



2009

# New Haven Point-in-Time Survey and Parking Plan Update

**NEW HAVEN** IT ALL HAPPENS HERE  
Mayor John DeStefano, Jr. [www.infonewhaven.com](http://www.infonewhaven.com)





March 9, 2010

Mr. Michael Piscitelli, AICP  
Director  
Department of Transportation, Traffic & Parking  
200 Orange Street, Ground Floor  
New Haven, CT 06510

Mr. William Kilpatrick  
Executive Director  
New Haven Parking Authority  
50 Union Avenue  
New Haven, CT 06510

**RE: New Haven Point in Time Survey &  
Parking Study Update - 2009  
MMI #1621-29**

Dear Mr. Piscitelli and Mr. Kilpatrick:

Milone & MacBroom, Inc. has prepared this report presenting and analyzing the results of the 2009 Point in time-survey. We hope this report is useful to you and the City of New Haven in providing a thorough understanding of downtown parking, bicycling and walking activity. We have presented a number of recommendations, which we feel will allow the City to continue to provide parking in a way that is beneficial to residents and businesses. If you have any questions or need anything further, please do not hesitate to contact us.

Very truly yours,

MILONE & MACBROOM, INC.

A handwritten signature in blue ink that reads "David A. Sullivan".

David G. Sullivan, P.E. – Associate  
Senior Transportation Engineer

Very truly yours,

MILONE & MACBROOM, INC.

A handwritten signature in blue ink that reads "Thomas L. Harned".

Thomas L. Harned  
Transportation Planner

10\1621-29\mr810-ltr.doc

# Table of Contents

Executive Summary .....	3
Introduction.....	5
Point-in-Time Survey - Parking.....	5
Background .....	5
Methodology.....	8
Results.....	11
Table 1 - Point-in-time Parking Utilization .....	14
Table 1 - Point-in-time Parking Utilization (Cont'd) .....	15
Table 2 -Summary of Publically Accessible Parking by District .....	16
Table 3 - Downtown Parking Utilization by Year .....	16
Projected timing of anticipated changes to supply/demand.....	17
Table 4 - Projected timing of anticipated major changes to supply/demand.....	19
Forecast – 2010 .....	20
Forecast – 2011 .....	20
Forecast – 2012 .....	20
Forecast – 2013 .....	21
Discussion – Parking Utilization / Forecast.....	21
Point-in-Time Survey - Bicycle and Pedestrian Counts .....	23
Background.....	23
Methodology – Bicyclist Counts .....	23
Results – Bicyclist Counts .....	24
Table 5 - Bicycle Traffic Volumes .....	31
Methodology – Pedestrian Counts .....	31
Results – Pedestrian Counts.....	33
Table 6 - Pedestrian Traffic Volumes.....	33
Discussion – Bicycle and Pedestrian Counts .....	33
Summary of Findings and Recommendations .....	38

## Table of Figures

Figure 1 .....	Study Area
Figure 2 .....	Publicly Accessible Downtown Parking Facilities: Surface Lots and Parking Garages
Figure 3 .....	Metered On-Street Parking Spaces
Figure 4 .....	Peak Period Parking Utilization
Figure 5 .....	Projected Parking Capacity and Utilization
Figure 6 .....	Bicyclist Count Locations
Figure 7 .....	Bicyclist Volumes – 10:30-11:30 A.M., Elm Street at York Street
Figure 8 .....	Bicyclist Volumes – 10:30-11:30 A.M., Elm Street at Church Street
Figure 9 .....	Bicyclist Volumes – 10:30-11:30 A.M., Elm Street at Orange Street
Figure 10 .....	Bicyclist volumes – 10:30-11:30 A.M., Chapel Street at College Street
Figure 11 .....	Bicyclist Volumes – 10:30-11:30 A.M., Chapel Street at Church Street
Figure 12 .....	Pedestrian Count Locations
Figure 13 .....	Pedestrian Volumes – 11:30 A.M.-12:30 P.M., Elm Street at York Street
Figure 14 .....	Bicyclist Volumes – 10:30-11:30 A.M., Elm Street at Orange Street
Figure 15 .....	Pedestrian Volumes – 11:30 A.M.-12:30 P.M., chapel Street at College Street
Figure 16 .....	Pedestrian Volumes – 11:30 A.M.-12:30 P.M., Chapel Street at Church Street

## Executive Summary

In recent years the City of New Haven has carefully monitored the supply of publicly-accessible parking Downtown relative to demand through a series of “point-in-time surveys”, which provide a snapshot of Downtown parking utilization. This has allowed the City to plan new parking facilities prudently and appropriately as a number of new developments have been constructed Downtown. This year, the City, in cooperation with the New Haven Parking Authority, engaged Milone & MacBroom, Inc. to undertake a new point-in-time survey and update their Downtown parking plan. Additionally, the point-in-time survey has been expanded to include counts of pedestrian and bicyclist volumes Downtown.

A parking utilization survey, as well as bicyclist and pedestrian counts, were undertaken on Wednesday, November 18, 2009. The results indicated that Downtown parking utilization is currently at levels similar to those observed in previous studies conducted over the last several years. Projections by the City suggest that parking occupancy will exceed 90% in 2012 as Gateway Community College relocates to the Ninth Square district and 500 surface spaces on the Coliseum site are phased out. The construction of the second parking garage at Union Station and a potential 1,000 space parking garage on the Coliseum site will largely resolve this issue by the summer of 2013. The bicycle and pedestrian counts revealed a high level of activity Downtown with more than 50 bicyclists and more than 1,000 pedestrians observed at several Downtown intersections in a one-hour period.

Based on the results of the point-in-time survey, a number of recommendations were made to avoid parking shortages projected for 2012, including the timely completion of the second Union Station Garage, as well as the construction of the “State and Wall” Garage. In addition to capacity increases, it was recommended that the City explore potential Transportation Demand Management strategies to reduce parking demand Downtown. Based on the high level of pedestrian and bicyclist activity Downtown it was recommended that the City continue to monitor and count these roadway users and continue to incorporate bicyclist and pedestrian counts in future point-in-time surveys.

### **The key findings of the study are:**

- The observed 2009 parking utilization was 88%, 89% when Union Station was included in the analysis;
- The most significant increase to Downtown parking demand will result from the relocation of Gateway Community College to the Ninth Square District. The college has plans to lease approximately 700 parking spaces to accommodate staff and students;
- Based on projections developed by City staff, the parking system is anticipated to operate at over 90% of capacity by 2012, peaking at a projected 99% utilization by the end of that year, even assuming all planned garages are completed on schedule;
- Construction of the State and Wall Garage would help accommodate projected parking demand during the anticipated parking crunch in the second half of 2012, although

additional measures, either temporary capacity increases or the use of TDM strategies will be required to reduce parking utilization below 90%;

- The bicycle counts showed a high level of off-peak bicycle transportation activity with 74 bicyclists observed in a one-hour period at the intersection of Elm Street at York Street;
- Counts of pedestrian activity showed that pedestrians constitute a significant component of Downtown travel activity with between 431 and 1,314 pedestrians observed in one hour at the count intersections. Two of the four intersections counted had hourly volumes of over 1,000 pedestrians.

## Introduction

During the past six years, the City of New Haven has experienced a significant amount of economic development, which has resulted in increased demands on its transportation system. In particular, the City has sought to maintain and improve the economic vitality of the Downtown by ensuring that: (1) the transportation system is not overly reliant on the private automobile and (2) that the parking supply can meet current and projected demands, while avoiding an excess in parking supply that could occupy otherwise developable land or result in a financial drain on the City's resources.

In order to properly manage the supply of Downtown parking, the City has commissioned and undertaken a number of studies, starting in 2003, which seek to: assess the adequacy of the publically-accessible Downtown parking supply, determine future parking needs relative to supply, and make recommendations accordingly. The findings of the 2003 study are presented in the *Downtown New Haven Parking: Strategic Plan*, completed by Wilbur Smith Associates (WSA) in May, 2004. The City updated and expanded upon the plan in September 2004 and undertook additional updates in June 2006, August 2007, and October 2008. The core information utilized in these studies is capacity and utilization data obtained through "point-in-time" surveys completed in 2003 and 2008 in which the City manually counted publically-accessible parking utilization throughout the Downtown study area.

In addition to monitoring and managing the parking supply, the City has, in recent years, taken significant steps to provide a greater range of transportation options for residents and visitors. Much of this focus has been on "active transportation" modes such as walking and biking, which have the potential to meet many of the transportation needs of both residents and visitors without the increases in pollution and traffic congestion associated with motor vehicle travel and without further increases in parking demand. In 2008 the City passed Complete Streets legislation, aimed creating a safe and sustainable transportation network that is accessible and beneficial to all users. A major component of the Complete Streets legislation is to ensure that the City develops and maintains its transportation system with all roadway users in mind, including: pedestrians, cyclists, motorists and transit users.

In the fall of 2009, the City of New Haven engaged Milone & MacBroom, Inc. to manage and execute a third point-in-time survey of parking supply and demand as well as manual counts of bicycle and pedestrian activity Downtown. The study began with the development of a detailed methodology by which to determine parking utilization within the study area and measure bicycle and pedestrian activity at key intersections Downtown. Milone & MacBroom organized and oversaw the parking, bicyclist, and pedestrian counts, compiled that data and presented the findings in this report. The results of the parking counts were compared to the findings of previous studies and used along with additional data provided by the city to develop a profile of anticipated future parking supply and demand within the study area.

## Point-in-Time Survey - Parking

### Background

Beginning in 2003, the City of New Haven has carefully monitored Downtown parking demand relative to the supply of publically-accessible parking including: metered on-street parking,

surface parking lots, and parking garages. Provided below is a brief summary of each of the previous parking plans and updates.

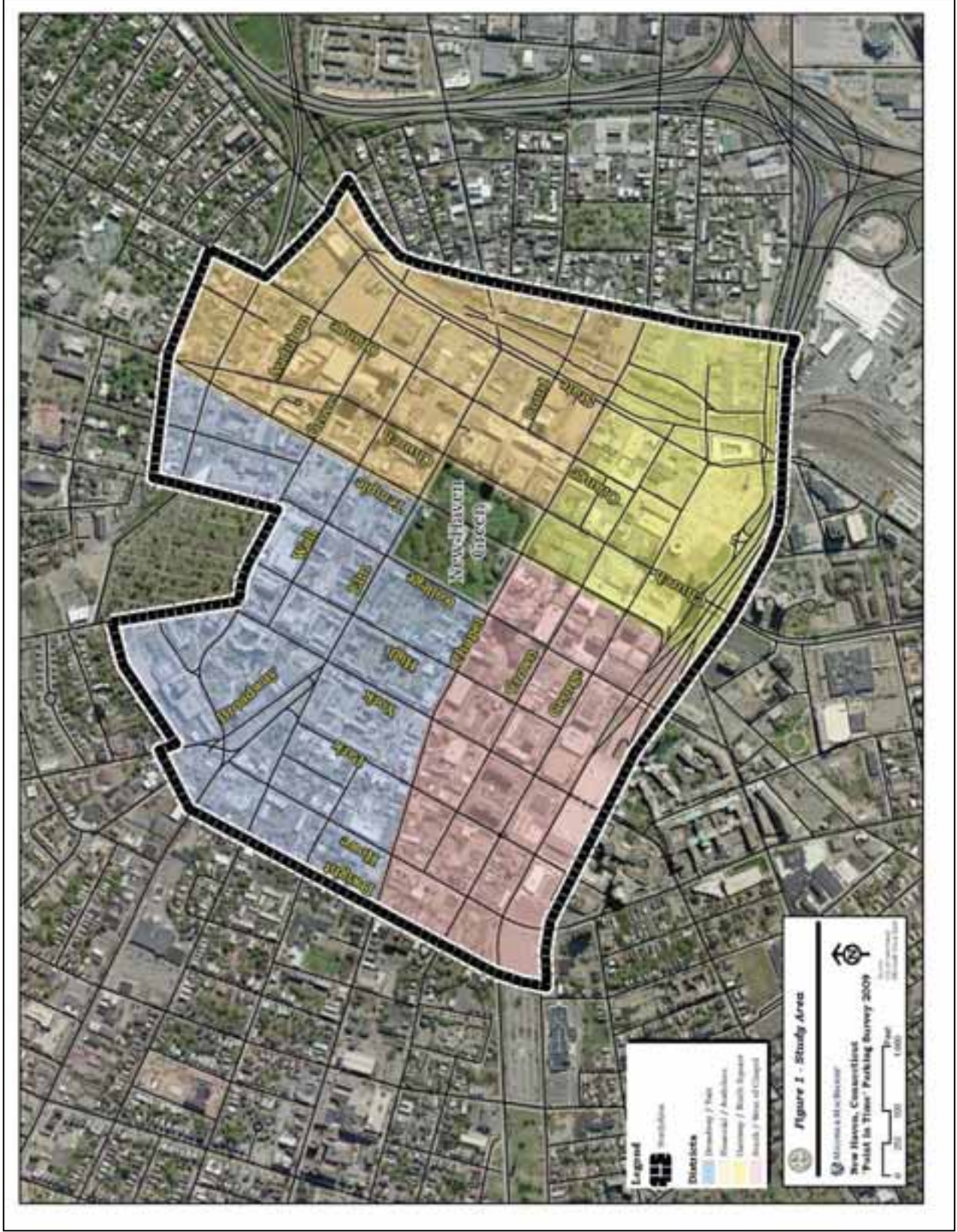
*Strategic Parking Plan (2003)* - The *Downtown New Haven Parking: Strategic Parking* was completed by Wilbur Smith Associates (WSA), a consultant commissioned by the City of New Haven and the New Haven Parking Authority (NHPA). In 2003, WSA undertook a parking utilization study, assembled stakeholder input, and made recommendations to address the parking needs of Downtown New Haven. The study, released in May of 2004, concluded that parking occupancy in the Downtown study area, shown in Figure 1, is in excess of 80% and approaching 90% at most locations. Recommendations included both the provision of additional parking facilities, as well as parking management strategies, such as discouraging single-use parking facilities and improved coordination between the City of New Haven and private businesses and institutions.

*Detailed Parking Plan (2004)* - The *Update Report: Detailed Parking Plan for Gateway/Ninth Square and South/West of Chapel* was completed by WSA one year after the study that served as the basis for the Strategic Parking Plan. This Plan was formulated after the details surrounding a number of planned retail, residential, and institutional projects were confirmed by the City of New Haven. The plan includes projections for anticipated parking supply and demand through July of 2008. Based on their findings, WSA recommended the construction of new parking facilities, two interim solutions to address a projected insufficiency in parking supply relative to demand, and parking demand strategies aimed at limiting the growth in parking demand in the longer term.

