
To: Empire State Development

From: Sumeet Kishnani
Graeme Masterton

Date: June 19, 2018

Reference: Belmont Arena Transit Ridership Projections and Service Request

This memo describes projected transit ridership at the Belmont Arena site, and includes service recommendations to meet this demand. Stantec has prepared this memo on behalf of New York Arena Partners ("NYAP") in the context of their development of an arena-anchored, mixed-use development adjacent to Belmont Park.

Executive Summary

The proposed Belmont Arena project (the "Project") includes destination retail, a 19,000-seat Arena, and a hotel on the site adjacent to Belmont Park. The mix of uses on event days would include Arena attendees, retail guests, racetrack attendees, hotel users, and employees. To meet the demand and guest expectations, the following recommendations are made for LIRR transit service:

- Two trains per hour are requested between New York Penn Station and Belmont, during peak operating hours (9AM-5PM). This is similar to the transit service provided at Bicester Village, a similar Value Retail development, near London. This service frequency would meet the guest and employee ridership demands, and it would also allow for an average wait time of no more than 15 minutes.
- The service would ideally provide one-seat access between New York Penn Station and Belmont, to encourage higher transit utilization.
- Three trains per hour would be required during the pre- and post-event peak hours.
- A fourth train may be required during the pre-event peak hour for weekend midday events, when retail activity is projected to be higher than on weeknights.
- Additional event service outside the pre- and post-event peak hours would help meet the demand for early-arriving or late-departing guests.

For the purposes of this analysis, we have assumed that a small percentage of guests would take transit (LIRR) to the site. This includes 15% of Arena attendees and retail guests, and 30% of Arena and retail employees. Generally, to accommodate this demand, train service would be required during the day for retail, and special service would be required in the evening for a game or concert at the arena. Each condition is discussed below as well as a combined weekend daytime when an arena event may occur during the peak retail hours.

Typical Non-Event Day

Based on these estimates, the projected rail-based ridership demand to the site from Manhattan or connecting via Jamaica is between 400 to 800 persons per hour between the hours of 8AM and 5PM on a typical non-event weekend day, and 200 to 400 persons per hour between these hours on a typical non-event weekday. The retail customer targeted for this site is more likely to utilize rail than bus and have expectations of a one-seat journey from Manhattan. Arrival volumes are projected to be highest in the early morning hours (between 8AM and 12PM), while departures are expected to be higher between 12 PM and 5PM.

Reference: Belmont Arena Transit Ridership Projections and Service Request

The transit demand projections are based on the actual temporal distribution profile of vehicle arrivals and departures at Bicester Retail Village, which is comparable in size to the retail component of the Project and features 30-minute frequency rail service from central London (Marylebone Station) with a trip time averaging around one hour.

The retail entry demand is highest between 8 AM and 5PM. Based on these demand observations and the transit mode share described above, the projected retail demand for a non-event weekday and weekend day are shown in Figure 1.

Figure 1: Non-Event Day Transit Demand



An analysis was conducted to determine the type of service that would be required to meet this demand, based on the following assumptions:

- Retail guests would desire a one-seat ride from New York Penn Station to Belmont. A two-seat connection with a transfer at Jamaica would greatly inconvenience these guests and may affect the transit mode share adversely. Many of these guests are expected to take rideshare, taxi, or transit from their point of origin to Penn Station, so it is essential to provide a reliable, convenient, one-seat connection between Penn Station and Belmont.
- The average wait time for a train should be similar to that in London, at 15 minutes or less. Two trains per hour would achieve this objective.
- The transit service should accommodate the peak demand.
- The transit service for retail users would primarily be required outside of commuter peak hours (e.g., between 8 AM and 4 PM).

Based on these assumptions, our recommendation is for two trains per hour between New York Penn Station and Belmont Park Station between the hours of 9 AM and 5 PM. Ideally, this would be in the form of a train from Penn Station that stops at Jamaica, enters Belmont Station, and then returns to Penn Station.

