2015 NEW HAVEN POINT-IN-TIME TRANSPORTATION SURVEY

TRANSPORTATION, TRAFFIC & PARKING
CITY OF NEW HAVEN
ECONOMIC DEVELOPMENT
PARK NEW HAVEN
NEW HAVEN IT ALL HAPPENS HERE

MILONE & MACBROOM

2015 Point-in-Time Transportation Survey

New Haven, Connecticut
February 1, 2016
(Revised July 13, 2016)

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Engineering, Planning,
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February 3, 2016 **(Revised July 13, 2016)**

Mr. Doug Hausladen
Director
Department of Transportation, Traffic, and Parking
200 Orange Street, G3
New Haven, CT 06510

Mr. Doug Hausladen
New Haven Parking Authority
50 Union Avenue – 2nd Floor East
New Haven, CT 06519

Mr. Michael Piscitelli
Deputy Economic Development Administrator
City of New Haven Economic Development
165 Church Street
New Haven, CT 06510

RE: 2015 New Haven Point-in-Time Survey
MMI #1621-62

Dear Mr. Hausladen and Mr. Piscitelli:

Milone & MacBroom, Inc. has prepared this report presenting the results of the 2015 Point-in-Time Survey. We hope this report is useful to you and the City of New Haven in providing a thorough picture and understanding of downtown parking, bicycling, and walking activity. We have presented a number of recommendations that we feel will help the city to accommodate parking and increase nonmotorized active transportation, increasing sustainability, livability, and economic success. If you have any questions or need anything further, please do not hesitate to contact us.

Very truly yours,

MILONE & MACBROOM, INC.

David G. Sullivan, P.E., Associate
Manager of Traffic Engineering

Neil C. Olinski, MS, PTP
Transportation Planner II

Enclosure

1621-62-s2116-ltr

2015 Point-in-Time Transportation Survey

New Haven, Connecticut
February 1, 2016
(Revised July 13, 2016)

Prepared for:
City of New Haven
200 Orange Street
New Haven, Connecticut 06510

MMI #1621-62-1

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APPENDIX

EXECUTIVE SUMMARY

Beginning in 2003, the City of New Haven (the City) began monitoring the supply of and demand for publicly accessible parking in its downtown area. This was done and continues through a series of "Point-in-Time" surveys, which provide a snapshot of peak weekday parking demand in downtown New Haven. The Point-in-Time survey also quantifies nonmotorized travel demands through the downtown area street network by including counts of pedestrian and bicyclist traffic at key intersections. The data from these surveys are used for a number of purposes including to help form policy and properly manage and carefully plan for parking, bicycle facilities, and pedestrian accessibility. Since 2009, Milone & MacBroom, Inc. (MMI) has overseen the annual Point-in-Time survey and furnished the City with the results as well as updated the downtown parking plan.

MMI again managed the Point-in-Time survey in 2015, coordinating a count of all publicly accessible downtown parking lots, garages, and metered on-street parking spaces and counts of bicycle and pedestrian activity at key intersections. The results and discussion of these counts are presented in this report.

The annual Point-in-Time survey has regularly expanded the area it has covered over the years. In 2011, the City expanded focus and interest on the pedestrian and bicyclist counts by adding six intersections to monitor in more detail the pedestrian and bicyclist traffic in the downtown area. In 2012, the City further expanded the study area by conducting pedestrian and bicycle counts at 15 additional intersections in the Route 34, Medical District, and Union Station areas. In 2013, the City added a 23rd intersection to the pedestrian count program. In 2014, the City again increased the pedestrian count program by adding two additional intersections. With regard to the parking counts, 51 parking areas were surveyed in 2014. Compared to prior years, some parking facilities were added to the study while others were removed due to new development. The study areas were increased in 2015 as well, with the addition of the intersections at Whitney Avenue and Audubon Street as well as at Grove Street and Orange Street. Six parking locations within the study area were also added in 2015: the State Street-Olive Street Lot #36, the State Street Lot #32, the south side of Wall Street between Temple Street and Church Street, the north side of Chapel Street between Howe Street and Park Street, Yale Lot #37, and the 208 Crown Street Lot. Overall, a total of 17,951 parking spaces were surveyed in 2015.

The following are the key findings of this study:

- The observed overall 2015 parking utilization rate in downtown New Haven was 82% (83% when including Union Station), slightly higher than what it was during the last few years yet still within the optimal range of efficient utilization between 80% and 90%.

- The Broadway/Yale area had the lowest district parking utilization at 71% while the South/West of Chapel area had the highest district parking utilization at 91%.

- In 2015, overall bicycle ridership at previously surveyed locations was found to have increased, and pedestrian activity at previously surveyed locations stayed relatively similar

overall compared to 2014. Both modes of nonmotorized travel are significant components of the transportation picture in New Haven.

- Bicycle ridership was seen to have increased in conjunction with innovative bicycle infrastructure improvements that were implemented in 2015. The best example of this is the increase of ridership found on the southern section of College Street, which now sports bright green bicycle lanes and bicycle boxes. Ridership during the midday period increased approximately 38% across the four study intersections in the area (College Street at George Street, College Street at MLK Jr. Boulevard, College Street at South Frontage Road, and College Street at Congress Avenue).

- Pedestrian activity continues to be very heavy in the center of New Haven, especially at intersections in the downtown, in the Yale University area, and the Medical District area.

- Parking use, pedestrian activity, and bicycle travel in New Haven appears to be changing as new development is occurring and the City is evolving. Overall, positive changes are occurring with regard to nonmotorized transportation as a whole in New Haven.

As New Haven continues to see new development, parking conditions should be closely monitored so that utilization rates remain within the optimal range of between 80% and 90%. Currently, three of the districts (Broadway/Yale, Financial/Audubon, and Gateway/Ninth Square are below this while South/West of Chapel is slightly above it). An efficient balance of parking supply and management of parking demand will help ensure that the City continues to develop in a sustainable, livable, and economically successful manner.

The bicycle and pedestrian counts indicate that nonmotorized transportation continues to play a very important and growing role in the transportation picture of the downtown and New Haven as a whole. Notable flow of bicycle traffic was observed between Yale University and the Medical District as well as through the downtown along east-west routes. Pedestrian counts remained high overall. The City has recently invested in innovative bicycle infrastructure improvements including bright green bicycle lanes and bicycle boxes in several places throughout the City. As the City develops steadily in the coming years, it should continue to explore potential modifications to the transportation system through new and improved bicycle, pedestrian, and transit facilities in order to further promote nonmotorized, sustainable travel. Furthermore, the City should continue to explore strategies to efficiently manage parking demands and motor vehicle traffic downtown.

1.0 INTRODUCTION

The City of New Haven (the City) is projected to continue to experience a significant amount of economic development in the near future. With this growth and investment comes a need for the appropriate management of new and existing transportation demands in order to further improve and increase the economic vitality of downtown and surrounding areas. The most vibrant, successful, and sustainable urban areas are usually walkable, dense, and have successful multimodal transportation systems. These areas are not overly reliant on automobiles, and manage parking in ways that avoid an excess in supply that financially drain resources, and occupy land that could otherwise be utilized by buildings, which would contribute to additional tax revenue.

In order to analyze and manage downtown parking, the City has commissioned a study of parking usage annually since 2003. In 2009, the study was altered to also include an analysis of pedestrian and bicyclist activity in central New Haven. These studies are centered on a Point-in-Time survey, which provides a "snapshot" count of usage and activity taken during peak weekday periods. The City is taking significant steps to provide increased transportation options for residents, workers, and visitors. Much of this focus has been on increasing active transportation modes such as walking and biking, which can meet many transportation needs without increasing pollution and traffic congestion associated with motor vehicle travel and without further increasing parking demand. The City passed a Complete Streets policy in 2008 aimed at creating and maintaining a safe and sustainable transportation network that is accessible and beneficial to all users, including motorists, pedestrians, bicyclists, and transit users alike.

The Point-in-Time study area has continually expanded and evolved over the years in order to provide an increasingly more comprehensive analysis of how people travel and park in key areas of New Haven. For the 2015 study, MMI has once again been given the responsibility of gathering and analyzing data on parking supply and use as well as bicycle and pedestrian activity in the downtown area. This will be MMI's seventh Point-in-Time report for the City, having been involved since 2009. For the 2015 study, pedestrian and bicyclist activity was studied at a total of 27 intersections in the downtown, Route 34, Medical District, and Union Station areas. This is up two intersections from the 2014 study, with the inclusion of the intersections of Whitney Avenue at Audubon Street and Grove Street at Orange Street. Parking usage was surveyed at a total of 55 parking facilities in 2015, reflecting the addition and removal of several parking lots since the report the prior year. The 2015 survey results are analyzed in comparison to analysis comparing the findings from past studies.

2.0 POINT-IN-TIME HISTORY

Since 2003, the City has carefully monitored downtown parking demand relative to the supply of publicly accessible parking including metered on-street parking, surface parking lots, and parking garages. The City then included the pedestrian and bicyclist counts in 2009 and formally called the study the Point-in-Time. Provided below is a brief summary of each previous report.

Strategic Parking Plan (2003) – The *Downtown New Haven Parking: Strategic Plan* was commissioned by the City and the New Haven Parking Authority (NHPA) in 2003. Wilbur Smith Associates (WSA) undertook the parking utilization study, assembled stakeholder input, and made recommendations to address the parking needs of downtown. The study concluded that parking occupancy in the downtown study area was in excess of 80% and over 90% at many 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 and 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 Plan for parking. This was formulated after details were confirmed by the City surrounding a number of planned retail, residential, and institutional projects. This report included projections for anticipated parking supply and demands through July 2008. WSA again recommended the construction of new parking facilities. In addition, interim solutions and parking management strategies aimed at limiting growth in long-term parking demands were recommended.

Parking Plan Update #1 (2006) – In 2006, several City departments including the NHPA; the New Haven School Construction Office; Transportation, Traffic & Parking (TTP) Department; City Plan Department; and Office of Economic Development worked together to update the parking data. On-street parking counts in 2006 were conducted by consultant Tighe & Bond. Off-street parking utilization data was provided by parking facility operators. This report found that parking utilization increased from 86% to 89% in 2006 and predicted that a parking shortage would occur in the first half of 2008. Recommendations included the continued monitoring of parking, attention to planned and pending developments, and timely construction of proposed garages including a second garage at Union Station.

