Kimley»Horn

August 31, 2017

Josiel Ferrer-Diaz, E.I.
City of Miami Beach
1688 Meridian Avenue, Suite 801
Miami Beach, FL 33139

Re: Ocean Terrace Redevelopment
Miami Beach, FL
Traffic Assessment

Dear Mr. Ferrer-Diaz:

Kimley-Horn and Associates, Inc. has performed a traffic assessment for the proposed Ocean Terrace redevelopment bounded by 75th Street to the north, 74th Street to the south, Ocean Terrace to the east, and Collins Avenue to the west in Miami Beach, Florida. The proposed redevelopment consists of 58 condominium units, 78 hotel rooms, 18,022 square feet of retail space, 288-seat restaurant, and a 4,320 square-foot bar. Please note that the proposed hotel includes an ancillary restaurant and bar that was not included in the trip generation as it will be primarily utilized by hotel guests.

Currently, the site is occupied by 16 apartment units, 240 hotel rooms contained within five (5) separate buildings, of which 181 rooms are active, and 37,866 square feet of specialty retail space contained within six (6) separate buildings, of which 32,149 square feet are active. The addresses of the hotel buildings on Ocean Terrace include 7410, 7420, 7430, 7436, and 7450. The addresses of the commercial buildings on Collins Avenue include 7409, 7421, 7433, 7439, 7441, and 7449. A detailed redevelopment conceptual site plan and a project location map are provided in Attachment A.

The traffic assessment's methodology is consistent with the requirements outlined by the City of Miami Beach. Methodology correspondence detailing the study requirements is provided in Attachment B. The following sections summarize the trip generation, valet analysis, pedestrian traffic operations analysis, and maneuverability analysis.

TRIP GENERATION

Trip generation calculations for the proposed redevelopment were performed using the Institute of Transportation Engineers' (ITE's) *Trip Generation Manual*, 9th Edition. The trip generation for the existing development was determined using ITE Land Use Codes (LUC) 220 (Apartment), 310 (Hotel), and 820 (Shopping Center). LUC 230 (Residential Condominiums/Townhouses), 310 (Hotel), 820 (Shopping Center), 931 (Quality Restaurant), and 925 (Drinking Place) were utilized for the proposed redevelopment. Project trips were estimated for the weekday A.M. and P.M. peak hours. Please note that the proposed hotel includes an ancillary restaurant and bar that was not included in the trip generation as it will be primarily utilized by hotel guests.

A ten percent (10%) multimodal reduction factor was applied to the trip generation calculations to account for the urban environment in which the redevelopment is located. It is expected that residents,

patrons, and guests will choose to walk, bike, or use public transit to and from the proposed redevelopment. City of Miami Beach Trolley's North Beach route, the Surfside Shuttle, and Miami-Dade Transit (MDT) Metrobus routes 108, 115, 119, and 120 provide service along Collins Avenue. Furthermore, MDT Metrobus routes 79, 112, and 117 serve the study area along 73rd Street and 75th Street.

A portion of the trips generated by the development will be captured internally within the site. Internal capture trips were determined based upon the ITE *Trip Generation Handbook*, August 2014. An internal capture rate of 2.4 percent (2.4%) was calculated during the A.M. peak hour and 10.2 percent (10.2%) during the P.M. peak hour based on the interaction between existing apartments, hotel, and retail space. An internal capture rate of 8.1 percent (8.1%) was calculated during the A.M. peak hour and 40.1 percent (40.1%) during the P.M. peak hour based on the interaction between the proposed residential condominiums, hotel, retail space, and restaurant space.

Pass-by capture trips were also determined based on average rates provided in the ITE *Trip Generation Handbook*, August 2014. For the existing development, a pass-by capture rate of 34.0 percent (34.0%) was applied to LUC 820 (Shopping Center) during the P.M. peak hour. For the proposed redevelopment, a pass-by capture rate of 34.0 percent (34.0%) was applied to LUC 820 (Shopping Center) and a pass-by capture rate of 44.0 percent (44.0%) was applied to LUC 931 (Quality Restaurant) during the P.M. peak hour.

The Ocean Terrace redevelopment is expected to result in a net reduction of 49 A.M. peak hour trips and a net reduction of 95 P.M. peak hour trips. Detailed trip generation calculations are included in Attachment C. Table 1 provides a summary of the trip generation for the proposed redevelopment.

Table 1: Trip Generation Summary

Development Plan	A.M. Peak Hour			P.M. Peak Hour		
	In	Out	Total	In	Out	Total
Existing Development	94	69	163	128	128	256
Proposed Redevelopment	56	58	114	95	66	161
Net Change	**-38**	**-11**	**-49**	**-33**	**-62**	**-95**

VALET ANALYSIS

The Ocean Terrace redevelopment will be served by two (2) dedicated valet drop-off/pick-up areas. Valet vehicles accessing the residential drop-off/pick-up area will be driven by a valet attendant to the residential parking garage. Note that the site provides separate valet drop-off and pick-up areas for residential valet. Two (2) drop-off spaces and two (2) pick-up spaces are provided at the residential drop-off/pick-up areas. Valet vehicles accessing the hotel, retail, and restaurant drop-off/pick-up area will be driven by a valet attendant to the hotel, retail, and restaurant parking garage. Six (6) spaces are provided at the hotel, retail, and restaurant drop-off/pick-up area. Attachment D contains graphics

illustrating drop-off/pick-up area stacking and proposed valet routes to and from the site's parking garages.

Self-parking and valet service are available for residents. Self-parking residents will park in the residential parking garage with access from 74th Street. Residents using valet services will use the residential valet drop-off/pick-up areas. For the residential component, it is assumed that 50.0 percent (50.0%) of arrivals and departures will self-park and the remaining 50.0 percent (50.0%) will utilize valet. For the hotel, retail, and restaurant components, it is assumed that 100.0 percent (100.0%) of the arriving patrons will valet as self-parking is not provided for hotel, retail, and restaurant patrons. A taxi/rideshare trip reduction factor of 42.6 percent (42.6%) was applied to the hotel trips based on actual field observation from the Cadillac Hotel located at 3925 Collins Avenue, Miami Beach, to account for patrons arriving via taxi/rideshare trips. Therefore, 57.4 percent (57.4%) of hotel trips were assumed to valet. Detailed data related to the Cadillac Hotel analysis is provided in Attachment E.

The valet analysis was conservatively prepared for the weekday P.M. peak hour of generator and the weekend (Saturday) peak hour of generator as they are the highest trip generation scenarios and as land uses peak at different times. That is, the hotel, retail, and restaurant uses peak during the weekday P.M. peak hour of generator and the retail and restaurant uses peaks during the weekend (Saturday) peak hour of generator. The valet trip generation calculations indicate that the development will generate a total of nine (9) residential valet trips during the weekday P.M. peak hour of generator and 10 residential valet trips during the weekend (Saturday) peak hour of generator. Furthermore, the trip generation calculations indicate that the development will generate a total of 189 hotel, retail, and restaurant valet trips during the weekday P.M. peak hour of generator and 275 hotel, retail, and restaurant valet trips during the weekend (Saturday) peak hour of generator. A summary of expected valet trips is contained in Table 2. Detailed trip generation calculations are included in Attachment F.

Table 2: Expected Valet Trips

Valet Station	Land Use Served	Drop-Off	Pick-Up
Weekday P.M. Peak Hour Generator			
Residential	58 Condominiums	6	3
Hotel, Retail, and Restaurant	78 Hotel Rooms 18,022 sf of Retail 288-Seat Restaurant 4,320 sf Bar	117	72
Weekend Peak Hour Generator			
Residential	58 Condominiums	6	4
Hotel, Retail, and Restaurant	78 Hotel Rooms 18,022 sf of Retail 288-Seat Restaurant 4,320 sf Bar	165	110

The valet queuing operations analysis was performed based on the methodology outlined in ITE's *Transportation and Land Development*, 1988. The analysis was performed to determine if valet operations could accommodate vehicular queues without blocking the crosswalks and travel lanes on 74th Street and 75th Street.

Valet Assumptions

The queuing analysis used the multiple-channel waiting line model with Poisson arrivals and exponential service times. The queuing analysis is based on the coefficient of utilization, ρ, which is the ratio of the average vehicle arrival rate over the average service rate multiplied by the number of channels.

Valet attendants for the residential condominiums will be stationed at the lobby level porte-cochere and will travel to and from the residential parking garage. Valet attendants for hotel, retail, and restaurant patrons will be stationed at the lobby level porte-cochere and will travel to and from the hotel, retail, and restaurant parking garage. A valet drop-off trip service time was calculated based on the time it would take a valet parking attendant to obtain and park a drop-off vehicle for both valet areas. Similarly, a valet pick-up trip service time was calculated based on the time it would take a valet parking attendant to bring a parked vehicle back to a patron for both valet areas.

