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RESPONSIVE SUBMITTAL FOR ENTITLEMENTS CONTINUANCE OF PLANNING COMMISSION HEARING JAN. 20, 2026

Date: March 19, 2026
Project: Truckee Railyard Hotel
District: Downtown Extension
Location: Town of Truckee, California
Regarding: Planning Application #2024-00000086
Applicant: CP Truckee LLC
To: Town of Truckee Planning Division

Introduction

This Responsive Submittal for Entitlements is being delivered as part of a revised entitlements package for the Project. The revised entitlements package is in response to feedback received during the January 20, 2026 Planning Commission hearing, during which the Project was continued.

Proposed Use

As described in the submitted plans, the project now consists of¹:

- 60 hotel units;
- 17 for-sale (individual ownership) multifamily residential units, which will utilize the “Transient rental, multifamily dwellings” permitted land use under the Railyard Master Plan and Railyard Development Agreement;
- 1,267 square feet of retail space, consisting of 455 square feet along Donner Pass Road and 812 square feet along Truckee Way;
- 5,172 square feet of food and beverage space, consisting of a 3,488 square foot ground floor restaurant and kitchen, and a 1,684 square foot rooftop bar, warming kitchen and BOH/service space;
- 2,195 square foot ground floor event space;
- 1,474 square foot ground floor wellness center;
- 639 square feet ground floor fitness space;
- Rooftop pool, spa and terrace, with rooftop event space;

¹ Square footages listed here are gross square footages per the plans.

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- 19 on-site covered parking spaces (17 non-ADA and 2 ADA spaces); and
- Outdoor event and plaza space.

Summary of Design Revisions

Included with the submittal is a file entitled “Summary of Project Revisions.” This Summary includes descriptions and justifications for 22 different categories of design changes, including all the categories of feedback received during the January 20 Planning Commission hearing.

Notably, the Summary provides context on the addition of two residential units:

This increase in density (2 residential units) serves several critical purposes.

First, increasing the number of units improves overall housing yield and adds greater diversity of housing types, including additional smaller one-bedroom units that may be attainable to a larger range of buyers. This change supports the Town’s goals of increasing residential density within the downtown core and encouraging efficient use of land within walkable, mixed-use districts.

Second, the added three-bedroom unit is appropriately located above the new retail space at the northeast corner of the building, allowing it to integrate naturally within the updated ground-floor program and create a more architecturally appealing corner at the roundabout, addressing Planning Commission concern #12 above (redesign the mechanical yard to better activate the pedestrian edge).

Third, the additional density will strengthen and support the feasibility of the new retail spaces at the project, especially while the Railyard continues to get built out.

Fourth, the addition counters reduced feasibility resulting from changes that address other Planning Commission concerns: (1) reduced event and wellness space, (2) reduced balcony space at the southwest corner to provide better transition from Historic Downtown to the Railyard, and (3) the introduction of new balconies and stepbacks (and smaller hotel units) along the Donner Pass frontage to further reduce the mass and scale of the building, create more variation along the facade, and decrease the "block length" aspects of the previous design.

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In addition, we direct you to Sheets 10 and 11 of the updated architectural package. These sheets contain a visual and descriptive presentation of the before and after design changes related to corresponding Planning Commission comments.

New Retail Spaces

In addition to architectural revisions to address Planning Commission feedback, much of the effort since the last Planning Commission meeting was centered on optimizing the location of three new retail spaces, two along the Donner Pass Road frontage, and one at the roundabout on Truckee way. In total, 1,267 of new retail space has been added to the Project in three separately programmable locations along the two main pedestrian frontages of the Project.

While the retail spaces are included in the current entitlement application, specific programming will be finalized during later phases, at which time Project Applicant will pursue any required Zoning Clearance for the specific uses.

Condition 44 – Transient Rentals

We are pleased to have come to agreement with the Town Attorney on the language of Condition 44. We have agreed to the following language:

Prior to the short-term rental (transient rental) of any of the multifamily residential dwellings, the property owner of each such unit shall obtain a transient occupancy registration certificate. The owner and/or operator of such unit shall pay transient occupancy tax in compliance with Chapter 3.24 of the Truckee Municipal Code. Each dwelling operated as a short-term rental shall comply with Town of Truckee Municipal Code Sections 5.02.040 and 5.02.050.B–F, as may be amended, and the owners and operators of such dwellings shall comply with all other legally applicable provisions of Chapter 5.02 of the Truckee Municipal Code, if any. Nothing in this condition is intended to, nor shall it be construed to, require the developer or any owner of a multifamily residential unit within the project to waive, concede, or impair any vested right or any other rights, claims, or defenses they may possess.

We note, for the record, that (1) transient rental rights in the multifamily residential units are a core and critical component of the Project and the intended overall use of the Project, and (2) Project Applicant is materially relying on the vested rights under the

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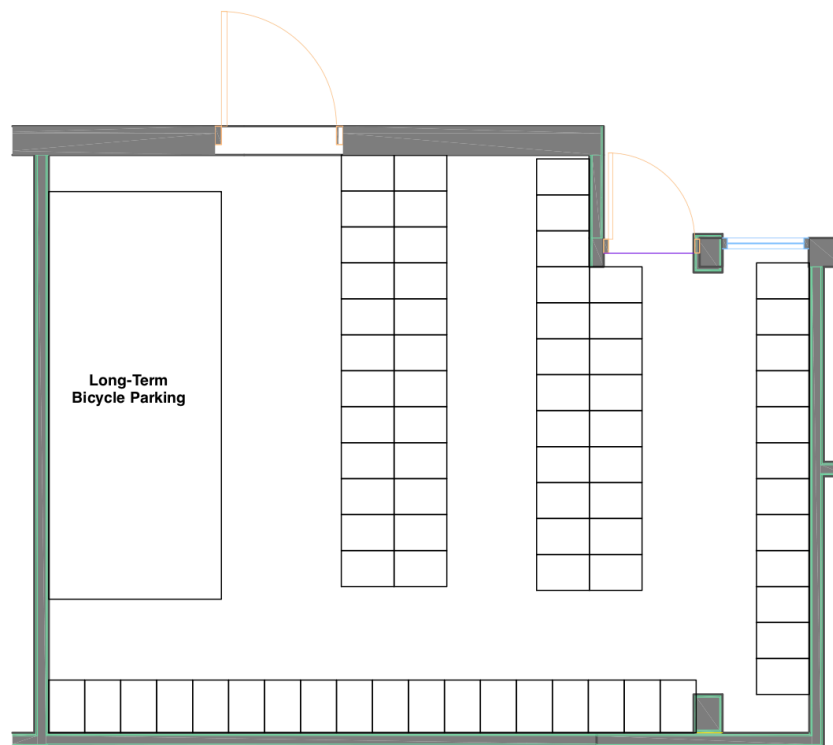
March 2026

Railyard Master Plan and Railyard Development Agreement as part of the Project approvals. As outlined in the approved condition of approval, and without limiting any other rights, claims or defenses, neither Project Applicant nor any owner of a multifamily residential unit is waiving, conceding or impairing any of such vested rights.

Long-Term Bicycle Parking

We note Condition 40 regarding the installation of bicycle parking. As indicated in our previous designs and letter of justification, long-term bike parking will be located within the Project in the planned Gear Room. The Gear Room will be secured at all times.

Advances in technology have allowed for a more structured and efficient solution for bicycle parking in all types of projects. Project Applicant intends to explore stacked long-term bicycle parking solutions, including those provided by [Dero](#) and [Saris Infrastructure](#), among others. Below is a preliminary layout of the Gear Room, showing capacity for 20 bicycles.



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Public Art

Project Applicant continues to believe there is a strong and important opportunity to incorporate public art into the Project.

As described in the Summary, since the last Planning Commission hearing on January 20, 2026 Project Applicant has initiated discussions with local artist Jen Standteiner of Mountain Forge regarding potential opportunities to incorporate public art into the project. Concepts under discussion include a metal sculpture at the public plaza at the southwest corner and a mural installation on the exterior wall facing the Church of the Mountains (the potential location of which is illustrated in the architectural plans).

Applicant's Summary of Project Revisions 3/17/26

RAILYARD HOTEL

Planning Application # 2024-00000086/DP

Planning Commission Comment Tracker

#	Request Category	Description / Specific Direction	Goals or Key Points	How this item was incorporated
1	Parking Management Plan	Submit a detailed Parking Management Plan for review, addressing all questions in draft Condition of Approval No. 36. Include specifics on valet parking locations and operations.	See COA 36	A draft PMP has been prepared and provided by LSC Transportation Consultants. LSC is the consultant that prepared the existing Railyard Parking Management Plan, and so is the best party to prepare the parking management plan for the project.
2	Traffic Direction Signage	Install a "Please Turn Right" sign in the onsite parking area to encourage right turns onto Church Street. This will be added as a condition of approval.	Improve site circulation and reduce traffic impacts on Church Street.	Direction signage requirement included as COA and will be incorporated into project
3	Public Outreach	Conduct additional outreach with the community to discuss potential design improvements.	Strengthen community support and integrate public feedback.	In person meetings with Church of the Mountains, MAP, and Brendan Riley regarding specific concerns with the project. Feedback received during these discussions informed several of the design refinements included in the revised proposal.
4	Building Design – Overall Form	The Commission felt the building was "monolithic" and inconsistent with Railyard Master Plan intent.	Avoid block-length building; Reduce visual mass; Introduce varied forms and articulation.	The building massing was refined to create a more articulated composition with distinct segments rather than a single continuous façade. Additional variation in materials, balconies, awnings, and façade elements were introduced to break down the perceived mass of the structure. The southwest corner was redesigned to step down in scale toward the historic district, and additional façade layering was incorporated to create depth and visual variation consistent with the Railyard Master Plan intent and design guidelines.
5	Building Design – Repetition	The design is too repetitive despite including patterns.	Increase variation and rhythm across facades.	Each major portion of the façade was modified to create greater differentiation and rhythm. Design elements including balconies, awnings, material changes such as formed metal siding, and varying window patterns were introduced to create unique architectural segments and reduce the appearance of repetitive façade treatment.
6	Building Design – Elevations	Apply design guidelines to all elevations, with emphasis on south and east façades.	Ensure cohesive design and visual interest on all sides.	Architectural detailing was refined across all elevations to ensure consistency with the design guidelines. The south and east façades received additional articulation through increased transparency and glazing at the ground floor, new balconies and awnings, varied materials, and adjustments to window proportions to create a cohesive and visually engaging design on all sides of the building. The visible roof element at the east elevation was reduced so it now extends across approximately one-third of the façade length, further breaking up the building mass and improving facade composition. Lighting was redistributed to reduce rooftop fixtures and allow additional pedestrian-scale lighting (sconces) at the ground floor.
7	Building Design – Façade Breaks	Add features to break up façades longer than 50 feet.	Create visual relief and a pedestrian scale.	The building façade was segmented through the introduction of varied materials, awnings, balconies, and subtle massing changes that visually divide the building into smaller architectural components. These design elements create a rhythm along the façade and reduce the perceived length of uninterrupted wall planes, helping establish a pedestrian-scaled streetscape.
8	Building Design – Street Level	Make the street level floor more distinct from upper levels.	Strengthen pedestrian experience and building hierarchy.	The ground floor was redesigned to clearly differentiate the building base from the upper levels. Vertical battens previously proposed at the ground level were removed, and additional elements such as awnings, exterior sconces, increased glazing, and retail uses were incorporated to create a more transparent and pedestrian-oriented base while maintaining a more solid and refined upper façade.

9	Building Design – Transition	Provide a clear transition between the historic district and the Railyard.	Contextual integration with adjacent character zones.	The building massing and material palette were refined to better relate to the surrounding context. The southwest corner facing downtown was redesigned to step down in scale toward the smaller historic buildings. Additional façade articulation and material transitions were incorporated to create a gradual transition between the historic district and the larger Railyard development pattern.
10	Building Design – Southwest Corner	Step back upper levels above the first floor at the southwest corner; use material changes to reduce apparent mass.	Improve scale transition and visual interest.	The southwest corner of the building was redesigned with revised massing and material changes to reduce the perceived scale and better relate to the surrounding historic structures. The upper levels were visually stepped back and differentiated through material transitions, additional balconies, and façade articulation to create a more human-scaled corner condition.
11	Ground Floor Activation	Reconsider ground-floor uses along Donner Pass Road (Primary Street). Current meeting and fitness/wellness uses lack active frontage.	Introduce active, pedestrian-oriented uses (e.g., café, retail, shared workspace).	Ground-floor programming was revised to increase pedestrian-oriented uses along Donner Pass Road and Truckee Way. Two retail spaces (totaling 455 square feet) were introduced along Donner Pass Road, along with a 812 square foot retail space along Truckee Way. The event space footprint was reduced, the wellness center was reduced, and back-of-house areas were minimized to increase street frontage dedicated to active uses and create a more engaging pedestrian environment.
12	Ground Floor – Northeast Corner	Redesign the mechanical yard to better activate the pedestrian edge.	Enhance street-level interaction and visual appeal.	The mechanical yard at the northeast corner was redesigned and reconfigured entirely. The corner condition was redesigned to incorporate a retail space with signage and increased transparency (glazing) extended around the corner, creating a more active and visually engaging street edge for visitors arriving along Truckee Way. In addition, exterior egress stairs shown in the previous plans have now been able to be incorporated within the building envelope creating more visual continuity and articulation along the northern facade from the ground floor upwards.
13	Solar Evaluation	Provide updated solar study showing shadows on north and west properties during winter solstice (morning, noon, and afternoon).	Assess shading impacts and ensure compliance with solar access goals.	An updated solar study was prepared and included within the architectural plan set. The study evaluates building shadows on surrounding properties during the winter solstice and includes additional time intervals beyond the original analysis. Adjacent buildings were also incorporated into the study to more accurately illustrate potential shading conditions. The results indicate relatively minimal shadow impacts on neighboring properties, and confirms that overall shadow impacts do not exceed existing impacts from the Artist Lofts.
14	Loading Zone – Dimensional Standards	Review and adjust loading zone to meet code (two spaces, each 25' long x 15' wide). Current layout (≈20' x 37') may not comply.	Meet Development Code §18.48 requirements.	The loading configuration was reviewed and refined in coordination with the project team to ensure the loading area meets applicable dimensional standards. The updated design provides a single loading zone meeting the dimensional requirements of the Development Code. The loading area is located adjacent to the trash pickup area to consolidate service functions and minimize disruption to the public realm.
15	Loading Zone – Operations & Noise	Prevent conflicts with trash service and neighbor noise impacts (backup alarms, deliveries). Consider signage and scheduling solutions.	Minimize disturbance and ensure safe, efficient operations.	The loading zone has been located adjacent to the designated trash pickup area to consolidate service activities in one area of the site. Operational procedures will be coordinated to ensure that loading activities do not conflict with trash service operations. The project team is open to implementing operational measures, such as delivery scheduling or signage if necessary, to minimize potential conflicts and reduce noise impacts to nearby properties.
16	Loading Zone – Screening	Loading zone should be screened from streets and residential properties, and landscaped appropriately.	Reduce visual and acoustic impacts.	A continuous eight-foot wall is provided between the loading and trash service area and Church Place. This wall provides visual separation from the public street and adjacent properties while maintaining efficient service access. In addition, in order to create a more continuous and effective screen, all trash/recycling receptacles have been moved to the northwest corner and will be contained in enclosures.

Other Items Updated

#	Item	Description	Explanation / Justification
17	Density	<p>The residential program was refined to increase the number of condominium units within the building envelope. One additional three-bedroom unit was added and one previously planned two-bedroom unit was reconfigured into two one-bedroom units. This adjustment increases the total number of condominium units from 15 to 17.</p>	<p>This increase in density (2 residential units) serves several critical purposes. First, increasing the number of units improves overall housing yield and adds greater diversity of housing types, including additional smaller one-bedroom units that may be attainable to a larger range of buyers. This change supports the Town's goals of increasing residential density within the downtown core and encouraging efficient use of land within walkable, mixed-use districts. Second, the added three-bedroom unit is appropriately located above the new retail space at the northeast corner of the building, allowing it to integrate naturally within the updated ground-floor program and create a more architecturally appealing corner at the roundabout, addressing Planning Commission concern #12 above (redesign the mechanical yard to better activate the pedestrian edge). Third, the additional density will strengthen and support the feasibility of the new retail spaces at the project, especially while the Railyard continues to get built out. Fourth, the addition counters reduced feasibility resulting from changes that address other Planning Commission concerns: (1) reduced event and wellness space, (2) reduced balcony space at the southwest corner to provide better transition from Historic Downtown to the Railyard, and (3) the introduction of new balconies and stepbacks (and smaller hotel units) along the Donner Pass frontage to further reduce the mass and scale of the building, create more variation along the facade, and decrease the "block length" aspects of the previous design.</p>
18	Wellness Center Programming	<p>The wellness center was refined to create a more public-facing and flexible space capable of supporting a broader range of programming. The space is designed to accommodate wellness-related activities and experiences such as yoga, meditation, small workshops, and potentially community-oriented programming, along with physical wellness elements such as cold plunges and/or saunas. This space now interfaces with a retail space at the southeast corner that benefits from an exterior standalone storefront entrance.</p>	<p>The revisions allow the wellness center to function as a flexible amenity that can support both hotel guests and members of the public. By allowing a variety of programming types, the space contributes to increased activity within the project and provides an additional gathering space that supports the vitality of the downtown area.</p>
19	Pedestrian Level Renderings	<p>Additional pedestrian-level renderings and street perspective views were prepared and included in the architectural plan set. These renderings illustrate how the building interfaces with the street, including storefront transparency, materials, awnings, lighting, and pedestrian-oriented design elements.</p>	<p>These renderings were prepared in response to requests from the Planning Commission to better illustrate how the building will be experienced from the public realm. The views help demonstrate the pedestrian-scale design elements incorporated into the project and provide greater clarity regarding how the building contributes to the character and walkability of the surrounding streets. In addition, high resolution renderings have been included in the submittal to help show the level of detail in materiality, finish and <u>architecture of the building</u>.</p>
20	Reach Out to Public Artists	<p>The project team initiated discussions with local artist Jen Standteiner of Mountain Forge regarding potential opportunities to incorporate public art into the project. Concepts under discussion include a metal sculpture at the public plaza at the southwest corner and a mural installation on the exterior wall facing the Church of the Mountains.</p>	<p>Integrating public art is intended to enhance the visual character of the project and contribute to the cultural identity of the Railyard District. The project team is open to incorporating a mural or other art features, which would activate these areas visually and create an opportunity for collaboration with local artists and the broader community.</p>

21	Sustainability Focus	<p>The project design continues to prioritize sustainability, including the use of a mass timber structure, high-performance building systems, energy-efficient mechanical equipment, and strategies to enhance daylighting and indoor air quality. Since the previous Planning Commission hearing, a sustainability consultant has helped identify opportunities for LEED and/or WELL certification, ensuring the building reduces environmental impact, improves energy performance, and supports occupant health.</p>	<p>These sustainability strategies are intended to reduce the building's environmental impact, improve energy efficiency, and enhance occupant health and comfort. The use of mass timber and high-performance systems supports lower embodied carbon and long-term operational performance, while exploring LEED and/or WELL certification demonstrates a commitment to contemporary best practices in sustainable design. Together, these measures reinforce the project's alignment with the Town's goals for environmentally responsible development and resilient, high-quality buildings.</p>
22	West Elevator Facade	<p>A second material has been added to the west elevator facade to improve the appearance of the facade facing the Church of the Mountains property.</p>	<p>This change responds to feedback regarding the visual impact of the west elevator facade from Church Street. The updated materials soften the appearance of this portion of the building and improve how it is experienced from adjacent properties and public viewpoints while maintaining the functional requirements of the elevator core. In addition, this portion of the facade could be a potential location for a public art mural.</p>

Revised Parking Management Plan

Justification and Rationale for Mandatory Valet and Overnight Permit Request

Supplement to Planning Application #2024-00000086

March 27, 2026

Overview

This memo accompanies the revised Parking Management Plan (March 27, 2026 draft) and the 2008 LSC Transportation Consultants parking analysis referenced in the plan. It walks through the reasoning behind the key provisions - particularly mandatory valet and the overnight permit request.

Why Mandatory Valet Is the Right Approach

A foundational principle of this PMP is that valet parking is mandatory for all overnight guests and residents who bring a vehicle. This is not a guest amenity decision, it is a parking management decision, and it produces the most efficient and least impactful use of the Downtown Parking District's shared parking supply. Mandatory valet ensures that every overnight vehicle at the project is:

- Professionally managed by trained attendants with a single point of accountability.
- Tracked in real time through a digital valet management system, giving the Town full visibility into vehicle counts, locations, and arrival times.
- Available for prompt if not immediate relocation during snow removal operations, eliminating compliance issues associated with unmanaged overnight vehicles in shared lots.
- Parked in the most operationally appropriate location based on real-time conditions, freeing higher-demand spaces closer to the downtown core for public use

-
- Located in the overnight-designated lots closest to the project, subject to availability and lot assignment protocols established by the Town.

The alternative, allowing overnight guests to self-park in shared district lots, introduces exactly the problems the Town's conditions of approval are designed to prevent: unaccounted vehicles, snow removal noncompliance, and unmanaged overnight demand in the district. Mandatory valet solves all of these by design.

