ENGINEERING SUCCESS **TOGETHER**

August 31, 2013

Mr. Hans Larsen, Executive Director
Board of Selectmen
Town of Wellesley
525 Washington Street
Wellesley, Massachusetts 02482

Re: "**Tolles-Parsons Senior Center Transportation Study – Final Report" Review** **4505-04**

Dear Mr. Larsen:

Per your request, BETA Group, Inc. (BETA) has reviewed the "Tolles-Parsons Senior Center Transportation Study - Final Report" dated August 5, 2013. This report is a revision of a previous report; submitted on September 3, 2009; that proposed a 14,500 square foot Senior Center to be located at 496 Washington Street. The revision was submitted to update traffic analysis based on 2012 traffic volumes and to incorporate an additional 22 parking spaces proposed within the expanded Wellesley Police Department (WPD) parking lot, which is located just north of the proposed Senior Center. The program for the proposed facility did not change. Our comments are discussed below.

Study Area

The study proposes to relocate the Wellesley Senior Center from its existing location in the basement of the Wellesley Community Center, at 219 Washington Street, to a new free-standing building at 496 Washington Street, formerly an American Legion site.

The study area includes four intersections nearby the proposed Senior Center site:

- Washington Street (Route 16)/State Street/Kingsbury Street
- Washington Street (Route 16)/Wellesley Avenue/Brook Street
- Washington Street (Route 16)/Central Street (Route 135)/Grove Street
- Washington Street (Route 16)/Morton Street/WPD Driveway

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It was noted that the proposed Senior Center site will include two driveways, one exclusive entrance and one exclusive exit. These two driveways were also included in the analysis. BETA finds the study area appropriate.

Existing Traffic Volumes
The proponent collected peak hour turning movement volumes at the Washington Street (Route 16)/Morton Street/WPD Driveway intersection on Thursday, May 23, 2013. All other study area intersections were examined using volumes collected in 2012. Data collected in 2012 were adjusted using a 1% annual growth rate to estimate respective 2013 volumes. BETA finds this methodology appropriate.

Existing Intersection Operations
Using the new traffic volume data, the proponent found:

- The intersection of Washington Street/State Street/Kingsbury Street operates at LOS D/E in the AM Peak Hour and LOS C/D in the PM Peak Hour.

- The intersection of Washington Street/Wellesley Avenue/Brook Street operates at LOS C/D in both AM and PM Peak Hours.

- The intersection of Washington Street/Central Street/Grove Street operates at LOS E/F in the AM Peak Hour and LOS D/E in the PM Peak Hour.

- All approaches of the unsignalized intersection of Washington Street/Morton Street/WPD Driveway operate at LOS D or better in both AM and PM Peak Hour.

BETA finds this analysis acceptable.

Crash History
Crash data were obtained from the Wellesley Police Department for the study area intersections between 2010 and 2012. Within the three years, 25 crashes occurred at Washington Street/Kingsbury Street/State Street; 6 crashes occurred at Washington Street/Wellesley Avenue/Brook Street; 9 crashes occurred at Washington Street/Central Street/Grove Street; and 14 crashes occurred at Washington Street/Morton Street/WPD Driveway.

BETA finds this analysis acceptable.

Existing Parking Conditions
The existing parking conditions along Washington Street were examined in 2009 and 2012. The existing site provides 15-20 parking spaces, while Washington Street provides 48 public on-street spaces between Wellesley Avenue and Morton Street. The on-street parking is signed for two-hour parking only. The site has been turned into an informal parking lot, utilized by the adjacent church/school.

Existing Pedestrian Facility Conditions
The proponent conducted sidewalk and crosswalk inventories within the study area and found the overall condition of sidewalks to be in excellent or good condition. The existing crosswalk adjacent the St. Paul Parish provides flashing yellow beacons when the pedestrian pushes a call button.

No-Build (2018) Conditions
No-Build traffic volumes were estimated by applying a 1% growth rate per year for five years. This is consistent with other studies within the Town of Wellesley. Traffic volumes were also adjusted to account for nearby projects that might increase traffic in the study area. Two projects were researched: Wellesley High School, and 494 Washington Street. The Wellesley High School forecasts an increase in students by 2017, these trips were added to the network. The 494 Washington Street Project proposes the addition of eight new condominium units. These projected trips were also added to the network. Future volumes from the Wellesley Inn project were included in the analysis. BETA finds this acceptable.

No-Build (2018) Traffic Operations
Using the adjusted No-Build traffic volume data, the proponent found:

- The intersection of Washington Street/State Street/Kingsbury Street continues to operate at LOS D/E in the AM Peak Hour and LOS C/D in the PM Peak Hour.

- The intersection of Washington Street/Wellesley Avenue/Brook Street degrades to LOS D in the AM Peak Hour, but continues to operate at LOS C in the PM Peak Hour.

- The intersection of Washington Street/Central Street/Grove Street degrades to LOS F in the AM Peak Hour and continues to operate at LOS D/E in the PM Peak Hour.

- All approaches of the unsignalized intersection of Washington Street/Morton Street/WPD Driveway operate at LOS E or better in both the AM and PM Peak Hours.

BETA finds this analysis acceptable.