The calculated average service time for valeted residential vehicles is 3.0 minutes for valet drop-off/pick-up and 3.1 minutes for hotel, retail, and restaurant valet drop-off/pick-up. The average service time includes an average vehicle processing time of one (1) minute which includes the valet exchange time. The additional 2.0 minutes that comprises the service time represents the time needed to drive the valet vehicle to/from the parking space and for the valet attendant to walk to the parked vehicle or return to the valet station. The average service time is included as control delay in all further valet analyses. Detailed valet calculations are provided in Attachment F.

If the coefficient of utilization (average service rate/valet attendant service capacity) is greater than one (>1), the calculation methodology does not yield a finite queue length. This result indicates overcapacity conditions for the valet area. The valet attendant service capacity is the number of total trips a valet attendant can make in a one-hour period multiplied by the number of valet attendants.

The analysis determined the required queue storage, M, which is exceeded P percent of the time. Since this analysis seeks to examine if the queue length exceeds the storage provided, at a level of confidence of 90 percent (90%). Two (2) vehicle drop-off spaces and two (2) designated pick-up spaces are provided at residential drop-off/pick-up areas. A total of six (6) vehicle drop-off/pick-up spaces are provided at the hotel, retail, and restaurant drop-off/pick-up area. It is assumed that the three (3) spaces in the rotunda will be for valet drop-off in order to access the garage and the three (3) spaces north of the rotunda will be for valet pick-up.

Valet Analysis

An iterative approach was used to determine the number of valet attendants required to accommodate the proposed redevelopment demand during the analysis hour and ensure that the 90th percentile valet queue does not extend beyond the designated valet service area. The valet analysis worksheet is provided in Attachment F.

As the site provides separate valet drop-off and pick-up areas for residential valet, it was determined that one (1) valet attendant is needed for the residential valet drop-off and one (1) valet attendant is needed for the residential valet pick-up for a total of two (2) valet attendants at the residential porte-cochere during both the weekday P.M. peak hour of generator and weekend peak hour generator so that the vehicle queues from the drop-off/pick-up areas do not extend beyond the designated valet areas or negatively impacting circulation. A total of 13 valet attendants are required at the hotel, retail, and restaurant porte-cochere during the weekday P.M. peak hour of generator and 18 valet attendants would be required during the weekend peak hour generator so that the vehicle queues from the hotel, retail, and restaurant drop-off/pick-up area do not extend beyond the designated valet areas.

Valet Conclusion

Based on the valet operations analysis performed, it was determined that the 90th percentile valet queues will not extend beyond the valet service area and into the public right-of-way or negatively impacting circulation. Based upon the conservative assumptions applied to the traffic demand conditions, it was estimated that two (2) valet attendants would be required at the residential porte-cochere during both peak periods. It was also estimated that 13 valet attendants would be required at the hotel, retail, and restaurant porte-cochere during the weekday P.M. peak hour of generator and 18 valet attendants would be required during the weekend peak hour generator. It should be noted that projected vehicular volumes and estimated valet processing times were conservatively assumed in the analysis. If it is determined that valet processing times can be performed more efficiently and/or actual traffic volumes are lower than projected, a reduced number of valet attendants may be adequate to serve the site.

PEDESTRIAN EVALUATION

Pedestrian features including sidewalks, crosswalks, and pedestrian amenities were evaluated along 74th Street, 74th Street, Ocean Terrace, and Collins Avenue. A detailed evaluation of pedestrian features is provided below:

75th Street between Collins Avenue and Ocean Terrace

75th Street between Collins Avenue and Ocean Terrace functions as a two-lane, undivided roadway with on-street parking along the north and south sides of 75th Street. Sidewalk widths vary from 6 to 8 feet on the north and south sides of 75th Street. Crosswalks and pedestrian ramps are in place at the intersections of Ocean Terrace to the east and Collins Avenue to the west. Tactile domes are in place at all quadrants at the intersection of Collins Avenue. Note that the signalized intersection of 75th Street and Collins Avenue operates under pre-timed two-phase operations. Pedestrian crossing phases are concurrent with vehicles phases and are sequential with every phase change. Therefore, pedestrian push-buttons are not provided at the signal.

74th Street between Collins Avenue to Ocean Terrace

74th Street between Collins Avenue to Ocean Terrace functions as a two-lane, undivided roadway with on-street parking along the north and south sides of 74th Street. Sidewalk widths vary from 10 to 12 feet on the north and south sides of 74th Street. Crosswalks and pedestrian ramps are in place at the intersections of Ocean Terrace to the east and Collins Avenue to the west. Tactile domes are in place at the northeast, northwest, and southeast quadrants at the intersection of Collins Avenue. Note that

the signalized intersection of 74th Street and Collins Avenue operates under pre-timed two-phase operations. Pedestrian crossing phases are concurrent with vehicles phases and are sequential with every phase change. Therefore, pedestrian push-buttons are not provided at the signal.

Ocean Terrace between 75th Street and 74th Street

Ocean Terrace between 75th Street and 74th Street functions as a two-lane, undivided roadway with on-street parking along the east and west sides of Ocean Terrace. Sidewalk widths vary from 18 to 20 feet on the east and west sides of Ocean Terrace. Crosswalks and pedestrian ramps are in place at the intersections of 75th Street to the north and 74th Street to the south.

Collins Avenue between 75th Street to 74th Street

Collins Avenue between 75th Street to 74th Street functions as a three-lane, one-way (northbound), undivided roadway with on-street parking along the east and west sides of Collins Avenue. Sidewalk widths vary from 8 to 16 feet on the east and west sides of Collins Avenue. Crosswalks and pedestrian ramps are in place at the intersections of 75th Street to the north and 74th Street to the south. Tactile domes are in place at all quadrants at the intersection of 75th Street and at the northeast, northwest, and southeast quadrants at the intersection of 74th Street. Note that the signalized intersections of 75th Street at Collins Avenue and 74th Street and Collins Avenue operate under pre-timed two-phase operations. Pedestrian crossing phases are concurrent with vehicles phases and are sequential with every phase change. Therefore, pedestrian push-buttons are not provided at the signals.

MANEUVERABILITY ANALYSIS

The areas included in the maneuverability analysis include the on-site porte-cocheres, parking garage, and loading area. The analysis was performed using Transoft's *AutoTURN 10* software which applies vehicle turning templates consistent with American Association of State Highway and Transportation Officials' (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 2004/2011. The analysis was prepared using passenger car (P) design vehicles for the porte-cochere and parking garage areas. Single unit trucks (SU-30) and delivery trucks comparable to P-design vehicles were used for deliveries and loading activities. The following summarizes the results of this analysis.

Residential Porte-Cochere and Garage

Access to the residential porte-cochere is provided via one (1) driveway along the south side of the property along 74th Street. A P-design vehicle will be able to maneuver into and through the porte-cochere area to access the residential parking garage and travel through the parking garage without conflicting with by-passing traffic, refer to Exhibit 1 and 2 in Attachment G.

Hotel, Retail, and Restaurant Porte-Cochere and Garage

Access to the hotel, retail, and restaurant porte-cochere is provided via one (1) driveway along the north side of the property along 75th Street. A P-design vehicle will be able to maneuver into and through the porte-cochere area to access the hotel, retail, and restaurant parking garage (levels 2 and 3) and travel through the parking garage without conflicting with by-passing traffic, refer to Exhibit 1 and 2 (levels 2 and 3 parking is identical) in Attachment G.

Loading Area

Access to the loading area is provided via one (1) service entrance located along the north side of the property. SU-30 trucks and delivery vans, comparable to P-design vehicles, will be used for loading activities at the site and will be able to maneuver into and out of the loading area as shown in Exhibit 3 and 4 in Attachment G. SU-30 trucks will require a back-in maneuver from 75th Street to enter the loading area. A dock master or flagman is recommended for the loading area to direct traffic and assist SU-30 trucks with the back-in entry maneuvers.

Maneuverability Conclusion

Passenger vehicle traffic will be able to ingress and egress from the site's porte-cocheres and parking garages without conflicting with oncoming traffic. Additionally, SU-30 trucks and P-design vehicles are able to ingress and egress the loading area without conflicting with oncoming traffic. Please note that a dock master or flagman is recommended for the loading area to direct traffic and assist SU-30 trucks as they require back-in entry maneuvers.

TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

Transportation Demand Management (TDM) strategies are proposed to reduce the impacts of the project traffic on the surrounding roadway network. Typical measures promote bicycling and walking, encourage car/vanpooling and offer alternatives to the typical workday hours. The applicant will provide secure bicycle parking for use by residents and hotel employees. The site will include six (6) short-term and 58 long-term bicycle racks for use by residents and 12 short-term and 11 long-term bicycle racks for use by guests, patrons, and employees. Transit information will be provided within the site including route schedules and maps. The applicant will also provide subsidized transit passes for employees. Furthermore, to better accommodate pedestrians accessing the site, wide sidewalks (between 9 and 14 feet) will also be provided. The applicant will also provide four (4) electric vehicle charging stations, two (2) in each of the resident and hotel, retail, and restaurant parking garages.

CONCLUSION

The analysis results indicate that the proposed redevelopment is expected to result in a reduction of 49 net new vehicle trips during the A.M. peak hour and a reduction of 95 net new vehicle trips during the P.M. peak hour.