Parking Plan Update #2 (2007) – The 2007 report primarily focused on changes to the scheduling of major projects. Adjustments were made to utilization rates based on data provided by parking lot and garage operators. This report noted that the planned construction of the second Union Station garage had been pushed back and predicted that a parking shortage would occur in late 2009.

Parking Plan Update #3 (2008) – The 2008 report found that overall supply increased slightly and utilization decreased to 84% from 89% the year before. The decrease in utilization was attributed to a number of factors including rises in gasoline prices and additional parking lots constructed by Yale University. The updated study warned that a parking shortage would occur if the parking lot at the former Coliseum site were taken offline prior to the construction of a second parking garage at Union Station.

2009 Point-in-Time Survey and Parking Plan Update – Despite the sustained national economic downturn of the time, New Haven continued to experience investment and growth in 2009 due in large part to the strong position of its education and medical fields. The City hired MMI to oversee and conduct the 2009 report. Bicyclist and pedestrian counts at key downtown intersections were also added to the focus of the 2009 study, expanding it beyond just parking. This report found that overall downtown parking utilization increased to 88%, from 84% the previous year, and projected that the relocation of Gateway Community College to the downtown (which occurred in 2012) could lead to parking challenges. The pedestrian and bicyclist counts showed heavy activity in the downtown and at Yale.

2010 Point-in-Time Survey and Parking Plan Update – The 2010 report included an expanded parking study area and found the overall parking utilization decreased from 88% to 82%. It was projected in the 2010 report that the downtown parking system would operate at over 90% utilization in the future if new garages at Union Station and the redeveloped Coliseum site were not completed in a timely fashion (as noted earlier, both have yet to be built). The 2010 pedestrian and bicycle counts reinforced the importance of nonmotorized travel being a major part of the transportation picture in the New Haven.

2011 Point-in-Time Survey and Parking Plan Update – The 2011 report increased the pedestrian and bicyclist focus by adding to the count program six intersections along the Route 34 corridor. Bicyclist activity was observed to have increased at the intersections studied the prior year, while pedestrian activity decreased, in the 2011 report. Parking projections estimated that a parking shortage could begin in late 2012 coinciding with the Gateway Community College relocation to downtown.

2012 Point-in-Time Survey – In 2012, the reach of the pedestrian data collection was further expanded by 12 intersections, and the bicyclist data collection expanded by 15 intersections, primarily to the south of Route 34 into the Medical District and Union Station areas. The number of public parking facilities also increased from 45 to 49 lots and garages. The 2012 report surprisingly found that parking utilization decreased to 78%, its lowest level since the studies began in 2003. Previously predicted parking shortages were no longer projected. Bicyclist ridership was found to have increased over the prior year.

2013 Point-in-Time Survey – The 2013 report included an increase in the number of studied parking facilities from 49 to 52, and included one additional intersection to the pedestrian count program. Overall parking utilization was found to have remained at 78%, with no anticipated parking shortages expected through 2016. Overall bicyclist and pedestrian activity was found to have increased at the intersections also studied the prior year. Parking usage and pedestrian and bicyclist activity were each noted to be trending in the positive direction.

2014 Point-in-Time Survey – In 2014, the report included a decrease in the number of studied parking facilities from 52 to 51 due to the positive addition of new developments replacing surface parking lots. The overall 2014 downtown parking utilization rate 81%, slightly higher than the prior two years yet still low in comparison to all data over the past 11 years. Bicycle ridership at previously surveyed locations was found to have decreased in 2014 as compared to previous years, while overall pedestrian activity increased, being heaviest in the center of New Haven, especially at intersections in the downtown, in the Yale University area, and the Medical District area. Nevertheless, bicycle activity was still high with two study intersections (College Street at Chapel Street and Elm Street at York Street) experiencing over a bicyclist per minute during peak hours. Parking use, pedestrian activity, and bicycle travel in New

Haven appears to be changing as new development is occurring and the City is evolving, with overall positive changes occurring in regard to transportation.

3.0 PARKING

The 2015 Point-in-Time survey of downtown parking facilities is an update to a series of previously conducted studies aimed at monitoring downtown parking activity. The parking study area is shown in Figure 1. This study area has steadily evolved since the initial 2003 report. For the 2015 report, six new parking lots not previously studied were added including State Street/Olive Street Lot #36, State Street Lot #32, Wall Street/Temple Street Lot, Chapel Street/Howe Street Lot, Yale Visitors Lot #37, and the Crown Street Public Lot. The 280 Crown Street garage has been recently removed from the parking supply as the structure is being retrofitted into a new nonparking development. During the time of the counts, the Neon parking garage was also closed. Including the Union Station parking garage and lot (which were counted as one facility), parking utilization at a total of 55 parking facilities were surveyed in 2015.

The parking study area, shown in Figure 1, encompasses downtown New Haven and the Route 34 corridor. 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 the utilization of public parking may vary within parts of central New Haven and were used in each subsequent update. The Union Station parking garage and lot are located just outside of these four districts but are included in the study given their importance to the overall transportation system in New Haven.

Parking Data Collection

MMI worked with officials from the NHPA, TTP, and the Office of Economic Development to obtain data on the locations, ownership, operation, and capacity of publicly accessible parking facilities located within the study area. Figure 2 shows the publically accessible surface parking lots and parking garages in the study area, and Figure 3 shows the metered on-street parking spaces. Including Union Station, the total number of surveyed spaces was 18,311 in 2015. Professional enumerators were used to count the off-street parking lots and garages while City meter attendants counted the on-street metered parking using standardized count sheets as in years past. For the count of on-street spaces, enumerators were asked to count the number of empty metered spaces by block, as well as the number of vehicles parked outside of legal spaces, and the number of unusable spaces (such as those blocked off for construction or maintenance work). The number of metered spaces by district were acquired via GIS data obtained from the City.

Both on-street and off-street parking counts were conducted during the middle of the day on Wednesday, October 14, 2015, from approximately 11:00 a.m. to 2:00 p.m. This time of year and time of week were selected to represent a "peak scenario" in terms of downtown parking demand and is consistent with previous Point-in-Time surveys. Midday, midweek, in autumn are known to be among the heaviest periods of parking demand in downtown New Haven due to a number of factors including educational activities, Union Station travel, and business parking. The parking data is summarized in Tables 3-1 and 3-2. Table 3-1 summarizes the supply and utilization by district and facility type. Table 3-2 summarizes overall system utilization trends from 2003 to the present. Figure 4 geographically illustrates the utilization of the publicly accessible parking lots and garages that have been studied.

Appendix A contains the data for each of these off-street parking facilities and the on-street parking by district.

2015 Parking Summary

As shown in Table 3-1, overall utilization of the parking garages was slightly higher than that of surface lots – 84% and 77%, respectively. Overall utilization was also found to be more for parking garages but less for surface lots in 2015 as compared to 2014. Parking garage utilization went up 1% from 83% in 2014, and surface lots went down 5% from a utilization of 82% in 2014. The on-street metered parking in 2015 was found to be utilized at 83%, up 21% from 62% in the 2014 study. Within downtown New Haven, approximately two-thirds of the publicly accessible parking is provided in parking garages. The combined utilization of all the downtown parking was found to be 82%. With Union Station included (which was essentially at capacity), the total utilization of parking counted was 83%; this is a total of approximately 2% higher utilization than was found in the 2014 study.

The parking utilization rate by district (on-street parking and off-street facilities) was reviewed. Two of the four districts showed increases in parking utilization as compared to the 2014 study. The Broadway/Yale District experienced an increase of 13%, going from 58% to 71% utilization. The Financial/Audubon District utilization increased by only by 2%, going from 68% to 70%. The Gateway/Ninth Square District decreased in parking utilization by 2% from 83% to 81%. Lastly, the South/West of Chapel District increased from 89% to 91%, up 2%. It is important to note that two study off-street parking facilities in the South/West of Chapel District (Garage #43 - 280 Crown Street garage, and Garage #35 - Neon garage) were removed from this year's study as they were closed or under construction during the counts.

TABLE 3-1
2015 Parking Totals – New Haven Point-in-Time Study

	Facility Type	Capacity	Utilization	Utilization Rate
Broadway/Yale	Garages	193	126	65%
	Surface Lots	270	182	67%
	On-Street Parking	827	606	73%
	Total - Broadway/Yale	**1,290**	**914**	71%
Financial/Audubon	Facility Type	Capacity	Utilization	Utilization Rate
	Garages	2,837	1,876	66%
	Surface Lots	875	635	73%
	On-Street Parking	705	599	85%
	Total - Financial/Audubon	**4,417**	**3,110**	70%
Gateway/Ninth Square	Facility Type	Capacity	Utilization	Utilization Rate
	Garages	5,026	4,729	94%
	Surface Lots	1,077	822	76%
	On-Street Parking	195	151	77%
	Total - Gateway/Ninth Square	**4,178**	**3,396**	81%
South/West of Chapel	Facility Type	Capacity	Utilization	Utilization Rate
	Garages	5,026	4,729	94%
	Surface Lots	1,865	1,520	82%
	On-Street Parking	395	413	105%
	Total - South/West of Chapel	**7,286**	**6,662**	91%
Union Station	Facility Type	Capacity	Utilization	Utilization Rate
	Garage/Lot	1,140	1,128	99%
ALL DISTRICTS	Facility Type	Capacity	Utilization	Utilization Rate
	Garages	10,962	9,154	84%
	Surface Lots	4,087	3,159	77%
	On-Street Parking	2,122	1,769	83%
	Total - Districts	17,171	14,082	82%
	Total - Districts and Union Station	**18,311**	**15,210**	**83%**

Note: Data was collected between 11:00 a.m. and 2:00 p.m. on Wednesday, October 14, 2015.

TABLE 3-2
Downtown Parking Utilization by Year

District	2003 (Nov)	2006 (Apr)	2007 (Aug)	2008 (Sept)	2009 (Nov)	2010 (Oct)	2011 (Oct)	2012 (Oct)	2013 (Oct)	2014 (Oct)	2015 (Oct)
Broadway/ Yale*	91%	90%	94%	70%	79%	66%	67%	58%	73%	58%	71%
Financial/ Audubon	82%	91%	92%	80%	86%	83%	82%	73%	68%	68%	70%
Gateway/ Ninth Square	90%	87%	78%	84%	89%	79%	90%	77%	76%	83%	81%
South/ West of Chapel*	87%	88%	91%	88%	91%	86%	89%	86%	85%	89%	91%
Total	**86%**	**89%**	**89%**	**84%**	**88%**	**82%**	**86%**	**78%**	**78%**	**80%**	**82%**

*From 2003 to 2007, the Chapel/York garage was counted in the Broadway/Yale District. Since 2008, it has been counted in the South/West of Chapel District.

