

## Academy Street Extension Corridor Capacity Analysis

**To:** Munro Johnson, Norwalk Redevelopment Agency  
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This memorandum will serve to provide the City of Norwalk with an assessment of the benefits of extending Academy Street with respect to traffic on West Avenue. The City of Norwalk Redevelopment Agency expressed concern that the proposed uptown development – including most notably Wall Street Place, Waypointe, and the Berkeley – would generate a significant amount of traffic on West Avenue, and that an extended Academy Street could serve to divert sufficient traffic from West Avenue to maintain reasonable levels of service on West Avenue. The City is contemplating a northern extension of Academy Street to establish a middle, north-south axis within the uptown development areas. A southern extension of Academy Street – between Merwin and Orchard Streets – is a component of the Waypointe development project, and is assumed in the analysis. Likewise, re-routing Isaacs Street southward to intersect with Leonard Street is a component of the approved plan for the Wall Street Place development, and is also assumed in this analysis. The Redevelopment Agency retained Tighe and Bond to analyze the traffic benefits of extending Academy Street across the single remaining block, i.e., from Chapel Street to Leonard Street at Academy Street's northern extent, creating a continuous roadway. From the analysis, Tighe and Bond's conclusion is that the capacity of West Avenue is sufficient to handle the increased traffic generated by proposed development with or without an extended Academy Street. While an extended Academy Street may offer other benefits to the City and the project areas, it is Tighe and Bond's assessment that the extension cannot be justified solely on the basis of future West Avenue traffic impacts.

Tighe and Bond assessed the benefits of extending Academy Street with respect to the operations and capacity of West Avenue intersections in the vicinity. Intersection operations are measured in terms of average delay for motorists and are expressed in terms of Levels of Service ("LOS"). For signalized intersections, LOS A indicates a delay of ten seconds or less per vehicle, and most vehicles do not stop at all. LOS F indicates delays of a eighty seconds or more per vehicle. This level is considered unacceptable to most drivers. A computerized traffic model was developed to determine the Levels of Service at the studied intersections. The model used recent traffic studies, including the 2006 Vollmer Central Norwalk Transportation and Pedestrian Plan, made assumptions for ongoing growth of development and associated traffic in the area over time, and included the site-generated traffic anticipated for the three developments, Wall Street Place, Waypointe, and the Berkeley. In addition, based on improvement plans Tighe and Bond understands to be imminent, the model included a traffic signal at the West Avenue / Butler Street intersection; and assumed a coordinated traffic signal network on West Avenue and Wall Street to move vehicles efficiently along the corridor.

The study area limits for this project are shown in Figure 1, and extend from Butler Street and West Avenue in the south to Isaac and Wall Streets in the north. These limits encompass the extent of the "middle axis" an extended Academy Street would create, and impacts beyond these intersections most likely would be unaffected by the Academy Street extension.

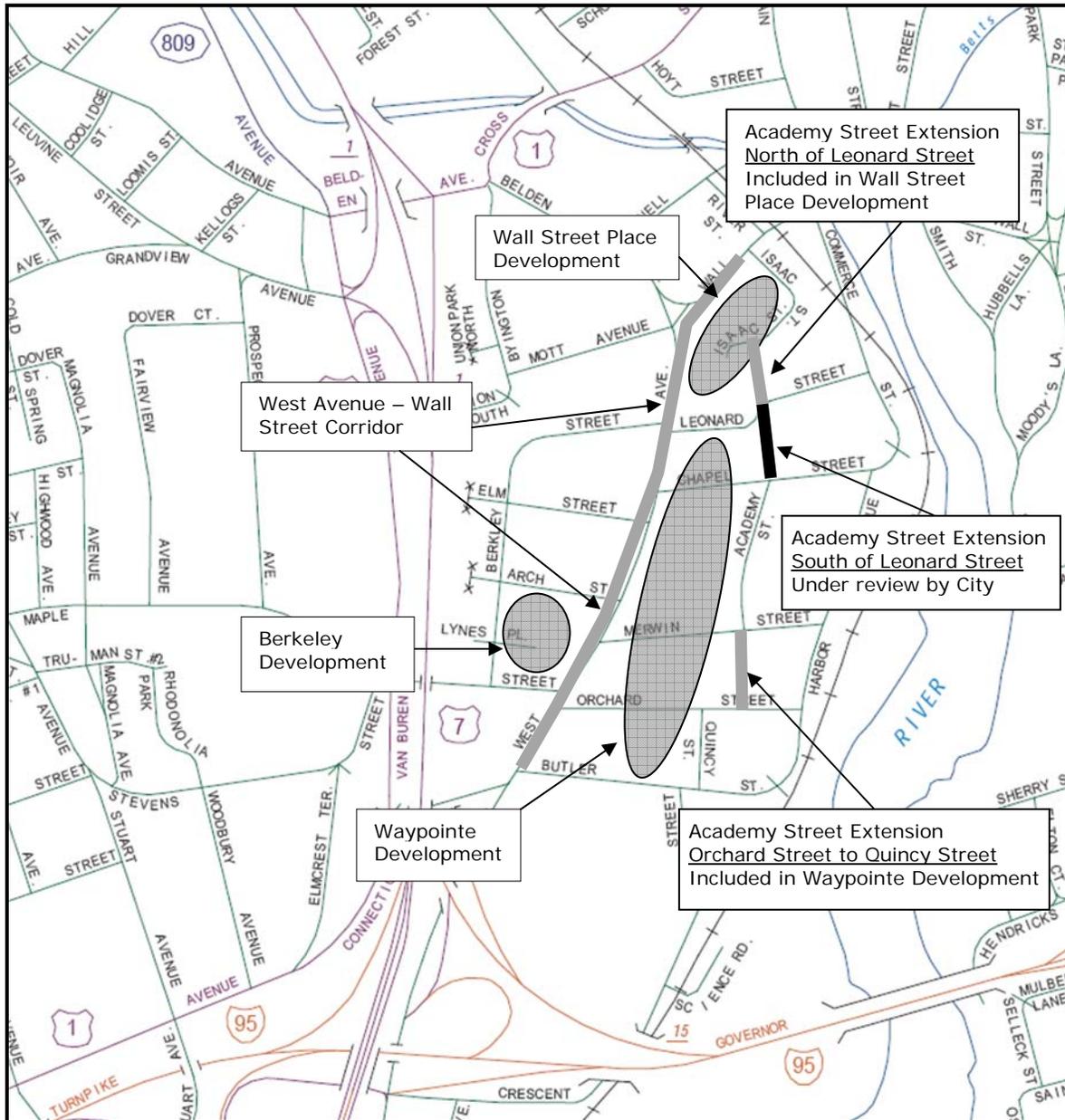
Based on traffic studies completed for each of the three proposed developments, the three sites would generate a total of approximately 1,700 vehicle-trips during the afternoon peak hour. The existing peak hour volume on West Avenue, which is approximately 1,600 vehicles, would increase by 400 vehicles. The remainder of the 1,700 vehicle-trips would be distributed throughout the roadway network and would use West Avenue or Wall Street to access their developments from the north or south extremes of the corridor.

