

GGP Garage- Entering and Existing Traffic Flows and Driveway Configurations

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General

1. Based on GGP's anticipated regional distribution, if there is clear signage for southbound traffic on West Avenue, approximately 63% of entering traffic will use the tunnel entrance, arriving on Level B2. Two percent (2%) will arrive via North Water Street from the east. And 35% will arrive on North Water Street from Reed Street and other points.

With approximately 1,400 Saturday peak hour trips entering the north garage, this means 880 trips using the West Avenue Tunnel, 30 trips arriving from the east on North Water Street, and 490 trips arriving on North Water Street from Reed Street and other points.

2. Based on GGP's anticipated regional distribution 90% of departing traffic will travel north on West Avenue. The remaining 10% will travel east on North Water Street or on West Avenue to the south.

With approximately 1,300 Saturday peak hour trips exiting, this means 1,170 trips will be using the West Avenue driveway or the North Water Street driveway to head north, with a further 130 trips using the North Water Street driveway to reach other points. The share of the 1,170 vehicles heading north on West Avenue which uses the West Avenue driveway will be determined by the ease with which they may reach the West Avenue exit on Level L1 via the internal circulation system.

The Level B2 and the Level B1 parkers (750 spaces), who are most likely to have arrived from the southbound tunnel from West Avenue, are likely to use the exit from Level B2 to North Water Street rather than circulate up one more level and traverse all of Level L1 to reach the exit to West Avenue from Level L1.

All parkers on Level L1 and above (1,930 spaces) will find the Level L1 exit to West Avenue convenient, instead of circulating down a level to exit from Level B1 to North Water Street, which is a much less convenient connection to the interchange once they are on the street.

Based on this analysis, it appears that 72% (1,930/2,680) of the 1,170 vph northbound exiting peak hour traffic (840 vph) will use the West Avenue driveway from Level L1 and 28% (330 vph) will use the North Water Street exit driveway to head north from the site.

A total of 460 vph will use the North Water Street driveway on Level B2, 330 vph heading north and 130 vph heading to other directions.

West Avenue Tunnel

1. A single lane tunnel has the capacity to handle up to 1,200 vph. Diverting 880 vph from making left turns from West Avenue to North Water Street at the West Avenue/North Water Street/intersection will improve traffic operations for through traffic on West Avenue. The remaining 520 arriving peak hour trips, mainly arriving from Reed Street, will arrive on North Water Street.
2. While the tunnel is a good idea in concept, design plans must demonstrate the physical impact of the tunnel on other traffic lanes on West Avenue, the effect on other projected traffic in the area, the adequacy of the access control lanes on Level B2, and the capacity of the cross floor route from the arrival point on Level B2 to the cascading ramps at the east side of the garage.

West Avenue Exit Driveway

1. Removing 840 vph from the garage exit/North Water Street intersection and from the North Water Street/West Avenue intersection will improve traffic operations at these intersections.
2. While the driveway is acceptable in concept, design plans must demonstrate the physical impact of the driveway on the sidewalk, mitigation of vehicle pedestrian conflicts on the sidewalk, the proposed method of control of the intersection of the driveway with northbound West Avenue, the effect on other projected traffic in the area, the adequacy of the egress control lanes on Level L1, and the cross floor route from the cascading ramps at the east side of the garage to the exit location on Level L1.

North Water Street Access to the North Garage via Left Turn from North Water Street

1. With the diversion of 880 vph into the North Garage via the Tunnel from West Avenue, the amount of peak hour traffic desiring to enter the North Garage from eastbound North Water Street will be approximately 520 vph.; with the diversion of 840 vph to the West Avenue exit driveway, anticipated exiting traffic to North Water Street will be 460 vph.; and with relatively light through traffic on North Water Street, a design for a left turn-in driveway may be developed, eliminating the slip ramp to Level L1.

This solution would eliminate the need for the bridge to the north garage at Level L1. Note that the slip ramp is presently proposed to accept only about half of the 520 vph arriving on North Water Street eastbound.

North Water Street Access to the North Garage via Right Turn into and through the South Garage

1. All eastbound traffic on North Water Street turning left into the north garage (520vph) may be converted into traffic turning right into the south garage and the portal of the north garage converted into an exit only driveway serving 460 vph. Once within the south garage, entering traffic may be routed via an internal ramp to the bridge to Level L1 of the north garage, bringing this traffic close to the cascading ramps at the east side of the garage for onward circulation to the upper levels.

This solution in which all traffic from North Water Street would enter using a perpendicular driveway into the south garage and a ramp within the south garage envelope to reach the bridge to the north garage eliminates the exterior slip ramp to Level L1. It also increases the amount of traffic delivered in close proximity to the cascading ramps at the east side of the garage for onward circulation to the upper levels.