Table 3-2 details annual trends in total parking utilization at publicly accessible facilities per district in downtown New Haven (excluding Union Station). From 2003 to 2011, total downtown parking utilization was found to vary between 78% and 89%. Although the utilization of the Gateway/Ninth Square area was considered within the range of optimal parking utilization which, especially in urban areas such as downtown New Haven, is between 80% and 90%, parking in the Broadway/Yale and Financial Audubon Districts were below the optimal range, and utilization in South/West of Chapel District was above it.

Utilization rates below 80% at peak times suggest an inefficient parking system, that is, one with an overabundance of parking and/or overpriced parking. This often corresponds with maintenance costs on unused space, barrenness in the urban fabric, and lost density in terms of underutilized space especially in the case of surface parking lots that could otherwise contribute more tax revenue as building space. A parking utilization rate over 90% suggests the opposite combination of a parking supply that is too little and priced too low to achieve the most efficient use. Although not a component of this study, parking user fees are a key part of understanding parking demands in urban areas as changes to user fees (along with necessary enforcement measures) can be made to manage demands. As utilization rates exceed 90%, motorists also have increasing difficulty locating the remaining available parking spaces, which can result in increased traffic congestion as motorists circle the block or drive to multiple facilities before locating an available space.

In 2012 and 2013, total parking utilization dropped below 80%. In 2014 and 2015, the overall parking utilization rate was surveyed as still being at the low end but still within the optimal range. In 2015, the Broadway/Yale and Financial/Audubon Districts had utilization rates below the optimal range; the Gateway/Ninth Square's utilization rate was at the low end of the optimal range, and South/West of Chapel's utilization rate was at the high end of the optimal range. As shown in Figure 4 and can be seen in Appendix A, individual parking facility utilization rates ranged widely from well below capacity (at 18%) to overcapacity (full lot with vehicles parked outside of marked parking spaces). Some lots were

found to be overcapacity, including the Orchard/Sherman Lot (#50) and the Crown Street Public Lot (#61). Certain areas of the downtown, particularly south of the Green near the Medical District and Union Station area, have a number of parking facilities that are heavily utilized.

In 2014, the City and Nelson/Nygaard conducted a "Mobility Study" of the Medical District and Southern Downtown areas. The Mobility Study's purpose was to address concerns surrounding the amount of new parking the City may require in the future as substantial redevelopment continues throughout the next 10+ years in that area. The Mobility Study first counted existing daytime parking utilization and then identified potential enhancements and demand-management opportunities that could shift some of the high proportion of commuters who travel to work in single-occupancy vehicles to other travel modes (transit, walking, bicycling, etc.). The data collected indicated that on-street parking occupancy among all spaces (metered and unmetered) peaked at 51.1% and occupancy at only metered spaces peaked at 56.3% during a typical weekday in the Medical District area. Regarding off-street parking, the collected data indicates that during a typical weekday occupancy among these spaces peaked at approximately 80% in the Medical District area.

The Mobility Study found that while there may be a notable amount of available parking in the Medical District as a whole at the current time new development in the area could use up the excess supply and create parking supply shortfalls. However, the Mobility Study found that with the implementation of Travel Demand Management (TDM), there is a substantial opportunity to reduce the predominance of driving alone in New Haven. By aggressively implementing TDM strategies and making appropriate expansions to the area's parking supply in both the long term and the short term, changes can be made to enhance the area's quality of life, commuter accessibility, and economic vitality in the City. Mobility Study recommendations included the following:

- Implement Complete Streets in order to increase pedestrian and bicycle mobility.
- Add commuter-express shuttle service to and from the Medical District/Downtown.
- Construct the second Union Station garage.
- Develop a park-and-ride lot just outside the Mobility Study area.
- Work with a TDM coordinator to implement coordinated-institutional TDM strategies.

Yale University, whose campus is located in central New Haven, operates numerous permit-only parking facilities in the City for its faculty, staff, and students. Permits are only issued to Yale University affiliates who apply and pay for them. According to Yale University Parking and Transit, with the exception of the three parking facilities on Science Hill (the northeastern section of the campus bordered by Whitney Avenue to the east, Sachem Street to the south, Prospect Street to the west, and Edwards Street to the north), the majority of these permit-only facilities operate at 100% capacity during the weekdays.

It should be generally noted that while many parking garages and surface lots often serve motorists parking for long durations such as employees working downtown, on-street parking is typically intended to serve higher turnover uses such as individuals frequenting retail establishments or restaurants. The peak period of parking for on-street spaces may differ markedly from the peak period of parking of many off-street parking facilities and the overall downtown as a whole. In some areas, the strongest demand for on-street parking occurs on weekend evenings as opposed to the middle of the workday on a weekday - the period of focus for this study. Since the purpose of this Point-in-Time report is to generally evaluate the area-wide peak period of downtown parking use, a detailed discussion of on-street peak parking demands is beyond this study.

As mentioned earlier, it is important to note that the parking data collected for this Point-in-Time report is by definition only a "snapshot" of parking use. Some amount of caution should be exercised when evaluating this data and too much reliance on this single survey observation should be tempered. Year-to-year changes that are summarized in the Point-in-Time studies offer good insight into the changing downtown parking picture, but with one observation per year, the data should not be deemed statistically significant. Numerous factors are at play that affect the year-to-year parking data. Over the numerous past studies, these changing factors have included changes in the number of surveyed parking spaces, changes in the physical supply of parking, and user-fee pricing changes as well as perhaps slowly evolving travel behavior changes (such as shifts in mode share away from single occupant vehicles) within the population who travel to/from and within downtown New Haven. As the parking counts were conducted during the busiest time of year, it is also worth noting that at many other times of the year the downtown parking utilization is less than that summarized above. That said, the data in this report provides valuable insight into the parking usage in downtown New Haven and shows that over the last decade parking has been generally well managed. Parking usage should continue to be studied, and policies that encourage the most efficient use of the valuable urban land in central New Haven should be implemented. As the City's fabric continues to evolve, it may be appropriate to identify continually underutilized parking facilities and seek better use of those lands.

Projected Parking Utilization

Downtown New Haven has continued to experience new development and redevelopment through the recent national economic recession. In many cases, this has meant the elimination of existing surface parking lots to accommodate new buildings. New development has also meant additional parking demands within the downtown. The challenge therefore is to continue to monitor parking supply and utilization and make appropriate adjustments to the parking system (physical, pricing, etc.) in an attempt to maintain optimal utilization. General decreases in overall utilization over the past few years toward the low end of the optimal range while new development is occurring may indicate that there is an overabundance of parking in some areas of downtown New Haven.

The following is a discussion of future parking supply and usage changes that are anticipated in the coming years. Overall rates in 2015 were found to be slightly higher than in 2014, with 2014 finding a peak-period parking utilization rate of approximately 80% (81% with Union Station) and in 2015 going up by approximately 2% in both areas with a peak-period parking utilization rate of approximately 82% (83% with Union Station). As downtown New Haven continues to expand and develop, the demands on the parking system will change. MMI, in coordination with the City's Office of Economic Development, TTP, and the NHPA, has developed projections of future parking utilization to help plan for future conditions. The forecast is based on a number of factors including:

- 2015 parking supply and utilization as reported above
- Anticipated changes to the downtown public parking supply
- Estimated new demands for publicly accessible parking associated with anticipated development

There are a number of new developments in New Haven that are in one stage or another of planning, approvals, or construction. Some developments are currently under construction and affecting parking through the closure of public parking facilities, as mentioned above. Table 3-3 summarizes notable expected changes to the public parking supply, demand, and utilization from the beginning of 2016 to the end of 2018 by quarter-year increments. What follows is a brief time line and description of the

estimated changes to parking supply and utilization in downtown New Haven. Note that the large developments that have been included in Table 3-3 have at least the same amount of anticipated public parking, and thus, have been included in the projections. It should again be noted that the parking projections herein have been developed for planning purposes. Parking demands are complex and difficult to predict as they are part of the broader travel behaviors of countless individuals. Many factors can affect parking demands at any particular time, including pricing, convenience of location, type of trip, weather conditions, and so on.

TABLE 3-3
Projected Developments and Parking Utilization Rates – 2016 to 2018

Projected Parking Supply & Utilization	District	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Anticipated Changes to Supply														
Remove Coliseum Parking Lot (ID#36) for LiveWorkLearnPlay	Gateway/Ninth Square				-471	-471	-471	-471	-471	-471	-471	-471	-471	-471
New (2nd) Union Station Garage	Union Station						555	555	555	555	555	555	555	555
Add new public parking supply assoc. w/ Route 34 West	Gateway/Ninth Square						850	850	850	850	850	850	850	850
Add new public parking supply assoc. w/ LiveWorkLearnPlay	South/West of Chapel								785	785	785	785	785	785
Remove Broadway / Elm Lot (#7)- 272 Elm St New Development	Broadway/Yale								-48	-48	-48	-48	-48	-48
New NHPA Lot at State and Trumbull	Financial/Audubon								75	75	75	75	75	75
Anticipated Changes to Utilization														
Office Space Re-absorption	Financial/Audubon		100	100	100	100	100	100	100	100	100	100	100	100
The Union Apartments (former Wells Fargo Building)	Financial/Audubon		25	25	50	50	50	50	50	50	50	50	50	50
Latent demand for New/2nd Union Station Garage	Union Station						85	85	85	85	85	85	85	85
Route 34 West Development new parking demands	Gateway/Ninth Square						765	765	765	765	765	765	765	765
LiveWorkLearnPlay new parking demands	South/West of Chapel								705	705	705	705	705	705
Conservative ambient growth factor (0.25% per quarter) to reflect increased activity in the downtown	Overall	153	191	230	268	307	346	385	424	463	502	541	580	620
Projected Total Supply	Overall	18,311	18,311	18,311	17,840	17,840	19,245	19,245	20,057	20,057	20,057	20,057	20,057	20,057
Projected Total Demand	Overall	15,210	15,526	15,565	15,628	15,667	16,556	16,595	17,339	17,378	17,417	17,456	17,495	17,535
Projected Parking Utilization Rate		**83%**	**85%**	**85%**	**88%**	**88%**	**86%**	**86%**	**86%**	**87%**	**87%**	**87%**	**87%**	**87%**

Several changes to the parking supply are anticipated over the next few years. The Coliseum site redevelopment is projected to begin in 2017 with the phasing out of 471 parking spaces at that surface lot. The new mixed-use development of the Coliseum site (LiveWorkLearnPlay) is projected to come online around 2018. The second Union Station garage is also anticipated to come online in 2017. Other expected changes include the addition of public parking as part of the Route 34 West development and the removal of the Broadway/Elm lot for new Yale housing.