*Parking Plan Update #1 (2006)* - As recommended in previous plans, the City of New Haven continued to monitor and assess changes in parking supply and demand. In 2006, several City departments including: the New Haven Parking Authority, the New Haven School Construction Office, Transportation, Traffic and Parking Department, City Plan Department, and Office of Economic Development, worked together to update capacity and utilization data. The data was obtained from on-street parking counts conducted by consultants Tighe & Bond as well as utilization data provided by parking facility operators. The update found that since the 2004 study utilization increased from 86.3% to 89.1% and predicted that the most significant parking crunch would occur in the first half of 2008. The recommendations included the continued monitoring of the parking supply relative to demand, continued attention to planned and pending developments expected to impact parking supply and demand, and that the planned 810-space midblock garage proposed for the Financial/Audubon District remain on schedule so that it opens in the second half of 2008. It was also recommended that the proposed second garage at Union Station be completed in a timely manner.

*Parking Plan Update #2 (2007)* - In 2007, the same City departments collaborated to update the parking plan from the previous year, focusing primarily on changes due to the scheduling of major projects. Adjustments were made to utilization rates based on data provided by surface lot





and garage operators. The update noted that two of the biggest planned changes to the parking system, the construction dates of the midblock garage and the second Union Station Garage were pushed back to 2010 and 2012, respectively. Additionally, the midblock garage was officially changed to “State and Wall” reflecting a new planned location, and was reduced in size from 810 to 600 spaces. Based on the changes to project scheduling the plan indicated that the tightest parking situation would occur in the fall/winter of 2009. The plan recommended that the City continue to monitor the Downtown parking situation, continue to track planned developments as well as changes to the parking supply, and that the State and Wall garage and second Union Station Garage be completed in a timely manner based on the revised schedule.

*Parking Plan Update #3 (2008)* - Due to significant changes in the parking supply as well as to the scheduling of major development projects, the City of New Haven undertook a significant update to its parking plan. The update was the result of a collaborative effort between a number of city departments, including: the Office of Economic Development, the Department of Transportation, Traffic, and Parking, the Livable City Initiative, and the City Plan Department. The abovementioned departments undertook a manual count to collect capacity and utilization data for publically-accessible parking facilities in Downtown New Haven including surface parking lots, parking garages, and metered on-street spaces. As with previous updates, the city also examined projected parking demand and supply based on planned developments and anticipated changes to the parking supply. The 2008 update found that overall capacity increased slightly while utilization dropped to 85%, down from 90% the year before. The decrease was attributed to a number of factors including rising gasoline prices, additional lots constructed by Yale University which reduced demand for public facilities, and increased capacity with respect to publically accessible parking facilities. The updated study also concluded that if the surface parking lot located at the former coliseum site is taken offline prior to the construction of a second parking garage at Union Station, the overall utilization in the Ninth Square district will rise to 97% based on current demand. Therefore, the construction of a second parking garage at Union was deemed essential to managing the parking system.

## **Methodology**

As previously mentioned, the 2009 point-in-time survey of Downtown parking facilities is an update to previous parking studies, meant to track changes in the Downtown parking system. Accordingly, the survey was set up using a methodology that allows for an “apples to apples” comparison of the 2009 results to the results of past studies. Specifically, the study area and parking zones designated in the 2003 report and were utilized in this study. The study area encompasses Downtown New Haven and is bounded by Dwight Street, South Frontage Road, Olive Street, and The Grove Street Cemetery and the East Rock neighborhood. The study area is subdivided into four districts: Broadway/Yale, Financial/Audubon, Gateway/Ninth Square and South/West of Chapel. These districts were developed as part of the original 2003 Downtown parking study in order to examine how parking utilization may vary within parts of the study area and were used in each subsequent update. Figure 1 shows the study area and the above-mentioned districts.

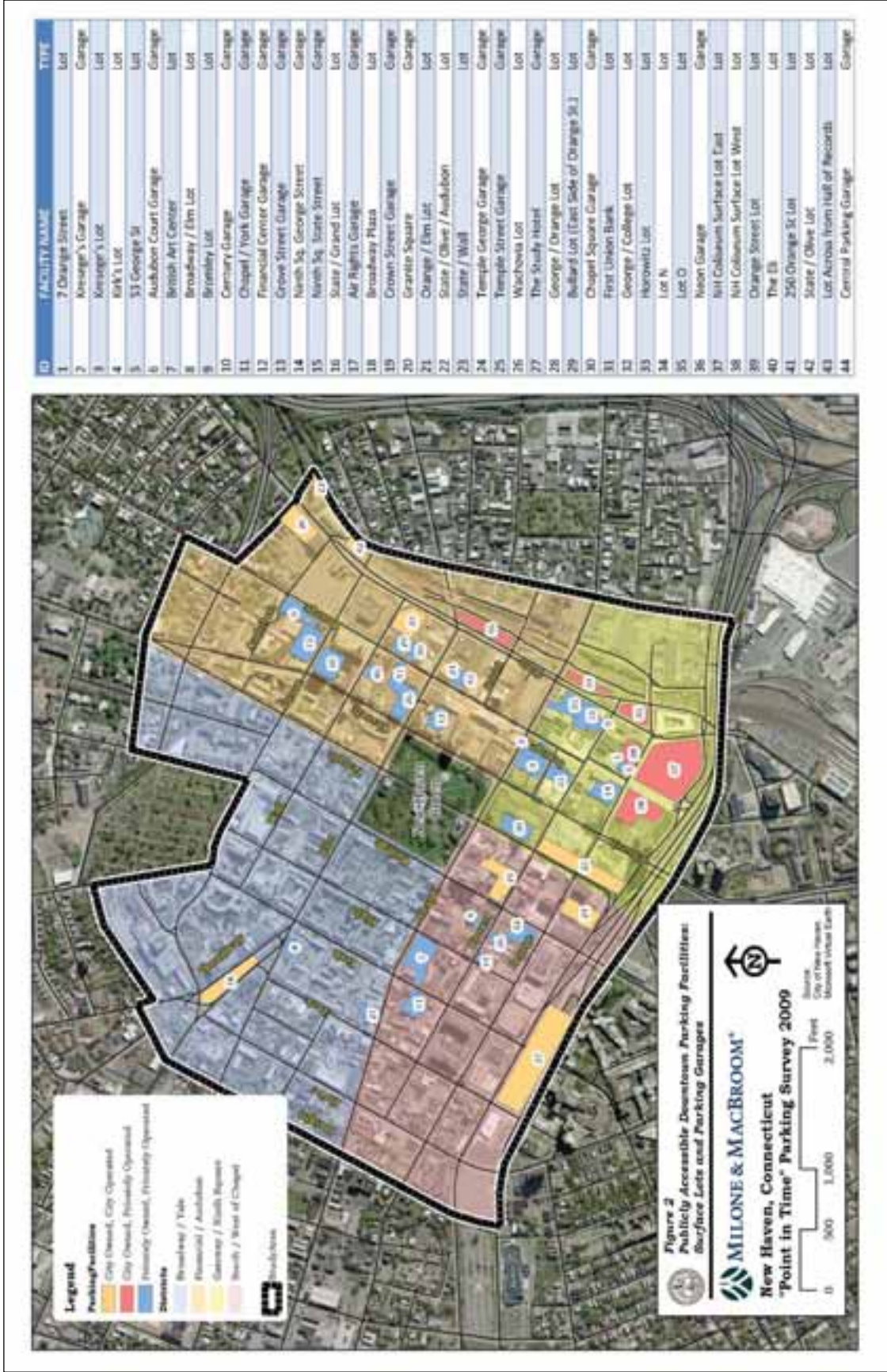
Milone & MacBroom worked with officials from the New Haven Parking Authority (NHPA) the Department of Transportation, Traffic and Parking and the Office of Economic Development to

obtain current data on the locations, ownership, operation and capacity of all publically-accessible parking facilities located within the study area. Figure 2 shows the surface parking lots and parking garages in the study area and Figure 3 shows the metered on-street parking spaces.

A set of standardized count forms or “tally sheets” were developed prior to conducting the parking counts. This was done in order to ensure that all enumerators collected all relevant data in a consistent manner. Separate forms were created for on-street metered parking spaces, surface parking lots, and parking garages. A sample set of count forms is included in the appendix.

For the count of metered on-street spaces, enumerators were asked to count parked vehicles by block including: the number of vehicles parked in legal spaces, the number of vehicles parked outside of legal spaces, as well as the number of spaces that were unusable such as those blocked off for construction or maintenance work. Likewise, for surface parking lots, enumerators were asked to count parked vehicles for each lot including: the number of vehicles parked in legal spaces, the number of vehicles parked outside of legal spaces, as well as the number of spaces that were unusable. For parking garages, a slightly different count methodology was used. Because most Downtown parking garages are typically parked at or near full capacity on weekdays during the day, enumerators were asked to simply count the number of unoccupied spaces, the number of vehicles parked outside of legal spaces, and the number of unusable parking spaces. Garage occupancies could then be determined by subtracting the number of unoccupied spaces from the garage capacities and adding in the number of vehicles parked outside of legal spaces. For each parking facility and each block of on-street metered parking spaces, enumerators were asked to note the start and end times of counts along with weather conditions and approximate temperature.

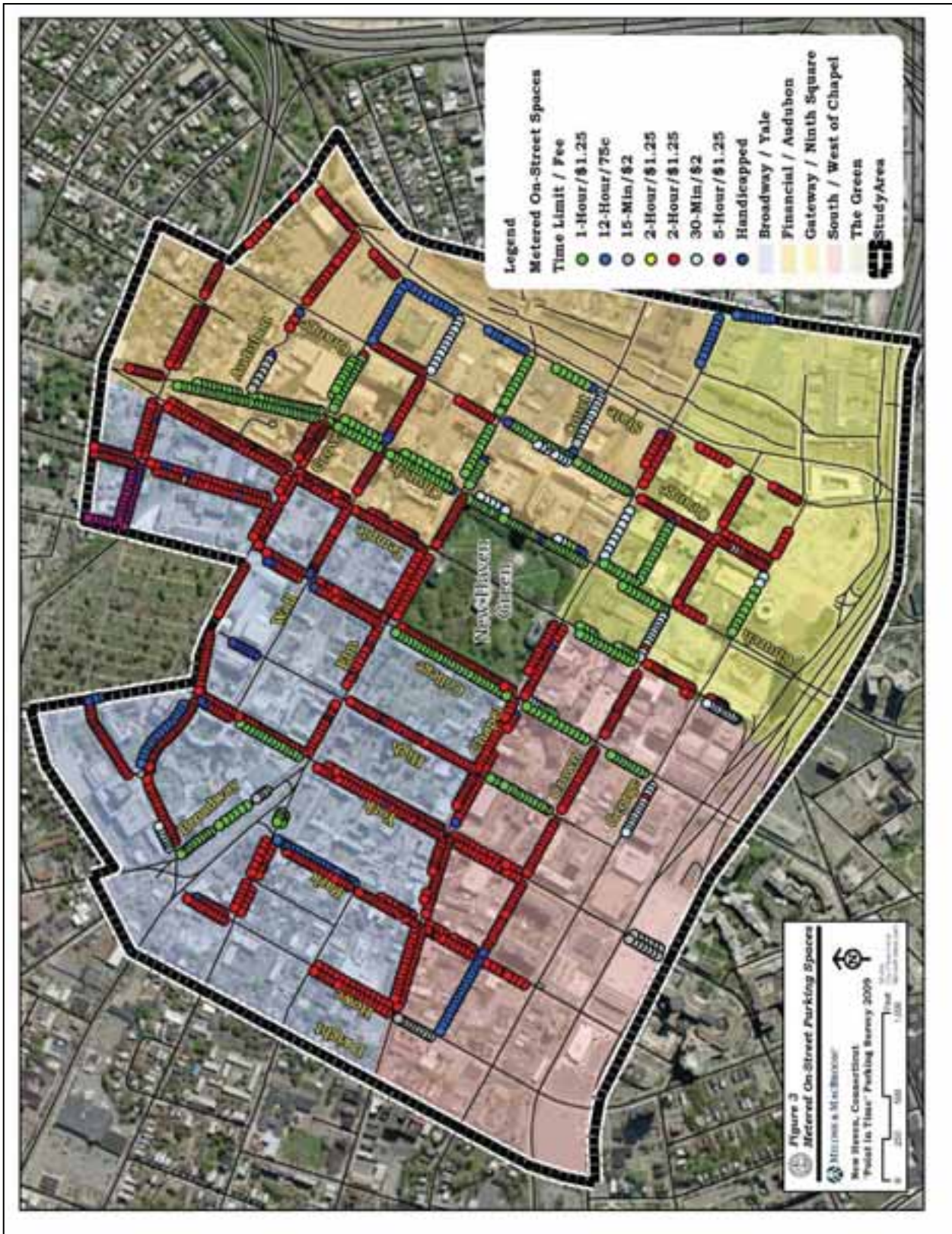
The parking count was conducted on Wednesday, November 18, 2009 from 11:00 AM to 2:00 PM. This date and time period was selected by the City to represent a “peak scenario” in terms of Downtown parking demand. Midday, midweek, in the fall is known to be among the heaviest periods of parking demand in Downtown New Haven due to a number of factors, including: Union Station travel, educational activities, and business employee parking. Each facility and each block of metered on-street parking spaces was counted during this period.