Weeknight Events

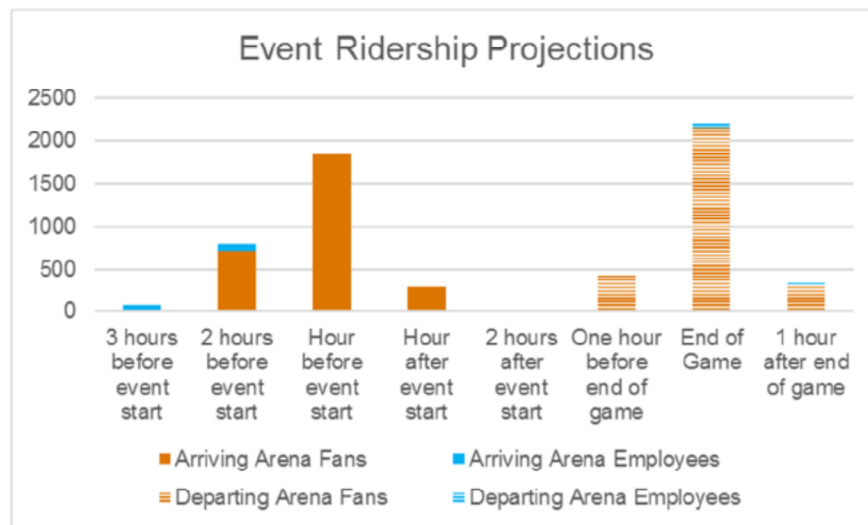
A majority of the fans (65%) are assumed to arrive during the hour before the start of the event. Some fans are projected to arrive early, and a small percentage are projected to arrive after the start of the event. Similarly, most fans (75%) are assumed to leave within the hour after the end of the game. As shown in Figure 2, there would be a demand of around 750 riders two hours before an event, and about 1,800 people an hour before the event, with about 300 people seeking train service within the first hour after an event starts. For departures,

Reference: Belmont Arena Transit Ridership Projections and Service Request

there is an expectation that there could be about 2,200 riders seeking trains back to Penn Station in the first hour after the event.

To accommodate the projected demand, we would like to request a train during a time 1-2 hours prior to the event, three dedicated trains during the 6:30-7:30 hour (weeknight NHL events and concerts will start at 7:30 or later.), and one train after 7:30 for late-arriving guests. In the hour after the event, three trains would be required during the peak egress hour, and one train for late departing guests an hour after the end of the game. Ideally, the three peak-hour egress trains would be situated at the Belmont Station at the end of the game to facilitate faster loading times for fans departing the Arena.

