	21.06%	7.42%	7.04%
Walking External	2.56%	6.38%	0.30%	3.07%	7.66%	0.30%	2.56%	6.38%	0.30%
Transit External	0.25%	3.35%	4.44%	0.34%	4.69%	6.21%	0.34%	3.35%	4.44%

Number of Trips	Daily			AM			PM		
Productions	HBW	HBO	NHB	HBW	HBO	NHB	HBW	HBO	NHB
Internal Capture	7	9	2	1	1	0	4	5	2
Walking External	5	35	0	1	2	0	0	2	0
Transit External	0	18	6	0	1	0	0	1	1
Attractions	HBW	HBO	NHB	HBW	HBO	NHB	HBW	HBO	NHB
Internal Capture	7	9	2	1	1	0	4	5	2
Walking External	2	43	1	0	3	0	0	5	0
Transit External	0	23	9	0	1	0	0	3	1

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	70	74	105.4%	0.3	0.2	A
	Right Turn	17	19	112.4%	0.3	0.6	A
	Subtotal	87	93	106.8%	0.3	0.2	A
SB	Left Turn	50	50	99.4%	4.1	0.3	A
	Through	116	116	99.6%	0.9	0.3	A
	Right Turn						
	Subtotal	166	165	99.5%	1.8	0.4	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	18	91.0%	5.8	1.2	A
	Through						
	Right Turn	55	56	101.6%	5.2	0.6	A
	Subtotal	75	74	98.8%	5.4	0.5	A
Total		328	332	101.3%	2.3	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	24	23	95.4%	6.8	2.3	A
	Through						
	Right Turn	57	60	104.6%	5.8	0.4	A
	Subtotal	81	83	101.9%	5.9	0.4	A
EB	Left Turn	49	49	100.0%	4.2	0.8	A
	Through	142	144	101.1%	1.3	0.4	A
	Right Turn						
	Subtotal	191	193	100.8%	2.0	0.5	A
WB	Left Turn						
	Through	106	108	101.7%	1.1	0.2	A
	Right Turn	19	21	110.0%	1.3	0.6	A
	Subtotal	125	129	103.0%	1.1	0.2	A
Total		397	404	101.7%	2.6	0.2	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	147	148	100.6%	1.1	0.6	A
	Right Turn	15	15	98.7%	1.0	1.7	A
	Subtotal	162	163	100.4%	1.1	0.5	A
SB	Left Turn	176	176	100.2%	5.3	0.9	A
	Through	627	645	102.9%	3.7	0.6	A
	Right Turn						
	Subtotal	803	822	102.3%	4.0	0.6	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	7	7	97.1%	15.3	8.3	C
	Through						
	Right Turn	156	161	103.2%	4.2	0.9	A
	Subtotal	163	168	102.9%	4.9	0.8	A
Total		1,128	1,152	102.1%	3.8	0.5	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	263	266	101.2%	13.0	2.4	B
	Right Turn	151	158	104.8%	3.7	0.8	A
	Subtotal	414	424	102.5%	9.5	1.7	A
SB	Left Turn	105	101	96.4%	12.9	1.8	B
	Through	631	635	100.7%	8.9	1.2	A
	Right Turn						
	Subtotal	736	737	100.1%	9.4	1.1	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	553	558	101.0%	15.8	1.5	B
	Through						
	Right Turn	198	196	98.7%	5.4	1.5	A
	Subtotal	751	754	100.4%	13.0	1.5	B
Total		1,901	1,915	100.7%	10.8	1.0	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	36	35	96.1%	32.0	10.4	C
	Through	191	196	102.4%	52.3	3.8	D
	Right Turn	67	74	110.0%	17.5	6.3	B
	Subtotal	294	304	103.3%	42.7	4.9	D
SB	Left Turn	477	429	90.0%	206.7	15.7	F
	Through	169	154	90.8%	173.8	18.6	F
	Right Turn	901	853	94.6%	62.6	9.2	E
	Subtotal	1,547	1,436	92.8%	117.7	10.8	F
EB	Left Turn	320	316	98.7%	40.5	6.2	D
	Through	172	175	101.7%	26.9	8.7	C
	Right Turn	16	17	104.4%	19.7	18.3	B
	Subtotal	508	508	99.9%	35.2	5.4	D
WB	Left Turn	50	49	98.2%	53.8	9.2	D
	Through	253	281	110.9%	42.0	6.4	D
	Right Turn	215	215	99.9%	8.4	1.3	A
	Subtotal	518	545	105.1%	29.9	4.1	C
Total		2,867	2,791	97.4%	77.1	4.5	E

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	64	64	99.8%	22.0	4.6	C
	Through	28	30	106.4%	23.3	7.8	C
	Right Turn	101	100	98.9%	3.2	0.9	A
	Subtotal	193	194	100.3%	12.7	2.6	B
SB	Left Turn	54	54	100.6%	16.7	4.9	B
	Through	71	71	99.4%	26.4	5.1	C
	Right Turn	29	30	101.7%	4.3	1.0	A
	Subtotal	154	154	100.3%	18.4	3.0	B
EB	Left Turn	22	20	92.7%	12.9	3.6	B
	Through	230	234	101.6%	16.4	2.4	B
	Right Turn	95	98	103.2%	8.2	2.5	A
	Subtotal	347	352	101.5%	13.9	2.2	B
WB	Left Turn	287	284	98.9%	13.8	1.7	B
	Through	324	323	99.7%	7.7	1.7	A
	Right Turn	47	47	100.2%	3.7	1.9	A
	Subtotal	658	654	99.4%	10.0	1.3	B
Total		1,352	1,354	100.1%	12.4	1.5	B

MOVEMENT SUMMARY

Site: 101 [Existing AM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.157	13.4	LOS B	0.6	14.5	0.63	0.63	0.63	33.7
8	T1	127	3.0	0.157	7.8	LOS A	0.6	14.5	0.63	0.63	0.63	34.3
18b	R3	62	3.0	0.157	7.8	LOS A	0.6	14.5	0.63	0.63	0.63	32.5
Approach		189	3.5	0.157	7.9	LOS A	0.6	14.5	0.63	0.63	0.63	33.7
SouthEast: RoadName												
3bx	L3	32	3.0	0.142	4.3	LOS A	0.5	14.7	0.29	0.17	0.29	35.9
3ax	L1	19	100.0	0.142	7.1	LOS A	0.5	14.7	0.29	0.17	0.29	34.5
18ax	R1	269	3.0	0.142	4.3	LOS A	0.6	15.2	0.29	0.17	0.29	35.6
Approach		320	8.8	0.142	4.4	LOS A	0.6	15.2	0.29	0.17	0.29	35.5
North: Deer Valley Drive												
7u	U	23	3.0	0.748	14.3	LOS B	8.6	221.4	0.52	0.26	0.52	30.4
7a	L1	804	3.0	0.748	14.3	LOS B	8.6	221.4	0.52	0.26	0.52	29.5
4	T1	378	3.0	0.748	8.1	LOS A	8.6	221.4	0.32	0.15	0.32	33.5
14	R2	12	100.0	0.204	7.2	LOS A	0.9	23.5	0.20	0.09	0.20	34.5
Approach		1217	3.9	0.748	12.3	LOS B	8.6	221.4	0.45	0.23	0.45	30.7
West: Transit Center												
5	L2	2	100.0	0.159	18.6	LOS C	0.3	11.7	0.68	0.68	0.68	29.6
12a	R1	23	100.0	0.159	18.6	LOS C	0.3	11.7	0.68	0.68	0.68	29.2
12	R2	13	100.0	0.159	18.6	LOS C	0.3	11.7	0.68	0.68	0.68	28.6
Approach		38	100.0	0.159	18.6	LOS C	0.3	11.7	0.68	0.68	0.68	29.0
All Vehicles		1765	6.9	0.748	10.5	LOS B	8.6	221.4	0.45	0.27	0.45	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	293	298	101.6%	1.0	0.3	A
	Right Turn	30	33	111.3%	0.8	0.6	A
	Subtotal	323	331	102.5%	1.0	0.3	A
SB	Left Turn	85	81	95.4%	4.6	0.7	A
	Through	78	78	99.9%	1.2	0.4	A
	Right Turn						
	Subtotal	163	159	97.5%	2.9	0.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	29	29	100.7%	8.5	4.0	A
	Through						
	Right Turn	60	60	100.7%	6.0	0.9	A
	Subtotal	89	90	100.7%	6.6	1.4	A
Total		575	580	100.8%	2.4	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	17	19	112.4%	10.6	4.9	B
	Through						
	Right Turn	80	87	108.6%	7.1	2.1	A
	Subtotal	97	106	109.3%	7.7	2.2	A
EB	Left Turn	87	84	96.4%	5.3	0.9	A
	Through	146	138	94.7%	1.9	0.8	A
	Right Turn						
	Subtotal	233	222	95.3%	3.3	0.9	A
WB	Left Turn						
	Through	319	324	101.6%	1.2	0.2	A
	Right Turn	34	35	102.1%	1.0	0.5	A
	Subtotal	353	359	101.6%	1.2	0.2	A
Total		683	687	100.6%	3.0	0.6	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	536	536	100.0%	3.4	0.3	A
	Right Turn	44	45	102.3%	3.2	1.3	A
	Subtotal	580	581	100.2%	3.4	0.3	A
SB	Left Turn	189	178	94.2%	8.5	2.0	A
	Through	204	205	100.6%	2.0	0.5	A
	Right Turn						
	Subtotal	393	383	97.5%	5.0	1.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	22	25	113.6%	39.3	37.1	E
	Through						
	Right Turn	377	382	101.2%	31.9	17.5	D
	Subtotal	399	407	101.9%	32.3	18.3	D
Total		1,372	1,371	99.9%	12.2	5.4	B

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	754	744	98.6%	29.8	7.7	C
	Right Turn	651	660	101.4%	20.8	8.4	C
	Subtotal	1,405	1,404	99.9%	25.6	7.8	C
SB	Left Turn	251	205	81.6%	19.8	1.7	B
	Through	460	431	93.6%	7.8	1.0	A
	Right Turn						
	Subtotal	711	635	89.4%	11.5	1.5	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	419	415	99.0%	23.4	4.0	C
	Through						
	Right Turn	129	129	99.8%	13.3	8.1	B
	Subtotal	548	544	99.2%	20.8	5.1	C
Total		2,664	2,583	96.9%	21.2	5.2	C

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	34	96.3%	26.9	5.4	C
	Through	395	387	98.1%	48.2	4.5	D
	Right Turn	68	74	108.1%	26.7	8.6	C
	Subtotal	498	495	99.3%	44.0	4.2	D
SB	Left Turn	495	389	78.7%	208.5	18.4	F
	Through	363	286	78.8%	164.0	18.2	F
	Right Turn	364	294	80.9%	44.7	5.1	D
	Subtotal	1,222	970	79.4%	147.7	13.7	F
EB	Left Turn	633	526	83.1%	87.2	7.4	F
	Through	277	240	86.5%	70.2	16.8	E
	Right Turn	36	30	83.6%	65.0	22.4	E
	Subtotal	946	796	84.1%	81.4	10.3	F
WB	Left Turn	75	74	98.9%	73.7	14.1	E
	Through	239	285	119.4%	56.1	8.1	E
	Right Turn	640	624	97.6%	40.2	5.9	D
	Subtotal	954	984	103.1%	47.7	3.3	D
Total		3,620	3,244	89.6%	84.3	3.4	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	176	166	94.4%	34.5	8.0	C
	Through	89	93	104.5%	29.9	6.0	C
	Right Turn	479	455	95.0%	11.2	2.4	B
	Subtotal	744	714	96.0%	19.4	2.8	B
SB	Left Turn	90	88	98.2%	30.0	5.6	C
	Through	55	50	91.5%	34.5	7.9	C
	Right Turn	63	59	92.9%	5.5	1.2	A
	Subtotal	208	197	94.8%	23.9	3.5	C
EB	Left Turn	71	68	96.3%	15.8	3.5	B
	Through	584	589	100.9%	26.4	3.4	C
	Right Turn	149	148	99.3%	21.2	4.8	C
	Subtotal	804	805	100.2%	24.6	3.1	C
WB	Left Turn	218	216	99.1%	17.7	3.0	B
	Through	384	386	100.5%	11.3	2.2	B
	Right Turn	46	49	106.3%	6.8	4.2	A
	Subtotal	648	651	100.4%	13.1	1.7	B
Total		2,404	2,367	98.5%	19.7	1.9	B

MOVEMENT SUMMARY

Site: 101 [Existing PM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.344	13.5	LOS B	1.5	38.8	0.64	0.65	0.68	32.9
8	T1	454	3.0	0.344	9.0	LOS A	1.5	38.8	0.64	0.65	0.68	33.8
18b	R3	62	3.0	0.344	9.0	LOS A	1.5	38.8	0.64	0.65	0.68	32.1
Approach		516	3.2	0.344	9.0	LOS A	1.5	38.8	0.64	0.65	0.68	33.6
SouthEast: RoadName												
3bx	L3	36	3.0	0.559	14.3	LOS B	3.7	97.6	0.74	0.91	1.23	31.7
3ax	L1	13	100.0	0.559	19.1	LOS C	3.7	97.6	0.74	0.91	1.23	30.4
18ax	R1	732	3.0	0.559	14.2	LOS B	3.8	98.4	0.75	0.91	1.23	31.0
Approach		782	4.6	0.559	14.3	LOS B	3.8	98.4	0.75	0.91	1.23	31.0
North: Deer Valley Drive												
7u	U	242	3.0	0.617	10.2	LOS B	5.3	134.5	0.36	0.17	0.36	31.9
7a	L1	368	3.0	0.617	10.2	LOS B	5.3	134.5	0.36	0.17	0.36	31.0
4	T1	398	3.0	0.617	7.1	LOS A	5.3	134.5	0.27	0.12	0.27	33.7
14	R2	6	100.0	0.169	6.8	LOS A	0.7	18.8	0.18	0.08	0.18	34.6
Approach		1014	3.6	0.617	9.0	LOS A	5.3	134.5	0.32	0.15	0.32	32.2
West: Transit Center												
5	L2	5	100.0	0.078	14.1	LOS B	0.1	5.8	0.61	0.61	0.61	31.0
12a	R1	12	100.0	0.078	14.1	LOS B	0.1	5.8	0.61	0.61	0.61	30.5
12	R2	5	100.0	0.078	14.1	LOS B	0.1	5.8	0.61	0.61	0.61	29.9
Approach		22	100.0	0.078	14.1	LOS B	0.1	5.8	0.61	0.61	0.61	30.5
All Vehicles		2334	4.8	0.617	10.8	LOS B	5.3	134.5	0.54	0.52	0.71	32.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Existing Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	119	119	99.7%	7.2	2.3	A
	Through	67	69	103.6%	4.7	1.1	A
	Right Turn						
	Subtotal	186	188	101.1%	6.2	1.7	A
SB	Left Turn						
	Through	194	200	103.2%	5.3	1.6	A
	Right Turn	15	16	105.3%	1.9	1.0	A
	Subtotal	209	216	103.4%	5.1	1.4	A
EB	Left Turn	15	15	100.0%	10.7	4.6	B
	Through						
	Right Turn	100	99	99.0%	5.4	1.1	A
	Subtotal	115	114	99.1%	6.3	1.6	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		510	518	101.6%	5.7	1.2	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	20	101.5%	7.9	2.2	A
	Through						
	Right Turn						
	Subtotal	20	20	101.5%	7.9	2.2	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	702	711	101.3%	3.7	0.6	A
	Right Turn	20	21	104.0%	2.2	1.2	A
	Subtotal	722	732	101.4%	3.7	0.6	A
WB	Left Turn						
	Through	185	183	98.9%	0.3	0.1	A
	Right Turn						
	Subtotal	185	183	98.9%	0.3	0.1	A
Total		927	935	100.9%	3.2	0.5	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	112	114	102.1%	0.9	0.2	A
	Right Turn	17	21	125.3%	1.0	0.6	A
	Subtotal	129	136	105.1%	0.9	0.1	A
SB	Left Turn	50	49	97.0%	4.0	0.3	A
	Through	204	213	104.4%	1.2	0.3	A
	Right Turn						
	Subtotal	254	261	102.9%	1.7	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	22	108.0%	7.5	2.8	A
	Through						
	Right Turn	55	52	94.0%	5.3	0.3	A
	Subtotal	75	73	97.7%	5.9	0.8	A
Total		458	470	102.7%	2.1	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	24	24	97.9%	8.2	2.6	A
	Through						
	Right Turn	57	56	97.5%	5.7	0.7	A
	Subtotal	81	79	97.7%	6.5	1.1	A
EB	Left Turn	49	49	99.8%	4.4	0.6	A
	Through	230	236	102.8%	1.7	0.5	A
	Right Turn						
	Subtotal	279	285	102.3%	2.2	0.3	A
WB	Left Turn						
	Through	148	145	97.7%	1.0	0.3	A
	Right Turn	19	20	103.7%	0.8	0.4	A
	Subtotal	167	164	98.4%	0.9	0.2	A
Total		527	529	100.3%	2.5	0.3	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Existing Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	190	190	100.0%	1.4	0.4	A
	Right Turn	15	14	96.0%	1.4	1.3	A
	Subtotal	205	204	99.7%	1.4	0.3	A
SB	Left Turn	264	271	102.7%	7.1	0.6	A
	Through	715	721	100.8%	4.3	0.3	A
	Right Turn						
	Subtotal	979	992	101.3%	5.0	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	7	7	97.1%	26.3	26.8	D
	Through						
	Right Turn	198	194	97.7%	5.6	1.2	A
	Subtotal	205	200	97.7%	6.4	1.4	A
Total		1,389	1,396	100.5%	4.7	0.4	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	305	299	98.1%	13.3	2.0	B
	Right Turn	168	161	96.0%	3.1	0.9	A
	Subtotal	473	461	97.4%	9.6	1.4	A
SB	Left Turn	105	90	85.6%	13.2	1.9	B
	Through	719	660	91.8%	9.8	1.2	A
	Right Turn						
	Subtotal	824	750	91.0%	10.2	1.2	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	588	589	100.2%	16.0	2.1	B
	Through						
	Right Turn	198	196	99.0%	5.7	1.1	A
	Subtotal	786	785	99.9%	13.3	1.7	B
Total		2,083	1,996	95.8%	11.3	1.0	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	36	38	104.4%	31.1	6.3	C
	Through	191	194	101.7%	49.3	4.9	D
	Right Turn	67	68	102.1%	15.3	5.9	B
	Subtotal	294	300	102.1%	39.3	5.1	D
SB	Left Turn	565	435	77.0%	215.8	13.6	F
	Through	169	139	82.0%	174.7	19.3	F
	Right Turn	901	715	79.3%	55.4	10.9	E
	Subtotal	1,635	1,289	78.8%	119.7	6.7	F
EB	Left Turn	320	314	98.2%	39.3	4.6	D
	Through	172	177	102.7%	31.2	6.4	C
	Right Turn	16	16	99.4%	21.7	12.3	C
	Subtotal	508	507	99.7%	36.0	4.9	D
WB	Left Turn	50	47	93.4%	59.7	16.5	E
	Through	253	281	111.1%	43.7	6.9	D
	Right Turn	257	248	96.6%	9.1	3.1	A
	Subtotal	560	576	102.9%	31.0	3.8	C
Total		2,997	2,672	89.1%	75.1	3.9	E

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	64	57	89.5%	21.3	4.2	C
	Through	28	27	97.9%	22.2	7.6	C
	Right Turn	118	109	92.5%	2.7	0.6	A
	Subtotal	210	194	92.3%	11.0	2.2	B
SB	Left Turn	54	52	96.5%	19.2	3.9	B
	Through	71	72	102.0%	24.5	5.0	C
	Right Turn	29	29	99.3%	4.0	0.9	A
	Subtotal	154	153	99.5%	18.6	2.2	B
EB	Left Turn	22	21	96.4%	10.8	3.3	B
	Through	230	226	98.3%	18.6	2.7	B
	Right Turn	95	97	102.4%	8.8	2.6	A
	Subtotal	347	345	99.3%	15.3	2.2	B
WB	Left Turn	322	319	98.9%	13.8	2.6	B
	Through	324	324	100.0%	8.7	1.4	A
	Right Turn	47	46	98.7%	4.6	2.1	A
	Subtotal	693	689	99.4%	10.8	1.5	B
Total		1,404	1,381	98.3%	12.8	1.1	B

MOVEMENT SUMMARY

Site: 101 [Existing Plus Project AM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.204	16.4	LOS C	0.7	18.5	0.68	0.68	0.68	32.7
8	T1	127	3.0	0.204	9.8	LOS A	0.7	18.5	0.68	0.68	0.68	33.3
18b	R3	81	3.0	0.204	9.8	LOS A	0.7	18.5	0.68	0.68	0.68	31.6
Approach		209	3.5	0.204	9.9	LOS A	0.7	18.5	0.68	0.68	0.68	32.6
SouthEast: RoadName												
3bx	L3	41	3.0	0.181	4.7	LOS A	0.7	19.5	0.30	0.18	0.30	35.8
3ax	L1	23	100.0	0.181	7.5	LOS A	0.7	19.5	0.30	0.18	0.30	34.3
18ax	R1	346	3.0	0.181	4.6	LOS A	0.8	20.1	0.30	0.18	0.30	35.4
Approach		411	8.5	0.181	4.8	LOS A	0.8	20.1	0.30	0.18	0.30	35.3
North: Deer Valley Drive												
7u	U	23	3.0	0.858	21.2	LOS C	13.6	349.0	0.81	0.45	0.81	27.8
7a	L1	963	3.0	0.858	21.2	LOS C	13.6	349.0	0.81	0.45	0.81	27.1
4	T1	378	3.0	0.858	9.3	LOS A	13.6	349.0	0.39	0.21	0.39	33.1
14	R2	12	100.0	0.235	7.6	LOS A	1.1	27.7	0.24	0.12	0.24	34.3
Approach		1376	3.8	0.858	17.8	LOS C	13.6	349.0	0.69	0.38	0.69	28.5
West: Transit Center												
5	L2	2	100.0	0.231	23.6	LOS C	0.4	16.9	0.73	0.74	0.75	27.8
12a	R1	33	100.0	0.231	23.6	LOS C	0.4	16.9	0.73	0.74	0.75	27.4
12	R2	13	100.0	0.231	23.6	LOS C	0.4	16.9	0.73	0.74	0.75	26.9
Approach		48	100.0	0.231	23.6	LOS C	0.4	16.9	0.73	0.74	0.75	27.3
All Vehicles		2043	7.0	0.858	14.5	LOS B	13.6	349.0	0.61	0.38	0.61	30.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Existing Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	150	147	97.9%	10.0	3.6	B
	Through	377	376	99.8%	7.5	2.7	A
	Right Turn						
	Subtotal	527	523	99.2%	8.2	2.9	A
SB	Left Turn						
	Through	97	92	94.6%	4.3	1.5	A
	Right Turn	15	20	130.0%	2.3	0.8	A
	Subtotal	112	111	99.4%	3.9	1.2	A
EB	Left Turn	15	15	101.3%	17.9	10.4	B
	Through						
	Right Turn	146	143	97.9%	6.6	3.0	A
	Subtotal	161	158	98.3%	7.7	3.9	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		800	792	99.1%	7.4	2.6	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	17	85.5%	15.5	8.6	C
	Through						
	Right Turn						
	Subtotal	20	17	85.5%	15.5	8.6	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	264	260	98.6%	1.7	0.6	A
	Right Turn	20	19	93.5%	0.6	0.6	A
	Subtotal	284	279	98.2%	1.7	0.5	A
WB	Left Turn						
	Through	664	673	101.3%	2.2	0.1	A
	Right Turn						
	Subtotal	664	673	101.3%	2.2	0.1	A
Total		968	969	100.1%	2.2	0.3	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Existing Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	396	400	101.0%	1.4	0.2	A
	Right Turn	30	29	95.0%	1.6	0.7	A
	Subtotal	426	429	100.6%	1.4	0.2	A
SB	Left Turn	85	84	98.5%	4.9	0.5	A
	Through	135	137	101.6%	1.5	0.4	A
	Right Turn						
	Subtotal	220	221	100.4%	2.7	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	29	24	84.1%	10.8	2.7	B
	Through						
	Right Turn	60	61	101.5%	7.7	2.1	A
	Subtotal	89	85	95.8%	8.5	1.8	A
Total		735	735	99.9%	2.6	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	17	17	99.4%	13.4	12.8	B
	Through						
	Right Turn	80	74	92.8%	9.6	6.8	A
	Subtotal	97	91	93.9%	10.2	7.1	B
EB	Left Turn	87	89	102.8%	5.4	0.7	A
	Through	203	202	99.7%	2.2	0.6	A
	Right Turn						
	Subtotal	290	292	100.6%	3.1	0.6	A
WB	Left Turn						
	Through	422	424	100.4%	2.6	2.8	A
	Right Turn	34	35	101.5%	3.0	4.5	A
	Subtotal	456	458	100.4%	2.6	2.9	A
Total		843	841	99.7%	3.7	2.3	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Existing Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	640	651	101.7%	3.0	0.2	A
	Right Turn	44	44	100.9%	2.5	0.8	A
	Subtotal	684	695	101.7%	3.0	0.2	A
SB	Left Turn	246	247	100.6%	9.5	1.7	A
	Through	262	257	98.2%	2.1	0.4	A
	Right Turn						
	Subtotal	508	505	99.3%	5.8	0.9	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	22	19	85.9%	128.3	30.8	F
	Through						
	Right Turn	480	436	90.9%	125.0	18.2	F
	Subtotal	502	455	90.7%	125.3	17.9	F
Total		1,694	1,655	97.7%	39.3	4.3	E

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	857	840	98.0%	44.8	24.2	D
	Right Turn	692	697	100.8%	38.1	29.4	D
	Subtotal	1,549	1,537	99.3%	41.7	26.5	D
SB	Left Turn	251	212	84.5%	18.3	3.1	B
	Through	518	473	91.3%	6.7	1.0	A
	Right Turn						
	Subtotal	769	685	89.1%	10.4	1.4	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	442	428	96.9%	20.9	2.7	C
	Through						
	Right Turn	129	132	101.9%	9.9	2.5	A
	Subtotal	571	560	98.0%	18.4	2.7	B
Total		2,889	2,782	96.3%	29.1	14.3	C

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	33	93.1%	39.3	9.0	D
	Through	395	397	100.6%	64.0	7.4	E
	Right Turn	68	65	94.9%	44.0	12.8	D
	Subtotal	498	494	99.3%	59.2	7.4	E
SB	Left Turn	553	492	88.9%	163.8	11.4	F
	Through	363	323	89.0%	129.2	4.7	F
	Right Turn	364	319	87.6%	41.9	4.3	D
	Subtotal	1,280	1,134	88.6%	120.6	8.2	F
EB	Left Turn	633	469	74.1%	105.2	6.6	F
	Through	277	199	71.9%	75.3	13.8	E
	Right Turn	36	25	69.7%	64.9	24.0	E
	Subtotal	946	693	73.3%	94.7	7.7	F
WB	Left Turn	75	75	99.3%	97.3	18.6	F
	Through	239	295	123.6%	66.7	18.8	E
	Right Turn	743	719	96.8%	35.3	4.7	D
	Subtotal	1,057	1,089	103.0%	48.2	6.5	D
Total		3,781	3,410	90.2%	82.8	3.4	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	176	173	98.2%	36.7	3.8	D
	Through	89	94	105.7%	27.4	6.6	C
	Right Turn	520	499	95.9%	12.1	2.8	B
	Subtotal	785	765	97.5%	19.7	3.1	B
SB	Left Turn	90	88	97.4%	32.6	7.3	C
	Through	55	51	93.5%	39.1	10.0	D
	Right Turn	63	65	102.5%	5.4	0.9	A
	Subtotal	208	204	97.9%	25.3	4.8	C
EB	Left Turn	71	74	104.5%	14.2	3.2	B
	Through	584	583	99.8%	26.2	3.6	C
	Right Turn	149	144	96.9%	21.8	3.1	C
	Subtotal	804	801	99.7%	24.3	3.4	C
WB	Left Turn	241	239	99.0%	19.0	1.5	B
	Through	384	387	100.8%	10.7	1.6	B
	Right Turn	46	46	100.9%	8.3	2.9	A
	Subtotal	671	672	100.2%	13.6	1.3	B
Total		2,468	2,443	99.0%	20.1	2.0	C

