



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Richard A. Davey, MassDOT Secretary and CEO and MPO Chairman
Karl H. Quackenbush, Executive Director, MPO Staff

MEMORANDUM

DATE: December 19, 2013
TO: Nicholas Rystrom, City Engineer, City of Revere
FROM: Seth Asante, MPO Staff
RE: Federal Fiscal Year (FFY) 2013 Community Transportation Technical Assistance Program: Safety Improvements for Pedestrians at Park Avenue and Dale Street Intersection in Revere

1 INTRODUCTION

The City of Revere requested technical assistance from the Boston Region Metropolitan Planning Organization (MPO) to review pedestrian safety improvements proposed for the intersection of Park Avenue, Dale Street, and Kilburn Street. Motorists turning left from Park Avenue onto Dale Street drive at high speeds because of the diagonal alignment of Dale Street, increasing risk to pedestrians in this intersection. The city is proposing construction of a traffic island on Dale Street to reduce the speed of vehicles turning from Park Avenue westbound. This purpose of this memorandum is to review this proposal; it includes an overview of the study location, issues and concerns, existing conditions, and refinements to the city's proposal.



Park Avenue, Dale Street, and Kilburn Street intersection

2 STUDY LOCATION

The study intersection is zoned primarily for residential use. Dale Street and Kilburn Street intersect Park Avenue to form a four-legged unsignalized intersection. Dale Street intersects Park Avenue at an oblique angle and Kilburn Street is offset slightly to the east of the intersection. Park Avenue and Dale Street are two-way, two-lane streets; Kilburn Street is a one-way, one-lane street with traffic heading towards the intersection. On-street parking is allowed on the south side of Park Avenue and is free for the general public. There are sidewalks on both sides of the streets, crosswalks with wheelchair ramps, and detectable warning plates. None of the streets has a bicycle lane; bicycles share the streets with motorists.

At the intersection, Park Avenue is the major street and its traffic is not controlled by a device; Dale Street and Kilburn Street are the minor streets and their traffic is controlled by stop signs. The intersection has an overhead flashing beacon (yellow on Park Avenue and red on Dale Street). The speed limit posted on Park Avenue is 30 miles per hour (mph); on Dale Street and Kilburn Avenue, the speed limits are not posted, but we expect them to be either 25 mph or 30 mph.

Massachusetts Bay Transportation Authority (MBTA) bus route 110 (from Wonderland or Broadway to Wellington Station via Park Avenue), and bus route 111c (from Woodlawn or Broadway via Park Avenue to Haymarket Station) has stops on Park Avenue at the study intersection. MBTA bus route 110 detours via Dale Street on snow days, to avoid a hill on Park Avenue west of Dale Street; therefore improvements must accommodate the snow route.

3 ASSESSMENT OF EXISTING CONDITIONS

MPO staff met with the Revere City Engineer, Mr. Nicholas Rystrom, to discuss safety concerns at the Park Avenue/Dale Street/Kilburn Street intersection and assess existing conditions. The meeting took place at the intersection. As stated above, the primary safety concern is that motorists on Park Avenue westbound do not slow down when turning left onto Dale Street, thus increasing the risk for pedestrians crossing Dale Street. The diagonal alignment of Dale Street contributes to the high-speed left turns and the City of Revere had received numerous complaints from residents regarding this safety problem. In addition, the diagonal alignment of Dale Street restricts sight lines and distances upon approach—northbound motorists on Dale Street have to twist their necks in order to get a good view of eastbound traffic on Park Avenue.

MPO staff assessed existing conditions in order to determine issues that should be taken into consideration when designing pedestrian-safety improvements. The findings of the MPO's safety audit are presented below:

