Millcreek City Planning
3330 South 1300 East
Millcreek, Utah 84106
Phone: (801) 214-2750

STAFF MEMORANDUM

From:	**Francis Xavier Lilly, AICP, Planning Director**
To:	**Millcreek Community Council** **East Mill Creek Community Council** **Canyon Rim Citizens Association**
Meeting Dates:	**November 6, 7, 8, 2019**
RE:	**Conditional Use Permit for a Mixed Use Multifamily Project, consisting of 176 dwellings and Approximately 40,000 square feet of retail and office space, at a maximum height of 74 feet.**
Address:	**3330 South Highland Drive**
Zone:	**C-2 / TCOZ**
Applicant:	**Russ Sorensen**
File No.:	**CU-19-012**

Request

Millcreek City Planning and Community Development is seeking your input on a request by Russ Sorensen for a conditional use permit for a mixed use multifamily project, consisting of 176 dwellings and approximately 40,000 square feet of retail and office space. The project is located in the C-2 Commercial Zone and the Town Center Overlay Center (TCOZ), which provides regulations pertaining to approvals of additional heights and design requirements. The applicant is proposing a development consisting of four buildings on the site, including one office building, one free-standing retail building, one mixed use building, and one standalone multifamily building, all organized in a common site plan with shared parking. The applicant intends to market the commercial spaces to existing local Millcreek businesses. The commercial spaces will be subject to a condominium plat.

The applicant is applying under the TCOZ, which imposes broader setbacks than the upcoming City Center Overlay Zone (CCOZ). As indicated in the applicant's letter, the applicant is consenting to meet all applicable standards in both the existing TCOZ and the proposed CCOZ. Accordingly, staff is applying the most restrictive applicable standard between the two ordinances toward this project.

The Planning Commission will discuss this matter at their meeting on **Wednesday, November 20, 2019 at 5:00 pm.**

Because this project is located within 600 feet of three community council districts, each community council will be given the opportunity to make recommendations to the Planning Commission regarding this project.

Existing Land Use and Proposed Change

The site is currently occupied by the former Linda's Furniture showroom and warehouse. The site consists of approximately 1.4 acres, and is bounded by The Home Depot site to the south and west, and to the Emissions Plus franchise to the north.

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The applicant is proposing a mixed use site consisting of four buildings. Rather than the traditional mixed use multifamily project, with apartments over ground-story retail, this applicant proposes a variety of commercial uses in four different buildings, including a free-standing office building and a free-stranding retail building, in front of the multifamily uses. The result will be a project that presents a distinctive streetscape along Highland Drive in a manner that complies with the CCOZ requirements for building length and step-backs, as well as commercial uses.

The project exceeds the requirements for open spaces, which will be arranged in two entryways along Highland Drive and in a variety of roof decks on upper stories.

The applicant is seeking a parking reduction per the City's standard off-street parking requirements, by establishing a parking ratio based on a shared parking analysis. The theory behind shared parking is that different uses on the same property will not have the same parking needs at the same time. For example, residential parking demand tends to be highest on the evenings and weekends, while office demand tends to be highest during weekdays. In a mixed use project where office and residential share the same parking facilities, peak time residential parking demand is offset by low demand for office.

Because the applicant is proposing significantly more office and retail than we typically see in a mixed use project, the shared parking analysis provided by Millcreek's Off-Street Parking Ordinance does provide an effective justification for a parking reduction. Staff prepared a shared parking analysis using the provisions of the Millcreek Code. That analysis is attached. The shared parking analysis is also mentioned in the parking and traffic study.

Both the proposed parking ratios and traffic mitigations are proposed in a parking and traffic study the city commissioned for this project. As part of an approval for a reduced parking ratio, the study recommends that the developer incorporate travel demand management concepts into the design of the building and the management of the project, and indicate that at least one stall per residential dwelling is reserved at all time for use by residents only. Staff recommends that the applicant proposed TDM strategies to be included in the final conditional use permit.

Code Considerations

The Town Center Overlay Zone asks the Planning Commission to make specific findings with respect to a request for additional building height for buildings on near the intersection of Highland Drive and 3300 South. Specifically:

Greater height may be granted up to a maximum of 75 feet by the Planning Commission through an evaluation of terrain differences, views, and the heights of buildings that are immediately adjacent to the proposed building in comparison to the proposed building. Higher building requests shall only be considered if they are mixed use or exclusively office uses, exceed the building design standards of this ordinance, include either a 20 foot usable setback between either the first or second and third floors, provide an additional 10 foot front yard setback as a public space adjacent to the ROW or a vertical facade setback for at least every 200 feet of frontage, consisting of at least 10 feet in depth and 10 feet in width for every story above the ground story, and not exceed the lot coverage requirement. Based on the above evidence provided by the applicant, the Planning Commission will determine if the proposed height is acceptable and that such height will not create reasonably anticipated detrimental effects on adjacent properties, as established by MKZ 19.84. This flexibility is only allowed for buildings that have at least 100 feet of frontage along Gunn Avenue between Highland Drive and Richmond Street, or within a 500' radius of the intersections of Highland Drive and 3300 South and 1300 East and 3300 South. Notwithstanding contrary definitions found in MKZ Title 19, building height is measured from the natural grade to the highest point of the roof.

In the case of this application, the building is a mixed use building, in fact exceeding the requirement for mixed use buildings in the zone. The proposed building provides a stepback. Finally, the project provides a variety of façade articulations, mainly in the form of the three separate buildings along Highland Drive.

The Planning Commission must find that the project creates no reasonably anticipated detrimental effects on adjacent properties. In this case, the project is bounded to the west by the drive approach and parking lot for The Home Depot, and the warehouse store itself is to the south. To the north is a long-standing commercial use. The nearest existing dwelling is over 230 feet from the west edge of the property. The nearest single-family neighborhood, on 3350 South, is nearly 280 feet from the east edge of the property.

In addition, Section 19.73.060 of the TCOZ ordinance states the following:
In order to meet the purposes of this chapter the Planning Commission shall consider the following prior to approval of any plan:

1. The development shall provide on-site amenities and appropriate buffering to adjacent properties and uses.
2. Safe access shall be provided within the site and to public streets.
3. Where the underlying zone allows residential uses only as part of a mixed-use development, the residential shall include commercial uses along the public street as required by the code, or be constructed as commercial space, in a manner to allow for future commercial uses on the first floor.
4. Notwithstanding the above, all conditional use applications shall be subject to MKZ 19.84.

After an initial review of both the TCOZ and the pending CCOZ ordinances, staff believes that this project substantially conforms to both ordinances, that there are appropriate on-site amenities, and that buffering is appropriate given the commercial and parking uses that abut the project site. The project exceeds the commercial space requirements, and staff recognizes the effort on the part of the applicant to develop a series of commercial spaces that would be attractive to existing Millcreek businesses. There are a number of issues to be resolved, and those are indicated in the code compliance summary, attached to this email. Provided adequate parking is supplied, staff believes these issues could be resolved in a technical review subsequent to issuance of a conditional use permit.

The Community Councils are encouraged to review the attached project, site plan, and the code compliance summary prepared by staff.

Community Council Action

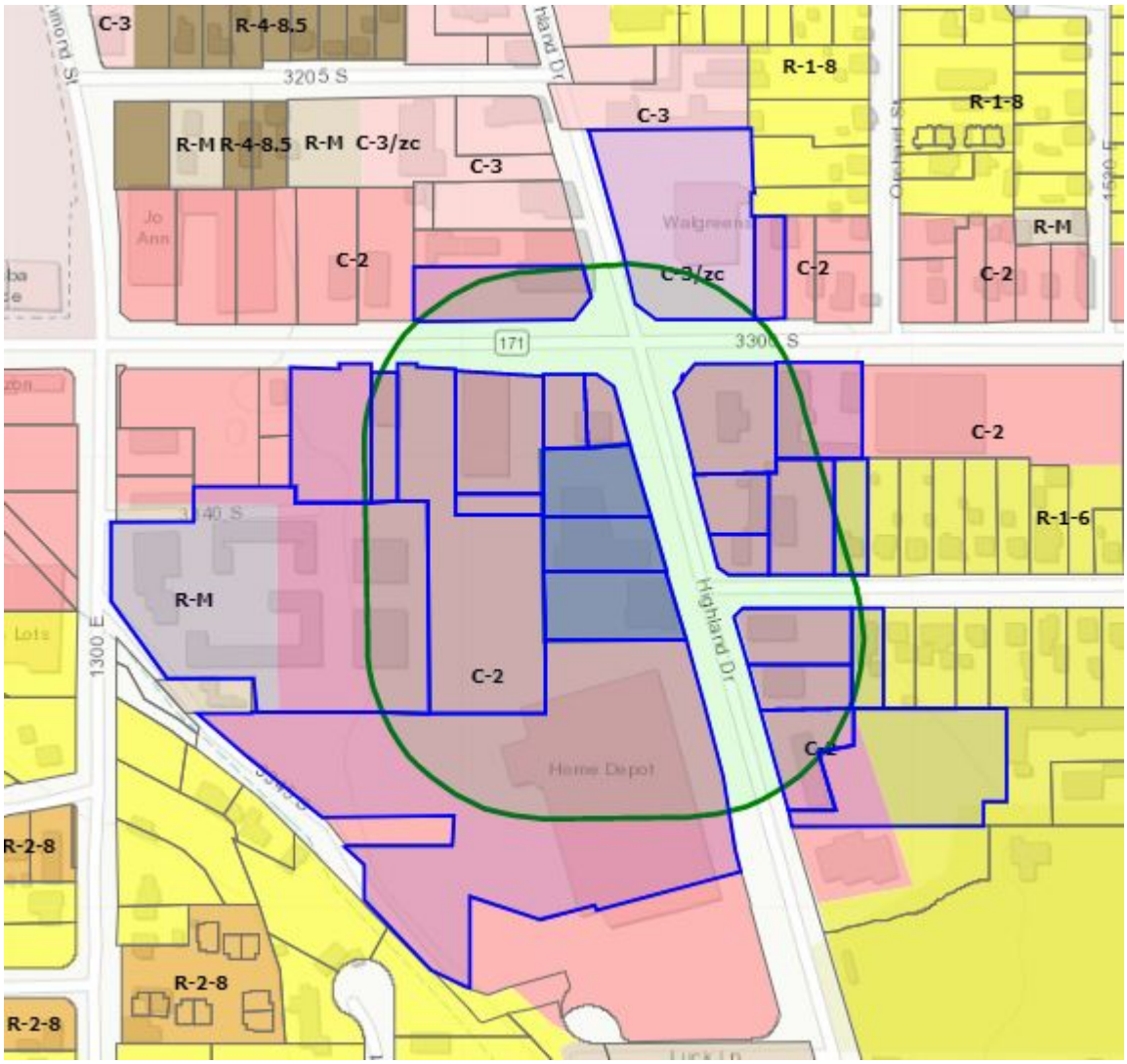
As per Chapter 2.56.100 of the Millcreek City Code, staff is seeking Community Council input on the conditional use permit. Specifically, staff is requesting guidance on any additional detrimental effects that could be reasonably anticipated, but that have not been identified in this memorandum, and to recommend mitigations for those detrimental effects to the Planning Commission.

Attachments

1. Conditional Use Permit Application and Affidavit
2. Conditional Use Permit Supplemental Form
3. Code Compliance Analysis
4. Project Elevations, Site Plan, Renderings, and Layot
5. Project Parking and Traffic Impact Study Summary

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Zoning and Noticing Map



Note: Property is also in the City's Town Center Overlay Zone.

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Phone: (801) 214-2750
Millcreek.us

File #

Land Use & Development Application

Zone: _____ Community Council: _____ Planner: _____

Parent File #: _____ Date: _____

Property Address: 3330 South Highland Drive, 84106 Parcel #: 1628351024, 1025, 1026

Name of Project MC33 Property Acreage: 1.41 Acres

Please describe your request:

Typical application required for a Mixed Use Development including Retail, Office, Dining, Apartments.

New Development:

- ☑ Conditional Use
- ☐ Permitted Use
- ☐ Subdivision # lots: _____
- ☐ PUD #lots: _____

Modify an Existing Development:

- ☐ Change Conditions of Approval
- ☐ Change the Site Plan
- ☐ Condo Conversion
- ☐ Lot Consolidation
- ☐ Lot Line Adjustment
- ☐ Mobile Store
- ☐ Signs
- ☐ Billboards

Other:

- ☐ Exception Request
- ☐ General Plan Amendment
- ☐ GRAMA (Records Request)
- ☐ Land Use Hearing
- ☐ Non-Conforming
- ☐ RCOZ Appeal (Option C)
- ☐ Research Request
- ☐ Re-zone
- ☐ Right-of-Way Improvement Permit
- ☐ Vacate a Street

Is a key or gate code required to access the property? ☐ Yes ☑ No If yes, code: _____
(or provide driving directions to property):

APPLICANT'S NAME:

First: Russ Last: Sorensen Initial: _____

Address: 3660 East Cove Point Drive City: Millcreek State: UT Zip: 84109

Phone: 801.301.4104 Cell: 801.301.4104 Email: soarrealty@hotmail.com

Property Owner(s):

First: Four Seasons Apartments Last: Sue Berrett Initial: _____

Address: 1656 Reunion Ave. City: South Jordan State: UT Zip: 84095

Phone: 801.638.4243 Cell: 801.638.4243 Email: mark@mbcpa.pro

Professional(s): ☐ Engineer ☑ Architect ☐ Other

Company: Range Architecture Contact: Derek Wilson

Address: 1068 E. 2100 S. City: SLC State: UT Zip: 84106

Phone: 801.694.9150 Cell: 801.694.9150 Email: dwilson@rangearchitecture.com

**NOTE: all correspondence will be sent to the applicant's address:*

To facilitate the land use notice and review process, the undersigned hereby authorize the City to reproduce this application and all documents attached to the application for staff, officials, and the interested public:

Applicant's Signature: Russ Sorensen Date 10.18.19

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File #

AFFIDAVIT – Property Owner

STATE OF UTAH }
} ss
COUNTY OF SALT LAKE }

I (we) Susan Berrett, Partner Four Seasons Apartment being duly sworn, depose and say that I (we) am (are) the owner(s) of the property(s) located at:

3330 South Highland Dr, Millcreek, UT 84106.

My (our) signature below attests that I (we) have reviewed the proposal by Ross Sorensen requesting review and approval of MC 33 Project. and that I (we) consent to the statements and information provided in the attached plans and exhibits and that all information presented is true and correct to the best of my (our) knowledge.

Property Owner Susan Berrett 10/17/19

Property Owner _____

Subscribed and sworn to me this 17th day of October, 2019.

STATE OF UTAH
COUNTY OF: Salt Lake
ON THE 17th DAY OF October, 2019
PERSONALLY APPEARED BEFORE ME
Susan S Berrett SIGNER(S) OF THE ABOVE
INSTRUMENT, WHO DULY ACKNOWLEDGED TO ME THAT
HE/SHE/THEY EXECUTED THE SAME

NOTARY PUBLIC

Notary: _____

Residing in Salt Lake County, Utah

NOTARY PUBLIC
Austin C McLain
700930
My Commission Expires
06/18/2022
STATE OF UTAH

Russ Sorensen – Soar Realty
3660 E. Cove Point Dr.
Millcreek City, UT 84109

October 17, 2019

Millcreek Planning Commission

Dear Commissioners,

We are excited to present MC33 to the commission. The current properties consist of a vacant furniture store an and active day spa business.

Our proposal is to remove the existing structures, replacing them with a 181 Unit apartment complex, a 20,000 square foot office building, a 14,000 square foot retail space, and a 4,500 square foot restaurant or retail site.

We are currently working with two existing Millcreek City businesses to help them relocate into this project, allowing them to expand and increase their business as owners within this proposed project. We will achieve this ownership through a condominium plat for Retail Space 1 & 3 and also Office 2.

The project is in harmony with the traffic study, which allows increased safety and beautification of Highland Drive, making sidewalks safer for pedestrians, reducing existing business accesses, and creating patron parking at grade off Highland Drive. The resident and owner parking is secure and below grade.

In addition the project creates a new public plaza and roof top amenities that will introduce new people to the city center and provides a setting that will connect them to nature.

This project anchors and revitalizes the south end of the city center by adding a mixed-use project to an all-commercial corridor. This will increase public use and rejuvenate local businesses.

Our building facades, public spaces, roof top terraces, retail, office, and multifamily living are fully intended to be designed to comply to the C-COZ standards and contribute to the intent of the masterplan by connecting the City Center to a major project south of 3300 South.

Sincerely,



Russ Sorensen

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Millcreek.us

Conditional Use Permit Application Supplemental Form

Part I: Submittal Requirements

In order for your application to be considered complete, you must submit the following items:

- ☐ Application Fee - $650 for Preliminary Review.
- ☐ A signed and notarized affidavit from the property owner, on a City-approved form.
- ☐ One copy of the proposed site plan, submitted electronically in PDF format, and scaled at 1":30'. Each plan submitted must represent the entire property and all proposed uses. Your site plan must be professionally prepared and must include the following:
  - ☐ Name and correct address of the development.
  - ☐ Location and name of streets.
  - ☐ Property boundaries and dimensions.
  - ☐ Precise location and footprints of any proposed structures.
  - ☐ Precise location of all proposed parking. If proposed parking is to be covered, please indicate on the plan.
  - ☐ Precise location of existing and proposed driveways.
  - ☐ Precise location of existing and proposed fencing.
  - ☐ Precise location of all required setbacks.
  - ☐ Precise location of proposed waste container and enclosure.
  - ☐ Plans for utility provisions, including additional water and sewer service, and disposal of any hazardous materials.
  - ☐ Precise location of any proposed signs.
  - ☐ Precise location of existing and proposed easements on your property, and all easements within 50 feet on abutting properties.
  - ☐ Precise location of any streams or waterways, if applicable.
  - ☐ Table showing land use allocation on the site (% building coverage, % landscaping, % parking).
- ☐ Proposed architectural elevations of every side of the buildings you propose. Include details on exterior materials, colors, and textures. Architectural elevations shall be professionally prepared and to scale.
- ☐ Interior layouts of all proposed buildings, including square footages. Label room and door locations.