MOVEMENT SUMMARY

Site: 101 [Existing Plus Project PM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.390	15.6	LOS C	1.9	48.1	0.68	0.74	0.86	32.2
8	T1	454	3.0	0.390	10.6	LOS B	1.9	48.1	0.68	0.74	0.86	33.0
18b	R3	74	3.0	0.390	10.6	LOS B	1.9	48.1	0.68	0.74	0.86	31.4
Approach		528	3.2	0.390	10.6	LOS B	1.9	48.1	0.68	0.74	0.86	32.8
SouthEast: RoadName												
3bx	L3	58	3.0	0.713	20.7	LOS C	6.6	175.2	0.82	1.13	1.74	29.1
3ax	L1	23	100.0	0.713	25.4	LOS D	6.6	175.2	0.82	1.13	1.74	27.9
18ax	R1	910	3.0	0.713	20.4	LOS C	6.9	176.8	0.83	1.13	1.73	28.5
Approach		991	5.3	0.713	20.5	LOS C	6.9	176.8	0.83	1.13	1.73	28.6
North: Deer Valley Drive												
7u	U	242	3.0	0.702	12.9	LOS B	6.8	174.2	0.54	0.32	0.54	30.8
7a	L1	466	3.0	0.702	12.9	LOS B	6.8	174.2	0.54	0.32	0.54	29.9
4	T1	398	3.0	0.702	8.1	LOS A	6.8	174.2	0.37	0.21	0.37	33.3
14	R2	6	100.0	0.192	7.3	LOS A	0.8	21.7	0.25	0.13	0.25	34.4
Approach		1112	3.5	0.702	11.1	LOS B	6.8	174.2	0.48	0.28	0.48	31.2
West: Transit Center												
5	L2	5	100.0	0.110	16.3	LOS C	0.2	8.1	0.65	0.65	0.65	30.2
12a	R1	18	100.0	0.110	16.3	LOS C	0.2	8.1	0.65	0.65	0.65	29.8
12	R2	5	100.0	0.110	16.3	LOS C	0.2	8.1	0.65	0.65	0.65	29.2
Approach		28	100.0	0.110	16.3	LOS C	0.2	8.1	0.65	0.65	0.65	29.8
All Vehicles		2660	5.1	0.713	14.6	LOS B	6.9	176.8	0.65	0.69	1.02	30.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	119	108	91.0%	5.5	2.3	A
	Through	67	93	138.2%	3.9	2.4	A
	Right Turn						
	Subtotal	186	201	108.0%	4.6	1.6	A
SB	Left Turn						
	Through	194	211	108.6%	2.9	1.3	A
	Right Turn	15	15	101.3%	1.4	2.4	A
	Subtotal	209	226	108.0%	2.8	1.3	A
EB	Left Turn	15	14	94.0%	7.2	0.9	A
	Through						
	Right Turn	100	90	89.6%	5.5	2.1	A
	Subtotal	115	104	90.2%	6.3	0.7	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		510	530	104.0%	4.2	1.1	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	20	100.5%	11.5	2.6	B
	Through						
	Right Turn						
	Subtotal	20	20	100.5%	11.5	2.6	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	702	709	101.0%	1.2	0.2	A
	Right Turn	20	21	107.0%	1.3	0.4	A
	Subtotal	722	731	101.2%	1.2	0.2	A
WB	Left Turn						
	Through	185	172	92.9%	0.7	0.1	A
	Right Turn						
	Subtotal	185	172	92.9%	0.7	0.1	A
Total		927	923	99.5%	1.3	0.2	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	112	135	120.9%	0.1	0.1	A
	Right Turn	17	17	101.2%	0.1	0.1	A
	Subtotal	129	153	118.3%	0.1	0.1	A
SB	Left Turn	50	49	98.2%	3.5	0.4	A
	Through	204	226	110.9%	0.4	0.1	A
	Right Turn						
	Subtotal	254	275	108.4%	1.0	0.1	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	19	97.0%	5.4	0.9	A
	Through						
	Right Turn	55	53	96.5%	5.1	0.4	A
	Subtotal	75	73	96.7%	5.2	0.5	A
Total		458	500	109.3%	1.4	0.1	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	24	23	97.1%	5.9	1.1	A
	Through						
	Right Turn	57	59	104.0%	5.7	0.8	A
	Subtotal	81	83	102.0%	5.8	0.5	A
EB	Left Turn	49	52	106.1%	4.6	0.7	A
	Through	230	249	108.3%	1.8	0.4	A
	Right Turn						
	Subtotal	279	301	108.0%	2.2	0.4	A
WB	Left Turn						
	Through	148	168	113.4%	0.2	0.1	A
	Right Turn	19	20	105.3%	0.0	0.1	A
	Subtotal	167	188	112.5%	0.1	0.1	A
Total		527	572	108.5%	2.1	0.4	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	190	178	93.6%	13.6	4.2	B
	Right Turn	15	16	103.3%	7.6	4.4	A
	Subtotal	205	193	94.3%	12.8	3.4	B
SB	Left Turn	264	284	107.7%	10.6	1.5	B
	Through	715	719	100.6%	8.1	0.9	A
	Right Turn						
	Subtotal	979	1,004	102.5%	8.8	0.8	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	7	7	94.3%	12.5	13.1	B
	Through						
	Right Turn	198	218	109.9%	4.3	1.0	A
	Subtotal	205	224	109.4%	4.7	0.9	A
Total		1,389	1,421	102.3%	8.6	0.8	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	305	308	101.1%	14.6	1.7	B
	Right Turn	168	167	99.3%	3.3	0.6	A
	Subtotal	473	475	100.4%	10.7	1.3	B
SB	Left Turn	105	92	87.5%	13.3	2.4	B
	Through	719	639	88.9%	9.9	1.2	A
	Right Turn						
	Subtotal	824	731	88.7%	10.3	1.1	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	588	606	103.0%	16.6	2.1	B
	Through						
	Right Turn	198	208	105.1%	5.8	1.2	A
	Subtotal	786	814	103.5%	13.9	1.9	B
Total		2,083	2,020	97.0%	11.8	1.0	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	36	45	125.6%	32.0	6.1	C
	Through	191	194	101.8%	49.3	5.7	D
	Right Turn	67	70	104.2%	17.7	8.0	B
	Subtotal	294	309	105.2%	39.3	3.9	D
SB	Left Turn	565	422	74.7%	203.8	44.0	F
	Through	169	129	76.4%	167.4	39.9	F
	Right Turn	901	732	81.3%	57.5	23.3	E
	Subtotal	1,635	1,284	78.5%	119.1	7.6	F
EB	Left Turn	320	338	105.8%	40.5	11.7	D
	Through	172	190	110.3%	27.5	7.5	C
	Right Turn	16	19	116.3%	21.1	8.6	C
	Subtotal	508	547	107.6%	35.2	9.0	D
WB	Left Turn	50	47	94.6%	64.6	12.7	E
	Through	253	303	119.7%	49.8	16.5	D
	Right Turn	257	261	101.4%	10.3	2.3	B
	Subtotal	560	611	109.1%	34.2	12.1	C
Total		2,997	2,751	91.8%	76.3	2.1	E

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	64	57	88.4%	21.8	5.7	C
	Through	28	28	100.0%	24.9	6.2	C
	Right Turn	118	112	94.9%	3.5	0.9	A
	Subtotal	210	197	93.6%	12.0	2.4	B
SB	Left Turn	54	57	106.3%	21.2	5.8	C
	Through	71	75	105.5%	24.3	4.0	C
	Right Turn	29	31	107.9%	4.4	1.2	A
	Subtotal	154	164	106.2%	19.5	2.1	B
EB	Left Turn	22	22	100.9%	13.4	6.2	B
	Through	230	245	106.7%	18.2	3.2	B
	Right Turn	95	98	103.5%	10.8	3.7	B
	Subtotal	347	366	105.4%	16.1	3.3	B
WB	Left Turn	322	335	104.0%	14.4	2.3	B
	Through	324	340	105.0%	7.9	1.7	A
	Right Turn	47	49	104.7%	4.7	1.5	A
	Subtotal	693	724	104.5%	10.6	1.4	B
Total		1,404	1,450	103.3%	13.2	1.6	B

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	150	148	98.7%	7.6	1.7	A
	Through	377	382	101.4%	7.7	1.1	A
	Right Turn						
	Subtotal	527	530	100.6%	7.7	1.2	A
SB	Left Turn						
	Through	97	93	95.4%	4.6	1.8	A
	Right Turn	15	16	107.3%	1.6	1.9	A
	Subtotal	112	109	97.0%	4.3	1.7	A
EB	Left Turn	15	15	97.3%	12.5	6.4	B
	Through						
	Right Turn	146	154	105.2%	5.2	1.5	A
	Subtotal	161	168	104.5%	5.9	2.3	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		800	807	100.9%	6.9	1.1	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	20	98.5%	19.0	10.0	C
	Through						
	Right Turn						
	Subtotal	20	20	98.5%	19.0	10.0	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	264	271	102.6%	0.3	0.1	A
	Right Turn	20	25	123.5%	0.4	0.3	A
	Subtotal	284	296	104.1%	0.3	0.1	A
WB	Left Turn						
	Through	664	656	98.8%	2.1	0.1	A
	Right Turn						
	Subtotal	664	656	98.8%	2.1	0.1	A
Total		968	971	100.3%	2.0	0.3	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	396	405	102.3%	0.4	0.1	A
	Right Turn	30	31	101.7%	0.4	0.1	A
	Subtotal	426	436	102.3%	0.4	0.1	A
SB	Left Turn	85	83	97.2%	5.0	1.4	A
	Through	135	139	103.1%	0.2	0.1	A
	Right Turn						
	Subtotal	220	222	100.8%	2.1	0.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	29	25	86.6%	11.0	4.3	B
	Through						
	Right Turn	60	61	100.8%	7.1	0.9	A
	Subtotal	89	86	96.2%	8.1	1.2	A
Total		735	743	101.1%	1.9	0.2	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	17	18	105.3%	8.5	2.0	A
	Through						
	Right Turn	80	81	100.9%	8.2	1.3	A
	Subtotal	97	99	101.6%	8.4	1.1	A
EB	Left Turn	87	88	101.6%	6.1	1.1	A
	Through	203	203	99.8%	1.6	0.4	A
	Right Turn						
	Subtotal	290	291	100.3%	3.0	0.3	A
WB	Left Turn						
	Through	422	430	101.8%	0.6	0.1	A
	Right Turn	34	35	103.5%	0.4	0.2	A
	Subtotal	456	465	101.9%	0.5	0.1	A
Total		843	854	101.3%	2.3	0.2	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	640	634	99.1%	21.8	4.0	C
	Right Turn	44	44	99.1%	19.2	4.0	B
	Subtotal	684	678	99.1%	21.6	4.0	C
SB	Left Turn	246	247	100.4%	20.6	4.1	C
	Through	262	272	104.0%	3.8	1.1	A
	Right Turn						
	Subtotal	508	519	102.2%	12.1	2.7	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	22	22	98.2%	42.2	10.1	D
	Through						
	Right Turn	480	481	100.1%	27.2	8.3	C
	Subtotal	502	502	100.1%	27.7	8.1	C
Total		1,694	1,700	100.3%	20.5	3.6	C

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	857	850	99.2%	59.5	28.4	E
	Right Turn	692	683	98.6%	56.0	40.0	E
	Subtotal	1,549	1,533	99.0%	58.0	33.5	E
SB	Left Turn	251	215	85.5%	19.5	2.5	B
	Through	518	475	91.6%	7.1	0.9	A
	Right Turn						
	Subtotal	769	689	89.6%	11.1	1.3	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	442	440	99.6%	19.6	2.1	B
	Through						
	Right Turn	129	136	105.0%	8.3	1.3	A
	Subtotal	571	576	100.8%	16.8	1.8	B
Total		2,889	2,798	96.8%	38.4	18.8	D

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	35	100.3%	34.3	9.1	C
	Through	395	403	102.0%	63.1	10.1	E
	Right Turn	68	64	94.7%	44.2	14.6	D
	Subtotal	498	503	100.9%	58.9	10.4	E
SB	Left Turn	553	488	88.2%	169.2	8.9	F
	Through	363	322	88.6%	132.8	8.7	F
	Right Turn	364	335	92.0%	42.6	5.1	D
	Subtotal	1,280	1,144	89.4%	123.1	6.8	F
EB	Left Turn	633	470	74.3%	104.1	4.8	F
	Through	277	204	73.5%	74.9	7.4	E
	Right Turn	36	27	74.2%	64.1	14.8	E
	Subtotal	946	701	74.1%	93.6	3.3	F
WB	Left Turn	75	78	103.9%	104.7	38.2	F
	Through	239	286	119.5%	51.8	12.5	D
	Right Turn	743	724	97.4%	38.5	3.8	D
	Subtotal	1,057	1,087	102.8%	47.2	5.4	D
Total		3,781	3,434	90.8%	83.7	2.1	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	176	172	97.7%	37.0	10.5	D
	Through	89	88	98.8%	39.8	9.2	D
	Right Turn	520	502	96.6%	11.0	3.0	B
	Subtotal	785	762	97.1%	20.3	4.2	C
SB	Left Turn	90	86	95.0%	29.7	5.5	C
	Through	55	53	96.4%	42.1	11.1	D
	Right Turn	63	64	101.6%	5.0	1.1	A
	Subtotal	208	203	97.4%	25.6	6.3	C
EB	Left Turn	71	67	94.8%	14.6	3.4	B
	Through	584	593	101.5%	26.2	2.1	C
	Right Turn	149	153	102.8%	19.9	3.4	B
	Subtotal	804	813	101.1%	24.2	1.7	C
WB	Left Turn	241	240	99.7%	18.8	3.0	B
	Through	384	395	102.9%	10.8	1.8	B
	Right Turn	46	47	101.5%	6.4	3.1	A
	Subtotal	671	682	101.7%	13.4	1.6	B
Total		2,468	2,460	99.7%	20.2	2.4	C

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	75	75	99.6%	0.2	0.2	A
	Right Turn	20	18	90.0%	0.5	1.0	A
	Subtotal	95	93	97.6%	0.2	0.3	A
SB	Left Turn	50	50	99.8%	4.0	0.4	A
	Through	120	126	105.3%	1.0	0.2	A
	Right Turn						
	Subtotal	170	176	103.7%	1.9	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	22	111.0%	5.9	1.1	A
	Through						
	Right Turn	55	55	100.2%	5.1	0.3	A
	Subtotal	75	77	103.1%	5.3	0.5	A
Total		340	346	101.9%	2.2	0.2	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	25	24	94.8%	6.2	1.6	A
	Through						
	Right Turn	60	62	104.0%	5.8	0.8	A
	Subtotal	85	86	101.3%	5.9	0.9	A
EB	Left Turn	50	51	101.0%	4.3	0.6	A
	Through	145	153	105.4%	1.5	0.5	A
	Right Turn						
	Subtotal	195	203	104.3%	2.3	0.5	A
WB	Left Turn						
	Through	110	109	99.2%	1.0	0.3	A
	Right Turn	20	21	104.0%	0.8	0.6	A
	Subtotal	130	130	99.9%	1.0	0.2	A
Total		410	419	102.3%	2.6	0.4	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	150	151	100.9%	1.2	0.3	A
	Right Turn	15	15	101.3%	0.7	0.8	A
	Subtotal	165	167	100.9%	1.2	0.3	A
SB	Left Turn	180	186	103.6%	5.7	0.5	A
	Through	635	636	100.2%	3.6	0.4	A
	Right Turn						
	Subtotal	815	823	100.9%	4.1	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	9	90.0%	14.2	10.1	B
	Through						
	Right Turn	160	162	101.2%	4.5	0.6	A
	Subtotal	170	171	100.5%	5.0	1.0	A
Total		1,150	1,160	100.9%	3.8	0.2	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	265	263	99.3%	12.8	2.3	B
	Right Turn	165	170	102.7%	2.7	0.9	A
	Subtotal	430	433	100.6%	9.1	1.6	A
SB	Left Turn	115	102	89.0%	11.7	2.9	B
	Through	635	620	97.6%	9.7	1.8	A
	Right Turn						
	Subtotal	750	722	96.3%	10.0	1.9	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	585	591	101.0%	15.6	0.8	B
	Through						
	Right Turn	215	222	103.4%	5.4	1.3	A
	Subtotal	800	813	101.6%	12.8	0.9	B
Total		1,980	1,968	99.4%	11.0	1.1	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	55	51	93.5%	34.8	3.8	C
	Through	195	198	101.3%	51.8	5.3	D
	Right Turn	75	73	96.9%	19.4	5.8	B
	Subtotal	325	322	99.0%	41.9	4.6	D
SB	Left Turn	475	404	85.1%	212.0	13.3	F
	Through	170	146	85.7%	173.4	18.6	F
	Right Turn	1,065	917	86.1%	72.5	16.1	E
	Subtotal	1,710	1,467	85.8%	121.5	7.1	F
EB	Left Turn	385	392	101.7%	44.4	7.5	D
	Through	240	238	99.0%	28.5	5.7	C
	Right Turn	25	28	111.6%	28.3	14.5	C
	Subtotal	650	657	101.1%	38.2	7.0	D
WB	Left Turn	50	48	96.2%	75.9	14.9	E
	Through	325	355	109.3%	68.7	15.7	E
	Right Turn	215	218	101.2%	10.0	1.9	B
	Subtotal	590	621	105.2%	49.4	9.8	D
Total		3,275	3,067	93.6%	81.9	6.0	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	65	58	89.4%	22.8	5.7	C
	Through	30	30	99.0%	23.4	6.9	C
	Right Turn	110	106	96.5%	3.1	0.7	A
	Subtotal	205	194	94.6%	12.2	2.4	B
SB	Left Turn	60	56	93.2%	18.4	7.3	B
	Through	75	75	99.9%	25.4	4.2	C
	Right Turn	30	31	103.0%	4.8	1.0	A
	Subtotal	165	162	98.0%	18.9	3.0	B
EB	Left Turn	25	24	95.6%	14.8	1.9	B
	Through	250	247	98.9%	18.6	2.4	B
	Right Turn	100	99	98.6%	8.5	2.4	A
	Subtotal	375	370	98.6%	15.8	2.2	B
WB	Left Turn	305	309	101.3%	14.0	2.3	B
	Through	350	344	98.4%	8.6	1.3	A
	Right Turn	50	49	98.8%	4.8	2.0	A
	Subtotal	705	703	99.7%	10.7	1.3	B
Total		1,450	1,428	98.5%	13.1	1.2	B

MOVEMENT SUMMARY

Site: 101 [2024 BG AM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	5	100.0	0.174	14.0	LOS B	0.6	15.9	0.63	0.63	0.63	33.7
8	T1	133	3.0	0.174	8.2	LOS A	0.6	16.1	0.63	0.63	0.63	33.9
18b	R3	64	3.0	0.174	8.2	LOS A	0.6	16.1	0.64	0.64	0.64	32.4
Approach		202	5.6	0.174	8.4	LOS A	0.6	16.1	0.63	0.63	0.63	33.4
SouthEast: RoadName												
3bx	L3	32	3.0	0.150	4.5	LOS A	0.5	15.5	0.32	0.19	0.32	35.8
3ax	L1	21	100.0	0.150	7.4	LOS A	0.5	15.5	0.32	0.19	0.32	34.4
18ax	R1	277	3.0	0.150	4.4	LOS A	0.6	16.1	0.32	0.20	0.32	35.5
Approach		330	9.3	0.150	4.6	LOS A	0.6	16.1	0.32	0.20	0.32	35.4
North: Deer Valley Drive												
7u	U	27	3.0	0.769	15.4	LOS C	9.2	236.0	0.59	0.32	0.59	30.0
7a	L1	809	3.0	0.769	15.4	LOS C	9.2	236.0	0.59	0.32	0.59	29.1
4	T1	383	3.0	0.769	8.7	LOS A	9.2	236.0	0.36	0.19	0.36	33.1
14	R2	16	100.0	0.210	7.3	LOS A	0.9	24.1	0.22	0.11	0.22	34.4
Approach		1234	4.3	0.769	13.2	LOS B	9.2	236.0	0.51	0.27	0.51	30.3
West: Transit Center												
5	L2	5	100.0	0.201	19.9	LOS C	0.3	14.9	0.69	0.69	0.69	28.9
12a	R1	27	100.0	0.201	19.9	LOS C	0.3	14.9	0.69	0.69	0.69	28.6
12	R2	16	100.0	0.201	19.9	LOS C	0.3	14.9	0.69	0.69	0.69	28.0
Approach		48	100.0	0.201	19.9	LOS C	0.3	14.9	0.69	0.69	0.69	28.4
All Vehicles		1814	7.8	0.769	11.3	LOS B	9.2	236.0	0.50	0.31	0.50	31.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	305	317	103.8%	1.0	0.2	A
	Right Turn	30	32	108.0%	0.9	0.7	A
	Subtotal	335	349	104.1%	1.0	0.2	A
SB	Left Turn	85	86	100.8%	5.1	0.7	A
	Through	85	84	99.3%	1.8	0.9	A
	Right Turn						
	Subtotal	170	170	100.1%	3.3	0.7	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	30	25	83.7%	8.2	2.8	A
	Through						
	Right Turn	60	61	102.3%	5.8	0.5	A
	Subtotal	90	87	96.1%	6.5	0.9	A
Total		595	606	101.8%	2.4	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	19	93.0%	11.2	4.5	B
	Through						
	Right Turn	80	80	99.9%	6.5	0.7	A
	Subtotal	100	99	98.5%	7.3	1.1	A
EB	Left Turn	90	89	99.1%	5.8	1.1	A
	Through	150	149	99.3%	1.8	0.6	A
	Right Turn						
	Subtotal	240	238	99.3%	3.3	0.8	A
WB	Left Turn						
	Through	330	339	102.6%	1.1	0.1	A
	Right Turn	35	38	108.6%	1.4	0.5	A
	Subtotal	365	377	103.2%	1.1	0.1	A
Total		705	713	101.2%	2.7	0.3	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	545	547	100.3%	3.6	0.4	A
	Right Turn	45	45	100.9%	1.8	0.7	A
	Subtotal	590	592	100.3%	3.5	0.3	A
SB	Left Turn	195	191	98.1%	8.7	2.1	A
	Through	210	209	99.6%	1.7	0.4	A
	Right Turn						
	Subtotal	405	401	98.9%	5.1	1.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	25	27	108.0%	41.3	27.9	E
	Through						
	Right Turn	385	390	101.3%	36.6	16.7	E
	Subtotal	410	417	101.7%	36.7	16.9	E
Total		1,405	1,410	100.3%	13.6	5.5	B

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	755	743	98.4%	27.5	2.6	C
	Right Turn	690	696	100.9%	17.7	1.5	B
	Subtotal	1,445	1,440	99.6%	22.9	1.9	C
SB	Left Turn	275	204	74.3%	20.6	3.6	C
	Through	460	376	81.8%	7.6	1.8	A
	Right Turn						
	Subtotal	735	581	79.0%	12.2	1.6	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	445	444	99.7%	25.4	4.0	C
	Through						
	Right Turn	145	148	101.7%	10.0	2.0	A
	Subtotal	590	591	100.2%	21.6	3.2	C
Total		2,770	2,611	94.3%	20.1	1.3	C

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	34	97.1%	33.2	6.1	C
	Through	395	399	101.0%	50.8	4.0	D
	Right Turn	70	77	110.6%	29.5	7.9	C
	Subtotal	500	510	102.0%	46.6	3.9	D
SB	Left Turn	495	370	74.7%	223.0	17.6	F
	Through	365	274	75.2%	174.9	13.5	F
	Right Turn	445	334	75.0%	47.8	7.2	D
	Subtotal	1,305	978	75.0%	151.2	13.7	F
EB	Left Turn	765	500	65.3%	84.9	4.7	F
	Through	355	231	65.1%	62.3	12.7	E
	Right Turn	50	37	73.6%	54.3	17.3	D
	Subtotal	1,170	768	65.6%	77.0	6.3	E
WB	Left Turn	80	76	94.8%	81.2	17.1	F
	Through	310	357	115.0%	63.5	15.9	E
	Right Turn	640	630	98.4%	37.7	7.7	D
	Subtotal	1,030	1,062	103.1%	49.3	9.0	D
Total		4,005	3,318	82.8%	84.7	2.6	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	180	175	97.0%	32.9	5.9	C
	Through	90	93	103.3%	31.5	5.6	C
	Right Turn	505	468	92.6%	12.2	2.4	B
	Subtotal	775	735	94.9%	19.7	2.1	B
SB	Left Turn	100	99	99.4%	34.1	6.9	C
	Through	55	58	105.6%	39.6	4.9	D
	Right Turn	65	66	101.5%	6.1	1.7	A
	Subtotal	220	224	101.6%	28.0	3.2	C
EB	Left Turn	75	76	101.2%	16.2	3.3	B
	Through	635	642	101.0%	25.9	2.6	C
	Right Turn	150	147	97.9%	20.9	3.6	C
	Subtotal	860	864	100.5%	24.3	2.2	C
WB	Left Turn	230	223	97.0%	19.6	3.8	B
	Through	420	430	102.4%	11.5	2.2	B
	Right Turn	50	51	102.8%	8.4	3.4	A
	Subtotal	700	705	100.7%	13.8	1.9	B
Total		2,555	2,528	98.9%	20.4	1.5	C

