

Follow-Up Evaluation / Observations Summary Memo
MMC Parking Garage Access / Saint John Street / D Street
Portland, Maine
JN 2866.01

Date: February 19, 2020
Subject: MMC Parking Garage Access / Saint John Street / D Street
Portland, Maine
To: Alexander Green (MMC), Dominic Gagnon (Colliers)
From: Randy Dunton, Gorrill Palmer

Introduction

Gorrill Palmer (GP) has been retained by MMC to evaluate / observe the operations of the intersection of the newly opened MMC parking garage access / Saint John Street / D Street intersection. The intersection is operating as unsignalized but is designed and equipped for signalization once it is determined to be warranted. This is the second set of observations completed at this intersection. The first observations were made on Tuesday January 14 and Wednesday January 15, 2020. A summary memo of those observations was prepared February 3, 2020 and provided to MMC. Because those observations were completed soon after the January 5, 2020 opening, they may have reflected the fact that employees were still getting used to the new facility. Therefore, the observations were repeated on Tuesday February 4 and Wednesday February 5, 2020.

The garage entrance/exit is still operating with three gated lanes. In the peak AM time periods, the three lanes are designated as two entering lanes and one exiting lane. The remainder of the time, the center lane is closed and there is one entering lane and one exiting lane. This access only serves employees, as the shuttles use a separate access to the ground level of the garage. During both the previous observations and these current observations, SP+ traffic assistants were helping direct traffic into the garage during the AM peak hours. Turning movement counts from both the previous observations and the most recent observations are attached.

Based on the previous counts and observations in January, it was clear that the AM peak hour had the most impact to the adjacent roadway network with the PM peak hour having minimal impact. As such, this most recent set of observations focused on the AM time period and are described in more detail as follow:



AM Peak Time Period (Observed / Counted from 6:00 AM to 8:30 AM)

AM Peak Hour Volumes

The initial counts in January showed the peak hour of the garage occurring earlier (6:00 – 7:00 AM) than the overall intersection (7:15-8:15 AM). In the most recent February counts, the peak hour of the garage was still 6:00-7:00 AM, but the peak of the overall intersection has changed to 6:15-7:15 AM. In our opinion this reflects how minimal the traffic is on Saint John Street at that time of day, and that the traffic for the garage is the controlling volume.

It should be noted that although the data is reported in peak hourly increments, during the peak hour of the garage approximately 66% of the traffic arrived in an approximately 20-minute time period. The effects of this surge in traffic is described in more detail in the following observations section.

AM Peak Hour Observations

During the previous AM observations, a traffic assistant from SP+ was located at the garage entrance on both days assisting traffic moving into the garage. Most of the AM peak hours on each day the observations were made, vehicles entering the garage from St. John Street and D Street did not affect traffic flow of vehicles traveling along St. John Street. However, there was a brief approximately ten to fifteen-minute time period between 6:30 AM - 6:45 AM when the flow of traffic entering the garage appeared to exceed the capacity, which in turn caused minor queuing of traffic in the left and right turn auxiliary lanes on St. John Street. This queuing exceeded the auxiliary lane lengths which occasionally interrupted the flow of Saint John Street through traffic. Fortunately, this occurred before the peak hour of traffic on St. John Street, and only for a ten to fifteen-minute time period. Based on the observations, the merging of the two entering lanes into one that occurs just inside the garage was a contributing factor for the queuing of traffic from the garage.

These same general observations were also seen during the February 4th and 5th observation days. During this observation period, the brief surge in traffic that occurred in the previous January observations had appeared to decrease in intensity and expanded over a longer time period of twenty or twenty-five minutes. It is assumed that the employees are learning to arrive earlier to avoid the rush of traffic. This expanded but less intense peak resulted in decreased queue lengths on St. John Street, which in turn decreased the impact to St. John Street. Despite the shortened queue lengths, the queues still exceeded the auxiliary turn lanes provided and still impacts the through-traveling lanes, but to a lesser degree of approximately 10 minutes.



AM Peak Hour Observation Conclusions

Based on the observations, the AM peak MMC traffic spike appears to have decreased in intensity and spread out over a longer time period. This results in decreasing the impacts to St. John Street. In our opinion, this appears to reflect employees becoming more familiar with traffic patterns associated with using the parking garage and adjusting accordingly. The observed queue lengths still exceed the provided turn lanes during a brief (approximately 10 minute) time period during the AM peak hour, although due to the limited through volumes on St. John Street, this impact is minimal.

Pedestrian Accommodations

It is our understanding that the City has received comments of safety concerns from MMC employees who walk from the garage to the hospital rather than ride the shuttles. The specific nature of the concerns is unknown. The crosswalk that provides access from the garage across St. John Street, to the sidewalk on D Street, appears to be the most used path for employees walking. Because this intersection is currently unsignalized, the pedestrian heads and push buttons cannot be activated. Therefore, the crosswalks in this area function the same as they would at any unsignalized intersection or midblock crosswalk within the City. This area does provide overhead illumination at each of the four corners of the intersection. Due to timing of the employee arrivals, the pedestrians are trying to cross Saint John Street during the peak of drivers arriving at the garage. During our observations, the SP+ traffic assistants assisted pedestrians crossing Saint John Street when they could. Based on our observations, it could be difficult for pedestrians crossing Saint John Street during the peak surge of traffic.