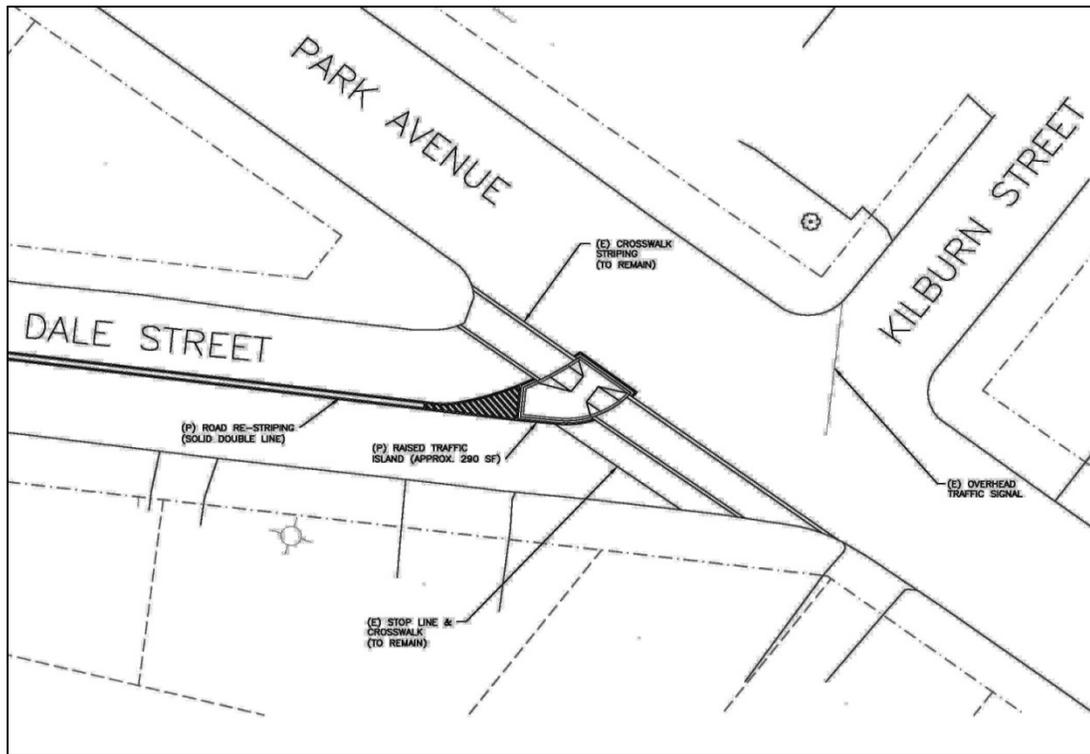
- Motorists on Park Street travel at speeds of 30 mph or higher because of the straight alignment of Park Avenue.
- Motorists turning left onto Dale Street do not slow down because of the wide turn; and the intersection warning beacon appears to have no effect on reducing vehicle speeds on Park Avenue.
- Parking on the approach of Dale Street reduces the effective widths of the inbound and outbound lanes and causes motorists to use portions of the opposing lanes. In addition, parking on the approach of Dale Street affects bus and truck traffic.
- The alignment of Dale Street and on-street parking on the south side of Park Avenue limits sight lines and distances at the approach of Dale Street.
- The approach geometry of Dale Street results in a long crosswalk.
- The intersection lacks enhancements that alert motorists of the presence of pedestrians.

4 REFINEMENTS TO THE CITY PROPOSAL

Based on discussions with the city engineer, the field visit, and review of the city's proposal, MPO staff concluded that the proposed traffic island would reduce the speed of vehicles turning left from Park Avenue onto Dale Street and channel traffic into and out of Dale Street. The traffic island would allow left-turning Park Street vehicles to approach Dale Street more perpendicularly and at a slower speed. It also would allow motorists northbound on Dale Street to approach Park Avenue more perpendicularly and improve their sight distance.

In addition, MPO staff proposes the following refinements (shown in Figure 1) to increase safety:

- Align the traffic island so that it would not restrict truck and bus movements (Figure 1). The MBTA bus route 110 uses Dale Street on snow days to avoid a hill on Park Avenue west of the intersection.
- Prohibit on-street parking at the intersection to improve visibility for motorists and pedestrians, and traffic flow on Dale Street.
- Install R4-7 (keep right) sign to direct traffic to pass only to the right-hand side of the traffic island.