MOVEMENT SUMMARY

Site: 101 [2024 BG PM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.356	13.9	LOS B	1.6	41.4	0.65	0.67	0.73	32.8
8	T1	460	3.0	0.356	9.3	LOS A	1.6	41.5	0.65	0.67	0.73	33.6
18b	R3	66	3.0	0.356	9.3	LOS A	1.6	41.5	0.65	0.67	0.73	32.0
Approach		526	3.2	0.356	9.3	LOS A	1.6	41.5	0.65	0.67	0.73	33.4
SouthEast: RoadName												
3bx	L3	40	3.0	0.582	15.1	LOS C	4.0	106.0	0.75	0.94	1.29	31.4
3ax	L1	15	100.0	0.582	19.9	LOS C	4.0	106.0	0.75	0.94	1.29	30.0
18ax	R1	753	3.0	0.582	15.0	LOS B	4.2	107.0	0.76	0.94	1.29	30.7
Approach		808	4.8	0.582	15.1	LOS C	4.2	107.0	0.76	0.94	1.29	30.7
North: Deer Valley Drive												
7u	U	242	3.0	0.636	10.7	LOS B	5.6	143.3	0.40	0.20	0.40	31.7
7a	L1	379	3.0	0.636	10.7	LOS B	5.6	143.3	0.40	0.20	0.40	30.8
4	T1	404	3.0	0.636	7.5	LOS A	5.6	143.3	0.30	0.14	0.30	33.4
14	R2	10	100.0	0.174	6.9	LOS A	0.7	19.3	0.20	0.09	0.20	34.6
Approach		1035	3.9	0.636	9.4	LOS A	5.6	143.3	0.35	0.17	0.35	32.0
West: Transit Center												
5	L2	5	100.0	0.090	14.6	LOS B	0.1	6.7	0.62	0.62	0.62	30.9
12a	R1	15	100.0	0.090	14.6	LOS B	0.1	6.7	0.62	0.62	0.62	30.4
12	R2	5	100.0	0.090	14.6	LOS B	0.1	6.7	0.62	0.62	0.62	29.8
Approach		25	100.0	0.090	14.6	LOS B	0.1	6.7	0.62	0.62	0.62	30.4
All Vehicles		2395	5.1	0.636	11.4	LOS B	5.6	143.3	0.56	0.55	0.75	31.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Opening Year Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	119	114	96.0%	9.0	2.4	A
	Through	75	76	100.9%	6.8	2.8	A
	Right Turn						
	Subtotal	194	190	97.9%	8.1	1.7	A
SB	Left Turn						
	Through	198	193	97.4%	5.7	2.0	A
	Right Turn	15	15	102.0%	2.9	2.1	A
	Subtotal	213	208	97.7%	5.5	1.8	A
EB	Left Turn	15	15	98.7%	12.9	6.8	B
	Through						
	Right Turn	100	100	100.2%	5.5	0.4	A
	Subtotal	115	115	100.0%	6.6	1.1	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		522	513	98.3%	6.7	1.1	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	21	106.5%	14.8	10.0	B
	Through						
	Right Turn						
	Subtotal	20	21	106.5%	14.8	10.0	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	713	709	99.4%	3.7	0.3	A
	Right Turn	20	20	100.5%	2.6	1.4	A
	Subtotal	733	729	99.4%	3.6	0.4	A
WB	Left Turn						
	Through	188	186	99.0%	0.3	0.1	A
	Right Turn						
	Subtotal	188	186	99.0%	0.3	0.1	A
Total		941	936	99.5%	3.2	0.3	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	117	113	96.8%	1.1	0.2	A
	Right Turn	20	23	115.5%	1.0	0.7	A
	Subtotal	137	136	99.5%	1.1	0.2	A
SB	Left Turn	50	45	90.8%	4.3	0.9	A
	Through	208	211	101.4%	1.1	0.2	A
	Right Turn						
	Subtotal	258	256	99.4%	1.7	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	17	86.5%	7.7	2.8	A
	Through						
	Right Turn	55	58	105.6%	5.3	0.7	A
	Subtotal	75	75	100.5%	5.8	0.4	A
Total		470	468	99.6%	2.2	0.2	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	25	26	102.4%	7.6	3.0	A
	Through						
	Right Turn	60	57	94.2%	5.5	0.4	A
	Subtotal	85	82	96.6%	6.1	0.9	A
EB	Left Turn	50	54	107.4%	4.8	0.9	A
	Through	233	230	98.8%	1.7	0.4	A
	Right Turn						
	Subtotal	283	284	100.3%	2.3	0.5	A
WB	Left Turn						
	Through	152	151	99.1%	1.0	0.2	A
	Right Turn	20	19	95.5%	0.8	0.4	A
	Subtotal	172	170	98.7%	0.9	0.2	A
Total		540	536	99.2%	2.5	0.3	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Opening Year Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	193	191	99.0%	1.6	0.3	A
	Right Turn	15	17	113.3%	1.4	1.6	A
	Subtotal	208	208	100.0%	1.6	0.3	A
SB	Left Turn	268	265	98.9%	7.1	0.7	A
	Through	723	717	99.2%	4.1	0.4	A
	Right Turn						
	Subtotal	991	982	99.1%	4.9	0.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	9	89.0%	20.4	20.2	C
	Through						
	Right Turn	202	197	97.5%	4.9	0.8	A
	Subtotal	212	206	97.1%	5.7	1.3	A
Total		1,411	1,396	98.9%	4.5	0.5	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	307	309	100.5%	14.2	1.8	B
	Right Turn	182	181	99.3%	3.5	0.8	A
	Subtotal	489	489	100.1%	10.2	1.2	B
SB	Left Turn	115	97	84.2%	13.4	2.5	B
	Through	723	643	89.0%	10.0	1.8	B
	Right Turn						
	Subtotal	838	740	88.3%	10.5	1.7	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	620	620	100.0%	16.8	3.4	B
	Through						
	Right Turn	215	219	102.0%	6.0	1.4	A
	Subtotal	835	839	100.5%	14.1	3.1	B
Total		2,162	2,069	95.7%	11.9	1.7	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	55	50	91.6%	35.2	8.4	D
	Through	195	202	103.5%	55.5	5.9	E
	Right Turn	75	76	101.6%	25.5	7.0	C
	Subtotal	325	329	101.1%	44.9	5.2	D
SB	Left Turn	563	409	72.6%	223.7	17.0	F
	Through	170	125	73.4%	194.1	10.7	F
	Right Turn	1,065	815	76.5%	62.0	7.1	E
	Subtotal	1,798	1,348	75.0%	126.3	5.7	F
EB	Left Turn	385	388	100.9%	43.5	3.6	D
	Through	240	240	99.9%	28.2	3.9	C
	Right Turn	25	25	98.4%	21.2	10.3	C
	Subtotal	650	653	100.4%	37.2	3.3	D
WB	Left Turn	50	52	103.8%	85.1	18.4	F
	Through	325	366	112.6%	64.2	13.7	E
	Right Turn	257	255	99.1%	9.1	1.3	A
	Subtotal	632	673	106.4%	45.9	9.9	D
Total		3,405	3,002	88.2%	80.0	2.7	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	65	61	93.4%	23.7	4.2	C
	Through	30	30	101.3%	28.1	5.7	C
	Right Turn	127	116	91.5%	3.7	1.1	A
	Subtotal	222	207	93.4%	13.1	1.2	B
SB	Left Turn	60	60	99.5%	21.2	7.2	C
	Through	75	74	98.9%	24.2	3.7	C
	Right Turn	30	30	101.0%	4.4	0.9	A
	Subtotal	165	164	99.5%	19.7	4.2	B
EB	Left Turn	25	24	94.0%	13.5	4.4	B
	Through	250	258	103.2%	20.1	2.5	C
	Right Turn	100	102	102.4%	12.0	2.5	B
	Subtotal	375	384	102.4%	17.7	2.2	B
WB	Left Turn	340	340	100.1%	14.4	1.8	B
	Through	350	351	100.4%	8.5	1.0	A
	Right Turn	50	53	106.6%	6.4	2.5	A
	Subtotal	740	745	100.6%	11.1	1.5	B
Total		1,502	1,500	99.9%	14.0	1.4	B

MOVEMENT SUMMARY

Site: 101 [Opening Year Plus Project AM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	5	100.0	0.225	17.2	LOS C	0.8	20.2	0.69	0.69	0.69	32.6
8	T1	133	3.0	0.225	10.4	LOS B	0.8	20.5	0.69	0.69	0.69	32.9
18b	R3	83	3.0	0.225	10.3	LOS B	0.8	20.5	0.69	0.69	0.69	31.4
Approach		221	5.3	0.225	10.5	LOS B	0.8	20.5	0.69	0.69	0.69	32.3
SouthEast: RoadName												
3bx	L3	41	3.0	0.190	4.9	LOS A	0.7	20.4	0.33	0.21	0.33	35.6
3ax	L1	26	100.0	0.190	7.8	LOS A	0.7	20.4	0.33	0.21	0.33	34.2
18ax	R1	353	3.0	0.190	4.8	LOS A	0.8	21.2	0.33	0.21	0.33	35.3
Approach		420	8.9	0.190	5.0	LOS A	0.8	21.2	0.33	0.21	0.33	35.2
North: Deer Valley Drive												
7u	U	27	3.0	0.881	23.6	LOS C	15.0	384.2	0.92	0.54	0.92	27.1
7a	L1	967	3.0	0.881	23.6	LOS C	15.0	384.2	0.92	0.54	0.92	26.3
4	T1	383	3.0	0.881	10.4	LOS B	15.0	384.2	0.45	0.25	0.45	32.5
14	R2	16	100.0	0.241	7.7	LOS A	1.1	28.4	0.26	0.13	0.26	34.2
Approach		1393	4.1	0.881	19.8	LOS C	15.0	384.2	0.78	0.46	0.79	27.9
West: Transit Center												
5	L2	5	100.0	0.280	25.6	LOS D	0.5	22.1	0.74	0.82	0.96	27.0
12a	R1	36	100.0	0.280	25.6	LOS D	0.5	22.1	0.74	0.82	0.96	26.7
12	R2	16	100.0	0.280	25.6	LOS D	0.5	22.1	0.74	0.82	0.96	26.2
Approach		57	100.0	0.280	25.6	LOS D	0.5	22.1	0.74	0.82	0.96	26.6
All Vehicles		2091	7.8	0.881	16.0	LOS C	15.0	384.2	0.68	0.44	0.69	29.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **Opening Year Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	150	151	100.4%	8.5	2.7	A
	Through	389	384	98.7%	8.3	3.0	A
	Right Turn						
	Subtotal	539	535	99.2%	8.3	2.8	A
SB	Left Turn						
	Through	105	101	96.0%	5.0	1.2	A
	Right Turn	15	16	104.0%	1.6	1.5	A
	Subtotal	120	116	97.0%	4.6	1.1	A
EB	Left Turn	15	15	100.7%	15.1	8.4	B
	Through						
	Right Turn	146	142	96.9%	5.2	0.8	A
	Subtotal	161	157	97.3%	6.0	1.0	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		820	808	98.5%	7.3	2.0	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	21	104.5%	24.3	18.6	C
	Through						
	Right Turn						
	Subtotal	20	21	104.5%	24.3	18.6	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	273	267	97.9%	1.6	0.4	A
	Right Turn	20	20	99.0%	1.7	0.8	A
	Subtotal	293	287	98.0%	1.6	0.3	A
WB	Left Turn						
	Through	674	669	99.2%	2.2	0.1	A
	Right Turn						
	Subtotal	674	669	99.2%	2.2	0.1	A
Total		987	977	99.0%	2.5	0.4	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	408	405	99.3%	5.0	9.1	A
	Right Turn	30	31	102.0%	3.7	5.2	A
	Subtotal	438	436	99.5%	5.0	9.0	A
SB	Left Turn	85	84	98.2%	5.1	1.0	A
	Through	142	140	98.5%	1.3	0.5	A
	Right Turn						
	Subtotal	227	223	98.4%	2.7	0.7	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	30	29	97.3%	18.4	18.9	C
	Through						
	Right Turn	60	59	98.3%	18.9	33.4	C
	Subtotal	90	88	98.0%	19.1	29.1	C
Total		755	747	99.0%	6.1	8.9	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	19	94.5%	72.8	90.9	F
	Through						
	Right Turn	80	80	100.3%	78.0	92.7	F
	Subtotal	100	99	99.1%	77.5	92.4	F
EB	Left Turn	90	93	103.0%	5.5	1.1	A
	Through	207	201	97.3%	1.8	0.6	A
	Right Turn						
	Subtotal	297	294	99.0%	3.0	0.7	A
WB	Left Turn						
	Through	433	424	97.8%	36.3	53.5	E
	Right Turn	35	33	95.1%	42.0	58.8	E
	Subtotal	468	457	97.6%	36.5	53.6	E
Total		865	850	98.3%	28.4	37.4	D

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	649	649	100.0%	2.9	0.5	A
	Right Turn	45	44	97.6%	2.4	1.4	A
	Subtotal	694	693	99.8%	2.8	0.4	A
SB	Left Turn	252	250	99.3%	9.9	2.1	A
	Through	268	263	98.1%	2.0	0.4	A
	Right Turn						
	Subtotal	520	513	98.7%	5.9	1.1	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	25	22	89.6%	120.8	28.5	F
	Through						
	Right Turn	488	435	89.2%	126.2	7.6	F
	Subtotal	513	458	89.2%	126.2	7.2	F
Total		1,727	1,664	96.3%	39.9	2.3	E

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	858	851	99.2%	96.3	49.4	F
	Right Turn	731	736	100.6%	110.7	64.0	F
	Subtotal	1,589	1,587	99.9%	102.4	55.3	F
SB	Left Turn	275	198	71.9%	22.5	4.8	C
	Through	518	415	80.1%	8.0	1.8	A
	Right Turn						
	Subtotal	793	613	77.2%	12.6	2.6	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	468	464	99.2%	29.7	8.0	C
	Through						
	Right Turn	145	139	96.1%	16.5	4.7	B
	Subtotal	613	603	98.4%	26.5	6.7	C
Total		2,995	2,803	93.6%	66.9	31.3	E

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	50	99.4%	31.3	7.8	C
	Through	395	396	100.2%	50.4	5.8	D
	Right Turn	70	72	102.7%	25.6	9.0	C
	Subtotal	515	517	100.4%	44.5	5.0	D
SB	Left Turn	553	380	68.7%	227.2	13.8	F
	Through	365	252	69.1%	179.2	12.4	F
	Right Turn	445	307	69.0%	51.7	11.6	D
	Subtotal	1,363	939	68.9%	155.6	7.3	F
EB	Left Turn	765	523	68.3%	87.2	8.2	F
	Through	355	236	66.4%	61.6	13.0	E
	Right Turn	50	34	67.6%	52.9	15.7	D
	Subtotal	1,170	792	67.7%	78.5	8.8	E
WB	Left Turn	80	75	93.3%	85.6	13.9	F
	Through	310	340	109.6%	60.0	8.1	E
	Right Turn	743	660	88.8%	52.4	3.1	D
	Subtotal	1,133	1,075	94.8%	57.1	3.9	E
Total		4,181	3,323	79.5%	88.1	2.8	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	180	166	92.4%	41.4	8.0	D
	Through	90	94	104.1%	33.6	6.4	C
	Right Turn	546	504	92.4%	12.8	1.9	B
	Subtotal	816	764	93.7%	21.8	2.8	C
SB	Left Turn	100	99	99.1%	34.3	5.6	C
	Through	55	55	100.4%	44.7	11.5	D
	Right Turn	65	69	105.8%	5.3	0.9	A
	Subtotal	220	223	101.4%	27.1	3.8	C
EB	Left Turn	75	75	100.3%	14.9	2.7	B
	Through	635	632	99.5%	29.3	3.4	C
	Right Turn	150	152	101.1%	26.1	4.0	C
	Subtotal	860	859	99.9%	27.4	3.1	C
WB	Left Turn	253	250	98.6%	20.8	2.4	C
	Through	420	415	98.9%	12.0	0.8	B
	Right Turn	50	55	110.2%	7.7	2.8	A
	Subtotal	723	720	99.6%	14.8	0.9	B
Total		2,619	2,566	98.0%	22.1	1.9	C

MOVEMENT SUMMARY

Site: 101 [Opening Year Plus Project PM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.403	16.1	LOS C	2.0	50.8	0.69	0.76	0.90	32.0
8	T1	460	3.0	0.403	11.0	LOS B	2.0	50.9	0.69	0.76	0.90	32.8
18b	R3	78	3.0	0.403	11.0	LOS B	2.0	50.9	0.69	0.76	0.90	31.2
Approach		538	3.2	0.403	11.0	LOS B	2.0	50.9	0.69	0.76	0.90	32.6
SouthEast: RoadName												
3bx	L3	62	3.0	0.737	22.2	LOS C	7.2	191.5	0.84	1.18	1.85	28.5
3ax	L1	25	100.0	0.737	27.0	LOS D	7.2	191.5	0.84	1.18	1.85	27.4
18ax	R1	930	3.0	0.737	21.9	LOS C	7.5	193.2	0.85	1.18	1.84	28.0
Approach		1017	5.4	0.737	22.0	LOS C	7.5	193.2	0.85	1.18	1.84	28.0
North: Deer Valley Drive												
7u	U	242	3.0	0.723	13.7	LOS B	7.3	185.9	0.59	0.35	0.59	30.5
7a	L1	477	3.0	0.723	13.7	LOS B	7.3	185.9	0.59	0.35	0.59	29.6
4	T1	404	3.0	0.723	8.6	LOS A	7.3	185.9	0.40	0.23	0.40	33.0
14	R2	10	100.0	0.198	7.4	LOS A	0.8	22.3	0.26	0.14	0.26	34.4
Approach		1133	3.9	0.723	11.8	LOS B	7.3	185.9	0.52	0.31	0.52	30.9
West: Transit Center												
5	L2	5	100.0	0.124	17.0	LOS C	0.2	9.2	0.66	0.66	0.66	30.0
12a	R1	21	100.0	0.124	17.0	LOS C	0.2	9.2	0.66	0.66	0.66	29.6
12	R2	5	100.0	0.124	17.0	LOS C	0.2	9.2	0.66	0.66	0.66	29.0
Approach		31	100.0	0.124	17.0	LOS C	0.2	9.2	0.66	0.66	0.66	29.6
All Vehicles		2720	5.4	0.737	15.5	LOS C	7.5	193.2	0.68	0.73	1.09	30.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	119	118	99.2%	6.4	2.3	A
	Through	75	78	103.7%	3.9	1.9	A
	Right Turn						
	Subtotal	194	196	101.0%	5.4	2.0	A
SB	Left Turn						
	Through	198	197	99.7%	4.1	2.4	A
	Right Turn	15	15	101.3%	1.3	1.6	A
	Subtotal	213	213	99.8%	3.9	2.3	A
EB	Left Turn	15	14	90.0%	11.7	5.7	B
	Through						
	Right Turn	100	99	98.8%	5.6	0.6	A
	Subtotal	115	112	97.7%	6.4	0.9	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		522	521	99.8%	5.0	1.8	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	18	88.0%	9.9	2.5	A
	Through						
	Right Turn						
	Subtotal	20	18	88.0%	9.9	2.5	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	713	715	100.3%	1.2	0.1	A
	Right Turn	20	19	94.0%	1.3	0.6	A
	Subtotal	733	734	100.1%	1.2	0.1	A
WB	Left Turn						
	Through	188	186	98.9%	0.7	0.1	A
	Right Turn						
	Subtotal	188	186	98.9%	0.7	0.1	A
Total		941	937	99.6%	1.3	0.1	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	117	118	100.6%	0.1	0.1	A
	Right Turn	20	20	100.5%	0.0	0.0	A
	Subtotal	137	138	100.6%	0.1	0.0	A
SB	Left Turn	50	46	92.2%	3.5	0.4	A
	Through	208	213	102.5%	0.3	0.1	A
	Right Turn						
	Subtotal	258	259	100.5%	0.9	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	18	92.0%	4.9	2.0	A
	Through						
	Right Turn	55	58	105.1%	5.1	0.3	A
	Subtotal	75	76	101.6%	5.3	0.5	A
Total		470	473	100.7%	1.4	0.1	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	25	27	109.6%	6.3	1.3	A
	Through						
	Right Turn	60	58	96.2%	6.0	0.8	A
	Subtotal	85	85	100.1%	6.1	0.9	A
EB	Left Turn	50	48	95.8%	4.2	0.9	A
	Through	233	232	99.6%	1.6	0.3	A
	Right Turn						
	Subtotal	283	280	98.9%	2.0	0.3	A
WB	Left Turn						
	Through	152	153	100.9%	0.2	0.1	A
	Right Turn	20	21	102.5%	0.1	0.1	A
	Subtotal	172	174	101.1%	0.2	0.1	A
Total		540	539	99.8%	2.2	0.4	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	193	191	98.8%	12.3	2.7	B
	Right Turn	15	14	94.7%	5.3	4.6	A
	Subtotal	208	205	98.5%	12.0	2.7	B
SB	Left Turn	268	265	98.8%	9.9	1.9	A
	Through	723	722	99.9%	8.1	1.5	A
	Right Turn						
	Subtotal	991	987	99.6%	8.6	1.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	8	82.0%	10.6	9.2	B
	Through						
	Right Turn	202	201	99.3%	4.5	1.1	A
	Subtotal	212	209	98.5%	4.9	1.2	A
Total		1,411	1,400	99.2%	8.6	1.2	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	307	312	101.7%	13.3	1.5	B
	Right Turn	182	179	98.6%	3.4	0.8	A
	Subtotal	489	492	100.5%	9.6	1.0	A
SB	Left Turn	115	94	81.6%	13.8	2.2	B
	Through	723	660	91.3%	9.4	1.5	A
	Right Turn						
	Subtotal	838	754	90.0%	9.9	1.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	620	628	101.3%	17.1	1.9	B
	Through						
	Right Turn	215	210	97.5%	6.5	1.2	A
	Subtotal	835	838	100.3%	14.4	1.8	B
Total		2,162	2,083	96.4%	11.7	1.1	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	55	56	101.8%	32.3	4.9	C
	Through	195	190	97.4%	50.6	3.7	D
	Right Turn	75	75	100.5%	24.6	6.9	C
	Subtotal	325	321	98.9%	42.0	4.4	D
SB	Left Turn	563	415	73.8%	231.3	16.7	F
	Through	170	118	69.2%	190.7	19.7	F
	Right Turn	1,065	789	74.1%	58.5	10.7	E
	Subtotal	1,798	1,322	73.5%	127.2	11.5	F
EB	Left Turn	385	382	99.1%	49.5	13.2	D
	Through	240	245	102.1%	32.3	11.8	C
	Right Turn	25	25	99.2%	20.7	9.2	C
	Subtotal	650	651	100.2%	41.8	12.4	D
WB	Left Turn	50	49	97.0%	81.4	21.0	F
	Through	325	355	109.1%	54.0	8.8	D
	Right Turn	257	253	98.3%	11.1	1.7	B
	Subtotal	632	656	103.8%	39.9	5.8	D
Total		3,405	2,951	86.7%	77.5	4.6	E

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	65	61	93.4%	21.5	4.2	C
	Through	30	29	95.7%	21.4	9.2	C
	Right Turn	127	115	90.2%	3.5	0.5	A
	Subtotal	222	204	91.9%	11.2	1.5	B
SB	Left Turn	60	56	93.0%	20.0	3.0	B
	Through	75	73	97.2%	24.5	4.8	C
	Right Turn	30	32	107.7%	4.5	0.6	A
	Subtotal	165	161	97.6%	18.9	2.5	B
EB	Left Turn	25	24	94.0%	14.4	3.9	B
	Through	250	258	103.2%	20.2	3.8	C
	Right Turn	100	104	104.2%	11.5	3.5	B
	Subtotal	375	386	102.8%	17.5	3.5	B
WB	Left Turn	340	336	98.7%	14.4	2.1	B
	Through	350	345	98.6%	9.0	1.2	A
	Right Turn	50	49	98.6%	4.8	2.6	A
	Subtotal	740	730	98.6%	11.3	1.4	B
Total		1,502	1,481	98.6%	13.8	1.8	B

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	150	152	101.4%	8.6	4.0	A
	Through	389	393	100.9%	7.4	2.4	A
	Right Turn						
	Subtotal	539	545	101.0%	7.8	2.8	A
SB	Left Turn						
	Through	105	110	104.4%	4.1	1.7	A
	Right Turn	15	14	96.0%	1.8	1.5	A
	Subtotal	120	124	103.3%	3.9	1.6	A
EB	Left Turn	15	13	88.7%	12.4	7.1	B
	Through						
	Right Turn	146	140	95.8%	5.6	2.3	A
	Subtotal	161	153	95.2%	6.6	3.1	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		820	822	100.2%	6.9	2.3	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	19	95.5%	17.9	10.6	C
	Through						
	Right Turn						
	Subtotal	20	19	95.5%	17.9	10.6	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	273	263	96.4%	0.4	0.1	A
	Right Turn	20	21	103.0%	0.3	0.2	A
	Subtotal	293	284	96.8%	0.4	0.1	A
WB	Left Turn						
	Through	674	680	100.9%	2.2	0.1	A
	Right Turn						
	Subtotal	674	680	100.9%	2.2	0.1	A
Total		987	983	99.6%	2.0	0.2	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	408	411	100.6%	0.4	0.1	A
	Right Turn	30	32	107.3%	0.3	0.1	A
	Subtotal	438	443	101.1%	0.4	0.1	A
SB	Left Turn	85	87	102.4%	5.1	0.8	A
	Through	142	149	104.6%	0.3	0.1	A
	Right Turn						
	Subtotal	227	236	103.8%	2.2	0.6	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	30	31	102.3%	10.4	2.7	B
	Through						
	Right Turn	60	65	109.0%	7.1	1.1	A
	Subtotal	90	96	106.8%	8.3	1.3	A
Total		755	775	102.6%	1.9	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	20	102.0%	10.5	2.2	B
	Through						
	Right Turn	80	82	102.9%	7.8	1.4	A
	Subtotal	100	103	102.7%	8.2	1.3	A
EB	Left Turn	90	89	99.2%	6.9	1.3	A
	Through	207	212	102.5%	1.7	0.4	A
	Right Turn						
	Subtotal	297	301	101.5%	3.2	0.6	A
WB	Left Turn						
	Through	433	443	102.2%	0.5	0.1	A
	Right Turn	35	33	92.9%	0.4	0.2	A
	Subtotal	468	475	101.5%	0.5	0.1	A
Total		865	879	101.6%	2.4	0.4	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	649	655	100.8%	22.5	4.1	C
	Right Turn	45	51	112.4%	18.6	5.7	B
	Subtotal	694	705	101.6%	22.2	4.1	C
SB	Left Turn	252	250	99.3%	22.0	6.3	C
	Through	268	258	96.4%	3.1	1.0	A
	Right Turn						
	Subtotal	520	509	97.8%	12.4	3.8	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	25	24	95.2%	47.1	12.8	D
	Through						
	Right Turn	488	501	102.7%	31.7	8.6	C
	Subtotal	513	525	102.3%	32.3	8.5	C
Total		1,727	1,739	100.7%	22.4	4.4	C

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	858	845	98.5%	102.5	55.6	F
	Right Turn	731	701	95.9%	128.6	93.0	F
	Subtotal	1,589	1,546	97.3%	115.0	72.3	F
SB	Left Turn	275	208	75.5%	25.4	5.2	C
	Through	518	397	76.7%	7.3	1.1	A
	Right Turn						
	Subtotal	793	605	76.3%	13.6	2.3	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	468	474	101.2%	34.0	10.8	C
	Through						
	Right Turn	145	144	99.2%	18.3	4.6	B
	Subtotal	613	617	100.7%	30.7	8.9	C
Total		2,995	2,768	92.4%	75.5	41.0	E