The valet operations analysis performed determined that the 90th percentile valet queues will not extend beyond the valet drop-off/pick-up areas. Based upon the conservative assumptions applied to the traffic demand conditions, it was estimated that two (2) valet attendants would be required at the residential porte-cochere during both the weekday P.M. peak hour of generator and weekend peak hour generator periods. Furthermore, it was estimated that 13 valet attendants would be required at the hotel porte-cochere during the weekday P.M. peak hour of generator and 18 valet attendants would be required during the weekend peak hour generator.

As a result of the pedestrian evaluation, it was determined that pedestrian amenities such as sidewalks and crosswalks are provided in the vicinity of the proposed redevelopment.

The maneuverability analysis determined that passenger vehicle traffic will be able to ingress and egress from the site's porte-cocheres and parking garages without conflicting with oncoming traffic.

Additionally, SU-30 trucks and P-design vehicles are able to ingress and egress the loading area without conflicting with oncoming traffic. Please note that a dock master or flagman is recommended for the loading area to direct traffic and assist SU-30 trucks as they require back-in entry maneuvers.

TDM strategies are also proposed as part of the redevelopment to reduce the impacts of the project traffic on the surrounding roadway network. The applicant will provide include six (6) short-term and 58 long-term bicycle racks for use by residents and 12 short-term and 11 long-term bicycle racks for use by guests, patrons, and employees. Transit information will also be provided within the site including route schedules and maps. The applicant will also provide subsidized transit passes for employees. Furthermore, to better accommodate pedestrians accessing the site, wide sidewalks (up to 14 feet wide) will be provided. The applicant will also provide four (4) electric vehicle charging stations, two (2) in each of the resident and hotel, retail, and restaurant parking garages.

If you have any questions regarding this analysis, please feel free to contact me.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Adrian K. Dabkowski, P.E., PTOE
Associate

Attachments

Adrian K. Dabkowski, P.E., PTOE
Florida Registration Number 78828
Kimley-Horn and Associates, Inc.
600 North Pine Island Road, Suite 450
Plantation, Florida 33324
CA # 00000696

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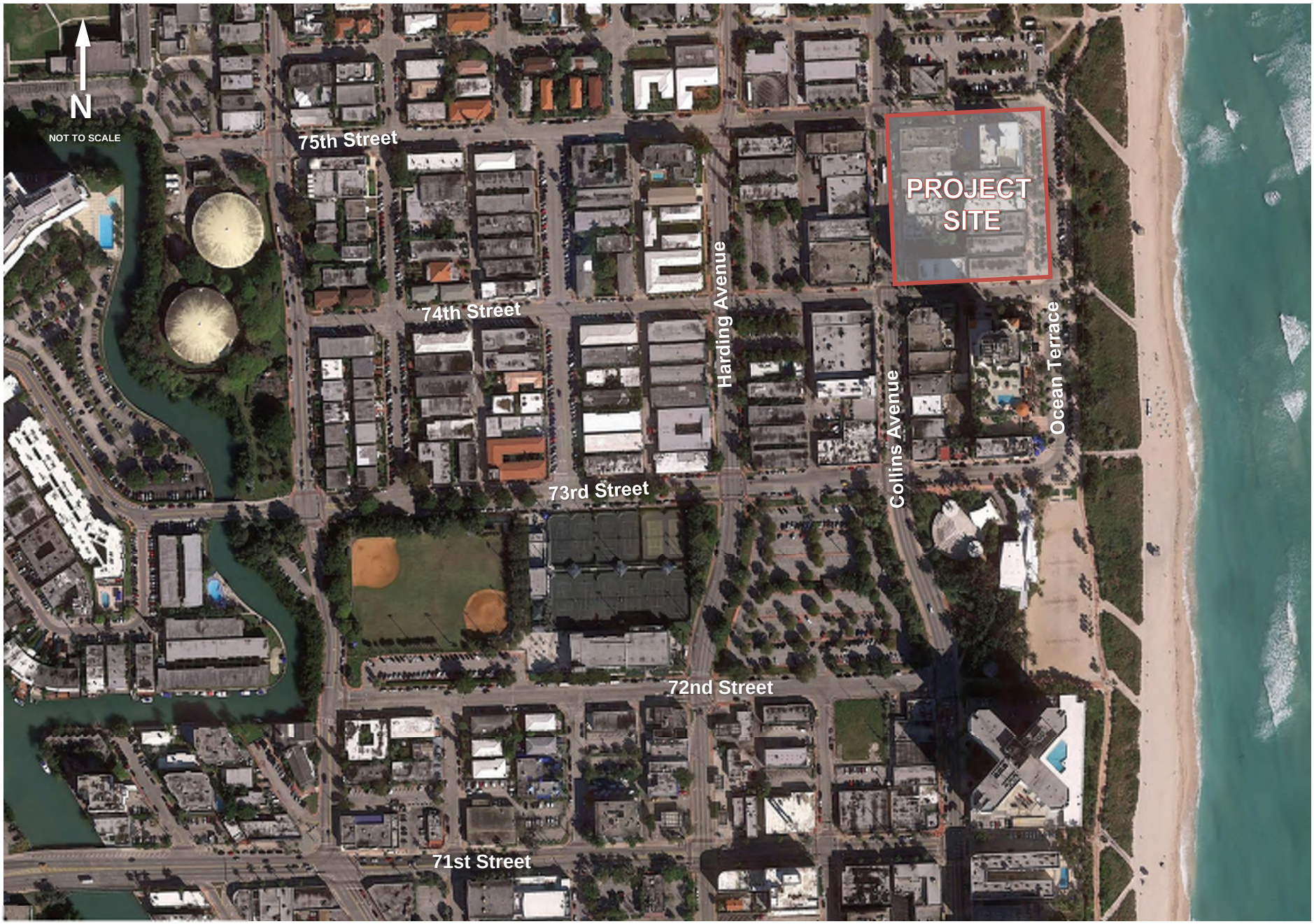
Attachment A

Conceptual Site Plan



Kimley»Horn

Location Map
Ocean Terrace
Miami Beach, Florida

RETAIL +7'-6" N.G.V.D. | 7436 +10'-0" N.G.V.D. | 7450 +10'-0" N.G.V.D. | CONDOMINIUM +10'-4" N.G.V.D.

LOBBY LEVEL
Floor Plan
SCALE: 1/16" = 1'-0"

N

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OCEAN TERRACE

7400 Ocean Terrace
Miami Beach, FL 33141

A mixed used project by
Ocean Terrace Holdings
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Luis O. Revuelta
AR-0007972

Date
8/25/2017
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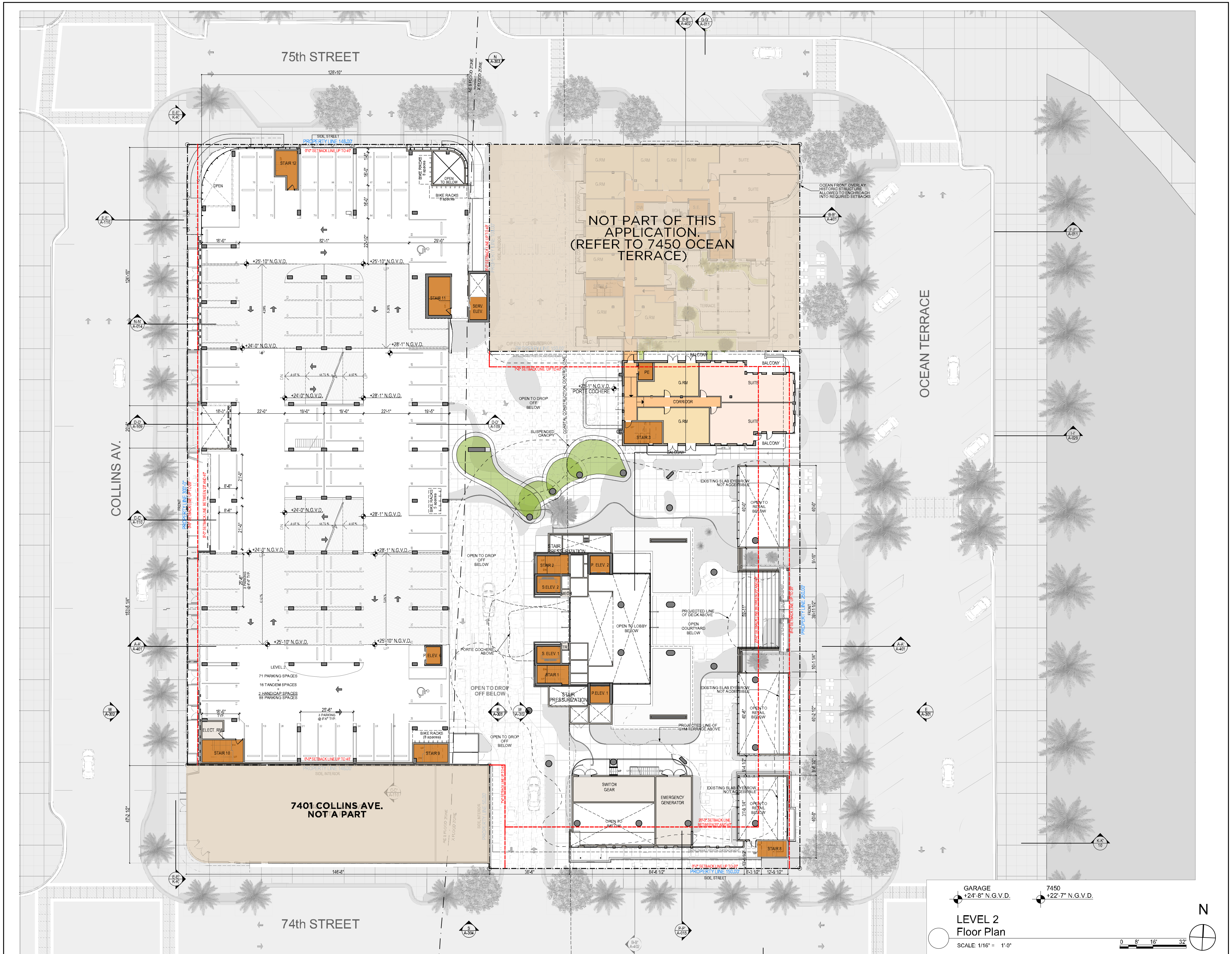
Sheet Name

