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**Parking Demand
Bayside Bowl Expansion
City of Portland, Maine
December 16, 2015**

The following is the updated forecast parking demand of the Bayside Bowl expansion in Portland, Maine. The site currently consists of a 12 lane bowling facility and a 60 seat restaurant. The proposed expansion includes the following:

- An additional 8 bowling lanes
- A 171 occupant mezzanine (Not expected to be fully occupied)
- 25 seat function room
- An up to 150 seat expansion of the restaurant (for a total of up to 210 seats)
- A 136 occupant roof bar

The parking demand is forecast to be dependent on the trip generation during the PM peak hour, so trip generation has been included in this parking analysis.

Trip Generation

Trip generation is typically calculated based on information provided in the Institute of Transportation Engineers' publication *Trip Generation*. However; the proposed facility is extremely unique and therefore any data for a similar type of facility is either limited or non-existent. To determine a trip generation for the existing and proposed uses, the manager of the facility provided information on the operations of the facility. The following are descriptions, assumptions, and the trip generation for the proposed facility.

Existing Facility:

The site currently consists of a 12 lane bowling facility and a 60 seat restaurant. To help determine the patterns of trip generation for the facility, the manager of the existing facility has provided the following information. The questions to be answered were approved by Mr. Errico, City peer reviewer, prior to requesting responses of the applicant:

- Bowling League Seasons: Jan 1 – April 30 & Sept 1-Nov 30
- Teams: Approx 16 teams/night during the League season, Sun-Thur
- Lanes Dedicated for League: 8 Lanes, 6-10:30 PM
- Lanes Dedicated for General Public: 4 Lanes during league times, plus all 12 on Fri/Sat and Non-League Times
- Rest. / Bar Hours: Summer 4PM-12AM; Fall/Winter 4PM-12AM M-Thur. 12PM-12AM
- Restaurant / Bar: Approximately 90% of the Restaurant/Bar business is from persons already on-site for other activities
- Special Events: As booked, Company Parties Dec/Jan
- Private Parties: Average 6/year
- Busiest Time of Year: December (Second Busiest: Jan-March)
- Busiest Time of Day: 6-9 PM on Weekdays, 7-10 PM on Weekends



- Busiest Nights: Fri. & Sat. nights

Existing Peak Hour Trip Generation:

Based on the information provided by the manager of the existing facility, the trip generation for the peak hour of the existing facility is as follows:

Assumptions / Trip Generation:

- Trip Generation assumes all the lanes are at capacity
- Trip Generation assumes the restaurant is at capacity
- 8 League lanes - 16 League teams at 4 persons/team with each person arriving independently = 64 trip ends
- 4 General Purpose lanes with 4 persons / lane and 2 person / vehicle occupancy = 8 ends
- 10 % of the restaurant is from persons solely there for the restaurant and the vehicle occupancy would be (2 persons per vehicle) = 3 trip ends
- 15 % of the trip ends arrived in a mode other than vehicle (bus, walked, bicycle)
- All the persons showed up within an hour and are there longer than an hour

Based on these assumptions, the trip generation during a peak hour of adjacent street traffic would occur during the peak of the league season and results in 75 total trip ends with 11 of those non-vehicular. A trip end is defined as a trip into or out of the site; thus a round trip is equal to two trip ends.

Proposed Facility:

The proposed Bayside Bowl expansion includes the following:

- An additional 8 bowling lanes
- A 171 occupant mezzanine (Not expected to be fully occupied)
- 25 seat function room
- An up to 150 seat expansion of the restaurant (for a total of up to 210 seats)
- A 136 occupant roof bar

Bayside Bowl Facility:

The following is a summary of the assumptions for the proposed Bayside Bowl Expansion and resulting trip generation.

Assumptions / Trip Generation:

- 8 General Purpose lanes with 4 persons / lane (2 persons/veh) = 16 trip ends
- Additional 150 seats for the restaurant where 10 % of the restaurant is from persons solely there for the restaurant and the average vehicle occupancy would be 2 persons per vehicle = 8 trip ends
- Assume 136 seat roof bar. 10 % of the roof bar are solely there for the bar (2 persons/veh) = 7 trip ends (please note that summer time is the slowest season for the uses and full occupancy for the roof bar is extremely unlikely)



- Mezzanine is being used by persons already on-site and persons there to observe are already on-site or came with the person they are observing
- Function Room is 100 % full = 12 trip ends (2 persons/veh)
- 15 % of the persons arrived in a mode other than vehicle (bus, walked, bicycle)

Based on these assumptions, the trip generation during a peak hour of adjacent street traffic would result in 43 total trip ends with 6 of those non-vehicular. A trip end is defined as a trip into or out of the site; thus a round trip is equal to two trip ends.

Trip Generation for Combined; Existing Bayside Bowl and Proposed Bayside Bowl:

The following Table summarizes the forecast trip generation for the facility once it is fully functional and operating. It should be noted that these are not all new trips to the adjacent roadway system since the existing facility is included.

Development component	Forecast Peak Hour Trip Ends
Existing Bayside Bowl	75
Proposed Bayside Bowl Expansion	43
15% Total Reduction for Bus, Walk, Bike	(18)
Total Vehicle Trip Ends	100

It should be emphasized what the above trip generation represents and what it assumes is all occurring at the same time.

- All 20 of the bowling lanes are fully occupied, both league and general public
- All 210 seats of the restaurant are occupied
- The function room is 100% full
- The roof bar is 100% full
- Every trip end listed above arrived and departed in the same hour

It is our opinion that the above trip generation is conservative, and exceeds what would be expected on a regular occurrence.

Parking Forecast

Vehicular Parking

The site is currently proposed to provide 36 on-site vehicle parking spaces. The PM peak hour trip generation is forecast to be 100 trip ends (85 entering + 15 exiting). Assuming a fifty percent overlap between the exiting vehicles leaving a parking space and entering vehicles looking for a parking space, the site may need 93 parking spaces. Since the site will accommodate 36 parking spaces, the remaining need for off-site parking spaces is 57 parking spaces. It is our understanding that the applicant is currently negotiating with Apothecary by Design to share their 17 spaces starting at 5:30 PM. The use of these spaces would reduce the off-site parking need to 40 parking spaces. The following table summarizes the forecast parking demand:



Parking Demand Summary

Forecast Demand	
Entering Trip Ends	85
Exiting Trip Ends	15
Parking Demand	93*
Parking Supply	
On-Site	36
Apothecary by Design (after 5:30 PM)	17
Total Supply	53
Off-Site Parking Demand	40

*This includes 50% of the exiting traffic.

Since this facility is extremely unique, and accurate parking needs can vary, we recommend that the applicant perform a complete parking study once the facility is constructed and fully occupied to confirm the need for additional spaces. The extent and methodology for the parking study would be approved by the City prior to beginning the study.

Bicycle Parking

The City of Portland requires non-residential structures to provide two bicycle parking spaces for every ten vehicle parking spaces for the first 100 required vehicle parking spaces. This facility is forecast to require 20 bicycle parking spaces.

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