Other than the traffic assistant continuing to assist pedestrians crossing Saint John Street, there was no obvious mitigation identified that would improve the circumstances. When the intersection is signalized, the pedestrian heads and push buttons will be operational and will significantly improve the ability for pedestrians to cross.

Bicycle Use

There were no bicycles observed during any of the observations. This is not unexpected given the time of year. The bicycle use to / from the garage is expected to be low even in the prime season, since there is little incentive to drive to the garage to then bicycle to the hospital.



Traffic Queuing on Saint John Street

It is our understanding that Saint John Street queuing of traffic from the Congress Street intersection back toward the garage has been identified as a concern. Although the PM peak hour was not observed for the February observations, it was observed during the January observations. Based on our observations in January, one of the two days observed did show significant queuing of traffic on Saint John Street approaching Congress Street. The length was significant enough to queue past the access to the garage. At that time GP was committed to observing the garage access and did not investigate the cause of the queuing, since it did not appear to be directly associated to the garage traffic or access.

Since that time, GP has completed additional observations of the operation of the Saint John Street / Congress Street intersection, and in our opinion, the queuing is primarily due to the conversion of the two Saint John Street approach lanes to Congress Street from a through & through/right lane to a through & a right lane, thus eliminating one of the northbound through lanes. This may also be exacerbated by the signal timing not having been revised to reflect the change in lane use. It is our understanding this change of lane use was made to address safety concerns and accommodate a center turn lane on Saint John Street between Congress Street and Park Avenue. This change was originally recommended as part of a City study and again recommended in the Traffic Impact Study for the relocated Dunkin Donuts located within that section of roadway. The loss of the through lane appears to be compounded by not having clear lane use direction for that approach at the intersection in the form of advanced lane use signs and/or overhead lane use signs. Drivers were observed approaching the intersection in the right turn only lane and then traveling through the intersection.

Dunkin Donuts was required to include MMC in its traffic impact study, but they did assume in that study that MMC would be the one to modify and optimize the timing and phasing of the intersection. Based on the Dunkin Donuts Traffic Impact Study dated August 17, 2018, the intersection was forecast to operate at acceptable levels of service, with a queue of less than four vehicles for that approach. It is unknown if the timing of the traffic signal has been modified to account for the loss of the through lane. If not, we recommend that the signal timing be adjusted in the field.

Summary

These second observations confirmed the original traffic observations and initial assumptions. Employees appear to be adjusting to the operations of the garage and arrive earlier to avoid the surge of traffic. This in turn decreased the impacts to Saint John Street traffic, which is minimal at that time of day. Pedestrians that cross Saint John Street during the peak surge of arriving traffic to the garage do have some difficulty crossing, which is improved by the assistance of a



traffic assistant at the intersection. This will be improved significantly when the intersection is signalized, and the pedestrian heads and push buttons are operational. Queuing of traffic on Saint John Street approaching Congress Street appears to be primarily due to the change of lane uses for that approach and the loss of a through lane compounded by a lack of clear guidance as to the proper lane use. We recommend that the signal timing in the field be adjusted as needed.