Snow Removal Compliance

Under the Railyard's flip-flop system, vehicles must be relocated between sides of each lot to allow plowing. Valet is uniquely suited to this requirement:

- The valet operator has real-time knowledge of every vehicle's location, keys in possession, and staff on-site during overnight hours. Relocation is immediate.
- Contacting individual hotel guests to move their own vehicles is operationally impractical. Hotel guests are transient visitors who may be asleep, unreachable, or unfamiliar with the area. In practice, any relocation request would ultimately be directed to the hotel regardless. Mandatory valet formalizes this reality and ensures compliance from day one.
- The project commits to working with the Town to develop snow removal protocols to minimize disruption to plowing operations. This commitment is a primary reason for adopting mandatory valet over self-parking in shared lots.

Railyard Planning Precedent

The 2008 LSC Transportation Consultants parking study - prepared for the Town of Truckee as part of the Railyard Master Plan EIR - specifically analyzed a 60-room hotel on the Railyard Hotel site (Parcel 1). That study found:

Finding	Detail	Source
Parking demand rate	1.00 space per room + 0.5 per peak employee, yielding 73 dedicated parking spaces for the 60-room hotel	Tables J, K, L
ITE parking demand data	Average hotel demand of 0.91 vehicles/room; 85th-percentile demand of 1.14 vehicles/room - a 60-room hotel generates 55 to 68 parked vehicles on a busy night	Table I
Dedicated (not shared)	All hotel parking treated as dedicated and not shared with other Railyard uses. Shared parking demand charts explicitly exclude hotel and residential uses.	Table K Note 2; Table L Note 2; Figures A, B
Drive-in market	Truckee recognized as a drive-in (not fly-in) tourist market, justifying higher parking rates than Vail (0.7/room) or Aspen (no requirement for lodging in infill areas)	Tables G, H

The Railyard's parking infrastructure was planned and sized around this hotel demand. Our request for 69 overnight valet permits (60 hotel rooms + 9 residential overflow) is less than the 73 dedicated spaces the Town's study identified for the project. This is not a new burden on the district - it is a demand the district was designed to accommodate.

Why 69 Overnight Permits, Not Fewer

Our TDM strategies are expected to reduce average overnight vehicle demand well below the permit count. We estimate average nightly valet demand at stabilization of 35 to 45 vehicles, with peak nights reaching the upper 50s for the hotel alone. But mandatory valet cannot guarantee fewer than 69 valet ready vehicles on the heaviest occupancy nights. Holiday weekends, peak ski season, and major events will produce counts at or near the hotel's total key count. We cannot control who brings a vehicle.

Adding the 9 residential overflow spaces (26 total residential parking demand minus 17 on-site), the project needs 69 overnight permits to ensure that on every night of the year, every overnight vehicle at the project remains within the managed valet system. To be clear, the number of overnight valet permits requested (69) is not a request to increase parking supply, it is merely a request to access the legally available supply in the parking district through the most efficient and managed means possible (mandatory valet).

If we cap permits below actual demand:

- Guests would be forced to self-park in shared lots on precisely the nights when professional management matters most.
- The operational benefits of the valet program - tracking, snow compliance, efficient allocation - are undermined.
- Safety risks increase for unfamiliar guests navigating icy, unlit lots in winter conditions without professional assistance.
- The permits are the ceiling, not the average. Most nights, the project will use significantly fewer. But the permits must cover the peak to keep the entire program intact. Much in the same way a building’s fire exits are designed for full occupancy rather than average occupancy.

Overnight Permit Summary

The following table summarizes the overnight permit request against actual anticipated demand.

Metric	Count	Notes
Hotel rooms	60	Total key count
Residential units	17	Each with one on-site parking space
Total residential parking demand	26	Per code; 17 on-site + 9 off-site
Residential off-site (valet)	9	Recommended via valet overnight permits, not residential self-park permits

Metric	Count	Notes
Total overnight valet permits requested	69	60 hotel + 9 residential overflow
LSC study: dedicated hotel spaces	73	Town's 2008 planning figure for this site
Anticipated average nightly valet demand (stabilized)	35 to 45	TDM strategies reduce actual usage well below permit count
Anticipated peak night valet demand	Upper 50s to lower 60s	Holiday weekends, peak ski season, major events
Full legal demand	69	Situations where all legally available spaces are utilized for overnight parking despite TDM strategies

Overnight Valet Does Not Compete with Daytime Parking

Peak public parking demand in the Downtown Parking District occurs between approximately 10:00 AM and 6:00 PM. Overnight valet operates outside these hours - guest vehicles typically arrive in the evening and depart in the morning, when competition for downtown spaces is lowest. The overnight valet permits do not displace the daytime parking supply that serves downtown businesses and visitors. This is complementary demand, not competing demand.

Efficiency and Environmental Benefits

The mandatory valet program delivers measurable efficiency and environmental benefits consistent with the Town's stated objectives:

Benefit	Detail
Maximized space utilization	Valet enables dynamic allocation based on real-time demand, parking vehicles in configurations self-parking cannot accommodate. Where self-parking leaves

Benefit	Detail
	spaces idle or misallocated, valet ensures each space is used as efficiently as possible.
Reduced VMT and GHG emissions	Self-parking guests circulate through the district searching for open spaces, generating unnecessary congestion and emissions. Valet eliminates this cruising behavior entirely - guests hand off at a single point, and the attendant drives directly to a known available space.
Pedestrian-based operation	The valet program uses no follow car. Attendants walk back from each parked vehicle, meaning the operation generates no additional vehicle trips beyond the single drive to the space.

Combined with the project's TDM commitments - TART transit information, bike share access, carpool matching, shuttle exploration, and financial incentives for car-free arrival - the overall parking strategy minimizes the project's traffic and emissions footprint. Limiting the valet program limits the very strategy that best serves the Town's parking efficiency and climate objectives.

Summary

This PMP is not asking the Town for something unusual. The Railyard was designed to accommodate this project, this parking demand was anticipated in the Town's study, and mandatory valet is the most responsible, efficient, and enforceable way to manage it. The overnight permit request covers the legal demand ceiling while our TDM strategies work to reduce actual nightly usage well below it. The plan protects the district's shared parking supply, ensures snow removal compliance, and gives the Town more visibility and control over hotel parking than any self-parking alternative would.



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MEMORANDUM

DATE: May 30, 2008

TO: Denyelle Nishimori, Town of Truckee
Lynette Dias & Charity Wagner, RRM Design Group

FROM: Gordon Shaw, LSC

SUBJECT: Truckee Railyard Trip Generation, Trip Distribution and Parking
Generation Analysis

The purpose of this memorandum is to present the trip generation analysis, parking generation analysis and trip distribution which LSC will use as the basis for the traffic analysis and parking analysis of the Truckee Railyard Project. We request that you review these assumptions and indicate whether they are acceptable or provide direction on appropriate changes, before we apply them to the ongoing analysis.

TRIP GENERATION

“Trip generation analysis” is the process by which transportation analysts identify the number of vehicle-trips that a specific proposed land use plan will add to local roadways. For a simple proposal (such as a single land use) this can be a relatively straightforward process of applying trip generation rates (the number of trips per unit of land use) observed at similar existing developments, and then potentially adjusting for specific local characteristics. For the Truckee Railyard project, however, the variety of mixed uses proposed to be constructed, its location within the historic downtown Truckee area, and the need to estimate traffic volumes on internal roadways requires a more complex trip generation analysis.

The traffic engineering profession has developed an extensive database regarding the traffic generated by common land use types, as documented in the *Institute of Transportation Engineer's (ITE) Trip Generation Manual* (7th Edition). This document is typically used as the basis for traffic analyses in the Town of Truckee. The trip generation associated with the Truckee Railyard Project was primarily based upon the

ITE trip rates, modified as discussed below to reflect various factors that tend to reduce traffic generation for the project. In addition, some assumptions regarding the use of these rates are further detailed below.

The project is proposed to be developed in several phases. The traffic and parking analysis has been scoped to focus on two development levels: the conclusion of Phase 1 (including both Phase 1A and Phase 1B) and the conclusion of full development. A separate trip generation and parking analysis has been provided for each development block in order to accurately reflect pedestrian and bicycle trips (which will tend to increase between Phase I and buildout as a higher number of trip attractions are developed within convenient walk/bike travel distance).

Phase 1 - Development Blocks

- Downtown Extension Hotel Block
- Downtown Extension Theater Block

Phase 2 - Development Blocks

- Downtown Extension Hotel Block
- Downtown Extension Bounded by Donner Pass Road (realigned), Donner Pass Road Extension, B Street, and Church Street Extension (including the Phase 1 Theater Block)
- Downtown Extension North of Church Street Extension (including partial Tahoe Truckee Lumber existing parcel)
- Heritage Industrial District
- Trout Creek District
- Balloon Track Area

This analysis is based on the land use quantities identified in the *Truckee Railyard Master Plan: Notice of Preparation of a Draft Environmental Impact Report* (Town of Truckee). It is also necessary to identify a number of planning assumptions for this analysis:

- Residential units are assumed to be 100 percent primary residents (i.e., full-time occupants rather than second home owners).
- Lodging is assumed to be 100 percent occupied during the period of analysis.

- Live/Work units are assumed to be residential units containing home offices, and, therefore, are not expected to generate any significant amount of external office/client related trips.
- Work/Live units are assumed to generate both residential and office/retail type of trips. These units are assumed to be 25 percent owner or renter occupied. In the other 75 percent of Work/Live units, the residential and commercial portions of the unit are independently occupied (i.e. there are tenants in one or both portions).
- In owner/renter-occupied Work/Live units, 20 percent of trips are assumed to be work-related, and thus internal.
- Each Work/Live unit is analyzed as one multifamily residential unit plus 1,000 square feet of commercial space. In the Downtown Extension District, 40 percent of Work/Live units are assumed to contain retail space and 60percent are assumed to contain office space. In the Industrial Heritage District, all Work/Live units are assumed to contain office space.
- All retail not otherwise designated is considered specialty retail, as defined by the *ITE Trip Generation Manual* (7th Edition).
- All office is considered general office, as defined in the *ITE Trip Generation Manual*.
- Restaurant space is assumed to consist of 20 percent fast-food (no drive-through window), 40 percent high-turnover sit-down restaurant, and 40 percent quality restaurant, as defined in the *ITE Trip Generation Manual*.
- Multifamily units are assumed to consist of 25 percent apartment (rentals) and 75 percent condo (owned).
- No reductions are assumed for transit use.
- The only use within the relocated balloon track area will be a 5,000 square foot Union Pacific Railroad yard office (not included in the Notice of Preparation land uses), which is evaluated at an office rate.
- Tahoe Truckee Lumber (TTL) is assumed to continue to operate in its current location in Phase 1, but is assumed to be relocated out of the vicinity by buildout. The land currently used by TTL not in the railyard area (the north side of the TTL site) will be assumed at buildout to be used for a public utility use that generates no traffic.
- The 25 Thousand Square Feet (KSF) of civic use floor area is assumed to consist half of museum space and half of library space.

Base Trip Generation Prior to Application of Reductions

The trip generation analysis was conducted by first identifying appropriate “base” trip generation rates, multiplying these rates by the proposed land use quantities associated with the Railyard development proposal, and then applying a series of adjustment factors to reflect the specific characteristics of the project and its location.

The base trip generation rates were largely drawn from the extensive data regarding observed trip generation presented in the *ITE Trip Generation Manual*. As shown in Table A, the assumptions discussed above were applied to the ITE rates to identify appropriate base rates for the specific Railyard land use categories. Several aspects of this table bear comment:

- A reduction is applied to the Work/Live units to reflect trips that are avoided as persons both working and living in the same unit do not generate commute trips. Based upon typical observed trip patterns by purpose, it is assumed that 20 percent of all trips associated with the residential portion of the Work/Live units that are occupied by on-site workers are work trips. As this factor applies to 25 percent of all Work/Live units, and as it results in an equal reduction in trips associated with the onsite employment, an overall 10 percent reduction is applied to all units ($0.20 \times 0.25 \times 2$).
- Trip generation rates for the museum land use type are not provided in the *ITE Trip Generation Manual*, and tend to vary depending on the attractiveness of the museum. A literature review was conducted as the basis for identifying an appropriate daily trip generation rate for a museum in the downtown Truckee area:
 - ♦ Data presented in the *Donner Memorial State Park Master Plan EIR* (California State Parks, 2003) regarding an expanded Emigrant Trail Museum indicates that the existing museum at Donner Memorial State Park generates approximately 37 one-way vehicle-trips per KSF on a busy summer day.
 - ♦ An analysis of a proposed California Natural History Museum on the campus of the California State University at Chico indicated a daily rate of 30 vehicle-trips per KSF (EDAW, 2007).
 - ♦ A study conducted by Bay Area Economics (BAE) in 2003 for a proposed museum at the Old Mint in San Francisco identified that major museum venues in the Bay Area (such as the San Francisco Exploratorium or Steinhart Aquarium) generate on the order of 8 visitors per square foot of museum floor area per year. (Old Mint Preliminary Feasibility Analysis, BAE, 2003). However, the report also states that published sources and BAE interviews with museum directors and experts indicate that a smaller museum, such as would be accommodated by the Old Mint site, would be more likely to support about four visitors per square foot of exhibit space. Factoring for vehicle occupancy and

seasonality, this latter figure equates to a daily trip generation rate of roughly 18 vehicle-trips per day in the peak season .

Considered as a whole, this data indicates that a daily rate of 30 vehicle-trips per day for a museum at the Railyard site is appropriate. It is further assumed that 15 percent of daily traffic enters or exits during the PM peak hour, and that twice as many vehicles are assumed to exit the museum during the PM peak-hour than would enter.

In order to estimate the trips generated by the project, the resulting trip rates identified in Table A of the *ITE Trip Generation Manual* are multiplied by the quantity of each land use. As shown in Table B, the Phase 1 land uses, without consideration for walking, biking, internal, or pass-by trips, are forecast to generate a total of 6,370 one-way vehicle-trips during a summer weekday, 341 of which occur during the PM peak hour (173 entering and 168 exiting). At buildout, as shown in Table C, daily one-way vehicle-trips (excluding consideration of internal, non-auto, or pass-by trips) are forecast to total 17,935, of which 1,385 are forecast to occur in the PM peak-hour (671 entering plus 714 exiting).

Internal and Non-Auto Trip Reductions

Because this is a mixed-use land development, a significant amount of internal trips would occur. Internal trips within each development block and between the development blocks within the site would also occur. Furthermore, all trips that occur within a development block are assumed to occur as walking (or bicycle) trips, while a high proportion of trips between development blocks would also occur as walking trips. The site's location within convenient walk distance of existing downtown Truckee land uses (commercial, recreational, and residential) also would tend to reduce auto trips, as some (though not all) trips between the Railyard area and existing downtown Truckee land uses would occur by non-auto modes.

For existing mixed use developments similar to the proposed Truckee Railyard project, the proportion of trips that remain internal to the project can be significant. As examples, Appendix C of the *ITE Trip Generation Manual* presents the results of detailed trip generation counts conducted for mixed use projects with similar quantities of residential/lodging, commercial, and office land uses, which indicate that roughly 40 percent of trips do not impact external roadways.

No reductions were made for trips made via transit, as the transit service currently provided in the Town of Truckee is relatively limited in scope and frequency and ridership levels are low, and as it is not appropriate to assume a significant increase in such service for purposes of this analysis. The trip generation rates presented in the *ITE Trip Generation Manual* typically reflect a negligible level of transit use, consistent with the relatively low level found in Truckee.

Non-Auto Internal Trips (Internal Trips Within a Development Block)

The proposed Truckee Railyard project consists of five development blocks (plus the relocated Balloon Track area), four of which include mixed-use development. As a result, significant amount of non-auto internal trips within the same block can be assumed between restaurants, retail, office, and residential land uses. As an example, a proportion of the restaurant and retail customers at establishments on the Hotel Block can be expected to consist of hotel guests who simply walk to these destinations, thereby reducing the traffic that would be otherwise generated by the restaurant and retail land uses. An estimate of the percentage of these trips that occur between residential, commercial, and office uses was primarily based upon the methodologies contained in the *ITE Trip Generation Manual* (2005). It should be noted, however, that the ITE internal capture estimation methodologies do not distinguish between different commercial land uses like restaurant and movie theater and, therefore, do not account for the fact that pedestrian trips and/or bicycle trips are higher between restaurants, retail uses, and movie theaters than between general retail uses. For this reason, adjustments were made to the ITE internal percentages based upon typical observed person-trips between these uses in similar settings. The balance of internal trips between various land use types within each block were then evaluated to identify the proportions that best balance these internal trips.

Non-Auto Internal Trips (Non-Auto Trips Between Development Blocks)

As the project proposes to build restaurants, retail shops, a movie theater, residential units, and office space on blocks within an easy walk or cycle distance, a significant amount of pedestrian/bicycle trips can be assumed to occur between land use on nearby blocks. To estimate the percentage of these trips that would occur between development blocks, the methodologies contained in the *ITE Trip Generation Handbook* were used, adjusting to reflect the specific type and configuration of Railyard proposed land uses.

Because more nearby land uses within convenient walk/bike distance would be available upon project buildout, the average percent of internal trips between the different land uses differ under Phase 1 and Buildout. Moreover, internal trips would vary by development blocks as the distance between each block and commercial, residential, and office centers varies. For example, pedestrian/bicycle trips would be higher between the Hotel and Theater Blocks compared to between the Hotel Block and Industrial Heritage District, which are about one-quarter mile apart. Similarly, the proportion of pedestrian/bicycle trips between the Hotel Block and the existing downtown Commercial Row area is expected to be greater than the proportion between Commercial Row and the Industrial Heritage area. Due to this, internal trips were assigned between the blocks individually considering the distance between the development blocks, size and type of land uses, and trips generated and received by the land uses.

Resulting Total Vehicle-Trip Generation – At Site Access

The base trip generation estimates can be factored by the internal and pedestrian//bike reductions in order to identify the total number of vehicle-trips that would enter/exit the site. (This is typically referred to as the site access trip generation, though in this instance it also includes vehicles parking on-street.) As shown in the central portion of Table B, with Phase 1 development the number of site access one-way vehicle-trips is estimated to equal 4,699 per day, including 254 PM peak-hour trips (129 inbound plus 125 outbound). Comparing these figures with the base trip generation volumes, the reduction in traffic associated with internal and pedestrian/bike trips is estimated to equal 26 percent over the course of the total day or in the PM peak-hour. At buildout (shown in Table C), site access trip generation is estimated to equal 13,139 vehicle-trips per day, and 1,046 in the PM peak-hour (505 inbound plus 541 outbound). This reflects a 27 percent reduction from base generation over the entire day, and 24 percent in the PM peak-hour. Note that these proportions are not directly comparable with the figure for similar mixed-use projects cited above, as they do not include vehicle trips expected to be generated that remain within the railyard site.

Trip Generation Reductions Reflecting Pass-By Trips

A proportion of the commercial trips would consist of pass-by trips, or trips that are made by drivers that are already on the adjacent roadways prior to the development of the site, which (with the development of the site) can be expected to make intermediate stops at project land uses on the way from an origin to a primary trip destination. Pass-by trips are included in the site driveway movements, but are reflected as reductions in the through volumes passing the site driveway locations and are not included in the forecast of impact of the project on through volumes away from the site driveways. Note that no reductions for pass-by trips are appropriate for residential land uses (including lodging) as this land use is a primary origin/destination of a vehicle-trip.

Data regarding appropriate pass-by percentages for various land uses is available in the ITE Trip Generation Handbook. Based upon the typical pass-by percentages presented in this document and considering regional access patterns, the percentage of pass-by trips are estimated to be 36 percent for the grocery store, 20 percent for other retail land uses, 25 percent for restaurants, 15 percent for offices, and 10 percent for the civic uses. All other land uses are assumed to have no pass-by trips. The Work/Live pass-by reduction of 16 percent is computed by factoring the commercial and residential land use pass-by reductions by the proportion of trip generation by use associated with each unit.

After adjusting for the above mentioned factors, the impact of the project on traffic volumes on adjacent roadways at Phase I is estimated to equal 4,190 per day, or 224 PM peak-hour trips (114 inbound plus 110 outbound). At buildout, trip generation is estimated to equal 11,012 vehicle-trips per day, with 878 in the PM peak-hour (427 inbound plus 451 outbound) occurring in the PM peak-hour. It may be noted that the number of trips entering and exiting the site are almost equal, suggesting that the mixed

use development in this project provides an effective rough balance in traffic that results in relatively effective use of roadway capacity. Of total daily external trip generation on adjacent roadways at buildout, 51.2 percent is generated by the commercial, office and civic uses, 36.7 percent is generated by the residential uses, 9.1 percent by the theater, and 3.1 percent by the hotel.

Trip Generation of Existing Uses To Be Removed

It is also necessary to estimate the traffic currently generated by the existing land uses on the site that would be removed. While the existing single family homes in the study parcel will remain and the railroad uses will be relocated on the site, the cardlock fueling facility and Truckee Glass uses would be removed as part of the Phase 1 development and the Truckee – Tahoe Lumber Company would be removed by buildout of the project. Table D presents the trip generation estimates associated with these land uses. As there is not a standard trip generation rate for a cardlock fueling facility, the trip generation for this land use is an estimate based upon typical gas station rates reduced to reflect the limit on users of the facility.