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	47	93.8%	33.2	7.0	C
	Through	395	398	100.7%	50.8	4.1	D
	Right Turn	70	69	98.0%	28.5	7.8	C
	Subtotal	515	513	99.7%	46.2	3.4	D
SB	Left Turn	553	381	68.9%	221.5	12.2	F
	Through	365	255	69.9%	178.2	15.1	F
	Right Turn	445	317	71.1%	49.3	7.2	D
	Subtotal	1,363	953	69.9%	152.9	10.5	F
EB	Left Turn	765	514	67.1%	89.6	7.8	F
	Through	355	237	66.7%	66.7	13.6	E
	Right Turn	50	37	73.8%	49.2	16.4	D
	Subtotal	1,170	787	67.3%	81.3	9.6	F
WB	Left Turn	80	73	91.0%	72.2	20.5	E
	Through	310	325	104.9%	60.1	12.4	E
	Right Turn	743	665	89.5%	51.8	3.0	D
	Subtotal	1,133	1,063	93.8%	56.0	4.5	E
Total		4,181	3,317	79.3%	87.5	2.9	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	180	163	90.4%	37.4	10.1	D
	Through	90	89	98.3%	33.2	8.6	C
	Right Turn	546	491	90.0%	13.4	3.3	B
	Subtotal	816	743	91.0%	21.5	5.0	C
SB	Left Turn	100	99	98.9%	29.5	6.1	C
	Through	55	58	105.6%	43.4	8.4	D
	Right Turn	65	69	106.0%	5.5	1.1	A
	Subtotal	220	226	102.7%	25.6	4.3	C
EB	Left Turn	75	76	101.3%	16.3	2.5	B
	Through	635	640	100.7%	28.2	4.4	C
	Right Turn	150	154	102.3%	23.3	4.4	C
	Subtotal	860	869	101.0%	26.2	4.1	C
WB	Left Turn	253	250	98.8%	20.8	2.7	C
	Through	420	433	103.2%	12.3	1.5	B
	Right Turn	50	48	96.2%	7.4	2.0	A
	Subtotal	723	732	101.2%	14.9	1.5	B
Total		2,619	2,569	98.1%	21.5	2.8	C

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	105	110	104.8%	0.3	0.2	A
	Right Turn	20	20	100.0%	0.1	0.2	A
	Subtotal	125	130	104.0%	0.3	0.2	A
SB	Left Turn	50	49	97.6%	3.9	0.6	A
	Through	160	169	105.3%	1.2	0.4	A
	Right Turn						
	Subtotal	210	217	103.5%	1.8	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	21	104.0%	6.9	2.0	A
	Through						
	Right Turn	55	56	100.9%	5.1	0.4	A
	Subtotal	75	76	101.7%	5.5	0.5	A
Total		410	424	103.3%	2.1	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	25	23	92.0%	7.5	2.2	A
	Through						
	Right Turn	60	64	106.5%	5.6	0.7	A
	Subtotal	85	87	102.2%	6.1	0.7	A
EB	Left Turn	50	49	97.8%	4.5	0.9	A
	Through	185	195	105.6%	1.5	0.4	A
	Right Turn						
	Subtotal	235	244	103.9%	2.2	0.4	A
WB	Left Turn						
	Through	140	145	103.7%	0.9	0.2	A
	Right Turn	20	19	97.0%	1.3	0.6	A
	Subtotal	160	165	102.9%	1.0	0.2	A
Total		480	496	103.3%	2.5	0.3	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Background**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	185	188	101.4%	1.6	0.5	A
	Right Turn	15	17	110.7%	1.2	0.8	A
	Subtotal	200	204	102.1%	1.5	0.4	A
SB	Left Turn	220	227	103.3%	6.6	0.8	A
	Through	740	735	99.4%	4.3	0.4	A
	Right Turn						
	Subtotal	960	963	100.3%	4.8	0.4	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	11	106.0%	17.3	16.7	C
	Through						
	Right Turn	190	195	102.7%	4.8	0.4	A
	Subtotal	200	206	102.9%	5.5	0.9	A
Total		1,360	1,373	100.9%	4.4	0.3	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	275	273	99.4%	28.7	16.6	C
	Right Turn	200	195	97.7%	3.4	1.0	A
	Subtotal	475	469	98.7%	18.4	9.9	B
SB	Left Turn	125	102	81.6%	14.8	3.6	B
	Through	655	546	83.3%	10.3	1.2	B
	Right Turn						
	Subtotal	780	648	83.0%	11.0	1.2	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	700	707	101.0%	24.9	7.6	C
	Through						
	Right Turn	225	220	97.7%	14.7	9.5	B
	Subtotal	925	927	100.2%	22.5	7.9	C
Total		2,180	2,043	93.7%	18.0	5.9	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	95	98	102.8%	31.5	5.0	C
	Through	195	194	99.3%	52.6	5.4	D
	Right Turn	70	69	98.9%	24.0	9.8	C
	Subtotal	360	361	100.1%	41.3	4.6	D
SB	Left Turn	480	305	63.5%	80.6	11.6	F
	Through	170	111	65.1%	76.7	11.0	E
	Right Turn	1,565	1,004	64.1%	122.1	2.4	F
	Subtotal	2,215	1,419	64.1%	109.3	3.2	F
EB	Left Turn	580	545	94.0%	73.7	6.0	E
	Through	360	335	93.0%	50.4	7.6	D
	Right Turn	45	43	95.8%	39.4	8.5	D
	Subtotal	985	923	93.7%	63.6	6.0	E
WB	Left Turn	50	44	88.6%	105.3	10.8	F
	Through	425	412	96.8%	99.5	8.2	F
	Right Turn	215	192	89.3%	14.7	4.5	B
	Subtotal	690	648	93.9%	74.9	6.9	E
Total		4,250	3,350	78.8%	83.0	2.5	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	75	67	89.3%	29.5	5.9	C
	Through	30	31	102.0%	25.6	4.5	C
	Right Turn	120	111	92.2%	4.7	1.3	A
	Subtotal	225	208	92.5%	15.7	2.7	B
SB	Left Turn	65	65	99.4%	27.1	7.1	C
	Through	75	74	98.0%	29.9	3.3	C
	Right Turn	35	36	102.0%	4.8	1.3	A
	Subtotal	175	174	99.3%	23.6	3.9	C
EB	Left Turn	25	25	98.4%	13.1	4.4	B
	Through	340	342	100.6%	21.6	2.7	C
	Right Turn	110	112	101.4%	12.9	3.8	B
	Subtotal	475	478	100.7%	19.0	2.7	B
WB	Left Turn	345	352	102.1%	17.2	2.1	B
	Through	475	473	99.6%	9.5	1.4	A
	Right Turn	55	57	103.5%	5.9	2.7	A
	Subtotal	875	883	100.9%	12.2	1.7	B
Total		1,750	1,743	99.6%	15.7	1.7	B

MOVEMENT SUMMARY

Site: 101 [2040 BG AM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	5	100.0	0.219	16.5	LOS C	0.7	19.8	0.67	0.67	0.67	32.8
8	T1	133	3.0	0.219	10.0	LOS A	0.8	20.0	0.67	0.67	0.67	33.1
18b	R3	85	3.0	0.219	9.9	LOS A	0.8	20.0	0.68	0.68	0.68	31.5
Approach		223	5.3	0.219	10.1	LOS B	0.8	20.0	0.67	0.67	0.67	32.5
SouthEast: RoadName												
3bx	L3	48	3.0	0.175	4.7	LOS A	0.7	18.6	0.32	0.20	0.32	35.6
3ax	L1	21	100.0	0.175	7.6	LOS A	0.7	18.6	0.32	0.20	0.32	34.1
18ax	R1	319	3.0	0.175	4.6	LOS A	0.8	19.2	0.33	0.20	0.33	35.3
Approach		388	8.3	0.175	4.8	LOS A	0.8	19.2	0.33	0.20	0.33	35.3
North: Deer Valley Drive												
7u	U	27	3.0	0.877	23.2	LOS C	14.5	370.9	0.90	0.53	0.90	27.2
7a	L1	947	3.0	0.877	23.2	LOS C	14.5	370.9	0.90	0.53	0.90	26.5
4	T1	399	3.0	0.877	10.9	LOS B	14.5	370.9	0.46	0.26	0.46	32.3
14	R2	16	100.0	0.240	7.7	LOS A	1.1	28.2	0.25	0.13	0.25	34.2
Approach		1388	4.1	0.877	19.4	LOS C	14.5	370.9	0.77	0.44	0.77	28.0
West: Transit Center												
5	L2	5	100.0	0.234	24.0	LOS C	0.4	17.2	0.74	0.75	0.77	27.5
12a	R1	27	100.0	0.234	24.0	LOS C	0.4	17.2	0.74	0.75	0.77	27.2
12	R2	16	100.0	0.234	24.0	LOS C	0.4	17.2	0.74	0.75	0.77	26.6
Approach		48	100.0	0.234	24.0	LOS C	0.4	17.2	0.74	0.75	0.77	27.0
All Vehicles		2048	7.3	0.877	15.8	LOS C	14.5	370.9	0.67	0.43	0.67	29.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	370	385	104.1%	1.2	0.2	A
	Right Turn	30	32	107.7%	0.6	0.5	A
	Subtotal	400	418	104.4%	1.2	0.2	A
SB	Left Turn	85	88	103.6%	5.2	0.6	A
	Through	125	121	97.0%	1.8	0.5	A
	Right Turn						
	Subtotal	210	209	99.7%	3.2	0.4	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	30	30	98.3%	9.1	3.8	A
	Through						
	Right Turn	60	63	104.8%	7.3	2.1	A
	Subtotal	90	92	102.7%	8.1	2.2	A
Total		700	719	102.8%	2.6	0.5	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	21	104.5%	15.0	6.1	B
	Through						
	Right Turn	80	79	98.1%	8.5	1.7	A
	Subtotal	100	99	99.4%	10.1	3.0	B
EB	Left Turn	90	94	104.8%	6.4	1.0	A
	Through	190	186	97.7%	2.1	0.5	A
	Right Turn						
	Subtotal	280	280	100.0%	3.6	0.6	A
WB	Left Turn						
	Through	395	412	104.4%	1.3	0.2	A
	Right Turn	35	37	105.1%	1.4	0.3	A
	Subtotal	430	449	104.4%	1.3	0.2	A
Total		810	828	102.3%	3.0	0.4	A

SimTraffic Post-Processor **Snow Park Village**
Average Results from 10 Runs **2040 Background**
Volume and Delay by Movement **PM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	645	641	99.4%	4.0	0.7	A
	Right Turn	45	48	107.6%	2.9	0.7	A
	Subtotal	690	690	100.0%	3.9	0.7	A
SB	Left Turn	235	232	98.6%	9.3	1.6	A
	Through	245	246	100.2%	1.8	0.4	A
	Right Turn						
	Subtotal	480	477	99.4%	5.4	1.0	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	25	27	106.4%	107.4	23.1	F
	Through						
	Right Turn	450	447	99.4%	111.6	22.5	F
	Subtotal	475	474	99.7%	111.5	22.3	F
Total		1,645	1,641	99.7%	35.5	4.8	E

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	785	771	98.2%	78.6	50.6	E
	Right Turn	820	786	95.9%	92.1	74.1	F
	Subtotal	1,605	1,558	97.0%	85.7	62.8	F
SB	Left Turn	290	189	65.2%	20.6	2.6	C
	Through	470	335	71.2%	8.6	2.2	A
	Right Turn						
	Subtotal	760	524	68.9%	12.8	2.1	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	530	526	99.2%	37.2	15.3	D
	Through						
	Right Turn	150	144	95.8%	20.4	8.7	C
	Subtotal	680	670	98.5%	33.5	14.1	C
Total		3,045	2,751	90.3%	59.2	37.7	E

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	70	71	101.3%	35.7	8.6	D
	Through	395	396	100.4%	54.8	5.5	D
	Right Turn	70	74	105.0%	41.2	9.5	D
	Subtotal	535	541	101.1%	50.6	5.6	D
SB	Left Turn	495	355	71.8%	216.3	16.0	F
	Through	365	259	71.1%	177.6	10.4	F
	Right Turn	720	524	72.7%	55.9	7.5	E
	Subtotal	1,580	1,138	72.0%	135.6	10.3	F
EB	Left Turn	1,190	527	44.3%	96.1	7.7	F
	Through	445	201	45.2%	75.2	18.2	E
	Right Turn	70	32	45.9%	64.1	23.0	E
	Subtotal	1,705	761	44.6%	89.7	9.7	F
WB	Left Turn	75	64	85.7%	122.1	17.2	F
	Through	405	396	97.7%	88.9	5.2	F
	Right Turn	640	546	85.3%	37.1	5.8	D
	Subtotal	1,120	1,006	89.8%	63.6	3.7	E
Total		4,940	3,445	69.7%	90.0	3.0	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	210	181	86.3%	51.9	15.5	D
	Through	90	85	94.4%	43.4	12.4	D
	Right Turn	565	508	89.8%	18.1	4.9	B
	Subtotal	865	774	89.5%	29.4	7.6	C
SB	Left Turn	105	103	97.7%	35.5	11.6	D
	Through	55	56	101.3%	47.5	6.9	D
	Right Turn	75	76	101.9%	6.4	1.6	A
	Subtotal	235	235	99.9%	28.6	4.7	C
EB	Left Turn	85	90	105.8%	18.2	2.9	B
	Through	865	882	101.9%	37.7	7.4	D
	Right Turn	175	172	98.2%	34.7	9.8	C
	Subtotal	1,125	1,144	101.6%	35.8	7.3	D
WB	Left Turn	255	252	98.6%	25.9	2.6	C
	Through	570	561	98.4%	12.7	1.8	B
	Right Turn	55	54	98.9%	8.3	2.7	A
	Subtotal	880	867	98.5%	16.4	1.3	B
Total		3,105	3,019	97.2%	28.1	3.0	C

MOVEMENT SUMMARY

Site: 101 [2040 BG PM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.402	15.4	LOS C	2.0	51.3	0.68	0.74	0.87	32.2
8	T1	475	3.0	0.402	10.6	LOS B	2.0	51.3	0.68	0.74	0.87	33.0
18b	R3	86	3.0	0.402	10.6	LOS B	2.0	51.3	0.68	0.74	0.87	31.4
Approach		562	3.2	0.402	10.6	LOS B	2.0	51.3	0.68	0.74	0.87	32.8
SouthEast: RoadName												
3bx	L3	51	3.0	0.681	19.2	LOS C	5.8	151.3	0.81	1.08	1.61	29.7
3ax	L1	15	100.0	0.681	24.1	LOS C	5.8	151.3	0.81	1.08	1.61	28.4
18ax	R1	864	3.0	0.681	19.1	LOS C	6.0	152.4	0.82	1.08	1.61	29.1
Approach		929	4.6	0.681	19.2	LOS C	6.0	152.4	0.82	1.08	1.61	29.1
North: Deer Valley Drive												
7u	U	247	3.0	0.695	12.5	LOS B	6.9	176.1	0.48	0.26	0.48	31.0
7a	L1	434	3.0	0.695	12.5	LOS B	6.9	176.1	0.48	0.26	0.48	30.1
4	T1	429	3.0	0.695	8.3	LOS A	6.9	176.1	0.34	0.17	0.34	33.1
14	R2	10	100.0	0.190	7.1	LOS A	0.8	21.5	0.22	0.10	0.22	34.5
Approach		1121	3.9	0.695	10.8	LOS B	6.9	176.1	0.43	0.22	0.43	31.4
West: Transit Center												
5	L2	5	100.0	0.098	16.0	LOS C	0.2	7.2	0.65	0.65	0.65	30.3
12a	R1	15	100.0	0.098	16.0	LOS C	0.2	7.2	0.65	0.65	0.65	29.9
12	R2	5	100.0	0.098	16.0	LOS C	0.2	7.2	0.65	0.65	0.65	29.2
Approach		25	100.0	0.098	16.0	LOS C	0.2	7.2	0.65	0.65	0.65	29.8
All Vehicles		2637	4.9	0.695	13.8	LOS B	6.9	176.1	0.62	0.64	0.94	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	119	119	100.3%	7.7	2.5	A
	Through	105	104	98.7%	6.0	2.9	A
	Right Turn						
	Subtotal	224	223	99.6%	6.8	2.4	A
SB	Left Turn						
	Through	238	236	99.2%	4.6	2.5	A
	Right Turn	15	17	114.0%	2.1	1.1	A
	Subtotal	253	253	100.0%	4.4	2.3	A
EB	Left Turn	15	15	100.0%	12.5	7.8	B
	Through						
	Right Turn	100	105	105.0%	5.9	1.6	A
	Subtotal	115	120	104.3%	6.8	2.4	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		592	596	100.7%	5.8	2.1	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	18	87.5%	21.2	23.2	C
	Through						
	Right Turn						
	Subtotal	20	18	87.5%	21.2	23.2	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	818	832	101.7%	4.4	0.4	A
	Right Turn	20	18	91.5%	3.2	0.7	A
	Subtotal	838	850	101.4%	4.3	0.4	A
WB	Left Turn						
	Through	223	225	100.9%	0.3	0.1	A
	Right Turn						
	Subtotal	223	225	100.9%	0.3	0.1	A
Total		1,081	1,092	101.1%	3.7	0.4	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	147	148	100.7%	1.1	0.2	A
	Right Turn	20	22	107.5%	0.5	0.4	A
	Subtotal	167	170	101.6%	1.0	0.2	A
SB	Left Turn	50	45	90.6%	3.9	0.7	A
	Through	248	257	103.4%	1.2	0.2	A
	Right Turn						
	Subtotal	298	302	101.3%	1.6	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	18	89.0%	6.6	1.9	A
	Through						
	Right Turn	55	55	100.0%	5.2	0.6	A
	Subtotal	75	73	97.1%	5.6	0.7	A
Total		540	544	100.8%	2.0	0.2	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	25	23	93.6%	9.6	2.6	A
	Through						
	Right Turn	60	63	105.0%	5.8	0.9	A
	Subtotal	85	86	101.6%	6.6	0.9	A
EB	Left Turn	50	51	101.4%	4.9	0.9	A
	Through	273	275	100.7%	1.9	0.4	A
	Right Turn						
	Subtotal	323	326	100.8%	2.4	0.4	A
WB	Left Turn						
	Through	182	184	101.0%	0.8	0.2	A
	Right Turn	20	19	97.0%	0.9	0.4	A
	Subtotal	202	203	100.6%	0.8	0.1	A
Total		610	615	100.9%	2.5	0.3	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	228	228	99.9%	1.7	0.2	A
	Right Turn	15	16	106.7%	0.8	1.2	A
	Subtotal	243	244	100.3%	1.7	0.2	A
SB	Left Turn	308	307	99.7%	7.8	0.8	A
	Through	828	841	101.6%	5.2	0.5	A
	Right Turn						
	Subtotal	1,136	1,148	101.1%	5.9	0.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	9	93.0%	29.1	15.8	D
	Through						
	Right Turn	232	236	101.9%	6.2	1.0	A
	Subtotal	242	246	101.5%	7.1	1.3	A
Total		1,621	1,637	101.0%	5.5	0.3	A

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	317	306	96.4%	30.5	26.4	C
	Right Turn	217	218	100.5%	4.3	0.9	A
	Subtotal	534	524	98.1%	19.7	16.9	B
SB	Left Turn	125	89	71.2%	14.7	1.9	B
	Through	743	556	74.8%	11.0	2.2	B
	Right Turn						
	Subtotal	868	645	74.3%	11.5	2.0	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	735	720	97.9%	29.2	8.2	C
	Through						
	Right Turn	225	215	95.6%	21.4	23.4	C
	Subtotal	960	935	97.4%	27.4	11.3	C
Total		2,362	2,103	89.0%	20.5	8.9	C

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	95	94	98.6%	32.2	5.8	C
	Through	195	198	101.4%	52.8	4.2	D
	Right Turn	75	75	99.9%	20.1	9.3	C
	Subtotal	365	366	100.4%	40.6	4.0	D
SB	Left Turn	568	377	66.3%	125.6	50.9	F
	Through	170	112	65.9%	99.0	33.1	F
	Right Turn	1,565	1,011	64.6%	115.3	5.8	F
	Subtotal	2,303	1,500	65.1%	117.2	12.8	F
EB	Left Turn	580	372	64.1%	89.2	7.2	F
	Through	360	232	64.5%	70.5	14.6	E
	Right Turn	45	31	68.2%	75.1	28.9	E
	Subtotal	985	635	64.4%	81.5	9.6	F
WB	Left Turn	50	47	93.8%	114.6	15.3	F
	Through	425	404	95.0%	93.8	8.4	F
	Right Turn	257	230	89.4%	14.9	4.1	B
	Subtotal	732	680	93.0%	69.3	4.9	E
Total		4,385	3,182	72.6%	90.7	6.5	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	75	64	85.6%	26.0	5.9	C
	Through	30	28	94.7%	27.1	7.7	C
	Right Turn	137	126	91.6%	3.3	0.8	A
	Subtotal	242	218	90.1%	13.5	2.5	B
SB	Left Turn	65	60	91.8%	26.8	6.1	C
	Through	75	73	97.9%	29.0	4.6	C
	Right Turn	35	35	99.4%	4.3	0.6	A
	Subtotal	175	168	95.9%	22.8	2.5	C
EB	Left Turn	25	25	98.4%	14.5	3.8	B
	Through	340	327	96.2%	22.6	2.1	C
	Right Turn	110	108	98.5%	11.5	2.6	B
	Subtotal	475	460	96.9%	19.6	1.5	B
WB	Left Turn	380	384	101.1%	19.1	2.3	B
	Through	475	466	98.1%	10.1	1.0	B
	Right Turn	55	53	96.5%	4.4	1.4	A
	Subtotal	910	904	99.3%	13.5	1.2	B
Total		1,802	1,750	97.1%	16.1	1.3	B

MOVEMENT SUMMARY

Site: 101 [2040 Plus Project AM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	5	100.0	0.280	20.5	LOS C	1.0	26.0	0.74	0.77	0.83	31.6
8	T1	133	3.0	0.280	12.8	LOS B	1.0	26.2	0.74	0.77	0.83	31.8
18b	R3	104	3.0	0.280	12.7	LOS B	1.0	26.2	0.74	0.77	0.83	30.3
Approach		243	5.1	0.280	12.9	LOS B	1.0	26.2	0.74	0.77	0.83	31.1
SouthEast: RoadName												
3bx	L3	57	3.0	0.216	5.1	LOS A	0.9	23.7	0.33	0.21	0.33	35.4
3ax	L1	26	100.0	0.216	8.0	LOS A	0.9	23.7	0.33	0.21	0.33	33.9
18ax	R1	396	3.0	0.216	5.0	LOS A	1.0	24.6	0.34	0.22	0.34	35.1
Approach		479	8.2	0.216	5.2	LOS A	1.0	24.6	0.34	0.22	0.34	35.1
North: Deer Valley Drive												
7u	U	27	3.0	0.993	42.4	LOS E	72.5	1855.3	1.00	1.23	2.16	22.2
7a	L1	1105	3.0	0.993	42.4	LOS E	72.5	1855.3	1.00	1.23	2.16	21.7
4	T1	399	3.0	0.993	14.2	LOS B	72.5	1855.3	0.45	0.41	0.73	31.0
14	R2	16	100.0	0.272	8.1	LOS A	1.2	32.9	0.29	0.16	0.29	34.0
Approach		1547	4.0	0.993	34.8	LOS D	72.5	1855.3	0.85	1.01	1.77	23.6
West: Transit Center												
5	L2	5	100.0	0.325	31.5	LOS D	0.6	26.4	0.78	0.92	1.19	25.3
12a	R1	36	100.0	0.325	31.5	LOS D	0.6	26.4	0.78	0.92	1.19	25.0
12	R2	16	100.0	0.325	31.5	LOS D	0.6	26.4	0.78	0.92	1.19	24.5
Approach		57	100.0	0.325	31.5	LOS D	0.6	26.4	0.78	0.92	1.19	24.9
All Vehicles		2326	7.3	0.993	26.3	LOS D	72.5	1855.3	0.73	0.82	1.36	26.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Average Results from 10 Runs | **2040 Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	150	142	94.6%	103.5	74.0	F
	Through	454	428	94.2%	109.5	82.3	F
	Right Turn						
	Subtotal	604	569	94.3%	108.3	80.5	F
SB	Left Turn						
	Through	145	143	98.8%	4.1	0.9	A
	Right Turn	15	14	94.7%	0.8	0.8	A
	Subtotal	160	158	98.4%	3.9	0.8	A
EB	Left Turn	15	15	96.7%	63.4	75.9	E
	Through						
	Right Turn	146	145	99.0%	18.1	18.7	B
	Subtotal	161	159	98.8%	21.9	21.4	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		925	886	95.8%	65.1	43.8	E

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	20	99.5%	32.4	14.7	D
	Through						
	Right Turn						
	Subtotal	20	20	99.5%	32.4	14.7	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	308	308	99.8%	1.7	0.4	A
	Right Turn	20	22	108.0%	2.2	1.5	A
	Subtotal	328	329	100.3%	1.8	0.4	A
WB	Left Turn						
	Through	774	773	99.9%	2.4	0.1	A
	Right Turn						
	Subtotal	774	773	99.9%	2.4	0.1	A
Total		1,122	1,122	100.0%	2.8	0.2	A

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	473	393	83.0%	246.9	41.6	F
	Right Turn	30	27	88.7%	262.9	63.4	F
	Subtotal	503	419	83.4%	247.7	42.1	F
SB	Left Turn	85	88	103.3%	4.4	0.6	A
	Through	182	185	101.5%	1.1	0.3	A
	Right Turn						
	Subtotal	267	273	102.1%	2.1	0.3	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	30	25	82.0%	330.2	150.8	F
	Through						
	Right Turn	60	47	78.8%	386.0	200.5	F
	Subtotal	90	72	79.9%	307.2	174.7	F
Total		860	764	88.8%	158.3	24.8	F

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	14	70.0%	414.6	262.7	F
	Through						
	Right Turn	80	58	72.4%	453.7	255.0	F
	Subtotal	100	72	71.9%	352.9	232.3	F
EB	Left Turn	90	87	96.3%	4.8	0.4	A
	Through	247	254	102.7%	1.9	0.5	A
	Right Turn						
	Subtotal	337	340	101.0%	2.6	0.6	A
WB	Left Turn						
	Through	498	389	78.2%	167.8	24.9	F
	Right Turn	35	27	76.6%	174.9	70.4	F
	Subtotal	533	416	78.1%	167.9	25.8	F
Total		970	828	85.4%	109.9	20.4	F

SimTraffic Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	749	751	100.3%	3.4	0.4	A
	Right Turn	45	48	106.2%	3.1	1.0	A
	Subtotal	794	799	100.6%	3.3	0.4	A
SB	Left Turn	292	292	99.9%	17.6	6.7	C
	Through	303	309	101.9%	2.4	0.7	A
	Right Turn						
	Subtotal	595	600	100.9%	9.8	3.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	25	19	74.4%	200.9	106.5	F
	Through						
	Right Turn	553	385	69.7%	153.4	13.7	F
	Subtotal	578	404	69.9%	155.8	16.1	F
Total		1,967	1,803	91.7%	39.6	1.6	E

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	888	856	96.4%	141.2	68.7	F
	Right Turn	861	825	95.8%	166.7	81.5	F
	Subtotal	1,749	1,681	96.1%	153.7	74.4	F
SB	Left Turn	290	176	60.8%	22.9	4.6	C
	Through	528	358	67.8%	8.1	1.6	A
	Right Turn						
	Subtotal	818	534	65.3%	12.8	2.0	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	553	560	101.2%	36.3	9.3	D
	Through						
	Right Turn	150	149	99.5%	20.8	7.2	C
	Subtotal	703	709	100.9%	33.2	8.9	C
Total		3,270	2,925	89.4%	99.1	42.4	F