Many of the new developments over the next several years are anticipated to accommodate their own parking demands within their own respective sites through new private parking facilities. This is largely the case for new residential developments. Some of these developments are also expected to include parking areas that will be accessible to the general public. The LiveWorkLearnPlay and Route 34 West developments are two examples. Other new developments will not add any new supply but may generate parking demands that will be accommodated through the general public parking supply such as is expected to occur with the Union Apartments (retrofit of the former Wells Fargo building). Reabsorption of office space in the Financial District is also expected to have some effect on downtown parking. The second Union Station garage that is anticipated to come online is expected to largely accommodate existing parking demands from the Coliseum lot as well as additional parking from latent demand. Various new smaller developments not shown in Table 3-3 and other increases in activity downtown are expected to place some additional parking demands on the public parking supply. Although difficult to quantify, for the purpose of this report, an ambient growth factor of 0.25% per quarter has been incorporated into the projections to conservatively account for such increases in activity.

Based on these assumptions that the anticipated developments move forward as planned, the City's downtown parking system is expected to operate between 85-87% utilization through 2018. In the big picture, these rates are within the optimal 80-90% utilization range. As mentioned above, some amount of caution should be exercised when evaluating these projections. The Point-in-Time survey is a once-a-year single data point and, as such, reliance on that single survey should be tempered. These projections are simplistic by nature and do not include many of the factors that affect parking usage at any particular time.

4.0 BICYCLE AND PEDESTRIAN COUNTS

In 2010, the City prepared its *Complete Streets Design Manual.*[1] The purpose of the manual is to "ensure that all streets are designed to provide a safe and comfortable environment for all roadway users." Many cities are now prioritizing Complete Streets as they realize that the greatest opportunity to thrive is to focus on the needs of all nonmotorists and motorists alike. One of the first steps toward service for all users is to measure and analyze the various travel demands placed upon the City streets. Surveying bicycle and pedestrian trips annually is a large part of this. The data obtained from these counts can help public officials and organizations appropriately plan for and make improvements to the transportation system such as with the introduction of new bike lanes. Figure 5 shows the current bicycle facilities in the center of New Haven.

The Point-in-Time survey's focus on pedestrians and bicyclists has increased since 2009. The 2009 and 2010 studies counted pedestrian and bicyclist traffic at four main downtown intersections. Six intersections along the Route 34 corridor were added in 2011. Fifteen additional intersections primarily within the Medical District/Union Station areas were included in 2012. In 2013, one additional intersection was added, and in 2014, pedestrian counts were conducted at two additional intersections. For the 2015 study, pedestrian and bicyclist counts were once again added at two intersections (Orange Street at Grove Street and Whitney Avenue at Audubon Street) in the Financial/Audubon area for a total of 27 intersections.

As in years past, bicyclist and pedestrian traffic was counted during both the weekday morning and midday periods. The morning counts took place from 8:00 a.m. to 9:00 a.m. while the midday counts occurred from 11:30 a.m. to 12:30 p.m. These time frames were chosen because they are known to be heavy travel periods within the City and are intended to provide a snapshot of typical busy bicycle and pedestrian activity. It is noted that these may not be the actual peak hours of pedestrian or bicyclist traffic at each intersection since data was not collected for the numerous hours to determine actual time-of-day variations.

Due to the large number of intersections, the pedestrian and bicyclist counts were conducted on four separate days. The downtown and most of the Route 34 corridor intersections were counted on Tuesday, October 6, 2015, and Wednesday, October 7, 2015. Counts in the Medical District and Union Station areas were conducted on Thursday, October 8, 2015, and Wednesday, October 14, 2015. The location of these intersections can be seen in Figure 6. All four days had mild weather, with average temperatures for October. All of the pedestrian and bicyclist counts were undertaken by professional enumerators.

Bicycle Counts

Bicyclist counts were conducted based on the methodology utilized by the National Bicycle and Pedestrian Documentation Project.[2] Cyclists were counted at the study intersections by their turning

[1] http://www.cityofnewhaven.com/Engineering/pdfs/CS-Manual-FINAL.pdf
[2] http://bikepeddocumentation.org

movements in 15-minute intervals. Cyclists traveling in the wrong direction, making illegal turns, or riding on the sidewalk were included in the counts. The methodology used for the bicyclist counts was identical to that employed in past counts.

Downtown Results

The results of the 2015 counting program continue to indicate a large amount of bicycle activity within downtown New Haven. During the morning and midday periods, total bicycle traffic volumes at the four downtown study intersections surveyed last year increased significantly from the 2014 levels, with an average increase of 15.5% across both time periods. Only one of the four intersections, Elm Street at Orange Street, experienced a total decrease across the sum of the two time periods when compared to the 2014 data. Tables 4-1 and 4-2 summarize the downtown bicycle activity during the morning hour and midday hour, respectively.

Bicyclist volumes during the morning hour at the four downtown intersections have been included in the count program since 2011 as shown in Table 4-1. As stated earlier, two additional intersections were added in 2015. From 2014 to 2015, the bicycle activity counted at the four original intersections increased a total of 4%. The most notable change from the prior year during the morning study hour was a 36% increase in bicyclist traffic at the intersection of College Street and Chapel Street. This brings the bicycle counts at this intersection back to around where it was in 2011-2013 prior to experiencing a drastic decrease in 2014. This 2014 decrease may have been attributable in part to construction work and associated lane closures that occurred on College Street to the south at the time. During the morning hour, bicyclist activity remained similar at the Elm Street/Orange Street intersection yet decreased slightly at the Elm Street/York Street and Church Street/Chapel Street intersections in 2015 compared to 2014.

TABLE 4-1
Downtown Morning Bicycle Volumes 2011 to 2015

Intersections	2011	2012	2013	2014	2015	% Change 2014 to 2015
College at Chapel	81	90	92	59	80	36%
Church at Chapel	27	34	34	40	35	-13%
Elm at York	44	87	74	84	77	-8%
Elm at Orange	24	23	35	42	43	2%
Orange at Grove	-	-	-	-	72	-
Whitney at Audubon	-	-	-	-	29	-
Total:	**176**	**234**	**235**	**225**	**235* (336)**	**4% ***

* Total does not include counts from Orange Street/Grove Street and Whitney Avenue/Audubon Street.

Bicyclist volumes during the midday hour at the four downtown intersections have been included in the count program since 2009 with two additional intersections being added in 2015 as shown in Table 4-2. During the midday hour, bicyclist activity in the four original intersections increased from the prior year at the College Street/Chapel Street, Church Street/Chapel Street, and Elm Street/York Street intersections yet decreased at the Elm Street/Orange Street intersection. Figures 7 and 8 illustrate the

bicyclist turning movement volumes at the downtown study intersections during the weekday morning and midday hours, respectively.

TABLE 4-2
Downtown Midday Bicyclist Volumes 2009 to 2015

Intersections	2009	2010	2011	2012	2013	2014	2015	% Change 2014 to 2015
College at Chapel	57	56	66	73	58	42	70	67%
Church at Chapel	29	34	46	29	25	45	70	56%
Elm at York	74	84	92	76	97	76	96	26%
Elm at Orange	15	25	19	35	35	39	23	-41%
Orange at Grove	-	-	-	-	-	-	36	-
Whitney at Audubon	-	-	-	-	-	-	31	-
Total:	**175**	**199**	**223**	**213**	**215**	**202**	**259* (326)**	**28%***

* Total does not include counts from Orange Street/Grove Street and Whitney Avenue/Audubon Street.

Route 34 Corridor Area Results

Tables 4-3 and 4-4 summarize bicycle activity at the Route 34 area intersections during the morning hour and midday hour, respectively. Although the total volume of 2015 bicyclist traffic during the morning hour at these intersections was found to have decreased by 3% compared to the 2014 counts, the total during the midday hour increased 12%, resulting in an overall increase of 3%.

The 2015 morning hour bicyclist volumes were counted to be at the lowest levels of the past few years. At individual intersections compared to 2014, there was a mix of relatively small increases and decreases in bicyclist activity for a total decrease of 3% during the morning hour.

The midday hour bicyclist volumes at the Route 34 intersections increased by 12% from 2014 to 2015, the largest increase seen as of yet for the midday hour counts at these intersections. Cyclist counts for this area have been climbing steadily since these intersections were included in the study in 2011. Some individual intersections experienced increases compared to the prior year while others experienced decreases. The intersection of College Street and South Frontage Road experienced the greatest increase from 2014 to 2015, with almost double the number of bicyclists. As in years past, there was very little bicycle activity at the two Orange Street intersections, which are comparatively less bicycle friendly since they serve primarily as on and off ramps at the Route 34 expressway connector. Figures 9 and 10 detail the bicycle movements observed during the morning and midday periods in the Route 34 corridor.