The net impact of the proposed project can be calculated by subtracting the trip generation of these existing uses that would be removed from the total future trip generation of the proposed uses. For Phase 1, subtracting the 406 existing daily trips on the adjacent streets from the 4,190 trips with the proposed land use indicates that the project would result in a net increase of 3,784 vehicle-trips. At buildout, subtracting the 1,432 trips associated with the existing land uses from the 11,012 trips with the proposed land uses results in a net increase of 9,580 vehicle-trips.

PARKING ANALYSIS

The purpose of the parking analysis is to evaluate the demand for parking generated by the various elements of the project, assess the potential to reduce parking supply through the shared use of parking, and provide information useful in the development of parking supply strategies. With careful consideration of the individual uses to be accommodated on the site and variation in the need for parking over the day, it is possible to meet all of the parking needs while also minimizing the total amount of parking spaces that must be provided.

Base Parking Demand Rates

Similar to the trip generation analysis presented above, the basis of the parking analysis is to identify parking demand rates appropriate to the specific setting and land uses of the Railyard project. For **commercial uses** (retail, office, and restaurant), the Town parking code is applied, and then factored based upon observed parking demand in the downtown Truckee area. Using land use and parking count data provided by the Town, the total parking required for existing downtown land uses under the existing Code was identified. Dividing the maximum observed parking demand by this “code” parking demand yields a ratio which then can be used to factor the standard code parking rate

to identify rates appropriate for the downtown area (including the proposed project). Note that this analysis focuses on a “busy but not peak” parking condition (the observed peak excluding only special events). For **residential and lodging uses**, LSC conducted a review of rates applied in the downtown core areas of other mountain resort communities, as well as a review of recent observed parking count data. These base parking rates are then used as the basis for a shared parking analysis of the proposed Railyard land uses.

Evaluation of Existing Downtown Truckee Commercial Parking

The Town of Truckee has adopted standard parking requirement rates for various land uses as part Chapter 18 of the *Development Code*. Previous counts of peak parking utilization generated in the downtown Truckee area have indicated that the actual parking demand generated by existing land uses are lower than would be required by the Town Code. As the proposed Railyard development would be a mixed-use development (similar to the existing downtown) in the same setting from a perspective of transportation factors, it is appropriate to evaluate this ratio of observed parking utilization to Code parking requirements for retail, restaurant, office and other non-lodging commercial land uses currently existing in the downtown area, and to apply the resulting adjustment factors to appropriate land uses in the proposed Railyard project.

Fortunately, the Town’s Parking Office conducts monthly parking counts on an hourly basis both on Wednesdays and Saturdays, throughout the year. As shown in Table E, this data was reviewed for a full year. Observed weekday parking demand was found to reach as high as 614 parked vehicles in July, while peak weekend (Saturday) parking demand was found to reach as high as 638 vehicles. These peak parking counts were observed to occur around 1:00 PM on the weekday counts, and 1:00 to 2:00 PM on the weekend counts.

Some of the observed parking demand is generated by non-commercial uses, such as the residential, lodging, and Post Office uses. Estimates of the parking demand generated by these uses at the time of peak overall parking demand were made based upon LSC and Town staff observations, the existing land use quantities for these land uses, and previous parking studies. As shown in Table F, subtracting these other parking demand figures results in an estimated commercial demand of 536 vehicles at the weekday peak and 551 at the weekend peak.

Next, Town Planning Department staff developed an updated inventory of total actual downtown Truckee land use quantities in the summer of 2007 (at the time of peak observed parking demand). As shown in the bottom portion of Table F, the Town Code parking requirements for each use were then identified. As the period of peak parking demand associated with each individual land use category does not necessarily occur at the observed time of overall peak parking demand, it is necessary to apply factors reflecting both the relative parking demand on the day of week as well as the relative parking demand by the time of day. These factors were drawn from data presented in the Urban Land Institute’s *Parking Demand* (2003). Multiplying the downtown Truckee

land use by the Town Code rates and applying the day-of-week and time-of-day factors for each land use yields the parking demand by land use at the period of overall peak parking demand. Summing over all land uses, the parking demand by Town Code is estimated to equal be 949 vehicles at peak on the weekday, and 858 at peak on the weekend.

Dividing the observed peak demand by the peak demand by Code results in a factor of 0.56 at the time of weekday peak demand, and 0.64 at the time of weekend peak demand. The “limiting case” between these two periods is the weekend. In conclusion, existing counts indicate that the existing Town Code parking rates must be factored by 0.64 to match the observed parking demand at the peak time of day on the peak day of the week in the peak month of the year in downtown Truckee (excluding special events). This factor can be reasonably applied to those commercial land use categories currently found in downtown Truckee.

Review of Parking Codes in Peer Mountain Resort Communities

One basis for identification of appropriate base parking rates for lodging and residential uses in the Railyard is a peer review of parking requirements adopted by other the mountain resort communities. Specifically, the code requirements adopted by Mammoth Lakes, California; Park City, Utah; Vail, Summit County, and Aspen, Colorado; and Jackson, Wyoming were reviewed. Tables G and H present peer hotel and residential parking codes. The Truckee code requirements are also presented in the tables for comparison purposes.

In reviewing these “peer” rates, it should be considered that many jurisdictions often simply use rates taken from other jurisdictions rather than develop them based upon any specific local study, and therefore may or may not reflect actual demand when adopted. To the degree that the rates have “stood the test of time” and not been modified due to resulting parking problems, these peer rates generally can be assumed to meet or exceed the actual parking demand.

Multifamily Dwelling Units

Table G presents the residential parking code peer review for multifamily dwelling units and workforce housing. It is assumed that, other than for units specifically identified as “workforce housing,” these rates are applicable to permanently occupied market rate units. Most of the peer communities describe parking codes in the number of spaces required per type of dwelling unit (one-bedroom, two-bedroom etc.), however, Park City, Utah and Vail, Colorado take into account the square footage of the dwelling unit as opposed to the number of bedrooms. For comparison purposes, Park City and Vail’s parking requirements are listed under the same dwelling unit type categories as the other communities. Both the City of Aspen and the Town of Vail established separate, less stringent residential off-street parking requirements for “commercial core” or “infill” areas. Aspen even goes a step further and allows developers in certain commercial zones to not provide any off-street parking if the project is part of a mixed use building.

In these cases, it is assumed that sufficient parking will be provided by the developer as part of the overall project. The code applied to the Village at Mammoth (a recently-constructed resort “village” in Mammoth Lakes) is another example of where the code was tailored to a specific area or type of use.

Focusing on the requirements for a 1 bedroom unit, the existing Truckee code requirement of 1.875 spaces per unit (including guest parking) is higher than any of the other peer community requirements for core areas. While the Vail code requires 2 spaces per unit outside of their commercial core area, within the commercial core area only 1.4 spaces are required per unit. For 2 bedroom units, the Truckee core requirement of 2.5 spaces per unit is higher than that of the peer communities, with the exception of Placer County’s requirements for the North Tahoe community plan areas, which is identical to Truckee’s.

Hotel

Hotel parking requirements of the various peer communities are shown in Table H. As indicated, the Truckee code requirement of 1 space per room plus 0.5 spaces per peak employee (plus any spaces needed for accessory uses) is consistent with the higher end of the peer rates. At the low end, the City of Aspen requires no parking for new lodging rooms within the downtown “infill” area. (It should be noted that this area is also served by a very extensive transit program as well as public parking facilities). Both Aspen (outside of the infill area) and Vail (within their commercial core area) require 0.7 spaces per room.

ITE Parking Generation Manual

A valuable and relatively up-to-date source of parking demand rates is Parking Generation, 3rd Edition published by the Institute of Transportation Engineers (ITE) in 2004. This document presents data from a collection of parking demand studies performed across the country for 91 different land uses. Although the majority of data in Parking Generation were derived from suburban settings, it can be used as a starting point to determine the general nature of parking demand for a given land use. Table I presents average and 85th percentile peak period parking demand ratios for lodging and residential land uses. The 85th percentile is defined as the point at which 85 percent of the values fall at or below and 15 percent of the values are above. When available, higher peak Saturday parking demand data was used to reflect the recreational characteristics of Truckee; otherwise, weekday data is shown in Table I.

Lodging

Data is available regarding three different types of lodging: hotel, motel, and resort hotel. The “resort hotel” category is not considered to be applicable to a project in the Truckee downtown area, as it is defined as a relatively large resort property with multiple inclusive recreational amenities such as a golf course or tennis courts. Focusing on the hotel land use, the average peak period parking demand is 0.91

vehicles per room and the 85th percentile value is 1.14. Note that these available rates are on a per room basis rather than a per occupied room basis, and therefore reflect some unknown level of unoccupied rooms. The rate per occupied room would be some unknown value higher than those presented in the document. These rates, moreover, were observed on weekdays (when occupancy is typically relatively low). The report indicates that "Three study sites providing both Saturday and weekday parking demand data; Saturday parking demand averaged 40 percent higher than the weekday rates."

Residential

Two ITE land use categories were deemed appropriate for this study: low/mid rise apartment and condo/townhouse with an average peak period parking demand of 1.20 vehicles per dwelling unit and 1.46 vehicles per dwelling unit, respectively. The 85th percentile parking demand is 1.46 vehicles per dwelling unit for the apartment category and 1.68 vehicles per dwelling unit for the condo/townhouse category. Although the number of bedrooms per condominium or apartment reflected in this data is unknown, the report provides limited information on apartment parking demand by number of bedrooms. For apartment complexes averaging less than 1.5 bedrooms per unit, parking demand rates were 8 percent less than average, while those complexes with 2.0 or more bedrooms per units generated parking demand 13 percent higher than the average for all complexes.

Recommended Downtown Truckee Parking Rates

Based on the information presented above, the following base parking rates are recommended as applicable to the Railyard parking analysis, as shown in Table J:

- For the **general retail, restaurant, and office land** uses, the observed downtown Truckee parking factor (discussed above) was applied to the base Truckee Code requirements to identify reduced parking demand rates appropriate for downtown Truckee.
- The existing Town Code does not include a rate specifically for **grocery stores**. The observed downtown parking factor is not considered to be applicable to this land use type, as the grocery store can be expected to serve a larger region (particularly if it provides grocery items unique to the Truckee area). In addition, the existing grocery stores in the community have particularly strong peaks in demand, such as at the beginning of busy summer and winter weekends when second home owners stock their residences. Therefore, the 85 percentile value presented in *ITE's Parking Generation* (6.72 vehicles per thousand square feet of floor area) is recommended.
- For the multiplex **movie theater**, a rate of 0.19 spaces per seat is recommended, based upon the highest observed value reported in *Parking Demand for Multiplex Theaters* prepared by Portland State University. This rate is less than the average rate presented in *ITE's Parking Generation* (0.26 spaces per seat), reflecting that not all screens in a multiplex theater are showing a highly popular film simultaneously.

- For the **civic and lodging** land uses, the existing Town Code requirements are considered to be appropriate. While this lodging rate is higher than those at some of the peer mountain communities, the relatively limited public transit program and the fact that the Truckee/Tahoe region is more of a “drive in” than a “fly in” tourist market indicates that a relatively high parking demand rate is appropriate.
- For **single family residential** units, the existing Town Code of 2 spaces per unit is appropriate.
- For the **multifamily residential** land use (including the live/work units), rates of 1.1 spaces per studio unit 1.35 spaces per one-bedroom unit, 1.65 spaces per two-bedroom unit and 1.95 spaces per three-bedroom unit are recommended. These are calculated by multiplying the 85th percentile ITE values shown in Table I by the factors related to the number of bedrooms identified in Note 2 of this table, for each multifamily residential type, and then weighting the results by the assumed mix of 25 percent apartment/75 percent condominium identified for the Railyard project. It is conservatively assumed that the parking demand reported in ITE for “2 or more” bedroom units is applicable to 2 bedroom units, with the increment between 1 and 2 bedroom units added to the 2 bedroom rate to identify the 3 bedroom rate. A 10 percent reduction in the parking demand rate is then applied, reflecting the lower parking demand rate for second-home units, as reflected in the peer parking codes, and the result rounded to the nearest 0.05. The resulting figures are slightly higher than the average of the peer community rates, which is appropriate given Truckee’s relatively limited transit options. It also bears noting that the 25 percent additional spaces for guests in the Town Code is higher than the guest parking requirements of any of the peer communities.
- To be able to apply the shared parking factors below, rates for **multifamily work/live** units were generated both for the residential and the commercial land uses. The parking rate for the residential element is identical to that for other multifamily units. For the commercial element, a reduction of 0.25 spaces is first applied to reflect the assumption that 25 percent of units have an employee that is also a resident (and thus does not generate additional parking demand). The parking demand for the commercial use is then added, reflecting the assumption that 40 percent of this commercial space is retail and 60 percent office in the Downtown Extension district, and 100 percent is office in the remaining districts. The resulting commercial rates are 2.25 per unit in the Downtown Extension district and 2.31 elsewhere.

Reduction for Internal and Pedestrian/Bicycle Trips

As the Truckee Railyard Project is a mixed-use development project near other trip generators, there will be internal and pedestrian/bicycle trips that could tend to reduce parking needs. However, the applicable internal reductions for a parking analysis are not the same as a trip generation analysis. If, for example, a person decides to go to the

movies and then, afterwards, go out to dinner, the movie to dinner trip generates no auto trips. However, the parking demand remains on site even though the land use the parking demand is associated with shifts. Therefore, it is only appropriate to make reductions in parking demand for the following two types of trips:

- Trips with one trip end internal to the site and one trip end external to the site that occur via non-auto modes. As existing transit service in the area is infrequent, the proportion of travel to the site via transit is assumed to result in a negligible reduction in parking demand. The site, however, is within a convenient walk distance of existing and planned commercial, recreational, and residential development in the downtown area, which will tend to reduce parking demand in the Railyard.
- Walking trips between residential/hotel and commercial/office uses, either within the same block or between blocks. As a portion of the parking spaces for the residential units have been identified as dedicated when a person parks their car in a dedicated residential space and walks to residential/commercial uses, an internal reduction would be applicable. This reduction is applicable to the work portion of the live/work units, as well as the commercial and office uses. The proportion of total internal trips associated with dedicated parking spaces was calculated for each land use. For instance, for a one-bedroom multifamily unit 1.5 spaces are needed for each residential unit, 1 of which is a dedicated residential space, and this internal reduction would only apply to 67 percent (1/1.5) of the commercial/office parking demand.

The applicable reduction for walking trips between residential uses and commercial uses or office uses within a block and between each block of the development were estimated separately and then combined to result in a single reduction factor using the following formula:

$$R_{\text{Total}} = 1 - ((1 - R_{\text{withinblock}}) \times (1 - R_{\text{betweenblocks}}) \times (1 - R_{\text{external}}))$$

Where:

R_{Total}	=	Total Percent Reduction in Parking Demand
$R_{\text{withinblock}}$	=	Reduction in Parking Demand for Non-Auto Trips from Residential Dedicated Spaces to Commercial/Office Within a Block
$R_{\text{betweenblocks}}$	=	Reduction in Parking Demand for Non-Auto Trips from Residential Dedicated Spaces to Commercial/Office Between Block
R_{external}	=	Reduction in Parking Demand for Non-Auto trips to External to the Railyard Site

Note that no reduction in parking demand is expected for the residential and lodging uses, as non-auto trips generated by residents and lodging guests simply result in their

vehicle staying in their on-site space. Finally, it should be noted that no additional parking is assumed to be generated on the Railyard site to reflect persons parking on the Railyard site and walking to other portions of the downtown area.

Parking Demand Analysis

Multiplying the base parking rates by the resulting total reduction factor yields the peak parking demand for each land use on each block. Dedicated (non-shared) parking is planned to consist of all hotel parking, one space for each multifamily dwelling unit, and two spaces for each single-family dwelling units, while the remaining parking spaces can be shared among all uses. As shown in Table K, 161 dedicated (non-shared) spaces will be required at the end of Phase 1. At buildout as shown in Table L, the total dedicated parking spaces equals 655 spaces (excluding spaces for single family residences, which are assumed to be provided at individual sites and are not included in this analysis).

The remainder of the parking demand can be accommodated in shared parking supply, and thus can be reduced to reflect the use of an individual parking space for various land uses with differing peak periods of demand. A "shared parking" analysis was conducted to quantify parking demand for the shared spaces for each period of day. This shared parking analysis is based upon the methodology for assessment of shared parking developed by the Urban Land Institute, as documented in *Shared Parking* (2004). This strategy recognizes the fact that some land uses (such as office) have peak parking needs that occur at different times than other land uses (such as residential). Therefore, the parking supply required to accommodate the needs of both land uses is less than the sum of the peak parking needs for the individual land uses.

Shared parking analysis is based on day of week and hourly time of day parking factors for different land use, reflecting the proportion of peak demand occurring in each period. The shared parking methodology by ULI provides hourly factors for employees as well as customers/visitors. Moreover, base parking ratios have also been estimated for visitors/customers versus employees. In order to estimate combined hourly factors for employees and visitors/customers, weighted averages of their base parking ratios with respect to their corresponding hourly variation in parking needs were calculated. The parking demand for each individual land use in a development block by time of day is then estimated. Based on these estimates, the total number of parking spaces required for all the land uses during a particular hour is calculated by summing the parking requirements for all the land uses within the block for each hour.

The shared parking analysis included the following assumptions:

- Parking for lodging is considered to be dedicated and therefore cannot be shared with other uses.
- One space per multifamily residential unit is assumed to be dedicated and not available to be shared.

- It is also assumed that the parking spaces associated with the Union Pacific Railroad office in the relocated balloon track would not be shared.
- While the Town may choose to manage a portion of the shared parking supply as employee parking only, it is assumed for purposes of this analysis that this parking is managed so that the overall required number of parking spaces is not increased. For instance, some parking can be designated as employee only during particular times of day or can be temporarily changed for special events (such as a film festival) that change the balance of parking needs.
- Shared parking analyses conducted for both weekday and weekend conditions indicated that peak parking demand would be higher on the weekend (specifically on Saturday). The day of week factors appropriate for Saturday were therefore applied.

The right-hand portion of Table K presents the shared parking analysis for the buildout of Phase 1. As indicated, a total of 275 shared parking spaces are required to serve all Phase 1 land uses, along with 161 dedicated spaces, for a total of 436 spaces. Parking need would peak around 8 PM. The ability to share parking spaces reduces overall parking demand by 1 percent in the Hotel Block (a relatively low number due to the high proportion of dedicated spaces for the hotel), and by 9 percent in the Theater Block. Figure A presents a graph of parking demand by time of day.

The shared parking analysis for the full buildout is presented in the right portion of Table L. A total of 719 shared spaces would be required, along with 655 dedicated spaces, for a total of 1,374 spaces. As also indicated in Figure B, peak shared parking demand for the entire Railyard would occur around 8:00 PM. The need to share parking between blocks is relatively low, as parking demand for the various blocks tends to peak around the same time of day. The reduction in parking demand associated with shared use of parking range from a low of no reduction in the Trout Creek district (as it is wholly residential) to a 35 percent reduction in the Industrial Heritage district (due to the good mix of residential versus commercial uses).

TRIP DISTRIBUTION

The distribution of trips generated on the Railyard site was developed using the Truckee TransCAD traffic model. For both the 2004 model and the model for buildout of the General Plan (with the adjustments for changes in the approved Martis Valley Community Plan projects subsequent to the adoption of the Community Plan), the assigned vehicle-trip origin/destination matrices were obtained. These were then “collapsed” into the various external “gates” to the Railyard traffic analysis area as well as the internal distribution areas, and totaled to identify the proportion of trips generated by the site to and from each distribution area or gate. Adjustments were made to reflect the types of trips generated by the proposed project land uses, as well as changes to the local roadway network since 2004 (such as the completion of the SR 89

North/Donner Pass Road Roundabout, providing a new access point into the Greys Crossing area).

The resulting distributions for 2008 and 2025 are shown in Table M. The shifts in trip distribution proportions between the two analysis years reflect growth occurring in specific areas (such as in Martis Valley and the Planned Community 3 area around the SR 267/Brockway Road area) that will increase the proportion of traffic bound to/from the growth areas and will result in a corresponding reduction in traffic distribution to other areas.

**TABLE A: Analysis of Blended Base Trip Rates for Railyard EIR
Traffic Analysis**

		Weekday Trip Generation Rates 1			
		Daily	PM Peak Hour		
Percent	In		Out	Total	
Restaurant Space					
Fast Food Restaurant (No Drive Through)	20%	716.00	13.34	12.81	26.15
High-Turnover Sit-Down Restaurant	40%	127.15	6.66	4.26	10.92
Quality Restaurant	40%	89.95	4.57	2.92	7.49
Blended		230.04	7.16	5.43	12.59
Multifamily Residential Units					
Apartment	25%	6.72	0.40	0.22	0.62
Condominium	75%	5.86	0.35	0.17	0.52
Blended		6.08	0.36	0.18	0.55
Work/Live Units -- In Downtown Extension Zone					
<i>Adjustment for Internal Work Trips</i>	-10%	-0.61	-0.03	-0.03	-0.06
Residential Unit		5.47	0.33	0.15	0.50
Specialty Retail	40%	44.32	1.19	1.52	2.71
Office	60%	11.01	0.25	1.24	1.49
Blended Total		29.80	0.96	1.50	2.48
Work/Live Units -- In Industrial Heritage Zone					
<i>Adjustment for Internal Work Trips</i>	-10%	-0.61	-0.03	-0.03	-0.06
Residential Unit		5.47	0.33	0.15	0.50
Office	100%	11.01	0.25	1.24	1.49
Total		16.48	0.58	1.39	1.99
Civic Use					
Museum	50%	30.00	1.50	3.00	4.50
Library	50%	54.00	3.40	3.69	7.09
Blended		42.00	2.45	3.34	5.80

Source 1: Institute of Transportation Engineers Trip Generation, 7th Edition.