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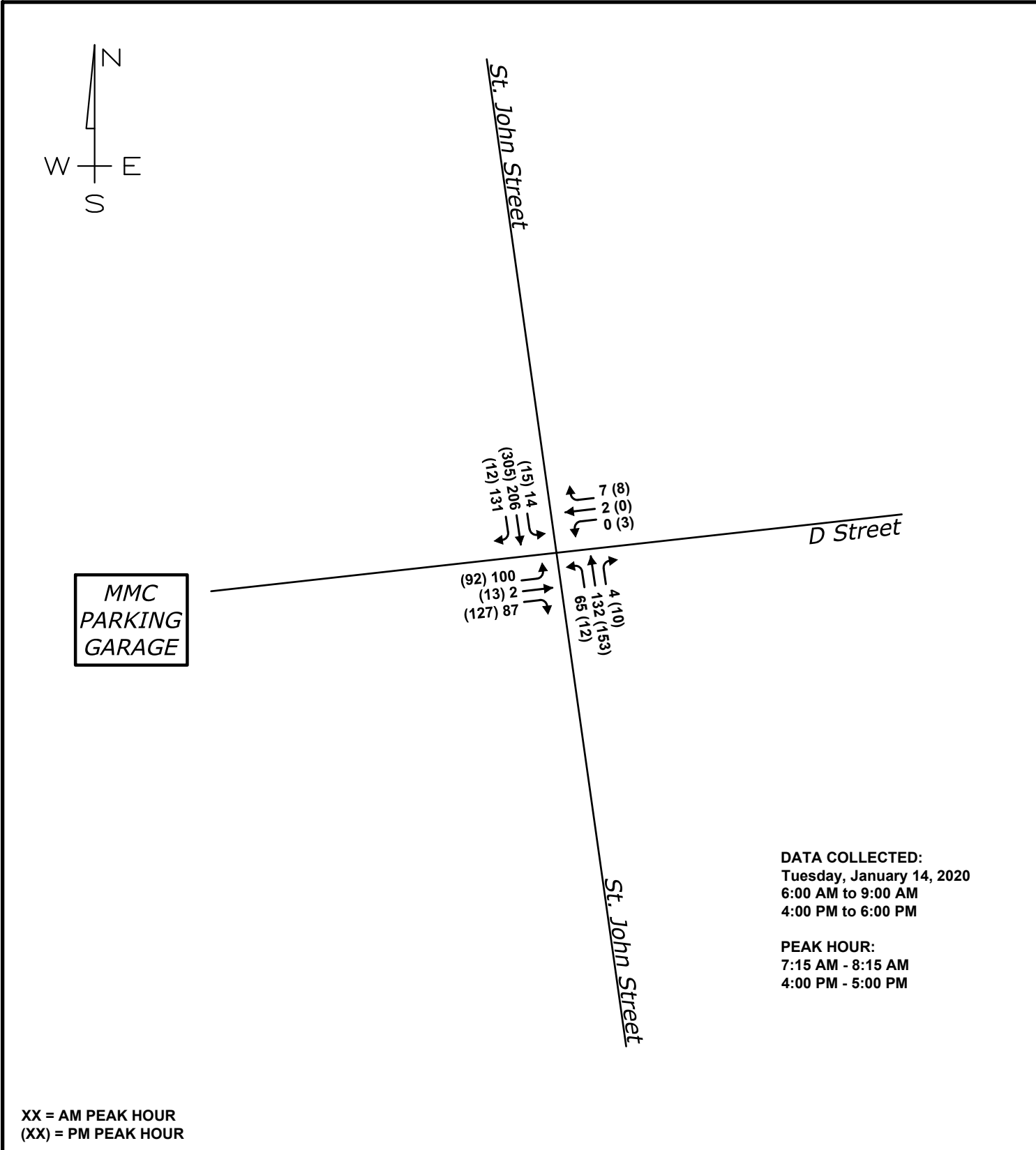