FLOOR PLAN - GROUND FLOOR

A-203



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AR-0007972

Date
8/25/2017
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FLOOR PLAN - LEVEL 2

A-204

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Date
8/25/2017
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FLOOR PLAN - LEVEL 3

A-205

Attachment B

Methodology Correspondence

Ekwere, Ekaete

From: Soltani Sobh, Ali <AliSoltaniSobh@miamibeachfl.gov>
Sent: Wednesday, December 21, 2016 11:40 AM
To: Dabkowski, Adrian
Cc: Ekwere, Ekaete; grace@clarocorp.com; Ferrer, Josiel; Oliver@fteinc.net; clamus@fteinc.net
Subject: RE: Ocean Terrace | Traffic Assessment Methodology

Good morning Adrian,
At this point, Transportation Department doesn't have any further comments on this methodology study.

Best regards,

MIAMIBEACH

Ali Soltani Sobh, Ph.D.
Transportation Analyst

Transportation Department
1700 Convention Center Drive, 4th Floor
Miami Beach, FL 33139
Tel: 305-673-7000, ext 2173
AliSoltaniSobh@miamibeachfl.gov
http://www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community.

From: Adrian.Dabkowski@Kimley-horn.com [mailto:Adrian.Dabkowski@Kimley-horn.com]
Sent: Wednesday, December 21, 2016 10:03 AM
To: Soltani Sobh, Ali
Cc: ekaete.ekwere@kimley-horn.com; grace@clarocorp.com; Ferrer, Josiel; Oliver@fteinc.net; clamus@fteinc.net
Subject: RE: Ocean Terrace | Traffic Assessment Methodology

Ali:

Please let me know if you have any further comments.

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

From: Dabkowski, Adrian
Sent: Wednesday, December 07, 2016 8:08 AM
To: Soltani Sobh, Ali <AliSoltaniSobh@miamibeachfl.gov>
Cc: Ekwere, Ekaete <ekaete.ekwere@kimley-horn.com>; grace@clarocorp.com; Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>; Oliver@fteinc.net; clamus@fteinc.net
Subject: RE: Ocean Terrace | Traffic Assessment Methodology

Ali:

The revised methodology including a pedestrian evaluation is attached. Please note that the retail component will not be able to self-park and will be valet-only. This update has also been included in the methodology.

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

From: Soltani Sobh, Ali [mailto:AliSoltaniSobh@miamibeachfl.gov]
Sent: Monday, December 05, 2016 4:12 PM
To: Dabkowski, Adrian <Adrian.Dabkowski@Kimley-horn.com>
Cc: Ekwere, Ekaete <ekaete.ekwere@kimley-horn.com>; grace@clarocorp.com; Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>; Oliver@fteinc.net; clamus@fteinc.net
Subject: RE: Ocean Terrace | Traffic Assessment Methodology

Good afternoon Adrian,
I have sent you our comments in email at November 29, 2016 as below:

"For the subject study please analysis the potential pedestrian demand and pedestrian circulation facilities level of services (including sidewalks and crosswalks at four intersections surrounding the proposed redevelopment)."

Best regards,

MIAMIBEACH

Ali Soltani Sobh, Ph.D.
Transportation Analyst

Transportation Department
1700 Convention Center Drive, 4th Floor
Miami Beach, FL 33139
Tel: 305-673-7000, ext 2173
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http://www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community.

From: Adrian.Dabkowski@Kimley-horn.com [mailto:Adrian.Dabkowski@Kimley-horn.com]
Sent: Monday, December 05, 2016 2:37 PM
To: Soltani Sobh, Ali
Cc: ekaete.ekwere@kimley-horn.com; grace@clarocorp.com; Ferrer, Josiel; Oliver@fteinc.net; clamus@fteinc.net
Subject: RE: Ocean Terrace | Traffic Assessment Methodology

Good afternoon Ali:

Please let me know if the City or peer reviewer have any additional comments, so we can proceed with the analyses.

Thank you
Adrian

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

From: Soltani Sobh, Ali [mailto:AliSoltaniSobh@miamibeachfl.gov]
Sent: Tuesday, November 29, 2016 11:25 AM
To: Dabkowski, Adrian <Adrian.Dabkowski@Kimley-horn.com>
Cc: Ekwere, Ekaete <ekaete.ekwere@kimley-horn.com>; grace@clarocorp.com; Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>; Oliver@fteinc.net; clamus@fteinc.net
Subject: RE: Ocean Terrace | Traffic Assessment Methodology

Good morning Adrian,
For the subject study please analysis the potential pedestrian demand and pedestrian circulation facilities level of services (including sidewalks and crosswalks at four intersections surrounding the proposed redevelopment).

Best regards,

MIAMIBEACH

Ali Soltani Sobh, Ph.D.
Transportation Analyst

Transportation Department
1700 Convention Center Drive, 4th Floor
Miami Beach, FL 33139
Tel: 305-673-7000, ext 2173
AliSoltaniSobh@miamibeachfl.gov
http://www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community.

From: Adrian.Dabkowski@Kimley-horn.com [mailto:Adrian.Dabkowski@Kimley-horn.com]
Sent: Wednesday, November 23, 2016 1:04 PM
To: Soltani Sobh, Ali
Cc: ekaete.ekwere@kimley-horn.com; grace@clarocorp.com; Ferrer, Josiel; Oliver@fteinc.net; clamus@fteinc.net
Subject: Ocean Terrace | Traffic Assessment Methodology

Good afternoon Ali:

Our proposed traffic assessment methodology for the Ocean Terrace project is attached. Please let us know if the City has any comments.

Thank you
Adrian

Kimley»Horn

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

Kimley»Horn

Memorandum

To: Ali Soltani Sobh, Ph.D.
City of Miami Beach

From: Adrian K. Dabkowski, P.E., PTOE AK
Ekaete Ekwere, E.I. EE

Cc: Grace Dillon, Ocean Terrace Holdings, LLC
Josiel Ferrer-Diaz, E.I., City of Miami Beach
Oliver Rodriguez, P.E., FTE Inc.
Claudia Lamus, P.E., FTE Inc.

Date: December 7, 2016

Subject: Ocean Terrace Redevelopment
Traffic Assessment Methodology

The purpose of this memorandum is to summarize the methodology discussed at our November 10, 2016 meeting. The proposed redevelopment is bounded by 75th Street to the north, 74th Street to the south, Ocean Terrace to the east, and Collins Avenue to the west in Miami Beach, Florida. The proposed redevelopment consists of 53 condominium units, 82 hotel rooms, and 18,000 square feet of retail space. Currently, the site is occupied by 16 apartment units, 240 hotel rooms, of which 181 rooms are active, contained within five (5) separate buildings, and 37,866 square feet of specialty retail space contained within six (6) separate buildings, of which 32,149 square-feet are active. The addresses of the hotel buildings on Ocean Terrace include 7450, 7436, 7430, 7420, and 7410. The addresses of the commercial buildings on Collins Avenue include 7409, 7421, 7433, 7439, 7441, and 7449. Detailed development program information and a conceptual site plan are provided in Attachment A. The following sections summarize the proposed methodology.

TRIP GENERATION

A trip generation comparison analysis was conducted using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 9th Edition for the existing and proposed redevelopment. Please note that the trip generation analysis excluded inactive uses within the existing development that were determined to be unoccupied and not in operation. The trip generation for the existing development was determined using ITE Land Use Codes 310 (Hotel), 820 (Shopping Center), and 220 (Apartment). The trip generation for the proposed redevelopment was determined using ITE Land Use Codes 230 (Residential Condominiums/Townhouses), 310 (Hotel), and 820 (Shopping Center). Please note that to provide a conservative analysis and to account for potential restaurants that could be included as part of the redevelopment, LUC 820 (Shopping Center) was used for the retail space. Project trips will be estimated for the weekday A.M. and P.M. peak hour.