Table B: Trip Generation of Truckee Railyard Master Plan -- End of Phase 1												Adjustment Factors			Site Access Project Generated				Project Generated Trips on Adjacent Streets						
Location	Description	Land Use	Quantity	Unit 2	Trip Generation Rates 1				Total Project Generated Trips				Non-Auto Trips Between Blocks	Non-Auto Trips Within Blocks	Non-Auto Trips External to Site	Site Access Project Generated				Pass-By Trips	Project Generated Trips on Adjacent Streets				
					Daily	PM Peak Hour			Daily	PM Peak Hour						Daily	PM Peak Hour				Daily	PM Peak Hour			
						In	Out	Total		In	Out	Total					In	Out	Total			In	Out	Total	
Downtown Extension - Hotel Block	Retail	Specialty Retail	3.5	KSF	44.32	1.19	1.52	2.71	155	4	5	9	13%	44%	5%	71	2	2	4	20%	57	2	1	3	
	Restaurant	Restaurant (Blended)	4.0	KSF	230.04	7.16	5.43	12.59	920	29	21	50	13%	17%	5%	632	20	14	34	25%	474	15	11	26	
	Lodging Units	Hotel	60	Rooms	8.92	0.34	0.36	0.70	535	21	21	42	11%	17%	0%	395	16	15	31	0%	395	16	15	31	
	Subtotal - Block								1,610	54	47	101				1,098	38	31	69		926	33	27	60	
Downtown Extension - Theater Block	Multifamily Units	Multifamily (Blended)	70	DU	6.08	0.36	0.18	0.55	426	25	14	39	11%	4%	0%	362	21	12	33	0%	362	21	12	33	
	Live/Work Units	Multifamily (Blended)	6	DU	6.08	0.36	0.18	0.55	36	2	1	3	11%	4%	0%	31	2	1	3	0%	31	2	1	3	
	Work/Live Units	Work/Live (Blended Total)	12	KSF	29.80	0.96	1.50	2.48	358	12	18	30	13%	6%	4%	280	9	14	23	16%	235	8	11	19	
	Retail	Specialty Retail	15.0	KSF	44.32	1.19	1.52	2.71	665	18	23	41	13%	10%	4%	497	13	18	31	20%	398	10	15	25	
	Restaurant	Restaurant (Blended)	4.5	KSF	230.04	7.16	5.43	12.59	1,035	32	25	57	13%	10%	4%	774	24	19	43	25%	581	18	14	32	
Movie-Theater	Movie Theater with Matinee	1000	Seats	2.24	0.03	0.04	0.07	2,240	30	40	70	13%	11%	4%	1,657	22	30	52	0%	1,657	22	30	52		
Subtotal - Block								4,760	119	121	240				3,601	91	94	185		3,264	81	83	164		
Total - Phase 1									6,370	173	168	341				4,699	129	125	254		4,190	114	110	224	
Subtotal by Land Uses at Build Out	Residential																								
	Multifamily Units		70	DU																	362	21	12	33	
	Live/Work Units		6	DU																	31	2	1	3	
	Work/Live Units		12	DU																	235	8	11	19	
	- Total Residential																					628	31	24	55
	Lodging Units																					395	16	15	31
Commercial																					1,510	45	41	86	
Theater						1,000	Seats														1,657	22	30	52	

Note 1 - Trip generation rates are estimated using the Institute of Transportation Engineers Trip Generation Manual, 7th Edition (2003).

Note 2 - KSF = 1,000 square feet gross floor area.

Source: LSC Transportation Consultants, Inc.

Table C: Trip Generation of Truckee Railyard Master Plan -- Buildout													Adjustment Factors			Site Access Project Generated Trips				Project Generated Trips on Adjacent Streets							
Location	Description	Land Use	Quantity	Unit 2	Trip Generation Rates 1				Total Project Generated Trips				Non-Auto Trips Between Blocks	Non-Auto Trips Within Blocks	Non-Auto Trips External to Site	Daily	PM Peak Hour			Pass-By Trips	Daily	PM Peak Hour					
					Daily	PM Peak Hour			Daily	PM Peak Hour							In	Out	Total			In	Out	Total	In	Out	Total
						In	Out	Total		In	Out	Total															
Downtown Extension - Hotel Block	Retail	Specialty Retail	3.5	KSF	44.32	1.19	1.52	2.71	155	4	5	9	18%	44%	5%	67	2	2	4	20%	54	2	1	3			
	Restaurant	Restaurant (Blended)	4.0	KSF	230.04	7.16	5.43	12.59	920	29	22	51	12%	17%	5%	641	20	16	36	25%	481	15	12	27			
	Lodging Units	Hotel	60	Rooms	8.92	0.34	0.36	0.70	535	21	21	42	18%	17%	0%	346	14	13	27	0%	346	14	13	27			
	Subtotal - Block								1,610	54	48	102				1,054	36	31	67		881	31	26	57			
Downtown Extension - Donner Pass Rd to Street B	Multifamily Units	Multifamily (Blended)	153	DU	6.08	0.36	0.18	0.55	930	55	28	83	18%	9%	0%	655	39	19	58	0%	655	39	19	58			
	Live/Work Units	Multifamily (Blended)	10	DU	6.08	0.36	0.18	0.55	61	4	2	6	18%	9%	0%	43	3	1	4	0%	43	3	1	4			
	Work/Live Units	Work/Live (Blended Total)	35	DU	29.80	0.96	1.50	2.48	1,043	34	53	87	13%	8%	4%	795	26	40	66	16%	668	22	33	55			
	Office	General Office Building	7.0	KSF	11.01	0.25	1.24	1.49	77	2	9	11	22%	7%	4%	53	1	7	8	15%	45	1	6	7			
	Retail	Specialty Retail	31.5	KSF	44.32	1.19	1.52	2.71	1,396	38	48	86	12%	5%	4%	1,114	30	39	69	20%	891	24	31	55			
	Restaurant	Restaurant (Blended)	6.0	KSF	230.04	7.16	5.43	12.59	1,380	43	33	76	12%	5%	4%	1,101	34	27	61	25%	826	26	20	46			
	Movie-Theater	Movie Theater with Matinee	1000	Seats	2.24	0.03	0.04	0.07	2,240	30	40	70	36%	26%	4%	1,007	13	18	31	0%	1,007	13	18	31			
	Grocery Store	Supermarket	20.0	KSF	102.24	5.33	5.12	10.45	2,045	107	102	209	12%	5%	4%	1,632	85	82	167	36%	1,044	54	53	107			
Civic	Civic	25	KSF	42.00	2.45	3.34	5.80	1,050	61	84	145	22%	7%	4%	723	42	58	100	10%	651	38	52	90				
Subtotal - Block								10,222	374	399	773				7,123	273	291	564		5,830	220	233	453				
Downtown Extension -- Lumber Yard Area	Multifamily Units	Multifamily (Blended)	67	DU	6.08	0.36	0.18	0.55	407	24	12	36	14%	6%	0%	312	18	10	28	0%	312	18	10	28			
	Live/Work Units	Multifamily (Blended)	5	DU	6.08	0.36	0.18	0.55	30	2	1	3	14%	6%	0%	23	2	0	2	0%	23	2	0	2			
	Work/Live Units	Work/Live (Blended Total)	15	DU	29.80	0.96	1.50	2.48	447	14	23	37	13%	6%	4%	345	11	18	29	16%	290	9	15	24			
	Office	General Office Building	3.0	KSF	11.01	0.25	1.24	1.49	33	1	4	5	17%	7%	4%	24	1	3	4	15%	20	1	2	3			
	Retail	Specialty Retail	15.0	KSF	44.32	1.19	1.52	2.71	665	18	23	41	10%	3%	4%	554	15	19	34	20%	443	12	15	27			
	Restaurant	Restaurant (Blended)	5.0	KSF	230.04	7.16	5.43	12.59	1,150	36	27	63	10%	3%	4%	958	30	22	52	25%	719	23	16	39			
Subtotal - Block								2,732	95	90	185				2,216	77	72	149		1,807	65	58	123				
Heritage District	Live/Work Units	Multifamily (Blended)	125	DU	6.08	0.36	0.18	0.55	760	45	23	68	9%	7%	0%	612	36	19	55	0%	612	36	19	55			
	Work/Live Units	Work/Live (Blended Total)	75	DU	16.48	0.58	1.39	1.99	1,236	44	104	148	9%	7%	0%	997	35	84	119	11%	887	31	75	106			
	Office	General Office Building	5.0	KSF	11.01	0.25	1.24	1.49	55	1	6	7	11%	7%	3%	43	1	5	6	15%	37	1	4	5			
	Retail	Specialty Retail	2.5	KSF	44.32	1.19	1.52	2.71	111	3	4	7	9%	5%	3%	91	2	4	6	20%	73	2	3	5			
	Restaurant	Restaurant (Blended)	2.5	KSF	230.04	7.16	5.43	12.59	575	18	14	32	9%	5%	3%	471	15	11	26	25%	353	11	9	20			
Subtotal - Block								2,737	111	151	262				2,214	89	123	212		1,962	81	110	191				
Trout Creek	Multifamily Units	Multifamily (Blended)	42	DU	6.08	0.36	0.18	0.55	255	15	8	23	13%	0%	0%	211	12	7	19	0%	211	12	7	19			
	Single Family Units	Single Family	18	DU	9.57	0.64	0.37	1.01	172	12	7	19	13%	0%	0%	143	10	6	16	0%	143	10	6	16			
	Live/Work Units	Multifamily (Blended)	25	DU	6.08	0.36	0.18	0.55	152	9	5	14	13%	0%	0%	126	7	5	12	0%	126	7	5	12			
	Subtotal - Block								579	36	20	56				480	29	18	47		480	29	18	47			
Balloon Track Area	UPRR Office	Office	5.0	KSF	11.01	0.25	1.24	1.49	55	1	6	7	0%	0%	0%	52	1	6	7	0%	52	1	6	7			
Total - Build Out									17,935	671	714	1,385				13,139	505	541	1,046		11,012	427	451	878			
Subtotal by Land Uses at Build Out	Residential																										
	Multifamily Units		262	DU																	1,178	69	36	105			
	Live/Work Units		165	DU																	804	48	25	73			
	Work/Live Units		125	DU																	1,845	62	123	185			
	Single Family Units		18	DU																	143	10	6	16			
	- Total Residential		570	DU																	3,970	189	190	379			
	Lodging Units				60	Rooms																346	14	13	27		
Commercial / Office / Civic				135	KSF																5,689	211	230	441			
Theater				1,000	Seats																1,007	13	18	31			

Note 1 - Trip generation rates are estimated using the Institute of Transportation Engineers Trip Generation, 7th Edition (2003) manual.

Note 2 - KSF = 1,000 square feet gross floor area.

Source: LSC Transportation Consultants, Inc.

Truckee Railyard/Trip Generation with internal.wb3

Table D: Trip Generation of Existing Land Uses To Be Removed

Phase	Description	Land Use	Quantity	Unit ²	Trip Generation Rates ¹				Total Project Generated Trips				Pass-By Trips	Project Generated Trips on Adjacent Streets			
					Daily	PM Peak Hour			Daily	PM Peak Hour				Daily	PM Peak Hour		
						In	Out	Total		In	Out	Total			In	Out	Total
Phase 1	Gas Cardlock	--	--	--	--	--	--	--	337	14	14	28	20%	270	11	11	22
	Truckee Glass	Building Materials	4.0	KSF	45.16	2.11	2.38	4.49	181	8	10	18	25%	136	6	8	14
	Total								518	22	24	46		406	17	19	36
Buildout	Gas Cardlock	--	--	--	--	--	--	--	337	14	14	28	20%	270	11	11	22
	Truckee Glass	Building Materials	4	KSF	45.16	2.11	2.38	4.49	181	8	10	18	25%	136	6	8	14
	Lumber Yard ³	Building Materials	30.3	KSF	45.16	2.11	2.38	4.49	1,368	64	72	136	25%	1,026	48	54	102
Total								1,886	86	96	182		1,432	65	73	138	

Note 1 - Trip generation rates are estimated using the Institute of Transportation Engineers Trip Generation Manual, 7th Edition (2003).

Note 2 - KSF = 1,000 square feet gro.

Note 3: Per ITE definition, warehouse, office and retail space is all included in total floor area.

Source: LSC Transportation Consultants, Inc.

TABLE E: Observed Truckee Parking Utilization -- Peak Time of Day

	Weekday		Weekend			
	Midday Peak	Peak Utilization	Midday Peak	Peak Utilization		
Wednesday, August 23, 2006	606	64.2%	Saturday, August 26, 2006	530	56.1%	
Wednesday, September 27, 2006	516	54.7%	Saturday, September 23 and 30, 2006	736	78.0%	Note 1
Wednesday, October 25, 2006	508	53.8%	Saturday, October 21 and 28, 2006	556	58.9%	
Wednesday, November 15, 2006	454	48.1%	Saturday, November 18, 2006	533	56.5%	
Wednesday, December 13, 2006	499	52.9%	Saturday, December 16, 2006	500	53.0%	
Wednesday, January 17, 2007	445	47.1%	Saturday, January 20, 2007	491	52.0%	
Wednesday, February 14, 2007	471	49.9%	Saturday, February 17, 2007	603	63.9%	
Wednesday, March 14, 2007	477	50.5%	Saturday, March 17, 2007	487	51.6%	
Wednesday, April 18, 2007	392	41.5%	Saturday, April 21, 2007	390	41.3%	
Wednesday, May 16, 2007	413	43.8%	Saturday, May 19, 2007	517	54.8%	
Wednesday, June 20, 2007	557	59.0%	Saturday, June 23, 2007	476	50.4%	
Wednesday, July 18, 2007	614	65.0%	Saturday, July 21, 2007	576	61.0%	
Wednesday, August 15, 2007	523	55.4%	Saturday, August 18, 2007	638	67.6%	
Wednesday, September 19, 2007	476	50.4%	Saturday, September 22, 2007	562	59.5%	
Wednesday, October 17, 2007	474	50.2%	Saturday, October 20, 2007	563	59.6%	

1. Note 1: Day of "Wine, Walk, Shop" special event. Excluded from analysis.

Source: Town of Truckee.

TABLE F: Analysis of Parking Demand Adjustment Factor for Downtown Truckee Commercial Uses

		Weekday Analysis			Weekend Analysis			
Peak Observed Parking Demand		614			638			
<u>Parking Utilization of Other Uses at Peak Time (1)</u>								
Residential (2)		14			23			
Hotel (3)		33			33			
Post Office (4)		26			26			
Railroad Depot (5)		5			5			
Total: Other Uses		78			87			
Estimated Existing Commercial Parking Demand		536			551			
Existing Downtown Truckee Commercial Land Uses Use	Floor Area (KSF)	Base Rate (Spaces per KSF)	Base Shared Parking Factors		Parking Demand at Time of Peak Demand	Base Shared Parking Factors		Parking Demand at Time of Peak
			Day of Week	Time of Day		Day of Week	Time of Day	
Bank	3.31	3.33	1.00	1.00	11	0.00	0.00	0
General Retail (Clothing/Gifts)	95.03	3.77	0.90	1.00	322	1.00	1.00	358
Grocery/Liquor/Pharmacy	6.00	5	1.00	1.00	30	1.00	1.00	30
Hardware/Building Materials	4.23	3.33	0.90	1.00	13	1.00	1.00	14
Furniture/Appliance/Home	1.76	2	0.90	1.00	3	1.00	1.00	4
Studio for Dance and Art	1.17	5	1.00	0.50	3	1.00	1.00	6
Personal Services	6.25	4	1.00	1.00	25	1.00	1.00	25
Restaurant	35.79	11.33	0.85	0.91	314	1.00	0.87	353
General Office	44.58	4	1.00	0.86	153	0.10	0.80	14
Mortuary Service (6)	1.20	4	1.00	1.00	5	1.00	1.00	5
Medical/Dental Office	4.39	5	1.00	0.93	20	1.00	0.80	18
Travel/Insurance/Real Estate	11.97	4	1.00	0.91	44	0.80	0.80	31
Warehouse/Storage	11.00	0.5	1.00	1.00	6	1.00	1.00	6
Total Parking Demand at Peak Time					949			858
Ratio of Peak Parking Demand: Observed to Calculated at Town Code Standard Rates					0.56			0.64

Note 1: Excludes some uses (such as the gas stations) where offstreet parking lots are not counted in the parking count surveys. No parking demand is assumed for museum, church, community center or meeting hall uses at period of peak demand.

Note 2: Assume that 2/3 of observed parking in Zone 26C and all of Zones 36, 40 and 41 are residents, per Town Staff direction.

Note 3: Assumes 65% of all 50 existing hotel rooms have one car parked on the street during midday, per Urban Land Institute data regarding parking demand by time of day.

Note 4: Based on Wilbur Smith and Town counts, and Wilbur Smith estimates of Post Office parking needs

Note 5: LSC estimate.

Note 6: As Mortuary Service is not specified in the Town Code, the rate is assumed to be similar to General Office

TABLE G: Multifamily Residential Parking Code Rates of Peer Communities

Jurisdiction Parking Code	Multi-Family Dwelling (in spaces per dwelling unit)				
	Studio	1-bedroom	2-bedroom	3-bedroom	4-bedroom
Town of Truckee	1.5 + 25% for Guest Parking = 1.875	1.5 + 25% for Guest Parking = 1.875	2 + 25% for Guest Parking = 2.5	2 + 25% for Guest Parking = 2.5	2 + 25% for Guest Parking = 2.5
North Tahoe Area of Placer County ⁽¹⁾	0.5	1.5	2.5	3.0	4.0
Town of Mammoth Lakes	--	1 + plus 2 for four units up to twelve + 4 for thirteenth to forty-eighth unit	2 + plus 2 for four units up to twelve + 4 for thirteenth to forty-eighth unit	3 + plus 2 for four units up to twelve + 4 for thirteenth to forty-eighth unit	3 + plus 2 for four units up to twelve + 4 for thirteenth to forty-eighth unit
Village at Mammoth	1.0	1.0	1.0	1.5	--
Park City, UT	1 per DU for Apt/Condo < 650 SF	1.5 per DU for Apt/Condo > 650 SF and < 1,000 SF	2 per DU for Apt/Condo > 1,000 SF and < 2,500 SF	3 per DU for Apt/Condo > 2,500 SF	3 per DU for Apt/Condo > 2,500 SF
<u>Vail, CO</u>					
Within commercial core area	1.4 per dwelling unit				
Outside of commercial core area	1.5 per DU for unit < 500 SF	2 per DU for unit > 500 SF and < 2,000 SF	2 per DU for unit > 500 SF and < 2,000 SF	2.5 per DU for unit > 2,000 SF	2.5 per DU for unit > 2,000 SF
Summit County, CO (Condo-Hotel)	1.0	1.5	1.5	1.5	1.5
<u>Aspen, CO</u>					
"Infll area" w/in a mixed use building	1 space per unit; No requirement for residential units in the CC and C-1 Zone Districts				
"Other areas" w/in a mixed use building	1 space per unit				
"Infll area" multi-family as a single use	1 space per unit				
"Other areas" multi-family as a single use	--	1.0	2.0	2.0	2.0
Jackson, WY	1.25	1.75	2.0	2.5	3.0

Note 1: Assumes studio and 1-bedroom has 1 bed; additional bedrooms have 1 bed each.
Source: Municipal/ County Codes.

TABLE H: Hotel Parking Code Rates of Peer Communities

Jurisdiction	Parking Code
<i>Town of Truckee</i>	1 / room + 0.5 per employee on peak shift + accessory use spaces
North Tahoe Area of Placer County	1 / room + 1 / 250 SF meeting / display area + 1 / 400 SF retail area + 1/ full-time admin emp. + 1/2 other FTE + 1/3 part-time emp.
Town of Mammoth Lakes	1 / room + 2 per manager unit + 1 for every 20 units
Village at Mammoth	1 / room + 2 per manager unit + 1 for every 20 units
Park City, UT	1 / room + one per 200 SF of separately leasable area
Vail, CO (within commercial core area)	0.7/ unit
Vail, CO (outside commercial core area)	0.4 / unit + 0.1 space per each 100 SF of residential floor area, max of 1.0 spaces per unit
Summit County, CO	1/room
Aspen, CO ("infill area")	5 / unit; No requirement for lodging units in the CC and C-1 Zone Districts
Aspen, CO ("other areas")	0.7 / unit
Jackson, WY	1/room + 1 per 500 SF commercial space

Note: SF = square feet, KSF = thousand square feet.

