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**Traffic Calming Implementation Plan
Harbor Square
Stamford, Connecticut**

March 2008

**Antares Real Estate
333 Ludlow Street
Stamford, CT**

Prepared by

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Introduction

This document will provide a proposed plan for the implementation of Traffic Calming for the Antares Harbor Square phase of the larger comprehensive Harbor Point Residential Transit Oriented Development. The plan that follows first discusses the goals and objectives determined by the City of Stamford for the South End in so far as the Stamford Traffic Calming program is currently planned.

Second this report will detail overall objectives of the Antares Traffic Calming actions and how these fit into the City's overall program.

Last specific actions will be detailed which form the first phase of the Harbor Point Traffic calming program.

Goals and Objectives

Traffic Calming is defined as the deployment of physical features to a roadway network which provide for reduced vehicle speeds, modify travel patterns to reduce traffic flow particularly through residential areas and enhance and improve pedestrian safety.

Harbor Square, as a Transit Oriented Development, is designed to facilitate pedestrian movement and as such this goal of Traffic Calming becomes the overarching action that should be implemented in Traffic Calming actions supporting Harbor Square. The success of Harbor Square will be measured by the ease by which pedestrians walk through and around the development and to the adjacent Stamford Transportation Center.

As the first phase of Harbor Point, the Harbor Square area has been designed to be a community center. It will provide both residential, commercial, office and retail uses and develops access to the waterfront. It is expected to generate significant pedestrian use and thus its traffic calming actions are intended to create the environment which is supportive of this feature.

The Stamford Traffic Calming Program

The City of Stamford has completed a comprehensive study of its various neighborhoods to assess traffic calming needs and issues. The South End Neighborhood was one of the areas that were addressed by this effort. This program provided significant public outreach and input. Attached hereto, is the final charrette meeting

minutes in which there were specific recommendations developed. The Appendix of this report includes the final presentation list of traffic calming issues in the South End. These issues were considered as the recommendations in this report were developed.

Antares is committed to implementation of improvements as part of its program presented to the City for the Harbor Point project. This report summarizes those actions and specific recommendations setting design guidelines for such improvements.

Harbor Square Traffic Calming Program

As noted earlier, the first phase of the full build Harbor Point project will be called Harbor Square and is shown in Figure 1. This project will develop a community center for subsequent phases of the plan and will set the look and feel of the Traffic Calming program for this portion of the South End.

Harbor Square will consist of the following development:

S1 to S4 blocks

Hotel: 130 rooms and 60 condos

Neighborhood commercial: 56,000 SF

Office Space: 300,000 SF

C7 Block

Approximately 337 Residential units

South and east of this section will be constructed some 2700 additional residential units in subsequent phases. As a Transit Oriented Community, Harbor Square will encourage pedestrian use of the area and accommodate vehicular traffic. Please note the emphasis. Pedestrian activity is to be favored and vehicular traffic accommodated but not at the expense of the pedestrian environment. This will be accomplished by several actions.

Sidewalk environments will be developed in concert with accepted CSS (Context Sensitive Solutions) approaches and the City of Stamford Streetscape Guidelines.