TABLE 4-3
Route 34 Corridor Bicyclist Volumes
Morning Bicycle Volumes 2011 to 2014

Intersections	2011	2012	2013	2014	2015	% Change 2014 to 2015
York Street at MLK Jr. Boulevard	10	14	25	16	10	-38%
York Street at South Frontage Road	13	15	23	15	16	7%
College Street at MLK Jr. Boulevard	65	52	72	59	55	-7%
College Street at South Frontage	40	56	62	53	54	2%
Church Street at MLK Jr. Boulevard	11	8	10	14	18	29%
Church Street at South Frontage	11	10	20	12	17	42%
Orange Street at MLK Jr. Boulevard	-	9	1	4	1	*
South Orange Street at South Frontage Road	-	1	0	2	1	*
College Street at George Street	-	77	86	66	63	-5%
Total:	150	242	299	241	235	-3%

Note: 2011 total volume not comparable to following years due to subsequently added intersections.
* Values too low to analyze

TABLE 4-4
Route 34 Corridor Bicyclist Volumes
Midday Bicycle Volumes 2011 to 2014

Intersections	2011	2012	2013	2014	2015	% Change 2014 to 2015
York Street at MLK Jr. Boulevard	19	20	30	24	23	-4%
York Street at South Frontage Road	17	25	18	30	21	-30%
College Street at MLK Jr. Boulevard	29	25	28	22	30	36%
College Street at South Frontage Road	27	24	28	18	33	83%
Church Street at MLK Jr. Boulevard	13	7	10	16	17	6%
Church Street at South Frontage Road	13	15	13	17	19	12%
Orange Street at MLK Jr. Boulevard	-	0	1	0	2	*
South Orange Street at South Frontage Road	-	0	0	3	1	*
College Street at George Street	-	33	33	32	35	9%
Total:	118	149	161	162	181	12%

Note: 2011 total volume not comparable to following years due to subsequently added intersections.
* Values too low to analyze

Medical District and Union Station Area Results

Tables 4-5 and 4-6 summarize bicyclist traffic at study intersections in the Medical District and Union Station areas during the morning hour and midday hour, respectively.

Overall, comparing the 2015 volumes to the 2014 volumes, the Medical District intersections experienced an 11% increase during the morning hour and 83% increase during the midday hour. The most notable increases during the morning hour occurred at the intersections of South Frontage Road at Howard Avenue where usage doubled as well as College Street at Congress Street, the busiest intersection in terms of bicycle activity in this study area, which saw a 37% increase. York Street at Cedar Street experienced the only notable decrease in bicycle traffic during the midday hour in the Medical District in 2015 compared to 2014. Figures 11 and 12 detail the bicycle turning movements during the respective morning and midday periods in the Medical District.

The Union Station area had a notable total (23%) increase in bicyclist traffic during the morning hour and a notable total (35%) decrease during the midday hour in 2015 compared to 2014. The intersection of Columbus Avenue at Howard Avenue was the busiest in terms of bicycle traffic during both time periods and also had increases in 2015 compared to 2014. Figures 13 and 14 detail the bicycle turning movements during the respective morning and midday periods in the Union Station area.

It is in the Medical District area that bicycle ridership during the midday period has increased the most since 2014. This could be due in part to new bicycle infrastructure improvements that were recently implemented. A good example of this is the increase of ridership found on the southern section of College Street, which now sports bright green bicycle lanes and bicycle boxes.

TABLE 4-5
Medical District and Union Station Area Bicycle Volumes
Morning Bicycle Volumes 2011 to 2015

	Intersections	Morning Hour				
		2012	2013	2014	2015	% Change 2014 to 2015
Medical District	S. Frontage at Howard	6	9	7	14	100%
	Howard at Davenport	14	13	21	22	5%
	Congress at Howard	17	12	19	19	0%
	York at Cedar	8	12	27	20	-26%
	Congress at Cedar	57	42	34	36	6%
	Congress at College	50	16	35	48	37%
	Congress at Lafayette	13	7	0	0	*
	Total:	165	111	143	159	11%
Union Station Area	Columbus at Howard	12	13	14	22	57%
	Columbus at Church St. S.	5	7	4	8	100%
	Union at Meadow	13	12	14	13	-7%
	Union at Columbus	9	12	15	13	-13%
	Union at Church St. S.	9	7	6	9	50%
	Total:	48	51	53	65	23%

TABLE 4-6
Medical District and Union Station Area
Midday Bicycle Volumes 2011 to 2015

	Intersections	Midday Hour				
		2012	2013	2014	2015	% Change 2014 to 2015
Medical District	S. Frontage at Howard	5	12	8	5	-38%
	Howard at Davenport	11	25	8	15	88%
	Congress at Howard	13	17	13	20	54%
	York at Cedar	11	32	5	28	460%
	Congress at Cedar	22	40	19	36	89%
	Congress at College	29	11	18	26	44%
	Congress at Lafayette	5	9	0	0	*
	Total:	96	146	71	130	83%
Union Station Area	Columbus at Howard	19	21	12	15	25%
	Columbus at Church St. S.	15	5	9	3	-67%
	Union at Meadow	10	14	8	5	-38%
	Union at Columbus	11	11	8	5	-35%
	Union at Church St. S.	14	10	6	5	-17%
	Total:	69	61	43	33	-23%

2015 Bicycle Count Program Summary

Based on all of the counts, overall bicyclist traffic in central New Haven was found to have increased in 2015 compared to 2014. Bicyclist activity increased 5% during the morning hour and 26% during the afternoon hour. Investments in innovative bicycle infrastructure throughout New Haven can likely take credit for some of the increases in bicycle use. Bright green bicycle lanes were painted on several of the City's major roads downtown in summer 2015. Bicycles continue to be a significant mode of transportation within New Haven. Review of the data from the U.S. Census Bureau finds that around 4% of commuters in central New Haven, excluding the outer neighborhoods, commute to work via bicycle. Although this may not sound like a lot, by comparison, the State of Connecticut as a whole only has around a quarter of a percent bicycle commute mode share.[3]

Pedestrian Counts

Like the bicyclist counts, the pedestrian counts were conducted using identical methodology to that employed in past years. Based on the methodology utilized by the National Bicycle and Pedestrian Documentation Project, the number of pedestrians on both sides of the street walking away from the intersection on each approach was counted in 15-minute intervals. A copy of the count form can be found in Appendix B.

[3] U.S. Census Bureau - American FactFinder. '09-'13 American Community Survey 5-year Estimates. Table B08301

Downtown Results

Table 4-7 shows the 2015 morning hour pedestrian volumes that were counted at the four downtown study intersections in comparison to prior years. As with the bicycle counts, two new intersections in the downtown area were added this year. The first being the intersection of Orange and Grove Streets and the second being the intersection of Whitney Avenue and Audubon Street. Three of the four original intersections were observed with increased pedestrian activity in 2015 compared to 2014. While the number of pedestrians at the intersection of Elm Street and Orange Street decreased during the morning hour compared to 2013, the total number of pedestrians was still greater than in 2012. There was a total increase in pedestrian traffic of 4% that was observed during the morning study period between 2013 and 2014.

TABLE 4-7
Downtown Morning Pedestrian Volumes
2012 to 2015

Intersections	2012	2013	2014	2015	% Change 2014 to 2015
College at Chapel	290	378	419	288	**-31%**
Church at Chapel	577	625	642	773	**20%**
Elm at York	454	538	569	631	**11%**
Elm at Orange	215	306	287	303	**6%**
Orange at Grove	-	-	-	325	**-**
Whitney at Audubon	-	-	-	299	**-**
Total:	**1,536**	**1,847**	**1,917**	**1,995***	**4%***

* Excludes Orange Street at Grove Street and Whitney Avenue at Audubon Street counts

Table 4-8 summarizes the 2015 midday pedestrian volumes collected at the six downtown study intersections (four original intersections and two new intersections). The total pedestrian traffic at the four original downtown study intersections decreased approximately 10%. The most notable decrease occurred at the intersection of College Street and Chapel Street, similar to what was found during the morning hour. It is important to note, however, that College Street was being resurfaced while the counts were collected, resulting in the presence of construction vehicles, uneven streets, noise, and other factors that affect a pedestrian's choice to walk through an area. It is assumed that this decrease is an outlier due to the roadwork, and pedestrian volumes at the intersection will resteady when counted again in the future. Pedestrian traffic was notably low in 2011 and 2012 at some of these intersections, which may have been attributable to area construction and changes in downtown commercial tenancy around that time.

Compared to 2014, the midday period pedestrian activity for the original four downtown intersections in 2015 decreased by 10%. However, when the intersection of College Street and Chapel Street is not included, the overall change for these intersections compared to 2014 is an increase of 2%. Figures 15 and 16 illustrate the 2015 pedestrian traffic by direction that was observed during the morning and midday count periods in the downtown, respectively.

TABLE 4-8
Downtown Midday Pedestrian Volumes 2009 to 2015

Intersections	2009	2010	2011	2012	2013	2014	2015	% Change 2014 to 2015
College at Chapel	852	805	753	712	756	828	458	**-45%**
Church at Chapel	1,180	1,268	1,274	977	1,080	979	977	**0%**
Elm at York	1,314	1,556	922	1,036	1,177	1,230	1,338	**9%**
Elm at Orange	431	382	303	333	326	380	319	**-16%**
Orange at Grove	-	-	-	-	-	-	370	**-**
Whitney at Audubon	-	-	-	-	-	-	606	**-**
Total:	**3,777**	**4,011**	**3,252**	**3,058**	**3,339**	**3,417**	**3,092***	**-10%***

* Excludes Orange Street at Grove Street and Whitney Avenue at Audubon Street counts.

Route 34 Corridor Area Results

The data collection of pedestrian traffic volumes along the Route 34 corridor's eastern portion began in 2011 during the midday period. Morning period pedestrian data collection for this area began in 2012.

Table 4-9 summarizes the 2015 morning period pedestrian traffic volumes for this area compared to prior years. Pedestrian traffic volumes in the Route 34 corridor area were observed to have increased overall by 6% in 2015 compared to 2014 during the morning period. York Street at MLK Jr. Boulevard had the largest increase in number of pedestrians in 2015 compared to 2014. The intersections with the busiest pedestrian activity in this area were College Street at George Street and York Street at South Frontage Road.

TABLE 4-9
Route 34 Corridor Morning Pedestrian Volumes 2012 to 2015

Intersections	2012	2013	2014	2015	% Change 2014 to 2015
York at MLK Jr. Blvd.	424	401	388	446	**15%**
York at South Frontage	607	554	572	526	**-8%**
College at MLK Jr. Blvd.	234	287	230	264	**15%**
College at South Frontage	268	276	249	282	**13%**
Church at MLK Jr. Blvd.	127	122	115	149	**30%**
Church at South Frontage	95	156	113	141	**25%**
Orange at MLK Jr. Blvd	-	-	37	36	**-3%**
South Orange at South Frontage	-	-	7	18	**157%**
College at George	-	441	537	530	**-1%**
Total:	**1,755**	**2,237**	**2,248**	**2,392**	**6%**

Note: 2012 - 2013 total volumes are not comparable to following years due to subsequently added intersections.