Source: Municipal codes.

TABLE I: ITE Parking Generation - Parking Demand Data

Land Use Type	Parking Demand Ratio (vehicles per unit)	
	Average Peak Period	85th Percentile
<u>Lodging</u>		
Hotel	0.91/room	1.14/room
Motel	0.90/room	1.02/room
Resort Hotel ⁽¹⁾	1.42/room	1.86/room
<u>Residential</u> ⁽²⁾		
Low/Mid-Rise Apartment	1.20/DU	1.46/DU
Condo/Townhouse	1.46/DU	1.68/DU

Note 1: While provided in the Parking Generation document, this land use is defined as a relatively large hotel property with multiple on-site recreational amenities (golf course, tennis courts, etc.) and therefore does not directly pertain to the type of hotel development proposed for the Railyard.

Note 2: The ITE data does not break out residential parking demand by number of bedrooms per unit. However, the available data cited in the report indicates that apartment sites with less than 1.5 bedrooms on average generate parking demand 8 percent less than the average, while apartment complexes with an average of 2.0 or more bedrooms generate parking demand 13 percent greater than average.

Source: Parking Generation, 3rd Edition, ITE, 2004.

TABLE J: Recommended Railyard Parking Trip Rates

Does Not Reflect Reductions for Shared Parking

Land Use	Base Truckee Code	Downtown Truckee Commercial Parking Factor	Recommended Railyard Rate
General Retail	3.77 per KSF	0.64	2.41 per KSF
Restaurant	11.33 per KSF	0.64	7.25 per KSF
Office	4 per KSF	0.64	2.56 per KSF
Grocery Store			6.72 per KSF
Movie Theater	0.2 per Seat + 10 Employee Spaces	NA	0.19 per Seat
Civic	2 per KSF	NA	2.00 per KSF
Lodging Units	1 per Room + 0.5 per peak Employee		1.00 per Room + 0.5 per peak Employee
Multifamily DU			
Studio	1.5 per DU + 25% Guest Spaces		1.10 per DU
1 BR	1.5 per DU + 25% Guest Spaces		1.35 per DU
2 BR	2 per DU + 25% Guest Spaces		1.65 per DU
3 BR	2 per DU + 25% Guest Spaces		1.95 per DU
Single Family DU	2 per DU		2.00 per DU
Multifamily Live/Work Units (All 1 BR)	1.5 per DU + 25% Guest Spaces		1.35 per DU
Multifamily Work/Live Units (All 1 BR)			
In Downtown Extension			
Residential Unit			1.35 per DU
Adjustment for Internal Work Trips	-10%	-0.25	
<u>Proportion of Commercial Land Use</u>			
Specialty Retail	40%	2.41	
Office	60%	2.56	
Blended Commercial		2.50	
Total Commercial			2.25 per DU
In Industrial Heritage			
Residential Unit			1.35 per DU
Adjustment for Internal Work Trips	-10%	-0.25	
<u>Proportion of Commercial Land Use</u>			
Office	100%	2.56	
Total Commercial			2.31 per DU

Source: LSC Transportation Consultants, Inc.

Table K: Parking Analysis for Truckee Railyard Master Plan -- Phase I

Location	Description	Quantity	Unit	Parking Rate	Total Base Parking	Total Reduction for Non-Auto Access ¹	Total Required Parking for Individual Land Use	Dedicated Parking ²	Parking Demand for Shared Parking	Day of Week Factor ³	Parking Demand by Hour for Shared Parking Analysis ³														Max Required Spaces for Shared Use					
											6.00 AM	7.00 AM	8.00 AM	9.00 AM	10.00 AM	11.00 AM	12.00 PM	1.00 PM	2.00 PM	3.00 PM	4.00 PM	5.00 PM	6.00 PM	7.00 PM		8.00 PM	9.00 PM	10.00 PM	11.00 PM	12.00 AM
Downtown Extension -- Hotel Block	Retail	3.5	KSF	2.41 per KSF	8	32%	5	0	5	1.0	0	0	1	2	3	4	4	5	5	5	5	5	4	4	3	3	2	1	0	26
	Restaurant	4.0	KSF	7.25 per KSF	29	23%	22	0	22	1.0	1	4	7	9	14	17	21	21	17	13	13	17	22	22	20	15	13	12	7	
	Lodging Units ⁴	60	Rooms	1 per Unit+0.5 per PK Empl	73	0%	73	73	0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Subtotal				110		100	73	27		1	4	8	11	17	21	25	26	22	18	18	22	26	26	23	18	15	13	7	
Downtown Extension -- Donner Pass Rd to Street B	Multifamily Units																													
	- Studio	17	DU	1.10 per Unit	19	0%	19	17	2	1.0	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	
	- 1 BR	35	DU	1.35 per Unit	47	0%	47	35	12	1.0	11	10	9	9	8	8	7	8	8	8	8	10	10	12	12	12	12	12	11	
	- 2 BR	18	DU	1.65 per Unit	30	0%	30	18	12	1.0	11	10	9	9	8	8	7	8	8	8	8	10	10	12	12	12	12	12	11	
	Live/Work Units - 1 BR	6	DU	1.35 per Unit	8	0%	8	6	2	1.0	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	
	Work/Live Units - 1 BR	12	DU																											
	- Residential			1.35 per Unit	16	0%	16	12	4	1.0	4	3	3	3	3	3	2	3	3	3	3	3	3	4	4	4	4	4	4	
	- Commercial			2.25 per KSF	27	12%	24	0	24	0.5	0	1	2	3	5	12	12	12	11	9	7	6	5	4	4	3	2	1	0	
	Retail	15.0	KSF	2.41 per KSF	36	14%	31	0	31	1.0	1	2	5	12	18	22	26	29	31	31	30	28	25	24	21	16	11	5	0	
	Restaurant	4.5	KSF	7.25 per KSF	33	12%	29	0	29	1.0	2	5	9	12	18	22	28	27	23	17	17	22	29	29	26	19	18	15	9	
Movie-Theater	1000	Seats	0.19 per Seat	190	11%	169	0	169	1.0	0	0	0	0	0	0	36	77	93	94	94	104	104	136	169	169	136	110	68		
Subtotal				406		373	88	285		33	35	41	50	62	77	120	166	179	172	169	187	190	225	252	239	199	163	107	252	
Total - End of Phase 1					516		473	161	312		34	39	49	61	79	98	145	192	201	190	187	209	216	251	275	257	214	176	114	275

Note 1- Non-auto parking reduction is estimated based on Internal trips calculated by ITE methods, adjusted to account for greater internal percent for different retail uses and the proportion of spaces dedicated to residential and lodging uses.

Note 2- All residential units are assumed to have one dedicated parking space per dwelling unit. Moreover, hotel is assumed to have all dedicated parking space.

Note 3- Day of week and hourly parking factors based on "Shared Parking" (ULI, 2003)

Note 4 - Assuming a peak of 25 lodging & spa employees on-site at any one time. Excludes restaurant employees.

Source: LSC Transportation Consultants, Inc.

Table L: Parking Analysis for Truckee Rallyard Master Plan -- At Buildout

Location	Description	Quantity	Unit	Applied Parking Rate	Total Base Parking	Total Reduction for Non-Auto Access ¹	Total Required Parking for Individual Land Use	Dedicated Parking ²	Parking Demand for Shared Parking	Day of Week Factor ³	Parking Demand by Hour for Shared Parking Analysis ³														Max Required Spaces for Shared Use						
											6.00 AM	7.00 AM	8.00 AM	9.00 AM	10.00 AM	11.00 AM	12.00 PM	1.00 PM	2.00 PM	3.00 PM	4.00 PM	5.00 PM	6.00 PM	7.00 PM		8.00 PM	9.00 PM	10.00 PM	11.00 PM	12.00 AM	
											AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM		PM	PM	PM	PM	AM	
Downtown Extension – Hotel Block	Retail	3.5	KSF	2.41 per KSF	8	28%	6	0	6	1.0	0	0	1	2	3	4	5	6	6	6	6	5	5	5	4	3	2	1	0	28	
	Restaurant	4.0	KSF	7.25 per KSF	29	20%	23	0	23	1.0	2	4	7	10	14	17	22	21	18	14	14	17	23	23	21	15	14	12	7		
	Lodging Units ⁴	60	Rooms	1.00 per Unit+0.5 per Pk Empl	73	0%	73	73	0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Subtotal				110			102	73			2	4	8	12	17	21	27	27	24	20	20	22	28	28	25	18	16	13		7
Downtown Extension – Donner Pass Rd to Street B	Multifamily Units																													437	
	- Studio	38	DU	1.10 per Unit	42	0%	42	38	4	1.0	4	3	3	3	3	3	2	3	3	3	3	3	3	4	4	4	4	4	4		
	- 1 BR	77	DU	1.35 per Unit	104	0%	104	77	27	1.0	25	22	21	20	19	18	16	18	18	18	19	22	24	26	27	27	27	27	26		
	- 2 BR	38	DU	1.65 per Unit	63	0%	63	38	25	1.0	23	21	20	19	18	16	15	16	16	16	18	20	22	24	25	25	25	25	24		
	Live/Work Units - 1 BR	10	DU	1.35 per Unit	14	0%	14	10	4	1.0	4	3	3	3	3	3	2	3	3	3	3	3	3	4	4	4	4	4	4		
	Work/Live Units	35	DU																												
	- Residential - 1 BR			1.35 per Unit	47	0%	47	35	12	1.0	11	10	9	9	8	8	7	8	8	8	8	10	10	12	12	12	12	12	11		
	- Commercial			2.25 per KSF	79	11%	70	0	70	0.5	0	2	5	10	13	36	36	35	31	26	21	17	15	13	11	9	6	2	0		
	Office	7.0	KSF	2.56 per KSF	18	9%	16	0	16	0.2	0	0	0	0	0	3	3	3	2	1	1	0	0	0	0	0	0	0	0		
	Retail	31.5	KSF	2.41 per KSF	76	11%	68	0	68	1.0	2	5	11	27	39	48	57	63	68	68	65	62	55	52	46	36	25	10	0		
	Restaurant	6.0	KSF	7.25 per KSF	44	11%	39	0	39	1.0	3	7	12	17	24	30	38	36	31	23	23	29	39	39	35	26	24	21	12		
	Movie-Theater	1000	Seats	0.19 per Seat	190	12%	167	0	167	1.0	0	0	0	0	0	0	35	76	92	93	93	103	103	135	167	167	135	109	67		
	Grocery Store	20.0	KSF	6.72 per KSF	134	11%	119	0	119	1.0	3	8	19	46	68	84	100	109	119	119	114	108	96	90	80	63	44	18	0		
	Civic	25.0	KSF	2.00 per KSF	50	9%	46	0	46	1.0	0	0	2	18	28	35	39	46	46	46	37	18	0	0	0	0	0	0	0		
Subtotal				861		795	198	597			75	81	105	172	223	284	350	416	437	424	405	395	370	399	411	373	306	232	148		
Downtown Extension – Lumber Yard Area	Multifamily Units																													95	
	- Studio	17	DU	1.10 per Unit	19	0%	19	17	2	1.0	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2		
	- 1 BR	33	DU	1.35 per Unit	45	0%	45	33	12	1.0	11	10	9	9	8	8	7	8	8	8	8	10	10	12	12	12	12	11			
	- 2 BR	17	DU	1.65 per Unit	28	0%	28	17	11	1.0	10	9	9	8	8	7	7	7	7	7	8	9	10	11	11	11	11	11			
	Live/Work Units - 1 BR	5	DU	1.35 per Unit	7	0%	7	5	2	1.0	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2		
	Work/Live Units	15	DU																												
	- Residential - 1 BR			1.35 per Unit	20	0%	20	15	5	1.0	5	4	4	4	4	3	3	3	3	3	4	4	4	5	5	5	5	5	5		
	- Commercial			2.25 per KSF	34	12%	30	0	30	0.5	0	1	2	4	6	16	15	15	13	11	9	7	6	5	5	4	3	1	0		
	Office	3.0	KSF	2.56 per KSF	8	7%	7	0	7	0.2	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0		
	Retail	15.0	KSF	2.41 per KSF	36	12%	32	0	32	1.0	1	2	5	12	18	23	27	29	32	32	31	29	26	24	21	17	12	5	0		
Restaurant	5.0	KSF	7.25 per KSF	36	12%	32	0	32	1.0	2	6	10	14	20	24	31	30	25	19	19	24	32	32	29	21	20	17	10			
Subtotal				233		220	87	133			33	36	43	53	66	84	93	95	91	83	81	87	92	93	87	74	67	55	41		
Heritage District	Live/Work Units - 2BR	125	DU	1.65 per Unit	206	0%	206	125	81	1.0	74	67	64	60	57	53	49	53	53	53	57	66	71	79	80	80	81	80	77	124	
	Work/Live Units	75	DU																												
	- Residential - 1 BR			1.35 per Unit	101	0%	101	75	26	1.0	24	22	21	19	18	17	16	17	17	17	18	21	23	25	26	26	26	25			
	- Commercial			2.31 per KSF	173	7%	161	0	161	0.2	0	1	3	4	5	32	29	26	19	13	6	3	2	0	0	0	0	0	0		
	Office	5.0	KSF	2.56 per KSF	13	7%	12	0	12	0.2	0	0	0	0	0	2	2	2	1	1	0	0	0	0	0	0	0	0	0		
	Retail	2.5	KSF	2.41 per KSF	6	13%	5	0	5	1.0	0	0	1	2	3	4	4	5	5	5	5	5	5	4	4	3	3	2	1		0
Restaurant	2.5	KSF	7.25 per KSF	18	13%	16	0	16	1.0	1	3	5	7	10	12	16	15	13	10	10	12	16	16	15	11	10	8	5			
Subtotal				517		501	200	301			99	93	94	92	93	120	116	118	108	99	96	107	116	124	124	120	119	115	107		
Trout Creek ⁵	Multifamily Units																													72	
	- 2 BR	21	DU	1.65 per Unit	35	0%	35	21	14	1.0	13	12	11	10	10	9	9	9	9	9	10	11	12	14	14	14	14	13			
	- 3 BR	21	DU	1.95 per Unit	41	0%	41	21	20	1.0	18	17	16	15	14	13	12	13	13	13	14	16	17	19	20	20	20	19			
	Single Family Units	18	DU	2.00 per Unit	36	0%	36	18	18	1.0	16	15	14	13	13	12	11	12	12	12	13	15	16	18	18	18	18	17			
	Live/Work Units																														
- 2 BR	12	DU	1.65 per Unit	20	0%	20	12	8	1.0	7	7	6	6	6	5	5	5	5	5	5	6	6	7	8	8	8	8	8			
- 3 BR	13	DU	1.95 per Unit	25	0%	25	13	12	1.0	11	10	9	9	8	8	7	8	8	8	8	8	10	10	12	12	12	12	11			
Subtotal				157		157	85	72			65	61	56	53	51	47	44	47	47	47	51	58	62	71	72	72	72	68			
Balloon Track Area	Office	5.0	KSF	2.56	13	5%	12	12	0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total - Build Out					1,891		1,787	655	1,132		274	275	306	382	450	556	630	703	707	673	653	669	668	715	719	657	580	487	371	719	

Note 1- Non-auto parking reduction is estimated based on internal trips calculated by ITE methods, adjusted to account for greater internal percent for different retail uses and the proportion of spaces dedicated to residential and lodging uses.

Note 2- All multifamily residential units are assumed to have one dedicated parking space per dwelling unit. Moreover, hotel is assumed to have all dedicated parking space.

Note 3- Day of week and hourly parking factors based on "Shared Parking" (ULI, 2003)

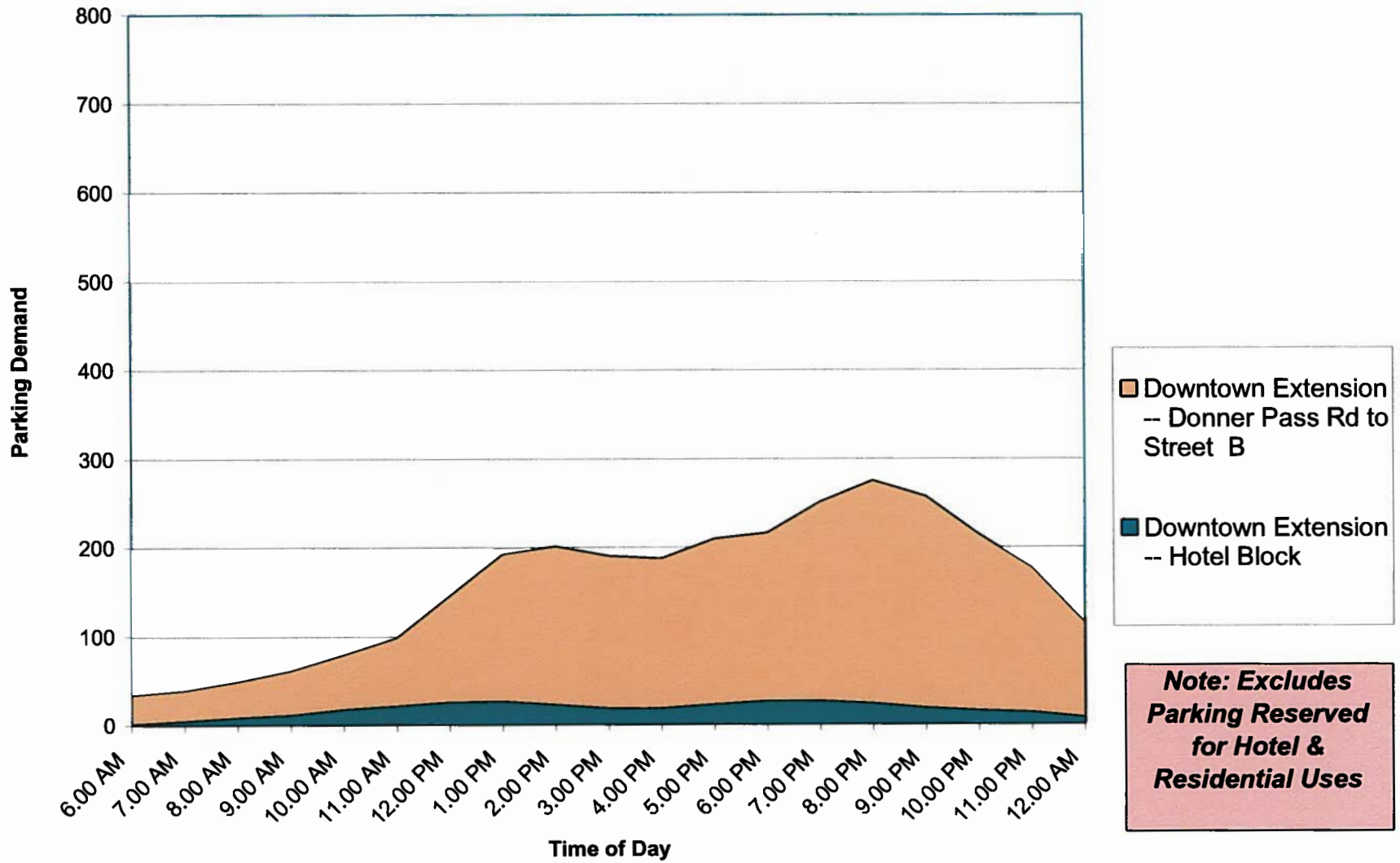
Note 4 - Assuming a peak of 25 lodging & spa employees on-site at any one time. Excludes restaurant employees.

Note 5 - Excludes parking for single family residences, assumed to be provided on individual building sites and not shared.