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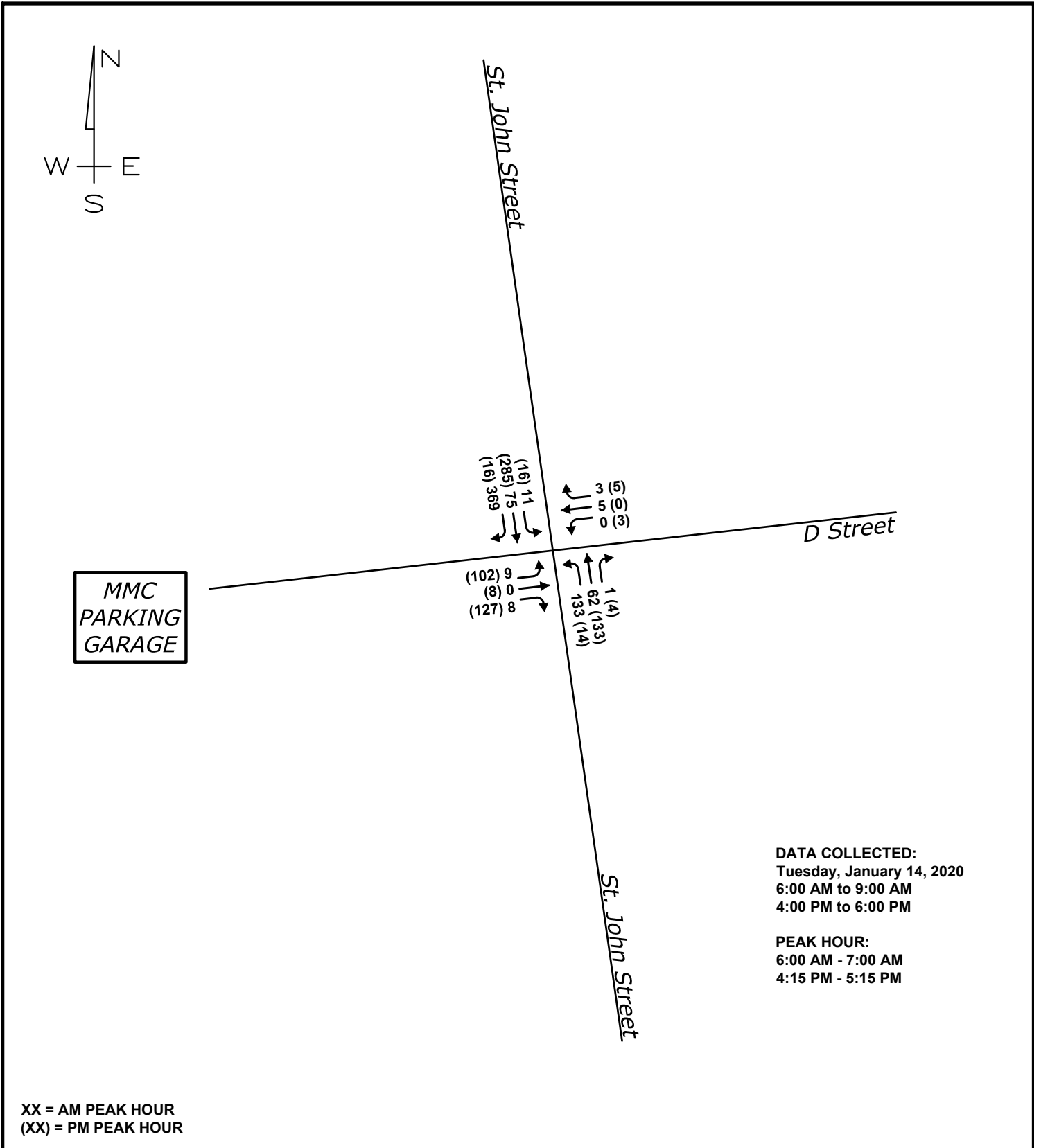
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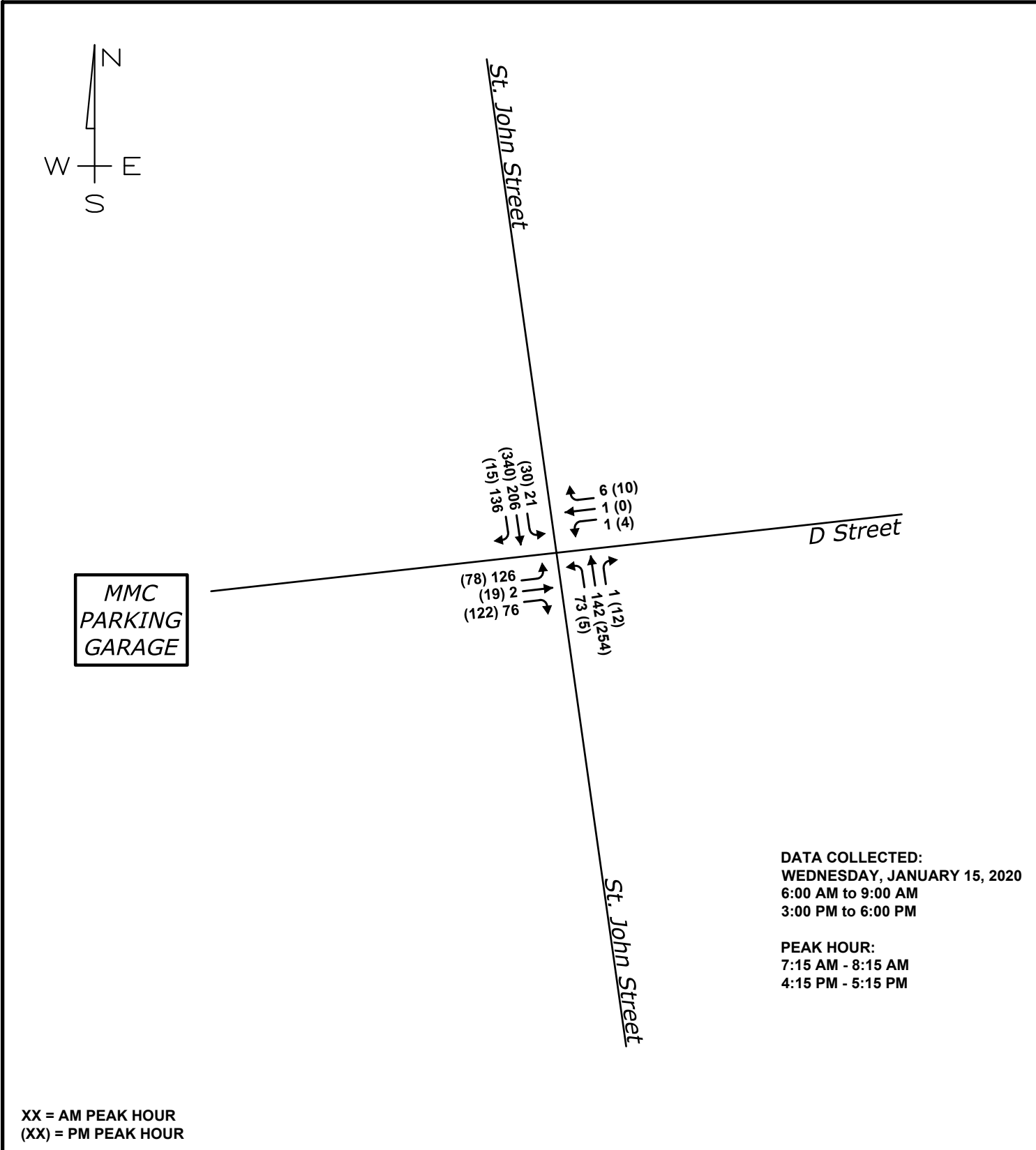


