



To: Alexander Green
Director of System Planning
Maine Medical Center
131 Chadwick Street
Portland, ME 04102

Date: August 28, 2018

Memorandum

Project #: 55141.00

From: Sean Manning, PE

Re: Maine Medical Center
Employee Garage Comparables Analysis

Overview

Maine Medical Center (MMC) has retained VHB to help assess anticipated future traffic operations related to the construction and operation of a new, remote staff parking garage on St John Street and supporting shuttle bus operation. Specifically, we have been asked to identify other large, staff parking garages that support large academic medical centers and to provide some input as to what factors and operational parameters are in place at those facilities that makes them operate both safely and efficiently.

Comparable Academic Medical Center Staff Parking Examples

We could identify many examples of comparable major hospitals that operate large, remote staff parking systems with supporting shuttle buses. Below are just a few examples for reference:

- **Washington University Medical Center (St Louis, MO)** – WUMC maintains approximately 6,500 staff parking spaces in a unified, structured parking complex that is about ½ mile from their main campus, which supports Barnes-Jewish Hospital, St Louis Children’s Hospital, the St Louis College of Pharmacy, and WUMC academic and research facilities. This complex is inter-connected by a covered, temperature controlled pedestrian corridor – but also a supporting shuttle bus operation. The complex is made up of three adjacent garages that were each built individually at different times. The Duncan Garage has 1,600 parking spaces. The St Louis Children’s Staff Garage has 1,830 parking spaces and the new East Campus Staff Garage has 3,025 parking spaces. The EC Staff Garage does have two means of access/egress. The other garages operate with one access point. However, all three garages share the same unified access road that interconnects them to the surrounding street system.
- **University of Pennsylvania Medical Center (Philadelphia, PA)** - Penn Medicine owns and operates the Lot 51 Staff Garage, a 2,200-space facility that functions with a single point of access/egress. This garage is used exclusively by Penn staff and is support by campus shuttle buses.
- **Brigham and Women’s Hospital (Boston, MA)** – BWH controls several thousand parking spaces that are located both adjacent to their campus, or in remote locations supported by a robust shuttle system. The Mission Park Garage is a 2-level facility that provides 1,470 parking spaces that are used primarily for staff, but also some patient valet parking. This garage is located two blocks from the main campus and staff walk between the garage and the hospital. The garage is accessed from a single location that is nestled within a dense residential neighborhood.
- **Partner’s HealthCare (Somerville, MA)** – The Partner’s Administrative Office Building is a 750,000 SF facility that is served by 1,997 dedicated structured parking spaces. The garage has two points of access that connect to the same adjacent roadway.

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Garage Access/Egress Design Provisions

We have reviewed and studied the primary access/egress configuration proposed for the garage, which is now to be located on the site of the existing, adjacent Portland Eagles parking lot, with secondary access to be provided via the existing driveway that serves both the surface parking lot and the adjacent retail shopping center. We offer the following comments based on our current understanding of how the garage will function, including technology that will be installed to help maintain efficient flow and minimize transaction times at the access gates:

- The volume of morning peak hour entering traffic will be considerable. However, that traffic will be dispersed over several hours, with most traffic arriving between 5:30 AM and 7:00 AM (well before surrounding morning peak period traffic conditions). Having primary access on St John Street (via the Eagles Lot location) will help to reduce the mixing of MMC staff traffic with adjacent retail center traffic. The use of the existing access/egress drive will be maintained as a secondary means for accessing all other floors as well to maximize garage circulation, operations and dispersion if needed. It will be important to maximize utilization of both access points given the size of the garage and percentage of the population that are expected to arrive/depart in relatively tight time slots during the morning and evening peaks.
- During the afternoon, exiting traffic will be most prevalent between 3:00 PM and 6:00 PM.
- The location of the primary entrance/exit point (Eagles Lot) will provide the opportunity for many staff to make use of the adjacent Fore River Parkway system – which provides the most direct access to I-295, and points north, south and west. In the afternoon, those choosing to make use of this roadway connection can do so via efficient right-hand turns both on to St John St and then again onto the Parkway. This opportunity will limit the amount of traffic in the neighborhood, and mixing with City traffic that uses the St John St and Congress St corridors.
- Shuttle bus circulation in the garage has been designed to minimize conflict between bus movements and staff parkers. This is an important provision that will help to keep both parkers and the buses moving.
- The Garage and all staff direct to park at that location will be fitted with either a microwave or Ultra High Frequency (UHF) windshield tag system. This system is fitted to the automobile and can reduce transaction times considerably. As a point of reference, a proximity card system can yield a range of transaction times between 10 and 30 seconds (depending on the behavior of the driver). A UHF system can yield a consistent transaction time of under 5 seconds. This technology, when paired with the likely exiting travel path of most drivers towards the Fore River Parkway (less conflicting right-turns) will help to empty the garage efficiently during weekday afternoons.
- The Garage will be fitted with a parking count/guidance system, which indicates the availability of vacant spaces on each level. This will help to direct parkers to available spaces quickly and will reduce the prevalence for back-ups and queuing during morning arrival times.

We hope this information is helpful to your continued development of a remote parking design solution. We are available to speak with you further at your convenience. Please call us with any questions or comments that you have.