A multimodal (public transit, bicycle, and pedestrian) reduction of 10 percent (10%) was applied to the trip generation calculations to account for the urban environment in which the project site is located. It is expected that employees, nearby residents, and visitors will choose to walk to the proposed development. Transit route information will be documented in the technical letter. Trip generation

calculations may be revised based on any revisions to the redevelopment program or site plan modifications.

A portion of the trips generated by the existing development and proposed redevelopment are captured internally within the site. Internal capture trips were determined based upon the ITE *Trip Generation Handbook*, August 2014. An internal capture rate of 1.2 percent (1.2%) for the A.M. peak period and 10.2 percent (10.2%) for the P.M. peak period was calculated based on the interaction between the existing apartments, hotel, and retail space. An internal capture rate of 1.7 percent (1.7%) for the A.M. peak period and 17.0 percent (17.0%) for the P.M. peak period was calculated based on the interaction between the proposed residential condominiums, hotel, and retail space. Internal capture calculations are contained in Attachment B.

In addition to the internal capture, pass-by capture trips were also determined based on average rates provided in the ITE *Trip Generation Handbook*, August 2014. For the existing development and proposed redevelopment, a pass-by capture rate of 34.0 percent (34.0%) was applied to LUC 820 (Shopping Center) during the P.M. peak hour. The project is expected to result in a reduction of 51 vehicle trips during the A.M. peak hour and a reduction of 102 vehicle trips during the P.M. peak hour. Detailed trip generation calculations are included in Attachment B.

VALET ANALYSIS

A valet operations queuing analysis will be prepared for the vehicle drop-off/pick-up area to ensure that queues do not spill back into public right-of-way. Self-parking and valet are available for patrons arriving to the residential component of the development. Please note that all trips to the hotel and retail are assumed to be valet trips as self-parking is not provided for these land uses. A taxi trip percentage factor of 42.6 percent (42.6%) will be applied based on actual field observation from the Cadillac Hotel located at 3925 Collins Avenue, Miami Beach to account for shared-ride trips associated with the hotel component of the redevelopment. Therefore, 57.4 percent (57.4%) of hotel trips will utilize valet. Data related to taxi trips is provided in Attachment C. For the residential component, it is assumed that 50.0 percent (50.0%) of the arriving patrons will self-park and the remaining 50.0 percent (50.0%) will utilize valet. For the retail component, it is assumed that 100.0 percent (100.0%) of the arriving patrons will valet.

Trip generation estimates will be utilized to provide for the highest demand (peak hour of generator) scenario based on a comparison of P.M. peak hour of generator and weekend peak hour of generator trip generation calculations for the redevelopment. The valet operations queuing analysis will be conducted consistent with procedures described in ITE's *Transportation and Land Development*, 1988. A traffic circulation figure will be prepared to illustrate the valet routes to and from the vehicle drop-off/pick-up area. All valet parking will be provided on-site. A technical letter documenting analysis assumptions and results, including the location of valet parking along with the number of parking spaces assigned for valet operations and the required number of valet attendants to service the facility under the highest demand will be prepared.

PEDESTRIAN EVALUATION

Pedestrian features near the site will be evaluated. The evaluation will include examining sidewalks and crosswalks along the site's boundaries including 74th Street, 75th Street, Ocean Terrace, and Collins Avenue.

MANEUVERABILITY ANALYSIS

Maneuverability analyses will be performed for the site plan utilizing Transoft Solutions' *AutoTURN* software. Maneuverability, traffic flow, and vehicular conflicts will be documented in a technical letter.

DOCUMENTATION

The results of the trip generation analysis, valet operations assessment and maneuverability analysis will be summarized in a technical letter. The letter will summarize the analysis assumptions, results, and will include supporting documents.

K:\FTL_TPTO\043727001-Ocean Terrace\Correspondence\Methodology\12 07 16 Ocean Terrace Meth rev.docx

Attachment A

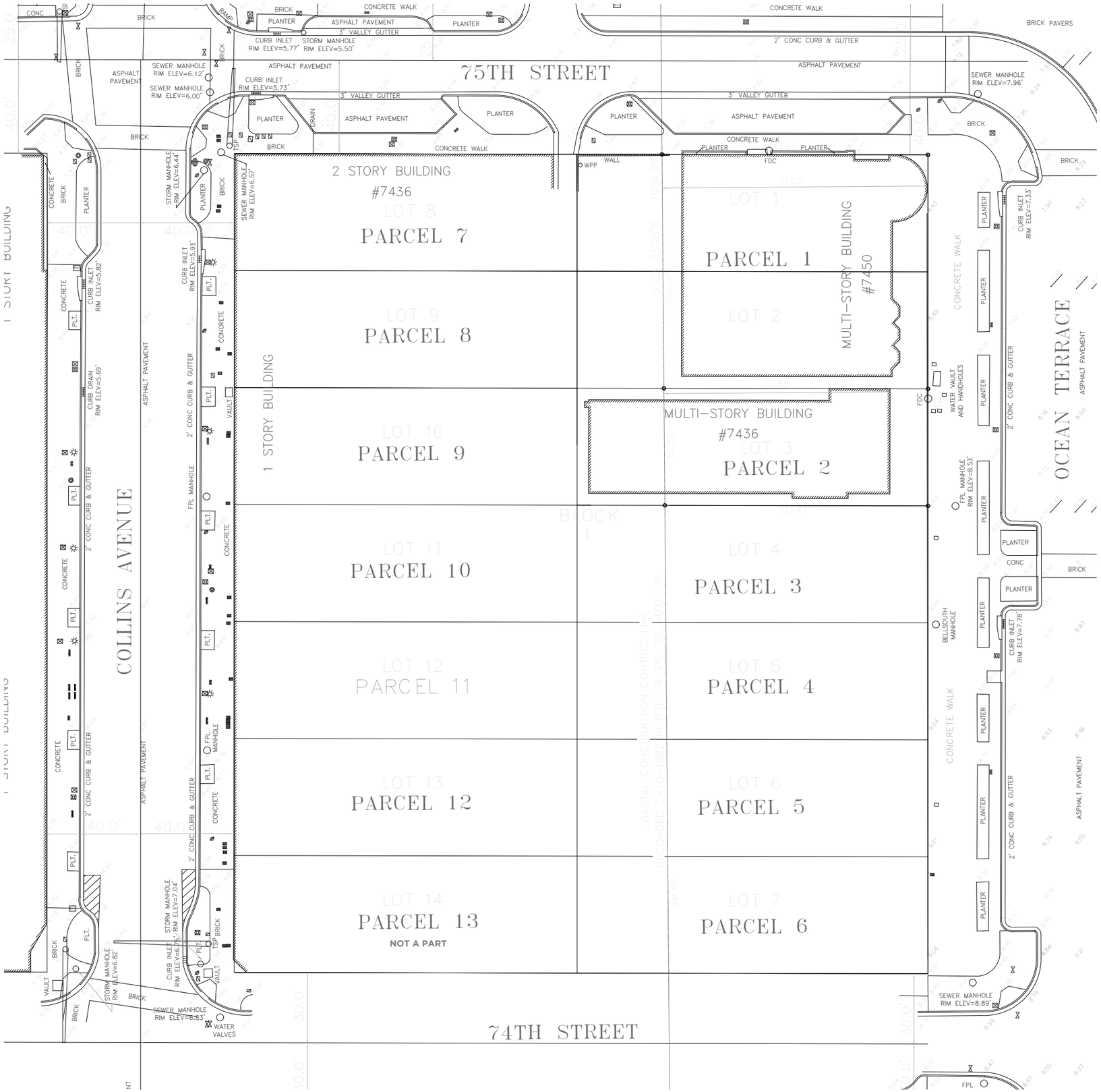
OCEAN TERRACE HOLDINGS Date 2016 10 31

EXISTING PROGRAM

HOTEL ROOMS	Keys	Sqft	Active/Inactive	Current Hotel
7450 Ocean Terrace	93	50,369	Active	Day Inn Hotel
w / Restaurant				Quijote Restaurant
7436 Ocean Terrace	49	16,244	Active	Ocean Surf Hotel
7430 Ocean Terrace	39	10,143	Active	Hotel
7410 Ocean Terrace	39	10,260	Inactive	
7420 Ocean Terrace	20	10,515	Inactive	
TOTAL	240	97,531		

COMMERCIAL	Use	Sqft	Active/Inactive	Current Stores
7409 Collins	Retail	3,375	Active	Subway, IGM Day Spa, Gaffas Optical
7421 Collins	Retail	4,754	Active	Goldstein's Prime - Kosher Market
7433 Collins	Restaurant	5,717	Inactive	
7439 Collins	Retail	4,913	Active	Latin Food Market, Fashion Outlet
7441 Collins	Retail	6,073	Active	Lulu Massgae, Hair Salon, Latin Café
7449 Collins	Retail/Offices	13,034	Active	Nail House, Christal Food Store, Traffic School
TOTAL		37,866		