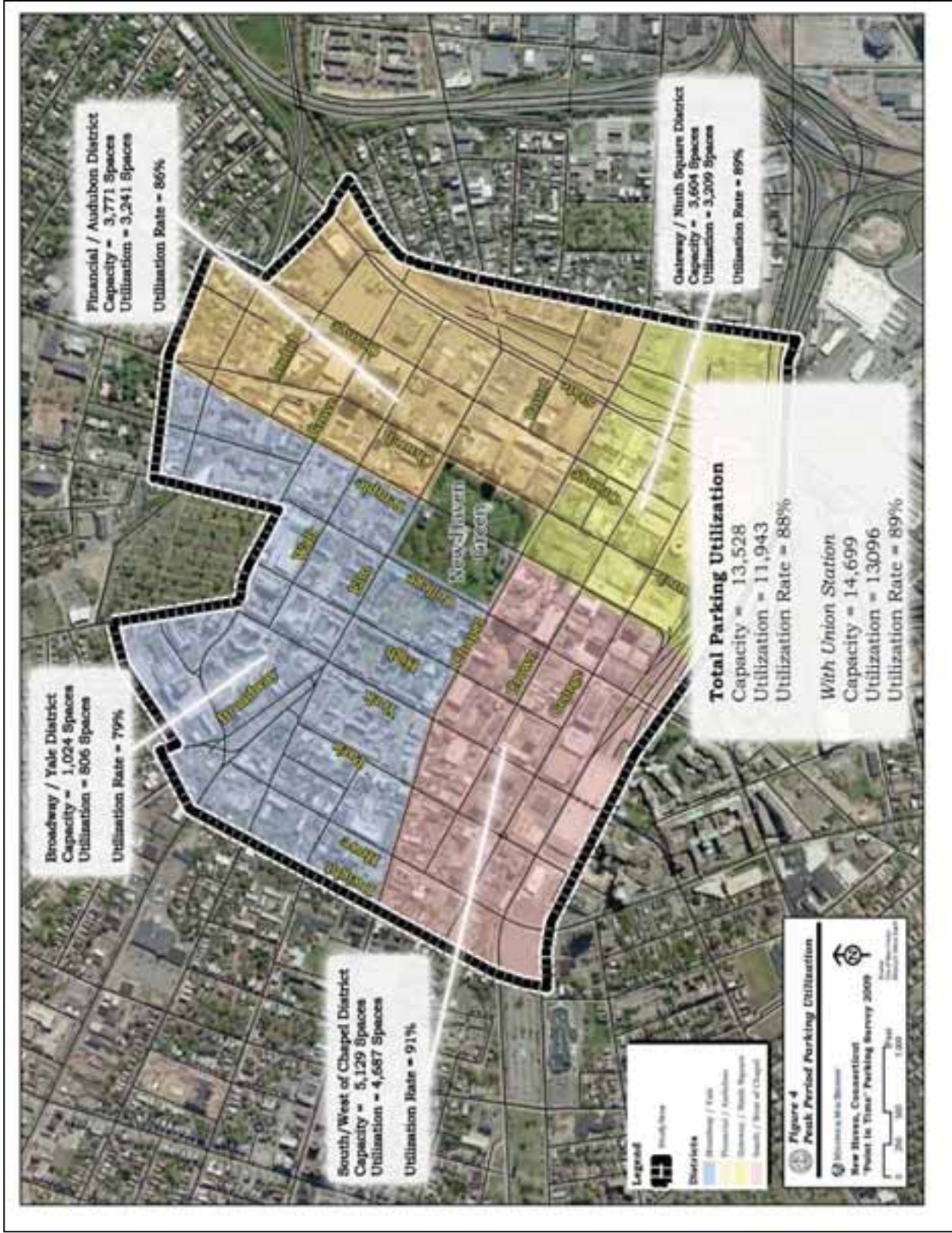


ID	FACILITY NAME	TYPE
1	7 Orange Street	Lot
2	Messinger's Garage	Garage
3	Messinger's Lot	Lot
4	Kirk's Lot	Lot
5	53 George St	Lot
6	Audubon Court Garage	Garage
7	British Art Center	Lot
8	Broadway / Elm Lot	Lot
9	Brimley Lot	Lot
10	Cemetery Garage	Garage
11	Chapel / York Garage	Garage
12	Financial Center Garage	Garage
13	Grove Street Garage	Garage
14	North Sq. George Street	Garage
15	North Sq. State Street	Garage
16	State / Grand Lot	Lot
17	Air Rights Garage	Garage
18	Broadway Plaza	Lot
19	Crown Street Garage	Garage
20	Granite Square	Garage
21	Orange / Elm Lot	Lot
22	State / Olive / Audubon	Lot
23	State / Wall	Lot
24	Temple George Garage	Garage
25	Temple Street Garage	Garage
26	Wachovia Lot	Lot
27	The Study Hotel	Garage
28	George / Orange Lot	Lot
29	Bulfinch Lot (East Side of Orange St.)	Lot
30	Chapel Square Garage	Garage
31	First Union Bank	Lot
32	George / College Lot	Lot
33	Honorwitz Lot	Lot
34	Lot N	Lot
35	Lot O	Lot
36	Nixon Garage	Garage
37	1st Coliseum Surface Lot East	Lot
38	1st Coliseum Surface Lot West	Lot
39	Orange Street Lot	Lot
40	The Eli	Lot
41	250 Orange St Lot	Lot
42	State / Olive Lot	Lot
43	Lot Across from Hall of Records	Lot
44	Central Parking Garage	Garage

## Results

The results of the counting program are shown in Table 1 on the following page. As shown in Table 1, parking occupancy system-wide is 88%. When Union Station is included in the analysis, the system-wide occupancy is 89%. These results are consistent with data from previous years. It should be noted that parking utilization rates varied considerably by district, with a low of 79% in the Broadway / Yale District and a high of 91% in the South / West of Chapel District. With the exception of Broadway / Yale, all parking districts had utilization rates exceeding 80%. Figure 4 presents a map of parking utilization by district. Table 2 summarizes the information in Table 1 by district and Table 3 shows parking occupancy each year where data is available starting in 2003.





**Table 1 - Point-in-time Parking Utilization**

Facility	Garage/Lot	Address	Ownership	Operator	Capacity	Occupancy	Utilization
Financial / Audubon	State / Grand Lot	417 State St	City of New Haven	LAZ	99	85	86%
	Orange / Elm Lot	40 Elm St	City of New Haven	NHPA	63	47	75%
	Financial Center Garage	157-195 Church St	Private	LAZ	668	634	95%
	Lot Across from Hall of Records	205 Orange Street	Private	Private	38	37	97%
	State / Wall	10 Wall St	City of New Haven	NHPA	102	114	112%
	Bullard Lot (East Side of Orange St.)	283 Orange St	Private	Propark	76	65	86%
	Wachovia Lot	205 Church St	Private	Private	46	50	109%
	250 Orange St Lot	250 Orange St	Private	Propark	48	54	113%
	The Eli	36 Wall Street	Private	Propark	68	66	97%
	Century Garage	265 Church St	Private	LAZ	599	534	89%
	Grove Street Garage	200 Grove St	Private	LAZ	599	490	82%
	Granite Square	380 Orange St	City of New Haven	NHPA	305	242	79%
	Orange Street Lot	269 Orange St	Private	Propark	83	43	52%
	Audubon Court Garage	356 Orange St	Private	LAZ	283	211	75%
	State / Olive / Audubon	687 State St	City of New Haven	NHPA	35	31	89%
	State / Olive Lot	687 State St	City of New Haven	NHPA	40	22	55%
	Metered On-Street Spaces: Financial / Audubon				619	516	83%
					<b>3,771</b>	<b>3,241</b>	<b>86%</b>
	Gateway / Ninth Square	NH Coliseum Surface Lot East	275 South Orange St	City of New Haven	Propark	500	565
Temple Street Garage		20 Church St	City of New Haven	NHPA	1235	1077	87%
Chapel Square Garage		155 Temple St	Private	Propark	325	244	75%
George / Orange Lot		25 George St	City of New Haven	NHPA	42	35	83%
53 George St		53 George St	Private	LAZ	65	62	95%
Lot O		183 State St	City of New Haven	Propark	68	53	78%
7 Orange Street		7 Orange St	Private	Express	13	10	77%
Bromley Lot		15 Crown St	Private	LAZ	42	29	69%
Ninth Sq. George Street		81 George St	Private	LAZ	366	357	98%
Ninth Sq. State Street		248 State St	Private	LAZ	266	257	97%
Lot N		253 State St	City of New Haven	Propark	90	51	57%
Horowitz Lot		232 State St	Private	Propark	60	67	112%
First Union Bank		45 Church St	Private	Propark	76	60	79%
NH Coliseum Surface Lot West		275 S. Orange St	City of New Haven	Propark	100	98	98%
Kresge's Garage		96 Orange St	Private	Express	114	101	89%
Kresge's Lot		834 Chapel St	Private	Express	65	37	57%
Metered On-Street Spaces: Gateway / Ninth Square					206	106	51%
					<b>3,633</b>	<b>3,209</b>	<b>88%</b>





**Table 1 - Point-in-time Parking Utilization (Cont'd)**

South / West of Chapel	Temple George Garage	Garage	230 George St	City of New Haven	NHPA	371	350	94%	
	Air Rights Garage	Garage	60 York St	City of New Haven	NHPA	2601	2415	93%	
	Crown Street Garage	Garage	213 Crown St	City of New Haven	NHPA	720	626	87%	
	George / College Lot	Surface Lot	188 College St	Private	Propark	118	96	81%	
	Central Parking Garage	Garage	280 Crown Street	Private	Central	99	70	71%	
	Neon Garage	Garage	260 Crown St	Private	Propark	118	92	78%	
	Kirk's Lot	Surface Lot	255 Crown St	Private	Kirk's	168	167	99%	
	British Art Center	Surface Lot	1074 Chapel St	Private	L.A.Z.	66	66	100%	
	Chapel / York Garage	Garage	150 York St	Private	L.A.Z.	474	403	85%	
	Metered On-Street Spaces: South / West of Chapel					394	402	102%	
		<b>District Sub Total</b>				<b>5,129</b>	<b>4,687</b>	<b>91%</b>	
	Broadway / Yale	The Study Hotel	Garage	1157 Chapel St	Private	Private	100	62	62%
		Broadway / Elm Lot	Lot	272 Elm St	Private	L.A.Z.	48	48	100%
		Broadway Plaza	Lot	Broadway	City of New Haven	NHPA	140	135	96%
		Metered On-Street Spaces: Broadway / Yale					736	561	76%
		<b>District Sub Total</b>				<b>1,024</b>	<b>806</b>	<b>79%</b>	
<b>GRAND TOTAL</b>						<b>13,557</b>	<b>11,943</b>	<b>88%</b>	
<b>WITH UNION STATION</b>						<b>14,728</b>	<b>13,096</b>	<b>89%</b>	

**Table 2 - Summary of Publically Accessible Parking by District**

District	Capacity	Utilization	Unoccupied	Utilization Rate
Financial / Audubon	3,771	3,241	530	86%
Gateway / Ninth Square	3,604	3,209	395	89%
South / West of Chapel	5,129	4,687	442	91%
Broadway / Yale	1,024	806	218	79%

**Table 3 - Downtown Parking Utilization by Year**

District \ Count Year	November-03	April-06	August-07	September-08	November-09
Financial / Audubon	82%	91%	92%	80%	86%
Gateway / Ninth Square	90%	87%	78%	84%	89%
South / West of Chapel	87%	88%	91%	88%	91%
Broadway / Yale*	91%	90%	94%	70%	79%
<b>Total</b>	<b>86%</b>	<b>89%</b>	<b>89%</b>	<b>84%</b>	<b>88%</b>

\*From 2003 to 2007, the Chapel / York Garage was counted in the Broadway / Yale district, in 2008 and 2009 it was counted in the South / West of Chapel District

As shown in Table 3, parking utilization rates at publically accessible facilities in Downtown New Haven have remained relatively stable from 2003 to the present, varying from 84% to 89%. In urban areas such as Downtown New Haven, parking utilization rates should be between 80 and 90%. Utilization rates below 80% suggest an inefficient parking system, that is, one with an overabundance of parking or overpriced parking. This can result in increased maintenance costs, decreased revenue, and opportunity costs associated with using otherwise taxable land. Utilization rates over 90% suggest that the parking supply is either insufficient to meet demand and/or is priced too low to achieve the most efficient use. As utilization rates exceed 90% motorists have increasing difficulty in locating the few remaining available parking spaces. This can result in increased traffic congestion as motorists have to circle the block or drive to several facilities before locating and available space. Additionally, as it becomes progressively more difficult to locate parking spaces, motorists may choose to avoid a particular area and shift trips to other destinations. Since 2003, the peak period parking utilization rates in Downtown New Haven have been in the ideal range described. Much of this can be attributed to the careful monitoring of Downtown parking activity through the point-in-time surveys and the associated studies and recommendations discussed earlier the report.

Even during a national economic downturn, Downtown New Haven continues to see significant economic development. In some cases this may mean the elimination of existing surface parking facilities to accommodate new developments while in other cases, new developments may increase the parking demand within the Downtown core. The challenge therefore, is to continue to monitor parking supply and demand and make appropriate adjustments to the parking system to maintain current utilization rates.

## **Projected timing of anticipated changes to supply/demand**

As Downtown New Haven continues to expand and develop, the demands on the parking system will intensify. Currently, the Downtown experiences a peak period parking utilization rate of approximately 88%, indicating that both the supply and pricing of publicly-accessible parking spaces are appropriate relative to demand. In order to maintain this balance moving forward, the Transportation, Traffic and Parking Department, the Office of Economic Development, and the New Haven Parking Authority have developed a forecast of anticipated parking utilization. The forecast is based on a number of factors, including:

- Current parking supply and utilization;
- Anticipated Downtown developments and the associated parking demand;
- New publicly-accessible parking facilities associated with anticipated developments;
- Anticipated/planned new publicly-owned parking facilities; and
- The impact of Downtown construction projects on parking supply.

Over the next 30 months, or two and a half years, Downtown New Haven is expected to experience a significant amount of development due to continuing investments by both the public and private sectors, including the continued expansion of institutional land uses, most notably the relocation of Gateway Community College from Long Wharf to a new Downtown campus. The majority of this development will take place in the Ninth Square District. Table 4 and Figure 5 illustrate the expected major changes to parking supply and demand from the present day through to the summer of 2013. What follows is a brief timeline and description of the expected changes to parking supply and demand in Downtown New Haven.