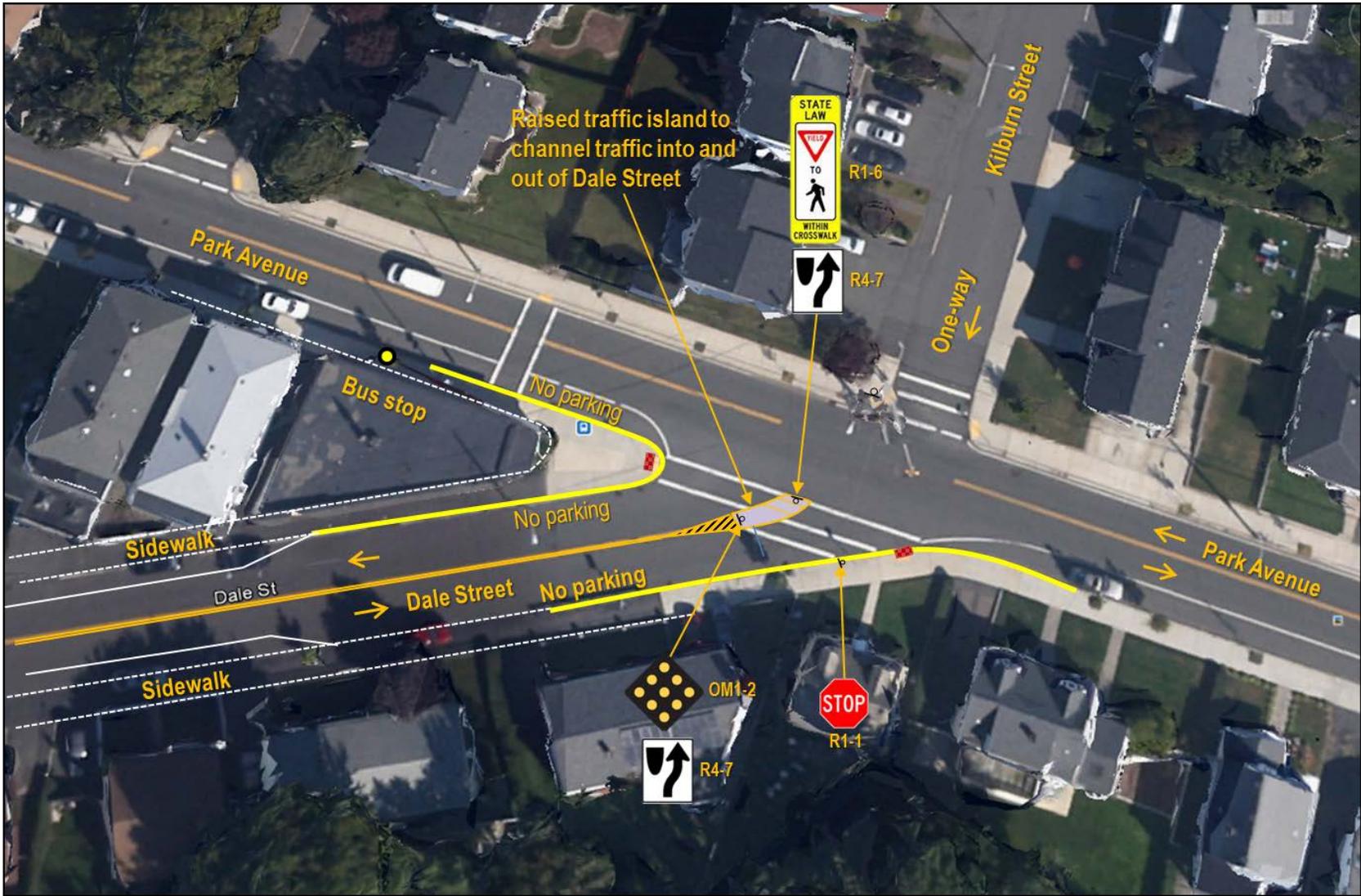


Proposed improvement submitted by City of Revere for review by MPO staff

- Install R1-6 (state law yield to pedestrian within crosswalk) sign to remind motorists of laws regarding right-of-way at an unsignalized pedestrian crosswalk.
- Install OM1-2 (object marker) sign to mark the obstruction (traffic island) within the roadway.

MPO staff believes that with the recommended refinements, pedestrian safety at the intersection, especially for those crossing Dale Street, would improve significantly. In addition, the traffic island would reduce speeds of vehicles turning onto Dale Street. The proposed additional signage would enhance safety by alerting motorists of the presence of pedestrians as well as directing them safely through the intersection.

SAA/saa



BOSTON
REGION
MPO

FIGURE 1
Refined Alternative Proposed by MPO Staff

*City of Revere
Community Transportation
Technical Assistance*