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	70	68	97.6%	31.6	5.8	C
	Through	395	399	101.0%	49.6	6.1	D
	Right Turn	70	70	100.3%	32.0	9.8	C
	Subtotal	535	537	100.4%	44.9	5.6	D
SB	Left Turn	553	358	64.7%	229.7	14.2	F
	Through	365	232	63.7%	188.3	19.1	F
	Right Turn	720	468	65.0%	53.4	6.9	D
	Subtotal	1,638	1,058	64.6%	146.3	9.3	F
EB	Left Turn	1,190	520	43.7%	86.8	7.6	F
	Through	445	198	44.5%	59.8	13.7	E
	Right Turn	70	30	43.1%	62.9	34.4	E
	Subtotal	1,705	748	43.9%	78.6	9.6	E
WB	Left Turn	80	66	82.6%	122.9	19.6	F
	Through	405	395	97.4%	94.8	4.5	F
	Right Turn	743	610	82.1%	44.3	4.4	D
	Subtotal	1,228	1,071	87.2%	67.5	2.6	E
Total		5,106	3,415	66.9%	90.1	2.7	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	210	179	85.0%	67.1	20.4	E
	Through	90	87	97.0%	50.2	13.4	D
	Right Turn	606	526	86.8%	25.1	10.8	C
	Subtotal	906	792	87.4%	37.9	13.3	D
SB	Left Turn	105	105	99.9%	42.0	9.0	D
	Through	55	54	97.6%	42.9	5.4	D
	Right Turn	75	78	103.3%	6.6	2.1	A
	Subtotal	235	236	100.5%	30.5	5.6	C
EB	Left Turn	85	85	100.0%	22.0	10.0	C
	Through	865	865	100.0%	42.5	15.4	D
	Right Turn	175	181	103.3%	42.0	19.3	D
	Subtotal	1,125	1,131	100.5%	40.9	15.7	D
WB	Left Turn	278	278	100.1%	26.4	3.3	C
	Through	570	580	101.7%	13.0	1.6	B
	Right Turn	55	53	96.2%	8.2	2.8	A
	Subtotal	903	911	100.9%	16.8	1.6	B
Total		3,169	3,069	96.9%	32.4	8.0	C

MOVEMENT SUMMARY

Site: 101 [2040 Plus Project PM]

Deer Valley Drive / Marsac Avenue Roundabout
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Marsac Avenue												
3	L2	1	100.0	0.452	17.9	LOS C	2.4	61.0	0.72	0.82	1.03	31.3
8	T1	475	3.0	0.452	12.5	LOS B	2.4	61.1	0.72	0.82	1.03	32.1
18b	R3	98	3.0	0.452	12.5	LOS B	2.4	61.1	0.72	0.82	1.03	30.6
Approach		574	3.2	0.452	12.5	LOS B	2.4	61.1	0.72	0.82	1.03	31.8
SouthEast: RoadName												
3bx	L3	72	3.0	0.834	30.5	LOS D	10.8	286.1	0.90	1.42	2.46	25.8
3ax	L1	25	100.0	0.834	35.4	LOS E	10.8	286.1	0.90	1.42	2.46	24.9
18ax	R1	1041	3.0	0.834	30.1	LOS D	11.3	288.0	0.91	1.42	2.44	25.5
Approach		1138	5.2	0.834	30.3	LOS D	11.3	288.0	0.91	1.42	2.44	25.5
North: Deer Valley Drive												
7u	U	242	3.0	0.782	16.4	LOS C	8.9	228.5	0.70	0.44	0.70	29.4
7a	L1	532	3.0	0.782	16.4	LOS C	8.9	228.5	0.70	0.44	0.70	28.6
4	T1	429	3.0	0.782	9.8	LOS A	8.9	228.5	0.46	0.28	0.46	32.4
14	R2	10	100.0	0.214	7.6	LOS A	0.9	24.4	0.28	0.15	0.28	34.3
Approach		1214	3.8	0.782	14.0	LOS B	8.9	228.5	0.61	0.38	0.61	30.1
West: Transit Center												
5	L2	5	100.0	0.135	18.6	LOS C	0.2	9.8	0.69	0.69	0.69	29.4
12a	R1	21	100.0	0.135	18.6	LOS C	0.2	9.8	0.69	0.69	0.69	29.0
12	R2	5	100.0	0.135	18.6	LOS C	0.2	9.8	0.69	0.69	0.69	28.4
Approach		31	100.0	0.135	18.6	LOS C	0.2	9.8	0.69	0.69	0.69	29.0
All Vehicles		2958	5.2	0.834	20.0	LOS C	11.3	288.0	0.75	0.87	1.40	28.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	119	123	103.4%	6.2	1.9	A
	Through	105	106	100.8%	3.6	1.5	A
	Right Turn						
	Subtotal	224	229	102.1%	5.2	1.3	A
SB	Left Turn						
	Through	238	231	97.1%	3.6	1.4	A
	Right Turn	15	18	119.3%	2.2	2.2	A
	Subtotal	253	249	98.4%	3.5	1.4	A
EB	Left Turn	15	16	108.0%	12.2	4.2	B
	Through						
	Right Turn	100	102	101.6%	5.7	0.5	A
	Subtotal	115	118	102.4%	6.7	0.8	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		592	596	100.6%	4.8	1.1	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	18	90.5%	12.6	2.8	B
	Through						
	Right Turn						
	Subtotal	20	18	90.5%	12.6	2.8	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	818	827	101.1%	1.3	0.2	A
	Right Turn	20	23	114.0%	1.8	0.8	A
	Subtotal	838	850	101.4%	1.3	0.2	A
WB	Left Turn						
	Through	223	226	101.2%	1.0	0.2	A
	Right Turn						
	Subtotal	223	226	101.2%	1.0	0.2	A
Total		1,081	1,093	101.1%	1.4	0.2	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	147	147	99.8%	0.1	0.1	A
	Right Turn	20	22	111.0%	0.1	0.1	A
	Subtotal	167	169	101.1%	0.1	0.0	A
SB	Left Turn	50	45	89.8%	3.2	0.6	A
	Through	248	251	101.1%	0.3	0.1	A
	Right Turn						
	Subtotal	298	296	99.2%	0.9	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	20	18	90.0%	5.9	1.7	A
	Through						
	Right Turn	55	57	103.5%	5.2	0.4	A
	Subtotal	75	75	99.9%	5.3	0.3	A
Total		540	539	99.9%	1.3	0.1	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	25	25	101.6%	6.6	0.9	A
	Through						
	Right Turn	60	61	101.0%	5.8	0.8	A
	Subtotal	85	86	101.2%	6.0	0.7	A
EB	Left Turn	50	52	103.2%	4.7	1.1	A
	Through	273	269	98.7%	1.6	0.4	A
	Right Turn						
	Subtotal	323	321	99.4%	2.1	0.5	A
WB	Left Turn						
	Through	182	185	101.8%	0.2	0.0	A
	Right Turn	20	20	99.0%	0.0	0.1	A
	Subtotal	202	205	101.5%	0.2	0.0	A
Total		610	612	100.3%	2.0	0.4	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	228	225	98.8%	10.0	2.4	A
	Right Turn	15	16	104.0%	6.0	3.0	A
	Subtotal	243	241	99.1%	9.7	2.4	A
SB	Left Turn	308	306	99.4%	14.4	2.5	B
	Through	828	833	100.6%	11.1	1.8	B
	Right Turn						
	Subtotal	1,136	1,139	100.3%	12.0	1.7	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	10	11	107.0%	15.4	5.8	B
	Through						
	Right Turn	232	233	100.2%	5.7	1.7	A
	Subtotal	242	243	100.5%	6.2	1.6	A
Total		1,621	1,623	100.1%	10.8	1.2	B

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	317	313	98.6%	17.2	5.4	B
	Right Turn	217	217	100.1%	3.2	0.4	A
	Subtotal	534	530	99.2%	11.6	3.8	B
SB	Left Turn	125	94	75.5%	14.4	2.3	B
	Through	743	623	83.8%	10.1	1.0	B
	Right Turn						
	Subtotal	868	717	82.6%	10.6	0.9	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	735	726	98.8%	20.8	2.7	C
	Through						
	Right Turn	225	218	96.7%	9.5	4.0	A
	Subtotal	960	944	98.3%	18.2	3.1	B
Total		2,362	2,191	92.8%	14.1	2.1	B

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	95	89	93.6%	32.3	5.3	C
	Through	195	188	96.6%	50.7	3.4	D
	Right Turn	70	71	100.9%	31.2	9.3	C
	Subtotal	360	348	96.6%	42.9	2.2	D
SB	Left Turn	568	370	65.1%	94.9	24.4	F
	Through	170	108	63.4%	74.3	13.9	E
	Right Turn	1,565	1,007	64.4%	119.7	2.8	F
	Subtotal	2,303	1,484	64.5%	110.4	6.2	F
EB	Left Turn	580	531	91.6%	76.1	5.0	E
	Through	360	327	90.7%	49.9	6.3	D
	Right Turn	45	41	90.0%	38.3	10.8	D
	Subtotal	985	898	91.2%	65.0	5.0	E
WB	Left Turn	50	45	89.8%	112.6	22.3	F
	Through	425	411	96.7%	98.7	9.1	F
	Right Turn	257	230	89.6%	16.2	3.7	B
	Subtotal	732	686	93.7%	72.1	5.8	E
Total		4,380	3,417	78.0%	83.8	3.4	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	75	65	87.1%	23.3	7.3	C
	Through	30	29	96.3%	23.9	5.9	C
	Right Turn	137	128	93.6%	3.8	0.7	A
	Subtotal	242	223	91.9%	12.0	3.0	B
SB	Left Turn	65	66	100.9%	23.6	5.3	C
	Through	75	77	103.1%	24.8	2.2	C
	Right Turn	35	33	95.4%	5.9	1.6	A
	Subtotal	175	176	100.7%	21.1	2.7	C
EB	Left Turn	25	24	95.2%	12.8	3.0	B
	Through	340	341	100.4%	20.1	2.6	C
	Right Turn	110	107	96.9%	14.0	2.2	B
	Subtotal	475	472	99.3%	18.4	2.3	B
WB	Left Turn	380	376	98.9%	15.7	3.0	B
	Through	475	476	100.2%	9.3	1.6	A
	Right Turn	55	58	104.7%	5.6	1.3	A
	Subtotal	910	910	99.9%	11.8	1.7	B
Total		1,802	1,780	98.8%	14.5	1.8	B

Intersection 1 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	150	147	97.9%	10.5	5.9	B
	Through	454	461	101.5%	8.9	4.3	A
	Right Turn						
	Subtotal	604	608	100.6%	9.2	4.6	A
SB	Left Turn						
	Through	145	137	94.4%	4.3	2.3	A
	Right Turn	15	17	110.7%	2.6	1.9	A
	Subtotal	160	154	95.9%	4.1	2.0	A
EB	Left Turn	15	14	92.7%	16.2	16.8	B
	Through						
	Right Turn	146	140	95.9%	5.4	1.0	A
	Subtotal	161	154	95.6%	6.6	2.4	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		925	915	98.9%	7.8	3.3	A

Intersection 2 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	20	21	103.5%	19.8	5.3	C
	Through						
	Right Turn						
	Subtotal	20	21	103.5%	19.8	5.3	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	308	299	96.9%	0.3	0.1	A
	Right Turn	20	21	103.0%	0.5	0.4	A
	Subtotal	328	319	97.3%	0.3	0.1	A
WB	Left Turn						
	Through	774	776	100.3%	2.3	0.1	A
	Right Turn						
	Subtotal	774	776	100.3%	2.3	0.1	A
Total		1,122	1,116	99.5%	2.2	0.2	A

Intersection 3 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	473	482	101.9%	0.4	0.1	A
	Right Turn	30	33	108.7%	0.3	0.2	A
	Subtotal	503	514	102.3%	0.4	0.1	A
SB	Left Turn	85	84	98.8%	5.7	1.2	A
	Through	182	179	98.6%	0.4	0.1	A
	Right Turn						
	Subtotal	267	263	98.7%	2.0	0.4	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	30	29	98.0%	11.1	4.7	B
	Through						
	Right Turn	60	62	102.5%	8.0	1.1	A
	Subtotal	90	91	101.0%	8.9	2.2	A
Total		860	869	101.0%	1.8	0.3	A

Intersection 4 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	20	19	93.5%	12.2	4.1	B
	Through						
	Right Turn	80	82	103.0%	8.5	1.6	A
	Subtotal	100	101	101.1%	9.3	2.0	A
EB	Left Turn	90	92	101.8%	7.6	1.0	A
	Through	247	242	97.9%	2.0	0.4	A
	Right Turn						
	Subtotal	337	333	98.9%	3.7	0.6	A
WB	Left Turn						
	Through	498	509	102.1%	0.7	0.1	A
	Right Turn	35	35	99.7%	0.4	0.2	A
	Subtotal	533	543	102.0%	0.6	0.1	A
Total		970	978	100.8%	2.6	0.4	A

Intersection 5 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	749	753	100.5%	35.6	21.9	D
	Right Turn	45	45	98.9%	31.7	20.5	C
	Subtotal	794	797	100.4%	35.3	21.8	D
SB	Left Turn	292	288	98.6%	27.6	5.1	C
	Through	303	294	97.0%	3.9	1.4	A
	Right Turn						
	Subtotal	595	582	97.8%	14.9	3.1	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	25	25	99.6%	99.7	33.8	F
	Through						
	Right Turn	553	546	98.7%	83.2	26.3	F
	Subtotal	578	571	98.8%	83.9	26.4	F
Total		1,967	1,950	99.1%	43.5	14.6	D

Intersection 7 **Deer Valley Drive/Bonanza Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	888	857	96.5%	173.4	65.6	F
	Right Turn	861	784	91.0%	217.3	89.3	F
	Subtotal	1,749	1,641	93.8%	193.6	75.6	F
SB	Left Turn	290	183	63.1%	23.4	3.1	C
	Through	528	358	67.7%	7.5	2.4	A
	Right Turn						
	Subtotal	818	541	66.1%	12.6	2.4	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	553	557	100.8%	39.2	6.3	D
	Through						
	Right Turn	150	151	100.6%	24.9	6.9	C
	Subtotal	703	708	100.7%	36.2	6.4	D
Total		3,270	2,890	88.4%	116.7	38.4	F

Intersection 8 **SR-224-Park Avenue/Empire Avenue-Deer Valley Drive** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	70	73	103.7%	33.5	7.8	C
	Through	395	392	99.1%	54.1	5.5	D
	Right Turn	70	71	100.7%	33.1	8.9	C
	Subtotal	535	535	99.9%	48.7	4.6	D
SB	Left Turn	553	366	66.1%	225.6	17.6	F
	Through	365	232	63.4%	181.8	18.5	F
	Right Turn	720	478	66.4%	57.0	10.1	E
	Subtotal	1,638	1,076	65.7%	141.5	14.3	F
EB	Left Turn	1,190	524	44.1%	87.2	6.3	F
	Through	445	197	44.2%	65.3	13.2	E
	Right Turn	70	32	46.1%	47.1	17.8	D
	Subtotal	1,705	753	44.2%	79.9	8.1	E
WB	Left Turn	75	67	89.5%	106.6	23.0	F
	Through	405	386	95.4%	90.3	12.2	F
	Right Turn	743	624	84.0%	46.2	7.2	D
	Subtotal	1,223	1,078	88.1%	65.8	4.6	E
Total		5,101	3,441	67.5%	89.4	3.9	F

Intersection 9 **Monitor Drive-Bonanza Drive/SR-248** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	210	173	82.2%	55.8	16.2	E
	Through	90	85	94.0%	40.8	10.5	D
	Right Turn	606	523	86.3%	20.9	4.4	C
	Subtotal	906	780	86.1%	30.8	6.0	C
SB	Left Turn	105	107	101.7%	38.9	3.5	D
	Through	55	58	105.5%	52.5	8.2	D
	Right Turn	75	73	97.9%	6.6	1.2	A
	Subtotal	235	238	101.4%	31.0	2.5	C
EB	Left Turn	85	83	98.1%	19.9	4.8	B
	Through	865	860	99.4%	42.9	11.9	D
	Right Turn	175	180	102.6%	39.0	13.7	D
	Subtotal	1,125	1,123	99.8%	40.6	11.5	D
WB	Left Turn	278	277	99.7%	26.7	3.5	C
	Through	570	569	99.9%	13.1	2.3	B
	Right Turn	55	55	99.5%	10.9	3.0	B
	Subtotal	903	901	99.8%	17.1	2.2	B
Total		3,169	3,043	96.0%	30.6	5.4	C

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 1 **P2 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	71	70	98.5%	11.1	1.0	B
	Through						
	Right Turn						
	Subtotal	71	70	98.5%	11.1	1.0	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	144	127	88.2%	0.7	0.4	A
	Right Turn	674	608	90.2%	12.3	4.1	B
	Subtotal	818	735	89.8%	10.4	3.5	B
WB	Left Turn						
	Through	152	125	81.9%	0.4	0.1	A
	Right Turn						
	Subtotal	152	125	81.9%	0.4	0.1	A
Total		1,041	929	89.3%	9.2	2.9	A

Intersection 2 **P1 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	18	15	82.8%	8.5	0.8	A
	Through						
	Right Turn						
	Subtotal	18	15	82.8%	8.5	0.8	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	115	101	87.7%	0.1	0.1	A
	Right Turn	29	26	89.7%	0.6	0.2	A
	Subtotal	144	127	88.1%	0.2	0.1	A
WB	Left Turn						
	Through	134	109	81.6%	0.1	0.0	A
	Right Turn						
	Subtotal	134	109	81.6%	0.1	0.0	A
Total		296	251	84.8%	0.5	0.1	A

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 3 **Mobility Hub Entrance/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	100	86	85.8%	0.1	0.1	A
	Right Turn	15	13	86.7%	0.3	0.0	A
	Subtotal	115	99	85.9%	0.1	0.1	A
WB	Left Turn	15	15	100.0%	1.5	1.2	A
	Through	119	109	91.7%	0.2	0.1	A
	Right Turn						
	Subtotal	134	124	92.6%	0.4	0.3	A
Total		249	223	89.5%	0.3	0.2	A

Intersection 4 **Mobility Hub Exit/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	15	16	105.3%	30.7	4.9	D
	Through						
	Right Turn	15	15	101.3%	33.4	14.6	D
	Subtotal	30	31	103.3%	31.6	6.1	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	100	86	85.9%	0.6	0.3	A
	Right Turn						
	Subtotal	100	86	85.9%	0.6	0.3	A
WB	Left Turn						
	Through	134	109	81.6%	0.1	0.0	A
	Right Turn						
	Subtotal	134	109	81.6%	0.1	0.0	A
Total		264	226	85.7%	5.8	1.2	A

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 5 **Deer Valley Drive East/P2 Parking** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	209	176	84.0%	0.7	0.1	A
	Right Turn						
	Subtotal	209	176	84.0%	0.7	0.1	A
SB	Left Turn						
	Through	293	257	87.6%	1.4	0.2	A
	Right Turn	45	47	103.6%	0.5	0.1	A
	Subtotal	338	303	89.8%	1.2	0.2	A
EB	Left Turn	15	13	85.3%	8.6	3.5	A
	Through						
	Right Turn						
	Subtotal	15	13	85.3%	8.6	3.5	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		562	492	87.5%	1.2	0.1	A

Intersection 6 **Deer Valley Drive East/P3 Parking** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	209	176	84.1%	1.1	0.4	A
	Right Turn						
	Subtotal	209	176	84.1%	1.1	0.4	A
SB	Left Turn						
	Through	249	220	88.3%	5.4	7.9	A
	Right Turn	44	37	84.1%	1.0	1.1	A
	Subtotal	293	257	87.6%	4.8	6.8	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		502	433	86.2%	3.2	3.8	A

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **AM Peak Hour**

Intersection 7 **Deer Valley Drive East/P4 Parking** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	41	81.8%	1.5	1.9	A
	Through	150	119	79.0%	1.6	0.8	A
	Right Turn						
	Subtotal	200	159	79.7%	1.6	0.6	A
SB	Left Turn						
	Through	200	176	88.2%	17.3	18.4	C
	Right Turn	49	44	89.4%	3.5	7.1	A
	Subtotal	249	220	88.4%	14.3	16.2	B
EB	Left Turn	59	57	97.1%	3.4	0.9	A
	Through						
	Right Turn						
	Subtotal	59	57	97.1%	3.4	0.9	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		508	437	86.0%	8.0	8.0	A

Intersection 8 **Deer Valley Drive East/Pick-up/Drop-off** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	200	160	79.8%	1.0	0.3	A
	Right Turn						
	Subtotal	200	160	79.8%	1.0	0.3	A
SB	Left Turn						
	Through	200	177	88.3%	43.8	18.9	E
	Right Turn						
	Subtotal	200	177	88.3%	43.8	18.9	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		400	336	84.0%	22.9	9.5	C

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 101 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	500	66	5	60	75	268	24	229	309	NO
	Right Turn	500	69	5	63	78	272	24	233	313	NO
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn	100	7	2	4	12	112	21	85	161	MAX
	Through	500	18	4	13	24	297	64	203	413	NO
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn	500	3	1	1	6	29	11	15	43	NO
	Through										
	Right Turn	100	6	1	4	8	125	18	91	143	MAX
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 102 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	500	1	0	1	1	30	2	28	35	NO
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	500	63	81	4	273	274	176	107	721	NO
	Right Turn	500	89	99	10	338	353	178	189	803	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	100	0	0	0	0	19	22	0	55	NO
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 103 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	300	6	1	5	8	74	10	63	95	NO
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	150	13	3	9	19	169	34	131	239	MAX
	Right Turn	150	13	3	10	20	172	34	135	243	MAX
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	75	1	0	1	2	86	20	47	117	MAX
	Through										
	Right Turn	75	2	0	1	2	86	20	47	116	MAX
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 104 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	0	28	8	18	44	NO
	Through										
	Right Turn	500	0	0	0	0	28	8	18	44	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	0	0	0	0	0	NO
	Through	500	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	500	0	0	0	0	0	0	0	0	NO
	Right Turn	500	1	0	1	2	31	0	31	32	NO
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 105 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	500	0	0	0	0	0	0	0	0	NO
	Right Turn	500	0	0	0	0	0	0	0	0	NO
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	0	4	5	0	14	NO
	Through	500	1	1	0	2	0	0	0	0	NO
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	0	27	6	19	32	NO
	Through										
	Right Turn	500	4	0	4	5	78	4	72	81	NO
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 1 **P2 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	150	10	1	8	11	119	1	117	120	NO
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	125	52	22	24	94	229	6	217	235	MAX
	Right Turn	125	42	20	17	80	208	6	197	215	MAX
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 2 **P1 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	150	5	0	4	5	78	2	76	82	NO
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	125	0	0	0	0	0	0	0	0	NO
	Right Turn	125	0	0	0	0	0	0	0	0	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 3 **Mobility Hub Entrance/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	Average Queue (ft) Minimum	Average Queue (ft) Maximum	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Maximum Queue (ft) Minimum	Maximum Queue (ft) Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	0	0	0	0	0	0	0	NO
	Right Turn	75	0	0	0	0	0	0	0	0	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn	100	0	0	0	0	15	13	0	35	NO
	Through	100	1	0	1	1	105	0	105	105	MAX
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 4 **Mobility Hub Exit/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	100	14	5	10	28	146	20	120	180	MAX
	Through										
	Right Turn	100	14	5	9	28	146	20	119	179	MAX
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	100	0	0	0	0	4	6	0	18	NO
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	75	2	1	2	3	108	10	94	127	MAX
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 5 **Deer Valley Drive East/P2 Parking** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	Average Queue (ft) Minimum	Average Queue (ft) Maximum	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Maximum Queue (ft) Minimum	Maximum Queue (ft) Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	160	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	300	0	0	0	1	4	13	0	42	NO
	Right Turn	50	0	0	0	0	0	0	0	0	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	150	1	0	1	2	72	12	55	90	NO
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 6 **Deer Valley Drive East/P3 Parking** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	Average Queue (ft) Minimum	Average Queue (ft) Maximum	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Maximum Queue (ft) Minimum	Maximum Queue (ft) Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	200	1	0	0	2	38	18	23	81	NO
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	160	2	3	0	10	54	33	13	131	NO
	Right Turn	50	0	0	0	0	0	0	0	0	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 7 **Deer Valley Drive East/P4 Parking** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	100	0	0	0	0	0	0	0	0	NO
	Through	100	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	75	1	2	0	6	14	18	0	39	NO
	Right Turn	75	1	2	0	6	14	18	0	39	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	150	2	0	1	3	82	1	80	84	NO
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
AM Peak Hour

Intersection 8 **Deer Valley Drive East/Pick-up/Drop-off** **Uncontrolled**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	Average Queue (ft) Minimum	Average Queue (ft) Maximum	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Maximum Queue (ft) Minimum	Maximum Queue (ft) Maximum	Exceeds Storage?
NB	U Turn Second Left Left Turn Through Right Turn Second Right	150	0	0	0	0	5	7	0	21	NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	150	13	9	0	31	92	42	21	162	NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right										

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 1 **P2 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	596	226	37.8%	11.2	0.7	B
	Through						
	Right Turn						
	Subtotal	596	226	37.8%	11.2	0.7	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	175	155	88.8%	2.5	0.8	A
	Right Turn	133	122	91.7%	0.5	0.1	A
	Subtotal	308	277	90.1%	1.6	0.5	A
WB	Left Turn						
	Through	178	143	80.1%	1.6	0.3	A
	Right Turn						
	Subtotal	178	143	80.1%	1.6	0.3	A
Total		1,082	645	59.6%	5.0	0.5	A

Intersection 2 **P1 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	13	12	91.5%	9.8	1.9	A
	Through						
	Right Turn						
	Subtotal	13	12	91.5%	9.8	1.9	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	161	142	88.4%	0.2	0.1	A
	Right Turn	14	13	92.1%	0.6	0.3	A
	Subtotal	175	155	88.7%	0.2	0.1	A
WB	Left Turn						
	Through	165	131	79.3%	0.6	0.1	A
	Right Turn						
	Subtotal	165	131	79.3%	0.6	0.1	A
Total		353	298	84.4%	0.8	0.1	A

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 3 **Mobility Hub Entrance/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	146	127	87.0%	0.6	1.4	A
	Right Turn	15	13	86.7%	2.5	7.0	A
	Subtotal	161	140	87.0%	0.8	1.9	A
WB	Left Turn	15	15	96.7%	1.2	1.1	A
	Through	150	131	87.3%	0.6	0.3	A
	Right Turn						
	Subtotal	165	145	88.1%	0.7	0.5	A
Total		326	285	87.5%	0.7	0.9	A

Intersection 4 **Mobility Hub Exit/Doe Pass Road** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	15	15	102.0%	36.6	12.8	E
	Through						
	Right Turn	15	15	100.0%	22.7	7.8	C
	Subtotal	30	30	101.0%	30.6	8.6	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	161	127	78.8%	1.3	0.9	A
	Right Turn						
	Subtotal	161	127	78.8%	1.3	0.9	A
WB	Left Turn						
	Through	165	131	79.4%	0.8	0.3	A
	Right Turn						
	Subtotal	165	131	79.4%	0.8	0.3	A
Total		356	288	81.0%	5.1	1.6	A

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 5 **Deer Valley Drive East/P2 Parking** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	465	418	89.9%	0.8	0.3	A
	Right Turn						
	Subtotal	465	418	89.9%	0.8	0.3	A
SB	Left Turn						
	Through	196	167	85.4%	1.0	0.2	A
	Right Turn	95	88	92.4%	0.7	0.2	A
	Subtotal	291	255	87.7%	0.9	0.1	A
EB	Left Turn	139	137	98.8%	5.9	0.8	A
	Through						
	Right Turn						
	Subtotal	139	137	98.8%	5.9	0.8	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		895	810	90.5%	1.7	0.3	A