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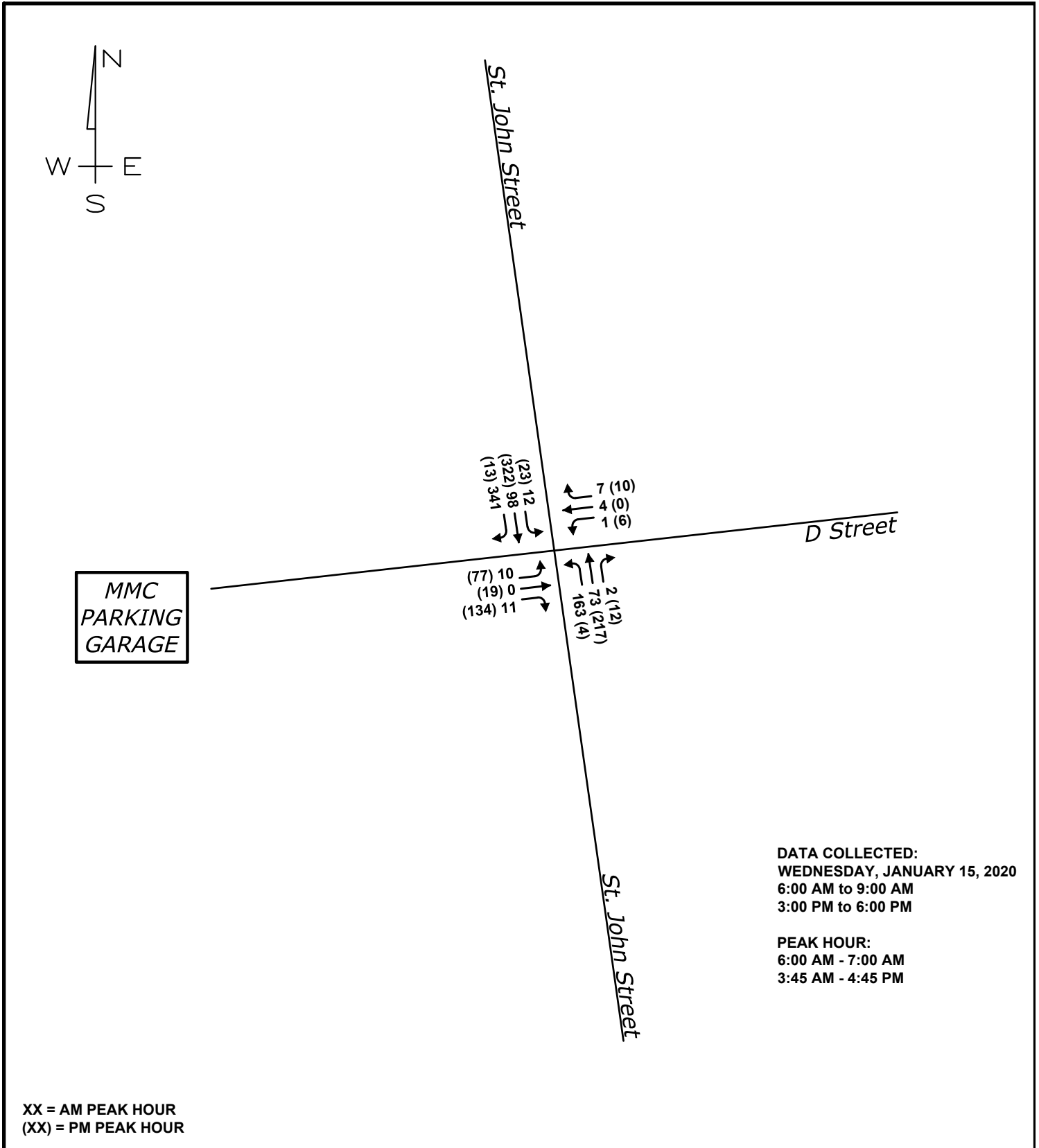
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January 15, 2020 - Overall Intersection Peak Hours