### Projected Parking Capacity and Utilization

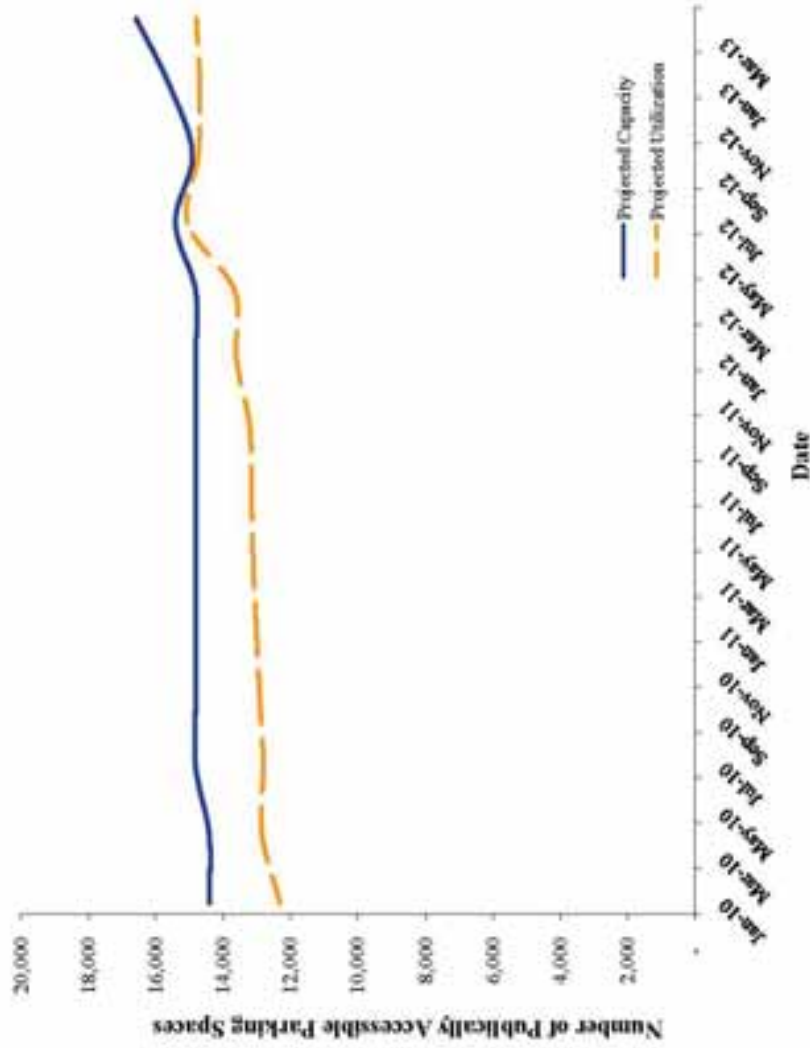


Figure 5  
February 2010



Table 4 - Projected timing of anticipated major changes to supply/demand

Anticipated Changes to Capacity	District	2010		2011		2012		2013		2013	Q2
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
GCC Parking Garage	Ninth Sq.										
2 Howe Street Parking Garage	S/W Chapel	845									
Second Union Station Garage	Ninth Sq.									667	
Phase-out of Coliseum Site Parking	Ninth Sq.			(100)						(500)	
360 State Street Garage	Ninth Sq.			500							
New Coliseum Site Garage	Ninth Sq.										1,000
Net Change in Capacity		845	-	400	-	-	-	-	600	(500)	667
<b>Anticipated Changes to Demand</b>											
Lot E (net new employees)	S/W Chapel	200	385								
GCC Construction	Ninth Sq.	67	100						100	(317)	
GCC Faculty, Staff & Students	Ninth Sq.					50					
360 State St Construction	Ninth Sq.	83	50	(133)							
360 State Street Mixed Use	Ninth Sq.			100	100	50					
Knights of Columbus Reallocation	Ninth Sq.						100				
205 Church Street Redevelopment	Financial						300				
Union Station Construction	Ninth Sq.										(50)
Coliseum Site Mixed Use	Ninth Sq.										
Net Change in Demand		350	535	(33)	100	50	400	50	1,400	(317)	100
<b>Summary</b>											
<b>Projected Capacity</b>	<b>District</b>	14,402	14,402	14,802	14,802	14,802	14,802	14,802	15,402	14,902	15,569
<b>Projected Demand</b>		12,293	12,828	12,795	12,895	13,145	13,195	13,595	15,045	14,728	14,778
<b>Utilization Rate</b>		85%	89%	86%	87%	89%	89%	92%	98%	99%	89%

## **Forecast – 2010**

In the winter of 2010 the 845-space parking garage at 2 Howe Street is anticipated to be fully operational and will likely accommodate a portion of the existing parking demand associated with the hospital uses and related medical land uses in the area. By the summer of 2010, the 500-space parking garage adjoining the 360 State Street development will be completed and opened to the public. This will occur before the development itself is fully occupied, resulting in additional parking capacity through to the spring of 2011. During this time, 100 surface parking spaces on the site of the former New Haven Coliseum are planned to be phased out. Overall, 1,245 parking spaces will be added to the Downtown parking supply over the course of 2010.

Demand is also expected to increase substantially throughout 2010. The South/West of Chapel District will see a 585 space increase in demand resulting from the new employees related to 2 Howe Street. As construction continues at the planned downtown campus for Gateway Community College there will be a demand for an additional 167 spaces to accommodate the workers. Similarly, the ongoing construction of the mixed-use development at 360 State Street will result in a 133-space increase in parking demand by the Spring of 2010. By the summer of 2010, the project is expected to be completed. As tenants and residents begin to occupy the development, it is projected that 200 of the 500 spaces will be occupied during peak periods.

Overall, the Downtown parking supply is expected to increase by approximately 1,245 spaces by the end of 2010, while parking demand is will likely increase by 952 spaces, resulting in a projected peak period utilization rate of 87%, which is comparable to the observed utilization of 88% in November, 2009 during the point in time survey.

## **Forecast – 2011**

Over the course of 2011, no significant changes to the Downtown parking supply are anticipated. The development at 360 State Street is expected to be fully occupied, resulting in a 250-space increase in demand on 2010 yielding a total demand of 450 spaces. The expected demand will be accommodated on-site in the proposed 500-space garage. The construction of Gateway Community College's downtown campus will intensify and result in an additional 50-space increase in parking demand downtown. These projected increases in parking demand will result in a projected utilization rate of 89%, slightly higher the present utilization rate of 88%, but remaining within accepted range of 85-90% utilization discussed earlier in this report.

## **Forecast – 2012**

During 2012, Downtown New Haven may experience a substantial increase in parking demand with no significant planned increase in the supply, depending in large part on the timing of major development projects. In this forecast, there will be a critical "parking crunch" in the Downtown as early as the fall of 2012.

Gateway Community College's Downtown campus is scheduled to open in the fall of 2012. This will create an immediate demand for approximately 1,300 additional parking spaces for students and staff as well as another 100 parking spaces to accommodate workers for the ongoing construction. The college is planning to build a 600-space parking garage and lease 700 spaces in

the Temple Street Garage to accommodate students and staff. Additionally, by the end of 2012, the remaining 500 surface spaces on the Coliseum site are scheduled to be phased out to allow for construction of a new mixed use development.

Much of the parking on the Coliseum site is currently utilized by commuters accessing Union Station, as the on-site parking supply at the station is at capacity. To improve access to Union Station and counterbalance to the loss of the Coliseum lots, a second, 667-space, parking garage is planned for Union Station. However, the garage schedule has not been released by the Connecticut DOT and is now not expected to be completed until the beginning of 2013 at the earliest. This leaves a gap of several months between the completion of the garage and the elimination of the Coliseum lots. Furthermore, the construction of the second Union Station garage will result in an additional parking demand of 50 spaces and reallocation of parking for the Knights of Columbus will create demand for another 100 spaces. The redevelopment of 205 Church Street is expected to result in an additional 300-space parking demand.

By the end of 2012, parking demand within the downtown is expected to increase by 1,533 vehicles, with an anticipated capacity increase of only 100 spaces. The projected increases in demand will severely impact the Ninth Square District in particular, which is expected to see 1,233-space increase in parking demand.

Based on this forecast, the parking utilization rate will surpass 90% by the beginning of 2012, climbing to 99% by the end of the year.

### **Forecast – 2013**

It is hoped that the Union Station Transit Oriented Development, phase 1, will come online by the first quarter of 2013. This will provide much-needed commuter capacity at the station (667 spaces), where the existing garage is operating at capacity. By the summer of 2013, a 1,000-space parking garage on the Coliseum site is expected to be completed in conjunction with the development of the site as a whole. With the completion of the two abovementioned garages, the parking crunch expected in 2012, will likely subside by the summer of 2013, at which point the projected parking occupancy downtown is projected to be at 89%, similar to levels observed today.

### **Discussion – Parking Utilization / Forecast**

If anticipated developments move forward as expected and no additional parking capacity is created other than that which is currently planned, the City's downtown parking system will be effectively over subscribed by 2012. As parking utilization exceeds 90%, a parking system is effectively at capacity, as motorists are unable to readily locate the few remaining available spaces in a given area. This results in a number of negative impacts. Drivers seeking to park in an on-street space will "circle the block" repeatedly looking for an open space, which can dramatically increase the amount of traffic congestion in a downtown. Similarly, those motorists searching for an off-street parking space may have to travel to multiple parking lots or garages before finding an available parking space. Finally, a significant and sustained shortage of parking spaces relative to demand may negatively impact downtown businesses that depend on a regional customer base, as motorists making discretionary shopping trips may opt to avoid downtown New Haven altogether.

While some constraint of the parking supply can be beneficial to a city by de-incentivizing private automobile travel and encouraging increased use of transit and “active” transportation modes such as walking and biking, a reasonable level of automobile access should be accommodated. An 85% to 90% parking utilization is generally considered to represent a good balance and sufficiently accommodates motorists without subsidizing or supplying parking to the extent that it induces additional automobile travel and shifts users away from other modes of transportation.

When a parking system is at or over capacity there are two main ways in which the utilization can be reduced to more acceptable levels. The first method is to reduce demand either by (1) establishing a market-based public parking system or by (2) reducing automobile travel through transportation demand management (TDM). The second method is to increase parking capacity. Ideally the parking supply in urban areas should be increased through the construction of parking structures as opposed to surface lots, in order to minimize the amount of land devoted to parking. In both the 2006 and 2007 parking plan updates it was recommended that (1) the Union Station garage be completed in a timely manner and (2) that a new 600-810 space parking garage, i.e. the “midblock” or “State and Wall” garage be constructed in the Financial District. Given the projected parking deficit in 2012, it is crucial that both of the abovementioned garages be completed and operational by the middle of 2012.

Despite the recommended capacity increase, the downtown parking system will likely continue to operate at over 90% of capacity during the second half of 2012. Therefore, barring any additional increases in parking capacity, it is recommended that the city implement TDM strategies, aimed at reducing automobile travel demand to the downtown while maintaining or increasing the number commuters and visitors. Specifically, the city should consider the following TDM strategies:

- Coordinate with CT Transit to improve service to major employment centers downtown;
- Increase parking fees during peak periods in public parking garages, lots, and metered on-street spaces;
- Improve bicycle and pedestrian access downtown;
- Improve transit, pedestrian, and bicycle connections at Union Station and State Street Station.

The above list is by no means exhaustive, and it is recommended that the City undertake a study to develop a comprehensive and effective TDM program for downtown New Haven.

It should be noted that the projected parking crunch is expected to be temporary, lasting from the beginning of 2012 to the summer of 2013. For this reason, in addition to the potential use of TDM strategies, the City should explore the possibility of creating temporary surface lots to accommodate the expected demand from 2012 to the summer of 2013.



# Point-in-Time Survey - Bicycle and Pedestrian Counts

## Background

In recent years the City has noted an increase in bicycle and pedestrian activity downtown and has sought to encourage this development. However, there has been a general lack of data to document and understand this component of the transportation system. In previous years the City has attempted to enumerate bicyclists and pedestrians at downtown locations only to find that the high volumes observed proved difficult to count reliably. Therefore, in an effort to develop a systematic and replicable approach to documenting bicyclist and pedestrian activity in New Haven, the City has worked with Milone & MacBroom to create a counting program that: (1) provides baseline data with respect to current bicycle and pedestrian activity at key locations downtown, and (2) allows the city to easily and efficiently update and potentially expand the counts each year. The successive updates to the parking plan continue to provide the City with crucial data about a key component of the transportation system. An established bicycle and pedestrian counting program would build on this success and increase the breadth of the data collected to provide a more complete understanding of how the downtown transportation system is operating.

## Methodology – Bicyclist Counts

Bicyclist counts were taken at five (5) key intersections within downtown New Haven. Locations were chosen based on discussions with City staff from the Transportation, Traffic and Parking Department and the Office of Economic Development. The following intersections were selected:

- Elm Street at York Street;
- Elm Street at Church Street;
- Elm Street at Orange Street;
- Chapel Street at College Street; and
- Chapel Street at Church Street.

The count locations are shown in Figure 6.

The counts were undertaken by volunteers recruited by the city and local cycling and traffic safety advocacy groups. The number of count intersections was limited by the number of volunteers available. As with the parking counts, bicyclist counts were conducted on Wednesday, November 18, 2009. The bicycle counts took place from 10:30 to 11:30 AM. Unlike the parking counts, the bicycle counts were not intended to capture a peak period of activity, but rather typical weekday activity. Volunteers were provided with a standardized bicycle intersection count form developed by Milone & MacBroom, Inc. The form is based on the methodology utilized by the National Bicycle and Pedestrian Documentation Project<sup>1</sup>. A copy of the form is included in the appendix. Volunteers were asked to record the date and time of the count, the weather, and their location. Cyclists were enumerated by turning movement, using

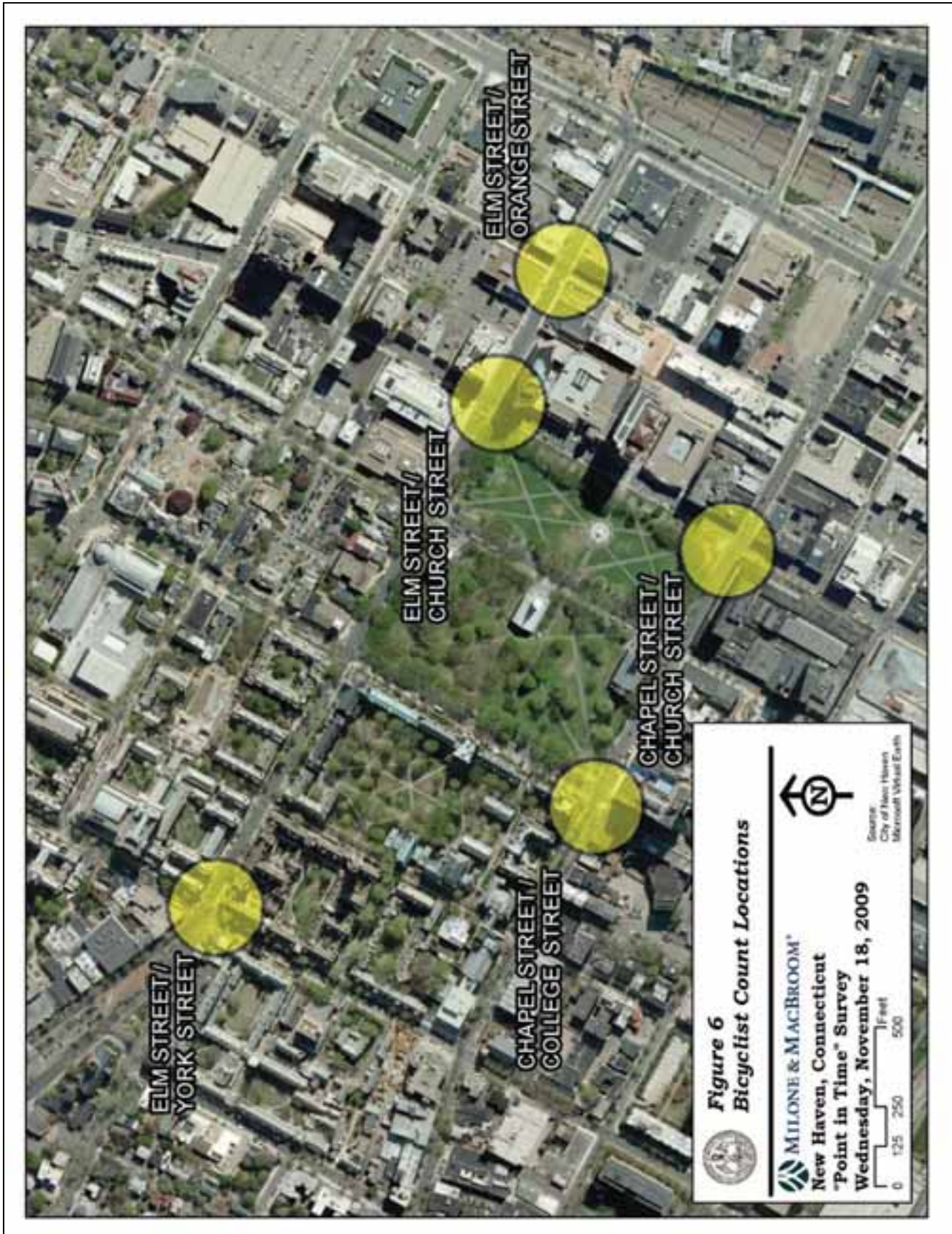
---

<sup>1</sup> “Standard Bicycle Intersection Count Form”, National Bicycle and Pedestrian Documentation Project, <http://bikepeddocumentation.org>

tally sheets in 15-minute intervals. Cyclists riding the wrong way on one-way streets and cyclists riding on the sidewalk were counted. Individuals walking their bicycles through an intersection were not counted. The volunteers were trained in use of the count forms during a one-hour training session, which took place several days before the count on Friday, November 13, 2009. During the training session, volunteers were instructed in the use of the forms and conducted a fifteen minute “pilot count” to ensure that they understood the procedure.