Intersection 6 **Deer Valley Drive East/P3 Parking** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	326	280	85.8%	1.0	0.3	A
	Right Turn						
	Subtotal	326	280	85.8%	1.0	0.3	A
SB	Left Turn						
	Through	196	167	85.4%	1.2	0.6	A
	Right Turn						
	Subtotal	196	167	85.4%	1.2	0.6	A
EB	Left Turn	139	138	99.5%	8.6	1.0	A
	Through						
	Right Turn						
	Subtotal	139	138	99.5%	8.6	1.0	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		661	585	88.5%	2.9	0.3	A

Vissim Post-Processor | **Snow Park Village**
Average Results from 10 Runs | **2040 Plus Project - Bus Option**
Volume and Delay by Movement | **PM Peak Hour**

Intersection 7 **Deer Valley Drive East/P4 Parking** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	200	157	78.7%	2.8	1.0	A
	Right Turn						
	Subtotal	200	157	78.7%	2.8	1.0	A
SB	Left Turn						
	Through	150	128	85.1%	16.2	15.7	C
	Right Turn	46	39	84.3%	0.6	0.6	A
	Subtotal	196	167	84.9%	12.4	11.7	B
EB	Left Turn	126	122	97.1%	11.4	12.2	B
	Through						
	Right Turn	50	48	96.8%	23.3	26.6	C
	Subtotal	176	171	97.0%	14.3	15.4	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		572	495	86.5%	10.0	8.9	B

Intersection 8 **Deer Valley Drive East/Pick-up/Drop-off** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	200	157	78.7%	2.7	0.8	A
	Right Turn						
	Subtotal	200	157	78.7%	2.7	0.8	A
SB	Left Turn						
	Through	200	174	87.1%	44.2	35.6	E
	Right Turn						
	Subtotal	200	174	87.1%	44.2	35.6	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		400	332	82.9%	24.7	18.8	C

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 101 **Deer Valley Drive West/Deer Valley Drive East** **Signal**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	500	214	31	154	264	519	49	397	581	MAX
	Right Turn	500	218	31	158	268	523	49	401	586	MAX
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn	100	22	4	18	29	168	16	140	186	MAX
	Through	500	6	1	5	8	125	22	105	169	NO
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn	500	8	1	5	10	52	9	38	66	NO
	Through										
	Right Turn	100	33	3	29	39	326	48	240	405	MAX
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 102 **Deer Valley Drive West/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	150	1	0	0	1	30	2	28	34	NO
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	500	0	0	0	0	0	0	0	0	NO
	Right Turn	500	0	0	0	0	3	5	0	13	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	100	0	0	0	0	54	28	27	103	NO
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 103 **Deer Valley Drive East/Doe Pass Road** **Signal**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	300	29	2	25	34	249	29	210	297	NO
	Through	300	28	2	25	33	248	29	209	296	NO
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	150	7	1	5	9	117	26	69	153	NO
	Right Turn	150	7	1	6	10	120	26	73	156	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	75	2	0	1	3	109	9	90	115	MAX
	Through										
	Right Turn	75	2	0	2	3	109	9	90	115	MAX
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 104 **Solamere Drive/Deer Valley Drive East** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	1	34	5	27	44	NO
	Through										
	Right Turn	500	0	0	0	1	34	5	27	44	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	0	0	0	0	0	NO
	Through	500	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	500	0	0	0	0	1	4	0	12	NO
	Right Turn	500	1	0	1	1	31	0	31	31	NO
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 105 **Deer Valley Drive East/Queen Esther Drive** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	500	0	0	0	0	0	0	0	0	NO
	Right Turn	500	0	0	0	0	0	0	0	0	NO
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	0	19	12	0	42	NO
	Through	500	0	0	0	1	0	0	0	0	NO
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn	500	0	0	0	1	27	6	20	38	NO
	Through										
	Right Turn	500	6	0	5	7	78	4	72	86	NO
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 1 **P2 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	150	68	0	68	69	121	1	119	122	NO
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	125	1	0	1	1	59	13	34	73	NO
	Right Turn	125	0	0	0	1	38	12	14	52	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 2 **P1 Parking/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	150	4	0	4	4	78	2	76	82	NO
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	125	0	0	0	0	0	0	0	0	NO
	Right Turn	125	0	0	0	0	0	0	0	0	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	0	0	0	0	0	0	0	NO
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 3 **Mobility Hub Entrance/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	Average Queue (ft) Minimum	Average Queue (ft) Maximum	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Maximum Queue (ft) Minimum	Maximum Queue (ft) Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	0	0	2	4	13	0	43	NO
	Right Turn	75	0	0	0	2	4	13	0	43	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn	100	0	0	0	1	16	17	0	39	NO
	Through	100	1	0	0	1	102	11	70	106	MAX
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 4 **Mobility Hub Exit/Doe Pass Road** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn	100	18	8	8	36	141	15	119	160	MAX
	Through										
	Right Turn	100	18	8	8	36	140	15	119	160	MAX
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through	100	0	0	0	0	14	12	0	36	NO
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through	75	1	0	0	2	103	17	59	116	MAX
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 5 **Deer Valley Drive East/P2 Parking** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	160	0	0	0	0	1	2	0	7	NO
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	300	0	0	0	0	0	0	0	0	NO
	Right Turn	50	0	0	0	0	0	0	0	0	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	150	37	1	36	39	117	1	116	118	NO
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 6 **Deer Valley Drive East/P3 Parking** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn Second Left Left Turn Through Right Turn Second Right	200	1	0	1	2	68	23	29	105	NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	160	0	0	0	1	28	11	12	53	NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right	150	35	1	33	37	101	1	101	103	NO
WB	U Turn Second Left Left Turn Through Right Turn Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 7 **Deer Valley Drive East/P4 Parking** **Side-street Stop**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	100	3	1	2	5	116	14	82	139	MAX
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through	75	0	1	0	2	0	0	0	0	NO
	Right Turn	75	0	1	0	2	0	0	0	0	NO
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn	150	19	17	6	66	126	26	84	181	NO
	Through										
	Right Turn	150	22	15	8	63	146	18	111	170	NO
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 8 **Deer Valley Drive East/Pick-up/Drop-off** **Uncontrolled**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn Second Left Left Turn Through Right Turn Second Right	150	39	38	4	124	201	49	99	270	MAX
SB	U Turn Second Left Left Turn Through Right Turn Second Right	150	10	10	1	36	90	36	52	170	NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right										

Vissim Post-Processor
Average Results from 10 Runs
Queue Length

Snow Park Village
2040 Plus Project - Bus Option
PM Peak Hour

Intersection 0 **//** **Signal**

Direction	Movement	Storage (ft)	Average Queue (ft) Average	Std. Dev.	Minimum	Maximum	Maximum Queue (ft) Average	Std. Dev.	Minimum	Maximum	Exceeds Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
SB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
SE	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
EB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										
WB	U Turn										
	Second Left										
	Left Turn										
	Through										
	Right Turn										
	Second Right										

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Project: UT20-2245
Description: Snow Park Transportation Study

Park City Minimum Parking Rates Based *Nonshared* Parking Demand Summary

Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 6 AM	Peak Mo Adj December	Estimated Parking Demand	Peak Hr Adj 6 AM	Peak Mo Adj December	Estimated Parking Demand
Retail																		
Retail (<400 ksf)	25,866	sf GLA	3.22	100%	100%	3.22	ksf GLA	3.20	100%	100%	3.20	ksf GLA	100%	100%	84	100%	100%	83
Employee			0.78	100%	100%	0.78		0.80	100%	100%	0.80		100%	100%	21	100%	100%	21
Food and Beverage																		
Entertainment and Institutions																		
Convention Center	30,879	sf GLA	5.73	100%	100%	5.73	ksf GLA	5.73	100%	100%	5.73	ksf GLA	100%	100%	177	100%	100%	177
Employee			0.52	100%	100%	0.52		0.52	100%	100%	0.52		100%	100%	17	100%	100%	17
Hotel and Residential																		
Hotel-Business		keys	0.87	100%	100%	0.87	key	0.87	100%	100%	0.87	key	100%	100%	-	100%	100%	-
Hotel-Leisure	193	keys	0.87	100%	100%	0.87	key	0.87	100%	100%	0.87	key	100%	100%	168	100%	100%	168
Hotel Employees	193	keys	0.13	100%	100%	0.13	key	0.13	100%	100%	0.13	key	100%	100%	25	100%	100%	25
Restaurant/Lounge	5,451	sf GLA	4.24	100%	100%	4.24	ksf GLA	4.26	100%	100%	4.26	ksf GLA	100%	100%	24	100%	100%	24
Meeting/Banquet (0 to 20 sq ft/key)		sf GLA	0.00	100%	100%	0.00	ksf GLA	0.00	100%	100%	0.00	ksf GLA	100%	100%	-	100%	100%	-
Meeting/Banquet (20 to 50 sq ft/key)		sf GLA	0.00	100%	100%	0.00	ksf GLA	0.00	100%	100%	0.00	ksf GLA	100%	100%	-	100%	100%	-
Meeting/Banquet (50 to 100 sq ft/key)		sf GLA	0.00	100%	100%	0.00	ksf GLA	0.00	100%	100%	0.00	ksf GLA	100%	100%	-	100%	100%	-
Convention (100 to 200 sq ft/key)		sf GLA	0.00	100%	100%	0.00	ksf GLA	5.50	100%	100%	5.50	ksf GLA	100%	100%	-	100%	100%	-
Convention (> 200 sq ft/key)		sf GLA	4.58	100%	100%	4.58	ksf GLA	4.58	100%	100%	4.58	ksf GLA	100%	100%	-	100%	100%	-
Restaurant/Meeting Employees	5,451	sf GLA	0.76	100%	100%	0.76	ksf GLA	0.74	100%	100%	0.74	ksf GLA	100%	100%	5	100%	100%	5
Residential, Urban																0%		
Studio Efficiency		units	0.00	100%	100%	0.00	unit	0.00	100%	100%	0.00	unit	100%	100%	-	100%	100%	-
1 Bedroom	11	units	0.00	100%	100%	0.00	unit	0.00	100%	100%	0.00	unit	100%	100%	-	100%	100%	-
2 Bedrooms		units	0.00	100%	100%	0.00	unit	0.00	100%	100%	0.00	unit	100%	100%	-	100%	100%	-
3+ Bedrooms	132	units	0.00	100%	100%	0.00	unit	0.00	100%	100%	0.00	unit	100%	100%	-	100%	100%	-
Reserved	100%	res spaces	1.44	100%	100%	1.44	unit	1.41	100%	100%	1.41	unit	100%	100%	206	100%	100%	201
Visitor	143	units	0.06	100%	100%	0.06	unit	0.08	100%	100%	0.08	unit	100%	100%	9	100%	100%	13
Office																		
Additional Land Uses																		
Ski Resort (as observed during data collection)	1	count	1,500	100%	100%	1,500	count	1,500	100%	100%	1,500	count	100%	100%	1,500	100%	100%	1,500
Employee			0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
													Customer/Visitor		1,962	Customer		1,965
													Employee/Resident		68	Employee/Resident		68
													Reserved		206	Reserved		201
													Total		2,236	Total		2,234

Attachment A:

Trip Generation Memorandum

FEHR PEERS

MEMORANDUM

Date: January 21, 2022

To: Alexandra Ananth, Park City Planning

From: Fehr & Peers

Subject: Revised Trip Generation Estimates for the Snow Park Village Traffic Impact Study

UT20-2245

This memorandum presents revised trip generation estimates for the proposed Snow Park Village project at Deer Valley Resort. The original trip generation estimates included in the Traffic Impact Study (April 2021) were reviewed by Park City staff and Wall Consulting Group (WCG), a third-party reviewer retained by the City. Park City staff, through WCG, requested revisions to the trip generation estimates with supporting documentation and/or rationale. Revisions presented in this memorandum are based on an updated land use plan, a local precedent study, comparable trip resort analysis, published trip generation rates from the Institute of Transportation Engineers, and mode shift assumptions derived from the Summit County travel demand model. This memorandum is an intermediate deliverable while additional details regarding site access and circulation are being resolved.

In summary, revised trip generation estimates for the Snow Park Village project show 2,276 daily trips, 162 trips in the Saturday AM peak-hour, and 204 trips in the Saturday PM peak hour. When compared with estimates included in the April 2021 traffic impact study, this results in an 60 percent increase in estimated daily trips, 80 percent increase in the Saturday AM peak-hour trips, and a 148 percent increase in the Saturday PM peak-hour trips.

Trip Generation Estimates

Trip generation estimates focus on Saturday AM and PM peak-hour operations due to the nature of how a ski resort operates: skier traffic is consistently highest on Saturdays. Updated trip generation estimates for Snow Park Village are presented below in **Table 1**.

Key Revisions

Trip generation estimates in this memorandum incorporate several key revisions, including:

- Updated resort hotel trip generation rates taken from the 2018 Canyons Village Transportation Master Plan
- Assumed mode shift away from private car taken from MXD, the Environmental Protection Agency's approved trip generation method, and the Summit County travel demand model for all proposed land uses
- Reductions in trip generation rates due to the implementation of paid parking for day skiers and most proposed land uses
- Reliance on trip internalization derived from MXD and the Summit County travel demand model for most proposed land uses
- The rate of internal capture assumed due to complementary land uses derived from analysis at a peer resort (Palisades at Tahoe, formerly known as Squaw Valley)

This combination of updates represents a much more conservative foundation for subsequent traffic analysis. Each of these changes and justification for each are described in greater detail below.

Resort Hotel Trip Generation Rates

The third-party reviewers (WCG) noted that the resort hotel trip generation rates appeared unreasonably low based on observed trip generation rates recorded during the development of the 2018 Canyons Village Transportation Master Plan. While there are a handful of key factors that might result in trip generation rates closer to those in the original Snow Park Village Traffic Impact Study, including proximity to the interstate and other complementary land uses, estimates in this memorandum used the local rates recorded at the Canyons.

Assumed Mode Shift

To avoid double-counting potential reductions, as was the case in the original Snow Park Village traffic impact study, the trip generation estimates in this memorandum rely solely on mode shift derived from the MXD methodology and underlying assumptions from the regional travel demand model. These reductions, which are shown in the columns titled "% Walk/Bike" and "% Transit," are applied to all proposed land uses. This results in a more conservative and defensible analysis,

however, it does not account for the planned changes to transit service in Park City and the world-class transit facility proposed as part of the Snow Park Village project. Potential mode shift to transit for those traveling to and from Deer Valley may be higher following such improvements.

Reduction in Vehicle Trips due to Implementation of Paid Parking

Charging for parking is a reliable method by which to influence mode choice, and Deer Valley intends to implement paid parking as part of the Snow Park Village proposal. The original Snow Park Village traffic study assumed a reduction in vehicle trips of nearly 18% and applied it to all land uses. This reduction was developed based on approximately 50 studies on the effects of paid parking from across the United States. WCG noted this reduction seemed high based on assumptions about typical Deer Valley clientele and their assumed willingness to pay for fees in addition to lift tickets, meal, lessons, and/or equipment rentals.

Reductions in trip generation due to the implementation of paid parking at Deer Valley have been scaled back to present a more conservative estimate of how parking pricing will affect trip generation. While we agree that some Deer Valley clientele may be much less sensitive to additional costs associated with a day's skiing as presented in the traffic study, almost 45% of existing trips to and from Deer Valley start and end at points along the Wasatch Front, residents of which are more likely to alter their behavior based on willingness to pay (note the massive increase in peripheral on-street parking at a greater distance to ski lifts at Deer Valley's IKON pass-sharing resort, Solitude). Lastly, reductions in trip generation due to the implementation of parking pricing are applied only to the resort hotel-, shopping center-, and recreational community center-generated trips, as proposed residential uses at the site are unlikely to require that residents pay for parking on a daily basis.

Trip Internalization Derived from MXD

A fundamental element of the Snow Park Village proposal is to provide amenities, services, and entertainment options that complement each other and the ski resort itself. This means that peak-hour trips that might occur without complementary land uses are either delayed (so that they do not occur during the peak hours) or do not require a vehicle trip due to proximity of different uses. Trip internalization rates, presented in **Table 1** under the column heading "% Internal Capture" are applied only to the residential-, resort hotel-, and recreational community center-generated trips, and present a more conservative rate of internalization than presented in the original Snow Park Village traffic impact study.

Trip Internalization Derived from Squaw Valley

While the residential, hotel, and community center uses are expected to be destinations unto themselves that will generate a measurable number of peak-hour vehicle trips, the food service and retail uses (shown in **Table 1** as "Shopping enter") are expected to almost exclusively serve guests already at Deer Valley rather than guests traveling to Deer Valley explicitly for those services.

To support this assumption, trip generation estimates for the shopping center uses in this memorandum rely on trip internalization estimates derived from an origin-destination survey conducted at the Squaw Valley, California resort in 2011. Surveys conducted showed that 95-97% of customers at dining and retail uses in a similar context (ski resort base village) were already at the village for other purposes, and did not travel solely for the dining/retail use. Reductions based on the data from Squaw Valley are presented under the column heading "% Resort Int. Capt." And are applied only to the shopping center uses. We assume that employees for these uses will almost exclusively arrive and depart during off-peak periods, resulting in lower reductions for daily trips generated by the shopping center uses.

Conclusion

Trip generation estimates prepared for the original Snow Park Village traffic impact study were based on an older land use plan, double-counted some reductions in vehicle trips, applied others to incorrect land uses, and over-emphasized the potential reductions in vehicle trips derived from paid parking. However, this memorandum relies on several assumptions that are fundamental to the Snow Park Village proposal:

- Complementary land uses will reduce peak-hour vehicle trips by providing alternatives to driving
- Employees will typically arrive and depart during off-peak periods
- Charging for parking is one of the most powerful tools available for influencing mode choice, relying on an appropriate pricing structure being implemented

The trip generation estimates presented in this memorandum represent a conservative set of analyses that will inform a fully revised traffic impact study for the Snow Park Village Project.

Attachment B:

Snow Park Village Parking Management Plan

FEHR PEERS

FEHR & PEERS

MEMORANDUM

Date: January 21, 2022

To: Rich Wagner, Deer Valley

From: Fehr & Peers

Subject: Snow Park Village MPD Parking Response

UT20-2245

The current parking experience at Deer Valley follows a well-established surface parking scenario, typical of ski resorts. There are five large surface lots that hold approximately 1,340 cars. There is also a long-standing agreement with Park City to allow for overflow parking on parts of Deer Valley Drive on peak visitation days.

Parking Layout

The proposed redevelopment of the base area (Snow Park) will change the parking experience in three significant ways:

- Parking will be in structures;
- There will be a paid parking program, with variable pricing based on season and demand;
- There will be a robust parking management program that includes parking and availability information to visitors as they approach the development, parking garages, and once within, and will rely heavily on Deer Valley's high-quality customer service provided by trained staff.

For phase 1, the proposed parking garages will be on four levels. Each level will have a prescribed function as outlined below. Parking loading will be managed level by level, utilizing guest services staff and electronic messaging. To help ensure that the majority of traffic coming to Snow Park does not conflict with transit on Doe Pass Road, signing, striping, and prominent wayfinding will direct the majority of personal vehicles to use Deer Valley Drive East to enter the garages, while transit and shuttle vehicles will be directed to Deer Valley Drive West and/or Doe Pass Road. The primary entrances to the garages, for levels P2, P3, and P4, will be from Deer Valley Drive East. There are no internal garage connections between levels allowing each level of the garage to serve

as an independent programmable parking resource. The layout and uses are shown in the attached *Parking Allocation* figure.

P1 Parking – this level will be divided between two user groups with a total of 406 stalls. Hotel/condo uses will have 202 stalls. The other 204 stalls may be utilized by valet parking and/or credentialed access users. Access to this area is from Doe Pass near the intersection Deer Valley Drive west. Due to its restricted uses, demand for spaces on P1 is expected to be relatively low, with hotel patrons parking vehicles for multiple days at once. In addition, it is unlikely that all hotel patrons will need to park at times that coincide with peak day skier arrival, further reducing the expected number of vehicles on Doe Pass Road during peak hours.

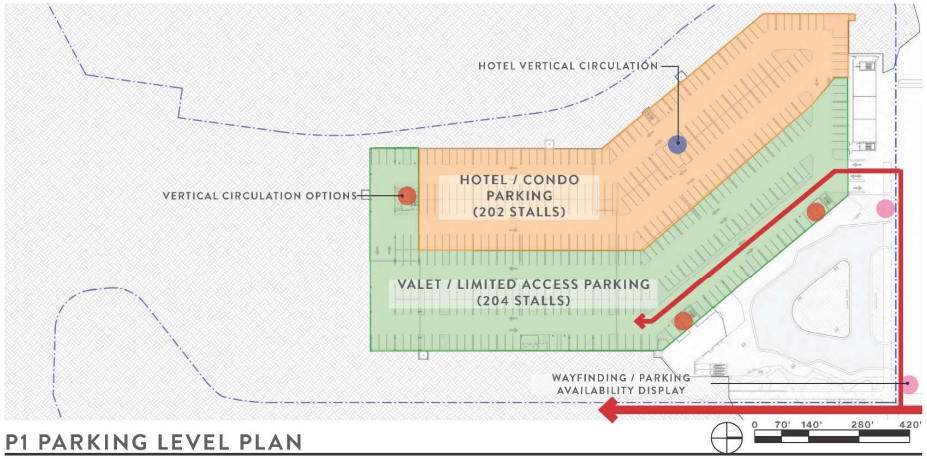
P2 Parking – this level will have 368 stalls. It will primarily be used for winter day skiers and summer resort guests during those seasons, transient parking and special event parking during event periods. Access is provided on Deer Valley Drive East, however an auxiliary exit is provided accessing Doe Pass to add flexibility in managing egress and minimize potential congestion during periods of peak parking demand and special events.

P3 Parking – the primary users for this level will be similar to P2; day users, transient parking, special event parking as well as space dedicated to ski school drop-off/pick-up. There are 375 stalls for these uses. There are an additional 80 stalls for hotel/condo use, for a total of 455 stalls. Access is primarily to/from Deer Valley Drive, however an auxiliary entrance/exit is provided accessing Deer Valley Drive West/Royal Street intersection, which will be dedicated to hotel and condominium uses.

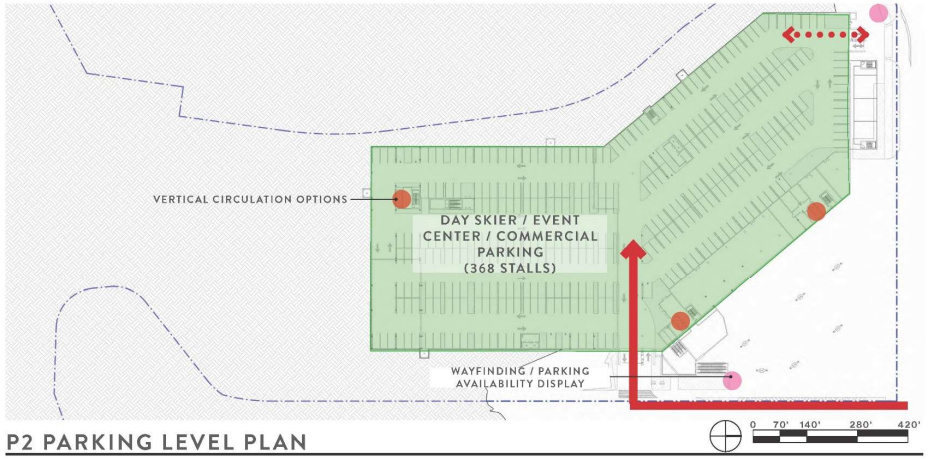
P4 Parking – there are 90 stalls for ski school, valet, and short-term parking on this level. "Short-term" means for visitor parking less than 30 minutes for such purposes as pick-up/drop-off, kiss 'n' ride, and so on. The balance of the parking on this level is 41 for hotel/condo uses.

North Parcel – The north parcel will consist of an additional 450 stalls. These will initially remain surface parking. This area will eventually consist of two levels, NP1 and NP2, and the total parking stalls will remain at 450. The north parcel will have the same level of parking management, including paid parking, and parking management technology, communications via multiple platforms, and high-touch customer service.

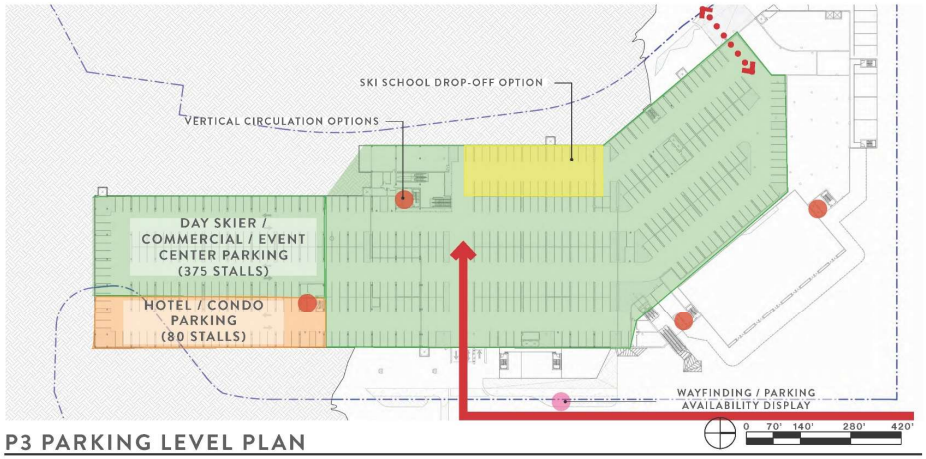
Structured parking layouts ae shown below in **Figure 1**.



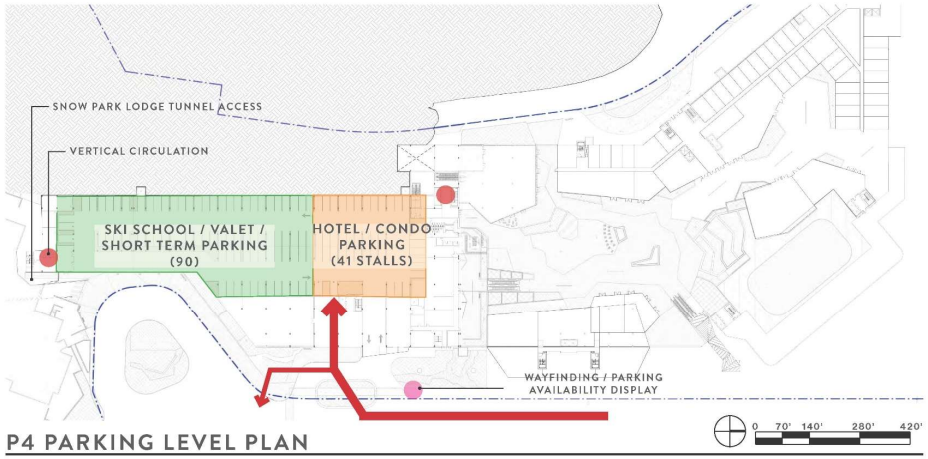
P1 PARKING LEVEL PLAN



P2 PARKING LEVEL PLAN



P3 PARKING LEVEL PLAN



P4 PARKING LEVEL PLAN

Source: IBI Group

Figure 1

Parking Level Layouts

Paid Parking

A paid parking scheme will be implemented in a manner that ensures transactions for inbound traffic do not cause delays which could impact adjacent streets. The price will vary by season and is an important tool to encourage all visitors to travel by modes other than driving alone. Signs and parking processes will be designed to maximize efficiency and minimize congestion.