- ☐ A landscape plan that complies with the landscaping requirements established in Chapter 19.77 of the Millcreek Code.
- ☐ A letter addressed to the Planning Commission describing the development. Include in your letter a discussion on phasing and development schedules.
- ☐ The attached questionnaire.

Part II: Applicant Questionnaire

1. A. State the conditional use desired:

Mixed Use development including retail, office, dining, apartments. The intent is for the project to abide by the future C-COZ ordinance.

B. State how the land is being used at the present time and what changes are proposed by this application:

The current use is an vacant furniture store and a functioning day spa. The proposed is the mixed use.

2. Will granting this application degrade the public health, safety, or welfare? Yes ☐ No ☑

If no, explain how:

The project will reduce public nuisances, vagrant issues, and police responses.

3. Does this proposed conditional use conform to the current zoning? Yes ☑ No ☐

If yes, explain how:

This project meets the current Township Ordinance and requires no variance consideration.

4. Is the proposed use compatible with the public interest and with the characteristics of the surrounding area? Yes ☑ No ☐

If yes, explain how:

Under the proposed C-COZ zoning the project meets the scope, scale, and public intent of the city center.

5. Will granting approval of the proposed use adversely affect local property values?

Yes ☐ No ☑

Explain why:

This project valued at $50M will significantly add to the tax base, create public activity and further beautify the city.

6. Are all the standards stated in Chapter 19.76 (Supplementary Regulations) and Title 19 (Zoning) of the Millcreek City Code met? Yes ☑ No ☐

If yes, describe how your proposed use meets applicable standards:

Please see plans and other documents.

7. Will granting this appeal result in a situation which is cost ineffective, administratively infeasible, or unduly difficult for the provision of any of the following essential services: roads and access for emergencyvehicles and residents; fire protection; police protection; schools and school busing; water, sewer, and storm water facilities; and garbage removal? Yes ☐ No ☑

Explain why:

This project improves public safety, upgraded infrastructure and structure, fire protection, and public space.

8. **Refer to Chapter 19.84.060 of the Millcreek Code.** What mitigation measures or conditions of approval do you propose to lessen the impacts and work out an adjustment between this conditional use and the surrounding area (such as parking; traffic acceleration lanes; on-site storm water retention facilities; special security or fire protection facilities; water, sewer, and garbage facilities; landscape screen to protect neighboring properties; requirement for the management and maintenance of the facilities; limited hours of operation; limited use of equipment emanating offensive noise, light, dust, or traffic; or other measures)?

Improved Highland Dr. safety & efficiency w/ park strip and sidewalk, secured parking, public activity, new utilities.

9. **State any other details about this proposed use which you want the Planning Commission to be aware of:**

Project will increase public activity, housing, tax revenue, ties to new city center, & keep Millcreek businesses here.

Code Compliance Analysis – MC33 Mixed Use Project
CU-19-013

Requirement	TCOZ	CCOZ	Project
BULK REQUIREMENTS			
Build to Zone	15 to 20 feet	0 to 10 feet – subject to new street standard	15 feet
Min Side Yard Setback	None	10 feet between buildings	Applicant to verify.
Min Rear Yard Setback	None	10 feet	10 feet
Building Height	PC can approve heights of up to 75 feet per conditions listed in 19.73.040 Note 3	74 feet	74 feet
Height Transitions	Required for projects within 100 feet of an R-1 or R-2 zone	Required for projects within 100 feet of an R-1 or R-2 zone	Not applicable. This project is more than 100 feet from an R-1 and R-2 zone.
Minimum Lot Coverage	None	50 percent	80 percent. Note: This project has extensive landscaping on upper levels of building. Overall, landscaping accounts for 40 percent of the lot area. Complies.
Maximum Lot Coverage	80 percent	80 percent	80 percent. Complies.
Off-Street Parking	Not allowed between building and street.	Must be located to the side or rear of building	Off street parking is in a structure served by two entrances along Highland Drive.
DESIGN STANDARDS			
Entrances	First floor entrances must face street.	First floor entrances must face street.	Each building has a first floor entrance along Highland Drive. Complies.
Building step-backs	20 foot stepback required, plus additional 10 foot setback.	20 foot stepback required between first and third stories.	20 foot stepback is provided above the first story of the building. Complies.
Windows	First story windows must comprise 50 percent of street facing facades. Windows must be 80% transparent.	50 percent of street facing facades, and 25 percent of upper story facades.	Ground floor windows exceed 50 percent requirement. Applicant to verify upper story window percentages
Landscaping	See 19.77.050(A). Must include street trees.	Specific street trees required.	Applicant to verify appropriate street trees.

Requirement	TCOZ	CCOZ	Project
Garbage and Recycling	May not be closer than 10 feet from a property line.	May not be closer than 10 feet from a property line, unless in a parking structure.	Complies.
Building Materials	Brick and stone must be at least 50% of façade.	Stucco and EIFS are prohibited for use as materials on any façade visible from a right-of-way.	Buildings consist of glass, masonry, and metal panel. No stucco contemplated. Complies.
Building Length	No new building elevation along a street may exceed 200 feet in length.	No single building may exceed 300 feet in length.	Applicant to verify that the building does not exceed 300 feet.
Building Separation	None Required	Buildings must be separated by at least 10 feet.	Applicant to verify that buildings are separated by 10 feet.
Facade Articulation	Must have at least two of: horizontal articulation, change in façade height, change in materials, columns or pilasters	Rooflines shall vary every 100 feet. 3 foot depth façade depth variation requires for buildings longer than 100 feet.	Roofline for rear building will need additional variation. Façade depth variation exceeds requirement.
Plaza	Sites greater than one acre need to have a plaza of up to 40% of open space.	Sites greater than one acre must have a plaza on the front, corner side, or side of the building.	The applicant proposes a 10 foot wide plaza off Highland Drive. Applicant to verify that the plaza meets the CCOZ requirements.
Open Space	20%. Note – TCOZ adopts the multifamily code definition for open space.	Defaults to lot coverage requirements. Residential open space to be 15%, not including private balconies.	The applicant proposes 39% open space, some of which is in the required stepbacks.
Commercial Frontage	80% of ground floor facing a street	50% of a ground floor facing a street (outside of Mill Park area)	The applicant proposes 86% of the ground floor as commercial. In fact, two of the buildings are commercial only buildings. Complies.
Residential Amenities	3 required per 19.44.050 (11)	3 required per 19.44.050 (11)	Applicant is proposing a pool deck, a dog park, a gym, and an additional “level 4” amenity.

Requirement	TCOZ	CCOZ	Project
Rooftop Gardens	Allowed in this case.	Allowed in this case, subject to design standards.	Applicant provides rooftop gardens.
Balconies	All units must have a balcony of 60 sf and 5' depth.	All units must have a balcony of 60 sf and 5' depth.	Each unit has a balcony. Applicant to verify required depth and area.
Utilities	Must be buried underground.	Utilities must be buried underground.	Applicant will be required to verify this requirement is met in technical review.
Management	24 hour onsite management required.	24 hour onsite management required.	Applicant to verify this requirement will be met.
Electric Vehicle Charging	Projects greater than 50 units must provide 1 charging station per each 10 units.	2 charging units per floor.	Applicant will be required to verify this requirement is met in technical review.
Unit Storage	Each unit must provide 100 cuft of unit storage.	Each unit must provide 100 cuft of unit storage.	Applicant to verify that requirement is met in technical review.
Energy Efficiency	None required	Rooftops must include solar.	Applicant to verify this requirement is met.
PARKING			
Requirement	0.75 per studio 1.5 per 1BR 2 per 2BR 0.33 per unit guest 1 per 250 sf office or retail	1 per unit 1.5 per unit 1.5 per unit 0.33 per unit guest 3 per 1000 sf commercial retail 1 per 1000 sf office	Applicant is proposing a parking reduction per parking study, that is short of the CCOZ requirements by 29 parking spaces. However, by virtue of the base C-2 zoning, the applicant is eligible to request a parking reduction by a shared parking analysis, which is attached. Applicant is proposing shared parking. TDM measures should be incorporated into approval.

Required Parking Matrix

Use	# of dwellings or area	Millcreek Standard Ratio	TCOZ required	CCOZ Ratio	CCOZ required	Proposed parking provided
Studio	31	0.75 per unit	23	1 per unit	31	
1 bedroom	114	1.5 per unit	171	1.5 per unit	171	
2 bedroom	31	2 per unit	62	1.5 per unit	47	
Guest	176	0.33 per unit	58	0.33 per unit	58	
Office	21,880 sf	1 per 250 sf	85	1 per 1,000 sf	22	
Retail	17,564	1 per 250 sf	70	3 per 1,000 sf	53	
Total			469		382	353

Shared Parking Analysis - MC33 Mixed Use Project - CU-19-013

		Weekdays						Weekends					
		12am - 7am		7am - 6pm		6pm - 12am		12am - 7am		7am - 6pm		6pm - 12am	
General Land Use Category	**Required Parking**												
Office - 21,880 sf	85	5%	4	100%	85	5%	4	0%	0	5%	4	0%	0
Retail - 17,564	70	5%	4	100%	70	80%	56	5%	4	100%	70	60%	42
Residential - Studio	23	100%	23	50%	12	80%	18	100%	23	75%	17	75%	17
Residential - 1BR	171	100%	171	50%	86	80%	137	100%	171	75%	128	75%	128
Residential - 2BR	62	100%	62	50%	31	80%	50	100%	62	75%	47	75%	47
Residential - Guest	58	100%	58	50%	29	80%	46	100%	58	75%	44	75%	44
Total	469		**322**		312		311		318		310		278

Note: The applicant is entitled to request an overall parking ratio based on a shared parking table per the standards of the Millcreek Off-Street Parking Requirements ordinance, specifically §19.80.080. The code established the above ratios for each by time of day, during a weekday and a weekend day. Assuming that not all uses will need full utilization of their required parking at all times, parking can be shared according to the factors listed in the table. The time period with the total highest parking requirement can be used for the overall parking requirement, on a shared parking basis. By this analysis, the time period with the total highest parking requirement is a weekday, from 12am to 7 am, and the overall utilization is 322 parking spaces. The applicant is proposing 353 stalls.



APARTMENT COUNT
STUDIO (444 - 500 sq ft) - (31) 18%
1 BED (496 - 823 sq ft) - (114) 64%
2 BED (692 - 1302 sq ft) - (31) 28%

2ND LEVEL (19,870 sq ft) - 26 apts
3RD LEVEL (19,218 sq ft) - 25 apts
4TH LEVEL (29,065 sq ft) - 36 apts
5TH LEVEL (28,354 sq ft) - 36 apts
6TH LEVEL (28,354 sq ft) - 36 apts
7TH LEVEL (19,018 sq ft) - 17 apts
TOTAL APARTMENTS (143,879 sq ft) - 176

POOL DECK - 2,092 SQ FT
GYM - 1,213 SQ FT
LEVEL 4 AMENITY - 711 SQ FT (+ 1,340 SQ FT DECK)
LEASING OFFICE - 1,132 SQ FT

1 - RETAIL - (2) 3,848 SQ FT
2 - OFFICE - (5) 22,180 SQ FT
3 - RETAIL - (2) 13,716 SQ FT
TOTAL (NON-APT) COMMERCIAL SPACE - 39,744 SQ FT

MC33



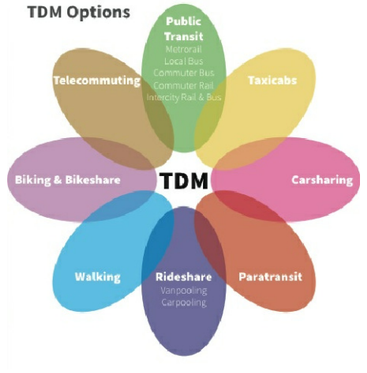
PARKING COUNT
STREET LEVEL - 67 STALLS
P1 - 128 STALLS
P2 - 158 STALLS
TOTAL PARKING - 353 STALLS

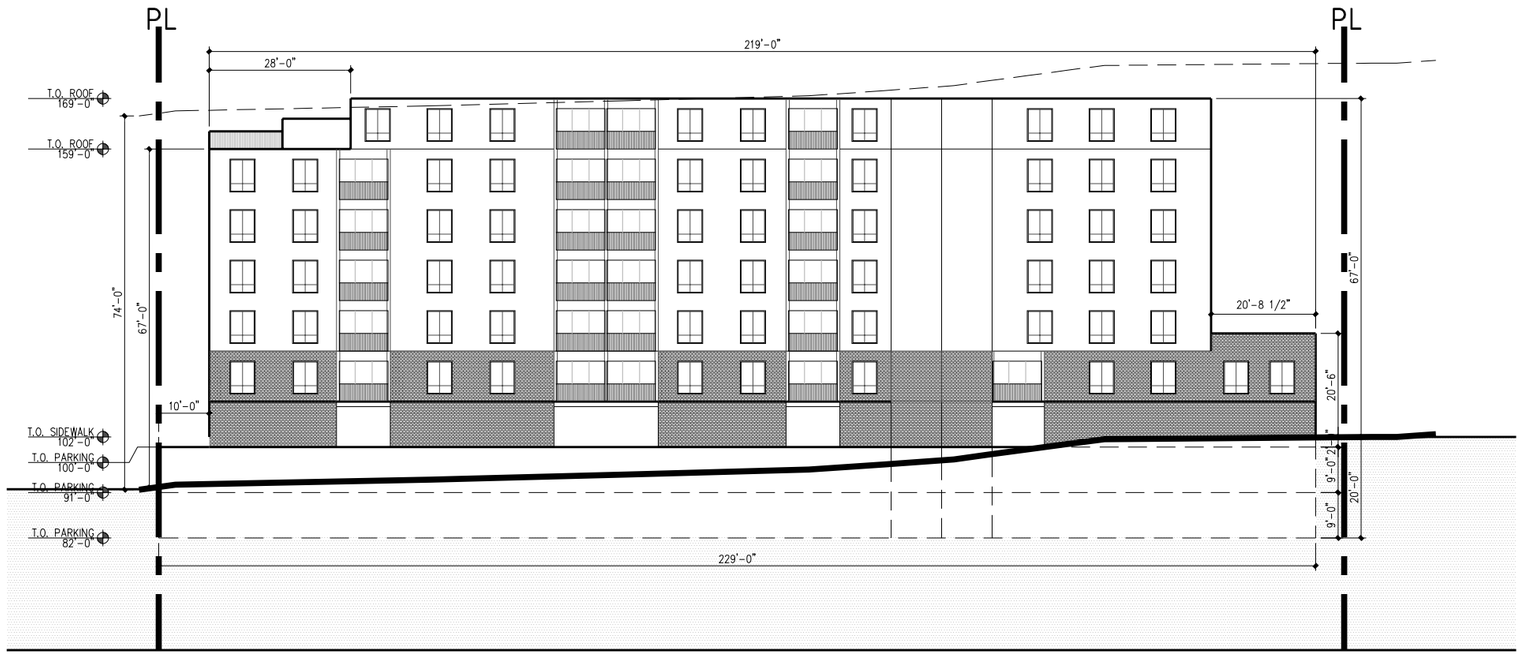
CCOZ PARKING REQUIREMENTS
STUDIO PARKING @ 31 x 1 = 31
1 - 2 BED PARKING @ 145 x 1.5 = 217
COMMERCIAL @ 3 / 1000 S.F. = 119
TOTAL REQUIRED = 367

TCOZ PARKING REQUIREMENTS
STUDIO PARKING @ 31 x .75 = 23
1 BED PARKING @ 114 x 1.5 = 171
2 BED PARKING @ 31 x2 = 62
COMMERCIAL @ 3 / 1000 S.F. = 119
TOTAL REQUIRED = 375

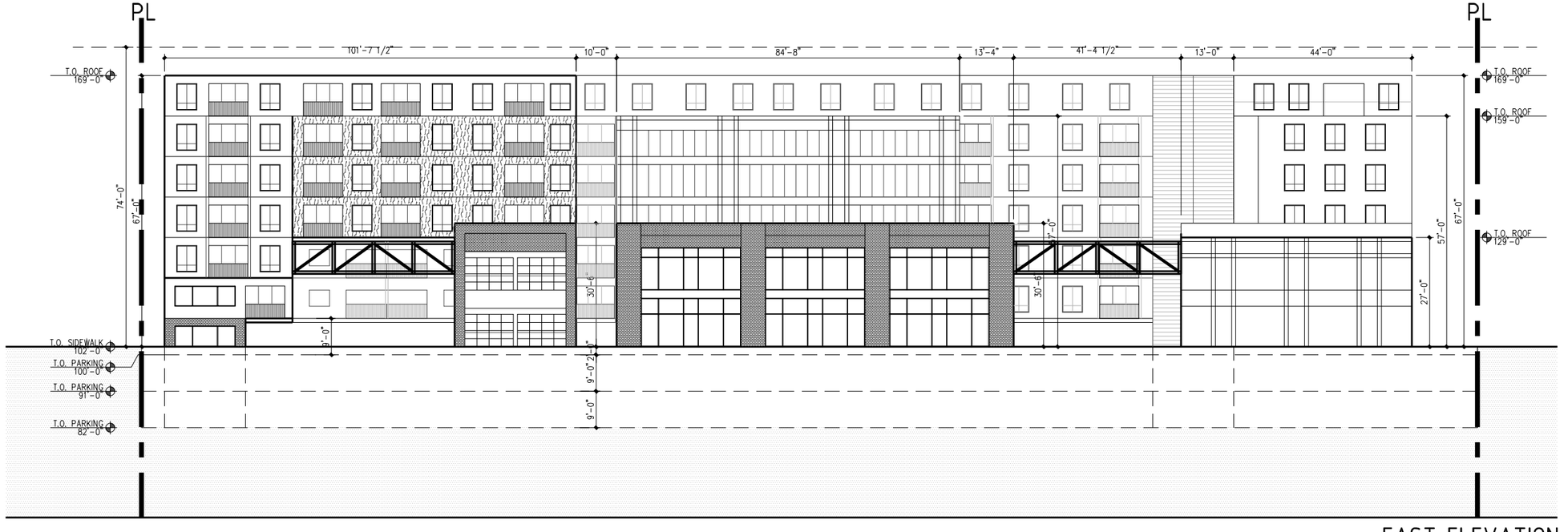
APT REQUIRED (CCOZ)- 248
APT PROVIDED (UNDERGROUND)- 286
COMMERCIAL REQUIRED - 119
COMMERCIAL PROVIDED (STREET LEVEL) - 67
RETAIL/COMMERCIAL PARKING @ GARAGE - 38
COMMERCIAL PARKING SHORTAGE (CCOZ) - 14