City of Stamford Streetscape Guidelines – Paving & Sidewalk Zones

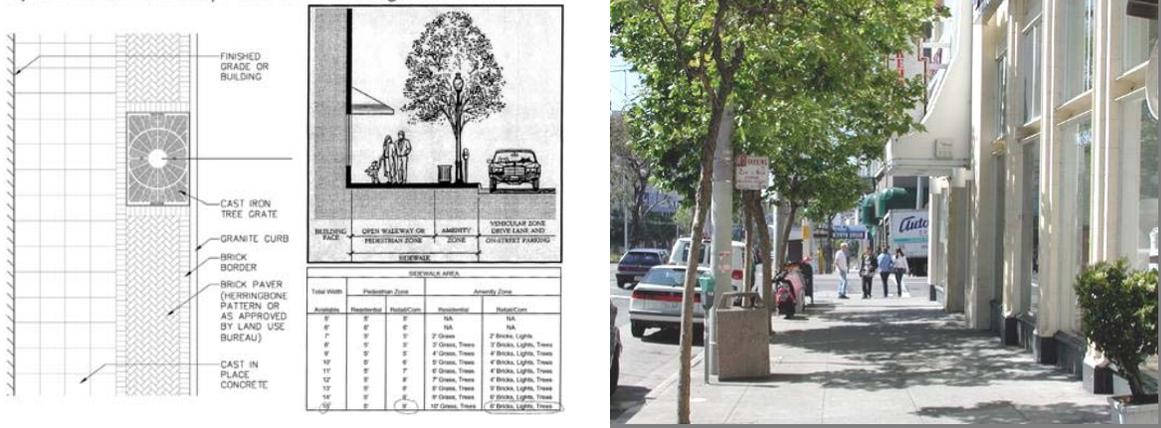


Figure 1. Sidewalk Environment Typical Treatments

This approach insures both pedestrian passage and the ability to develop the sense of community. In the figure above the Amenities Zone, and Pedestrian Zone would be within the public Right of Way or secured by easement. It is envisioned that this area will be a minimum of 10’ with the additional Frontage Zone developed depending on the street level use.

Design criteria for streets will be sensitive to the nature of the project. The context of the urban streets in the core of Harbor Point will have the following criteria.

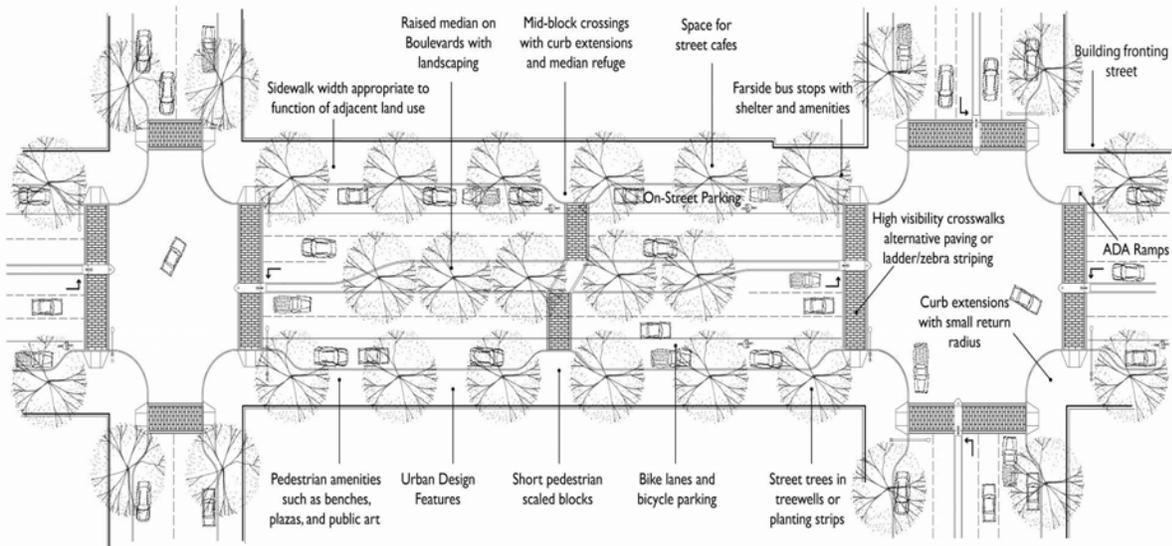


Figure 2. Urban Street Settings and Context

The overall approach to Harbor Point embraces the concepts presented above. While the opportunity for medians is limited by Right of Way, the other elements which encourage pedestrian environments will be present. Note the use of inset parking, bulbouts, and buildings fronting on the streets. Crosswalk amenities will be provided as suggested with some typical details included later herein.

Arterial Streets such as Washington Blvd, Atlantic Street and Pulaski Street will be developed to concentrate vehicular access and minimize possible diversion to neighborhood streets.

As can be seen from the Harbor Square site plans and the Streetscape guidance above, the design proposed is in context with the objective for this setting. Harbor Square provides significant open space by the dedication of land for the Commons park and similar amenities.

Antares will be implementing Bicycle amenities and lanes on the arterial streets in compliance with the South End Traffic Calming Plan.

Recommended practice for such installations is seen in the figure below.



Figure 3. Typical Bicycle Lane Application

- 13 feet from curb for parking
- 5 feet from curb for no parking with curbs

Antares will be implementing inset parking along areas of commercial frontage.

Roundabouts

As the nature and context of the areas being developed by Antares are significantly changed over existing conditions, we have recommended against the development of a Roundabout within the Harbor Square area. This would differ from the recommendation in the South End Traffic Calming Program. There were several reasons for this departure from the City's plan.