Trip Generation
Since the Institute of Transportation Engineers *Trip Generation Manual* does not include a specific land use for Senior Centers, the proponent collected empirical data for the existing Wellesley Senior Center location and three other Senior Centers in similar towns, including Franklin, Marshfield, and Winchester, Massachusetts. The proponent concluded that the proposed Senior Center will draw approximately 150 visitors per day based on the proposed program. BETA finds this estimate acceptable.

Mode Share
Mode share was determined in the 2009 study and was retained for this study. BETA finds the mode share percentages to be appropriate.

New Trips
The amount of added trips attributed to the study area network was determined in the 2009 study and were retained for this study. BETA finds this estimation to be appropriate.

Trip Distribution
Trip distribution was determined in the 2009 study and was retained for this study. BETA finds the trip distribution appropriate.

Build (2018) Traffic Operations
Using the adjusted Build traffic volume data, the proponent found:

- The intersection of Washington Street/State Street/Kingsbury Street continues to operate at LOS D/E in the AM Peak Hour and LOS C/D in the PM Peak Hour.

- The intersection of Washington Street/Wellesley Avenue/Brook Street continues to operate at LOS D in the AM Peak Hour and LOS C in the PM Peak Hour.

- The intersection of Washington Street/Central Street/Grove Street continues to operate at LOS F in the AM Peak Hour and LOS D/E in the PM Peak Hour.

- All approaches of the unsignalized intersection of Washington Street/Morton Street/WPD Driveway operate at LOS E or better in both the AM and PM Peak Hours.

- The Senior Center entrance driveway was found to operate at LOS A for both Washington Street approaches in both AM and PM Peak Hours.

- The Senior Center exit driveway was found to operate at LOS E in the AM Peak Hour and LOS C in the PM Peak Hour.

BETA finds this analysis acceptable.

Future Parking Conditions
The proposed Senior Center will have 34 parking spaces on-site, and an additional 22 spaces in the expanded WPD parking lot. Washington Street, between Morton Street and Wellesley Avenue, contains 48 metered on-street spaces. These meters are limited to two-hour use. It is estimated that eight of these metered spaces will be removed to provide room for the new Senior Center driveway, and a crosswalk that will replace the existing crosswalks at the WPD driveway. In total, this yields 56 off-street parking spaces, and 40 on-street parking spaces that are available for use of the Senior Center. It should be noted that the on-street spaces will also be used by St. Paul Parish School/Church activities.

Since the Institute of Transportation Engineers *Parking Generation Manual* does not include a specific land use for senior centers, the proponent estimated potential parking using the previously discussed parking studies and trip generation estimations. The proponent determined that all Senior

Center vehicles could be accommodated by the 56 parking spaces provided within the on-site parking lot and the adjacent WPD parking lot. BETA finds this acceptable.

Sight Distance
The proponent performed a sight distance analysis for both proposed Senior Center driveways and found the available Stopping Sight distance to be sufficient. BETA finds this acceptable.

Roadway and Parking Impacts
Since this project does not greatly increase traffic volumes outside of typical traffic growth, this project **does not meet the Project of Significant Impact requirements for impacted intersections.** Parking needs for the proposed Senior Center can be contained on-site and within the WPD parking lot.

Site Plan Review
The proposed site plan shows a two-lane egress driveway. We question the need for two lanes based on the low exiting traffic volume for the site. We recommend that the egress driveway be stripped for one lane, or the driveway width be reduced to one lane.

The crosswalk at the WPD driveway will be relocated to the east of the proposed Senior Center site. Since the crosswalk at the St. Paul Parish will be maintained, we recommend that the relocated crosswalk be spaced at least 300' from the St. Paul Parish crosswalk.

New Signalized Crosswalk Warrant Analysis
In a draft memorandum and an updated memorandum dated August 22, 2013 and August 30, 2013 respectively, the proponent provided a signal warrant analysis for the proposed crosswalk on Washington Street to be located east of the proposed Senior Center. This crosswalk would replace the existing crosswalks at the WPD driveway. The proponent examined warrants for a traditional traffic signal system and a Hybrid Pedestrian Beacon.

Based on the estimated pedestrian and vehicle volumes passing by this crosswalk, this location was not found to meet the traditional traffic signal warrants. The warrant analysis assumes that the St Paul crosswalk will remain in-place. This location did meet the Hybrid Pedestrian Beacon signal warrant for pedestrian volumes (43 vs. 20), but failed to meet the signal warrant for vehicle volumes (1,220 vs. 1,625). Based on the warrant analysis, the proponent proposes the installation of a Hybrid Pedestrian Beacon system at this location. The Hybrid Pedestrian Beacon signal would stop traffic to allow pedestrians to cross similar to the function of a traditional signal. BETA finds this acceptable.

The proponent proposes to keep the existing St Paul crosswalk and the pedestrian amber flashing signal beacon system. Since the spacing between this signal and the proposed Hybrid Pedestrian Signal Beacon meets the minimum requirement of 300 feet, we recommend that the amber flashing beacon system be kept. The potential confusion to motorists that these two pedestrian signal systems may cause should be monitored during the first half of the school year after the installation of the Hybrid Pedestrian Beacon signal system.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,
BETA Group, Inc.

Kien Ho, PE, PTOE
Vice President

cc: Terry Connolly, Deputy Director; Tyler de Ruiter, EIT

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