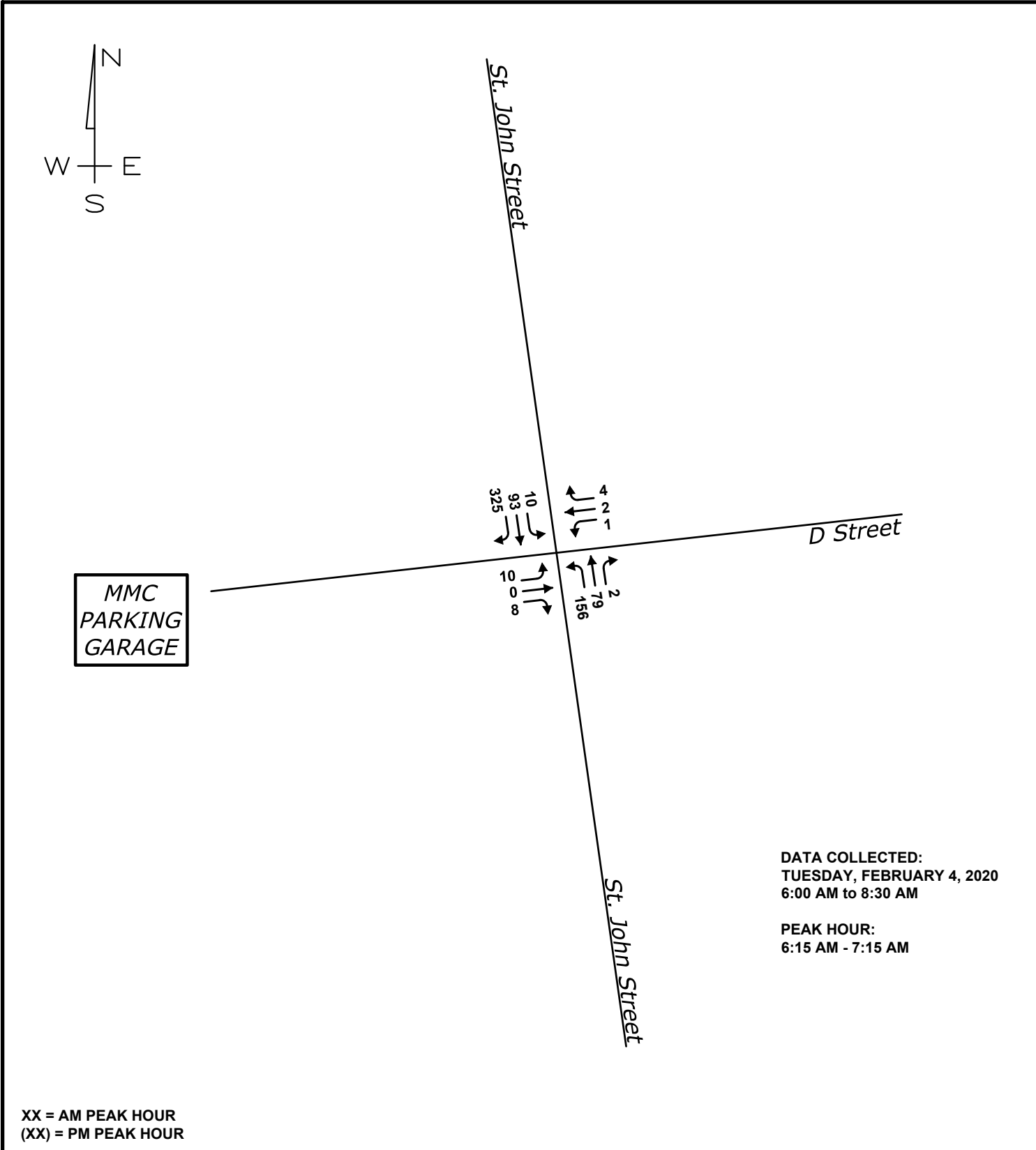
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January 15, 2020 - Garage Peak Hours



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February 4, 2020 - Overall Intersection Peak Hours

