

**MAINE MEDICAL CENTER
CONSTRUCTION MANAGEMENT PLAN
TRAFFIC AND ROAD CLOSURE STUDIES**

The CMP was developed in accordance with City of Portland requirements. The closing of Congress Street was the last option studied.

MMC VISITOR GARAGE OVERBUILD: ADD THREE FLOORS TO EXISTING GARAGE- FLOOR 9, 10, 11

FACTS:

PRECAST SECTION HEAVIEST WEIGHTS - 30 Tons

PRECAST TRUCK LENGTH - 85 Foot cab to trailer end

CRANE SIZE REQUIRED - 440 Ton minimum crane

TOTAL NUMBER OF PRECAST PIECES – 210

TOTAL DURATION TO BUILD CRANE, SET PRECAST, and DISMANTLE CRANE- 8 CONSECUTIVE WEEKS

OPTIONS RESEARCHED TO STUDY HOW TO ERECT PRECAST

1. Cast in place Concrete Garage
 - a. The structural engineer determined immediately that the weight of the Cast in Place structure while placing the concrete exceed the structural limits of the Garage.
2. Immediately Precast was the only solution. Turner started to meet with crane companies.

SOUTH SIDE OF VISITOR GARAGE ANALYSIS

CRANE:

To install the precast from the south side of the project at the Emergency Department Ambulance Entrance, a large crane - size 45 foot by 40 foot had to park in the Emergency Department loading / unloading turnaround. The crane had to be within 25 feet of the south edge of the Visitor garage to load precast within the crane limits..

The surcharge of the crane exceeded the strength limits of the retaining walls at the south side of the Visitor Garage. The Structural Engineer required reinforcement to support the retaining wall. There is no physical access to install any reinforcement measures.

There is not enough room to erect the crane in the ED loading area, and down Crescent Street.

During crane erection and dismantle there would be no access to the Emergency Department and the south entrance to the Visitor Garage.

MATERIAL DELIVERIES- PRECAST TRUCKS:

Turner met with Baldwin Crane, the same crane company that supplied the crane for the Visitor Garage construction in 2006. Baldwin confirmed that the precast truck access at the south side of Visitor garage was not possible.

Trucks carrying precast tees will be 85 feet long.

There is no street path through the residential neighborhood to accommodate that length of tractor trailer. The trucks would never be able to turn or maneuver on the roads of Crescent Street, Wescott Street and Emergency Department loading.

Baldwin crane confirmed that it was not possible for trucks to come up Gilman Street, then up the MMC service drive. a tractor trailer test run was made coming up Gilman Street and into the service road. The sharp hairpin turn is not navigable for 85 foot precast trucks, and is not navigable for 65 foot long trucks, without special trailer configuration. A 85 foot precast truck with no flexibility due the precast tees would never navigate the corner.

3. The closing of Congress Street became the only option to construct the Overbuild of the Visitor Garage.

CONGRESS STREET PRECAST ANALYSIS

The initial goal was to determine if one lane of traffic could remain open during precast erection.

Turner did significant Building Information 3 D Modeling to depict the entire road area of Congress at the MMC Visitor Garage. These 3D renderings are included in the logistic plans in the CMP.

Baldwin Crane Company came to the area multiply times to take measurements and give Turner measurements to put into the Construction Management Plan logistics.

The crane size fully installed and in an upright crane position is 50 foot x 50 foot. The crane must be on a level footprint pad. Congress Street has an elevation change of 14-15 feet over the length of the Visitor garage, so leveling must take place on Congress Street. These dimensions eliminated the ability to keep a lane open for one way traffic on Congress Street.

CMP and TMP

Once Turner completed their full studies, the only way to build an extension to the Visitor Garage was with the crane on Congress Street with a shutdown of the road for a period of 8 weeks.

The CMP and TMP was created to show the conditions and requirements of the Congress Street road closure.

The eight weeks are consecutive.