* MC33 TO HAVE SHARED PARKING AGREEMENT BETWEEN RESIDENTIAL & COMMERCIAL.
* MC33 TO ADOPT RECOMMENDATIONS OF TRAFFIC STUDY FROM FEHR & PEERS TRAFFIC STUDY
* SEE TDM OPTIONS BELOW





SOUTH ELEVATION

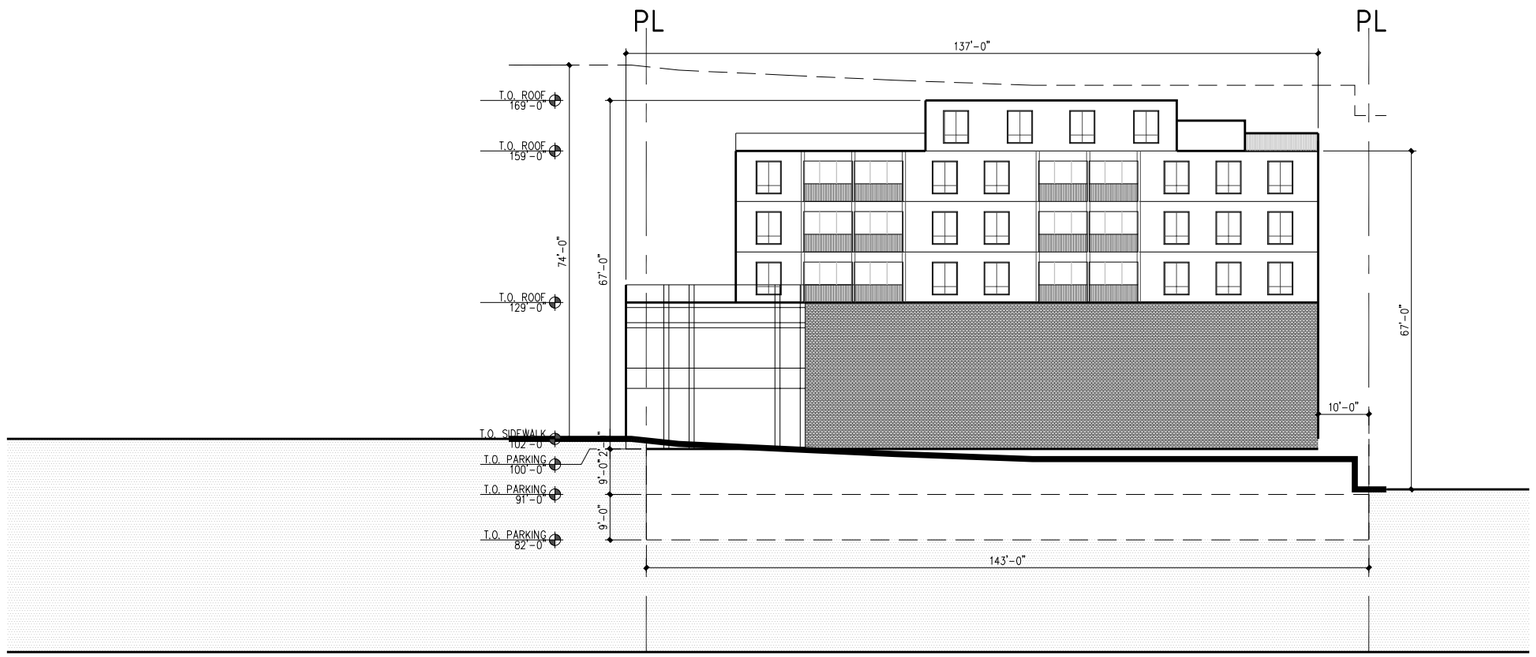


EAST ELEVATION

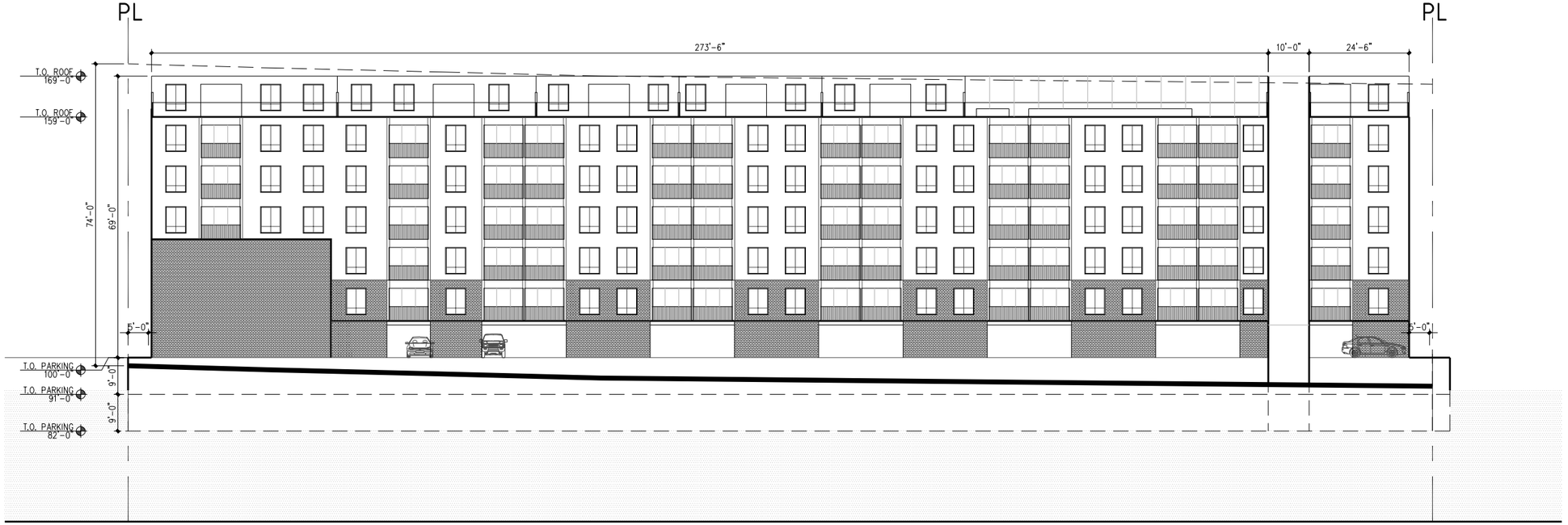
SCALE: 1" = 30'

RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019



NORTH ELEVATION



WEST ELEVATION

SCALE: 1" = 30'

RANGE ARCHITECTURE | DESIGN

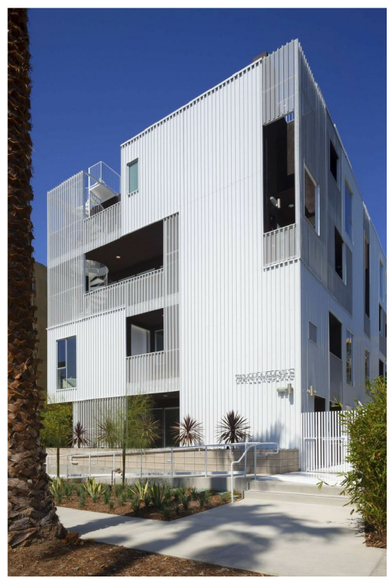
MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019



WOOD & FAUX WOOD



WHITE METAL RIBBED PANEL & WHITE CEMENTITIOUS PANEL



BLACK EXPOSED STEEL



GRAPHITE BRICK



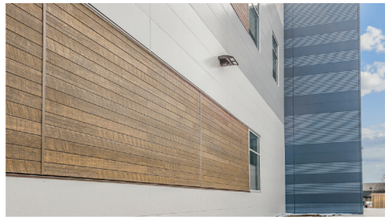
ZINC / CHARCOAL METAL PANEL



DARK BRONZE WINDOW SYSTEMS, DIVIDED PANES, LARGE FORMAT



WOOD & FAUX WOOD







WHITE METAL RIBBED PANEL & WHITE CEMENTITIOUS PANEL



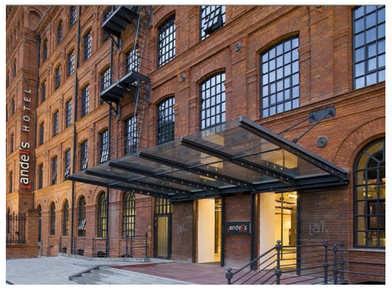






BLACK EXPOSED STEEL

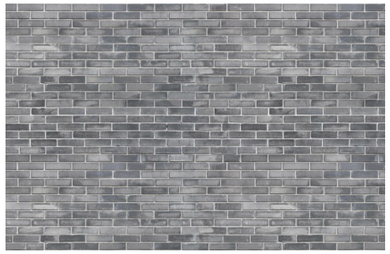


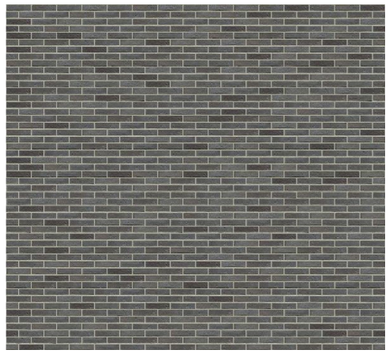






GRAPHITE BRICK

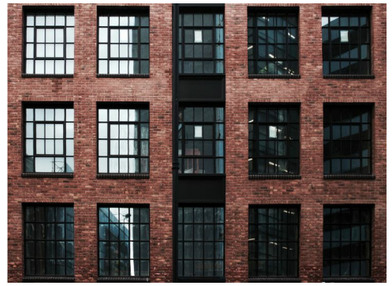




ZINC / CHARCOAL METAL PANEL

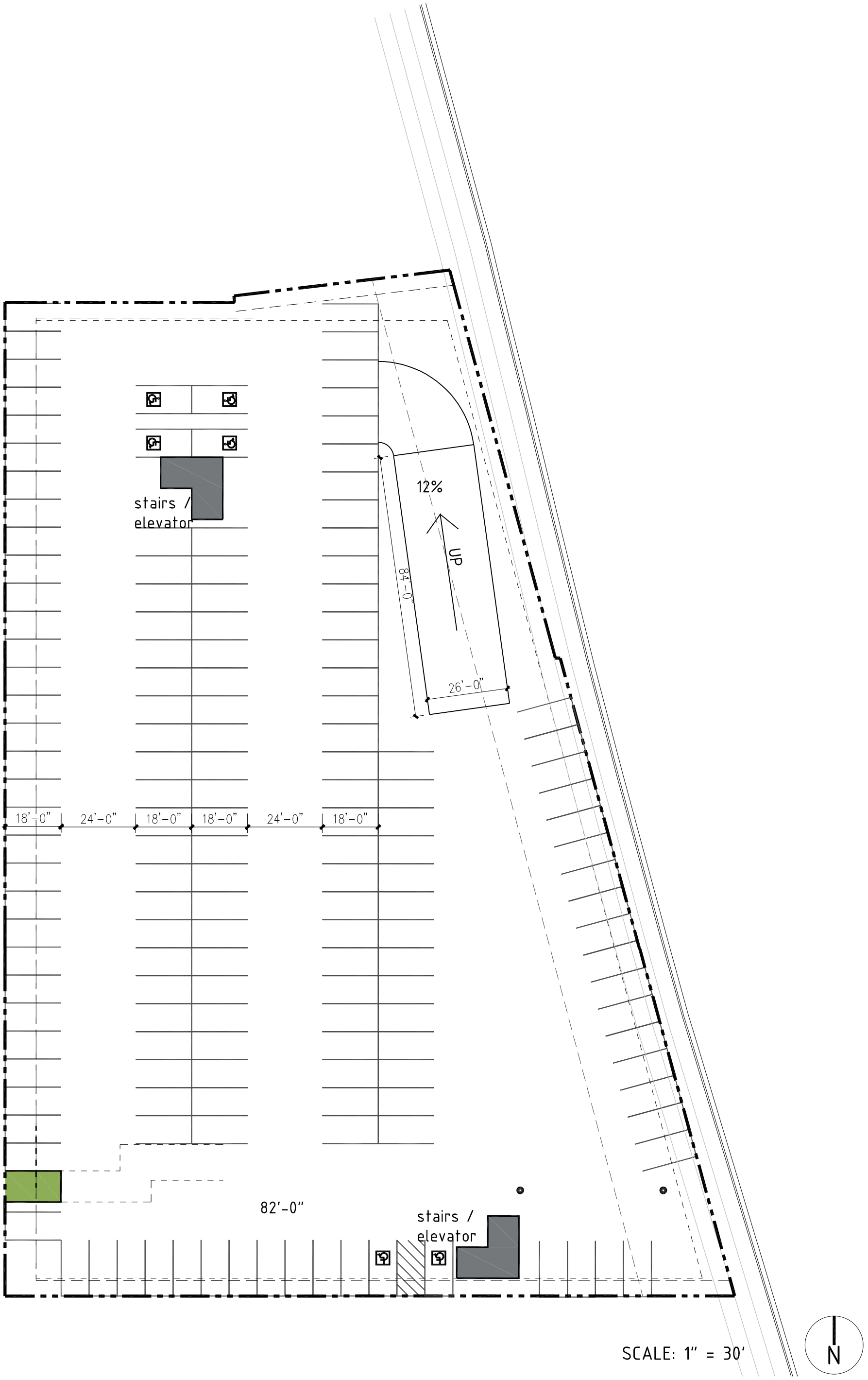


DARK BRONZE WINDOW SYSTEMS, DIVIDED PANES, LARGE FORMAT





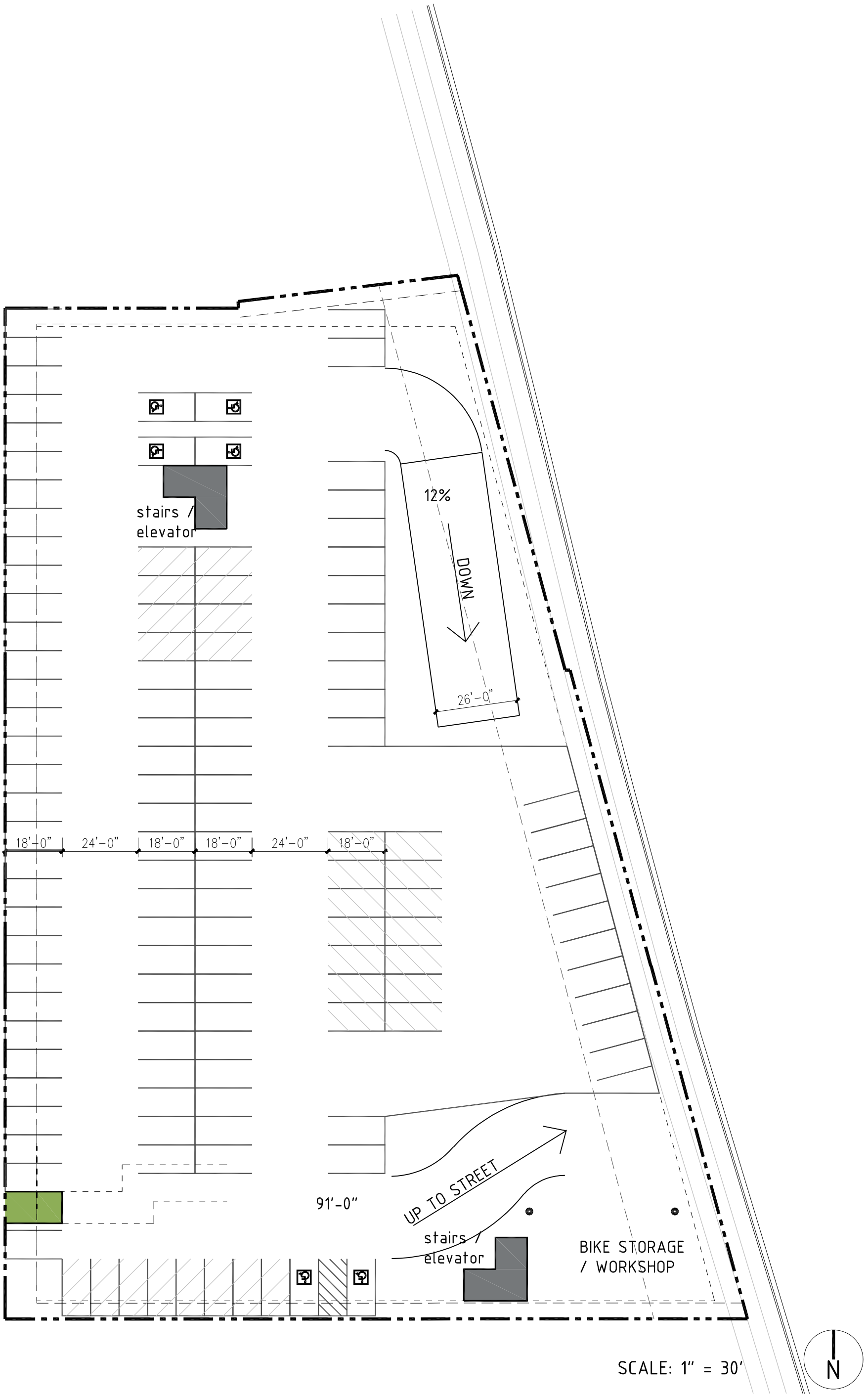
PARKING LEVEL 2 - 158 STALLS



RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

PARKING LEVEL 1 - 128 STALLS



RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

PARKING AREA

LANDSCAPING

PUBLIC PLAZA

PUBLIC PLAZA COVERAGE - 1871 SQ FT
(1838 SQ FT REQUIRED)

TOTAL LOT SIZE - 61,281 SQ FT
BULIDING COVERAGE - 16,350 SQ FT (27%)
PARKING COVERAGE - 23,234 SQ FT (38%)
LANDSCAPE COVERAGE (STREET LEVEL) - 5,923 SQ FT (10%)

LANDSCAPE COVERAGE - SQ FT (12,257 SQ FT REQUIRED)
5,923 SQ FT (STREET LEVEL) (48 % OF REQ.)
652 SQ FT (3RD LEVEL) (5% OF REQ.)
3,744 SQ FT (4TH LEVEL) (30% OF REQ.)
398 SQ FT (5TH LEVEL) (3% OF REQ.)
9,316 SQ FT (7TH LEVEL) (76% OF REQ.)
20,033 SQ FT PROVIDED (163% OF REQ.)