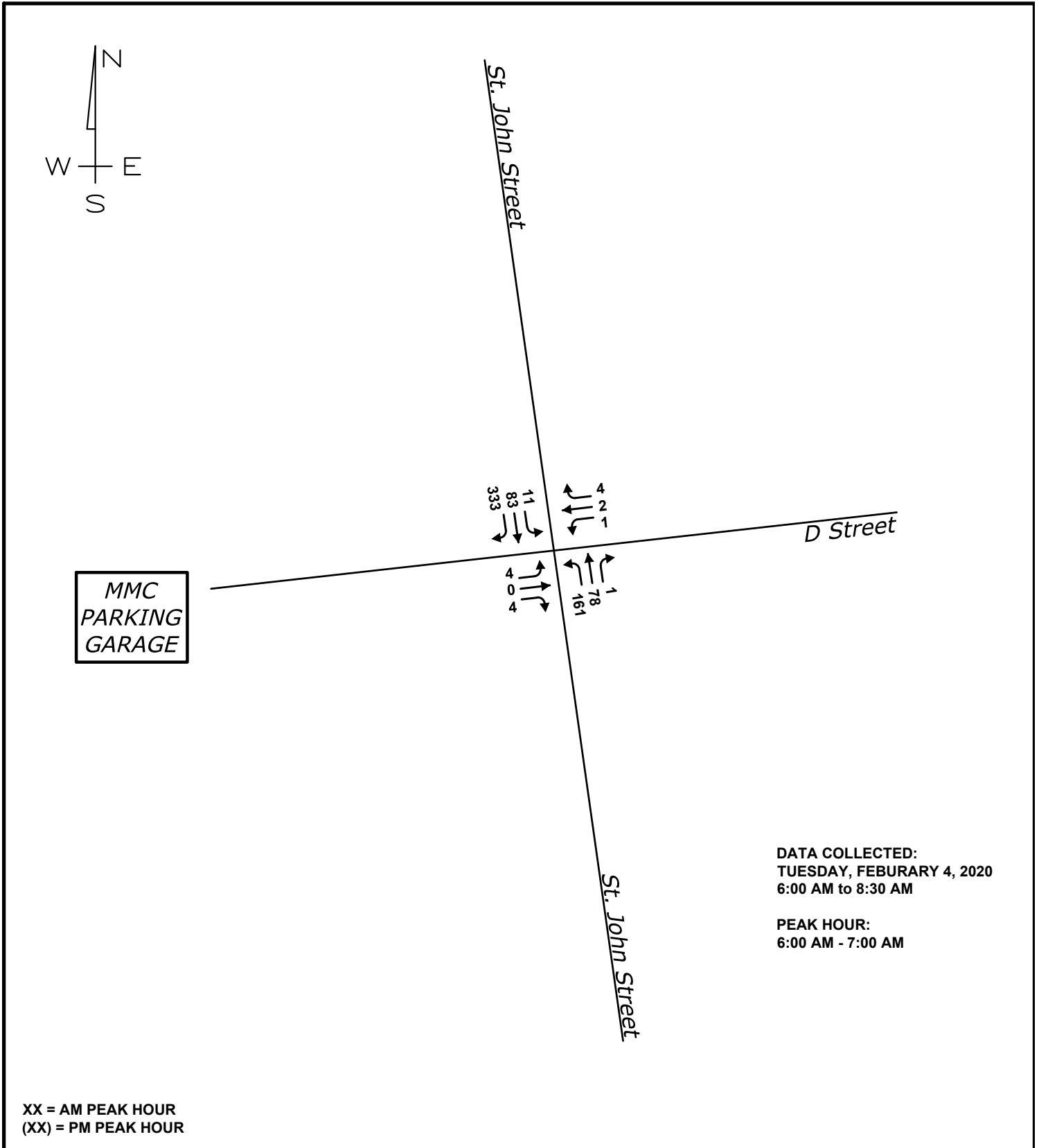


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February 4, 2020 - Garage Peak Hours

Figure No. **7**



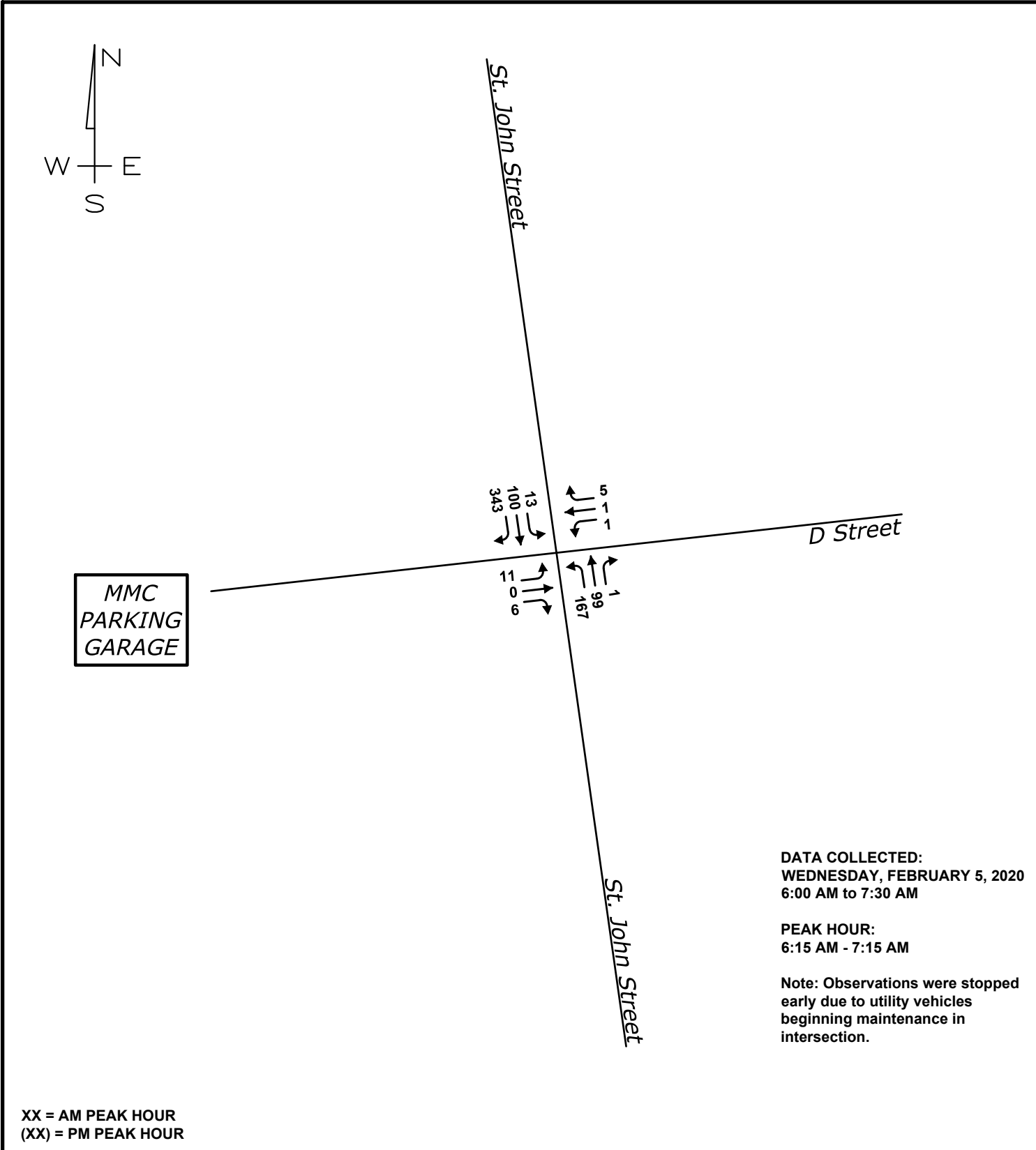
DATA COLLECTED:
TUESDAY, FEBRUARY 4, 2020
6:00 AM to 8:30 AM