## **Results – Bicyclist Counts**

The results of the bicyclist counts are summarized in Table 5 and shown graphically in Figures 7-11.



**Figure 6**  
**Bicyclist Count Locations**

MILONE & MACBROOM\*

New Haven, Connecticut

"Point in Time" Survey

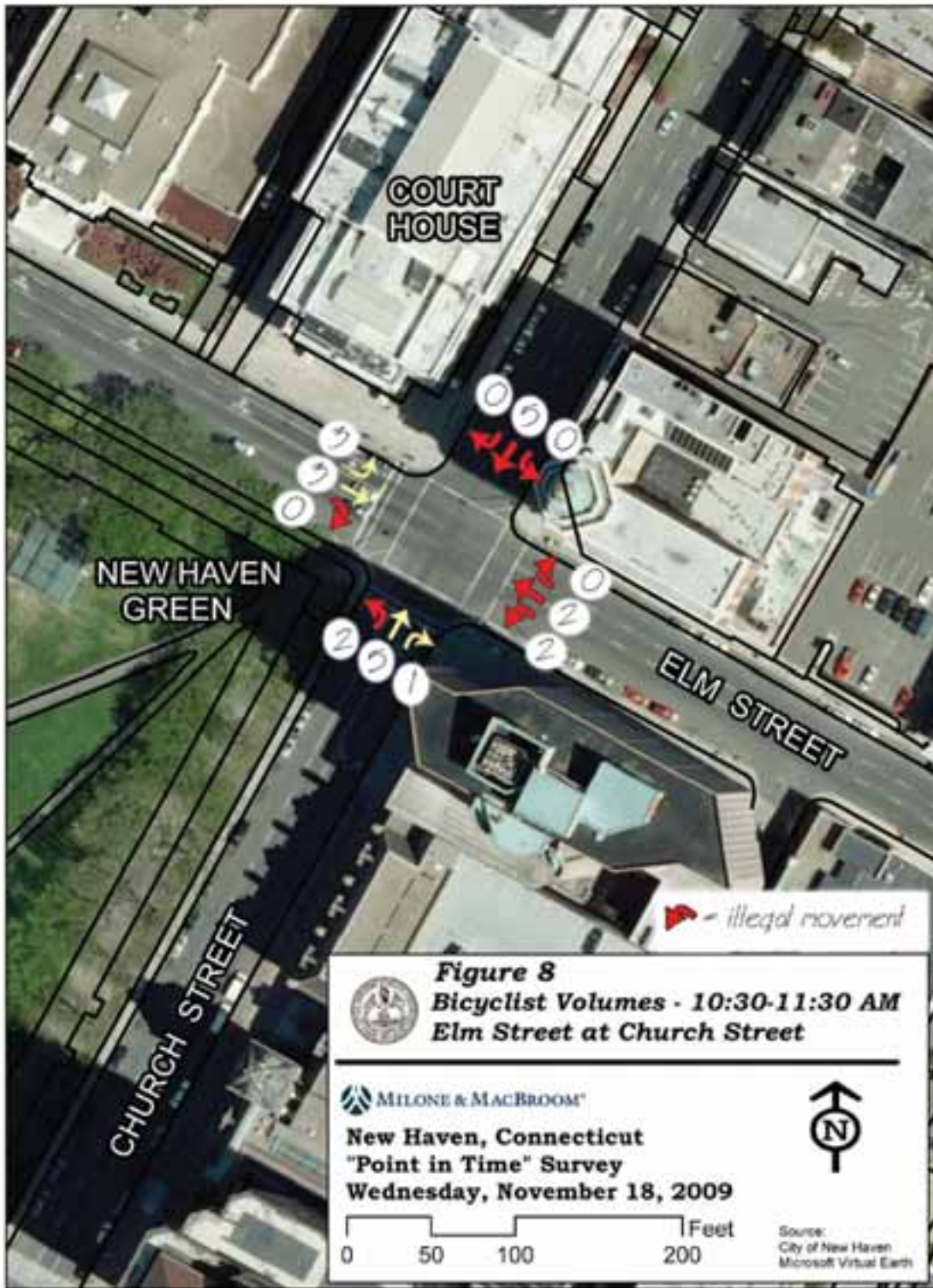
Wednesday, November 18, 2009

0 125 250 500 Feet

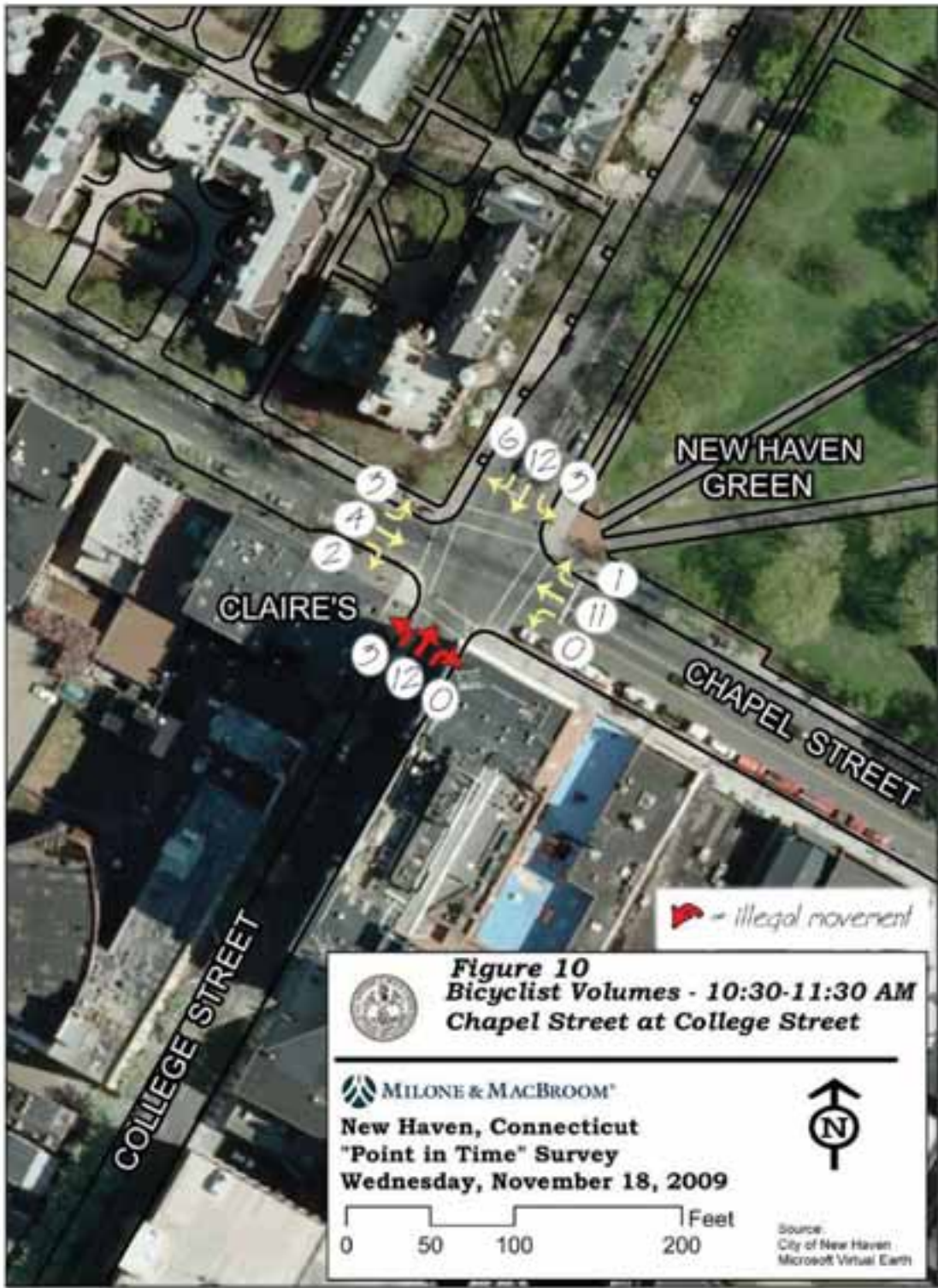


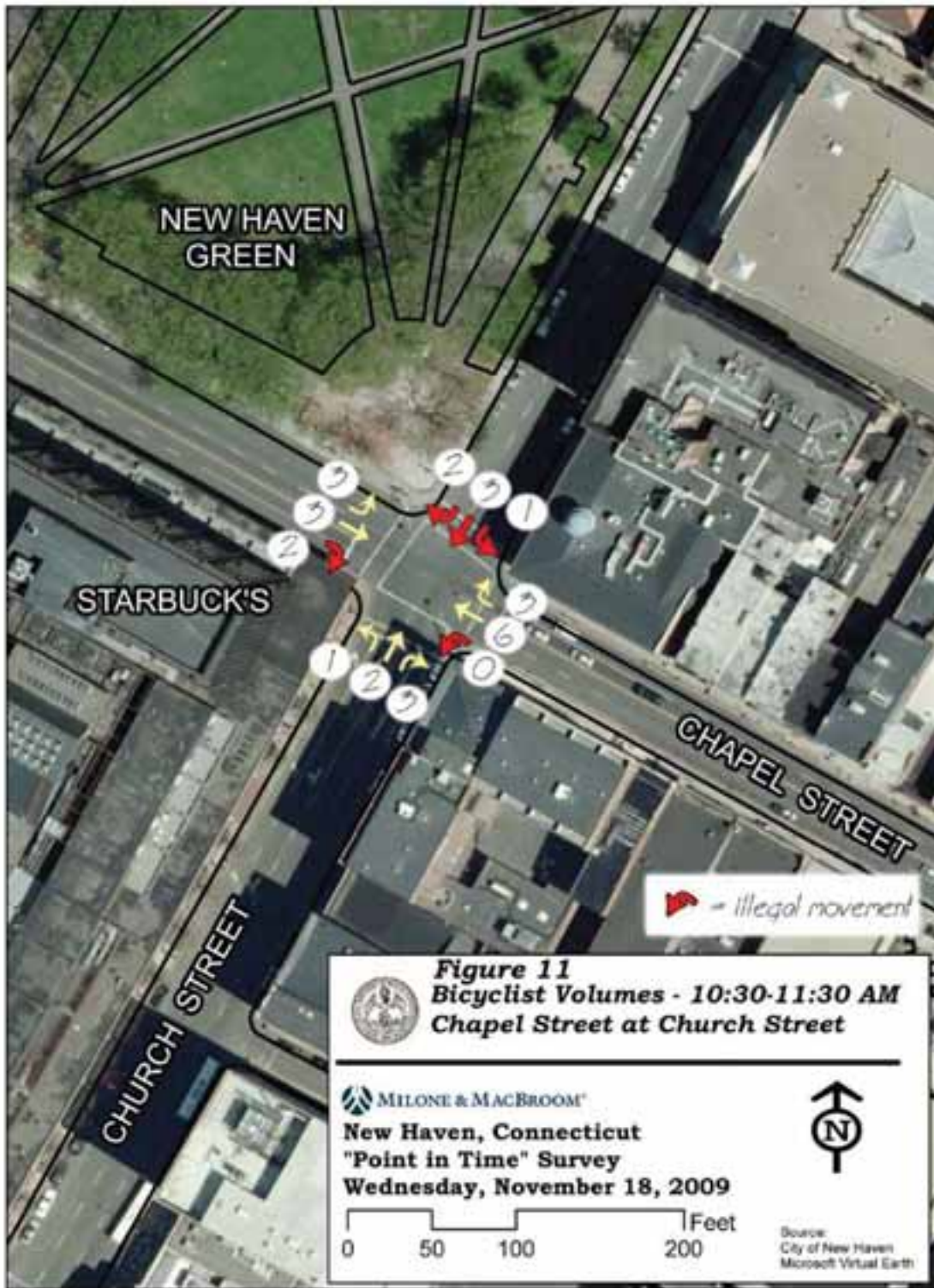
Source:  
City of New Haven  
Microsoft Virtual Earth













**Table 5 - Bicycle Traffic Volumes**  
**Wednesday, November 18, 2009 - 10:30AM-11:30 AM**

Intersection	Volumes
Elm Street at York Street	74
Elm Street at Church Street	23
Elm Street at Orange Street	15
Chapel Street at College Street	57
Chapel Street at Church Street	29

The results of the counting program indicate a significant level of bicycle activity within downtown New Haven. This is particularly notable as the counts were taken in mid November, rather than in warmer months where one would expect to see a higher number of cyclists. The highest volumes were observed at the intersection of Elm Street at York Street (74 cyclists) and Chapel Street at College Street (57 cyclists). As stated previously, these counts were intended to capture typical activity during the weekday as opposed to peak activity. It is likely that bicyclist volumes during the weekday morning and afternoon peak hours would be somewhat higher.

### **Methodology – Pedestrian Counts**

Pedestrian counts were taken at four (4) key intersections within downtown New Haven. The count locations match those intersections counted in the bicyclist counting program, with the exception of the intersection of the intersection at Church Street at Elm Street. While bicyclist counts could be conducted using one volunteer per intersection, the very high pedestrian volumes required that four volunteers be stationed at each count intersection, which limited the number of locations that could be effectively counted. The count locations are shown in Figure 12.