STREET LEVEL PARKING - 67 STALLS

10' MIN. BETWEEN BUILDINGS @ SIDE

PROPERTY LINE

DOG PARK

132'-3"

5' PARK STRIP

10' SIDEWALK / PLANTER

COMMERCIAL SIGNAGE

PROPOSED WASTE CONTAINER ENCLOSURE

44'-0"

BLDG 3
6645 sq ft
RETAIL

5'-0"

80'-0"

62'-5"

24'-11 1/2"

13'-0"

59'-0"

N.T.E. 30'-0"

EXISTING 8" FIRE RISER

stairs / elevator

100'-0" OFF STREET PARKING

10'-0"

PROPERTY LINE

20' STEP BACK REQUIREMENT @ 3RD STORY

5'-4 1/2"

26'-0"

POWER @ EAST SIDE OF HIGHLAND DRIVE

EXISTING SEWER LINE

U.T.A.

HIGHLAND DRIVE

99'-4"

10' REAR SETBACK

9'-0"

98'-0"

BLDG 2
5749 sq ft
OFFICE

OFFICE SIGNAGE

4'-3"

10'-0" 18'-0" 24'-0" 18'-0" 24'-0" 18'-0" 5'-0"

PLAZA

COMMERCIAL SIGNAGE

73'-3"

10'-0"

30'-0"

BLDG 1
1924 sq ft
RETAIL

31'-0 1/2"

NOTE: STREETSCAPE TO MATCH CCOZ

68'-1 1/2"

102'-0"

stairs / elevator

DOWN TO LOWER LEVEL PARKING

51'-7 1/2"

100'-0"

down 91'-0"

2 ELEC VEHICLE CHARGING STATIONS

UBER / LYFT

stairs / elevator

1132 sq ft MAIL / LEASING OFFICE

BIKE RACK

20'-0"

20'-0"

59'-3"

10' MIN. BETWEEN BUILDINGS @ SIDE

SCALE: 1" = 30'

N

RANGE ARCHITECTURE | DESIGN

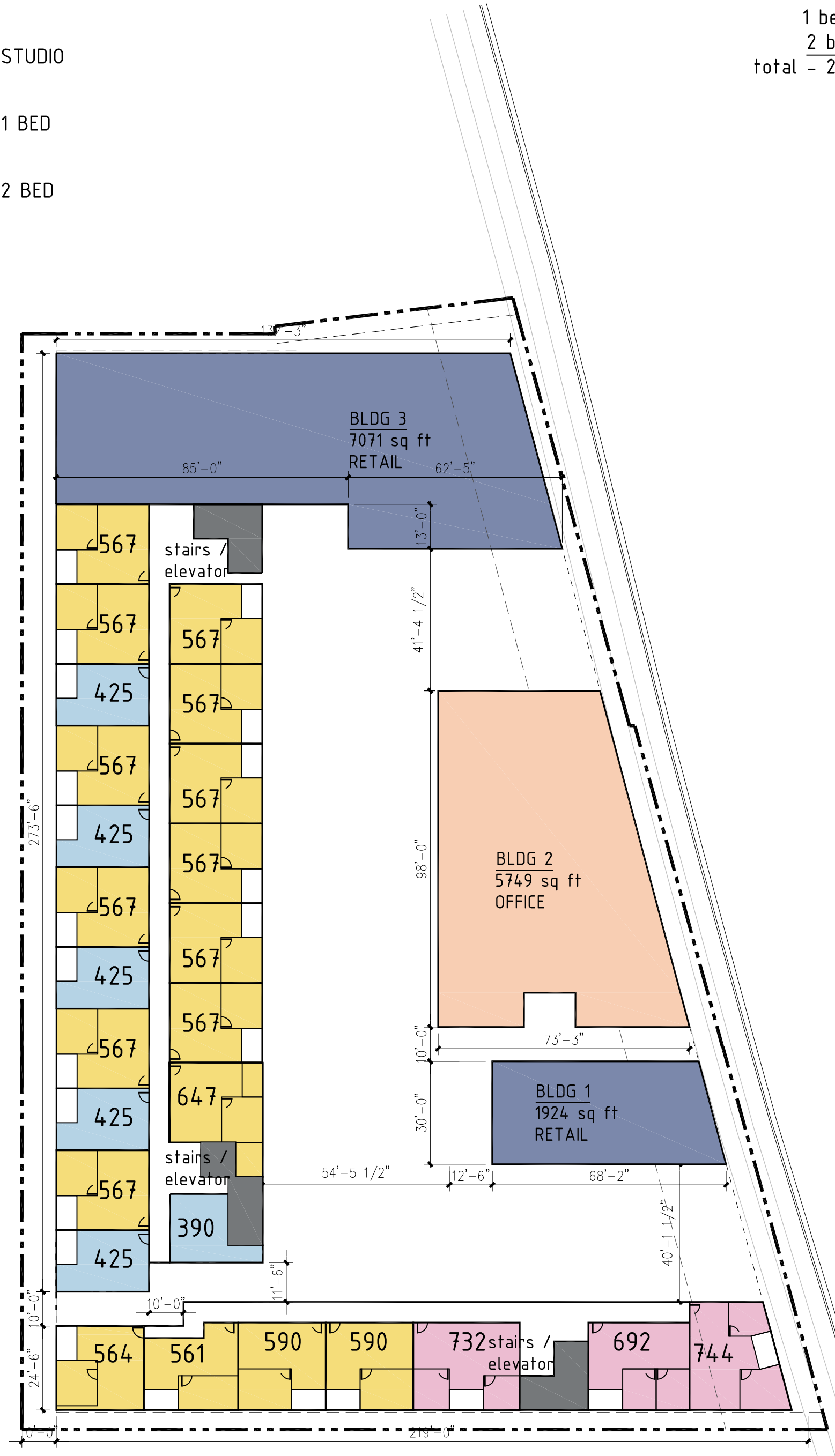
MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

STUDIO

1 BED

2 BED

2nd level
studio - 6
1 bed - 17
2 bed - 3
total - 26 apts



SCALE: 1" = 30'

N

RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

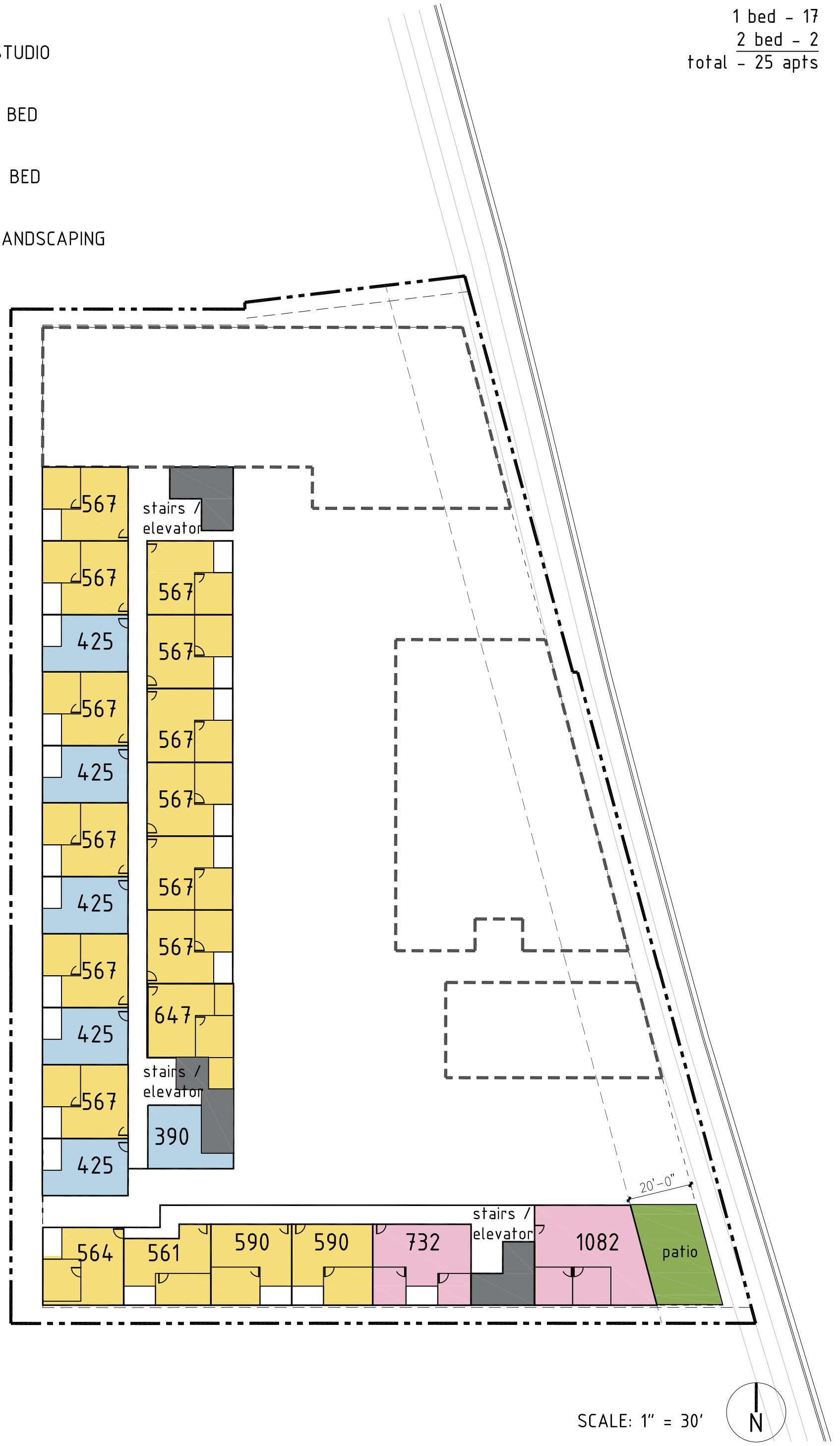
3rd level
studio - 6
1 bed - 17
2 bed - 2
total - 25 apts

STUDIO

1 BED

2 BED

LANDSCAPING



SCALE: 1" = 30'

N

RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

4th level
studio - 6
1 bed - 25
2 bed - 5
total - 36 apts

+ amenity & deck

STUDIO

1 BED

2 BED

LANDSCAPING



SCALE: 1" = 30'

N

RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

5th level
studio - 6
1 bed - 25
2 bed - 5
total - 36 apts

STUDIO

1 BED

2 BED



SCALE: 1" = 30'

RANGE ARCHITECTURE | DESIGN

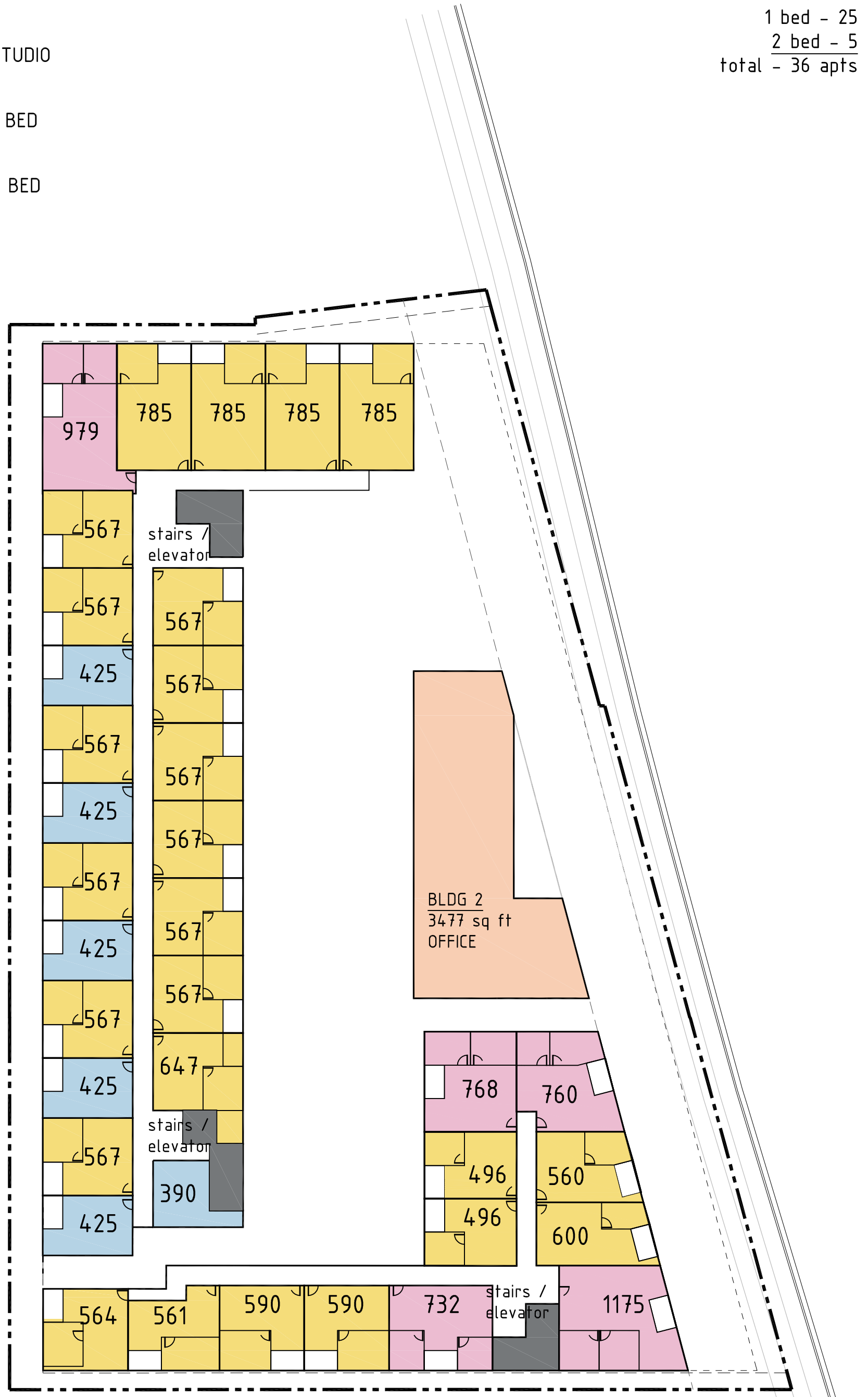
MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

6th level
studio - 6
1 bed - 25
2 bed - 5
total - 36 apts

STUDIO

1 BED

2 BED



SCALE: 1" = 30'

N

RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

STUDIO

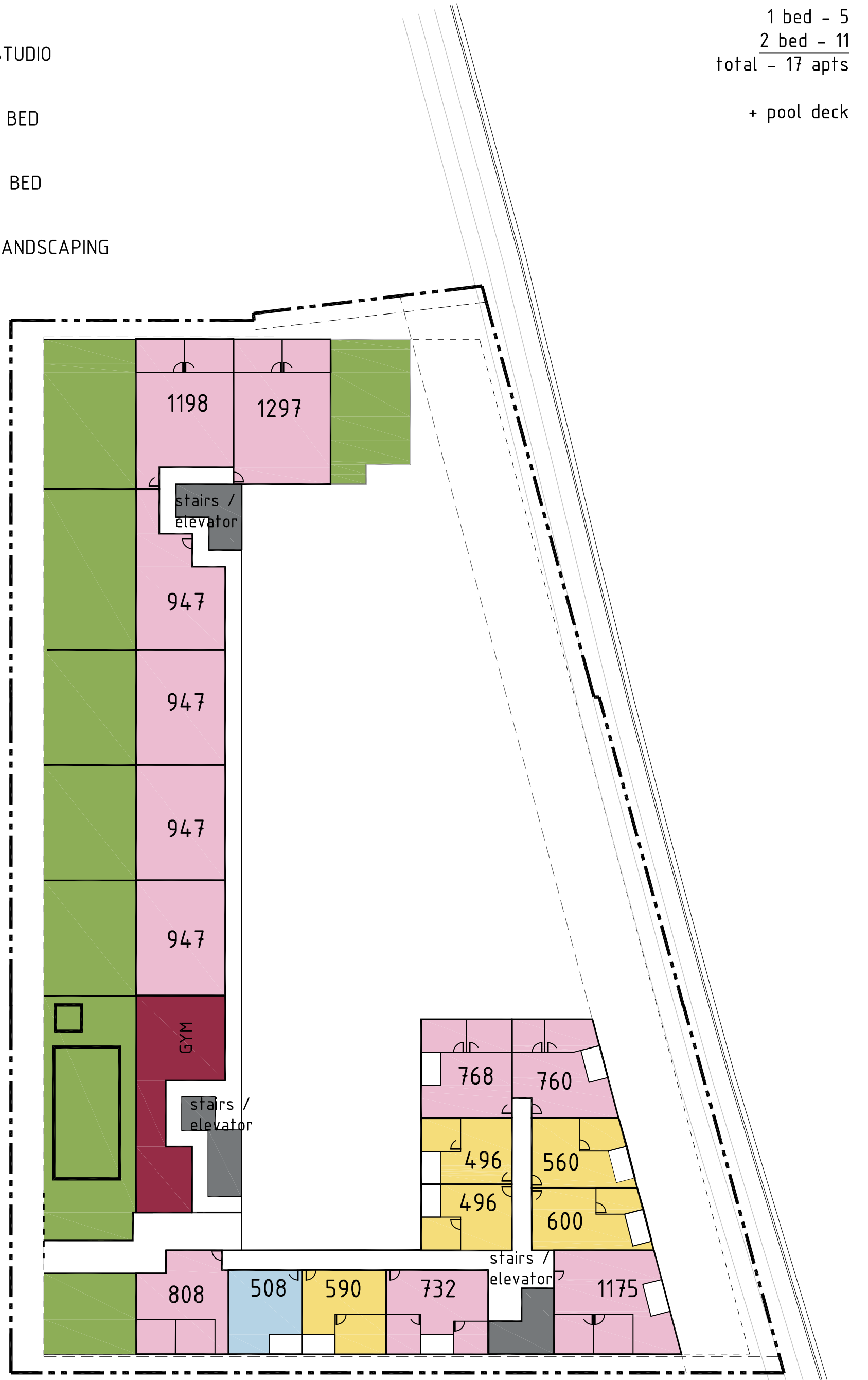
1 BED

2 BED

LANDSCAPING

7th level
studio - 1
1 bed - 5
2 bed - 11
total - 17 apts

+ pool deck



SCALE: 1" = 30'

N

RANGE ARCHITECTURE | DESIGN

MC33 - 3330 S HIGHLAND DRIVE
Russ Sorensen - Soar Realty
10.29.2019

FEHR PEERS

Millcreek Sorensen Traffic and Parking Study

MEMORANDUM

Date: October 17, 2019

To: Francis Lilly, AICP, Millcreek City

From: Seishi Yamagata, PE, Fehr & Peers
Maria Vyas, AICP, Fehr & Peers

Subject: Millcreek Sorensen Traffic and Parking Study

UT19-2177

EXECUTIVE SUMMARY

The purpose of this study is to determine the potential impacts to traffic conditions due to the proposed development in Millcreek, Utah located southwest of the 3300 South / Highland Drive intersection. Under current conditions and future background conditions, all study intersections operate at acceptable delays and Level of Service (LOS), with the exception of the 3350 South / Highland Drive intersection, which operates at LOS F in the weekday PM peak hour. This is caused by the side-street stop controlled eastbound left turn vehicles exiting the current driveway onto Highland Drive. There is a proposed plan to reduce the number of travel lanes on Highland Drive north of 3300 South. This lane reduction was assumed for the future conditions for this study.

