



## Feasibility Analysis

### Connecting the St John Garage to Fore River Parkway

June 22, 2018

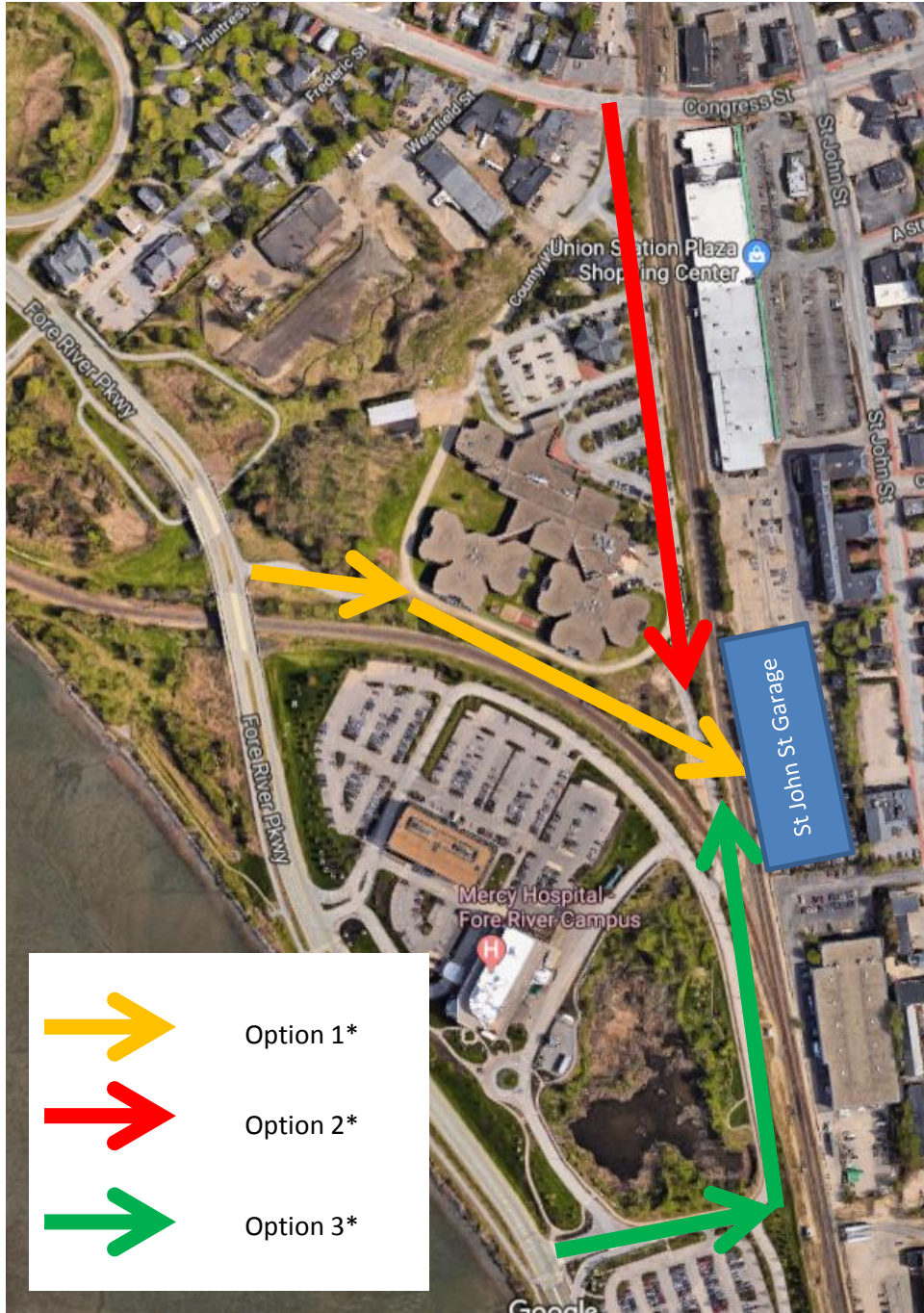
*(Revised August 1, 2018)*

#### **Executive Summary**

Maine Medical Center is proposing to locate a 2,450 space parking garage on St John St near 222 St John St – the old railroad administration building. The primary access point to the proposed garage is on St John St near the intersection of St John St and D St. A secondary access point to the proposed garage is on St John St at the north end of the building located at 222 St John St.