As with the parking and bicyclist counts, the pedestrian counts were undertaken on Wednesday, November 18, 2009. The pedestrian counts took place from 11:30 AM to 12:30 PM. The pedestrian counts were intended to provide a snapshot of typical weekday pedestrian activity at key downtown intersections, as opposed to peak period activity. Volunteers were provided with a standardized pedestrian intersection count form developed by Milone & MacBroom, Inc. The form is loosely based on the methodology utilized by the National Bicycle and Pedestrian Documentation Project. Because of the high volume of pedestrian traffic in downtown New Haven, the pedestrian count forms had to be modified significantly from the templates provided by the National Bicycle and Pedestrian Documentation project. Previous experience counting pedestrian volumes at downtown intersections indicated that pedestrian turning movement counts at busy intersections are very complicated and therefore tend to be either unreliable or require such a large number of volunteers that the counts become infeasible.

Instead of counting pedestrians by turning movement, volunteers simply counted the number of pedestrians on both sides of the street walking away from the intersection on each approach. Each intersection count was conducted using four (4) volunteers, with one volunteer per approach. The volunteers tallied pedestrians in 15-minute intervals on the count sheets provided. This procedure provided enough volunteers per intersection to ensure an accurate count of the total number of pedestrians passing through each study intersection. Each volunteer was supplied with: a map of downtown New Haven, a map of their assigned count intersection and approach,



and a standard pedestrian count form and set of instructions. Copies of the count form and instructions are included in the appendix. Volunteers were asked to record the date and time of the count, the weather, and their location. The volunteers were trained in use of the count forms during a one-hour training session, which took place several days before the count on Friday, November 13, 2009. During the training session, volunteers were instructed in the use of the forms and conducted a fifteen minute “pilot count” to ensure that they understood the procedure.

## Results – Pedestrian Counts

The results of the pedestrian counts are summarized below in Table 5 and shown graphically in Figures 13-16.

**Table 6 - Pedestrian Traffic Volumes  
Wednesday, November 18, 2009 - 11:30AM-12:30 PM**

Intersection	Volumes
Elm Street at York Street	1,314
Elm Street at Orange Street	431
Chapel Street at College Street	852
Chapel Street at Church Street	1,180

The results of the counts show that downtown New Haven was a very high level of pedestrian activity, with over 1,000 pedestrians utilizing two of the four study intersections during the one-hour count period. Moreover, the counts above likely represent a conservative estimate of pedestrian activity. The counts were taken in mid November, a time of year where people are less likely to walk and more likely to drive due to the weather (it was approximately 50 degrees during the count period). It is probable that pedestrian volumes in downtown New Haven would be higher if the counts were conducted in early fall or mid to late spring when temperatures are warmer.

## Discussion – Bicycle and Pedestrian Counts

The high level of non-motorized transportation observed during the point-in-time survey presents a number of challenges and opportunities for the City.

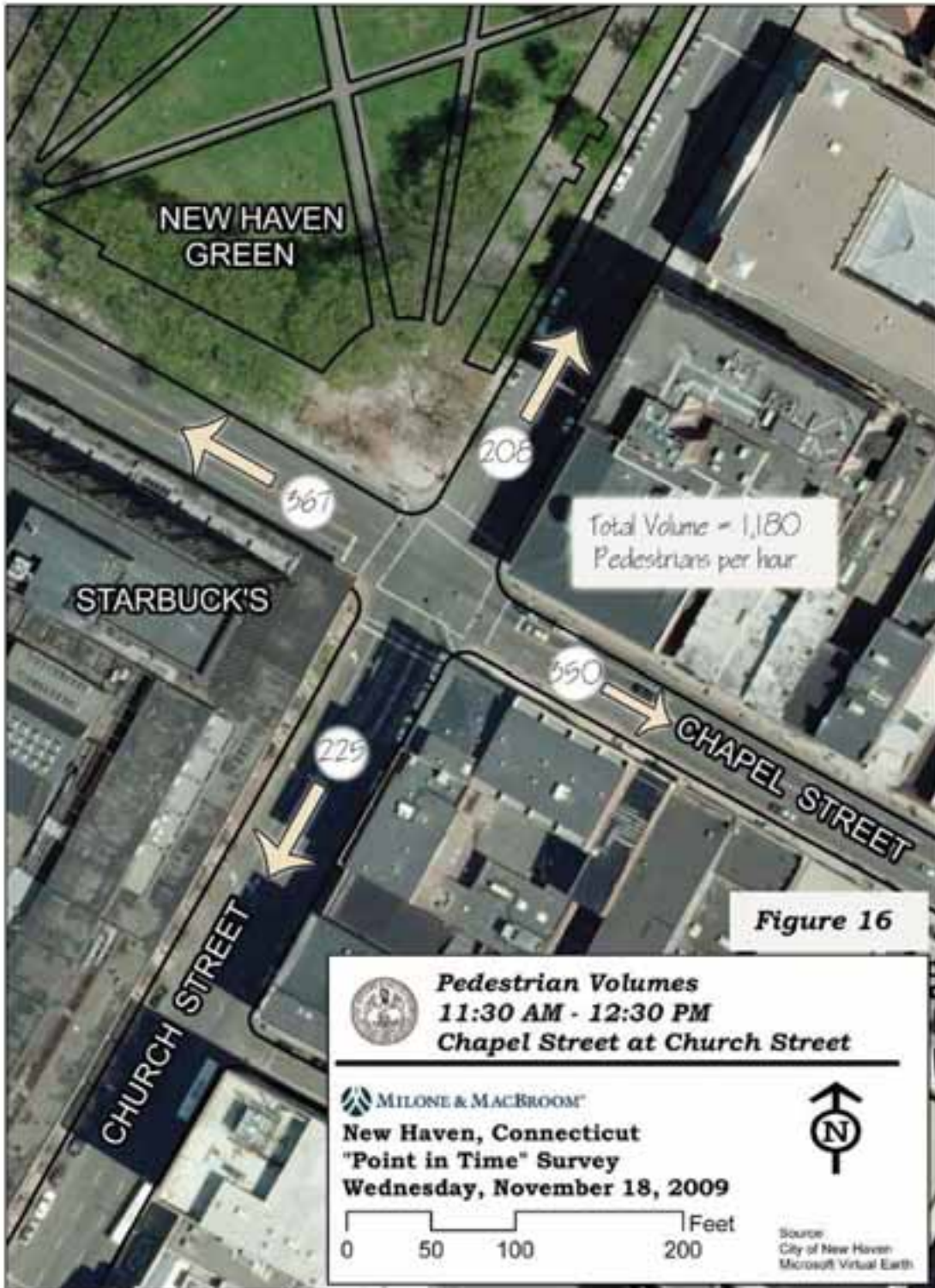
First, given the volume of pedestrians and cyclists, it is clear that these users comprise a significant proportion of roadway users. Therefore, the City should ensure that non-motorized users are properly accommodated in the downtown, with particular attention to the safety and convenience of crosswalks and pedestrian signals. Much of this work has already begun as the City has moved toward a Complete Streets policy, which entails designing the transportation system such that it accommodates all roadway users. Similarly, the Street Smarts program, aimed at developing a culture of mutual respect among roadway users has been largely successful and continues to the present day.

Second, the City should look to increase the mode split of pedestrians and cyclists as one of many tools available for managing Downtown parking demand. As noted earlier in this report, even with the assumption that the recommended parking garages are completed in a timely









manner, there is likely to be a “parking crunch” in the Downtown by the middle of 2012. Encouraging more residents to walk or bike Downtown has could potentially relieve some of the projected parking demand.

While there has been anecdotal evidence to suggest that walking and bicycling transportation has significantly increased in the past several years, there is an overall lack of data to confirm this hypothesis. Accordingly, it is recommended that the City of New Haven continue to monitor and measure pedestrian and bicyclist activity within the City. Specifically, the bicycle and pedestrian counts should be made a permanent component of the point-in-time survey. Counts should be undertaken at the same locations each year using identical or similar methodology. This will allow the City to track trends and allocate resources accordingly, as is currently done with respect to the parking system. Additionally, depending on the numbers of volunteers available, the counts could readily be expanded to include additional locations for little to no increase in cost.

## **Summary of Findings and Recommendations**

### **The following are the key findings:**

- The observed 2009 parking utilization was 88%, 89% when Union Station was included in the analysis;
- The observed 88% utilization rate is consistent with the results of previous point-in-time surveys, with exception of the 2008 study, which showed a rate of 85%;
- There was an increase in system-wide parking capacity (759 spaces) although this was offset by a larger increase in demand (1,276 spaces);
- The most significant increase to Downtown parking demand will result from the relocation of Gateway Community College to the Ninth Square District. The college has plans to lease approximately 700 parking spaces to accommodate staff and students;
- The planned Union Station Transit Oriented Development, phase 1 garage, and the proposed parking garage for the Coliseum site will largely accommodate the projected increase demand, as well as the anticipated loss of parking spaces in the Ninth Square district. However, these facilities are not anticipated to come online until 2013;
- Based on projections developed by City staff, the parking system is anticipated to operate at over 90% of capacity by 2012, peaking at a projected 99% utilization by the end of that year, even assuming all planned garages are completed on schedule;
- Construction of the State and Wall Garage would help accommodate projected parking demand during the anticipated parking crunch in the second half of 2012, although additional measures, either temporary capacity increases or the use of TDM strategies will be required to reduce parking utilization below 90%;



- The bicycle counts showed a high level of off-peak bicycle transportation activity with 74 bicyclists observed in a one-hour period at the intersection of Elm Street at York Street;
- Counts of pedestrian activity showed that pedestrians constitute a significant component of Downtown travel activity with between 431 and 1,314 pedestrians observed in one hour at the count intersections. Two of the four intersections counted had hourly volumes of over 1,000 pedestrians.

**The following actions are recommended:**

- Continue to monitor parking supply and demand as well as the progression and scheduling of major Downtown development projects;
- Ensure that the second Union Station Garage is completed on-schedule;
- Construct the State and Wall Garage recommended in previous studies;
- Undertake a study to identify potential TDM strategies and potential interim parking facilities to address the projected parking crunch in 2012;
- Continue to monitor bicycle and pedestrian activities in future point-in-time surveys using standardized methodology and count locations. If sufficient volunteers are available, expand the counts to include additional intersections.

This report provides a “snap shot” of parking, bicycle and pedestrian activity within Downtown New Haven as well as a forecast of anticipated parking demand for the next 30 months and a number of recommendations to maintain the current balance of parking supply relative to demand and to continue to monitor bicycle pedestrian activity within the city. We hope this report is useful to you in your efforts to continue to promote a livable and economically vibrant city. If you have any questions, or need additional materials, please do not hesitate to contact us.

# APPENDIX

# ON-STREET PARKING COUNT FORM



Initials: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

Weather (Circle One)     Fair   Rainy   Warm   Very Cold   Snow/Sleet

Approx. Temperature: \_\_\_\_\_

## Location

Street Name: \_\_\_\_\_

Between \_\_\_\_\_ AND \_\_\_\_\_

*Example: Elm Street between College and Temple*

## INSTRUCTIONS

- Use one count form per block
- Fill out the required information on the top of EVERY count sheet
- Count all parked vehicles on each block on BOTH sides of the street (all vehicles parked at a metered or signed space )
- Count the number of vehicles parked outside of legal spaces (e.g. double parkers, parking by corner, fire hydrant)
- Count unusable spaces - i.e. those occupied by something other than vehicles (e.g. dumpsters, construction equipment, debris, etc.)

## Mark Count Results in the Boxes Below

Vehicles Parked in On-Street Spaces	Parked Outside of On-Street Spaces	Unusable Spaces

# SURFACE LOT PARKING COUNT FORM



Initials: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

Weather (Circle One)      Fair   Rainy   Warm   Very Cold   Snow/Sleet

Approx. Temperature: \_\_\_\_\_

## Location

Facility Name: \_\_\_\_\_

*Example: Ahern Lot*

## INSTRUCTIONS

- Use one count form per facility
- Fill out the required information on the top of EVERY count sheet
- Count all parked vehicles in each lot
- Count the number of vehicles parked outside of legal spaces (i.e. double/tandem parkers, parked in drive aisle)
- Count unusable spaces - i.e. spaces occupied by something other than vehicles (e.g. dumpsters, construction equipment, debris, spaces that have been blocked off, etc.)

## Mark Count Results in the Boxes Below

Legally Parked Vehicles	Parked Outside of Legal Space	Unusable Spaces

# PARKING GARAGE COUNT FORM



Initials: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

Weather (Circle One)     Fair   Rainy   Warm   Very Cold   Snow/Sleet

Approx. Temperature: \_\_\_\_\_

## Location

Facility Name: \_\_\_\_\_

*Example: Temple Street Garage*

## INSTRUCTIONS

- Use one count form per facility
- Fill out the required information on the top of EVERY count sheet
- Count all UNOCCUPIED spaces in each facility
- Count the number of vehicles parked outside of legal spaces (i.e. double/tandem parkers, parked in drive aisle)
- Count unusable spaces - i.e. spaces occupied by something other than vehicles (e.g. dumpsters, construction equipment, debris, spaces that have been blocked off, etc.)