Figure 2: Pre-and Post-Event Transit Projections



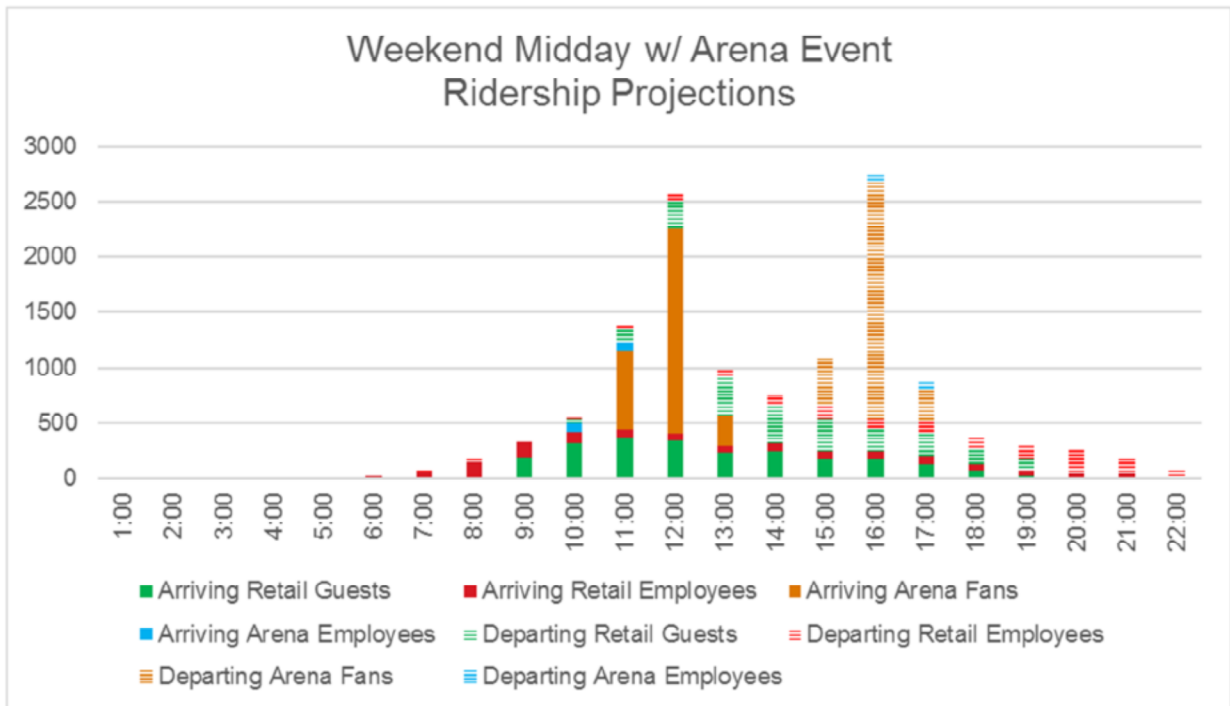
Weekend Midday Events

The highest hourly transit ridership is projected to occur during weekend midday events (e.g., Saturday 1PM NHL event), when there would be an overlap between peak retail and Arena activity. Figure 3 shows the projected demand on a peak weekend day. The peak passenger demand is projected to be some 2,500 passengers in the peak hour, with about 2,000 arriving passengers and 500 passengers departing (primarily retail guests). In the post-event peak hour, the passenger ridership demand is projected to be up to 3,000 passengers. Three dedicated egress trains operating at capacity would accommodate this demand in the peak hour, but an additional (fourth) train during the weekend midday egress hour would provide a better travel experience for both Arena and retail guests with less congested trains.

The transit ridership projection at times other than the peak ingress and egress hours is less than 1,500 passengers per hour, of which approximately 1,200 passengers are projected to travel in the peak direction (entering the Site before the game, and exiting the Site after the game). Our request of two trains per hour between 9AM and 5PM should provide sufficient capacity for both site-generated demand and some background weekend transit demand for these off-peak weekend hours.

Reference: Belmont Arena Transit Ridership Projections and Service Request

Figure 3: Weekend Midday Event Day Transit Projections



Conclusion

In summary, we would like to request the following to accommodate the projected transit ridership of the proposed Project:

- Two trains per hour from New York Penn Station to Belmont, on a daily basis, between the hours of 9AM and 5PM. These would be existing services that are routed into and out of Belmont.
- One train 1-2 hours before an event start time, to accommodate early arriving guests. Regular 30-minute service would meet this demand.
- Three trains from New York Penn Station to Belmont to accommodate the ingress demand on a weeknight (6:30-7:30PM for a 7:30 start), and three trains to accommodate the egress demand.
- One train 1 hour after the event ends, to accommodate late-departing guests.
- For a peak weekend midday event, three pre-game peak hour trains should be sufficient to accommodate the projected ridership. Arena departures are more concentrated than arrivals, and a fourth train is recommended in the hour after an event to provide a better, less congested experience for both retail and Arena guests. With regular planned 30-minute service, this would require one additional special event train in the pre-game peak hour, and two additional special event trains in the post-game hour.

Reference: Belmont Arena Transit Ridership Projections and Service Request

- All of these services would ideally provide one-seat access between Belmont and Penn Station, with a stop at Jamaica to provide connectivity for other riders. A one-seat ride is essential to encourage transit ridership for retail and Arena guests.
- A sample schedule is shown Figure 4, assuming additional, dedicated trains are provided between Penn Station and Belmont.