PEAK HOUR:
6:00 AM - 7:00 AM

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

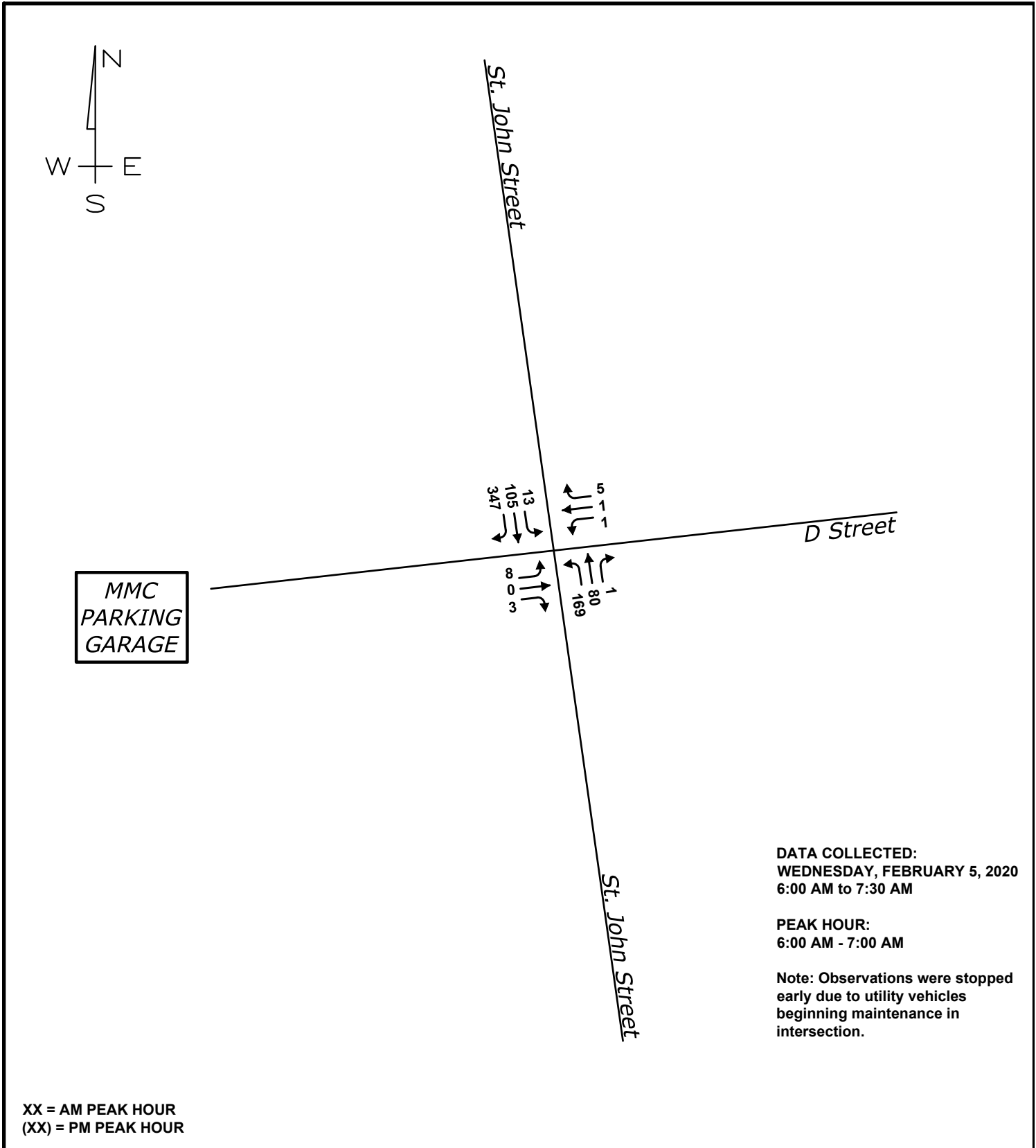
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February 5, 2020 - Garage Peak Hours



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