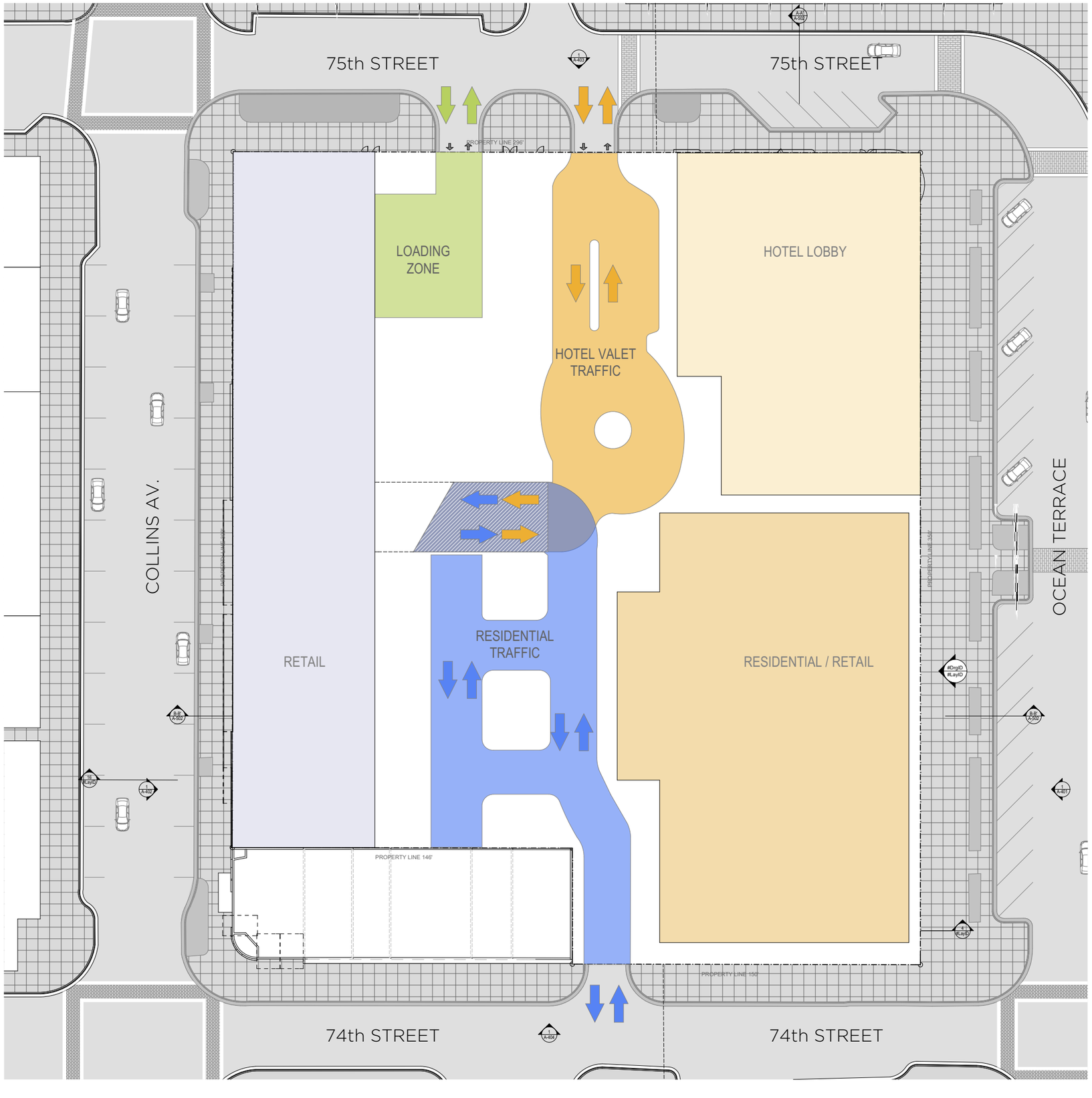
RESIDENTIAL	Units	Sqft	Active/Inactive	Notes
7400 Ocean Terrace	16	8,618	Active	
TOTAL	16	8,618		



EXISTING CONDITION

EXISTING

A



PROPOSED VEHICULAR TRAFFIC

- HOTEL
- RESIDENTIAL
- LOADING
- RAMP UP TO PARKING

ESTIMATED PROPOSED PROGRAM

CONDO UNITS	= 53
HOTEL ROOMS	= 82
RETAIL	= 8
AREA	= 18,000 SF
PARKING SPACES	= 200

CONCEPTUAL SITE PLAN & PROGRAM

A

Attachment B

PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
							Percent																			
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 1	1	Hotel	9	310	181	room	59%	41%	57	39	96	10.0%	10	51	35	86	1.2%	1	51	34	85	0.0%	0	51	34	85
	2	Shopping Center	9	820	32.149	ksf	48%	52%	37	41	78	10.0%	8	33	37	70	1.4%	1	32	37	69	0.0%	0	32	37	69
	3	Apartment	9	220	16	du	20%	80%	2	10	12	10.0%	1	2	9	11	0.0%	0	2	9	11	0.0%	0	2	9	11
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
						Total:			96	90	186	10.0%	19	86	81	167	1.2%	2	85	80	165	0.0%	0	85	80	165

ITE Land Use Code	Rate or Equation
310	Y=0.53(X)
820	LN(Y) = 0.61*LN(X)+2.24
220	Y=0.49*(X)+3.73

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
							Percent																			
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 2	1	Residential Condominium/Townhouse	9	230	53	du	17%	83%	5	26	31	10.0%	3	4	24	28	0.0%	0	4	24	28	0.0%	0	4	24	28
	2	Hotel	9	310	82	room	59%	41%	25	18	43	10.0%	4	23	16	39	2.6%	1	23	15	38	0.0%	0	23	15	38
	3	Shopping Center	9	820	18	ksf	48%	52%	26	29	55	10.0%	6	23	26	49	2.0%	1	22	26	48	0.0%	0	22	26	48
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
						Total:			56	73	129	10.0%	13	50	66	116	1.7%	2	49	65	114	0.0%	0	49	65	114

ITE Land Use Code	Rate or Equation
230	LN(Y) = 0.8*LN(X)+0.26
310	Y=0.53(X)
820	LN(Y) = 0.61*LN(X)+2.24

	IN	OUT	TOTAL
NET NEW TRIPS	**-36**	**-15**	**-51**

PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 1	1	Hotel	9	310	181	room	51%	49%	56	53	109	10.0%	11	50	48	98	9.2%	9	43	46	89	0.0%	0	43	46	89
	2	Shopping Center	9	820	32.149	ksf	48%	52%	134	146	280	10.0%	28	121	131	252	7.5%	19	116	117	233	34.0%	79	77	77	154
	3	Apartment	9	220	16	du	65%	35%	17	9	26	10.0%	3	15	8	23	43.5%	10	8	5	13	0.0%	0	8	5	13
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		Total:							207	208	415	10.0%	42	186	187	373	10.2%	38	167	168	335	23.6%	79	128	128	256

ITE Land Use Code	Rate or Equation
310	Y=0.6(X)
820	LN(Y) = 0.67*LN(X)+3.31
220	Y=0.55*(X)+17.65

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 2	1	Residential Condominium/Townhouse	9	230	53	du	67%	33%	24	12	36	10.0%	4	21	11	32	46.9%	15	11	6	17	0.0%	0	11	6	17
	2	Hotel	9	310	82	room	51%	49%	25	24	49	10.0%	5	22	22	44	13.6%	6	18	20	38	0.0%	0	18	20	38
	3	Shopping Center	9	820	18	ksf	48%	52%	91	99	190	10.0%	19	82	89	171	12.3%	21	75	75	150	34.0%	51	50	49	99
	4																									
	5																									
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	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		Total:							140	135	275	10.0%	28	125	122	247	17.0%	42	104	101	205	24.9%	51	79	75	154

ITE Land Use Code	Rate or Equation
230	LN(Y) = 0.82*LN(X)+0.32
310	Y=0.6(X)
820	LN(Y) = 0.67*LN(X)+3.31

	IN	OUT	TOTAL
NET NEW TRIPS	**-49**	**-53**	**-102**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (EXISTING)

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office						
Retail			33	37	121	131
Restaurant						
Cinema/Entertainment						
Residential			2	9	15	8
Hotel			51	35	50	48
	0	0	86	81	186	187

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	1	0	5	14
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	7	3
Hotel	0	0	0	1	7	2
	0	0	1	1	19	19

OUTPUT

Total % Reduction	*0.0%*	*1.2%*	*10.2%*
Office			
Retail		1.4%	7.5%
Restaurant			
Cinema/Entertainment			
Residential		0.0%	43.5%
Hotel		1.2%	9.2%

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	32	37	116	117
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	2	9	8	5
Hotel	0	0	51	34	43	46
	0	0	85	80	167	168