With project-generated traffic from the proposed development, all study intersections operate at acceptable delays and LOS with the exception of the 3350 South – South Project Access / Highland Drive, which operates at LOS F for all peak hours in both existing and future plus project conditions. The 3300 South / Highland Drive intersection also operates at LOS E in the weekday PM peak hour in future plus project conditions.

The following mitigation measures were analyzed for this study:

- Optimize signal timing at 3300 South / Highland Drive for the future plus project conditions weekday PM peak hour.
- Restrict left turns out of the North Project Access. Vehicles will instead make a right-turn onto Highland Drive and a U-turn at 3350 South / Highland Drive.

- Restrict left turns out of the South Project Access. Vehicles will instead make a right-turn onto Highland Drive and a U-turn at Luck Lane / Highland Drive.

With the mitigation measures listed above, all study intersections operate at acceptable delay and LOS for both existing and future plus project conditions. The added U-turns at 3350 South and Luck Lane cause minimal impact to the traffic operations at the intersections, but making the U-turn maneuver could be difficult due to lack of space and cause safety issues if vehicles take longer than anticipated to complete the U-turn maneuver. A summary of the delay and LOS for each condition is shown in **Table ES-1**.

TABLE ES-1 LEVEL OF SERVICE RESULTS SUMMARY

Intersection (Control)		Period	Existing	Existing + Project	Existing + Project Mitigated	Future Background	Future + Project	Future + Project Mitigated
			LOS & Delay (Sec/Veh)	LOS & Delay (Sec/Veh)	LOS & Delay (Sec/Veh)	LOS & Delay (Sec/Veh)	LOS & Delay (Sec/Veh)	LOS & Delay (Sec/Veh)
1	3300 S / Highland Dr (Signal)[1]	AM	34 / C	35 / D	35 / D	45 / D	52 / D	52 / D
		PM	41 / D	44 / D	44 / D	55 / D	63 / E	42 / D
		Sat	33 /C	35 / C	35 / C	40 / D	44 / D	44 / D
2	3350 S – South Project Access / Highland Dr (Side Street Stop)[2]	AM	22 / C	80 / F	31 / D	22 / C	89 / F	33 / D
		PM	51 / F	>100 / F	29 / D	55 / F	>100 / F	31 / D
		Sat	21 / C	81 / F	18 / C	22 / C	91 / F	19 / C
3	Luck Ln / Highland Dr (Signal)[1]	AM	6 / A	6 / A	6 / A	6 / A	6 / A	6 / A
		PM	6 / A	6 / A	6 / A	6 / A	6 / A	6 / A
		Sat	7 / A	7 / A	7 / A	7 / A	7 / A	7 / A
4	North Project Access / Highland Dr (Side Street Stop)[2]	AM	-	17 / C	11 / B	-	17 / C	11 / B
		PM	-	23 / C	13 / B	-	23 / C	13 / B
		Sat	-	18 / C	12 / B	-	18 / C	12 / B

1. Signalized intersections: overall intersection LOS and delay reported.
2. Unsignalized intersections: worst movement LOS and delay reported.

Source: Fehr & Peers, 2019

INTRODUCTION

The purpose of this study is to determine the potential impacts to traffic conditions due to the completion of the proposed development located southwest of the 3300 South / Highland Drive intersection. The proposed development is a mixed land use composed of residential, office space, and retail space. **Figure 1** shows the project location. This memorandum will discuss:

- The existing conditions in the study area.
- Intersection conditions with additional traffic from the proposed development.
- Future background conditions in the study area.
- Future intersection conditions with additional traffic from the proposed development.

STUDY AREA

This study analyzes the traffic operations at the following study intersections:

1. 3300 South / Highland Drive
2. 3350 South / Highland Drive
3. Luck Lane / Highland Drive
4. North Project Access / Highland Drive - plus project conditions only

DATA COLLECTION

Traffic counts at the existing study intersections were collected to establish a baseline of existing conditions and operations for the area. Weekday AM and PM peak period counts at 3300 South / Highland Drive and 3350 South / Highland Drive were previously collected on Thursday, February 21st, 2019. Additional weekday AM and PM peak period counts were collected at Luck Lane / Highland Drive on October 3rd, 2019. Saturday mid-day peak period counts were also collected on October 5th, 2019 at all study intersections. The weekday AM, weekday PM, and Saturday peak hours were 8:00-9:00 AM, 5:00-6:00 PM, and 12:30-1:30 PM, respectively.



FIGURE 1

Project Location

ANALYSIS METHODOLOGY

Level of Service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. **Table 1** provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for unsignalized intersections. The Highway Capacity Manual 6th Edition (HCM 6) methodology was used in this study to remain consistent with "state-of-the-practice" professional standards.

TABLE 1 LEVEL OF SERVICE DESCRIPTIONS

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

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

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

EXISTING CONDITIONS

PURPOSE

The purpose of the existing (2019) conditions analysis is to study the intersections during the peak travel periods of the day under existing traffic and geometric conditions. Through this analysis, existing traffic operational deficiencies can be identified.

LEVEL OF SERVICE ANALYSIS

Existing AM and PM peak hour volumes for this study are shown in **Figure 2**. Existing Saturday peak hour volumes for this study are shown in **Figure 3**. Using Synchro software and the HCM 6 delay thresholds introduced above, the existing weekday AM and PM and Saturday peak hour LOS were computed for each study intersection (see Appendix for detailed LOS reports). The results of this analysis are reported in **Table 2**.

As shown in **Table 2**, all study intersections operate at acceptable delay and LOS (LOS D or better) with the exception of the 3350 South / Highland Drive intersection in the PM peak hour, which operates at LOS F. This is caused by vehicles attempting to exit the proposed development by turning left onto Highland Drive. The high volumes of through traffic on Highland Drive make it difficult for these vehicles to find a gap in order to make the left turn, leading to high levels of delay.

MITIGATION MEASURES

The LOS F at 3350 South / Highland Drive is caused by traffic exiting the current driveway that will be replaced by the proposed development. Therefore, no mitigation measures were evaluated for existing conditions at this time.

TABLE 2 EXISTING CONDITIONS PEAK HOUR LEVEL OF SERVICE

Intersection				Worst Movement[1]			Overall Intersection	
ID	Location	Period	Control	Movement[3]	Delay (sec/veh)	LOS	Avg. Delay (sec/veh)[2]	LOS
1	3300 South / Highland Drive	AM	Signal	-	-	-	34	C
		PM		-	-	-	41	D
		Sat		-	-	-	33	C
2	3350 South / Highland Drive	AM	EB/WB Stop	WB LT	22	C	-	-
		PM		EB LT	51	F	-	-
		Sat		EB LT	21	C	-	-
3	Luck Lane / Highland Drive	AM	Signal	-	-	-	6	A
		PM		-	-	-	6	A
		Sat		-	-	-	7	A

1. The worst movement LOS and delay (seconds/vehicle). Only reported for unsignalized intersections.
2. The overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound, LT=Left-turn, RT=Right-turn, and TH=Through

Source: Fehr & Peers 2019.

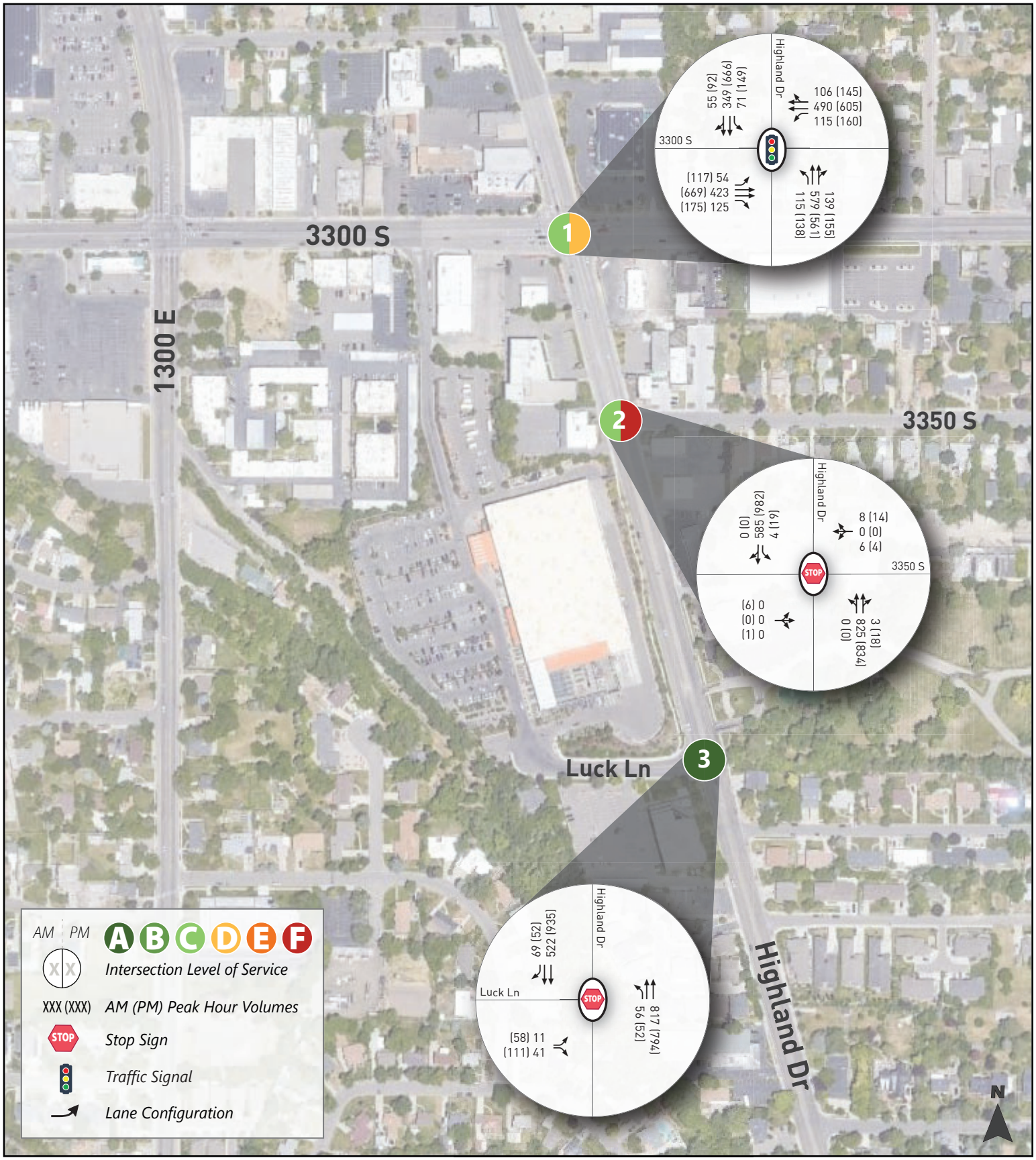


FIGURE 2

Existing Weekday AM & PM Conditions

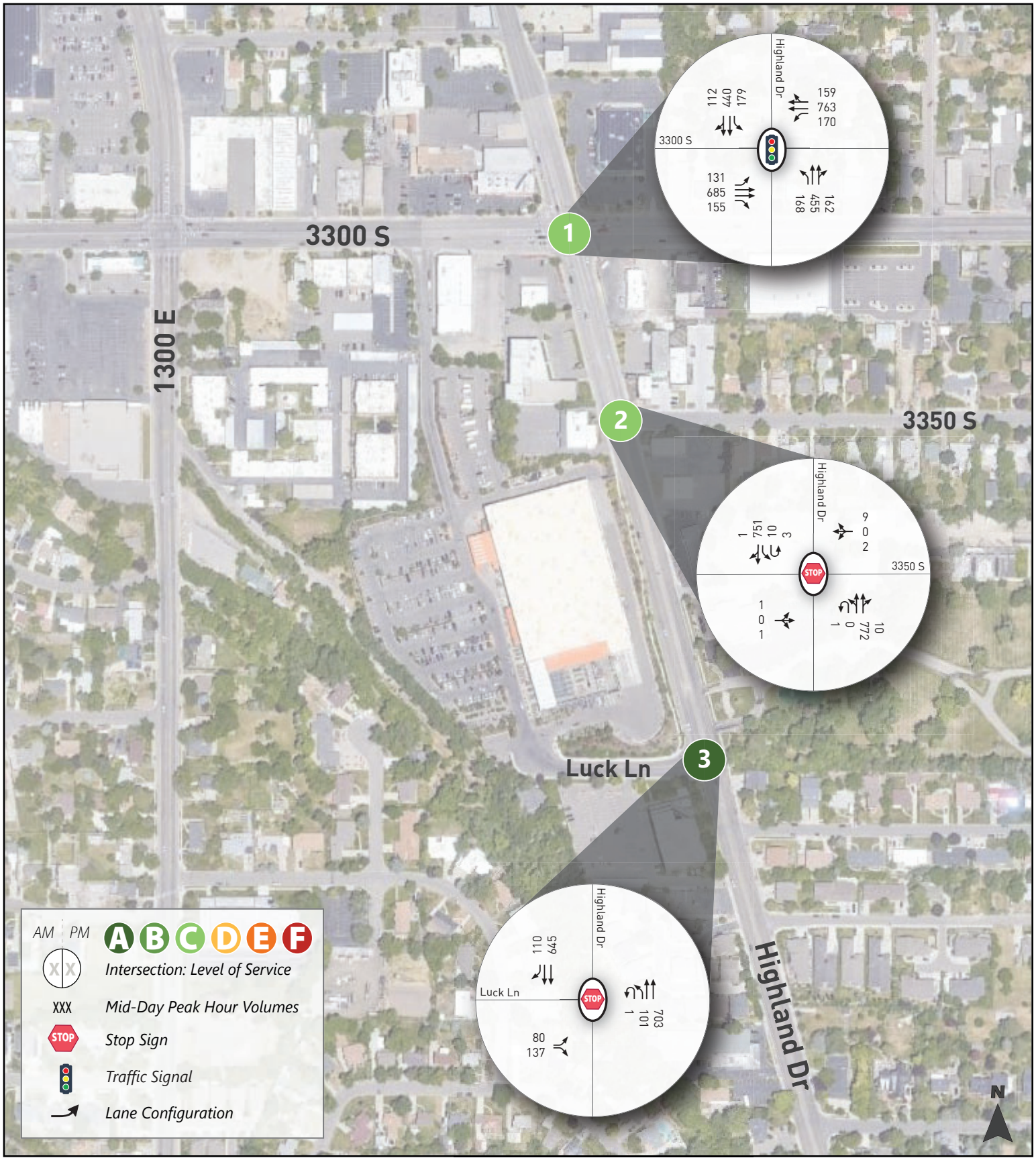


FIGURE 3

Existing Saturday Conditions

PROJECT CONDITIONS

PURPOSE

The project conditions analysis explains the type and intensity of the proposed development in the study area. This analysis provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in the Introduction.

PROPOSED DEVELOPMENT

The proposed development will be located on Highland Drive southwest of the 3300 South / Highland Drive intersection. The proposed development is mixed-use, composed of 195 multifamily residential units, a leasing office, general office space, and retail space. The site plan (attached in Appendix) shows two accesses to the proposed development on Highland Drive. It was assumed that these accesses will be full accesses, allowing left turns into and out of the development. This is consistent with the current driveways on Highland Drive in the study area.

TRIP GENERATION

Trip generation for the project was computed using trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*, 2017. Due to the mixed use nature of the development, internal capture rates were also calculated based on the method outlined in the ITE *Trip Generation Handbook, 3rd Edition*, 2017. It was also assumed that a portion of the trips traveling to and from the project site would shift to active transportation or transit modes of transportation. Census data from the surrounding census blocks was used to approximate the number of trips captured by walking, biking and transit modes. **Table 3** shows the weekday AM, weekday PM, and Saturday peak hour trip generation for the proposed Millcreek Sorensen development.