Figure 4: Train Schedule – Service to Belmont Park

Daily Train Service to Belmont Park					
		Ar.	Lv.		
Lv. Penn	Arr.	Belmont	Belmont	Lv.	Ar. Penn
Station	Jamaica	Park	Park	Jamaica	Station
9:15 AM	9:36 AM	9:48 AM	9:53 AM	10:05 AM	10:26 AM
9:45 AM	10:06 AM	10:18 AM	10:23 AM	10:35 AM	10:56 AM
10:15 AM	10:36 AM	10:48 AM	10:53 AM	11:05 AM	11:26 AM
10:45 AM	11:06 AM	11:18 AM	11:23 AM	11:35 AM	11:56 AM
11:15 AM	11:36 AM	11:48 AM	11:53 AM	12:05 PM	12:26 PM
11:45 AM	12:06 PM	12:18 PM	12:23 PM	12:35 PM	12:56 PM
12:00 PM	12:21 PM	12:33 PM	12:38 PM	12:50 PM	1:11 PM
12:15 PM	12:36 PM	12:48 PM	12:53 PM	1:05 PM	1:26 PM
12:45 PM	1:06 PM	1:18 PM	1:23 PM	1:35 PM	1:56 PM
1:15 PM	1:36 PM	1:48 PM	1:53 PM	2:05 PM	2:26 PM
1:45 PM	2:06 PM	2:18 PM	2:23 PM	2:35 PM	2:56 PM
2:15 PM	2:36 PM	2:48 PM	2:53 PM	3:05 PM	3:26 PM
2:45 PM	3:06 PM	3:18 PM	3:23 PM	3:35 PM	3:56 PM
3:15 PM	3:36 PM	3:48 PM	4:00 PM	4:12 PM	4:33 PM
3:30 PM	3:51 PM	4:03 PM	4:08 PM	4:20 PM	4:41 PM
3:37 PM	3:58 PM	4:10 PM	4:15 PM	4:27 PM	4:48 PM
3:45 PM	4:06 PM	4:18 PM	4:23 PM	4:35 PM	4:56 PM
4:15 PM	4:36 PM	4:48 PM	5:00 PM	5:12 PM	5:33 PM
4:45 PM	5:06 PM	5:18 PM	5:23 PM	5:35 PM	5:56 PM
5:15 PM	5:36 PM	5:48 PM	5:53 PM	6:05 PM	6:26 PM
5:45 PM	6:06 PM	6:18 PM	6:23 PM	6:35 PM	6:56 PM
6:15 PM	6:36 PM	6:48 PM	6:53 PM	7:05 PM	7:26 PM
6:30 PM	6:51 PM	7:03 PM	7:08 PM	7:20 PM	7:41 PM
6:45 PM	7:06 PM	7:18 PM	7:23 PM	7:35 PM	7:56 PM
7:10 PM	7:31 PM	7:43 PM	7:48 PM	8:00 PM	8:21 PM
9:32 PM	9:44 PM	10:05 PM	10:10 PM	10:22 PM	10:43 PM
9:52 PM	10:04 PM	10:25 PM	10:30 PM	10:42 PM	11:03 PM
10:02 PM	10:14 PM	10:35 PM	10:40 PM	10:52 PM	11:13 PM
10:12 PM	10:24 PM	10:45 PM	10:50 PM	11:02 PM	11:23 PM
10:52 PM	11:04 PM	11:25 PM	11:30 PM	11:42 PM	12:03 AM

Weekend Midday Event Days Only

Weekday and Weekend Evening Events Only

Daily Service

Pre-Event Peak Hour

Post-Event Peak Hour

Event Type	Number of Events Days per Year
"A" Events (Ex: Full-House Concert)	52
"B" Events (Ex: Disney on Ice)	43
"C" Events (Ex: Amateur Sports)	22
"D" Events (Misc.)	27
Preseason Islander Games	3
Islander Games (including post season)	43
Total	147

Month	
	Day 6am-5pm
January - November	4,251
December (25% increase for holiday season)	5314

NEW BELMONT AREA		
Number of Events per Year	Attendees Per Event	Attendees per Year
61	17,000	1,037,000
58	11,500	667,000
33	6,000	198,000
27	3,500	94,500
3	12,000	36,000
43	16,000	688,000
225		2,032,500

Retail Visitors - Per Day		
Weekday		
LIRR Riders - 15%	Night 6-11pm	LIRR Riders - 15%
638	508	76
797	635	95

NA - 'SAMPLE' EVENT SCHEDULE

LIRR Mode Share, 15%	Weekday Events		
	Days with Events	LIRR Riders per Event	Nights with Events
155,550	8	2,550	34
100,050	7	1,725	27
29,700	11	900	12
14,175	0	525	24
5,400	0	1,800	2
103,200	0	2,400	26
304,875	26		125

Weekend			
Day 6am-5pm	LIRR Riders - 15%	Night 6-11pm	LIRR Riders - 15%
7,311	1,097	673	101
9139	1,371	841	841

Weekend			
LIRR Riders per Event	Days with Events	LIRR Riders per Event	Nights with Events
2,550	8	2,550	11
1,725	10	1,725	14
900	7	900	3
525	0	525	3
1,800	0	1,800	1
2,400	6	2,400	11
	31		43

LIRR Riders per Event	
	2,550
	1,725
	900
	525
	1,800
	2,400