Table 4-10 summarizes the midday period pedestrian volumes in the Route 34 corridor area. There was observed to be an overall 3% decrease during the midday count period in 2015 compared to 2014. Although five out of nine of the individual intersections during the midday count period were observed with more pedestrian activity in 2015 compared to 2014, notable decreases at the other four intersections bring the total change into the negative. It is noted that MLK Jr. Boulevard was given multimodal infrastructure upgrades in summer 2015. These upgrades could account in part for not only the increases at all MLK Jr. Boulevard intersections in the study but possibly the decreases at the intersections involving South Frontage Road as MLK Jr. Boulevard and South Frontage Road are parallel arteries, and a pedestrian heading east or west could choose either street. Figures 17 and 18 illustrate the 2015 pedestrian traffic volumes observed during the morning and midday count periods, respectively.

TABLE 4-10
Route 34 Corridor Midday Pedestrian Volumes 2011 to 2015

Intersections	2011	2012	2013	2014	2015	% Change 2014 to 2015
York at MLK Jr. Blvd.	481	527	585	486	531	9%
York at South Frontage	652	670	669	633	675	7%
College at MLK Jr. Blvd.	409	326	404	307	320	4%
College at South Frontage	413	345	366	386	317	-18%
Church at MLK Jr. Blvd.	127	106	143	143	149	4%
Church at South Frontage	135	102	151	144	108	-25%
Orange at MLK Jr. Blvd	-	-	-	41	52	27%
South Orange at South Frontage	-	-	-	12	8	-33%
College at George	-	-	378	517	440	-15%
Total:	2,217	2,076	2,696	2,669	2,600	-3%

Note: 2011 – 2013 total volumes are not comparable to following years due to subsequently added intersections.

Medical District and Union Station Area Results

Pedestrian traffic volumes have been counted at 12 intersections within the Medical District and Union Station area since 2012. Table 4-11 summarizes comparisons made between the 2014 and 2015 data for the morning period whereas Table 4-12 summarizes the same data for the midday period.

TABLE 4-11
Medical District and Union Station Area – Morning Pedestrian Volumes 2012 to 2015

District	Intersections	Morning Hour				
		2012	2013	2014	2015	% Change 2014 to 2015
Medical District	S. Frontage at Howard	273	263	168	301	79%
	Howard at Davenport	268	275	304	271	-11%
	Congress at Howard	252	251	266	260	-2%
	York at Cedar	523	507	662	606	-8%
	Congress at Cedar	604	649	732	566	-23%
	Congress at College	207	200	249	108	-57%
	Congress at Lafayette	136	111	146	87	-40%
	Total:	2,263	2,256	2,527	2,199	-13%
Union Station Area	Columbus at Howard	129	154	160	134	-16%
	Columbus at Church St. S.	134	113	69	190	175%
	Union at Meadow	118	94	135	143	6%
	Union at Columbus	145	124	180	195	8%
	Union at Church St. S.	49	52	39	47	21%
	Total:	575	537	583	709	22%

TABLE 4-12
Medical District and Union Station Area – Midday Pedestrian Volumes 2012 to 2015

District	Intersections	Midday Hour				
		2012	2013	2014	2015	% Change 2014 to 2015
Medical District	S. Frontage at Howard	202	149	167	137	-18%
	Howard at Davenport	328	331	396	342	-14%
	Congress at Howard	298	273	302	337	12%
	York at Cedar	958	839	975	910	-7%
	Congress at Cedar	822	849	906	859	-5%
	Congress at College	274	288	300	308	3%
	Congress at Lafayette	112	99	108	156	44%
	Total:	2,994	2,828	3,154	3,049	-3%
Union Station Area	Columbus at Howard	130	98	75	100	33%
	Columbus at Church St. S.	77	64	78	81	4%
	Union at Meadow	152	116	139	197	42%
	Union at Columbus	137	144	176	237	35%
	Union at Church St. S.	37	70	18	38	111%
	Total:	533	492	486	653	34%

The highest volumes of pedestrians observed within the Medical District were again counted at the intersections of York Street at Cedar Street and Congress Street at Cedar Street due to their proximity to Yale-New Haven Hospital and the Yale School of Medicine although both intersections had lower counts in 2015 than in 2014. Compared to 2014, the Medical District as a whole had a 13% decrease in pedestrian activity during the morning count period and a 3% decrease during the midday count period. Figures 19 and 20 detail pedestrian movements that were observed in the Medical District.

The Union Station area had an overall 22% increase in pedestrian activity during the morning period in 2015 compared to 2014 and a 34% increase during the midday period. The intersection of Union Avenue at Columbus Avenue near Union Station was the busiest location in terms of pedestrian traffic during both study periods. Figures 21 and 22 show the pedestrian traffic that was observed during the morning and midday count periods in the Union Station area.

2015 Pedestrian Count Program Summary

Pedestrians continue to be significant users of the roadway network in the center of New Haven. In comparing the 2014 data to the newly collected 2015 data (excluding the intersections of Orange Street at Grove Street and Whitney Avenue at Audubon Street, which were just added in the 2015 study), the entire four-district study area as a whole had essentially no change (<1%) in pedestrian traffic during the morning count period and a slight decrease of 3% during the midday count period. It is important to note that the data from the major intersection of College Street and Chapel Street in the downtown area suffered a significant decrease of pedestrian usage during this study, -31% during the morning period and -45% during the afternoon period, most likely due to construction and road resurfacing in the area. When this intersection is excluded from the counts, pedestrian traffic in the morning period increases by 1%, and in the afternoon period there is no change (0%).

Review of data from the U.S. Census Bureau finds that over 19% of residents in central New Haven, excluding the outer neighborhoods, commute to work by walking. By comparison, the State of Connecticut as a whole only has a 3% walking mode share.[4] Recent and ongoing new developments are causing some change in pedestrian travel patterns. Some areas of roadwork, such as the resurfacing of College Street in proximity of the intersection of Chapel Street, were also present during the times of the counts that may have affected pedestrian patterns. With new development continuing into the foreseeable future, pedestrian activity is expected to continue to increase overall. As in past years, the intersection of York Street and Elm Street had the highest 1-hour pedestrian traffic count in 2015, with a volume of 1,338 pedestrians during the midday hour, an increase of 9% when compared to 2014.

[4] U.S. Census Bureau - American FactFinder. '09-'13 American Community Survey 5-year Estimates. Table B08301

5.0 2015 PARKING, PEDESTRIAN, AND BICYCLE COUNTS SUMMARY AND RECOMMENDATIONS

The annual Point-in-Time survey provides a useful yearly look at differences in parking, pedestrian, and bicycle activity in the center of New Haven, especially at the entire study area level and at the district level. As mentioned earlier, it is important to put the results of this study in context and recognize its limitations. The Point-in-Time surveys represent a "snapshot" of parking, cycling, and pedestrian activity downtown. Day-to-day, month-to-month variations in activity at individual locations can be quite notable. Construction and roadwork activity can also cause travel patterns to shift from one intersection or location to another. Nevertheless, the Point-In-Time survey is still a useful tool to measure such activities. The following are the key findings of this 2015 Point-in-Time study:

- The observed overall 2015 parking utilization rate in downtown New Haven was 82% (83% when including Union Station), slightly higher than what it was during the last few years yet still within the optimal range of efficient utilization between 80% and 90%.

- The Broadway/Yale area had the lowest district parking utilization at 71% while the South/West of Chapel area had the highest district parking utilization at 91%.

- In 2015, overall bicycle ridership at previously surveyed locations was found to have increased, and pedestrian activity at previously surveyed locations stayed relatively similar overall compared to 2014. Both modes of nonmotorized travel are significant components of the transportation picture in New Haven.

- Bicycle ridership was seen to have increased in conjunction with innovative bicycle infrastructure improvements that were implemented in 2015. The best example of this is the increase of ridership found on the southern section of College Street, which now sports bright green bicycle lanes and bicycle boxes. Ridership during the midday period increased approximately 38% across the four study intersections in the area (College Street at George Street, College Street at MLK Jr. Boulevard, College Street at South Frontage Road, and College Street at Congress Avenue).

- Pedestrian activity continues to be very heavy in the center of New Haven, especially at intersections in the downtown, in the Yale University area, and the Medical District area.

Parking use, pedestrian activity, and bicycle travel in New Haven appears to be changing as new development is occurring and the City is evolving. Overall, positive changes are occurring with regard to nonmotorized transportation as a whole in New Haven.

Going forward, it is recommended that New Haven continue to monitor parking supply and utilization as well as the progression and scheduling of major downtown development projects. In general, the low overall parking utilization rate downtown compared to past decades may indicate an ongoing shift in travel demand away from the single-occupancy vehicle, user pricing levels at parking facilities that some motorists are unwilling to pay, unoccupied office space in the downtown, or likely a combination of the three. Even with filled occupancy of vacant office space taken into account in the future, projections of

overall parking utilization are around 85-87% through 2018, well within the optimal range of efficient parking utilization (between 80-90%).

This sustained overall utilization of around or just over 80% could also be seen as an opportunity to turn over underutilized lots into better uses, particularly at a time when more focus on new developments in New Haven is occurring. Moreover, there is an ongoing realization that overabundances of parking have led to rising automobile use in cities since the early 20th century as increased supplies of free or underpriced parking have created a feedback loop of induced demand for more parking. Part of the answer to combating high levels of automobile use and creating a more sustainable New Haven could be to pare down the physical amount of parking over a span of time.

Underutilized surface parking lots should be monitored and looked at for better, higher uses of the land (e.g., possible development of new buildings that could generate more tax revenues and create a denser and livelier city). More frequent surveying of data, such as spot counts at select locations, may highlight normal sampling variations. For selected parking facilities and on-street parking, the City could conduct a series of hourly "spot counts" throughout a day and evening to determine time-of-day variations and the peak hours of parking utilization in the downtown. As state-of-the-art technology improves, the City should further look into parking space occupancy sensors and other such technology to improve operations and parking management. Sensors can provide real-time information on parking occupancy, and coupled with "smart parking meters," could allow for improved enforcement of parking violations. These also have the potential to be used to manage parking demands through dynamic pricing.