Recognizing that the much of the typical clientele of Deer Valley are less price-sensitive than many potential parkers, pricing may be adjusted following initial implementation to ensure that the preferred reductions in peak parking demand are achieved.

Communications

To achieve the smoothest parking operations possible, parking information will be made available on Deer Valley's website and integrated into any platforms through which ski passes might be purchased. Additionally, hotel and condominium uses will be expected to incentivize arrival options that do not require parking on-site.

Parking availability by level will be integrated into the design of Snow Park. Parking information will be part of the dynamic wayfinding program included in the development. This information will be available to the visitor via electronic messaging at key decision points along Deer Valley Drive East, including at the newly-configured "Y" intersection of Deer Valley Drives East and West, and as the driver approaches the garage entrances. Parking communication may also be integrated into various phone and web apps operated by the resort, city, county, etc.

Once inside the parking levels, parking availability and general internal wayfinding will be incorporated into the design to improve access rates, guiding visitors to available spaces. The exact technologies and vendors have not been determined at this point, but it will employ the most appropriate and technologically advanced parking and transportation systems to ensure an efficient and user-friendly parking experience with minimal impact on adjacent streets.

Attachment C:
Snow Park Village Transportation Demand Management Plan

FEHR PEERS

Snow Park Village

TDM Plan

Prepared for:
Deer Valley

October 2022

UT20-2245

FEHR PEERS

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1. Project Description and TDM Approach

This Transportation Demand Management (TDM) Plan describes the proposed approach to reduce the total number of vehicle trips at the Snow Park Village project at Deer Valley Resort in Park City, Utah. The Park City Municipal Corporation (PCMC), through its planning department review of the project application, has requested that a standalone TDM Plan be developed for the project. In addition, the City adopted a TDM Plan in 2016 that specifies how the City seeks to reduce vehicle trips through TDM strategies. A reduction in vehicle trips will reduce local pollution, greenhouse gas emissions and improve the quality of life for all who live and work in Park City by reducing vehicle traffic.

This document describes how Deer Valley intends to reduce the number of single-occupancy vehicle (SOV) trips to Snow Park Village using a variety of TDM options. This plan is based heavily on PCMC's existing TDM plan and strategies therein, adopted in August 2016.

Additionally, this plan formalizes TDM offerings that are already provided by Deer Valley to guests and employees for some time. In addition to describing existing offerings, this plan includes new TDM measures to help reduce SOV trips and monitor program effectiveness through ongoing collaboration with PCMC staff and other major destinations in Park City.

1.1 Project Description

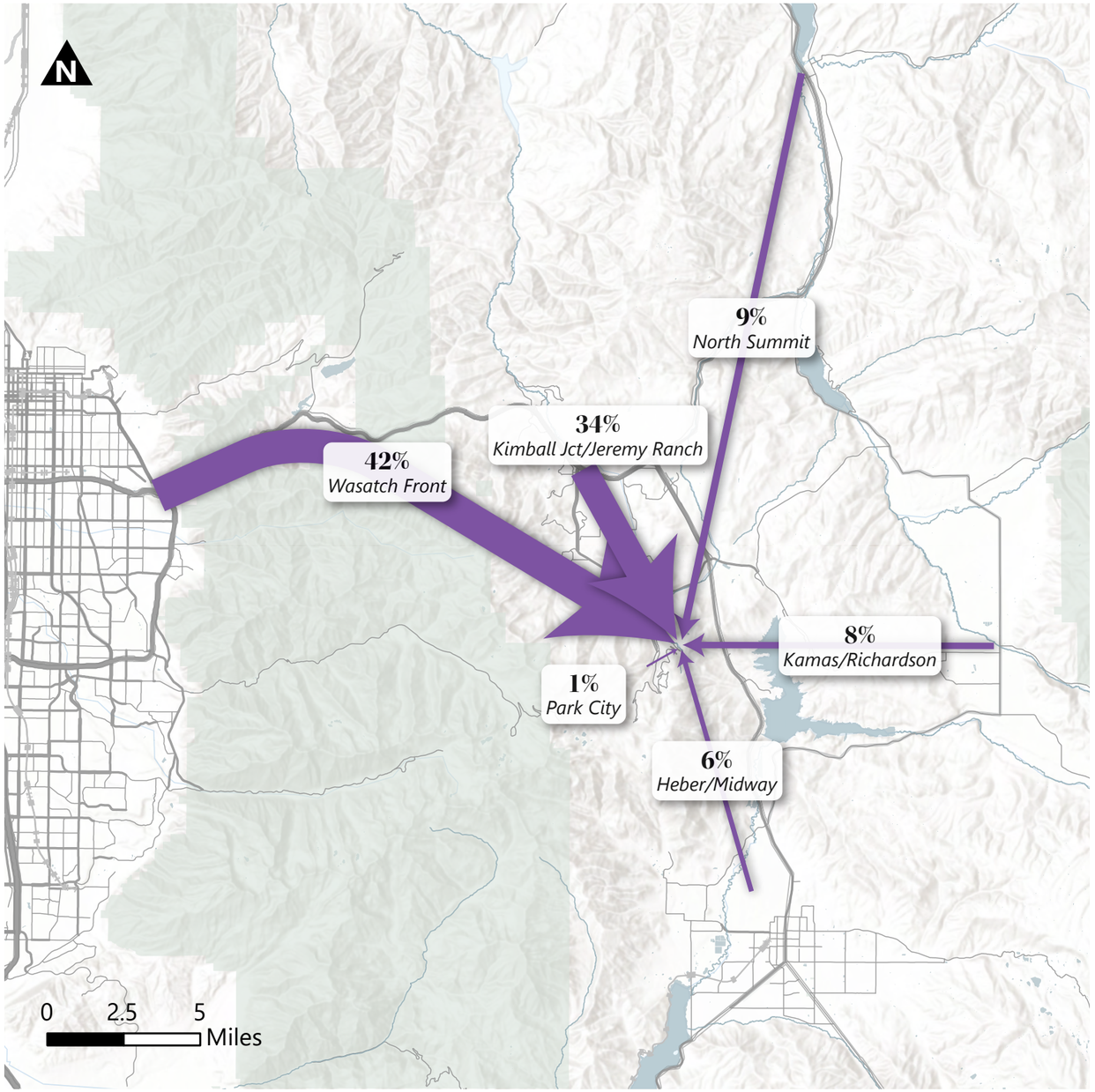
Snow Park Village proposes to repurpose the existing surface parking lots of the Snow Park base area at Deer Valley Resort for a mixed-use development including hotel, residential, retail and events center uses. Snow Park Village is approximately 1.5 miles from downtown Park City and approximately 2.5 miles from the Pak City Mountain Resort base area. Snow Park Village's location in Park City is shown in **Figure 1**.

The bulk of activity at the Snow Park Village is expected to take place during normal business hours. Parking at the site will be priced and include standard and ADA-compliant spaces. Central to the success of the project, a multimodal mobility hub is proposed on Deer Valley Drive, will facilitate non-automobile connections to key destinations in Park City, elsewhere in Summit County, and the Salt Lake Valley. Full build-out of Snow Park Village will include a network of dedicated pedestrian paths within the project, as well as connections to area cycling and pedestrian facilities.

Project Location

1.2 TDM Approach

The success of a TDM program relies on creating a system to manage travel demand that shifts the behavior of those traveling to and from Snow Park from using single occupant vehicles to options other than driving alone. The following sections describe the menu of transportation choices that will make it easier and more convenient to use modes other than driving alone. Through an evaluation of anonymized mobile phone data, provided by a third-party vendor, this Plan has been assembled with the knowledge that a substantial portion of those traveling to and from Deer Valley do so from points around the region. The origins and destinations of Deer Valley's guests and employees are dispersed throughout northern Utah, with the largest share traveling to and from points along the Wasatch Front, as shown in **Figure 2.** This variety of travel patters requires a robust and diverse program to reduce drive alone trips. A diverse and flexible TDM program will allow Deer Valley to match the transportation services to the travel needs of all traveling to and from Snow Park Village. The TDM Plan described in the following sections supports the project's commitment to managing vehicle traffic to and from Snow Park Village while maintaining flexibility in response to changing travel behavior and regional transportation investments.



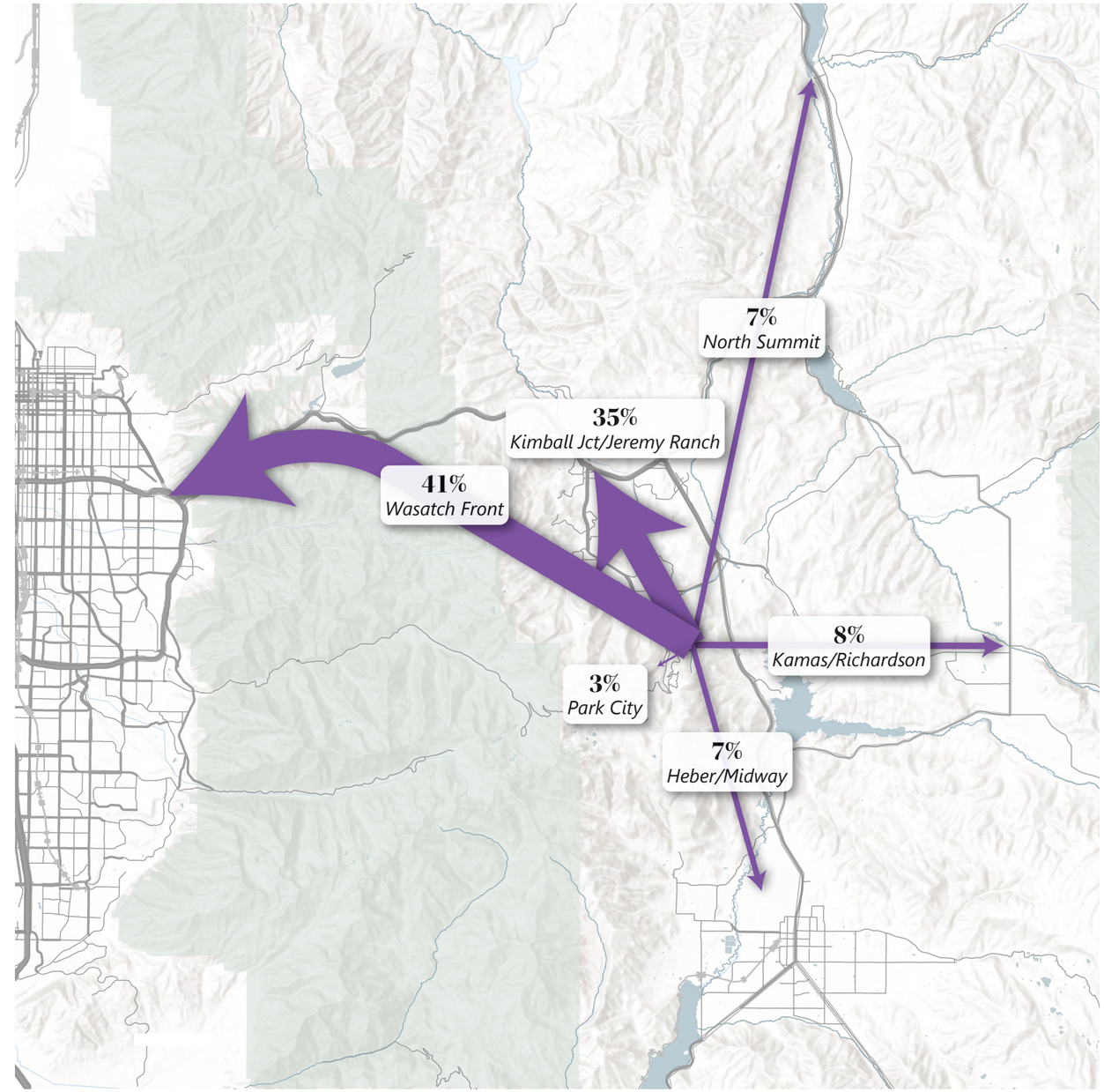


Figure 2

Deer Valley Origin-Destination AM Incoming – PM Outgoing Trends

2. Snow Park Village TDM Program

2.1 Primary TDM measures

Deer Valley will provide a variety of opportunities for those traveling to and from Snow Park to choose travel modes that are not driving alone. These are categorized as incentivizing using transit, riding a bicycle, sharing a car, or some combination thereof. A summary of the Primary TDM measures can be found in **Table 1**.

Table 1: Primary TDM Measures

Measure	Status	Description
Transit pass subsidy	Existing Program	Subsidized UTA transit passes for Deer Valley employees living in Salt Lake Valley and Utah Valley
Bicycle Amenities and Perks	New Program	Bicycle repair tools and dedicated bicycle parking at key locations
Education and Promotion	Existing Program	Educational and promotional events to encourage travelers to use by modes other than driving alone.
Parking Management	New Program	Efficient, constrained, and priced parking to discourage drive-alone trips
Employee Transit	Existing Program	Operate designated employee transit to facilitate efficient employee commutes through an appealing alternative
Real-Time Messaging	New Program	Communicate traffic conditions in real time to travelers
Appoint a TDM Coordinator	New Program	Identify a staff member to oversee the TDM program

Source: Deer Valley

More detailed descriptions of the Primary TDM Measures can be found below.

To incentivize traveling by bicycle, Deer Valley plans to implement the bicycling-based TDM strategies listed in **Table 2**.

Table 2: Bicycling and Walking TDM Strategies

Biking/Walking Strategies	Status	Target User Groups	Description
Implement Bicycle Parking at Key Destinations and Transit Stops	New Program	Day Guests Commuters Employees	Snow Park Village's site plan includes the provision of safe and convenient locations to park bicycles, encouraging their use and removing barriers such as frustration in finding secure parking and bicycle theft. This includes the proposed mobility hub on Deer Valley Drive, a key connecting point for trips to and from Snow Park.
Expand e-Bike Share	New Program	Day Guests Commuters Employees	Snow Park Village will include a relocated PCMC e-bike-share station with direct access to the mobility hub. This will expand coverage of the existing e-bike share service in Park City and enable more non-automobile trips for people traveling to and from Snow Park Village.
Install Bicycle Repair Stand	New Program	Day Guests Commuters Employees	Deer Valley will install two do-it-yourself bicycle repair stands: one at the proposed mobility hub on Deer Valley Drive, and another seasonal stand at the Silver Lake Express base. The repair stands may include an air pump and basic tools to make minor bicycle repairs. Additional repair options include full-service bike shop(s) during the summer season and on-mountain assistance from Bike Patrol.

Source: Deer Valley

To incentivize traveling by modes other than driving alone, Deer Valley plans to implement the parking-based TDM strategies listed in **Table 3.**

Table 3: Demand Management TDM Strategies

Demand Management Strategies	Status	Target User Groups	Description
Implement Real-Time Information Messaging	New Program	Day Skiers Employees	Deer Valley plans to work with the City, UDOT, and Summit County to deploy VMS boards and other messaging systems at key locations, including approach roads, parking areas, and ski lift bases, to inform those traveling to and from Snow Park Village of current traffic and parking conditions. Additionally, Deer Valley will use its website, social media platforms, and mobile application to notify guests in real time. This will enable

			visitors to make more informed transportation choices allowing for better demand management.
Provide Additional Evening Recreation Opportunities/Amenities:	New Program	Day Skiers Employees Overnight Guests	Providing additional activities, food and beverage options, and/or entertainment for visitors after the ski day has ended is an essential element of the Snow Park Village proposal. Providing opportunities for day skiers to linger at the base area longer will better distribute peak-hour outbound vehicle trips.

Source: Deer Valley

To incentivize traveling by modes other than driving alone, Deer Valley plans to implement the parking-based TDM strategies listed in **Table 4.**

Table 4: Policy-Based TDM Strategies

Policy Strategies	Status	Target User Groups	Description
Provide Employee Housing	Existing Program	Employees	Deer Valley has and will continue to provide subsidized housing for its employees in and around Park City. The locations of this housing allow for shorter commutes with access to public transit or shuttles, and increases the likelihood of ridesharing among employees. Any active, full-time staff member is eligible for employee housing. Employee housing is distributed throughout Park City and Heber City in areas that are served by public and employee transit.
Provide Employee Amenities	Existing Program	Employees	Deer Valley employees are able use various on-site amenities that will be provided at Snow Park Village, including employee dining rooms that offer discounted meals, and employee locker rooms that allow for storage of personal items to reduce the need for trips off-site during shift changes and during mealtimes.
Childcare	Existing Program	Day Skiers Employees Overnight Guests	Parents managing childcare are among those who are most attached to private vehicles for personal travel, and providing on-site childcare in the form of both nursery/day care programs, and on-mountain options for active childcare will reduce the need for parents to make multiple local trips and enable their use of non-SOV modes by collocating services. Deer Valley employees are eligible for discounted childcare programs.

Source: Deer Valley

To incentivize traveling by modes other than driving alone, Deer Valley plans to implement the parking-based TDM strategies listed in **Table 5.**

Table 5: Parking TDM Strategies

Parking Strategies	Status	Target User Groups	Description
Implementation of Efficient Parking Schemes	Existing Program	Day Skiers Employees	Deer Valley will continue to assess the need for remote or satellite parking areas for days on which parking demand requires additional capacity beyond that which is provided at the base area itself. The only designated off-site parking location that has been used by Deer Valley is Treasure Mountain Middle School, and is used solely on days of particularly high demand.
Implement Parking Demand Management	New Program	Day Skiers Employees	A fundamental aspect of Snow Park Village's proposed parking system is to charge for parking, a direct incentive to those traveling to Deer Valley to more efficiently utilize vehicle capacity, specifically for day skiers. The cost of parking at Snow Park Village will be set at a level that will incentivize higher-occupancy vehicles when traveling to and from Snow Park, a direct disincentive to drive alone. While many Deer Valley patrons are likely less price sensitive to additional charges such as paid parking, available data suggests that a substantial portion of day traffic originates from points along the Wasatch Front, from where patrons are expected to be more price sensitive to parking fees, increasing their likelihood of mode shift.

Source: Deer Valley

To incentivize traveling by modes other than driving alone, Deer Valley plans to implement the programmatic TDM strategies listed in **Table 6.**

Table 6: Program-Based TDM Strategies

Programmatic Strategies	Status	Target User Groups	Description
Establish a TDM Coordinator	New Program	Employees Day Skiers Overnight Guests	Deer Valley will identify an existing staff member to act as the TDM coordinator, a central source for TDM program information. The TDM coordinator may fill many roles, but may be responsible for: real-time messaging of traffic conditions to travelers, distribute information on new or adapted TDM program offerings, and evaluate the effectiveness and use of TDM program elements. The TDM coordinator will also continue to explore new TDM options that best serve Deer Valley guests and/or employees. The TDM coordinator will be the main point of contact with the City and will facilitate communication in connection with the proposed monitoring program. This coordinator will meet with Park City staff on a regular basis to discuss on-going adjustments to the TDM measures.
Provide Tailored Information and Promotions	Existing Program	Employees Day Skiers Overnight Guests	Deer Valley will develop and distribute targeted messaging and promotions to ensure that different user groups are aware of the TDM measures most relevant to their needs. These promotions may include gamification to further incentivize non-drive alone trips. Deer Valley supports a mobile app used by employees that allows them to organize rides sharing, and identify transit, bike and walking options for their commute. The application also offers incentives to Deer Valley employees for not driving alone to work. Deer Valley will encourage all ski area-serving businesses (namely hotels and other lodging) to further emphasize their transportation offerings that allow guests to rely less on private vehicles and more on shared mobility.

Source: Deer Valley

To incentivize traveling to and from Snow Park by transit, Deer Valley plans to implement the transit-based TDM strategies listed in **Table 7.**

Table 7: Transit TDM Strategies

Transit Strategies	Status	Target User Groups	Description
Provide Employee Transit	Existing Program	Employees	To complement public transit service and supplement in certain areas where public transit may not yet exist, Deer Valley will continue to provide private employee transit to and from Snow Park to allow Deer Valley employees to travel longer distances (such as from Heber City) on employee shuttles. Deer Valley contracts through Le Bus to operate full-sized coach buses for their employees. In a typical (non-Covid) year, Deer Valley provides three AM peak-period and two PM peak-period shuttle runs to serve their employees living in River's Edge and Heber City.
Subsidize Transit Passes for Inter-City Commuters	Existing Program	Employees	Deer Valley provides subsidized Utah Transit Authority passes to employees commuting to Deer Valley from Utah and Salt Lake Valleys.

Source: Deer Valley

3. Program Monitoring and Adaptation

Deer Valley has a strong interest in making trips to and from Snow Park Village as efficient and enjoyable as possible. Doing so is not only a way to improve the overall experience for all who visit Snow Park, but it also allows Deer Valley to contribute to shared goals for reducing traffic impacts within Park City and Summit County.

3.1 Monitoring Program

Deer Valley will conduct internal monitoring to best understand how various user groups are getting to Snow Park, how best to improve their experiences, and how to optimize their experience while minimizing their impact on area traffic and the environment. Elements of the TDM program may be adapted, added, or eliminated over time as Deer Valley strives to achieve maximum effectiveness with its TDM program. The Snow Park TDM program will change over time as travel behaviors change and the transportation context around Snow Park evolves.

Ongoing, real-time traffic monitoring will be enabled by a Deer Valley-funded and managed monitoring traffic monitoring station at the Deer Valley Drive / Deer Valley Drive East / Deer Valley Drive West intersection. This will allow for ongoing traffic counts, recording of queueing via still imagery, and year-over-year comparison at a crucial intersection in Park City.

The TDM coordinator will be responsible for ongoing collaboration and coordination with PCMC staff to ensure that goals are shared and TDM measures managed by Deer Valley are complementing those enacted by the City. To that end, semiannual meetings will take place among Deer Valley, PCMC staff, and other TDM coordinators:

- Prior to each ski season, relevant parties will gather to share relevant updates for the upcoming season, and identify potential opportunities for collaboration, share expectations for the coming months, and discuss performance metrics to be tracked
- Following each ski season, the same parties will meet to share lessons learned and review program performance as recorded by agreed-upon performance metrics, and establish potential action items during the off-season

With ongoing updates to local transit service operated by both Park City Transit and High Valley Transit, Deer Valley will strive to avoid duplication of transit service offerings. Deer Valley's TDM program is intended to support the use of public transit among the public rather than act as an alternative to public

transit service. As public transit coverage expands, Deer Valley will adapt its program to support local transit agencies.

3.1.1 Annual Monitoring Report

To evaluate the effectiveness of Deer Valley's TDM program, and inform potential adjustments to the program, Deer Valley will develop an annual monitoring report to be submitted to Park City staff for review. Submittal of this report will fall between semi-annual meeting with Park City staff and other TDM program mangers in Park City.

To the greatest extent possible, data collected for this monitoring effort will rely on existing or to-be-implemented sources. This will improve consistency across monitoring periods and allow for flexibility around weather or other events if needed.

Deer Valley will collect the following types of data for their TDM monitoring effort:

- Seven-day vehicle counts at all Snow Park Village driveways, to be analyzed and summarized by a third-party consultant. This data will be analyzed and summarized by a third-party consultant
- Average vehicle occupancy collected on one weekday and one weekend day, collected by a third-party vendor or Deer Valley staff, to be analyzed and summarized by a third-party consultant
- Ski season transit ridership, summarized at the stop and daily levels and provided by transit operators, to be analyzed and summarized by a third-party consultant
- Available data regarding program utilization from the *Ride On Park City* platform, to be analyzed and summarized by a third-party consultant

If additional or revised analyses are requested by the City, those requests can be reviewed and possibly scoped in advance of the first monitoring report.

WALL CONSULTANT GROUP
2139 South 1260 West, Salt Lake City, UT 84119-1464

TECHNICAL MEMORANDUM

Date: Wednesday, May 3rd, 2023

To: John Robertson, City Engineer

Cc: Alexandra Ananth, Senior Planner

From: Jeremy Searle, PE, PTOE and Gary Horton, SE

Subject: Snow Park Village Transportation Analysis Independent 3rd Party Review

Purpose & Background

WCG has been involved as the independent 3rd party review for the Snow Park Village project by Deer Valley since September 2021 and has provided multiple reviews of submitted materials and coordinated with City staff and the Deer Valley team. Through these reviews, meetings, and coordination, the proposed project has become more defined, better aligned with the goals of Park City, and more in tune with the feelings of the surrounding community.

Most recently, WCG was asked to review the updated Transportation Analysis – Shared Mobility Lane Alternative, dated April 2023 for the proposed Snow Park Village Redevelopment project at Deer Valley and provide comments. This memorandum outlines how previous comments on this analysis were addressed. No new concerns were identified in the review.

Summary

Generally, WCG finds **that the applicant's transportation analysis is sound**, and the previous traffic related concerns identified were addressed. **WCG supports the Shared Managed Lane (SML) Plan** proposed by the applicant, noting that this plan provides the best use of public right of way by providing improvements for transit balanced with bike lanes, while also improving transportation for all modes of travel in a safe manner. The proposed transit priority traffic signals provide Park City the flexibility needed to improve traffic operations while prioritizing transit when needed. There are a few comments related to driveway design/layout (comments #10, 11, 12) that are not critical to preliminary approvals, and will be addressed during final design review and approval. All addressed comments are marked with a green check mark. ✓

Previous Comments

Previously, the Applicant had requested a 20 percent parking reduction for the development. Recently, they have changed their application to provide the full amount of required parking, which results in a total of 2,262 required parking stalls. The increase in the number of parking also results in an expected increase in trips generated. Previously, the Applicant had submitted a PowerPoint in February 2023 outlining their proposed changes to the trip generation calculations and assumptions. WCG had previously reviewed this submittal and provided the following comments. Underneath each comment is an explanation of how each was addressed in the latest transportation analysis:

1. Why did the assumed transit reduction percentage increase with the removal of the parking reduction request? It would seem likely that transit ridership would decrease with the availability of more parking stalls.

This was addressed by decreasing the transit reduction from 3% to 1.5% daily and during the PM peak hour, and 1% during the AM peak hour. This change in calculating the trip generation is in line with what is expected with the increase in parking. Therefore, this comment has been addressed.

2. The diagram on slide 7 shows existing incoming and outgoing trips during the AM and PM peak hours. It also indicates that a 5% reduction on these counts was assumed to account for background traffic to Solamere and Queen Esther. However, the diagram shows the counts on DVD East being collected beyond Solamere and Queen Esther. If the diagram is accurate, a 5% reduction would not be needed for these counts. Please clarify these numbers and assumption.

This was addressed by removing the 5% reduction that was previously assumed. Therefore, the diagram, percent reduction, and overall comment are not relevant anymore.

3. Why was a daily trip generation total not calculated with the revised assumptions? Please provide a daily trip generation total for the development assuming no parking reduction.

This comment was addressed by providing an updated trip generation table in the new transportation analysis report, including a daily trip generation total. The projected number of daily trips from the development is 3,616 trips, with 261 during the AM peak hour and 322 during the PM peak hour.

4. Please provide a more detailed parking program for the planned stalls. How many will be reserved for residents, for the hotel, day skiers, etc? The parking program will greatly influence the trip generation for the project.

This comment was addressed with the Snow Park Village Parking Management Plan included as Attachment B in the transportation analysis report. This report provides details on the number of parking for each use, how each parking level is programmed, circulation, paid parking, etc.

5. Once the trip generation numbers are finalized, an updated traffic analysis is recommended to determine the impact of the additional trips.