To establish a baseline for comparison, Tighe and Bond's traffic model anticipated future traffic in the year 2016 without the new developments or the Academy Street Extension. Using the existing road network, the development-generated volumes were added to the traffic model. Finally, Academy Street Extension was added to the traffic model and 50% of the proposed development traffic was assigned to it. The resulting intersection operations were compared to the operations without Academy Street Extension. It should be noted that the analysis does not take into account other traffic that may utilize the new network, such as locals using the new route not to access the developments, but to by-pass them.

The traffic model results showed that in the future, intersections in the West Avenue study area without the Academy Street extension would operate at a Level of Service B or better, with one exception. The intersection of West Avenue at Maple Street / Orchard Street would operate at a Level of Service E, with an average driver delay greater than one minute. However, the model demonstrates that it would operate at this level either with or without Academy Street Extension. When Academy Street Extension is added to the network, the resulting decrease in West Avenue traffic yields minor reductions in delay (within the range of 1-8 seconds) at the Maple Street / Orchard Street, Merwin Street, Chapel Street and Berkeley Street intersections. The Maple Street / Orchard Street, Butler Street and Isaac Street intersections will experience higher delays for left turns while West Avenue through movements will experience lower delays; and the Butler, Belden and Isaac Street intersections will experience minor increases in overall delay (within the range of 2-5 seconds). This analysis indicates that while the Academy Street Extension will attract traffic, the impacts of this extension on West Avenue capacity, both positive and negative, are minor.

In summary, this analysis revealed that the extension of Academy Street would not have significant impacts on the Level of Service of West Avenue during the peak hours. While the extension may reduce delays at intersections along the middle of the corridor, it may result in a minor increase in delays at the northern and southern limits where Academy Street intersects with Butler Street, Orchard Street and Wall Street.

While the operational analysis reveals no preference for the Academy Street extension, there are a number of other factors that support extending Academy Street. It offers a secondary access to Waypointe and to the other developments, particularly for residents living within the area. Academy Street would provide internal access to developments, avoiding the use of West Avenue for both vehicles and pedestrians. In addition, the extension does provide an alternate route for through traffic due to special events, detours, and emergencies. While the extension of Academy Street cannot be justified with respect to traffic capacity on West Avenue, it can make the redevelopment area road network more accessible, provide better utilization of existing local roads, which can provide benefits to local users and emergency personnel, and it may also encourage further redevelopment.



Site Location Map  
Academy Street Extension  
Norwalk, Connecticut



Table 1  
Levels of Service  
Academy Street Extension

Intersection		Without Academy	With Academy
Butler			
	LOS	A	A
	Delay	4.7	9.3
Maple / Orchard			
	LOS	E	E
	Delay	76	68.6
Merwin			
	LOS	A	A
	Delay	8.2	5.3
Chapel			
	LOS	B	A
	Delay	12.2	7.8
Berkeley / Leonard			
	LOS	A	A
	Delay	6.7	5.7
Belden			
	LOS	B	B
	Delay	17.8	19.5
Isaac and Wall			
	LOS	A	B
	Delay	7.4	10.2