- Roundabouts of appropriate size seemed not feasible with the right of way which was available for the development of the program.
- Recent developments surrounding the Access Board and disabled pedestrian standards for roundabouts could mandate signalization of the roundabouts which would provide for difficult traffic operations.
- Implementation of Roundabouts and Washington Blvd and Atlantic Street would result in diversion of heavily used pedestrian paths which could result in less safety.

For the above reasons, we have recommended that Antares pursue traditional traffic calming applications at locations where Roundabouts were proposed. Antares will develop improvements to Washington Blvd, which removes the jog at Dyke Lane and provides for enhanced crosswalks, inset parking and bulbouts at Washington Blvd and Atlantic. Treatments for Pacific and Belden will be developed at a later phase.

Attached following this report is a copy of the Traffic Circulation Plan which provides supporting information for this plan to support traffic calming activities with Harbor Square.

Summary

The Traffic Calming Plan for Harbor Square is a beginning and embraces not only the development of features to calm traffic, but rather an integrated approach to establish context sensitive design and placemaking as framework for the project.

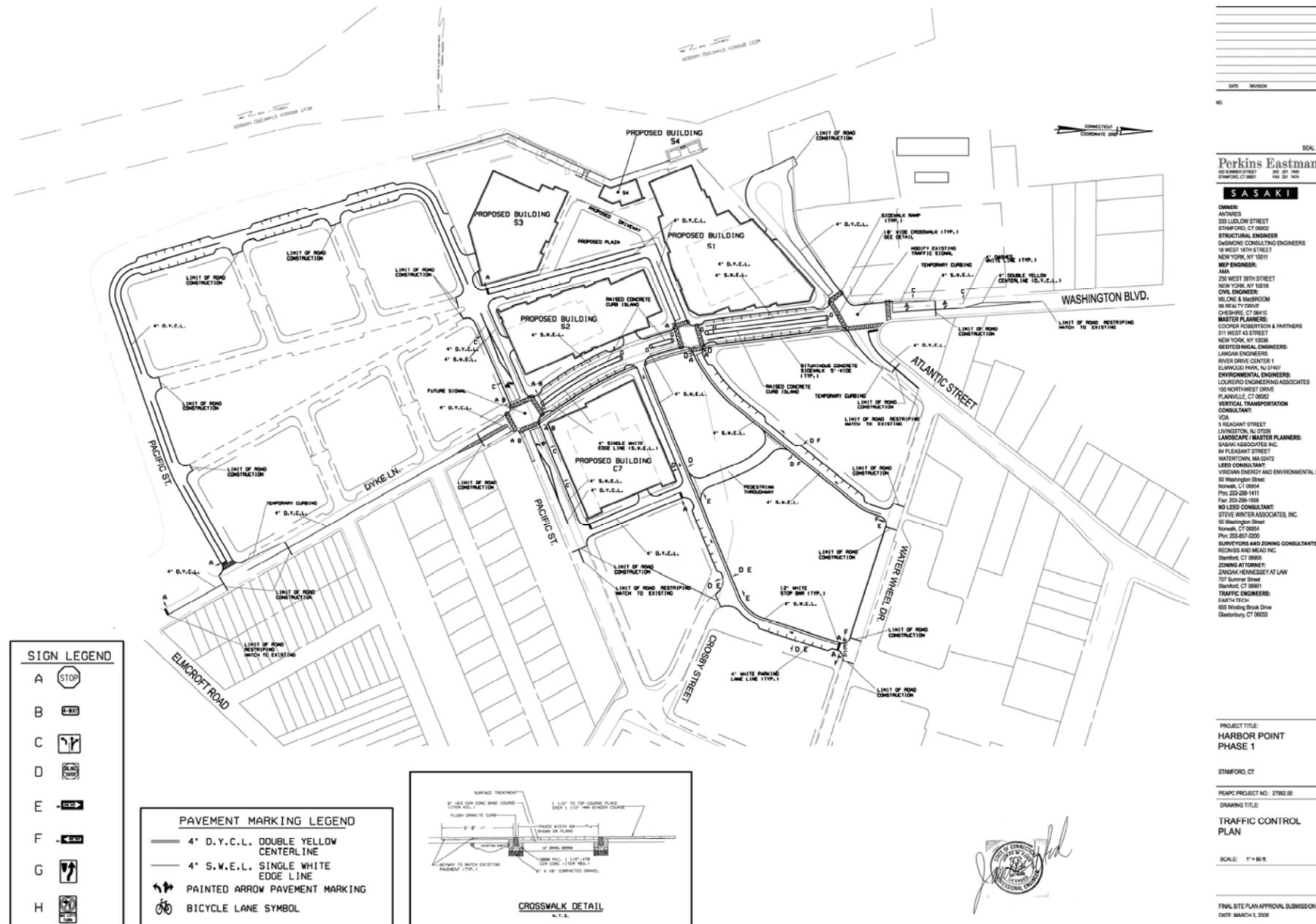
Recognizing the goals and objectives of the program to set design criteria to encourage a walkable community and Transit Oriented Development, the program provides:

- Enhanced Pedestrian amenities (CSD Sidewalk Design)
- Medians or similar treatments on Boulevards with Landscape or Decorative Surface Treatments

- Inset Parking
- Widened sidewalks in context with adjacent development
- Crosswalks using Decorative Pavement Treatments to create sense of pedestrian environment
- Bicycle lanes on Washington Blvd. and Atlantic and Pacific Street and the Commons

The development of Harbor Square will set the tone and concept for the completion of the Harbor Point project. While this is a rather small segment of the larger project, it will create the sense of place that will be Harbor Point. This will not be an auto centric environment but rather the walkable community place, facilitating transit, bicycling and recreation.

Figure 4. Harbor Square Traffic Circulation



2/29/2007

List of Traffic Calming issues documented in the City Study:

- There is a speeding problem going up the hill on Lipton Place, as well as a blind spot on the top of the hill.
- Curb extensions are needed on the north side of the intersection Henry Street and Atlantic Street due to sightline problems.
- The entrance to the school is on Woodland Avenue. It is more important to improve pedestrian safety on Woodland Avenue as opposed to Henry Street.
- Enforce a no parking rule on the south side of Lipton Place.
- Add midblock curb extensions on Woodland Avenue between Pacific Street and Henry Street. This is where buses pick up children from the school.
- Add roundabouts on Pacific Street at the Woodland Avenue and Henry Street intersections.
- There is a speeding problem on Elmcroft Road between Dyke Lane and Belden Street. Consider adding inset parking or a bicycle lane.
- The bend on Stone Street is wide and cars speed around it. Consider using curb extensions to narrow the road at that location.
- Cedar Street should be a one-way northbound street between Stone Street and Ludlow Street.
- Add bicycle lanes leading to the park on Washington Boulevard.
- Add a roundabout at the intersection of Atlantic Street and Washington Boulevard.

**Neighborhood
Traffic Calming Meeting
Memorandum**



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75 Charter Oak Avenue
Hartford, CT 06106

City of Stamford
888 Washington Blvd.
Stamford, CT 06901



STAMFORD NEIGHBORHOOD TRAFFIC CALMING MEMORANDUM OF MEETING

SUBJECT: SOUTH END NEIGHBORHOOD CLOSING CHARRETTE

DATE: JUNE 12, 2007 **TIME:** 6:30 PM

LOCATION: CTE LATHON WIDER COMMUNITY CENTER, 137 HENRY STREET

Mani Poola, City Traffic Engineer, welcomed the attendees and introduced the project. Joe Rimiller, Assistant Project Manager, discussed the charrette process. This is the closing charrette and it is the second of two charrettes. The first charrette was aimed at gathering input from the community. Following the opening charrette the project team analyzed all of the identified issues and prepared a neighborhood traffic calming plan addressing them. During this evening's charrette that plan will be presented the community will have the opportunity to critique and make additions to it before it is finalized. Residents are also encouraged to submit additional comments to the project team via phone, e-mail, or the project website (www.stamfordtrafficcalming.com). Updates including meeting minutes, the neighborhood traffic calming plans, and other information will be posted on the website.

National traffic calming expert Dan Burden gave a presentation which detailed the benefits of traffic calming and described a wide variety of specific treatments. Highlights include the following:

- Pedestrian survival following a collision is directly related to vehicular speed.
- A driver's peripheral vision decreases as speed increases.
- According to a study by Appleyard, interaction between neighbors decreases as traffic speeds and volumes increase.
- Appleyard also studied the size of the area which people consider part of their homes. On streets with low volumes and speeds residents considered both sides of the street to be part of their home, while on streets with fast speeds on high volumes residents didn't even consider the front of their houses to be part of their homes.
- Traffic calming is a way of improving quality of life, safety, and sense of community.
- Most communities initially take a reactive approach to traffic calming which involves unwarranted stop signs and speed humps. Unwarranted stop signs lead to speed spiking while the overuse of speed humps delays emergency response vehicles. The approach which Stamford is currently taking will result in a citywide traffic calming master plan. This approach is much more proactive and effective.