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office						
Retail			23	26	82	89
Restaurant						
Cinema/Entertainment						
Residential			4	24	21	11
Hotel			23	16	22	22
	0	0	50	66	125	122

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	1	0	7	14
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	10	5
Hotel	0	0	0	1	4	2
	0	0	1	1	21	21

OUTPUT

Total % Reduction	*0.0%*	*1.7%*	*17.0%*
Office			
Retail		2.0%	12.3%
Restaurant			
Cinema/Entertainment			
Residential		0.0%	46.9%
Hotel		2.6%	13.6%

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	0	0	22	26	75	75
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	4	24	11	6
Hotel	0	0	23	15	18	20
	0	0	49	65	104	101

Attachment C

Hotel and Restaurant Valet Drop-off and Pick-up Traffic Data Summary
Friday October 22, 2010

Hotel Valet Area Observations									
Time	Hotel Pick-up Maximum Queue	Hotel Pick-Up Volume	Hotel Pick-Up Peak Hour Volume	Hotel Drop-off Maximum Queue	Hotel Drop-off Volume	Hotel Drop-Off Peak Hour Volume	Total Hotel Volume		Total Hotel Peak Hour Volume
18:00	0	0		3	18		18		
18:15	2	4		2	3		7		
18:30	2	6		3	7		13		
18:45	4	23	40	4	13	37	36		77
19:00	3	9		1	3		12		
19:15	2	6		2	7		13		
19:30	1	2		3	14		16		
19:45	0	0		2	4		4		
20:00	1	3		2	7		10		
20:15	1	3		1	2		5		
20:30	3	11		2	7		18		
20:45	3	13		2	6		19		

Restaurant Valet Area Observations						
Time	Restaurnt Pick-up Maximum Queue	Restaurant Pick-Up Volume	Restaurant Pick-Up Peak Hour Volume	Restaurant Drop-off Maximum Queue	Restaurant Drop-off Volume	Restaurant Drop-off Peak Hour Volume
18:00	5	17		0	0	
18:15	4	13		2	7	8
18:30	3	9		0	0	
18:45	3	18		0	0	
19:00	4	15		1	1	
19:15	4	14		1	1	
19:30	5	18		1	1	
19:45	6	27		1	2	
20:00	5	18	81	1	1	
20:15	5	15		0	0	
20:30	5	15		0	1	
20:45	6	33		0	0	

Taxi vs Valet Trips									
Time	Valet Pick-up Trips	Valet Drop-off Trips	Total Valet Trips	Taxi Pick-up Trips	Taxi Drop-off Trips	Total Taxi Pick-up Trips	Total Site Pick-up Trips	Total Site Drop-off Trips	Total Site Trips
18:00	1	11	12	16	7	23	17	18	35
18:15	5	6	11	12	4	16	17	10	27
18:30	3	3	6	12	4	16	15	7	22
18:45	32	10	42	9	3	12	41	13	54
19:00	17	1	18	7	3	10	24	4	28
19:15	12	5	17	8	3	11	20	8	28
19:30	12	12	24	8	3	11	20	15	35
19:45	20	4	24	7	2	9	27	6	33
20:00	10	4	14	11	4	15	21	8	29
20:15	3	1	4	15	1	16	18	2	20
20:30	15	4	19	11	4	15	26	8	34
20:45	35	2	37	11	4	15	46	6	52

Taxi Trips Observed 42.6%

Attachment C

Trip Generation

PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
							Percent																			
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 1	1	Hotel	9	310	181	room	59%	41%	57	39	96	10.0%	10	51	35	86	2.3%	2	51	33	84	0.0%	0	51	33	84
	2	Shopping Center	9	820	32.149	ksf	62%	38%	48	30	78	10.0%	8	43	27	70	2.9%	2	41	27	68	0.0%	0	41	27	68
	3	Apartment	9	220	16	du	20%	80%	2	10	12	10.0%	1	2	9	11	0.0%	0	2	9	11	0.0%	0	2	9	11
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
						Total:			107	79	186	10.0%	19	96	71	167	2.4%	4	94	69	163	0.0%	0	94	69	163

ITE Land Use Code	Rate or Equation
310	Y=0.53(X)
820	LN(Y) = 0.61*LN(X)+2.24
220	Y=0.49*(X)+3.73

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
							Percent																			
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 2	1	Residential Condominium/Townhouse	9	230	58	du	17%	83%	6	27	33	10.0%	3	5	25	30	3.3%	1	5	24	29	0.0%	0	5	24	29
	2	Hotel	9	310	78	room	59%	41%	24	17	41	10.0%	4	22	15	37	2.7%	1	22	14	36	0.0%	0	22	14	36
	3	Shopping Center	9	820	18.022	ksf	62%	38%	34	21	55	10.0%	6	30	19	49	8.2%	4	28	17	45	0.0%	0	28	17	45
	4	Quality Restaurant	9	931	288	seat	50%	50%	5	4	9	10.0%	1	4	4	8	50.0%	4	1	3	4	0.0%	0	1	3	4
	5	Drinking Place	9	925	4.32	ksf	*	*	0	0	0	0.0%	0	0	0	0	0.0%	0	0	0	0	0.0%	0	0	0	0
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
						Total:			69	69	138	10.0%	14	61	63	124	8.1%	10	56	58	114	0.0%	0	56	58	114

ITE Land Use Code	Rate or Equation
230	LN(Y) = 0.8*LN(X)+0.26
310	Y=0.53(X)
820	LN(Y) = 0.61*LN(X)+2.24
931	Y=0.03(X)
925	Y=*(X) [1]

	IN	OUT	TOTAL
NET NEW TRIPS	**-38**	**-11**	**-49**

Note: [1] Drinking Place assumed to be closed during the A.M. peak hour as ITE does not provide a trip generation rate for this time period.

PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 1	1	Hotel	9	310	181	room	51%	49%	56	53	109	10.0%	11	50	48	98	9.2%	9	43	46	89	0.0%	0	43	46	89
	2	Shopping Center	9	820	32.149	ksf	48%	52%	134	146	280	10.0%	28	121	131	252	7.5%	19	116	117	233	34.0%	79	77	77	154
	3	Apartment	9	220	16	du	65%	35%	17	9	26	10.0%	3	15	8	23	43.5%	10	8	5	13	0.0%	0	8	5	13
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				**Total:**	207	208	415	10.0%	42	186	187	373	10.2%	38	167	168	335	23.6%	79	128	128	256
		310		Y=0.6(X)																						
		820		LN(Y) = 0.67*LN(X)+3.31																						
		220		Y=0.55*(X)+17.65																						

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 2	1	Residential Condominium/Townhouse	9	230	58	du	67%	33%	25	13	38	10.0%	4	22	12	34	64.7%	22	8	4	12	0.0%	0	8	4	12
	2	Hotel	9	310	78	room	51%	49%	24	23	47	10.0%	5	21	21	42	31.0%	13	14	15	29	0.0%	0	14	15	29
	3	Shopping Center	9	820	18.022	ksf	48%	52%	91	99	190	10.0%	19	82	89	171	33.9%	58	59	54	113	34.0%	38	39	36	75
	4	Quality Restaurant	9	931	288	seat	67%	33%	50	25	75	10.0%	7	45	23	68	45.5%	31	28	9	37	44.0%	16	16	5	21
	5	Drinking Place	9	925	4.32	ksf	66%	34%	32	17	49	10.0%	5	29	15	44	45.5%	20	18	6	24	0.0%	0	18	6	24
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				**Total:**	222	177	399	10.0%	40	199	160	359	40.1%	144	127	88	215	25.1%	54	95	66	161
		230		LN(Y) = 0.82*LN(X)+0.32																						
		310		Y=0.6(X)																						
		820		LN(Y) = 0.67*LN(X)+3.31																						
		931		Y=0.26(X)																						
		925		Y=11.34(X)																						

	IN	OUT	TOTAL
NET NEW TRIPS	**-33**	**-62**	**-95**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (EXISTING)

GROSS TRIP GENERATION

	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
INPUT	Office				
	Retail	43	27	121	131
	Restaurant				
	Cinema/Entertainment				
	Residential	2	9	15	8
	Hotel	51	35	50	48
		96	71	186	187

INTERNAL TRIPS

	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
OUTPUT	Office	0	0	0	0
	Retail	2	0	5	14
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	7	3
	Hotel	0	2	7	2
		2	2	19	19

OUTPUT	*Total % Reduction*	*2.4%*	*10.2%*
	Office		
	Retail	2.9%	7.5%
	Restaurant		
	Cinema/Entertainment		
	Residential	0.0%	43.5%
	Hotel	2.3%	9.2%

EXTERNAL TRIPS

	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
OUTPUT	Office	0	0	0	0
	Retail	41	27	116	117
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	2	9	8	5
	Hotel	51	33	43	46
		94	69	167	168

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
INPUT	Office				
	Retail	30	19	82	89
	Restaurant	4	4	74	38
	Cinema/Entertainment				
	Residential	5	25	22	12
	Hotel	22	15	21	21
		61	63	199	160