TABLE M: Distribution of Truckee Railyard Site-Generated Vehicle-Trips

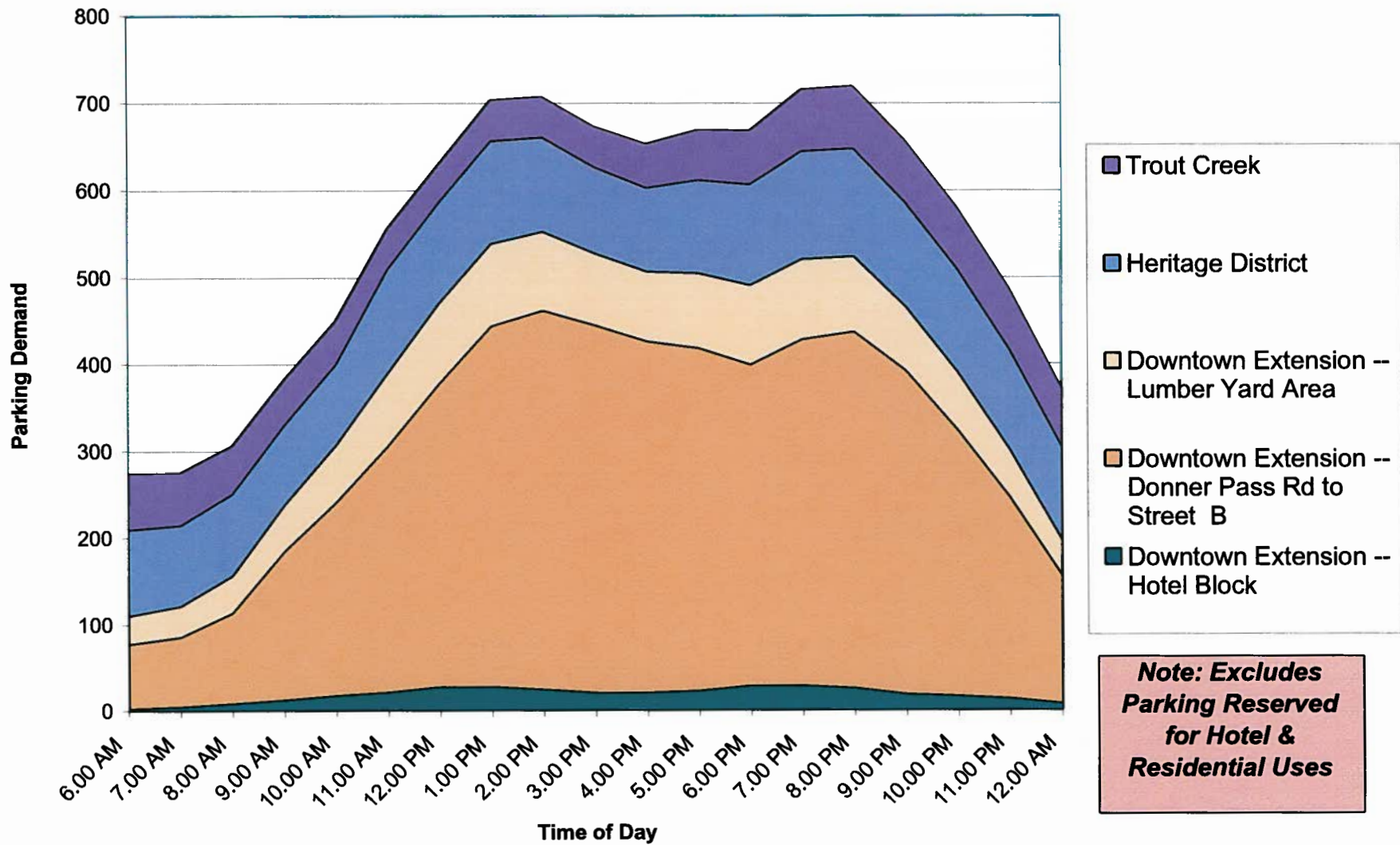
Distribution Area	2008	2025
I-80 West of SR 89S	12.5%	9.0%
Along Donner Pass Road West of SR 89 S	6.9%	5.0%
Frates Lane	0.4%	0.3%
Along SR 89 S Near Deerfield Drive	6.6%	4.5%
SR 89S South of West River Street	5.3%	4.9%
Along Donner Pass Road Between Central I-80 and SR 89S	7.4%	5.3%
Along W. River St Between McIver Crossing and SR 89S	2.6%	2.2%
Along W. River St Between McIver Crossing and Brockway	0.2%	0.2%
Southern Tahoe Donner	8.6%	4.2%
Northern Tahoe Donner	3.0%	1.1%
Along Donner Pass Road Between Central I-80 and Spring St	0.2%	0.4%
Between Jibboom, Spring, I-80 and Bridge	0.7%	0.6%
Between Jibboom, Bridge, I-80 and Keiser	0.0%	0.2%
On Donner Pass Road between Glenshire Drive and I-80	0.0%	1.4%
East River Street	0.2%	0.2%
Martis Valley Road	1.4%	3.0%
Palisades Drive	0.9%	1.9%
S. River Street	0.2%	0.3%
Brockway Road Between Palisades Drive and Martis Valley Road	1.1%	2.3%
Glenshire Drive	8.8%	9.4%
I-80 East of SR 267	9.8%	7.7%
SR 89 North of Donner Pass Rd	3.6%	5.5%
Along Pioneer Trail Between Donner Pass Rd and Bridge St	3.6%	5.5%
Recreation Center Site in Triangle Parcel	0.0%	0.2%
Grays Crossing Accessed by Extension of DPR	0.2%	2.2%
Commercial Row	1.4%	1.5%
Internal to Project Site	2.0%	2.0%
PC3 Area (SR 267 / Brockway Road)	1.2%	5.7%
Along SR 267 from Brockway to Airport	0.4%	1.2%
Airport Area	2.2%	1.5%
Schaffer Mill Road Area	0.3%	1.3%
Along SR 267 from Airport to Northstar	0.4%	0.9%
Northstar Area	4.6%	4.6%
SR 28 East of SR 267	1.9%	2.4%
SR 28 West of SR 267	1.4%	1.4%
	100.0%	100.0%

**Figure A:
Demand for Shared Parking by Time of Day -- Phase 1**



**Note: Excludes
Parking Reserved
for Hotel &
Residential Uses**

**Figure B:
Demand for Shared Parking by Time of Day -- Buildout**



Truckee Railyard Hotel

Truckee, California

LIGHTING FIXTURES SPECIFICATIONS

Entitlement

March 17, 2026



43-01 21st Street STE 326A
Long Island City, NY 11101
Tels: 312.662.3215 / 607.342.2736
hello@within-light.com / within-light.com

1. GENERAL

- 1.1 The specification sheets indicating the lighting design requirements for specific areas within this project form part of this document and should be read in conjunction with these preambles and the relevant lighting drawings, and associated sketches.
- 1.2 All quantities shall be checked against the construction drawings.
- 1.3 Final locations and details associated with all lighting equipment is to be confirmed with the design team.

2. SUBMITTALS

- 2.1 Shop drawings/ fixture submittals shall be submitted for approval for all light fixtures in accordance with the requirements of the Construction Documentation. Shop Drawings shall clearly indicate the reference number of Construction Documentation used in the development of the Shop Drawings and the names of the job and Lighting Designer. Shop Drawings shall be complete submissions for approval and shall include complete lighting fixture model numbers and complete lamp model numbers. Catalog Cut Sheets lacking sufficient detail to indicate compliance with Construction Documentation will not be accepted. Where applicable, Shop Drawings shall include the wiring diagram, scale plans, and details showing the method of installation of lamp holders, lamps, reflectors, transformers and secondary feeds as well as a complete bill of materials. Where applicable, verify field dimensions and include them on Shop Drawings showing exact locations and lamp shapes and lengths. Provide copies of approved Shop Drawings for owner's use in maintenance and lamp replacement. All prior changes to Shop Drawings are to be "clouded" and dated prior to resubmission. No variation from the general arrangement and details indicated on the drawings shall be made on the Shop Drawings unless required to suit the actual conditions on the premises, and then only with the written acceptance of the Architect. All variation must be clearly marked as such on drawings submitted for approval.
- 2.2 Review of Shop Drawings or samples does not waive contract requirements. Approval of the Shop Drawings or samples does not relieve the Contractor from the responsibility for deviations from the specifications or drawings unless they have provided a letter noting such deviations at time of submission, and received written approval for such deviations. Approval of Shop Drawings or samples does not relieve the Contractor from responsibility for errors in the Shop Drawings or samples. Contractor shall be fully responsible for lighting fixtures that are manufactured or installed without approved Shop Drawings or lighting fixtures not manufactured in accordance with requirements or the Architect and Lighting Designer's Shop Drawing reviews.
- 2.3 Submit samples of each lighting fixture type as requested for approval prior to manufacture. The samples shall be complete with specified lamp(s), ready for hanging, energizing, and examining, and shall be shipped, prepaid by Contractor, to the Lighting Designer, or as otherwise advised. Samples must be an actual working unit of materials to be supplied. Samples will be returned but should not be included in quantities listed for the project.

3 ALTERNATES AND SUBSTITUTIONS

- 3.1 Manufacturers listed in the Lighting Fixture Schedule shall be assumed capable of supplying the listed lighting fixtures unless exceptions are set forth in their quotations. Any such exceptions shall immediately be brought to the attention of the Architect and the Lighting Designer.
- 3.2 No substitutions shall be permitted for specific lighting fixture types where noted in the Lighting Fixture Schedule. The Contractor shall submit lighting fixtures from the manufacturers listed for each lighting fixture type on the Lighting Fixture Schedule. Should the Contractor wish to have lighting fixtures considered other than those specified, the lighting fixtures must be submitted ten (10) days in advance of the bid. A complete Working sample and an independent lab photo-metric report must be submitted for each lighting fixture to be considered. Failure to submit within that deadline constitutes a guarantee that only specified products will be supplied. This provision does not apply to lighting fixture types specifically noted as “no substitutions” in the Lighting Fixture Schedule. The Architect and Lighting Designer shall be the sole judges in determining whether a proposed substitution complies with the specifications, and shall reserve the right to disqualify any manufacturers.
- 3.3 Contractor shall provide itemized costs for all lighting fixtures.
- 3.4 The electrical distributor has the authority to require unit pricing from the manufacturer’s representatives for those products so specified. Failure on the part of the manufacturer’s representative to comply with this requirement may result in changes to the specifications.

4 STANDARDS COMPLIANCE

- 4.1 All lighting equipment shall be in full compliance with the appropriate city, state and national codes. Standards requirements particular to individual lighting fixture types are indicated on the relevant specification sheet. For projects in the United States, equipment should conform to the Underwriters Laboratories Standards.
- 4.2 All lighting equipment shall demonstrate general construction quality conforming to the highest commercial standards. All materials used shall be appropriate for their intended function, shall be resistant to corrosion and to thermal and mechanical stresses encountered in the normal application and function of the fixtures.
- 4.3 All lighting equipment shall be completely factory assembled, wired and equipped with necessary sockets, ballasts, wiring, shielding, reflectors, channels, lenses and other parts and accessories as required to fulfill normal application and function.
- 4.4 The cost of obtaining any necessary approvals shall be included in any tender price, detailed as a separate item.

5. TECHNICAL REQUIREMENTS

5.1 Lighting fixtures

- 5.1.1 Equipment selected as a standard item from a particular manufacturer's range has been specified with a view to performance, optics, maintenance, quality, aesthetics, etc.
- 5.1.2 Should alternative equipment be offered, full technical and photometric data shall be supplied to the Lighting Designer in time to enable its accurate assessment. If any variants of standard lighting fixtures are required, these shall be developed by the manufacturer of the standard lighting fixture, unless otherwise specifically stated, and shall be manufactured to the same standards as the equivalent specified lighting fixture.
- 5.1.3 If specified, two copies of all working drawings of proposed variants, shall be supplied to Lighting Designer for approval prior to fabrication.
- 5.1.4 Notwithstanding the above, the manufacturer shall remain responsible for ensuring compliance with relevant standards, the accuracy of the information shown on his drawings at all times and for ensuring that the equipment shown fulfills the requirements of this specification.
- 5.1.5 The Lighting Designer cannot accept responsibility for the installation of non-approved lighting fixtures.
- 5.1.6 The final location of each lighting fixture and where relevant its integration with the architecture shall be as detailed on the construction issue drawings. The Lighting Designer cannot accept responsibility for lighting fixtures installed in a manner other than intimated in the relevant drawings or as otherwise agreed.
- 5.1.7 All exterior lighting equipment shall be designed and manufactured specifically for use in exterior environment and shall have materials, parts and general construction suitable for this requirement.
- 5.1.8 For the specification of lighting within the furniture refer to furniture manufacturer. Lighting fixtures purchased and installed within furniture will be the responsibility of the furniture contractor prior to delivery to site.

5.2 Control Gear

- 5.2.1 All necessary control gear and transformers shall be mounted within the lighting fixture unless shown as being located remotely. All such gear shall be of good quality construction, shall comply with all relevant statutory regulations, shall be compatible with the lamps specified, and shall be mounted and wired in accordance with the manufacturers' instructions.
- 5.2.2 Where appropriate, the lighting fixture manufacturer shall ensure compatibility between control gear and the proposed control system. They shall also provide all necessary data regarding gear losses, etc. to enable the dimmers to be sized correctly.

Lighting Fixture Specifications

5.2.3 Transformers shall have a stable output voltage of 11.8V / 22.8V, under varying loads, where the output voltage is nominally quoted at 12V / 24V.

5.2.4 Unless otherwise stated, all transformers shall be suitable for dimming on their primary side via a remote lighting control system.

5.2.5 Where gear or transformers are installed remotely, care should be taken to ensure that any audible sounds generated by control gear, or by lamp filaments via control gear are kept to a minimum.

5.2.7 Electrical supply connections shall be designed to facilitate the easy installation of the lighting fixtures. The supplier shall liaise with the Electrical Engineer to ensure any specific requirements in this respect are met.

5.2.8 Remote Transformer in well ventilated and accessible locations. Architect and contractor to coordinate. Distance between fixtures and remote transformer must not exceed manufacturer's recommendation.

5.3 Lamps

5.3.1 A complete set of lamps shall be supplied at the completion of construction work prior to practical completion.

5.3.2 Manufacturer to ensure LEDs and LED fixtures are color matched to the highest level of accuracy.

5.3.3 The following lamp manufacturers are approved; General Electric; Osram, Sylvania; Philips or approved.

5.3.4 Incandescent and tungsten halogen lamps shall not be operated, other than for initial testing, prior to final inspection.

5.3.5 Should alternative lamps be offered, the contractor should supply a working sample of the lamp to the Lighting Designer for review and approval.

5.3.6 For LED, fluorescent, and HID sources, alternative lamps may only be substituted if full technical data is first supplied to the Lighting Designer to enable their accurate assessment and approval.

5.3.7 All fluorescent lamps shall be triphosphor, color 94 or equivalent and suitable for use with electronic ballast.

5.3.8 For low voltage reflector lamps, alternative may only be substituted where the lamp has the same lumen output, beam angle, lamp cover and shield characteristics as the lamp specified.

5.3.9 Allowance shall be made for the specialized installation of lighting as required (i.e. cold cathode). Such installation may require the services of a specialized sub-contractor.

5.3.10 Refer to the Electrical Engineers documentation for emergency lighting requirements and provisions.

Lighting Fixture Specifications

6. GENERAL KEYNOTES

REMARKS	DESCRIPTION
1	Manufacturer/Supplier must comply with Within Light Studio lighting specifications.
2	Compatibility of dimmable driver with lighting control system to be verified by installing electrical contractor/ electrical engineer.
3	Remote driver to be located in dry accessible area.
4	Lighting Fixture to be UL listed and to meet all local code requirements.
5	Final linear lengths and power feed location to be verified by electrical contractor/ electrical engineer.
6	Contractor to provide all connectors, hardware and accessories for a complete and working system.
7	Finish to be confirmed with Interior Designer/ Architect.
8	Contractor to verify ceiling thickness, housing and mounting accessory requirements.
9	Decorative fixture plug to be compatible with US outlets.
10	Refer to Interior Designer specification package.

Architectural Lighting Fixture Schedule

FIXTURE TYPE	MANUFACTURER INFO	DESCRIPTION	LAMPING	REMARKS Refer to Section 6.0
LA-X	MANUFACTURER: Solais Lighting NAME: Stretta ST2Arm CODE: ST2ARM-R1(*8)-BA-PW(*7)-FL-H-27-700-UNV-NCH-HL CONTACT: Samantha Graziano A+M (Archibald & Meek) 537 W. Wrightwood Avenue Elmhurst, IL 60126 T: 773-302-6679 E: sgraziano@amirep.com	DESCRIPTION: Recessed mounted (in ceiling) adjustable LED round downlight, 360° horizontal and 40° vertical adjustability. LOCATION: Restaurant Entrance FINISH: White*7 CONTROL: 0-10v dimmable to 0.1% DRIVER: Integral ACCESSORIES: Honeycomb Louver	LAMP: LED Integral WATTS: 8 W VOLTS: 120 V LUMENS: 700 lm CCT: 2700K CRI: 98+ CRI OPTICS: 36° beam angle IP: IP 20	Remark # 1, 2, 4, 6, *7, *8
LA-1-X	MANUFACTURER: Solais Lighting NAME: Stretta ST2Arm CODE: ST2ARM-R1(*8)-BA-PW(*7)-WFL-H-27-700-UNV-NCH-HL CONTACT: Samantha Graziano A+M (Archibald & Meek) 537 W. Wrightwood Avenue Elmhurst, IL 60126 T: 773-302-6679 E: sgraziano@amirep.com	DESCRIPTION: Same as fixture type LA except beam angle to be different. LOCATION: Lobby and Restaurant Entrance FINISH: White*7 CONTROL: 0-10v dimmable to 0.1% DRIVER: Integral ACCESSORIES: Honeycomb Louver	LAMP: LED Integral WATTS: 8 W VOLTS: 120 V LUMENS: 700 lm CCT: 2700K CRI: 98+ CRI OPTICS: 55° beam angle IP: IP 20	Remark # 1, 2, 4, 6, *7, *8
LB-X	MANUFACTURER: Lucent Light NAME: In Wall 40 CODE: AIW40-27-(Finish*7)-LP CONTACT: David Martin Western Lighting 626-298-2501 david@westernecs.com	DESCRIPTION: Recessed in wall round step light. LOCATION: Restaurant Entrance and Waking Path FINISH: TBD CONTROL: Phase with 0.1% dimming DRIVER: Remote ACCESSORIES: TBD	LAMP: LED Integral WATTS: 2.6 w VOLTS: 3 v LUMENS: 30 lm CCT: 2700 K CRI: 90 CRI OPTICS: TBD° optic IP: IP 66	Remark # 1, 2, 3, 4, *7,
LC_X	MANUFACTURER: FX Luminaire NAME: Modern CODE: MP-30 CONTACT: FX Luminaire - USA Headquarters Tel: (1) 760-744-5240 Fax: (1) 760-744-7461 1940 Diamond Street San Marcos, CA 92078	DESCRIPTION: L shaped bollard. 20.2" tall LOCATION: Restaurant Entrance FINISH: TBD CONTROL: Phase with 1% dimming DRIVER: Integral ACCESSORIES: N/A	LAMP: LED Integral WATTS: 2.2 w VOLTS: UNV LUMENS: 60 lm CCT: 2700 K CRI: 85+ CRI OPTICS: TBD° optic IP: IP 67	Remark # 1, 2, 4, 7,
LD-X	MANUFACTURER: DMF Lighting NAME: X Series CODE: XCS-R-6-S-D-07-WF-H-27-BK*7-T-00-S CONTACT: PG Enlighten Jim Sychta 500 Quail Ridge Dr Westmont, IL 60559 847-228-1199	DESCRIPTION: Surface mounted (in ceiling) LED round 3" diameter cylinder downlight. LOCATION: Restaurant Terrace FINISH: BLACK *7 CONTROL: Phase with 1% dimming DRIVER: Integral ACCESSORIES: N/A	LAMP: LED Integral WATTS: 9.5 W VOLTS: 120 v LUMENS: 750 lm CCT: 2700 K CRI: 90+ CRI OPTICS: 50° optic IP: Damp	Remark # 1, 2, 4, 6, *7

Architectural Lighting Fixture Schedule

FIXTURE TYPE	MANUFACTURER INFO	DESCRIPTION	LAMPING	REMARKS Refer to Section 6.0
LE-X	MANUFACTURER: LLI Lighting NAME: Tight Pitch 0.75W LED Tapelight - IP65 CODE: LLI-LTP0.75W-65-27K-24V-90-TBD(*5)-TBD(*5)-TBD(*5) Channel: LLI-XS-THIN-SA-F-TBD(*5) CONTACT: Elaine Kilburg KSA Lighting + Controls 150 E. Pierce Rd. #650 Itasca, IL 60143-1222 312-659-1515 ksalighting.com	DESCRIPTION: Surface mounted LED tapelight with aluminum channel, frosted lens and remote dimmable driver. LOCATION: Parking Lot and Pergolas FINISH: N/A CONTROL: 0-10v with 1% dimming DRIVER: Remote ACCESSORIES: Aluminum Mounting Channel, Mounting clip & End Cap	LAMP: LED Integral WATTS: 0.75 W per ft VOLTS: 24 V LUMENS: 75 lm / ft CCT: 2700K CRI: 90+ CRI OPTICS: Frosted optic IP: IP 65	Remark # 1, 2, 3, 4, *5, 6
LF-X	MANUFACTURER: DMF Lighting NAME: X Series CODE: XCW-R-6-W-D-07-WF-H-00-00-27-BK*7-T-00-S CONTACT: PG Enlighten Jim Sychta 500 Quail Ridge Dr Westmont, IL 60559 847-228-1199	DESCRIPTION: Wall mounted LED round 3" diameter cylinder downlight. LOCATION: Parking Lot FINISH: BLACK *7 CONTROL: 0-10v with 1% dimming DRIVER: Integral ACCESSORIES: N/A	LAMP: LED Integral WATTS: 9.5 W VOLTS: 120 v LUMENS: 750 lm CCT: 2700 K CRI: 90+ CRI OPTICS: 50° optic IP: IP 65	Remark # 1, 2, 4, 6, *7
LF-1-X	MANUFACTURER: DMF Lighting NAME: X Series CODE: XCW-R-6-W-D-07-NS-H-00-00-27-BK*7-T-00-W CONTACT: PG Enlighten Jim Sychta 500 Quail Ridge Dr Westmont, IL 60559 847-228-1199	DESCRIPTION: Wall mounted LED round 3" diameter cylinder downlight. LOCATION: Parking Lot FINISH: BLACK *7 CONTROL: 0-10v with 1% dimming DRIVER: Integral ACCESSORIES: N/A	LAMP: LED Integral WATTS: 9.5 W VOLTS: 120 v LUMENS: 750 lm CCT: 2700 K CRI: 90+ CRI OPTICS: 20° Wall Washer optic IP: IP 65	Remark # 1, 2, 4, 6, *7
LG-X	MANUFACTURER: FX Luminaire NAME: Evo Petite Path Light CODE: EP-31-E2W-12R-X-BC CONTACT: Central Turf & Irrigation Supply 914-347-5166 5 Nepperhan Avenue Elmsford, 10523	DESCRIPTION: Mushroom shaped bollard. 15.2" tall LOCATION: Outdoor Event FINISH: BLACK *7 CONTROL: Phase with 1% dimming DRIVER: Integral ACCESSORIES: Long Slot Spike	LAMP: LED G4 lamp WATTS: 2.6 w VOLTS: UNV LUMENS: 125 lm CCT: 2700 K CRI: 82+ CRI OPTICS: TBD° optic IP: IP 65	Remark # 1, 2, 4, 7,
LH-X	MANUFACTURER: BK Lighting NAME: Denali Staff star style 'L' LED CODE: SF-24"-L-DE-LED-x67-FL-(Finish*7)-13-11-90-(basemounting) CONTACT: Chicago Lightworks Bryan Terrell 505 Warrenville Rd #101 Lisle, IL 60532	DESCRIPTION: L shaped bollard with adjustable accent head. LOCATION: Pedestrian pathway FINISH: TBD CONTROL: 0-10v with 0.1% dimming DRIVER: Integral ACCESSORIES: Long Slot Spike	LAMP: LED Integral WATTS: 27 w VOLTS: 120 v LUMENS: 139 lm CCT: 2700 K CRI: 90 CRI OPTICS: 35° optic IP: 66	Remark # 1, 2, 4, *7,
LJ-X	MANUFACTURER: Kalco Lighting NAME: Drew short ADA LED wall Sconce. CODE: 720062449127 CONTACT: Kalco Lighting 6355 S Windy Road Las Vegas, NV 89119 800-525-2655 customer.services@kalco.com	DESCRIPTION: Wall mounted LED 5" height decorative wall sconce. LOCATION: Pedestrian pathway FINISH: Matte Black*7 CONTROL: 0-10v with 0.1% dimming DRIVER: Integral ACCESSORIES: NA	LAMP: LED Integral WATTS: 5.5 w VOLTS: 120 v LUMENS: 800 lm CCT: 3000 K CRI: 90 CRI OPTICS: General optic IP: Wet rated	Remark # 1, 2, 4, *7,