TABLE 3 MILLCREEK SORENSEN DEVELOPMENT TRIP GENERATION

Land Use[1]	Number of Units	Unit Type	Daily Trip Generation[2]	% Entering[3]	% Exiting[3]	% Walk/ Bike[4]	% Transit[4]	% Internal Capture[5]	Trips Entering	Trips Exiting	**New Daily Trips**
(221) - Multifamily Housing - Mid-Rise	195	Dwelling Unit	1,061	50%	50%	2.4%	3.0%	2.1%	491	491	**981**
(712) - Small Office Building	1,065	Sq. Ft.	17	50%	50%				8	8	**16**
(710) - General Office Building	24,382	Sq. Ft.	270	50%	50%				125	125	**250**
(820) - Shopping Center	11,176	Sq. Ft.	1,355	50%	50%				627	627	**1,253**
Net Weekday Trips									**1,250**	**1,250**	**2,500**
Land Use[1]	Number of Units	Unit Type	AM Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]				Trips Entering	Trips Exiting	**New AM Peak Hour Trips**
(221) - Multifamily Housing - Mid-Rise	195	Dwelling Unit	66	26%	74%	2.4%	3.0%	2.2%	16	45	**61**
(712) - Small Office Building	1,065	Sq. Ft.	2	83%	17%				2	0	**2**
(710) - General Office Building	24,382	Sq. Ft.	49	86%	14%				39	6	**45**
(820) - Shopping Center	11,176	Sq. Ft.	157	62%	38%				90	55	**145**
Net Weekday AM Peak Hour Trips									**146**	**107**	**253**
Land Use[1]	Number of Units	Unit Type	PM Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]				Trips Entering	Trips Exiting	**New PM Peak Hour Trips**
(221) - Multifamily Housing - Mid-Rise	195	Dwelling Unit	84	61%	39%	2.4%	3.0%	2.2%	47	30	**78**
(712) - Small Office Building	1,065	Sq. Ft.	3	32%	68%				1	2	**3**
(710) - General Office Building	24,382	Sq. Ft.	30	16%	84%				4	23	**28**
(820) - Shopping Center	11,176	Sq. Ft.	107	48%	52%				48	51	**99**
Net Weekday PM Peak Hour Trips									**100**	**107**	**207**
Land Use[1]	Number of Units	Unit Type	Saturday Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]				Trips Entering	Trips Exiting	**New Saturday Peak Hour Trips**
(221) - Multifamily Housing - Mid-Rise	195	Dwelling Unit	89	49%	51%	2.4%	3.0%	2.8%	40	42	**82**
(712) - Small Office Building	1,065	Sq. Ft.	2	50%	50%				1	1	**2**
(710) - General Office Building	24,382	Sq. Ft.	13	54%	46%				6	6	**12**
(820) - Shopping Center	11,176	Sq. Ft.	110	52%	48%				53	49	**102**
Net Saturday Peak Hour Trips									**101**	**97**	**198**

1. (XXX) Indicates ITE Land Use Code. Land Use Code from the Institute of Transportation Engineers - 10th Edition Trip Generation Manual (ITE Manual)

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

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

4. Percentage of trips that shift to active transportation or transit modes based on data collected by U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

5. Percentage of trips that are captured internally to the site based on rates published in ITE Manual.

Source: Fehr & Peers, 2019

TRIP DISTRIBUTION AND ASSIGNMENT

Project traffic was assigned to the roadway network based on the proximity to major streets and freeways, roadway network, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provided helpful guidance to establish these distribution percentages, especially in close proximity to the site.

The project-generated trips were distributed to and from these directions in the corresponding percentages:

- 40% North (using Highland Drive)
- 30% West (using 3300 South)
- 15% East (using 3300 South)
- 15% South (using Highland Drive)

These trip distribution assumptions were used to distribute project generated traffic to the study area intersections for the weekday AM and PM peak hours and the Saturday peak hour, as shown in **Figure 4** and **Figure 5**, respectively.

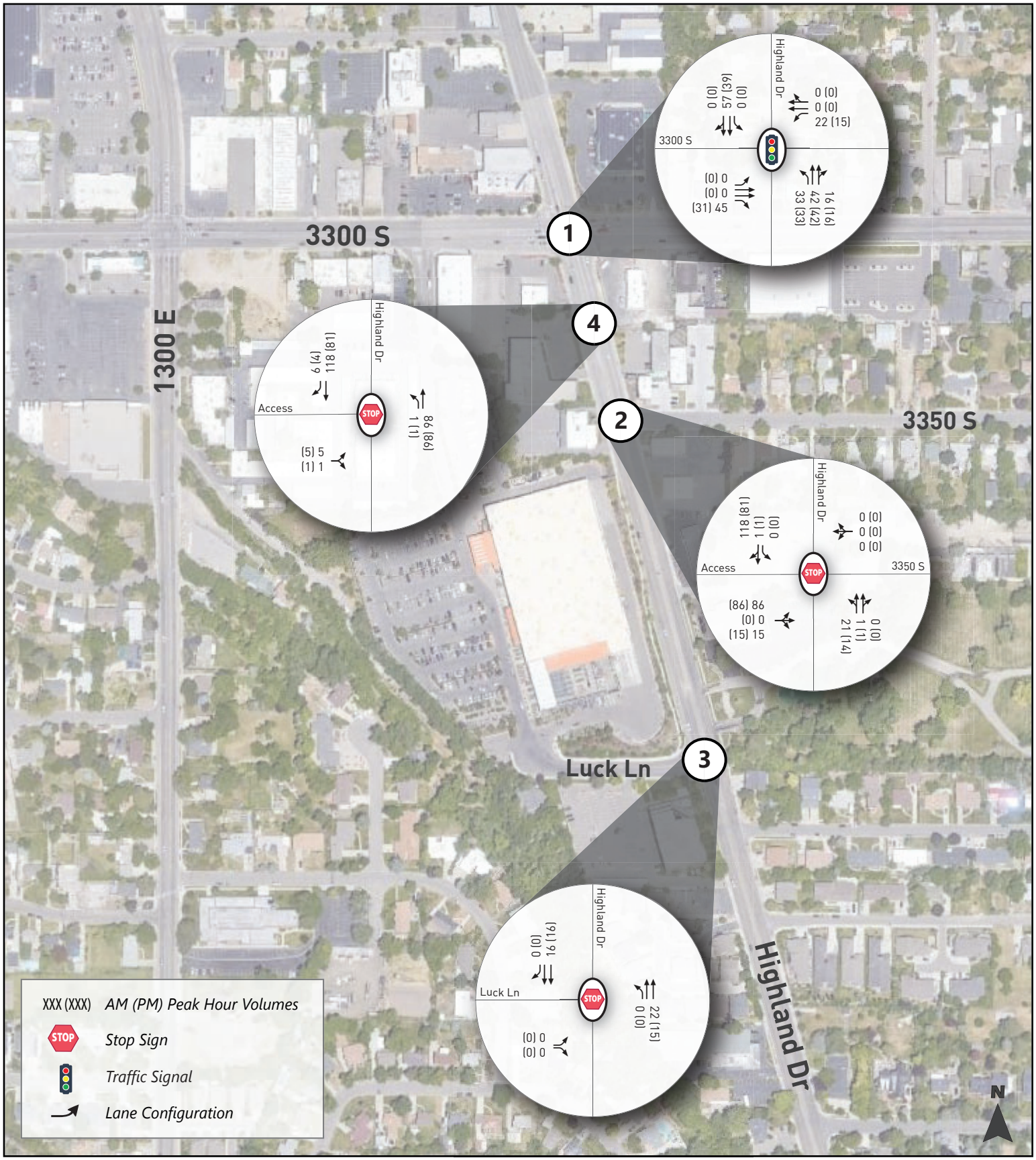


FIGURE 4

Weekday AM & PM Project Trips

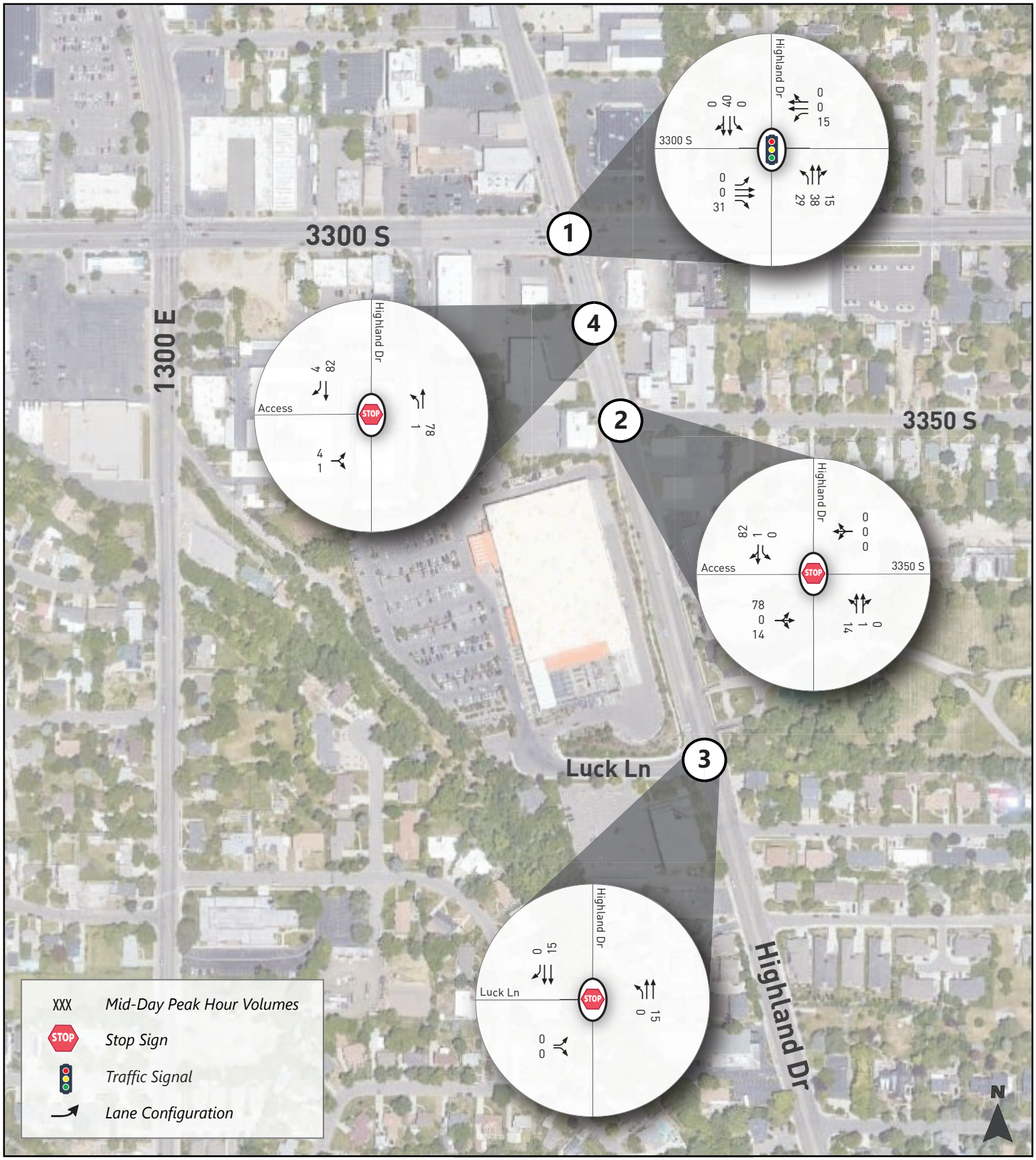


FIGURE 5

Saturday Project Trips

EXISTING PLUS PROJECT CONDITIONS

PURPOSE

The purpose of the existing plus project analysis is to evaluate the impact of the proposed development on the study intersections and roadways. In order to analyze this impact, the existing weekday AM, weekday PM, and Saturday peak hour traffic volumes were combined with volumes generated by the proposed project for the weekday AM, weekday PM, and Saturday peak hours. Intersection LOS analyses were then performed to show the impact of the proposed development.

TRAFFIC VOLUMES

In order to evaluate the impacts of the proposed development, weekday project-generated traffic (**Figure 4**) was added to the existing AM and PM peak hour volumes (**Figure 2)** to yield "existing plus project" weekday peak hour traffic volumes, and Saturday project-generated traffic (**Figure 5**) was added to the existing Saturday peak hour volumes (**Figure 3**) to yield "existing plus project" Saturday peak hour traffic volumes at the study intersections. The resulting traffic volumes for the weekday AM and PM peak hours and the Saturday peak hour are displayed in **Figure 6** and **Figure 7**, respectively.

LEVEL OF SERVICE ANALYSIS

Using Synchro software and the HCM 6 delay thresholds introduced above in **Table 1**, the existing plus project weekday AM, weekday PM, and Saturday peak hour LOS were computed for each study intersection (see Appendix for detailed LOS reports). The results of this analysis are reported in **Table 4**.

TABLE 4 EXISTING PLUS PROJECT CONDITIONS PEAK HOUR LEVEL OF SERVICE

Intersection				Worst Movement[1]			Overall Intersection	
ID	Location	Period	Control	Movement[3]	Delay (sec/veh)	LOS	Avg. Delay (sec/veh)[2]	LOS
1	3300 South / Highland Drive	AM	Signal	-	-	-	35	D
		PM		-	-	-	44	D
		Sat		-	-	-	35	C
2	3350 South – South Project Access / Highland Drive	AM	EB/WB Stop	EB LT	80	F	-	-
		PM		EB LT	>100	F	-	-
		Sat		EB LT	81	F	-	-
3	Luck Lane / Highland Drive	AM	Signal	-	-	-	6	A
		PM		-	-	-	6	A
		Sat		-	-	-	7	A
4	North Project Access / Highland Drive	AM	EB Stop	EB LT	17	C	-	-
		PM		EB LT	23	C	-	-
		Sat		EB LT	18	C	-	-

1. The worst movement LOS and delay (seconds/vehicle). Only reported for unsignalized intersections.
2. The overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound, LT=Left-turn, RT=Right-turn, and TH=Through
Source: Fehr & Peers 2019.

As shown in **Table 4**, all study intersections operate at acceptable delay and LOS (LOS D or better) with the exception of the 3350 South – South Project Access / Highland Drive intersection, which operates at LOS F in all peak hours. This is caused by vehicles attempting to exit the proposed development by turning left onto Highland Drive. The high volumes of through traffic on Highland Drive make it difficult for these vehicles to find a gap in order to make the left turn, leading to high levels of delay.

It should also be noted that the analysis shows northbound queues at the 3300 South / Highland Drive intersection expected to build up past the North Project Access. These northbound queues are likely to prevent vehicles from turning left out of the proposed development, as they will not

be able to enter the stream of vehicles heading northbound on Highland Drive. Due to the limitations of the software, Synchro does not take into account queue build-ups from adjacent intersections. Therefore, the delay at the North Project Access / Highland Drive intersection is likely understated.

There are also safety concerns for project vehicles exiting the North Project Access making a left turn onto Highland with the northbound queue from the 3300 South / Highland Drive intersection blocking the access. Vehicles attempting to turn left onto Highland Drive from the proposed development could be occupied with trying to find a gap make the left turn maneuver and not notice the queue from the 3300 South / Highland Drive intersection.

MITIGATION MEASURES

To address the LOS F at the 3350 South - South Project Access / Highland Drive intersection and the safety issue at the North Project Access, the following mitigation measures were considered for analysis in this study for existing plus project conditions:

- Restrict left turns out of the North Project Access. Vehicles will instead make a right-turn onto Highland Drive and a U-turn at 3350 South / Highland Drive.
- Restrict left turns out of the South Project Access. Vehicles will instead make a right-turn onto Highland Drive and a U-turn at Luck Lane / Highland Drive.

The results of the mitigated existing plus project conditions analysis are reported in **Table 5** (see Appendix for detailed LOS reports). Mitigated LOS results are reflected in **Figure 6** and **Figure 7**. As shown in **Table 5**, all study intersections operate at acceptable delay and LOS (LOS D or better) with both project accesses limited to right-turn out only. The U-turns at 3350 South and Luck Lane cause minimal impact to the operations at the intersections. However, the travel lanes on Highland Drive are not particularly wide (about 11 feet) with no shoulders in the area. Making a U-turn maneuver could be difficult due to lack of space and cause safety issues if vehicles take longer than anticipated to complete the U-turn maneuver.

It is also recommended that the South Project Access be aligned with 3350 South to avoid left turn conflicts north/south on Highland Drive to improve safety at the intersection.

TABLE 5 EXISTING PLUS PROJECT MITIGATED CONDITIONS PEAK HOUR LEVEL OF SERVICE

Intersection				Worst Movement[1]			Overall Intersection	
ID	Location	Period	Control	Movement[3]	Delay (sec/veh)	LOS	Avg. Delay (sec/veh)[2]	LOS
1	3300 South / Highland Drive	AM	Signal	-	-	-	35	D
		PM		-	-	-	44	D
		Sat		-	-	-	35	C
2	3350 South – South Project Access / Highland Drive	AM	EB/WB Stop	WB LT	31	D	-	-
		PM		WB LT	29	D	-	-
		Sat		WB LT	18	C	-	-
3	Luck Lane / Highland Drive	AM	Signal	-	-	-	6	A
		PM		-	-	-	6	A
		Sat		-	-	-	7	A
4	North Project Access / Highland Drive	AM	EB Stop	EB RT	11	B	-	-
		PM		EB RT	13	B	-	-
		Sat		EB RT	12	B	-	-

1. The worst movement LOS and delay (seconds/vehicle). Only reported for unsignalized intersections.
2. The overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound, LT=Left-turn, RT=Right-turn, and TH=Through

Source: Fehr & Peers 2019.