INTERNAL TRIPS

	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
OUTPUT	Office	0	0	0	0
	Retail	2	2	23	35
	Restaurant	3	1	28	23
	Cinema/Entertainment	0	0	0	0
	Residential	0	1	14	8
	Hotel	0	1	7	6
		5	5	72	72

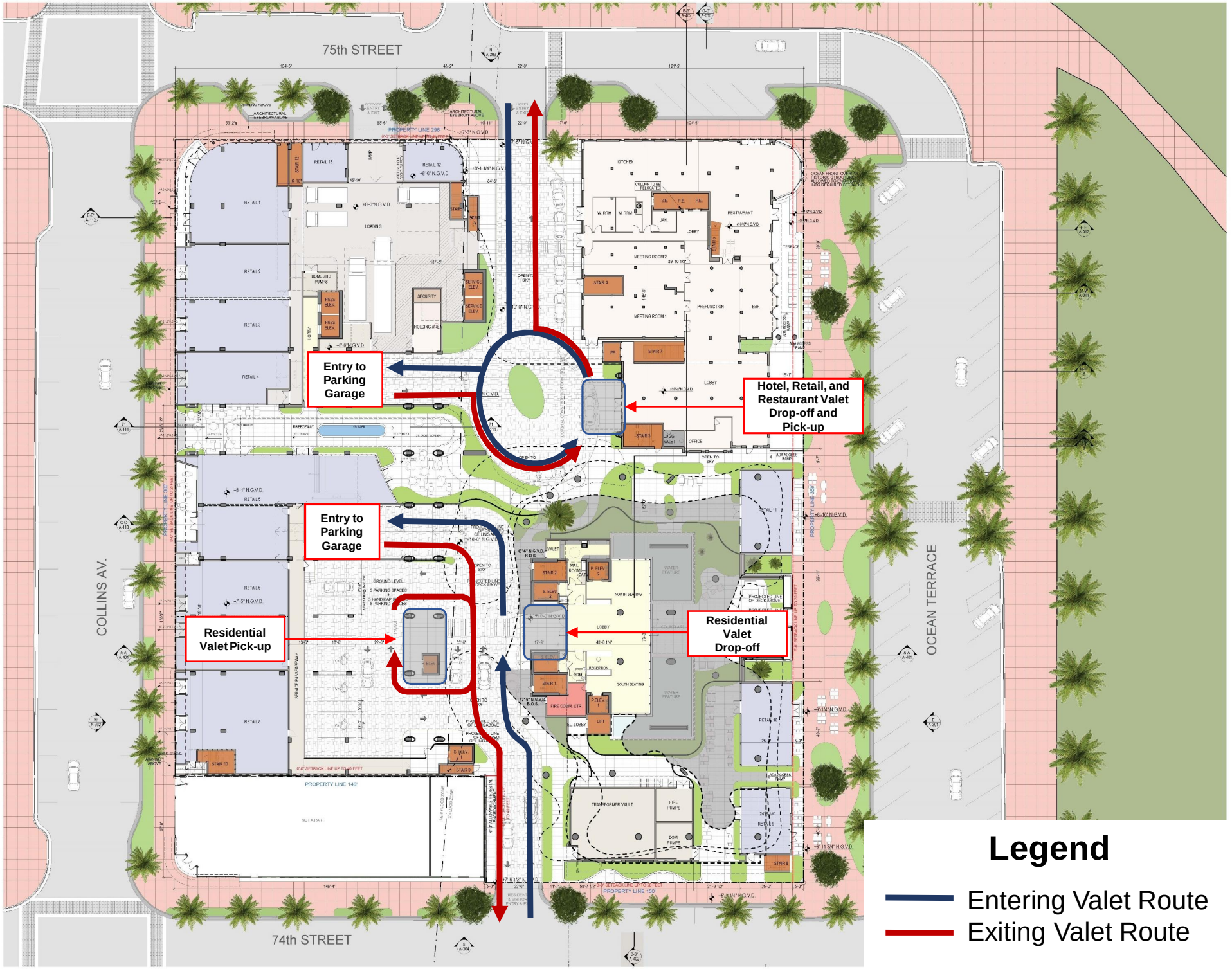
OUTPUT	*Total % Reduction*	*8.1%*	*40.1%*
	Office		
	Retail	8.2%	33.9%
	Restaurant	50.0%	45.5%
	Cinema/Entertainment		
	Residential	3.3%	64.7%
	Hotel	2.7%	31.0%

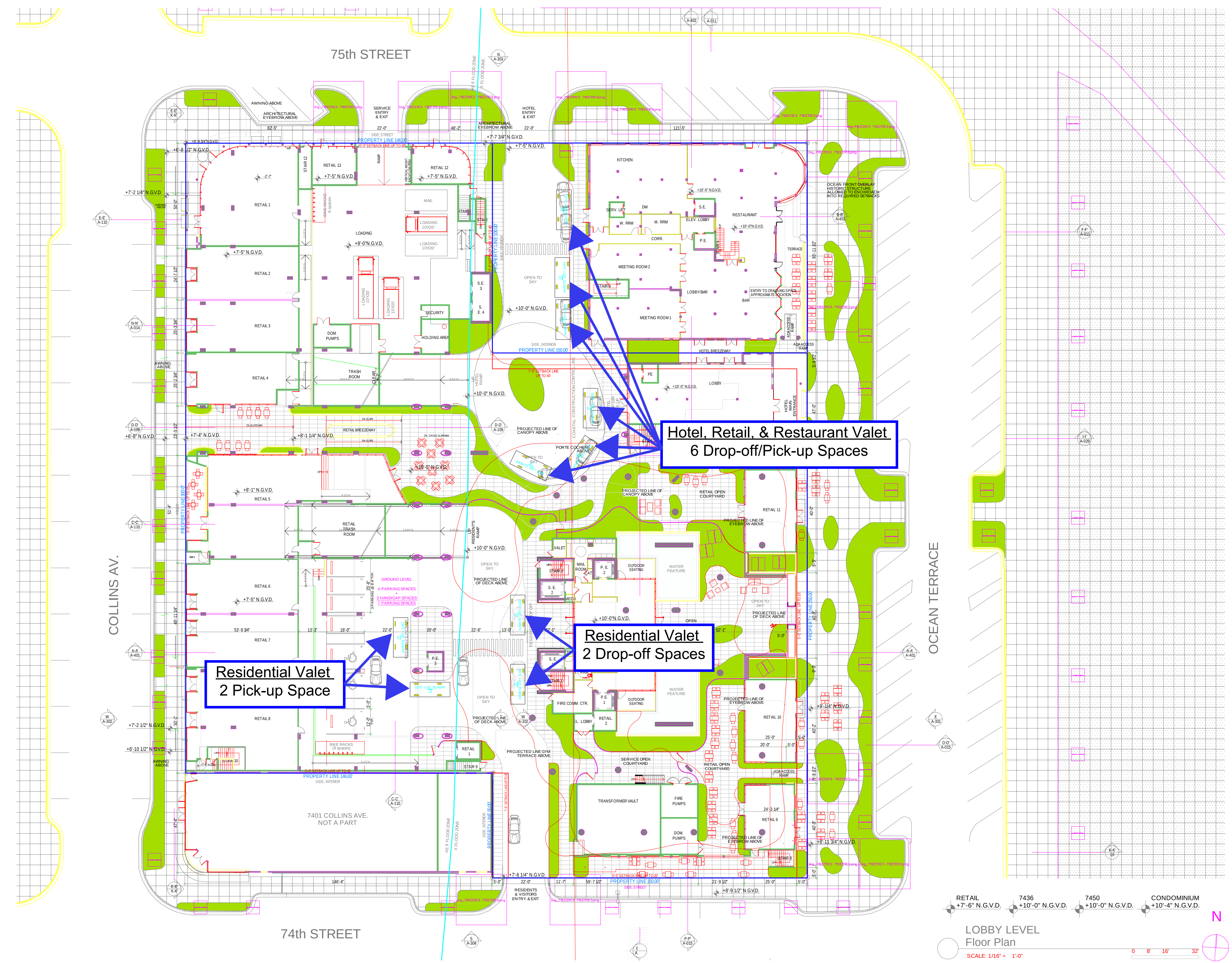
EXTERNAL TRIPS

	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
OUTPUT	Office	0	0	0	0
	Retail	28	17	59	54
	Restaurant	1	3	46	15
	Cinema/Entertainment	0	0	0	0
	Residential	5	24	8	4
	Hotel	22	14	14	15
		56	58	127	88

Attachment D

Valet Circulation


75th STREET
74th STREET
COLLINS AV.
OCEAN TERRACE
Entry to Parking Garage
Entry to Parking Garage
Hotel, Retail, and Restaurant Valet Drop-off and Pick-up
Residential Valet Pick-up
Residential Valet Drop-off
Legend
Entering Valet Route
Exiting Valet Route



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AR-0007972

Date
8/28/2017
Scale
AS SHOWN
Sheet Name

FLOOR PLAN - GROUND FLOOR

A-203

Attachment E

Taxi/Rideshare Percentage – Cadillac Hotel