SPECIFICATION CODE

PROJECT _____ TYPE _____

SPECIFIER _____ MEMO _____

ORDERING CODE BREAKDOWN _____

ST2Arm

REMODEL | NEW CONSTRUCTION
STRETTA ADJUSTABLE 2" DOWNLIGHT

MAIN FEATURES

- Designed for remodel installation; new construction tray and Chicago plenum/airtight housing optional
- 95 CRI Standard; 98+ CRI option available
- Delivering up to 900 lumens at 3000K, 95 CRI and 10W
- 40° tilt and 360° rotation for optimal adjustability
- Solais' proprietary driver technology delivers smooth, flicker-free dimming (per IEEE 1789-2015) to 1% via phase-cut or 0-10V
- Custom TIR optic platform to ensure smooth beams and excellent light control with no need for a solite lens
- Modular platform with easy maintenance for individual components
- Fixture accommodates up to 2 accessories. (1 per module and trim)



Round and square with beveled flange shown above.



/ / / TBD*7/ / / / / - -

FIXTURE	COLLAR	TRIM	TRIM FINISH	BEAM SPREAD	CRI	CCT	LUMENS	POWER SUPPLY	INSTALLATION	FIXTURE OPTIONS	OPTIONS
ST2ARM	R1 : Round; 0.5"-0.75"	BD : Beveled Down Flanged	PW : Perfect White	NSP ¹² : 13°	9 : 95 CRI	22 ³ : 2200K	700 : 8W	UNV : 120-277V 1% Phase-cut and 0-10V	NCT : New Construction Tray	CASPC : Casambi Wireless Phase-cut Node	Module Options (1 max)
	R2 : Round; 0.75"-1.38"	BDM : Beveled Down Microflange	BK : Black	NFL : 22°	H : 98+ CRI	25 ³ : 2500K	900 : 10W		NCC : New Construction Tray with Commercial Hanging Brackets with Vertical Adjustment	CAS10 : Casambi Wireless 0-10V Node	HL : Honeycomb Louver
	S1 : Square; 0.5"-0.75"	BDT : Beveled Down Flangeless	BR : Bronze	FL : 36°	D ² : Dim-to-Warm	27 : 2700K		UDA : 120-277V 0.1% Logarithmic DALI-2 D4i		CAS : Casambi Wireless DALI-2 Node	LS : Linear Spread Lens
	S2 : Square; 0.75"-1.38"	BA : Beveled Adjustable Flanged	SV : Silver	WFL : 55°		30 : 3000K			NCH : New Construction CP/IC Housing	AWN : Lutron Athena Wireless DALI-2 Node	Trim Options (1 max)
		BAM : Beveled Adjustable Microflange				35 : 3500K			RM : Remodel Floating J-box	LEV : Leviton Intellect DALI-2 Node	ST : Solite Lens
		BAT : Beveled Adjustable Flangeless				40 : 4000K				WAT : Wattstopper/Encelium Wireless DALI-2 Node	CT : Clear Lens
		FD : Flat Pinhole Down Flanged				50 : 5000K				EM : 10W Integrated Emergency Battery Backup	LT : Linear Spread Lens
		FDM : Flat Pinhole Down Microflange									WT : Wide Flood Lens
		FDT : Flat Pinhole Down Flangeless									
		BW : Beveled WW Flanged									
		BWM : Beveled WW Microflange									
		BWT : Beveled WW Flangeless									

Notes: ¹NSP options are 90+ CRI when selecting '9'
²Dim to Warm is 98+ CRI, 3000K to 1800K; Unavailable with NSP
³2200K, 2500K are only available with '9' and are 90+ CRI
 Solais recommends no lens on trim for best performance
 Collar color will be matched to trim finish selection



SPECIFICATION CODE

PROJECT _____ TYPE _____

SPECIFIER _____ MEMO _____

ORDERING CODE BREAKDOWN _____

ST2Arm

REMODEL | NEW CONSTRUCTION
STRETTA ADJUSTABLE 2" DOWNLIGHT

MAIN FEATURES

- Designed for remodel installation; new construction tray and Chicago plenum/airtight housing optional
- 95 CRI Standard; 98+ CRI option available
- Delivering up to 900 lumens at 3000K, 95 CRI and 10W
- 40° tilt and 360° rotation for optimal adjustability
- Solais' proprietary driver technology delivers smooth, flicker-free dimming (per IEEE 1789-2015) to 1% via phase-cut or 0-10V
- Custom TIR optic platform to ensure smooth beams and excellent light control with no need for a solite lens
- Modular platform with easy maintenance for individual components
- Fixture accommodates up to 2 accessories. (1 per module and trim)



Round and square with beveled flange shown above.



/ / / TBD*7/ / / / / - -

FIXTURE	COLLAR	TRIM	TRIM FINISH	BEAM SPREAD	CRI	CCT	LUMENS	POWER SUPPLY	INSTALLATION	FIXTURE OPTIONS	OPTIONS
ST2ARM	R1 : Round; 0.5"-0.75"	BD : Beveled Down Flanged	PW : Perfect White	NSP ¹² : 13°	9 : 95 CRI	22 ³ : 2200K	700 : 8W	UNV : 120-277V 1% Phase-cut and 0-10V	NCT : New Construction Tray	CASPC : Casambi Wireless Phase-cut Node	Module Options (1 max)
	R2 : Round; 0.75"-1.38"	BDM : Beveled Down Microflange	BK : Black	NFL : 22°	H : 98+ CRI	25 ³ : 2500K	900 : 10W		NCC : New Construction Tray with Commercial Hanging Brackets with Vertical Adjustment	CAS10 : Casambi Wireless 0-10V Node	HL : Honeycomb Louver
	S1 : Square; 0.5"-0.75"	BDT : Beveled Down Flangeless	BR : Bronze	FL : 36°	D ² : Dim-to-Warm	27 : 2700K		UDA : 120-277V 0.1% Logarithmic DALI-2 D4i		CAS : Casambi Wireless DALI-2 Node	LS : Linear Spread Lens
	S2 : Square; 0.75"-1.38"	BA : Beveled Adjustable Flanged	SV : Silver	WFL : 55°		30 : 3000K			NCH : New Construction CP/IC Housing	AWN : Lutron Athena Wireless DALI-2 Node	Trim Options (1 max)
		BAM : Beveled Adjustable Microflange				35 : 3500K			RM : Remodel Floating J-box	LEV : Leviton Intellect DALI-2 Node	ST : Solite Lens
		BAT : Beveled Adjustable Flangeless				40 : 4000K				WAT : Wattstopper/ Encelium Wireless DALI-2 Node	CT : Clear Lens
		FD : Flat Pinhole Down Flanged				50 : 5000K				EM : 10W Integrated Emergency Battery Backup	LT : Linear Spread Lens
		FDM : Flat Pinhole Down Microflange									WT : Wide Flood Lens
		FDT : Flat Pinhole Down Flangeless									
		BW : Beveled WW Flanged									
		BWM : Beveled WW Microflange									
		BWT : Beveled WW Flangeless									

Notes: ¹NSP options are 90+ CRI when selecting '9'
²Dim to Warm is 98+ CRI, 3000K to 1800K; Unavailable with NSP
³2200K, 2500K are only available with '9' and are 90+ CRI
 Solais recommends no lens on trim for best performance
 Collar color will be matched to trim finish selection



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Stretta
rev 04/2025

North America

lucent®

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InWall40



InWall provides fully recessed wall light for interior and exterior installation. InWall products are Wet rated and include round and square variants. Springs for hollow wall and tube for solid surfaces installation available. Available in 3 color temperatures. TRIAC/Phase, 0-10V/1-10V, DMX and DALI/digital dimming.

Project Ref: _____ Location Ref: _____

Specify fixture part number (All boxes must be filled in to correctly order)

AIW40 TBD*7

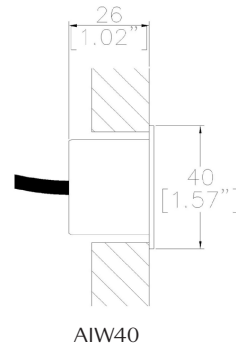
- CCT
- 27 2700K
 - 30 3000K
 - 40 4000K

- Finish
- BSS Brushed Stainless Steel
 - PSS Polished Stainless Steel
 - BRZ Flamed Bronze
 - ABZ Antique Bronze (Interior Only)
 - ASV Matt Silver (Interior Only)
 - ABK Matt Black
 - WH Matt RAL9016 White

- Dimming Protocol^
- S Non-Dimmable
 - P TRIAC/Phase (120V ONLY) (25-10% Minimum Dimming)***
 - LP Lutron Forward Phase 2-Wire (1% Dimming) (120V ONLY)
 - ESS EcoSystem 5-Series (5% Dimming)
 - LHE EcoSystem Hi-Lume Fade to Black (1% Dimming)
 - LAE Lutron 3-Wire Hi-Lume (1% Dimming)
 - LHP Lutron Hi-Lume Premier EcoSystem (0.1% Dimming)
 - A 0-10V (15-5% Minimum Dimming)***
 - ESD EldoLED Solo DALI2 (0.1% Dimming)
 - EED EldoLED Eco DALI2 (1% Dimming)
 - ESA EldoLED Solo 0-10V/1-10V (0.1% Dimming)
 - EEA EldoLED Eco 0-10V/1-10V (1% Dimming)
 - B Bluetooth**

- Accessories
- XX Not required
 - TH381 IP68/Wet Connector

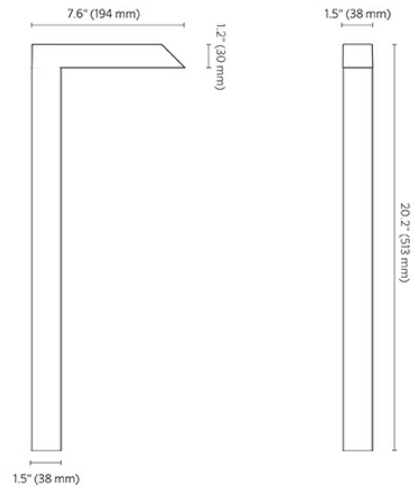
- Installation Methods
- IW40-90-SPRING Springs for Hollow Walls
 - IW40-TUBE Indoor Tube
 - IW40-CONDUIT Conduit Box



FXLuminaire

Modern™ MP-30 and MP-31

PATH LIGHT



Modern™ MP-30 and MP-31 SPECIFICATIONS

Model	MP-30	MP-31	
Light Source	PowerBoard™ Integrated LEDs	G4 LED Lamp	
Power	1LED	ZDC	E2
Total Lumens (lm)	60	40-85	50
Input Voltage (V)	10-15	11-15	10-15
Power Consumption (VA)	2.2	4.3	1.3
Efficacy (lm/W)	30.0	13.0	44.9
Color Temperature (CCT)	2700K 3000K 585-595 nm	-	2700K 3000K
Color Rendering Index (CRI)	85+	-	84+
Maximum Candela (cd)	30	30	25
Luxor® Compatibility			
Powerline Zoning (Z)	Included	Included	-
Smooth PWM Dimming (D)	Included	Included	-
RGBW Color-Changing (C)	-	Included	-
Minimum Rated Life (L70/B10)	72,000 Hrs	55,000 Hrs	33,000 Hrs

LANDSCAPE AND ARCHITECTURAL LIGHTING

Learn more. Visit: fxl.com | +1 760-744-5240

X Series

Project:	Type:
Product Code:	Date:

V021725



3" Surface Mount Cylinder

- Versatile, small diameter surface mount cylinder
- Installs Directly to a surface or recessed mounted junction box, ideal for areas with limited ceiling height & plenum space restrictions
- Wet Listed & IP65 rated

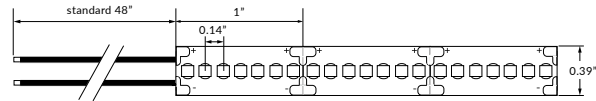
PRODUCT BUILDER

CYLINDER	<input type="text" value="XCS"/>	XCS Surface Mount Cylinder
SHAPE	<input type="text" value="R"/>	R Round
SIZE	<input type="text" value="6"/>	6 6.5 Inch 9 9 Inch
CANOPY	<input type="text" value="S"/>	S Standard F Flangeless ¹
LIGHT OPTIONS	<input type="text" value="D"/>	D Downlight A Adjustable ²
LUMENS DOWN	<input type="text" value="07"/>	07 750 lm 10 1000 lm 12 1250 lm ³ 15 1500 lm ³
BEAM SPREAD DOWN	<input type="text" value="NS"/>	NS Narrow Spot (20°) SP Spot (30°) FL Flood (40°) WF Wide Flood (50°) ³
SPECIALTY LENS	<input type="text" value="0"/>	0 None H Hex Louver ^{2,5}
CCT	<input type="text" value="27"/>	27 2700K ⁶ 30 3000K ⁶ 35 3500K 40 4000K
		3W Warm Dim ^{4,6} T1 Tunable White ⁷ (4000K-1800K) T2 Tunable White ⁷ (6500K-2700K)
FINISH ⁸ TBD*7	<input type="text" value="WH"/>	WH White BK Black BA Brushed Aluminum
		BZ Bronze CC Custom Color
DIMMING	<input type="text" value="0"/>	0 0-10V T TRIAC/ELV D DALI-2 ⁹
EMERGENCY	<input type="text" value="00"/>	00 None
TRIM	<input type="text" value="S"/>	S Standard N Snoot ³ (Black Only) W Wall Wash ³
		O Decorative: Open ³ Y Decorative: Hyperbolic ³ F Decorative: Float ³



PROJECT _____ SPECIFIER _____
 SKU _____
 QUANTITY _____ DATE _____

TIGHT PITCH 0.75W LED TAPELIGHT - IP65

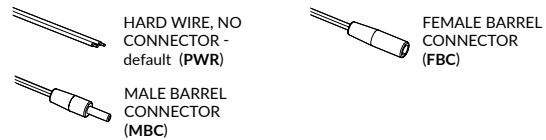


TECHNICAL INFORMATION

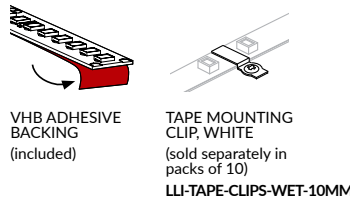
NOTE: All data has +/- 5% tolerance.

WATTAGE	0.75W per foot
IP RATING	IP65 - wet locations. Not suitable for submersion, limited protection against harsh environments.
OUTPUT	2200K - 71 lm/ft 2700K - 75 lm/ft 3000K - 78 lm/ft 3500K - 82 lm/ft 4200K - 87 lm/ft 5200K - 91 lm/ft
INPUT VOLTAGE	24VDC
OPERATING TEMP.	-13° to 140° F
CRI	90+
CUT LENGTH	Every 1", or every 7 LEDs
MAXIMUM RUN	26 feet
DIMENSIONS	0.4" W x 0.11" H (10mm x 2.8mm)
ADHESIVE BACKING	Yes - VHB
LIFESPAN	50,000 hrs
WARRANTY	3 year limited
POWER SUPPLY	Compatible with all 24VDC power supplies -- see page 4

LEAD TYPES



MOUNTING



EXTRUSIONS



ORDERING GUIDE

← PRODUCT CODE						OPTIONAL CODE →	
SERIES	IP RATING	COLOR	VOLTAGE	CRI	LENGTH	POWER FEED	
LLI-LTP0.75W	65	27K (75 lm/ft) 22K (71 lm/ft) 30K (78 lm/ft) 35K (82 lm/ft) 42K (87 lm/ft) 52K (91 lm/ft)	24V	90	TBD*5 <small>(enter length in inches, up to 312")</small>	LEAD TYPE	LEAD LENGTH
						TBD*5	TBD*5
						Default [blank] - 48" hard wire end feed (PWR48)	
						PWR	Enter desired wire length in inches
						MBC	Male barrel connector
						FBC	Female barrel connector
						N/A	No lead attached
Example part number: LLI-LTP0.75W-65-35K-24V-90-96in Default 48in power wire (PWR48) included on all custom lengths. Use OPTIONAL section to specify other power feed(s).						*Compatible with DIY connectors, see page 2	

X Series

Project:	Type:
Product Code:	Date:

V021725



3" Wall Mount Cylinder

- Versatile, small diameter cylinder family
- Robust machined aluminum construction
- Wet Listed options for exterior locations

PRODUCT BUILDER

CYLINDER	<input type="text" value="XCW"/>	XCW Wall Mount Cylinder			
SHAPE	<input type="text" value="R"/>	R Round			
SIZE	<input type="text" value="6"/>	6 6.5 Inch	9 9 Inch		
BRACKET	<input type="text" value="W"/>	W Standard (Wet) <input type="radio"/>	S Slim (Damp) ¹ <input type="radio"/>		
LIGHT OPTIONS	<input type="text" value="D"/>	D Downlight <input type="radio"/>	A Adjustable ² <input type="radio"/>		
LUMENS DOWN	<input type="text" value="07"/>	07 750 lm	10 1000 lm	12 1250 lm ³	15 1500 lm ³
BEAM SPREAD DOWN	<input type="text" value="NS"/>	NS Narrow Spot (20°)	SP Spot (30°)	FL Flood (40°)	WF Wide Flood (50°) ³
SPECIALTY LENS	<input type="text" value="0"/>	0 None	H Hex Louver ⁴ <input type="radio"/>		
LUMENS UP ^{3,5}	<input type="text" value="00"/>	00 None	07 750 lm	10 1000 lm	12 1250 lm
BEAM SPREAD UP ^{3,5}	<input type="text" value="00"/>	00 None	SP Spot (25°)	FL Flood (40°)	WF Wide Flood (60°)
CCT	<input type="text" value="27"/>	27 2700K	30 3000K	35 3500K	40 4000K
FINISH ⁸ TBD*7	<input type="text" value=""/>	WH White <input type="radio"/>	BK Black <input type="radio"/>	BA Brushed Aluminum <input type="radio"/>	
		BZ Bronze <input type="radio"/>	CC Custom Color <input type="radio"/>		
DIMMING	<input type="text" value="0"/>	0 0-10V	T TRIAC/ELV <input type="radio"/>	D DALI-2 ^{9,10} <input type="radio"/>	
EMERGENCY	<input type="text" value="00"/>	00 None			
TRIM DOWN	<input type="text" value="S"/>	S Standard <input type="radio"/>	N Snoot (Black Only) <input type="radio"/>	W Wall Wash ^{9,10} <input type="radio"/>	
		O Decorative: Open ³ <input type="radio"/>	Y Decorative: Hyperbolic ³ <input type="radio"/>	F Decorative: Float ³ <input type="radio"/>	
TRIM UP ³	<input type="text" value=""/>	[Blank] N/A <input type="radio"/>	S Standard <input type="radio"/>	N Snoot ¹¹ (Black Only) <input type="radio"/>	
		O Decorative: Open ¹¹ <input type="radio"/>	Y Decorative: Hyperbolic ¹¹ <input type="radio"/>	F Decorative: Float ¹¹ <input type="radio"/>	