- The devices in the traffic calming toolbox can be grouped into three categories – visual treatments, horizontal treatments, and vertical treatments.

Visual Treatments

- Visual treatments are the first option that should be considered when addressing a traffic issue. They usually have the greatest impact, are the most aesthetically pleasing, and are the least expensive treatments.
- Road diets can be implemented by simply changing the lane markings on a street. Road diets involve either using narrower or fewer lanes. They result in slower speeds and fewer crashes because they force drivers to pay closer attention to the road.
- Trees in medians or on the sides of the roads discourage speeding.
- On street parking reduces the width of the travel lanes and thus prevent speeding.
- Parking chicanes involve alternating parking from one side of the street to another. They prevent drivers from having a straight path on which to accelerate.
- Pocket parking protects parked vehicles and limit roadway width.
- On very wide streets angle parking can be implemented. Angle parking increases the number of spaces available, is aesthetically pleasing, and reduces roadway width.

Horizontal Treatments

- Crosswalks alert the driver that they are entering an area reserved for pedestrians.
- Medians narrow roads and prevent drivers from sling-shotting around curves.
- Refuge islands cut the distance which pedestrians must cross at one time in half.
- Curb extensions shorten the distance the pedestrians must cross, make pedestrians more visible to drivers, and prevent vehicles from parking at corners and obstructing sightlines.
- Mini-roundabouts improve safety by limiting the number of conflicting movements at an intersection. They also offer opportunities for landscaping.
- Curb radii reductions are used at intersections that are excessively wide. They prevent vehicles from speeding around corners.
- Chokers narrow two lane roadways down to one lane at a midblock location.

Vertical Treatments

- Vertical treatments should be used when visual and horizontal treatments are not an option.
- Speed humps provide vertical deflection.
- Speed tables are similar to speed humps but they have a flat top. Unlike speed humps they are effective in slowing larger vehicles such as SUV's.
- Raised intersections raise the intersection up to the height of the sidewalk. They are expensive because they require more material but they are effective, particularly in school areas.



Activity #1

Residents were asked to vote on what level of landscaping they would like to see incorporated into traffic calming devices in their neighborhood. “Gold” landscaping is highly aesthetic but residents or local organizations must agree to perform maintenance. “Silver” landscaping involves lesser planting and maintenance but can still make the traffic calming treatments attractive. “Bronze” landscaping does not include any type of planting or maintenance. It was understood that the vote was only meant to provide a general sense of the level of landscaping the neighborhood was willing to maintain. Landscaping may vary from location to location depending on the availability of sponsors willing to provide maintenance. Results were as follows:

RESULTS

“Gold” level landscaping	0
“Silver” level landscaping	3
“Bronze level landscaping	5

Activity #2

Participants were asked to identify the locations that should be top priorities for receiving treatment. Each participant was then allowed to vote for three of the locations identified by the group.

RESULTS

Henry Street (west side)	7
Canal Street	7
Ludlow Street	5
Elmcroft Road (between Belden Street and Dyke Lane)	4
Washington Boulevard	0

Activity #3

Attendees were given an opportunity to sign up to be part of a steering committee which will oversee the plan through the implementation phase. Those who were unable to commit time to being full members of the committee were able to sign up to be assistants to the committee.

Activity #4

Participants were given an opportunity to review the preliminary neighborhood traffic calming plan in detail and write down their comments. Results are as follows:

RESULTS

- There is a speeding problem going up the hill on Lipton Place, as well as a blind spot on the top of the hill.



- Curb extensions are needed on the north side of the intersection Henry Street and Atlantic Street due to sightline problems.
- The entrance to the school is on Woodland Avenue. It is more important to improve pedestrian safety on Woodland Avenue as opposed to Henry Street.
- Enforce a no parking rule on the south side of Lipton Place.
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- Cedar Street should be a one-way northbound street between Stone Street and Ludlow Street.
- Add bicycle lanes leading to the park on Washington Boulevard.
- Add a roundabout at the intersection of Atlantic Street and Washington Boulevard.

It is believed that the above represents an accurate description of the major events that transpired at this meeting.

Respectfully submitted,

URBAN ENGINEERS, INC.

Najib O. Habesch
Project Manager

cc: File