The purpose of this document is to explore future access possibilities to the proposed St John garage from Fore River Parkway. This document analyzes the feasibility of such an access route and the pros and cons of access options identified by the City of Portland.

The options identified by the City of Portland are illustrated in the image below.



\*Option 4 is a variation of the options shown above.

Source: Good Earth; City Of Portland

As described in detail below, none of the options are feasible within the anticipated construction schedule proposed by MMC in its Site Plan application.

### Objectives:

The objectives of a connection between the St John garage and the Fore River Pkwy include:

1. Utilize existing infrastructure, easements, and rights of way to the extent possible.
2. Decrease vehicular traffic on Congress St.
3. Increase vehicular traffic on Fore River Pkwy.

### **Assumptions:**

Assumptions made in this analysis include:

1. A rail crossing is required.
2. The slope of proposed ramps will be within industry standards for safe vehicular travel.
3. Any access option will meet applicable City of Portland technical standards.























### **Key Factors:**

Key factors considered in this analysis include:

1. Existing and required easements.
2. Length of time required for all stakeholders to align around proposed design of access route. Stakeholders include rail operator, property owners and abutters, neighborhood associations, City of Portland and MMC.
3. Cost of ramps and infrastructure.
4. Minimum clearance over the rail is 23'-0" resulting in a bridge deck level of approximately 27'-0" above adjacent grade.
5. Vehicular access into the garage can be accommodated along the West elevation of the garage at grade and level 2.
6. The parking decks are predominately flat and there are opportunities to re-route internal traffic to accommodate additional access points.
7. Additional garage access will reduce the number of parking spaces available within the garage.
8. Ramping is designed to provide the most efficient vertical circulation from the St. John St. access. We will not be able to modify the ramps in the future, only the traffic patterns to accommodate an additional access point. This could lower the level of service in the garage.

## Option Summary

The following table provides a snapshot assessment of each option considering the objectives and three key factors. A significant cost and time to implement is assumed with each option. Costs would include the roadway and ramps associated with the rail crossing. Time for stakeholders to agree and approve a design is anticipated to exceed 18 months.

	Option 1: Access behind the Jail	Option 2: County Way	Option 3: Mercy Circle Drive	Option 4: Surface Crossing
Cost				
Time to Implement				
Vehicle Safety				
Utilization of existing infrastructure / easements				
Decrease vehicular traffic on Congress St				Depends on Access Route
Increase vehicular traffic on Fore River Pkwy				Depends on Access Route

Option 2 and Option 3, whether bridge or surface crossing, would provide an opportunity to create a pedestrian route to Fore River Parkway from the St John garage.

### Option 1: Access Behind the Jail

Constructing a bridge crossing that spans two-railroad tracks and a new roadway alongside and south of the jail provides access from the Fore River Parkway to the garage at a new intersection between two existing bridges on the parkway. While this option provides direct, fully segregated access for garage traffic between the parkway and the garage, there is insufficient room between the jail building and the spur track right-of-way (approximately 40' from building to right-of-way, estimated). The space is too narrow to accommodate a two-lane roadway, walkway, drainage, and infrastructure such as a retaining wall, while still providing a reasonable buffer from the jail building. Other complicating factors in this option include the limited room / limited sight lines at the proposed intersection location on Fore River Parkway, as this intersection would be located between two width-limited bridge structures. This option would require purchase of land or easements from various property owners and negotiating a railroad bridge crossing with the railway.

This option is not feasible due to the limited width of land between the railroad and the jail.