## Mark Count Results in the Boxes Below

UNOCCUPIED Spaces

Parked Outside of  
Legal Space

Unusable Spaces

--	--	--

# BICYCLE INTERSECTION COUNT FORM



Name: \_\_\_\_\_

## Location (Circle One)

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

- 1 *Elm Street at Orange Street*
- 2 *Elm Street at Church Street*
- 3 *Grove Street at Church Street/Whitney Avenue*
- 4 *Church Street at Chapel Street*
- 5 *College Street at Chapel Street*
- 6 *Elm Street at York Street*

Weather (Circle One) Fair Rainy Warm Very Cold Snow/Sleet

Approx. Temperature: \_\_\_\_\_

## INSTRUCTIONS

- Count all bicyclists moving through the intersection under the appropriate category on the graphic
- Count for one hour in 15-minute increments
- Use one intersection graphic per 15-minute interval
- Include bicyclists who ride on the sidewalk
- Count the number of people on the bicycle, not the number of bicycles
- Include bicyclists who ride the wrong way
- Do NOT include people walking their bicycles through the intersection

### Notes:

Count forms based on "Standard Bicycle Intersection Count Form"

source: National Bicycle and Pedestrian Documentation Project

<http://bikepeddocumentation.org>

# BICYCLE INTERSECTION COUNT FORM



00-:15

Street:

	D-Left	
	D-Through	
	D-Right	

D

Street:

A-Right	A-Through	A-Left

A

Street:

	B-Right	
	B-Through	
	B-Left	

B

Street:

C-Left	C-Through	C-Right

C

# BICYCLE INTERSECTION COUNT FORM



15-:30

Street:

**A**

A-Right	A-Through	A-Left

Street:

Street:

**D**

	D-Left
	D-Through
	D-Right

Street:

C-Left	C-Through	C-Right

Street:

**C**

**B**

	B-Right
	B-Through
	B-Left

Street:



# BICYCLE INTERSECTION COUNT FORM



30-:45

Street:

**D**

**A**

A-Right	A-Through	A-Left

Street:

Street:

**B**

	D-Left	
	D-Through	
	D-Right	

Street:

C-Left	C-Through	C-Right

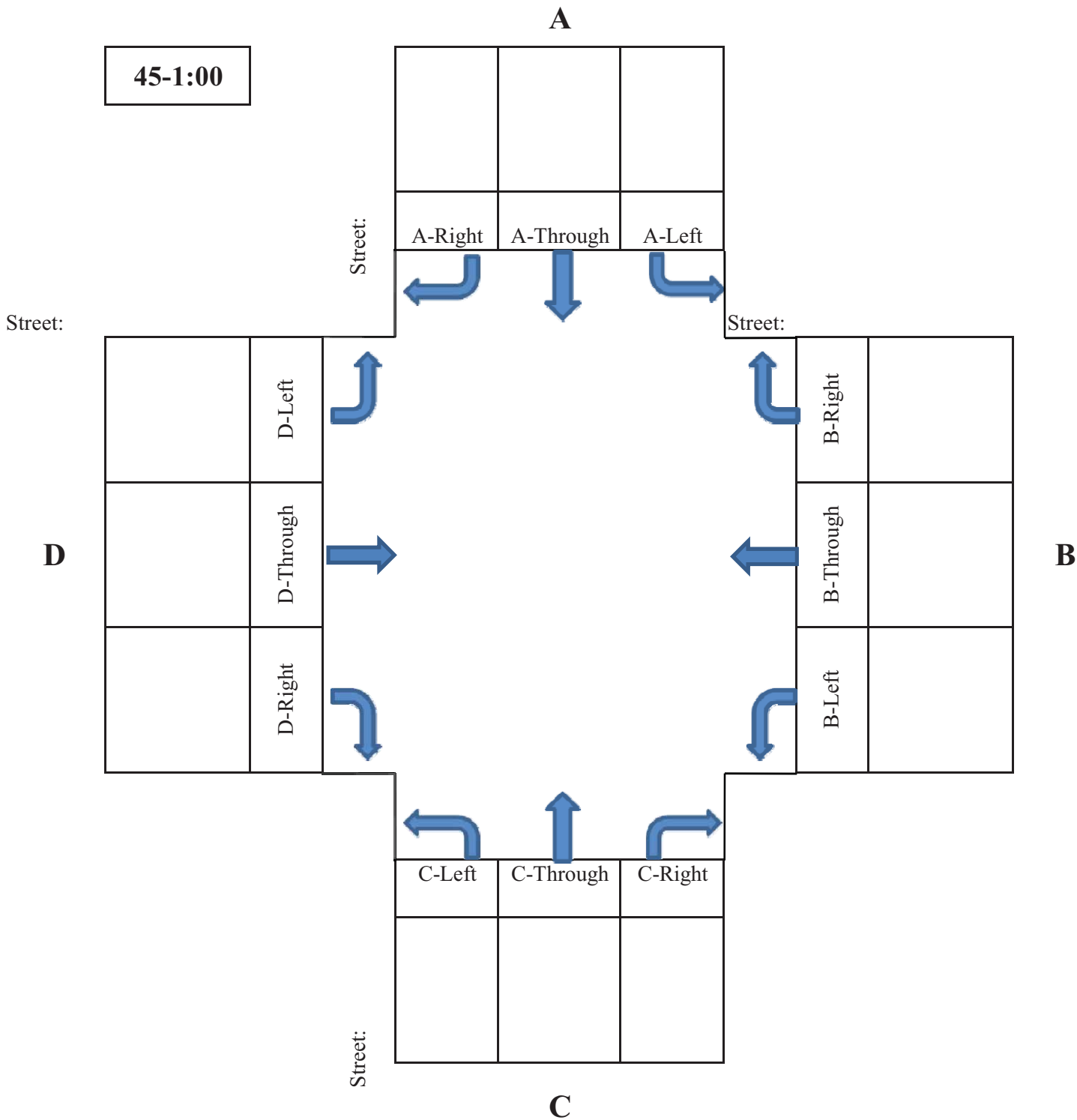
Street:

**C**

B-Right	B-Through	B-Left

Street:

# BICYCLE INTERSECTION COUNT FORM



# PEDESTRIAN COUNT FORM



Name: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

## Location (Circle One)

- 1 Elm Street at Orange Street
- 2 Elm Street at Church Street
- 3 Grove Street at Church Street/Whitney Avenue
- 4 Church Street at Chapel Street
- 5 College Street at Chapel Street
- 6 Elm Street at York Street

Weather (Circle One) Fair Rainy Warm Very Cold Snow/Sleet

## Assigned count leg (Circle One)

*see attached map*

Approx. Temperature: \_\_\_\_\_

A B C D

## INSTRUCTIONS

- Count all pedestrians walking AWAY from the intersection for your assigned intersection leg
- Tally pedestrians according to the side of the street they're travelling on
- Count for one hour in 15-minute increments
- Use one intersection graphic per 15-minute interval
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- Mark skateboarders, rollerbladers and others on recreational devices under the "other" box
- Do NOT count people riding bicycles
- Do NOT count people pacing back and forth (e.g. newspaper vendors, canvassers, etc.)

### Notes:

Count Instructions based on screenline count instructions

source: National Bicycle and Pedestrian Documentation Project

<http://bikepeddocumentation.org>

# PEDESTRIAN COUNT FORM



00-:15



Empty rectangular box for recording pedestrian count data at station A-1.

A-1



Empty rectangular box for recording pedestrian count data at station A-2.

A-2

Horizontal rectangular box spanning the width of the intersection, likely for recording total counts or other summary data.

Vertical rectangular box on the left side of the intersection, likely for recording counts for a specific approach.

Vertical rectangular box on the right side of the intersection, likely for recording counts for a specific approach.

# PEDESTRIAN COUNT FORM



15-:30



Empty rectangular box for recording pedestrian count data at station A-1.

A-1



Empty rectangular box for recording pedestrian count data at station A-2.

A-2

Wide horizontal rectangular box spanning the width of the page, likely for recording overall count data or observations.

# PEDESTRIAN COUNT FORM



30-:45



Empty rectangular box for recording pedestrian count data at station A-1.

A-1



Empty rectangular box for recording pedestrian count data at station A-2.

A-2

Wide horizontal rectangular box spanning the width of the page, likely for recording summary or total counts.

Vertical rectangular box on the left side of the page, likely for recording additional data or notes.

Vertical rectangular box on the right side of the page, likely for recording additional data or notes.

# PEDESTRIAN COUNT FORM



45-1:00



Empty rectangular box for recording pedestrian count data for station A-1.

A-1



Empty rectangular box for recording pedestrian count data for station A-2.

A-2

Horizontal rectangular box spanning the width of the page, likely for recording overall count data or survey information.

Vertical rectangular box on the left side of the page, likely for recording additional count data or survey information.

Vertical rectangular box on the right side of the page, likely for recording additional count data or survey information.

# PEDESTRIAN COUNT FORM



Name: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

## Location (Circle One)

- 1 Elm Street at Orange Street
- 2 Elm Street at Church Street
- 3 Grove Street at Church Street/Whitney Avenue
- 4 Church Street at Chapel Street
- 5 College Street at Chapel Street
- 6 Elm Street at York Street

Weather (Circle One) Fair Rainy Warm Very Cold Snow/Sleet

## Assigned count leg (Circle One)

*see attached map*

Approx. Temperature: \_\_\_\_\_

A B C D

## INSTRUCTIONS

- Count all pedestrians walking AWAY from the intersection for your assigned intersection leg
- Tally pedestrians according to the side of the street they're travelling on
- Count for one hour in 15-minute increments
- Use one intersection graphic per 15-minute interval
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- Mark skateboarders, rollerbladers and others on recreational devices under the "other" box
- Do NOT count people riding bicycles
- Do NOT count people pacing back and forth (e.g. newspaper vendors, canvassers, etc.)

### Notes:

Count Instructions based on screenline count instructions

source: National Bicycle and Pedestrian Documentation Project

<http://bikepeddocumentation.org>



# PEDESTRIAN COUNT FORM



00-:15

Vertical rectangular box for recording pedestrian counts.

Rectangular box for recording pedestrian counts, labeled B-1.

B-1



Horizontal rectangular box for recording pedestrian counts.

Rectangular box for recording pedestrian counts, labeled B-2.

B-2



# PEDESTRIAN COUNT FORM



15-:30

Vertical rectangular box for recording pedestrian counts.

Rectangular box for recording pedestrian counts, labeled B-1.

B-1



Horizontal rectangular box for recording pedestrian counts.

Rectangular box for recording pedestrian counts, labeled B-2.

B-2



# PEDESTRIAN COUNT FORM



30-:45

Vertical rectangular box for recording pedestrian counts.

Rectangular box for recording pedestrian counts, labeled B-1.

B-1



Horizontal rectangular box for recording pedestrian counts.

Rectangular box for recording pedestrian counts, labeled B-2.

B-2



# PEDESTRIAN COUNT FORM



45-1:00

Vertical rectangular box for pedestrian count data.

Rectangular box for pedestrian count data, labeled B-1.

B-1



Horizontal rectangular box for pedestrian count data.

Rectangular box for pedestrian count data, labeled B-2.

B-2



# PEDESTRIAN COUNT FORM



Name: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

## Location (Circle One)

- 1 Elm Street at Orange Street
- 2 Elm Street at Church Street
- 3 Grove Street at Church Street/Whitney Avenue
- 4 Church Street at Chapel Street
- 5 College Street at Chapel Street
- 6 Elm Street at York Street

Weather (Circle One) Fair Rainy Warm Very Cold Snow/Sleet

## Assigned count leg (Circle One)

*see attached map*

Approx. Temperature: \_\_\_\_\_

A B C D

## INSTRUCTIONS

- Count all pedestrians walking AWAY from the intersection for your assigned intersection leg
- Tally pedestrians according to the side of the street they're travelling on
- Count for one hour in 15-minute increments
- Use one intersection graphic per 15-minute interval
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- Mark skateboarders, rollerbladers and others on recreational devices under the "other" box
- Do NOT count people riding bicycles
- Do NOT count people pacing back and forth (e.g. newspaper vendors, canvassers, etc.)

### Notes:

Count Instructions based on screenline count instructions

source: National Bicycle and Pedestrian Documentation Project

<http://bikepeddocumentation.org>

# PEDESTRIAN COUNT FORM



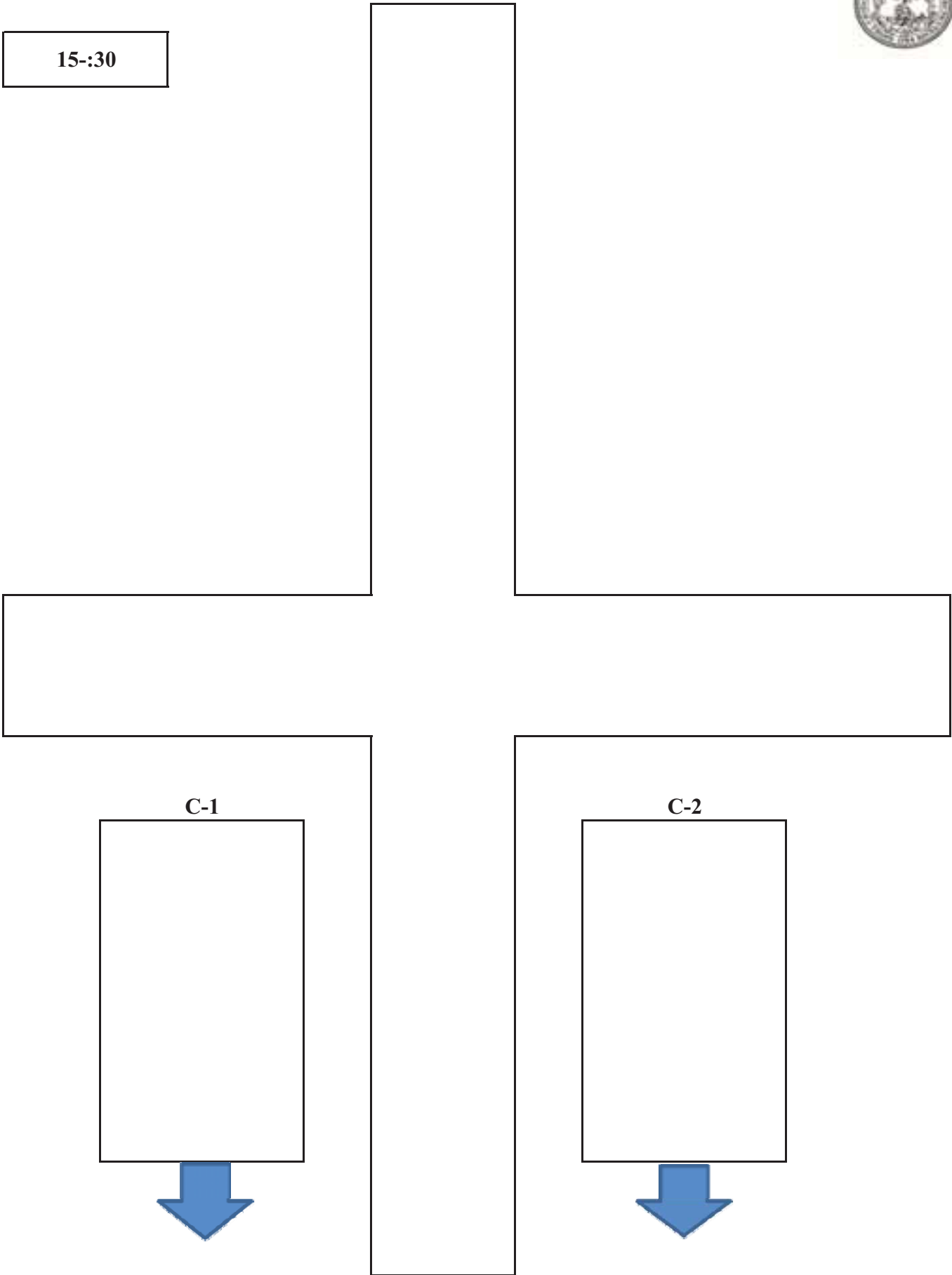
00-:15

A large diagram of a cross-shaped intersection. The vertical road is on the left, and the horizontal road is on top. At the bottom of the vertical road, there are two rectangular boxes labeled "C-1" and "C-2". Below each of these boxes is a blue arrow pointing downwards. The central intersection area is empty, and the four arms of the cross are also empty.