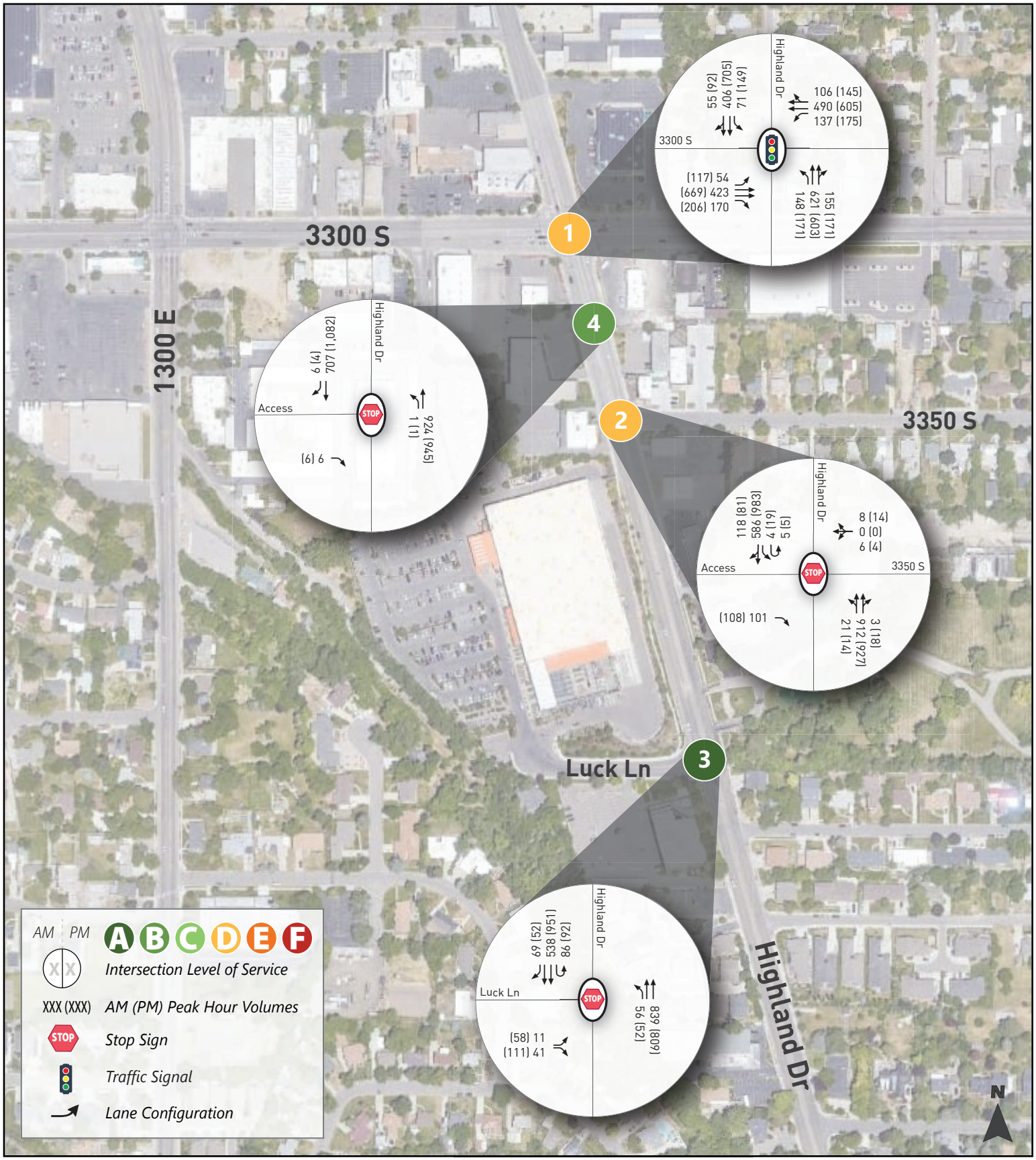


FIGURE 6

Existing Plus Project Weekday AM & PM Conditions

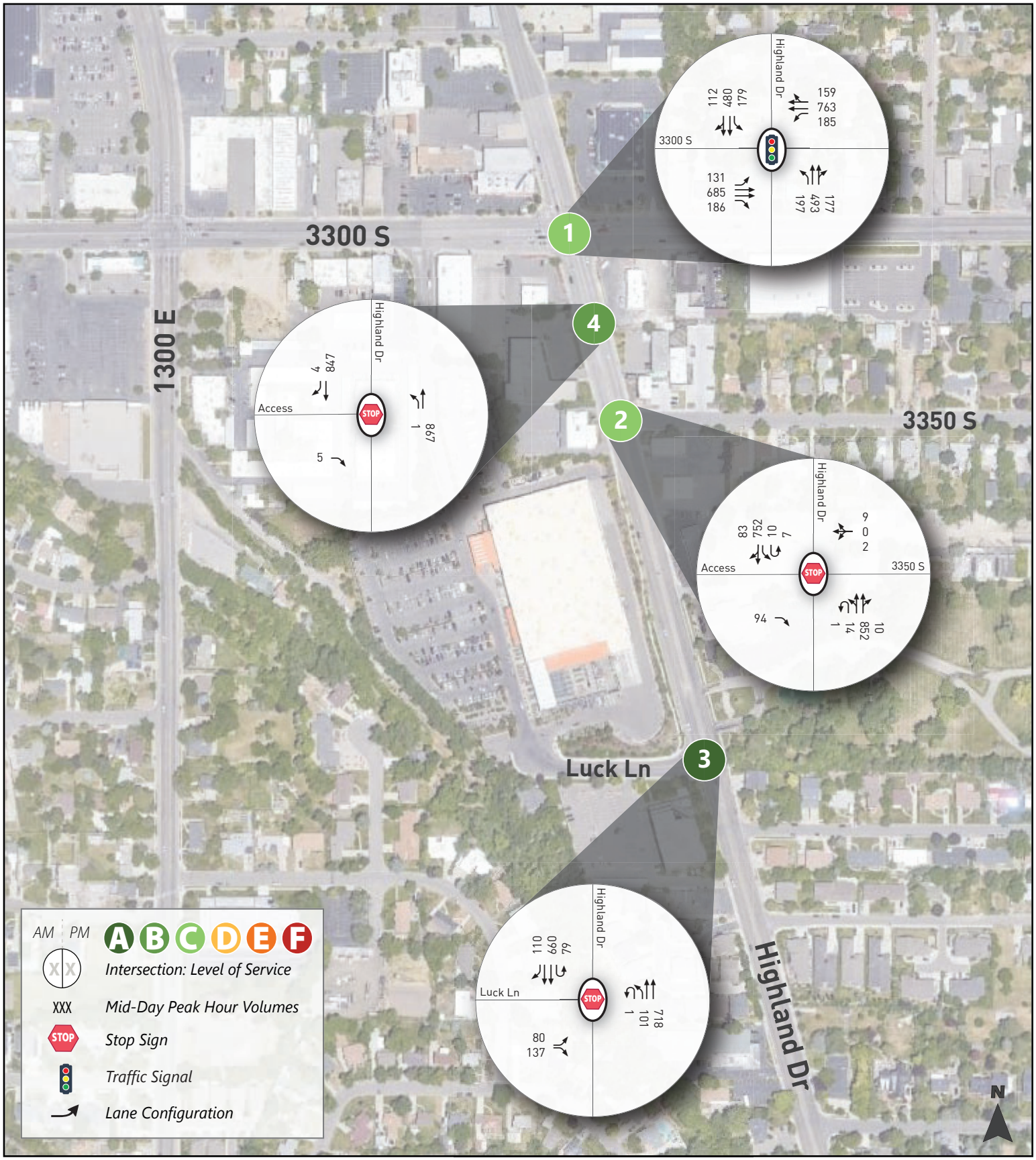


FIGURE 7

Existing Plus Project Saturday Conditions

FUTURE 2024 BACKGROUND CONDITIONS

PURPOSE

The purpose of the Future 2024 Background conditions analysis is to evaluate the study intersections during the peak travel periods of the day under projected 2024 traffic volumes. Through this analysis, future traffic operational deficiencies can be identified.

TRAFFIC VOLUMES

Fehr & Peers projected 2024 volumes using the linear annual growth rate of 3% which was derived from a comparison of the Wasatch Front Regional Council (WFRC) 2019 and 2050 Travel Demand Models along 3300 S.

The growth rate was applied to the existing 2019 background volumes and planned development volumes in the area were added to it to formulate the traffic volumes for the Future 2024 Background conditions. The 2024 background weekday AM and PM peak hour traffic volumes are shown in **Figure 8**. The 2024 background Saturday peak hour traffic volumes are shown in **Figure 9**.

There is a proposed plan to reduce the number of travel lanes on Highland Drive north of 3300 South. This lane reduction on Highland Drive was assumed for the future 2024 background and plus project analyses for this study.

LEVEL OF SERVICE ANALYSIS

Using Synchro software and the HCM 6th Edition delay thresholds introduced in the Introduction section, Future 2024 Background weekday AM, weekday PM, and Saturday peak hour LOS was computed for each study intersection. The results of this analysis are reported in **Table 6** (see Appendix for the detailed LOS report).

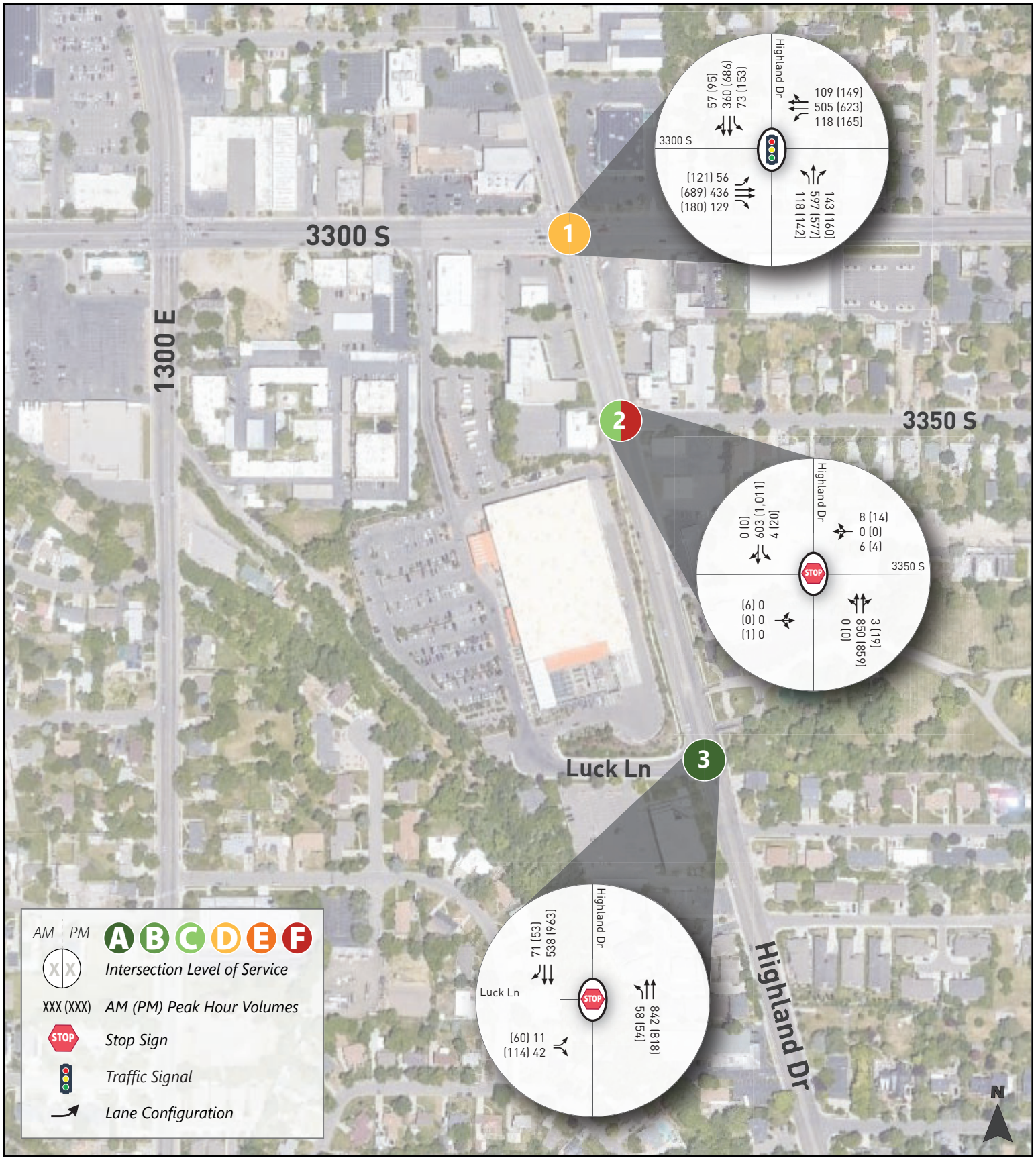


FIGURE 8

2024 Background Weekday AM & PM Conditions

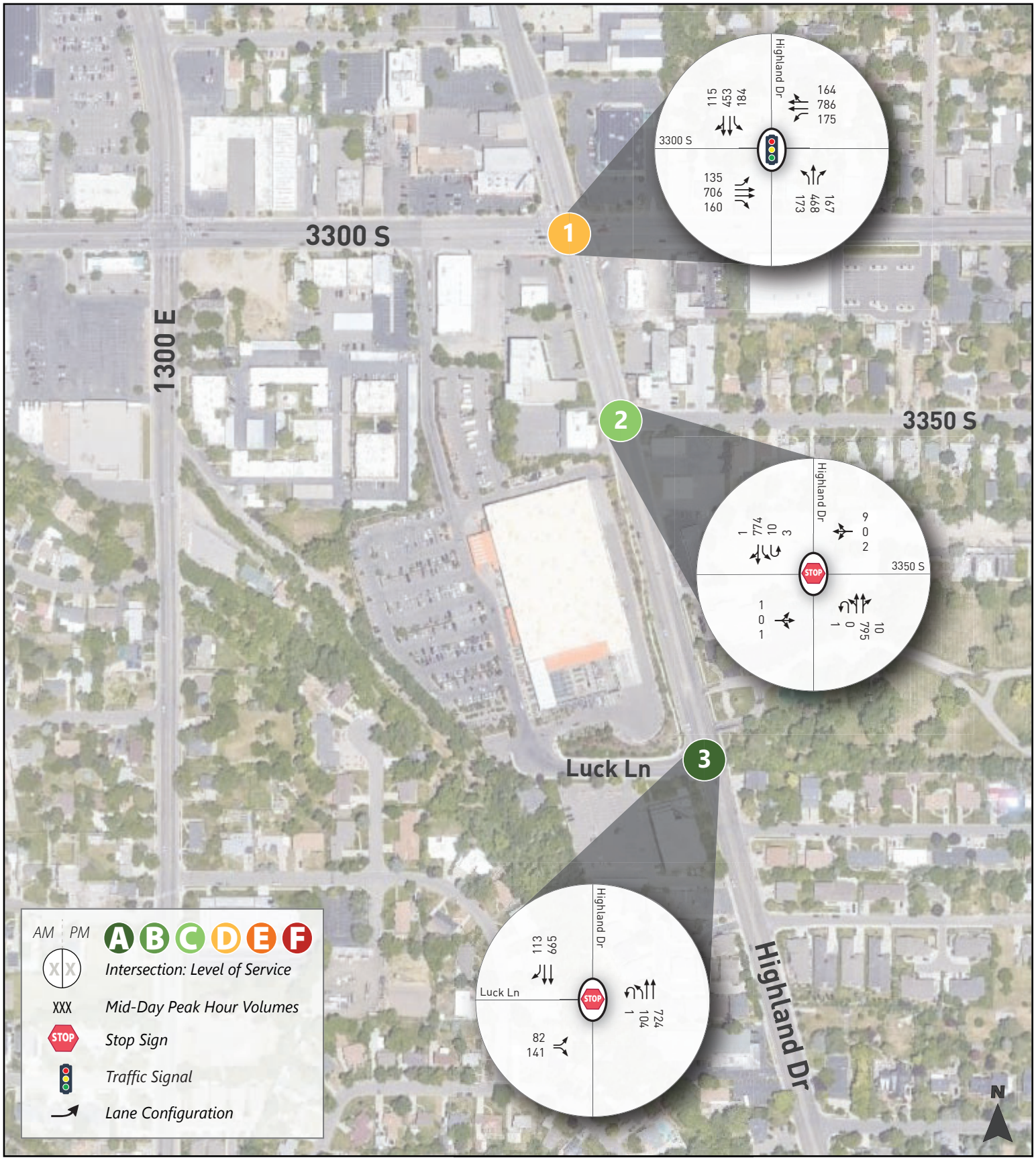


FIGURE 9

2024 Background Saturday Conditions

TABLE 6 FUTURE 2024 BACKGROUND CONDITIONS PEAK HOUR LEVEL OF SERVICE

Intersection				Worst Movement[1]			Overall Intersection	
ID	Location	Period	Control	Movement[3]	Delay (sec/veh)	LOS	Avg. Delay (sec/veh)[2]	LOS
1	3300 South / Highland Drive	AM	Signal	-	-	-	45	D
		PM		-	-	-	55	D
		Sat		-	-	-	40	D
2	3350 South / Highland Drive	AM	EB/WB Stop	WB LT	22	C	-	-
		PM		EB LT	55	F	-	-
		Sat		EB LT	22	C	-	-
3	Luck Lane / Highland Drive	AM	Signal	-	-	-	6	A
		PM		-	-	-	6	A
		Sat		-	-	-	7	A

1. The worst movement LOS and delay (seconds/vehicle). Only reported for unsignalized intersections.
2. The overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound, LT=Left-turn, RT=Right-turn, and TH=Through
Source: Fehr & Peers 2019.

As shown in **Table 6**, all study intersections operate at acceptable delay and LOS (LOS D or better) with the exception of the 3350 South / Highland Drive intersection in the PM peak hour, which operates at LOS F. This is caused by vehicles attempting to exit the current driveway by turning left onto Highland Drive. The high volumes of through traffic on Highland Drive make it difficult for these vehicles to find a gap in order to make the left turn, leading to high levels of delay.

It should also be noted that the 3300 South / Highland Drive intersection operates at the threshold of LOS D and LOS E (55 seconds). Also, the lane reduction on Highland Drive causes a reduced northbound thru lane at the 3300 South / Highland Drive intersection. The analysis shows northbound queues expected to build up past the two project accesses, making it more difficult for vehicles exiting the proposed development to make a left turn onto Highland Drive. Due to limitations of the software, Synchro does not take into account queue build-ups from adjacent intersections. Therefore, the delay at the 3350 South / Highland Drive intersection is likely understated.

MITIGATION MEASURES

The LOS F at 3350 South / Highland Drive is caused by traffic exiting the current driveway that will be replaced by the proposed development. Therefore, no mitigation measures were evaluated for future background conditions at this time.

FUTURE 2024 PLUS PROJECT CONDITIONS

PURPOSE

The purpose of the future 2024 plus project analysis is to evaluate the impact of the proposed development after completion on the study intersections and roadways. In order to analyze this impact, the future 2024 background weekday AM, weekday PM, and Saturday peak hour traffic volumes were combined with volumes generated by the proposed project for the weekday AM, weekday PM, and Saturday peak hours. Intersection LOS analyses were then performed to show the impact of the proposed development.

TRAFFIC VOLUMES

In order to evaluate the impacts of the proposed development, weekday project-generated traffic (**Figure 4**) was added to the future 2024 background AM and PM peak hour volumes (**Figure 8)** to yield "future 2024 plus project" weekday peak hour traffic volumes, and Saturday project-generated traffic (**Figure 5**) was added to the future 2024 background Saturday peak hour volumes (**Figure 9**) to yield "future 2024 plus project" Saturday peak hour traffic volumes at the study intersections. The resulting traffic volumes for the weekday AM and PM peak hours and the Saturday peak hour are displayed in **Figure 10** and **Figure 11**, respectively.