This comment was addressed with the new transportation analysis report, which is dated April 2023. The new report includes updating trip generation, analyses, parking information, pick-up / drop-off loop analyses, etc.

6. Park City Municipal Corporation (PCMC) has a stated goal of reducing peak-hour traffic volumes by 20% citywide. The applicant's project will add peak hour traffic in the most congested areas of the City.

a. It is recommended that PCMC staff and the Applicant identify specific goals that can be measured and achievable. The Deer Valley team has outlined a detailed TDM plan and a monitoring system. The next step is to finalize the plan and identify the objectives that should be met with the annual data monitoring program.

This comment has been partially addressed through the Applicants detailed TDM plan, which outlines extensive efforts to reduce peak hour traffic. The final step is to continue to work with City Staff to identify specific metrics and objectives that can be monitored over time and be flexible in making adjustments as needed.

7. The Applicant's trip distribution assumptions between Deer Valley Drive East and West should be further justified and supported. If the distribution assumed in the TIS is different in reality, additional queuing will result on Deer Valley Drive East and West, as well as Doe Pass Road.
   a. The most recent plan submitted by the Applicant includes a signal at the "Y-intersection", which alleviates much of the concern regarding the distribution and potential queuing at that intersection. The signal timing can be adjusted, and transit priority can be added to provide flexibility for different distributions and transit needs.
   b. It is recommended that ingress into the parking garages be carefully monitored to ensure that queues do not develop and back up onto City streets. If the Applicant's distribution assumptions are not correct this could further exacerbate this concern.
   c. Similarly, the drop-off and pick-up area east of Snow Park Lodge should be monitored to ensure queues do not develop and back up onto City streets.

This comment was addressed in the most recent transportation analysis report (April 2023). The distribution was adjusted to more closely match existing travel patterns, and a sensitivity analysis was completed to show the impacts of changes to the distribution percentages. In addition, clarification on parking ingress and egress times were confirmed through WGI, a parking garage design and operations consultant, providing additional confidence in the parking garage assumptions. Finally, a detailed analysis of the drop-off and pick-up area east of Snow Park Lodge was completed. This included data on the average dwell time for vehicles in the pick-up / drop-off area collected in January 2022. This analysis provides a much clearer understanding of how the pick-up / drop-off area will operate. It shows that during peak times it is anticipated to operate at LOS E, with an average of 44 sec/veh of delay, however it does not impact adjacent intersections. The report suggests that added efficiencies with on-site staff will help improve operations as needed.

8. The additional VISSIM transportation analysis does not consider actual travel conditions, downstream impacts, or other common causes of delay in the Deer Valley Loop during peak traffic hours or weather/special events. PCMC has provided actual travel times of buses traveling these roads during ski season. Utilization of this data to calibrate the model could provide a more accurate view of the benefits of the SML to transit during peak congestion times.

a. It is recommended that the Applicant refine and calibrate the VISSIM model to better represent actual conditions and provide a better representation of the proposed project conditions.

This comment was addressed by the Applicant further refining the VISSIM model, including collecting additional dwell time data for the pick-up/drop-off loop. Park City also provided transit travel time data to further refine the model.

Additional explanation was provided in the report, "The simulation shows traffic circulation with minimal delays with the proposed configuration in peak ski season conditions. Because of the lack of congestion, the buses simulated in this analysis travel in near free-flow conditions. This was due to the models being calibrated to typical travel times. Bus and vehicle travel time measurements were provided by Deer Valley and Park City, which showed several outlier days with excessive travel times. However, the calibrated VISSIM model travel times were closer to the median travel times observed from the data."

9. The applicant does not provide enough detail about the assumptions for the pick/up drop off loop of 100 pick/up drop/off vehicles, 50 Transportation Network Company (TNC) vehicles, and 50 Valet vehicles were developed.
    a. WCG has requested additional detail outlining what data was collected to support these assumptions and what happens to the internal circulation if these numbers are low.

This comment was addressed with a detailed analysis for the drop-off and pick-up area in the latest transportation analysis report (April 2023). This included data on the average dwell time for vehicles in the pick-up / drop-off area collected in January 2022. This analysis provides a much clearer understanding of how the pick-up / drop-off area will operate. It shows that during peak times it is anticipated to operate at LOS E, with an average of 44 sec/veh of delay, however it does not impact adjacent intersections. The report suggests that added efficiencies with on-site staff will help improve operations as needed.

10. Some driveway widths do not appear to meet LMC § 15-3-4(C) requirements but may facilitate efficient garage ingress.

As conditions of final approval, these modifications need to be addressed with the final design.

11. The intersection of Royal Street and a proposed new driveway across the street do not appear to meet LMC § 15-3-3(H) requirements.
    a. It is recommended that the Applicant coordinate with City Staff on adjustments to the proposed driveway to meet City code.

As conditions of final approval, these modifications need to be addressed with the final design.

12. The driveway spacing of some driveways on Doe Pass Road does not appear to meet LMC § 15-3-3(H) requirements
    a. It is recommended that the Application coordinate with City Staff on adjustments to driveway spacing on Doe Pass Road to meet City code.

As conditions of final approval, these modifications need to be addressed with the final design.

13. A review of the bus auto-turn templates show that buses can make the required turning movements.
    a. It is recommended that another review be completed in the final design phases.

As noted above, the current design does meet bus turning requirements. Additional review is required with any design changes.

Applicant Proposed Mitigation Measures

The Applicant proposed to implement the following mitigation measures to improve traffic operations, safety, active transportation, and transit operations:

1. Reconfiguring the "Y-intersection" and adding signalized traffic control, which helps to establish a new access pattern for visitors while providing safety for pedestrians and bicyclists, as well as transit pre-emption.
2. A new left-turn deceleration and acceleration lane at Solamere Drive and Queen Esther Drive.
3. Reducing parking demand by implementing paid parking and shared parking for the development.
4. Improving the active transportation network with new or improved trails, safer crossings, and multi-use paths.
5. A new on-site mobility hub with space for six buses and additional amenities.
6. A new traffic signal at the intersection of Doe Pass Road / Deer Valley Drive East with transit signal pre-emption capabilities to expedite transit service into and out of the proposed mobility hub.
7. Either dedicated bike lanes or bike lanes during the summer and dedicated transit lanes during the peak winter season, depending on which transportation alternative is chosen.
8. A detailed transportation demand management plan that outlines a lot of measures the applicant is both currently doing and new measures that they plan to implement to reduce travel demand (see Snow Park Village TDM Plan for details).

Snow Park Traffic Study Independent Review

Wall Consultant Group

June 15, 2023

Overview

WCG provided an independent 3rd party review, including

- 17 different applicant submittals
- 11 different formal reviews of the proposed development.
- Numerous meetings with the applicant and City staff

Trip Generation

Table 3: Snow Park Traffic

	Daily			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing Traffic	5,221	5,329	10,550	770	249	1,019	333	903	1,236
New Trips	1,808	1,808	3,616	176	85	261	115	207	322
Total Trips	7,029	7,137	14,166	946	334	1,280	448	1,110	1,558

Parking Comparison

The applicant is currently proposing **2,236** total stalls on site for Snow Park, as required by City code. Previously, a 20% reduction in parking was proposed (Nov. 2022 study)

Table 2: Trip Generation Comparison

Trip Generation			
Period	**Nov 2022 Study**	**Mar 2023 Update (Full Parking Supply)**	**Difference**
Daily	2,276	3,616	1,340
AM Peak Hour	162	261	99
PM Peak Hour	204	322	118

Table 3: 2040 Plus Project Peak Hour Total Traffic Volume Assumptions

Traffic Volume Assumptions								
Period	**Nov 2022 Study**			**Mar 2023 Update (Full Parking Supply)**			**Increase in Total Vehicles**	**% Increase in Total Traffic**
	Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**		
AM Peak Hour	1,043	454	**1,497**	1,136	460	**1,596**	99	7%
PM Peak Hour	584	1,195	**1,779**	595	1,302	**1,897**	118	7%

Mitigation Measures Proposed by Applicant

1. Reconfiguring the “Y-intersection” with the addition of signalized traffic control
    - new access pattern for visitors
    - safety for pedestrians and bicyclists
    - transit pre-emption
2. A new left-turn deceleration and acceleration lane
    - Solamere Drive
    - Queen Esther Drive
3. Reducing parking demand by
    - implementing paid parking
    - shared parking for the development
4. Improving the active transportation network with
    - new or improved trails
    - safer crossings
    - multi-use paths

Mitigation Measures Proposed by Applicant

5. A new transit mobility hub
   - Room for 6 buses
   - Restrooms & lockers
   - Additional amenities
6. Traffic signal at Doe Pass Road / Deer Valley Drive East
   - Transit pre-emption
   - Safety for pedestrians and bicyclists
7. Shared Mixed Lanes
   - Bike Lanes during summer
   - Dedicated transit lanes during peak winter season
8. Transportation Demand Management (TDM) Plan
   - Outlines existing programs and efforts to reduce trips
   - Identifies new strategies to reduce trips
   - See Snow Park Village TDM Plan for details

Latest Traffic Impact Study Review

Please see the WCG review memo dated May 3rd, 2023 for details.

A few highlights of our review include:

- Concerns with trip generation and distribution were corrected
- Questions about parking were addressed with a detailed parking management plan
- Concerns about the pick-up / drop-off area were addressed
- The VISSIM model was calibrated and refined with additional data

Recommended Next Steps

WCG recommends the following next steps:

- PCMC Staff and the Deer Valley Team establish a regular TDM meeting schedule
- Implement a monitoring system
- Establish clear goals and metrics that can be tracked and measured
- Be flexible in trying new methods for reducing travel demand
- Consider reservation parking and reconsider the parking reduction with offsite mitigation (20% reduction to support Park City goals)
- Driveway spacing and access widths can be refined if the project proceeds towards final design

City Council Staff Report

Subject:	**Title 4 Code Amendments – Replacing Main Street Business Improvement District with Main Street Business District**
Author:	**Jenny Diersen, Mindy Finlinson**
Department:	**Special Events, Finance**
Date:	**November 2, 2023**
Type of Item:	**Legislative**

Recommendation

Hold a public hearing, review, and consider approving Ordinance 2023-51 to amend sections 4-1-1, 4-3-6(B)(5), and 4-7-3(B)(6) of the Park City Code to replace references to the Main Street Business Improvement District (BID) and remove the BID fee that was previously charged.

Executive Summary

This is a clean-up of code language due to recent changes with the Main Street Business District (MSBD) and the approaching Sundance Film Festival (SFF). Changes will:

1. Update references to the BID to reflect the recently updated name: MSBD.
2. Remove the requirement for a Type 2 Convention Sales License (CSL2) Applicant to pay a BID fee.

Background

The Main Street BID was created in 2007 after Summit County ceased providing commercial waste services. On August 3, 2017 (report p. 107 / minutes p. 7), the City Council amended section 4-7-3(B)(6) of the Park City Code to include BID fees for CSL2.

Despite a continued desire for coordinated services and communication between Main Street merchants and the City, there was no express authorization for the BID's continuation under Utah law. What was the Main Street BID is now referred to as the MSBD. On August 29 (report p.98 / minutes p.7), the City Council entered into an Agreement with HPCA for Centralized Communication and Waste Management.

Analysis

Annually, during the SFF, more than 100 temporary businesses operate in Park City. These groups are unaffiliated with SFF and leave behind a significant amount of waste (trash and recyclables) that is mitigated at the expense of the local, full-time businesses and landlords.

The proposed amendments update the name of the MSBD and remove any requirement for a CSL2 Applicant to pay the Main Street BID fee since it is no longer authorized under Utah state law. Temporary businesses will still be required to obtain a CSL2, and as part of this license requirement (4-7-3(B)(6)), they are required to pay a trash fee to Republic Services and show proof of receipt to the City.

It is important that temporary businesses during SFF pay the trash fee to Republic Services as this is one of the busiest times on Main Street all year, and there is an increased need for waste and recycling services.

Finance and Environmental Sustainability Departments, SFF, and HPCA have reviewed these amendments and support the updates and clarifications.

Funding

There is no impact on the City's budget or funding for this amendment.

Exhibits

Exhibit A Draft Ordinance 2023-51
Exhibit B Draft Redlines

Exhibit A: Draft Ordinance

Ordinance No. 2023-51

AN ORDINANCE AMENDING SECTIONS 4-1-1, 4-3-6, AND 4-7-3 OF THE MUNICIPAL CODE OF PARK CITY, UTAH

WHEREAS, changes in State law removed the statutory authorization for the Main Street Business Improvement District and the corresponding fee; and

WHEREAS, City Council finds that it is in the public interest to update the City Code to reflect the changes in State law and remove references to the Business Improvement District.

NOW, THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF PARK CITY, UTAH, THAT:

SECTION I. Approval of Amendments to Title 4. Sections 4-1-1, 4-3-6, and 4-7-3 of the Park City Code are hereby amended as shown in Attachment A.

SECTION II. Effective Date. This ordinance shall become effective upon publication.

PASSED AND ADOPTED this 2nd day of November 2023.

PARK CITY MUNICIPAL CORPORATION

_____
Mayor, Nann Worel

Attest:

_____
Michelle Kellogg, City Recorder

Approved as to form:

_____
City Attorney's Office

4-1-1 Definitions

All words and phrases used in this Title shall have the following meanings unless a different meaning clearly appears from the context. Definitions specific to Chapters 4-8 and 4-11 are included in their respective chapters:

ART. Original works of fine Art, graphic Art, and aesthetic objects produced by the Artist. It shall not include any Art produced by any Person other than the Artist displaying the Art, or any Art purchased or taken on consignment and held for resale.

ARTIST. The creator of the Art who exhibits his/her own Art for sale. Artist does not include street musician.

AVAILABLE CITY PROPERTY. The green space at the northeast intersection of Park Avenue and 9th Street, Park City, Utah, owned and operated by the City, and alternatively pursuant to 4-10-3(E)(1), City Park.

BACKGROUND CHECK CERTIFICATE. Certificate issued by the Bureau of Criminal Investigation that includes the applicant's name, date of certificate, date of expiration, and a statement that the certificate holder has met the requirements of the background check.

BEDROOM. Each room in a hotel, motel, lodge, condominium project, single family residence, fractional ownership or timeshare project, or other Nightly Lodging Facility that is intended primarily for the temporary use of transient guests for sleeping purposes.

BUSINESS. A distinct and separate Person or entity Engaging in Business, as those terms are defined herein. A Business is distinguished from another Business by separate state sales tax numbers or separate ownership.

CITY. Park City, Utah.

COMMERCIAL VEHICLES AND TRAILERS & CONSULTANT LICENSE. Motor vehicles used for a Business's normal activities, but not used to transport people to, from, and within Park City for a Fare. Such vehicles include but are not limited to vehicles used for deliveries, cleaning or consulting, commercial hauling, and snow removal services, as well as cargo rental vehicles, concrete trucks, and dump trucks.

DABS. The Utah Department of Alcoholic Beverage Services.

EMPLOYEE BASED. Businesses which lease or otherwise provide employees to other businesses or any Person in return for consideration. Such businesses include but are not limited to employment agencies and security firms.

ENGAGING IN BUSINESS. Includes all activities within the corporate limits of Park City carried on for the purpose of gain or economic profit, except that the acts of employees rendering service to employers shall not be included in the term Business unless otherwise specifically prescribed. "Engaging in Business" includes but is not limited to the

sale, rental, Gifting, marketing, or promotion of tangible personal or real property at retail or wholesale, the manufacturing of goods or property, and the rendering of personal services for others for consideration by Persons engaged in any profession, trade, craft, Business or occupation, except the rendering of personal services by an employee to his/her employer under any contract of personal employment. Each manufacturing or originating company, whether individually occupying a premise, including home occupations and home offices, or co-locating, shall be required to obtain an individual Business license for that Business activity.

EXHIBIT. To display for sale with the intent or expectation of receiving valuable consideration for the item displayed.

FOOD TRUCK OPERATOR. One who owns or operates a Food Truck as defined in Title 15, Land Management Code.

GIFTING. Includes various hospitality, filming, display, exhibiting, or promotional use of goods not for sale and other related activity that are marketing or promoting tools in which goods are given or traded to the public in general or desirable people so that the product will be associated with those people and appear in publications, media, internet, etc., to give the product exposure. Gifting is not just the display of goods with the hope of future orders; it involves actually giving the product away, where the consideration for the gift is the exposure of the product, and includes direct or indirect interaction with customers or potential customers in order to increase awareness of a product, or service of company. Corporate groups that receive gifts purchased by the corporation that are not provided by another entity and are exclusively for the group will not be considered Gifting.

HOURLY USER CAPACITY. The maximum number of Persons that can be safely and reasonably accommodated per hour by an amusement park, golf course, athletic club, theater, bowling alley, tennis club, racquetball club, swimming pool, ski lift, gondola, or tram, or any other recreational, sports, or entertainment facility.

INSTRUCTOR LICENSE. Any individual engaged in instructing individuals or groups, or teaching, giving, or offering lessons, classes, training, or other programs to individuals or groups such as ice skating lessons, etc., must obtain an Instructor License if instructing 30 days or more per annum. Instructor licenses are assessed at the same rate as commercial vehicles.

LICENSE FEE(S). Fees as defined by the Business License Fee Schedule.

MAIN STREET BUSINESS DISTRICT. Main Street Business ~~Improvement~~ District (MSBD~~BID~~) is defined as all businesses located in the following area:

The MSBD~~BID~~ boundary shall follow the centerline of the following streets: Beginning at the intersection of Main Street and Deer Valley Drive, then proceeding westerly on Main Street to the intersection of the 9th Street, then west on 9th Street to the intersection of the 9th Street and Park Avenue, then proceeding southerly on Park Avenue to the intersection

of King Road, then easterly on King Road to Main Street, then southerly on Main Street to Hillside Avenue, then proceeding easterly along Hillside to Marsac Avenue, then proceeding northward on Marsac Avenue to the intersection of Deer Valley Drive and the point of beginning.

MOBILE VENDOR. One who sells non-food goods such as flowers, agricultural products, or merchandise from push carts, mobile wagons, or motor vehicles. Mobile Vendors do not include Food Truck Operators.

NIGHTLY LODGING FACILITY. Any place where any portion is rented or otherwise made available to Persons for transient lodging purposes for a period less than thirty (30) days including, without limitation, a hotel, motel, lodge, condominium project, single family residence, fractional ownership or timeshare project.

NON-PROFIT CORPORATION. A corporation organized for some purpose other than making a profit and, as such, may enjoy a tax exempt status.

NUISANCE. For the purposes of the Alcoholic Beverage Licenses Chapter of this Title, any licensed premises where:

A. Alcoholic beverages are manufactured, sold, kept, bartered, stored, consumed, given away, or used contrary to the Alcohol Beverage Control Act or this Code;
B. Intoxicated Persons are permitted to loiter about;
C. Profanity, indecent, immoral, loud, or boisterous language or immoral, unruly, disorderly, lewd, obscene conduct is permitted or carried on;
D. Persons under the age of twenty-one (21) are permitted to purchase or drink beer or liquor;
E. City, county, state, or federal laws or ordinances that protect the public health, safety, peace, or morals are violated by the licensee or his/her agents or patrons with the consent or knowledge of licensee;
F. Patrons litter or throw other objects within the licensed premises or from the licensed premises in a manner which tends to affect the public health, safety, peace, or morals;
G. Patrons are permitted to remove opened containers of alcoholic beverages or glasses containing alcoholic beverages from the licensed premises to the public street or way.

PERSON(S). Any individual, receiver, assignee, trustee in bankruptcy, trust, estate, firm, partnership, joint venture, club, company, Business trust, corporation, association, society, or other group of individuals acting as a unit, whether mutual, cooperative, fraternal, non-profit, or otherwise.

PLACE OF BUSINESS. A place at which one Engages in Business; Each separate Place of Business or location must be separately licensed.

RESTAURANT. A Business location at which a variety of foods are prepared and at which complete meals are served to the general public in indoor or outdoor dining accommodations. This does not include Mobile Vendors or Food Trucks.

ROUTE DELIVERY. Any delivery made to customers of a Business, which makes repeated door-to-door deliveries to the same households along designated routes with an established time interval in between delivery visits. The majority of such deliveries must be to fulfill orders previously made by the customer. However, nothing in this Title shall prevent a Business from taking orders from established customers and filled during such delivery visits. Such Business will include, but not be limited to, dairies and sellers of bulk meats or produce.

SHUTTLE. A vehicle that travels between fixed locations for a set or predetermined Fare.

SKI RESORT. A ski area that operates as a distinct and separate enterprise and which is deemed to include, without limitation, the ski runs, ski lifts, and related facilities that are part of the ski area and primarily service the patrons of the ski area. The Ski Resort includes ski instruction, tours, first aid stations, parking garages, management and maintenance facilities, and workshops, but does not include food service, ski rentals, or retail sales of goods or merchandise, which are all deemed separate businesses even if owned by a resort operator.

SKIER DAY. A three (3) year average of the total number of lift tickets sold each year between November 1 and June 30, including daily lift tickets, resident coupons, complimentary tickets, and an estimated average of season pass holders' daily use. The three (3) year average shall be calculated by the Ski Resort and shall include the three (3) most recent years of operation from November 1 through June 30. The City may audit the analysis and any Business records relied upon for the analysis. The calculation shall be submitted to the Finance Department by July 15 of each year.

SOLICITED DELIVERY. A delivery of previously ordered goods or services or the United States mail. Solicited Delivery includes, but is not limited to, the delivery of newspapers or publications pursuant to a subscription, parcel delivery services, businesses engaging in Route Delivery, or Persons delivering previously ordered goods or services on behalf of an established retailer of those goods or services.

SOLICITOR. A Person who contacts individuals or the general public for the purpose of taking orders for goods or services, or encouraging attendance at sales presentations, lectures, seminars, or the like, at which goods or services are promoted or offered for sale, whether the presentation, or lecture, seminar or the like is held within Park City or not, provided that the Solicitor makes contact with the public at a location other than at the regular Place of Business at which the goods or services are actually sold or performed. For purposes of this Title, the term "goods or services" shall include merchandise, produce, personal services, property services, investment opportunities, franchises, time intervals in the use of ownership or real property, and any other kind of tangible or intangible thing that is given in exchange for valuable consideration.

SQUARE FOOTAGE. The aggregate number of square feet of area within a Place of Business that is used by a licensee Engaging in Business.

UNIT. Any separately rented portion of a hotel, motel, condominium, apartment building, single family residence, duplex, triplex, or other residential dwelling without limitation.

UNSOLICITED DELIVERY. The delivery of any unsolicited newspaper or publication, sample product, or advertising material. Unsolicited newspapers or publications, sample products, or advertising material shall include, but not be limited to, handbills describing or offering goods or services for sale, any goods or products that were not previously ordered by the homeowner or occupant, any newspaper or publication delivered without a subscription by the owner or occupant, and any coupons or rebate offers for goods and services.

4-3-6 License Issuance, Revocation, Or Denial

A. The Finance Manager or his/her designee shall notify the applicant of:
   1. The denial of a license and the reason for such denial; or
   2. The issuance of the license.

B. The Finance Manager or his/her designee may deny or revoke a license if the applicant:
   1. Has been convicted of a fraud or felony by any state or federal court within the past five (5) years, has been released from prison after serving a sentence for a fraud or felony within the last five (5) years, or now has criminal proceedings pending against him/her in any state or federal court for fraud or a felony;
   2. Has obtained a license by fraud or deceit;
   3. Has failed to pay personal property taxes or other required taxes or fees imposed by the City or other governmental agency;
   4. Has violated the laws of the State of Utah, the United States Government, or the ordinances of Park City governing operation of the Business for which the applicant is applying for the license;
   5. Is located within the boundaries of the Main Street Business ~~Improvement~~ District (MSBD~~BID~~) and has failed to pay ~~the Business promotion tax, set by separate ordinance, or~~ any applicable solid waste management charges or fees. Proof of up-to-date payment will be required prior to license approval or renewal;
   6. Fails to meet the requirements set by this Title;
   7. Conflicts with other applications or issued licenses;
   8. If applying for a Solicitor license, has been convicted of, or entered a guilty plea, to any crime involving receiving stolen goods, burglary, theft, fraud, the possession or sale of controlled substances, securities violations, or prostitution within the preceding five (5) years; or
   9. It would be inappropriate to issue the license due to concerns regarding the community's general health, welfare, and public safety.

C. Additionally, the Finance Manager or his/her designee may deny or revoke an alcoholic beverage license if the applicant:
   1. Is less than twenty-one (21) years of age;
   2. Has been convicted of:
      a. A felony under federal or state law;
      b. A violation of federal law, state law, or local ordinance concerning the sale, offer for sale, warehousing, manufacture, distribution, transportation, or adulteration of an alcoholic product;
      c. A crime involving moral turpitude; or
      d. Driving under the influence of alcohol, drugs, or the combined influence of alcohol and drugs on two (2) or more occasions within the five (5) years before the day on which the license is issued;
   3. Has had any type of alcoholic beverage license revoked within the last three (3) years;
   4. Fails to comply with federal and state laws pertaining to the payment of taxes and contributions to unemployment and insurance funds; or
   5. Fails to meet all other state requirements for the applicable license.

4-7-3 Applications

A. For Type 1 and Type 3 convention sales licenses, the City may take up to ten (10) business days to complete the licensure process to permit adequate time for the Police, Building, Finance, and Planning Departments for review and investigation. The Departments may request reasonable evidence of title to goods proposed to be offered for sale as part of the review.

B. Retained Council Authority for Type 2 licenses:
   1. The Finance Manager or his/her designee shall refer the Type 2 convention sales license application to the Building, Planning, Parking, and Public Safety Departments for approval.
   2. After obtaining department approval, all Type 2 licenses shall require City Council approval at a publicly noticed meeting. All Type 2 license applications must be completed and received at least seven (7) calendar days prior to a regular scheduled meeting and three (3) business days prior to a special meeting.
   3. All Type 2 license applications require the applicant to have a pre-inspection prior to application at the Place of Business conducted by the Building Department for compliance with the building and fire codes. A copy of said pre-inspection report must accompany the license application submittal. The pre-inspection prior to application shall remain valid for one hundred and twenty (120) days.
   4. All Type 2 license applications shall require an accurate floor plan and a design occupancy load stamped by a design professional to be submitted to the Building Department prior to application.
   5. All Type 2 license applicants require a final inspection by the Building Department post application after the space has been set up for the event. Business shall not be conducted until the final inspection has been passed and the applicant has been issued a Type 2 convention sales license.
   6. All Type 2 convention sales license applicants for locations within the Main Street Business ~~Improvement~~ District (MSBD~~BID~~) boundaries are required to submit a payment receipt from the contracted local solid waste removal service provider ~~in the amount of one hundred dollars ($100)~~ at the time of application showing payment for solid waste removal during the duration of their license~~, and be required to pay the Main Street BID tax set forth by ordinance~~.
   7. All Type 2 convention sales licenses will be assessed the Enhanced Enforcement Fees as established in the Fee Schedule to be paid at time of application.
   8. If the City Manager or designee deems it necessary, the loading operations of each Type 2 convention sales licensee must be permitted by the Parking Division as set forth in Section 9-5-3(H) of the Municipal Code.

C. Type 1 and Type 2 Convention Sales and Hospitality Licenses, located in a Storefront that meet the definition of a Conventional Chain Business, must comply with the Land Management Code Section 15-2.5-2 in the Historic Recreation Commercial District or 15-2.6-2 in the Historic Commercial Business District.