New Haven should consider implementing a Transportation Demand Management (TDM) program for municipal employees as is offered by Yale-New Haven Hospital. This would set a frame work and standard for private employers in downtown. The Transportation Options website that is run by Yale is noted to be a good source of information on numerous alternate means of travel in New Haven. The City should also work with private employers toward their implementation of TDM programs and develop strategies that would influence large businesses to offer TDM programs.

With regard to bicyclists and pedestrians, New Haven should ensure that nonmotorized users are properly accommodated, with particular attention to the safety and convenience of crosswalks, pedestrian signals, and proper allocation of roadway space such as for protected bike lanes. The New Haven Complete Streets policy is a notable guide that supports designing and retrofitting the transportation system to accommodate all roadway users. The Street Smarts program aimed at developing a culture of mutual respect among roadway users should continue. New Haven should also seek to become a NACTO (National Association of City Transportation Officials) member city as the City's Complete Streets policy and efforts are aligned with NACTO's mission of creating safe, sustainable, and multimodal urban transportation.

Before the 2015 counts were taken, the City invested in innovative bicycle infrastructure improvements including bright green bicycle lanes and bicycle boxes in several places throughout the City. This study shows some increase of bicycle activity in proximity to these infrastructure improvements. More data should be collected surrounding the use of such facilities in order to plan for and implement other similar facilities in the most successful way. As the City develops steadily in the coming years, it should continue to explore potential modifications to the transportation system through new and improved bicycle, pedestrian, and transit facilities in order to further promote nonmotorized, sustainable travel.

The City should consider putting into place policy goals aimed at increasing nonmotorized travel. New Haven should continue to seek new locations for bicycle lanes, protected bicycle lanes, cycle-tracks, and other such facilities that support nonmotorized travel and help to make it a more attractive option. Cities that experience increases in pedestrian and bicyclist activity report safety in numbers and economic and health benefits. New Haven should also consider implementing a bike share program. The City should continually look for additional ways to increase pedestrian, cyclist, and transit travel as these collectively help reduce downtown parking demands and vehicle traffic congestion and support a future that is more sustainable, livable, and economically successful.

1621-62-1-jl1316-rpt

FIGURES

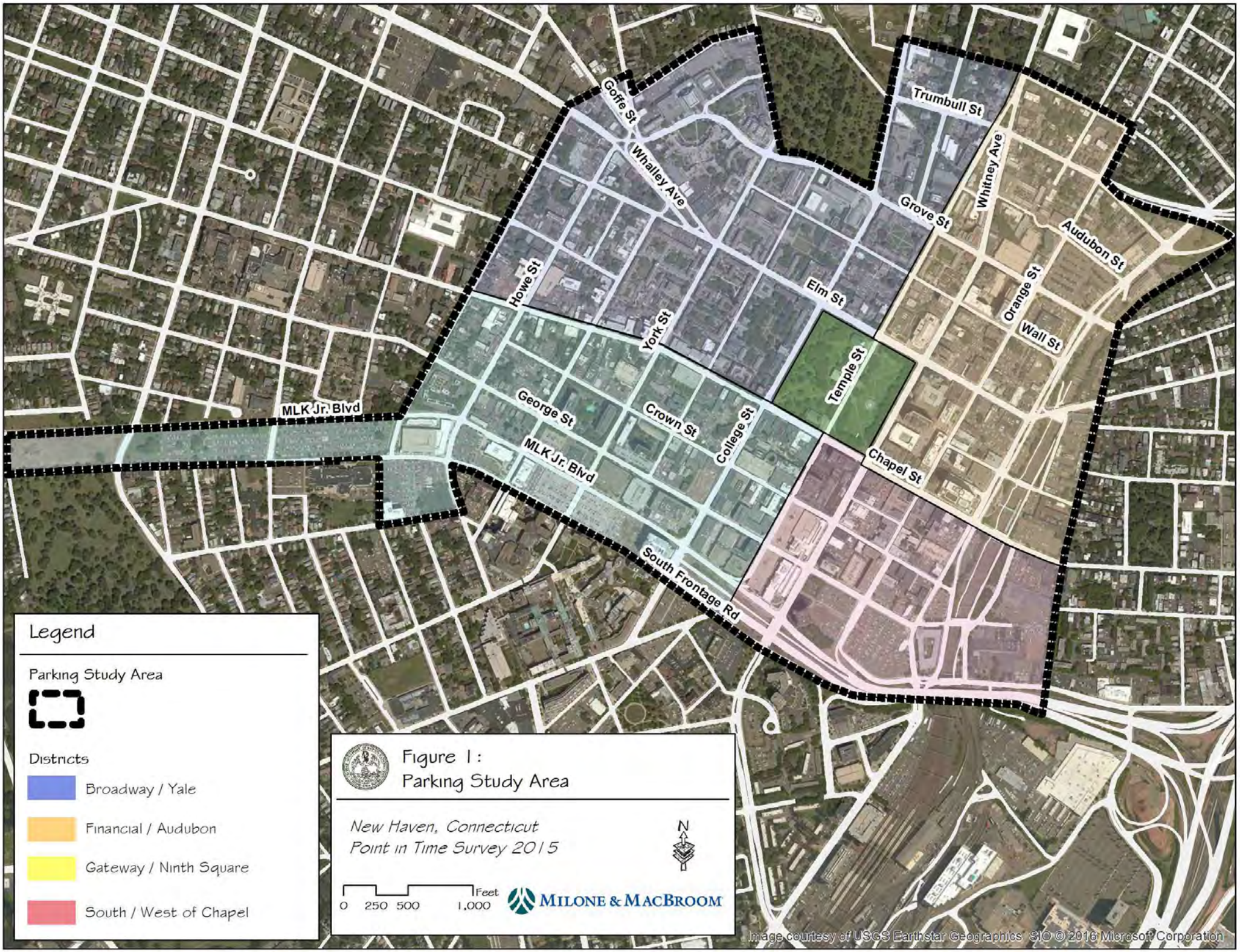

Goffe St
Whalley Ave
Trumbull St
Whitney Ave
Grove St
Audubon St
Howe St
Elm St
Orange St
York St
Wall St
Temple St
George St
Crown St
College St
MLK Jr. Blvd
MLK Jr. Blvd
Chapel St
South Frontage Rd
Legend
Parking Study Area
Districts
Broadway / Yale
Financial / Audubon
Gateway / Ninth Square
South / West of Chapel
Figure 1:
Parking Study Area
New Haven, Connecticut
Point in Time Survey 2015
N
0 250 500 1,000 Feet
MILONE & MACBROOM
Image courtesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation

Figure 2:
Publicly Accessible Downtown Area Parking Facilities Surface Lots & Garages

New Haven, Connecticut
Point in Time Survey 2015

Districts

- Broadway / Yale
- Financial / Audubon
- Gateway / Ninth Square
- South / West of Chapel

Parking Facilities

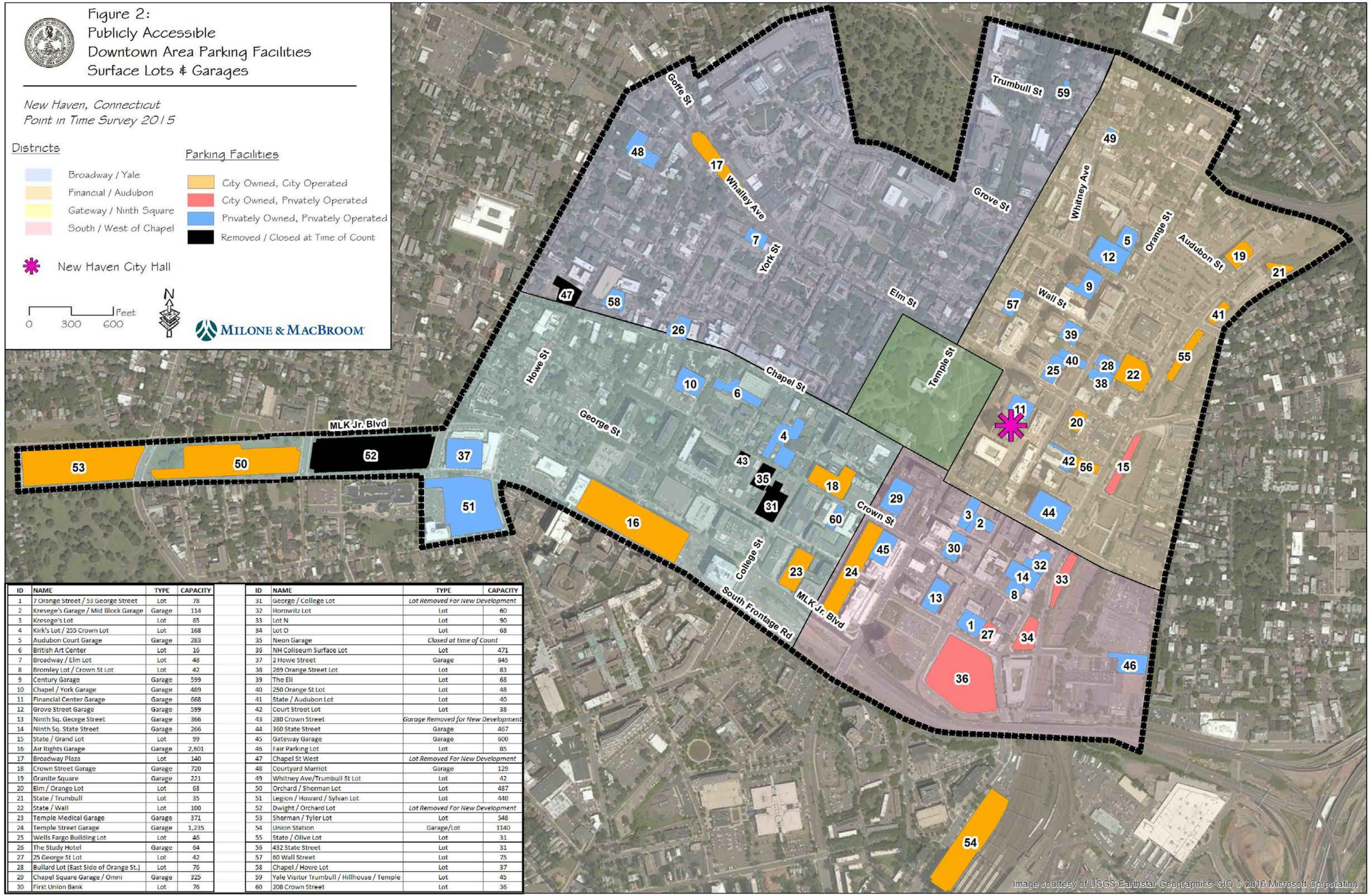
- City Owned, City Operated
- City Owned, Privately Operated
- Privately Owned, Privately Operated
- Removed / Closed at Time of Count