# PEDESTRIAN COUNT FORM



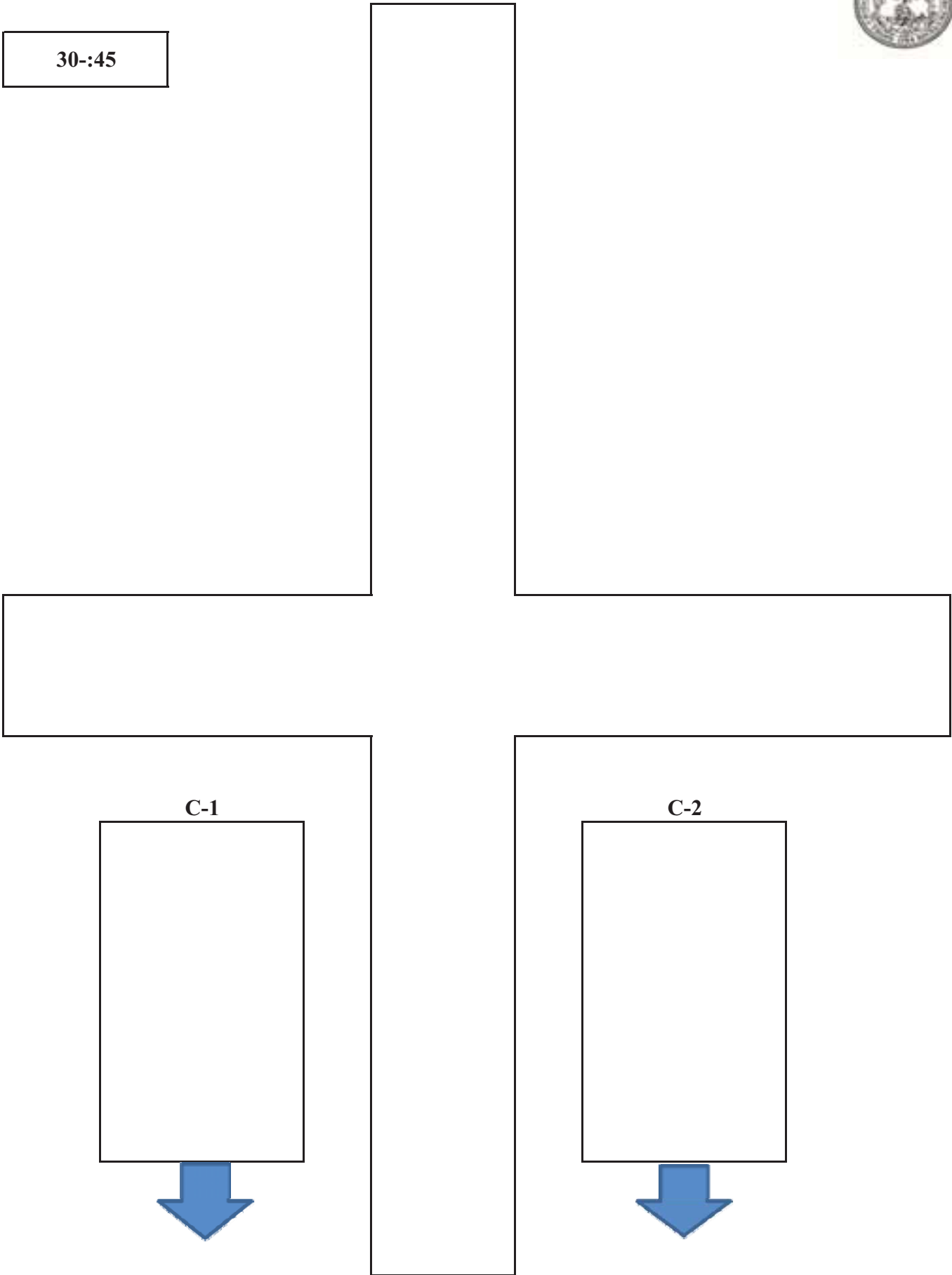
15-:30



# PEDESTRIAN COUNT FORM



30-:45

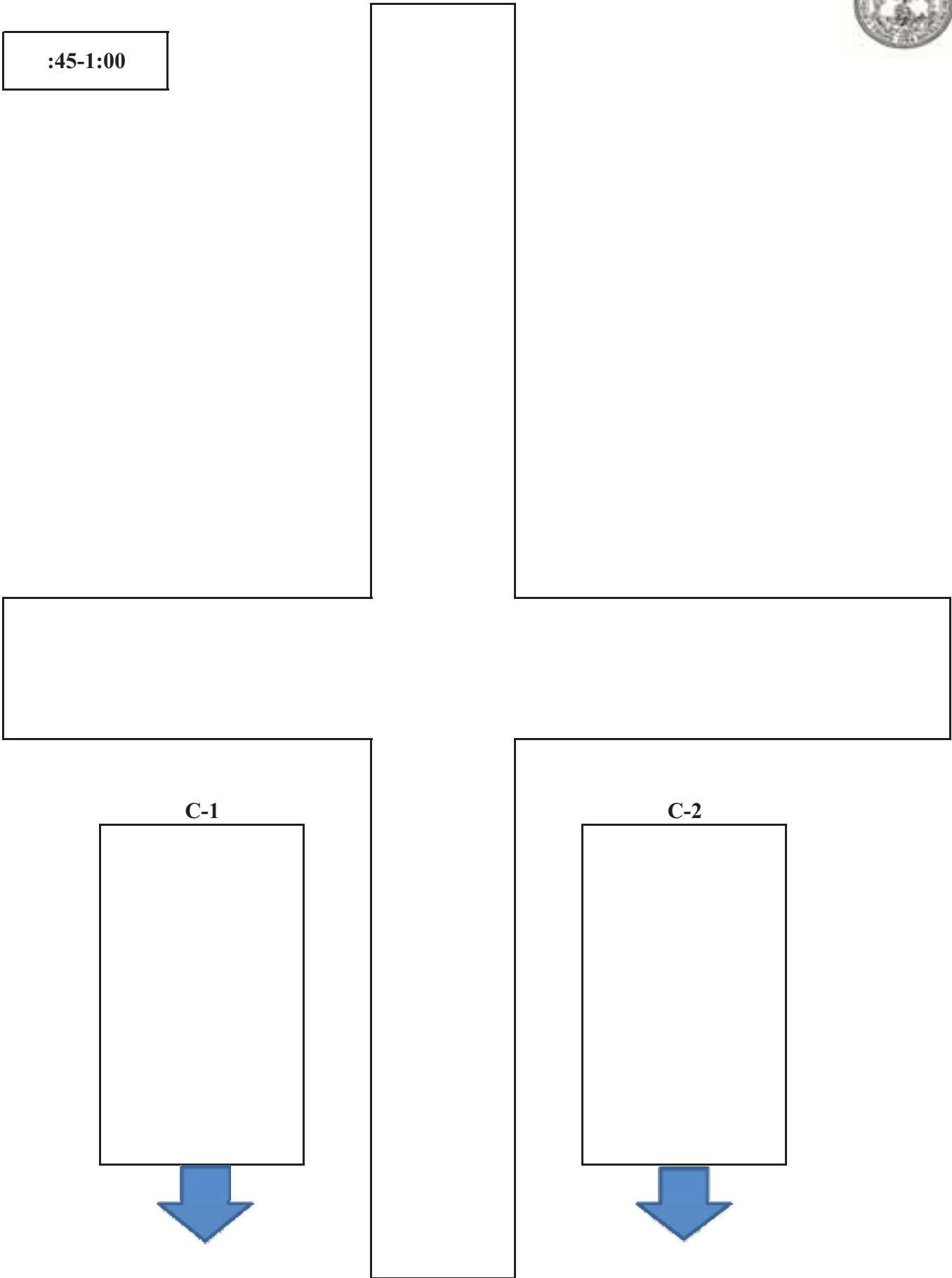




# PEDESTRIAN COUNT FORM



:45-1:00



# PEDESTRIAN COUNT FORM



Name: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

## Location (Circle One)

- 1 Elm Street at Orange Street
- 2 Elm Street at Church Street
- 3 Grove Street at Church Street/Whitney Avenue
- 4 Church Street at Chapel Street
- 5 College Street at Chapel Street
- 6 Elm Street at York Street

Weather (Circle One) Fair Rainy Warm Very Cold Snow/Sleet

## Assigned count leg (Circle One)

*see attached map*

Approx. Temperature: \_\_\_\_\_

A B C D

## INSTRUCTIONS

- Count all pedestrians walking AWAY from the intersection for your assigned intersection leg
- Tally pedestrians according to the side of the street they're travelling on
- Count for one hour in 15-minute increments
- Use one intersection graphic per 15-minute interval
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- Mark skateboarders, rollerbladers and others on recreational devices under the "other" box
- Do NOT count people riding bicycles
- Do NOT count people pacing back and forth (e.g. newspaper vendors, canvassers, etc.)

### Notes:

Count Instructions based on screenline count instructions

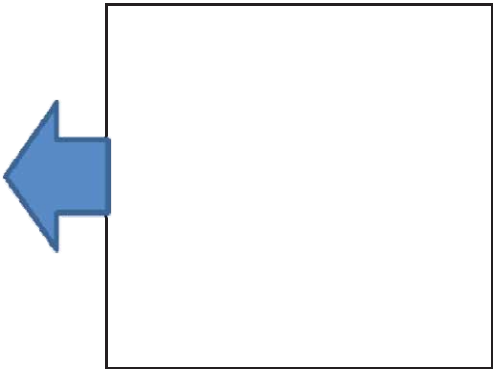
source: National Bicycle and Pedestrian Documentation Project

<http://bikepeddocumentation.org>

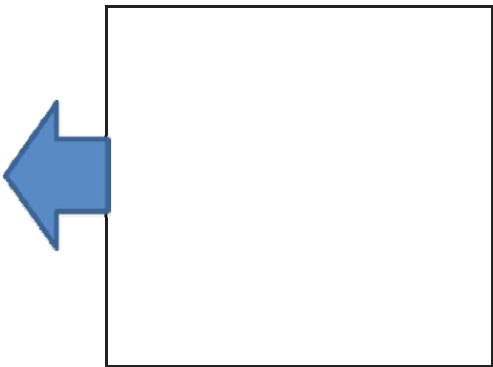
# PEDESTRIAN COUNT FORM



00-:15



D-1

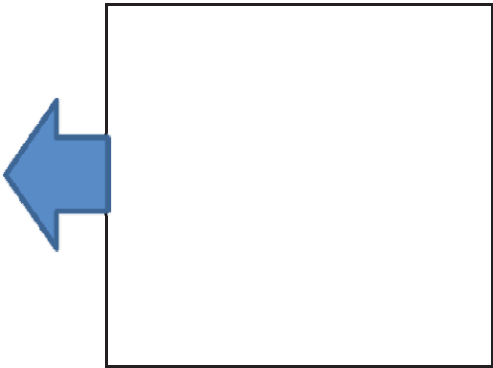


D-2

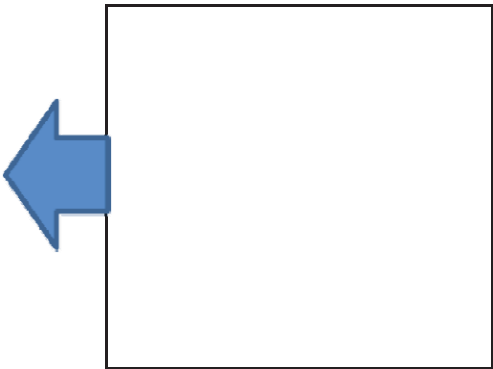
# PEDESTRIAN COUNT FORM



15-:30



D-1

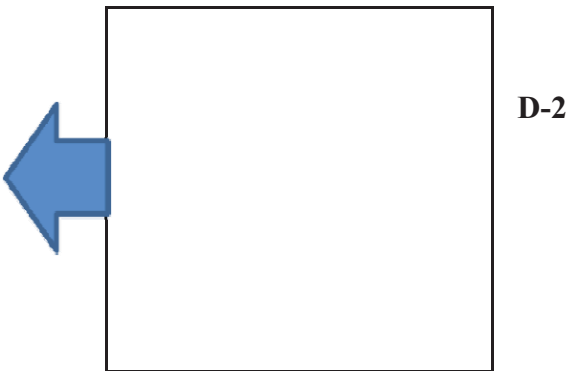
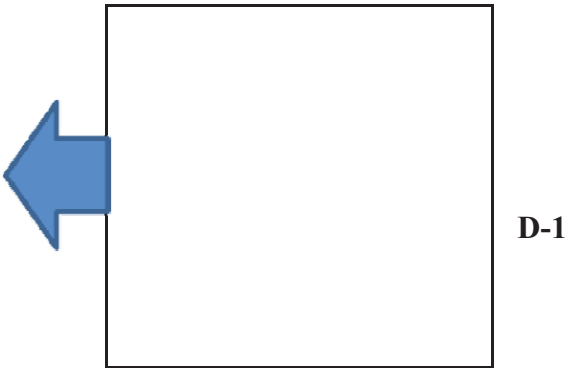


D-2

# PEDESTRIAN COUNT FORM



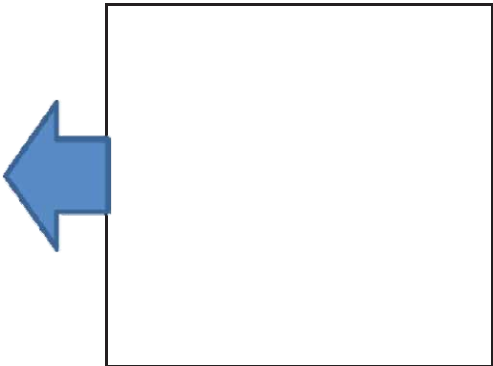
30-:45



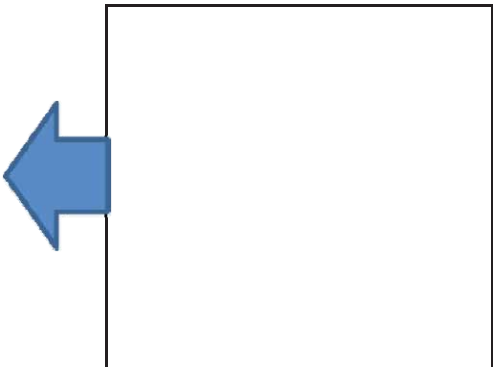
# PEDESTRIAN COUNT FORM



45-1:00



D-1



D-2