There is a proposed plan to reduce the number of travel lanes on Highland Drive north of 3300 South. This lane reduction on Highland Drive was assumed for the future 2024 background and plus project analyses for this study.

LEVEL OF SERVICE ANALYSIS

Using Synchro software and the HCM 6 delay thresholds introduced above in **Table 1**, the future 2024 plus project weekday AM, weekday PM, and Saturday peak hour LOS were computed for each study intersection (see Appendix for detailed LOS reports). The results of this analysis are reported in **Table 7**.

TABLE 7 FUTURE PLUS PROJECT CONDITIONS PEAK HOUR LEVEL OF SERVICE

Intersection				Worst Movement[1]			Overall Intersection	
ID	Location	Period	Control	Movement[3]	Delay (sec/veh)	LOS	Avg. Delay (sec/veh)[2]	LOS
1	3300 South / Highland Drive	AM	Signal	-	-	-	52	D
		PM		-	-	-	63	E
		Sat		-	-	-	44	D
2	3350 South – South Project Access / Highland Drive	AM	EB/WB Stop	EB LT	89	F	-	-
		PM		EB LT	>100	F	-	-
		Sat		EB LT	91	F	-	-
3	Luck Lane / Highland Drive	AM	Signal	-	-	-	6	A
		PM		-	-	-	6	A
		Sat		-	-	-	7	A
4	North Project Access / Highland Drive	AM	EB Stop	EB LT	17	C	-	-
		PM		EB LT	23	C	-	-
		Sat		EB LT	18	C	-	-

1. The worst movement LOS and delay (seconds/vehicle). Only reported for unsignalized intersections.
2. The overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound, LT=Left-turn, RT=Right-turn, and TH=Through
Source: Fehr & Peers 2019.

As shown in **Table 7**, all study intersections operate at acceptable delay and LOS (LOS D or better) with the exception of the 3300 South / Highland Drive intersection in the PM peak hour (LOS E), and the 3350 South – South Project Access / Highland Drive intersection, which operates at LOS F

in all peak hours. This is caused by vehicles attempting to exit the proposed development by turning left onto Highland Drive. The high volumes of through traffic on Highland Drive make it difficult for these vehicles to find a gap in order to make the left turn, leading to high levels of delay.

It should also be noted that the analysis shows northbound queues at the 3300 South / Highland Drive intersection expected to build up past the North Project Access. These northbound queues are likely to prevent vehicles from turning left out of the proposed development, as they will not be able to enter the stream of vehicles heading northbound on Highland Drive. Due to the limitations of the software, Synchro does not take into account queue build-ups from adjacent intersections. Therefore, the delay at the North Project Access / Highland Drive intersection is likely understated.

There are also safety concerns for project vehicles exiting the North Project Access making a left-turn onto Highland with the northbound queue from the 3300 South / Highland Drive intersection blocking the access. Vehicles attempting to turn left onto Highland Drive from the proposed development could be occupied with trying to find a gap make the left turn maneuver and not notice the queue from the 3300 South / Highland Drive intersection.

MITIGATION MEASURES

To address the LOS E at the 3300 South / Highland Drive intersection, the LOS F at the 3350 South - South Project Access / Highland Drive intersection and the safety issue at the North Project Access, the following mitigation measures were considered for analysis in this study for existing plus project conditions:

- Optimize signal timing at 3300 South / Highland Drive for the PM peak hour.
- Restrict left turns out of the North Project Access. Vehicles will instead make a right-turn onto Highland Drive and a U-turn at 3350 South / Highland Drive.
- Restrict left turns out of the South Project Access. Vehicles will instead make a right-turn onto Highland Drive and a U-turn at Luck Lane / Highland Drive.

The results of the mitigated future plus project conditions analysis are reported in **Table 8** (see Appendix for detailed LOS reports). Mitigated LOS results are reflected in **Figure 10** and **Figure 11**.

TABLE 8 FUTURE PLUS PROJECT MITIGATED CONDITIONS PEAK HOUR LEVEL OF SERVICE

Intersection				Worst Movement[1]			Overall Intersection	
ID	Location	Period	Control	Movement[3]	Delay (sec/veh)	LOS	Avg. Delay (sec/veh)[2]	LOS
1	3300 South / Highland Drive	AM	Signal	-	-	-	52	D
		PM		-	-	-	42	D
		Sat		-	-	-	44	D
2	3350 South – South Project Access / Highland Drive	AM	EB/WB Stop	WB LT	33	D	-	-
		PM		WB LT	31	D	-	-
		Sat		WB LT	19	C	-	-
3	Luck Lane / Highland Drive	AM	Signal	-	-	-	6	A
		PM		-	-	-	6	A
		Sat		-	-	-	7	A
4	North Project Access / Highland Drive	AM	EB Stop	EB RT	11	B	-	-
		PM		EB RT	13	B	-	-
		Sat		EB RT	12	B	-	-

1. The worst movement LOS and delay (seconds/vehicle). Only reported for unsignalized intersections.
2. The overall intersection LOS and delay (seconds/vehicle).
3. NB=Northbound, SB=Southbound, EB=Eastbound, WB=Westbound, LT=Left-turn, RT=Right-turn, and TH=Through
Source: Fehr & Peers 2019.

As shown in **Table 8**, all study intersections operate at acceptable delay and LOS (LOS D or better) with both project accesses limited to right-turn out only. The U-turns at 3350 South and Luck Lane cause minimal impact to the operations at the intersections. However, the travel lanes on Highland Drive are not particularly wide (about 11 feet) with no shoulders in the area. Making a U-turn maneuver could be difficult due to lack of space and cause safety issues if vehicles take longer than anticipated to complete the U-turn maneuver.

It is also recommended that the South Project Access be aligned with 3350 South to avoid left turn conflicts north/south on Highland Drive to improve safety at the intersection.

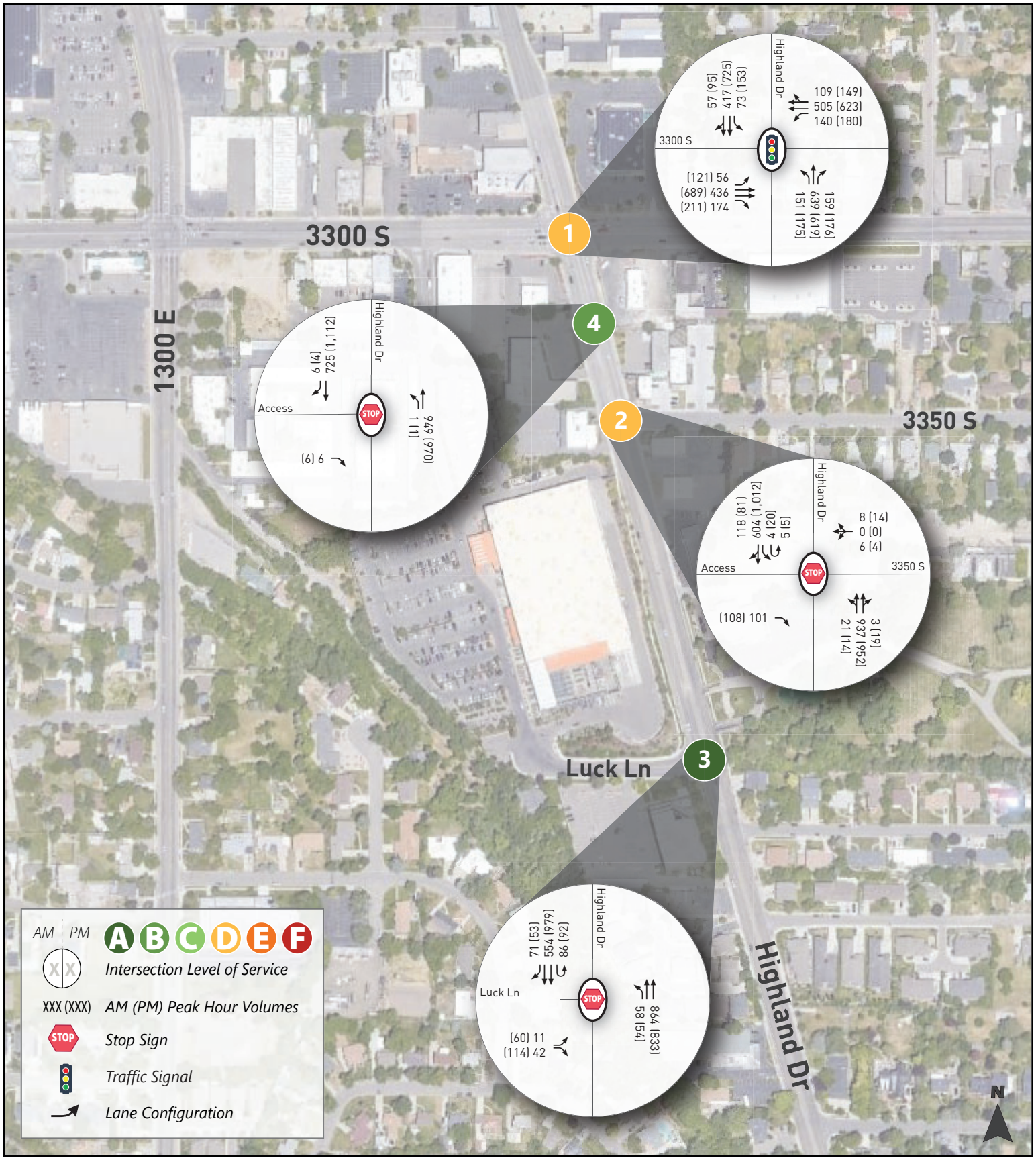


FIGURE 10

2024 Plus Project Weekday AM & PM Conditions

PARKING DEMAND ANALYSIS

PURPOSE

The purpose of the parking analysis is to assess the number of proposed parking stalls as outlined in the site plan to determine if the supplied parking will meet demands.

LITERATURE REVIEW

Using the land uses as outlined in **Table 3** for the proposed mixed-use development, Fehr & Peers evaluated and compared parking rates from the following sources to calculate the required number of parking spaces:

- Institute of Transportation Engineers (ITE)
- Urban Land Institute (ULI)
- Millcreek Municipal Code

Table 9 shows the parking requirement rates from each source listed above for the land uses of the proposed development.

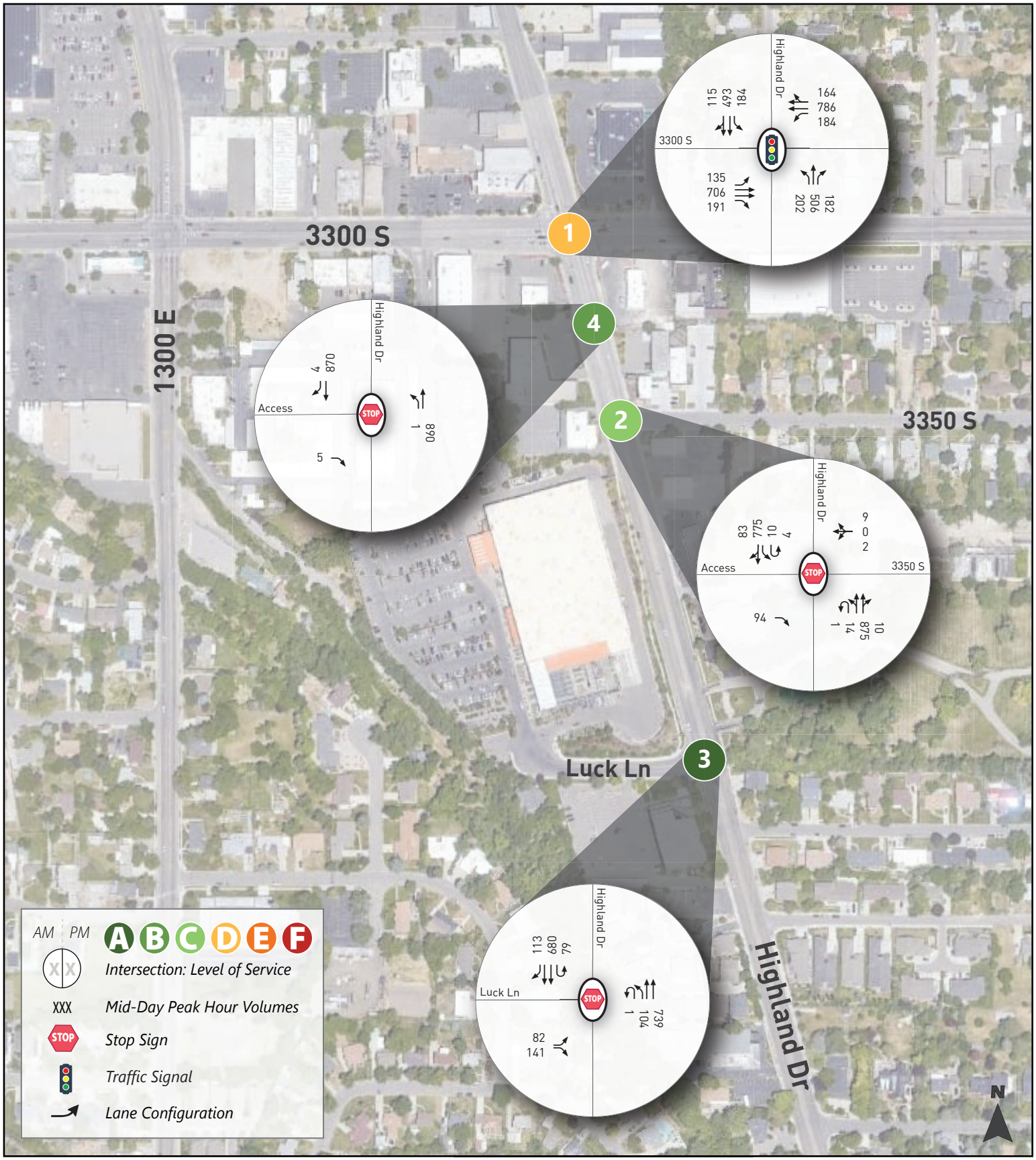


FIGURE 11

2024 Plus Project Saturday Conditions

TABLE 9 PARKING REQUIREMENT RATES

Source	Land Use	Units	Average Parking Demand	
			Weekday	Saturday
ITE[1]	Multifamily Housing (Mid-Rise)	Dwelling Units	1.31/Dwelling Unit	1.22/Dwelling Unit
	Small Office	GFA	2.56/1,000 ft^2	-
	General Office	GFA	2.39/1,000 ft^2	0.28/1,000 ft^2
	Shopping Center	GFA	1.95/1,000 ft^2	2.91/1,000 ft^2
ULI[2]	Multifamily Housing (Mid-Rise)	Dwelling Units	1.65/Dwelling Unit	1.65/Dwelling Unit
	Small Office	GFA	3.80/1,000 ft^2	0.38/1,000 ft^2
	General Office	GFA	3.80/1,000 ft^2	0.38/1,000 ft^2
	Shopping Center	GFA	3.60/1,000 ft^2	4.00/1,000 ft^2
Millcreek[3]	Studio Apartments	Dwelling Units	1.08/Dwelling Unit	-
	1 Bedroom Apartments	Dwelling Units	1.83/Dwelling Unit	-
	2 Bedroom Apartments	Dwelling Units	2.33/Dwelling Unit	-
	Small Office	GFA	1/250 ft^2	-
	General Office	GFA	1/250 ft^2	-
	Shopping Center	GFA	1/250 ft^2	-

1. ITE Parking rates from the *ITE Parking Generation, 4th Edition, 2010*, for Multifamily Housing (Mid-Rise) (Land Use 221), Small Office Building (Land Use 712), General Office Building (710), and Shopping Center (Land Use 820).
2. ULI parking rates from *Shared Parking, 2nd Edition,* 2005, for Residential (Rental), Office (<25 ksf), and Community Shopping Center (<400 ksf).
3. Parking ratio requirements from Millcreek Municipal Code Chapter 19.80.040: *Number of Spaces Required,* for Multiple Family Units, Multiple Family Dwelling, Dwelling Group, Apartment House (includes guest/visitor parking), Professional Offices and Banks, and Retail and Wholesale – Intensive.

The required number of parking stalls for the proposed land uses was calculated using parking rates displayed in **Table 9**. The calculated required parking spaces for the different sources are shown in **Table 10**.

TABLE 10 REQUIRED PARKING SPACES

Source	Land Use	Units	Required Parking Spaces	
			Weekday	Saturday
ITE[1]	Multifamily Housing (Mid-Rise)	195 Dwelling Units	256	238
	Small Office	1,065 GFA	3	3
	General Office	24,382 GFA	59	7
	Shopping Center	11,176 GFA	22	33
	TOTAL		**340**	**281**
ULI[2]	Multifamily Housing (Mid-Rise)	195 Dwelling Units	322	322
	Small Office	1,065 GFA	4	1
	General Office	24,382 GFA	93	10
	Shopping Center	11,176 GFA	41	45
	TOTAL		**460**	**378**
Millcreek[3]	Studio Apartments	30 Dwelling Units	33	-
	1 Bedroom Apartments	134 Dwelling Units	246	-
	2 Bedroom Apartments	31 Dwelling Units	73	-
	Small Office	1,065 GFA	5	-
	General Office	24,382 GFA	95	-
	Shopping Center	11,176 GFA	45	-
	TOTAL		**497**	**-**

The site plan shows 386 total parking stalls provided for the mixed-use proposed development. As shown in **Table 10**, the above sources show that aside from ITE, the parking supply would be insufficient. However, it should be noted that the above sources do not account for factors such as shared parking and proximity to transit that would encourage patrons to use one parking space for multiple uses, or avoid parking altogether.

The mixed land uses of residential, office, and retail should provide a benefit in shared parking at the proposed development. It is recommended though that parking regulations be clearly set to ensure parking spaces for the residents of the multifamily housing. It is also recommended that Transportation Demand Management (TDM) strategies, such as providing benefits to promote transit use and less driving for patrons, be considered to reduce the parking demand at the proposed development.

CONCLUSION

The analysis has shown that the vehicles making a left turn onto Highland Drive from the proposed development accesses will experience significant delay and safety concerns. Restricting left turns out of the development will help mitigate traffic operations and safety issues. However, making U-turns at 3350 South and Luck lane could be difficult due to lack of space and cause safety issues if vehicles take longer than anticipated to complete the U-turn maneuver on Highland Drive in the study area.