X Series

Project:	Type:
Product Code:	Date:

V021725



3" Wall Mount Cylinder

- Versatile, small diameter cylinder family
- Robust machined aluminum construction
- Wet Listed options for exterior locations

PRODUCT BUILDER

CYLINDER	<input type="text" value="XCW"/>	XCW Wall Mount Cylinder			
SHAPE	<input type="text" value="R"/>	R Round			
SIZE	<input type="text" value="6"/>	6 6.5 Inch	9 9 Inch		
BRACKET	<input type="text" value="W"/>	W Standard (Wet) <input type="radio"/>	S Slim (Damp) ¹		
LIGHT OPTIONS	<input type="text" value="D"/>	D Downlight <input type="radio"/>	A Adjustable ²		
LUMENS DOWN	<input type="text" value="07"/>	07 750 lm	10 1000 lm	12 1250 lm ³	15 1500 lm ³
BEAM SPREAD DOWN	<input type="text" value="NS"/>	NS Narrow Spot (20°)	SP Spot (30°)	FL Flood (40°)	WF Wide Flood (50°) ³
SPECIALTY LENS	<input type="text" value="0"/>	0 None	H Hex Louver ⁴		
LUMENS UP ^{3,5}	<input type="text" value="00"/>	00 None	07 750 lm	10 1000 lm	12 1250 lm
BEAM SPREAD UP ^{3,5}	<input type="text" value="00"/>	00 None	SP Spot (25°)	FL Flood (40°)	WF Wide Flood (60°)
CCT	<input type="text" value="27"/>	27 2700K	30 3000K	35 3500K	40 4000K
FINISH ⁸ TBD*7	<input type="text" value=""/>	WH White <input type="radio"/>	BK Black <input type="radio"/>	BA Brushed Aluminum <input type="radio"/>	
		BZ Bronze <input type="radio"/>	CC Custom Color <input type="radio"/>		
DIMMING	<input type="text" value="0"/>	0 0-10V	T TRIAC/ELV	D DALI-2 ^{9,10}	
EMERGENCY	<input type="text" value="00"/>	00 None			
TRIM DOWN	<input type="text" value=""/>	S Standard	N Snoot (Black Only)	W Wall Wash ^{9,10}	
		O Decorative: Open ³	Y Decorative: Hyperbolic ³	F Decorative: Float ³	
TRIM UP ³	<input type="text" value=""/>	[Blank] N/A <input type="radio"/>	S Standard <input type="radio"/>	N Snoot ¹¹ (Black Only)	
		O Decorative: Open ¹¹	Y Decorative: Hyperbolic ¹¹	F Decorative: Float ¹¹	

FXLuminaire

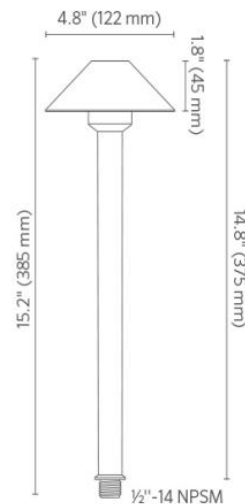
EVO™ EP-31 Petite Path Light



PROJECT
CATALOG #
TYPE
NOTES

Ideal for any path or area lighting project, the 15" (387 mm) Evo™ EP-31 Petite Path Light features a small footprint along with a globe-style lens and built-in shade reflector for optimum lumen output. It also includes a 12" (305 mm) riser, a 5" (127 mm) diameter top hat/shade, and a nitrile O-ring for exceptional weatherproof sealing.

As part of the Evo Collection™, this injection-molded fixture reduces environmental impact with recycled composite construction build while offering a lower-cost option that doesn't sacrifice on design or output. Developed for simplicity, it comes with a G4 LED Lamp and is available in a black finish that blends into the landscape.



EVO™ EP-31 Petite Path Light ORDERING INFORMATION

Fixture	Power	Riser Height	Compliance	Finish
EP-31	E2W 1.3 VA, 2700K G4 lamp (20 W equivalent lamp)	12R	[default] North America (UL Listed)	BC Black Composite
			E International (CE Certified)	

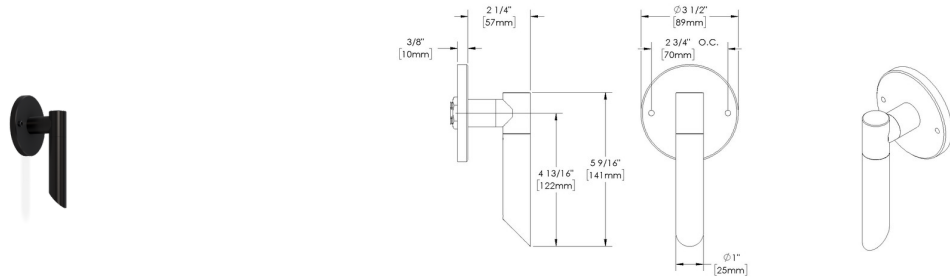
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EXAMPLE FIXTURE CONFIGURATION: EP-31-E3W-X-BC

MINI MICRO - Wall Mount - Low Voltage Driver - LED High-Power - Single - Downlight or Uplight - Symmetrical Optics
MINI MICRO - Wall Mount - Low Voltage Driver - LED High-Power - Aluminum - Surface Mount - Cap A - Single - Downlight or Uplight - Symmetrical Optics

Date Project Type Page: 1 of 5

UPGRADED



Configure

WARNING: This is a low voltage driver product. Please check "Mountings With A Power Supply" or "Power Supplies" to order remote transformer separately.

Catalog Number Logic

MM-WM-LOD-LHP-AL-SM-CA-DS-OSYM- _ _ _ _ -WL00- _ _

Light Source	Optic	Lens	Shielding
<p>[e70] 2700K CRI80 - 3W - LED High-Power 139 - 167 lumens</p> <p>[e71] 3000K CRI80 - 3W - LED High-Power 146 - 146 lumens</p> <p>[e72] 4000K CRI80 - 3W - LED High-Power 164 - 197 lumens</p> <p>[e73] Amber - 3W - LED High-Power - lumens</p>	<p>[e85] 2700K CRI90 - 3W - LED High-Power - lumens</p> <p>[e86] 3000K CRI90 - 3W - LED High-Power - lumens</p> <p>[e87] 3500K CRI80 - 3W - LED High-Power - lumens</p>	<p>[SP] Spot (15 - 24°)</p> <p>[SP2] Spot (15 - 24°)</p> <p>[NFL] Narrow Flood (25 - 29°)</p>	<p>[12] Soft Focus</p> <p>[13] Rectilinear</p> <p>[00] Not included (Standard)</p> <p>[11] Honeycomb Baffle</p>

B-K LIGHTING AMERICAN MADE + EMPLOYEE OWNED | 40429 Brickyard Drive, Madera, CA 93636 | +1 (559) 438-5800 | info@bklighting.com | bklighting.com

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Updated 07/09/2025

DREW SHORT ADA LED WALL SCONCE

SKU: 404921MB



Product Details

Description:

Inspired by industrial cooling fins, the Matte Black (MB) Drew Outdoor Collection radiates light from driverless LEDs. An unassuming frame offers stark contrast from day to night, and the single light version can be oriented for Dark Sky applications.

Additional Information	
Collection Name	Drew
UPC Code	720062449127
Design Style	Casual Luxury
Finish	Matte Black
Construction Material	Stainless Steel

Hanging Weight	2 Lbs.
Dimensions (in)	W: 5 H: 12 L: 4 E: 4
Mounting Plate Dimensions (in)	W: 5 H: 5 L: 1
Wire Length	7
Lamping	Integrated LED
Watts/Kelvins/CRI/Lumens	5.5W / 3000K/90CRI/800LM
Bulb Type	Integrated LED
Bulbs Included	Yes
Dimmable	Yes
Dimmer Type	Refer to bulb manufacturer for comp
Assembly Required	Partial
Safety Rating	WET
Rating Location	UL-cUL
Lead Time	2

Truckee Railyard Hotel

Truckee, CA

LIGHTING CONTROL SPECIFICATIONS

Entitlement_Rev.02

May 11, 2026



43-01 21st Street STE 326A
Long Island City, NY 11101
Tels: 312.662.3215 / 607.342.2736
hello@within-light.com / within-light.com

1. OUTLINE OF OPERATION

1.1 Public Area Control.

1.1.1 The lighting management system (LMS) controls all of the interior public area lighting within the front of house space. Components may include:

- Control Processor With Timeclock
- Dimming Control Modules
- Switching Control Modules
- Emergency Lighting Control Panel
- Window Treatment Control
- Interface With A/V Equipment
- Interface With Building Management System

1.1.2 The LMS can interface directly with the Building Management system.

1.1.3 The lighting management system (LMS) controls all of the exterior lighting (building & landscape). Pre-programmed lighting scenes to be triggered via timeclock events linked to the sunrise/sunset times of the location.

1.2 Guest room Control (where applicable).

1.2.1 The guest room lighting control system is a component of the overall Room Management System (RMS). The RMS is a networked system to monitor and control all functions within the guest room. Components may include:

- Lighting
- HVAC
- A/V
- Window Treatment
- Occupancy Sensor
- Communication with building management system

1.2.2 The RMS can interface directly with the hotel building management system to alert hotel staff regarding room occupancy and guest requirements.

1.2.3 The RMS manufacturer may include the guest room lighting control system or provide an interface to connect to a separate lighting control system from a different manufacturer.

2. TERMINOLOGY

2.1 Lighting Zones. A collection of individual lighting fixtures that should always be controlled together. A zone may contain multiple lighting circuits as per the electrical drawings

2.2 Lighting Scenes. Preprogrammed light levels for a selected group of lighting zones. Scenes can be triggered by timeclock events or manually at keypads.

2.3 Keypads. Control wall stations that communicate with the control panel to trigger programmed scenes.

2.4 Control Panel. Unit containing the control modules and mounting racks as well as the control processor.

3. GENERAL SYSTEM SPECIFICATION

3.1 Intelligent Control

3.1.1 The Manufacturer shall provide a control processor with fully sufficient hardware and software to setup, program and maintain the lighting control system. The software should come preloaded with all project information and the necessary connection cables/leads.

3.1.2 The manufacturer shall ensure that all devices supplied with this contract shall be addressable via the software

3.1.3 The Manufacturer shall ensure this system is fully operational and shall integrate as required with other building/room functions. Refer to electrical engineering documentation for further information.

3.2 Memory Scene Controllers

3.2.1 The control modules specified shall be controlled by one or more microprocessor based memory scene controllers which shall provide all of the following facilities:

3.2.2 The Memory Scene Controller shall be capable of storing, and fade processing on command the required lighting scenes, over the number of zones.

3.2.3 The assignment of levels for any or all control zones in each scene, and all other assignable parameters shall be via the control panel and a hand-held programming device.

3.2.4 All final setting up of the lighting scenes will be conducted in the presence of the Lighting Designer over a minimum period of one (1) day. The system employed for all programming shall be made available to the Lighting Designer at no cost with a commissioning engineer from the Manufacturer in attendance to program and demonstrate the scenes to the Lighting Designer and the Client's satisfaction.

3.2.5 All data programmed within the system shall be stored in non-volatile memory and shall be secure for a minimum of one (1) month on power failure and shall not be affected by power failure or normal system operations.

3.2.6 The system will provide a "hard copy" of the programmed memory, which can be removed and retained. This hard copy will allow the system to easily re-programmed should the system memory become corrupted or destroyed.

3.4 Control Panel

- 3.4.1 The control modules shall be able to accommodate the stated load types and functions (dim, switch, etc.) as identified within the control zone schedule. The supplier shall propose the installation arrangements of dimmer modules for approval by the Lighting Designer and Electrical Engineer.
- 3.4.2 The control panel should have data port for programming via external device and push button with touch screen for on board programming.
- 3.4.3 A number of control zones may require more than one dimmer module to handle the electrical load. The Manufacturer shall provide a breakdown schedule of dimmer module configurations for each control zone within the specification they provide. This documentation shall be permanently displayed adjacent to the relevant dimmer modules and shall also be incorporated into the system manual.
- 3.4.4 The control module racks shall be supplied fully wired and suitably labeled by permanent means. Final load circuits shall be labeled in accordance with the final load circuit designation as detailed in the Electrical Engineers contract documents.
- 3.4.5 Final control module specification to be coordinated with the Electrical Engineer.

3.5 Keypads

- 3.5.1 Keypads shall be provided and located as indicated on the lighting plans.
- 3.5.2 Keypads to communicate with the control processor to trigger scenes or functions as programmed. Operations shall be via programmable push buttons. If desired push buttons to be able to incorporate LED indication.
- 3.5.3 All keypads shall have removable metal or powder coated faceplate (final finish to be confirmed by Architect/Interior Designer prior to ordering) with permanent engraved labeling and facility for temporary labeling as required. Final labeling and mounting location of all panels to wall box. Final labeling and mounting location of all panels to be agreed with the Lighting Designer, Architect, and Interior Designer.
- 3.5.4 Should specific switch panels be required to accommodate additional control functions (i.e. non-lighting items, sound and/or DMX addressing), the Manufacturer shall ensure that the necessary protocols and control options are provided to fully integrate such items into the control scenes and panels as detailed in the Electrical Engineer's contract documents.
- 3.5.5 Local (in-line) switches or dimmer switches for table and floor lamps shall be provided as indicated in the lighting specifications. Such dimmers shall enable the local operation of each decorative item. Table and floor lamps shall be plugged/wired to such devices and designed in a manner to prevent removal from the room.

3.5.6 All local micro switches - door-operated controls shall be provided by the Electrical Contractor.

3.5.7 Unless otherwise noted, the entire lighting elements within the Front of House, including those controlled by micro switches in furniture, shall be linked to the lighting control system.

4. RELATED ISSUES

- 4.1 A single Manufacturer to form a complete, independent system shall supply all relevant items. In addition, the Manufacturer shall include any other items necessary in order to ensure the correct operation of the systems in accordance with the specification. The Manufacturer shall be responsible for ensuring that the switching/dimming modules used are suitable for controlling the loads as specified.
- 4.2 The system shall be capable of being expanded in terms of operational capacity via the addition of all necessary hardware and software enabling seamless operation and control of the expanded system, if so desired.
- 4.3 The Manufacturer shall provide an interface (if required) for the lighting control system to integrate with the specified Building Management System and Security System for this project. Refer to electrical and mechanical engineering drawings and specifications.
- 4.4 The Manufacturer shall verify that fluorescent dimmable ballasts, low voltage transformers, discharge lamp gears, LED drivers, and all other relevant control gear and modules specified for use on this project are suitable for use and will perform as required with the lighting control system.
- 4.5 Unless otherwise noted, lighting not controlled via this system shall be switched in a conventional manner using analogue switches or motion detectors. Refer to electrical engineering drawings and specifications.
- 4.6 The selected Manufacturer shall provide two (2) samples of all interface devices to the Architects/Interior Designers for approval and verification prior to commencement of manufacture.
- 4.7 The selected Manufacturer shall confirm all interconnecting cable requirements and suitability of cable routes with the Contractor. The Contractor shall provide shop drawings of all components, together with wiring schematics showing intended wiring routes through the building.
- 4.8 The Contractor shall confirm that the cable routes and equipment locations chosen shall not result in any adverse interference, which shall affect the operation of the lighting control system or of any other equipment or cables in the vicinity.
- 4.9 The Contractor shall seek confirmation of labeling for all keypads from the Architects/Interior Designers prior to manufacture and shall identify the required dates by which such information shall be provided to achieve the Construction Schedule and inform the Manufacturer.

5. COMMISSIONING, PROGRAMMING, & TRAINING

- 5.1 The Contractor shall supply one single volume within twenty (20) days of commissioning incorporating a full system operational description, all component specifications, scaled drawings for all devices, wiring schematics for installed cabling, manuals for each device, installation details, programming instructions and all safety advisories required under law or specified by the Manufacturer or installer.
- 5.2 The Manufacturer shall fully commission the lighting control system with the Contractor and demonstrate its correct operation, in accordance with this specification, in the presence of the Lighting Designer, prior to commencement of final programming.
- 5.3 The Manufacturer shall allow a minimum of one (1) day and one (1) night for programming of the lighting control system with the Lighting Designer.
- 5.4 The Manufacturer shall allow a minimum of one (1) day and one (1) night for assistance to the Architect, Lighting Designer and Electrical Engineer in training designated staff members in use of the lighting control system. This shall include programming, setting levels, use of all devices and resetting electrical items such as circuit breakers etc.
- 5.5 If required, additional training shall be provided as requested as an additional cost item.

6. PROPOSED MANUFACTURERS

Lutron
Crestron
ETC
Inncom

Refer to Electrical Engineer for details

7. LIGHTING CONTROL SCHEDULE

Please refer to associated document for detailed schedule of Lighting Control Zones with associated loads and lamp types

Please refer to Electrical Engineers' circuiting schedule for actual circuit breakdowns of stated control zones and areas.

Control Zone Schedule

ZONE	FIXTURE TYPE	DESCRIPTION	WATTS per UNIT	QUANTITY	CONNECTED LOAD	CONTROL	LUMENS per UNIT	LUMENS TOTAL	Notes
GROUND FLOOR PLAN									
X-01	LA-1-X	Recessed Downlight	8.0W	2	16.0W	0-10v	700 Lm	1,400 Lm	
X-02	LE-X	LED tape	0.8W	23	17.3W	0-10v	75 Lm	1,725 Lm	
X-03	LA-X	Recessed Downlight	8.0W	2	16.0W	0-10v	700 Lm	1,400 Lm	
X-04	LB-X	Step Lights	2.6W	4	10.4W	0-10v	29 Lm	116 Lm	
X-05	LC-X	Path Lights	2.2W	8	17.6W	0-10v	60 Lm	480 Lm	
X-06	LD-X	Surface Mounted Downlight	9.5W	10	95.0W	0-10v	750 Lm	7,500 Lm	
X-07	LA-1-X	Recessed Downlight	8.0W	2	16.0W	0-10v	700 Lm	1,400 Lm	
X-08	LG-X	Mushroom Planter Lights	2.6W	8	20.8W	0-10v	125 Lm	1,000 Lm	
X-09	LE-X	LED tape	0.8W	48	36.0W	0-10v	75 Lm	3,600 Lm	
X-10	LF-X	Wall Mounted Downlight	9.5W	33	313.5W	0-10v	750 Lm	24,750 Lm	
X-11	LH-X	Wall Mounted Accent Light	3.0W	12	36.0W	0-10v	139 Lm	1,668 Lm	
X-12	LA-1-X	Recessed Downlight	8.0W	2	16.0W	0-10v	700 Lm	1,400 Lm	
X-13	LF-1-X	Wall Mounted Downlight	9.5W	6	57.0W	0-10v	750 Lm	4,500 Lm	
X-14	LB-X	Step Lights	2.6W	3	7.8W	0-10v	29 Lm	87 Lm	
X-15	LA-1-X	Recessed Downlight	8.0W	4	32.0W	0-10v	700 Lm	2,800 Lm	
X-16	LH-X	Wall Mounted Accent Light	3.0W	1	3.0W	0-10v	139 Lm	139 Lm	
X-17	LG-X	Mushroom Planter Lights	2.6W	2	5.2W	0-10v	125 Lm	250 Lm	
X-18	LH-X	Wall Mounted Accent Light	3.0W	4	12.0W	0-10v	139 Lm	556 Lm	
X-19	SIGN LTG	Hotel Signage By Others	20.0W	5	100.0W	TBD	50 Lm	250 Lm	
X-20	SIGN LTG	Restaurant Signage By Others	20.0W	1	20.0W	TBD	50 Lm	50 Lm	
X-21	LH-X	Wall Mounted Accent Light	3.0W	4	12.0W	0-10v	139 Lm	556 Lm	
X-22	LJ-X	Wall Mounted Accent Light	5.5W	16	88.0W	Phase	800 Lm	12,800 Lm	
LEVEL 2									
X02-01	LH-X	Wall Mounted Accent Light	3.0W	4	12.0W	0-10v	139 Lm	556 Lm	
LEVEL 3									
X03-01	LH-X	Wall Mounted Accent Light	3.0W	2	6.0W	0-10v	139 Lm	278 Lm	
LEVEL 4									
X04-01	LE-X	LED tape	0.8W	261	195.8W	0-10v	75 Lm	19,575 Lm	
X04-02	LH-X	Wall Mounted Accent Light	3.0W	9	27.0W	0-10v	139 Lm	1,251 Lm	
X04-03	LB-X	Step Lights	2.6W	11	28.6W	0-10v	29 Lm	319 Lm	
X04-04	LB-X	Step Lights	2.6W	12	31.2W	0-10v	29 Lm	348 Lm	
GR BALCONIES									
	LA-X	Recessed Downlight	8.0W	6	48.0W	0-10v	400 Lm	2,400 Lm	
	LB-X	Step Lights	2.6W	28	72.8W	0-10v	29 Lm	812 Lm	
TOTAL					1248.1W			93,966 Lm	

NOTE

All quantities and loads must be verified by installing electrical contractor/electrical engineer.
 All LED tape quantities must be verified on site by installing electrical contractor/electrical engineer.