### **Option 2: County Way**

Constructing a bridge crossing that spans two-railroad tracks and reconstructing two roadway sections alongside and east / north of the jail (Ogdensburg Street to County Way) provides access from Congress Street to the garage. This option relies on sharing municipal roadways that are currently fully dedicated to serving the needs of the Cumberland County jail; analysis would be needed on whether additional traffic has adverse impacts on the jail operations and emergency response vehicles. This option does not decrease traffic on Congress St or increase traffic on Fore River Pkwy. County Way and Congress St is an unsignalized intersection; signalizing this intersection is complicated due to the proximity of the intersection to the rail crossing. Individuals seeking entrance to I-295 would have a circuitous route given the one-way on Congress St. Traffic that leaves the garage over the railroad tracks would need to cross those same tracks at an existing surface crossing on Congress Street. This option would require negotiating a railroad bridge crossing from the railway and coordination with the County jail, including possible easements.

This option does not meet two of the objectives of decreasing vehicular traffic on Congress Street while increasing utilization of the Fore River Parkway and is therefore not considered to be a viable option for further consideration.

### **Option 3: Mercy Circle Drive**

Constructing a long bridge across three-railroad tracks and the Mercy hospital roadway provides access from the Fore River Parkway to the garage by way of the existing Mercy Hospital roadway system. This option maximizes the use of existing, built infrastructure on the Mercy Hospital campus, including the existing signalized intersection on the Fore River Parkway. The ramp system that provides access between the Mercy Hospital roadway and the garage bridge would likely require filling of wetland areas and impacts to the previously developed Mercy Hospital Master Plan submitted to the City prior to the Fore River Campus construction. This option would require purchase of land or easements from various property owners, including Mercy Hospital, and negotiating a railroad bridge crossing with the railway.

This option meets the objectives of utilizing existing infrastructure, easements, and rights of way to the extent possible; decreasing vehicular traffic on Congress Street; and, increasing utilization of the Fore River Parkway. However, this option negatively impacts the development possibilities on the Mercy Hospital Fore River Campus.

### **Option 4: Surface Crossing**

Use of a surface rail crossing is a potential that was explored early in this feasibility analysis. A surface rail crossing is not the recommended solution for accessing the garage from the Fore River Parkway. Section 8A.05 of the Manual on Uniform Traffic Control Devices (MUTCD) states:

*“Because grade crossings are a potential source of crashes and congestion, agencies should conduct engineering studies to determine the cost and benefits of eliminating these crossings.”*

This suggests that existing surface crossings should be evaluated for elimination and suggests new surface crossings should be avoided.

Of the three options considered above, Option 3 is most worthy of further consideration. A surface crossing utilizing the Mercy Circle drive would intersect three rail lines: two parallel lines and one spur line. This would require a very long surface crossing with a space in the center (between the main rail lines and the spur line) where vehicles could get stranded. In addition, the turn onto/off of the Mercy connector roadway is immediately adjacent to the surface crossing across the spur line, leaving an awkward alignment when approaching the crossing and potentially leading to blocked through-traffic on the Mercy roadway as arriving vehicles wait for the gate/signal at the garage entry crossing.

Safety concerns relate to specific scenarios in which cars would be inadvertently stopped on the tracks or crossing the tracks without proper sight lines. With three rail lines at one crossing, a stopped train located adjacent to the crossing on any one track results in a restricted sight line and may result in drivers assuming that the signal is caused by the stopped train, when another approaching train is visibly blocked by the adjacent stopped train. Any issues for a vehicle entering the garage in the AM peak (i.e. - garage gate issue, ez-pass system issue, stalled vehicle, accident) will result in trailing cars being temporarily stopped across the tracks.

A surface crossing adjacent to the St John St garage would create queuing of traffic either back into the garage or back onto the street should a train coincide with the AM or PM peak hours of the garage. Additional queuing would degrade the user satisfaction and may result in lower utilization of the garage.

For these reasons, a surface crossing is not recommended.