New Haven City Hall

0 300 600 Feet

N

MILONE & MACBROOM



ID	NAME	TYPE	CAPACITY
1	7 Orange Street / 53 George Street	Lot	78
2	Kresege's Garage / Mid Block Garage	Garage	114
3	Kresege's Lot	Lot	65
4	Kirk's Lot / 255 Crown Lot	Lot	168
5	Audubon Court Garage	Garage	283
6	British Art Center	Lot	16
7	Broadway / Elm Lot	Lot	48
8	Bromley Lot / Crown St Lot	Lot	42
9	Century Garage	Garage	599
10	Chapel / York Garage	Garage	489
11	Financial Center Garage	Garage	668
12	Grove Street Garage	Garage	599
13	Ninth Sq. George Street	Garage	366
14	Ninth Sq. State Street	Garage	266
15	State / Grand Lot	Lot	99
16	Air Rights Garage	Garage	2,601
17	Broadway Plaza	Lot	140
18	Crown Street Garage	Garage	720
19	Granite Square	Garage	221
20	Elm / Orange Lot	Lot	68
21	State / Trumbull	Lot	35
22	State / Wall	Lot	100
23	Temple Medical Garage	Garage	371
24	Temple Street Garage	Garage	1,235
25	Wells Fargo Building Lot	Lot	46
26	The Study Hotel	Garage	64
27	25 George St Lot	Lot	42
28	Bullard Lot (East Side of Orange St.)	Lot	76
29	Chapel Square Garage / Omni	Garage	325
30	First Union Bank	Lot	76

ID	NAME	TYPE	CAPACITY
31	George / College Lot	*Lot Removed For New Development*	
32	Horowitz Lot	Lot	60
33	Lot N	Lot	90
34	Lot O	Lot	68
35	Neon Garage	*Closed at time of Count*	
36	NH Coliseum Surface Lot	Lot	471
37	2 Howe Street	Garage	845
38	269 Orange Street Lot	Lot	83
39	The Eli	Lot	68
40	250 Orange St Lot	Lot	48
41	State / Audubon Lot	Lot	40
42	Court Street Lot	Lot	38
43	280 Crown Street	*Garage Removed for New Development*	
44	360 State Street	Garage	467
45	Gateway Garage	Garage	600
46	Fair Parking Lot	Lot	85
47	Chapel St West	*Lot Removed For New Development*	
48	Courtyard Marriot	Garage	129
49	Whitney Ave/Trumbull St Lot	Lot	42
50	Orchard / Sherman Lot	Lot	487
51	Legion / Howard / Sylvan Lot	Lot	440
52	Dwight / Orchard Lot	*Lot Removed For New Development*	
53	Sherman / Tyler Lot	Lot	548
54	Union Station	Garage/Lot	1140
55	State / Olive Lot	Lot	31
56	432 State Street	Lot	31
57	60 Wall Street	Lot	75
58	Chapel / Howe Lot	Lot	37
59	Yale Visitor Trumbull / Hillhouse / Temple	Lot	45
60	208 Crown Street	Lot	36


Figure 3:
Metered On-Street Parking
New Haven, Connecticut
Point in Time Survey 2015
N
0 250 500 1,000 Feet
MILONE & MACBROOM
Goffe St
Whalley Ave
Howe St
York St
George St
MLK Jr. Blvd
Crown St
College St
Elm St
Grove St
Trumbull St
Whitney Ave
Audubon St
Orange St
Wall St
Temple St
Chapel St
South Frontage Rd
Legend
StudyArea
Districts
Broadway / Yale
Financial / Audubon
Gateway / Ninth Square
South / West of Chapel
On-Street Meters
15-Min/$2
30-Min/$2
1-Hour/$1.50
2-Hour/$1.50
5-Hour/$1.50
NTL/$0.75
NTL/$1.00
NTL/$1.50
Image courtesy of USGS/Earthstar Geographics SIO © 2016 Microsoft Corporation

Figure 4:
Parking Utilization
Downtown Area Parking Facilities
Surface Lots & Garages

New Haven, Connecticut
Point in Time Survey 2015

Districts

- Broadway / Yale
- Financial / Audubon
- Gateway / Ninth Square
- South / West of Chapel

Parking Utilization

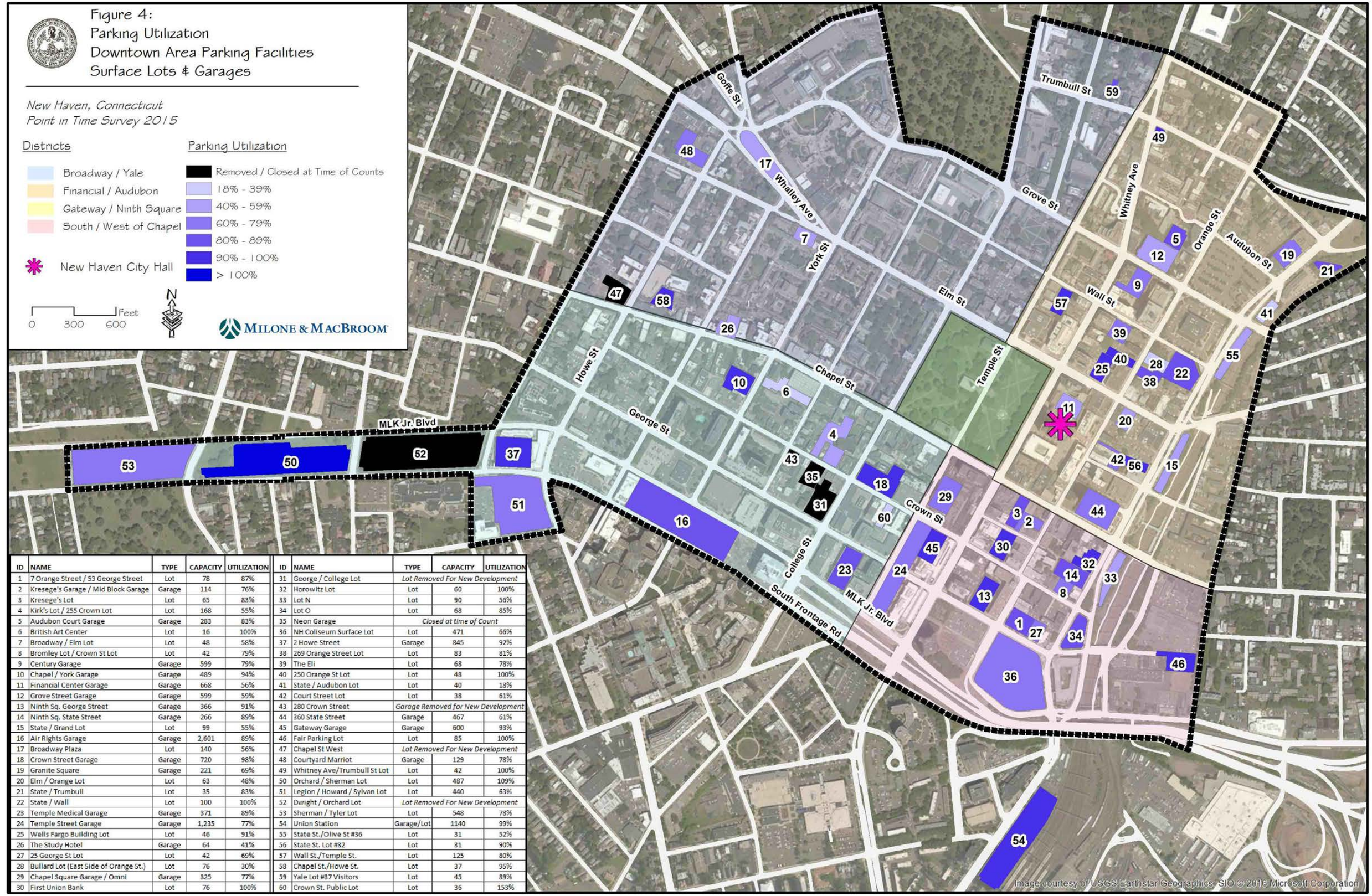
- Removed / Closed at Time of Counts
- 18% - 39%
- 40% - 59%
- 60% - 79%
- 80% - 89%
- 90% - 100%
- > 100%

New Haven City Hall

0 300 600 Feet

N

MILONE & MACBROOM



ID	NAME	TYPE	CAPACITY	UTILIZATION
1	7 Orange Street / 53 George Street	Lot	78	87%
2	Kresege's Garage / Mid Block Garage	Garage	114	76%
3	Kresege's Lot	Lot	65	83%
4	Kirk's Lot / 255 Crown Lot	Lot	168	55%
5	Audubon Court Garage	Garage	283	83%
6	British Art Center	Lot	16	100%
7	Broadway / Elm Lot	Lot	48	58%
8	Bromley Lot / Crown St Lot	Lot	42	79%
9	Century Garage	Garage	599	79%
10	Chapel / York Garage	Garage	489	94%
11	Financial Center Garage	Garage	668	56%
12	Grove Street Garage	Garage	599	59%
13	Ninth Sq. George Street	Garage	366	91%
14	Ninth Sq. State Street	Garage	266	89%
15	State / Grand Lot	Lot	99	55%
16	Air Rights Garage	Garage	2,601	89%
17	Broadway Plaza	Lot	140	56%
18	Crown Street Garage	Garage	720	98%
19	Granite Square	Garage	221	69%
20	Elm / Orange Lot	Lot	63	48%
21	State / Trumbull	Lot	35	83%
22	State / Wall	Lot	100	100%
23	Temple Medical Garage	Garage	371	89%
24	Temple Street Garage	Garage	1,235	77%
25	Wells Fargo Building Lot	Lot	46	91%
26	The Study Hotel	Garage	64	41%
27	25 George St Lot	Lot	42	69%
28	Bullard Lot (East Side of Orange St.)	Lot	76	30%
29	Chapel Square Garage / Omni	Garage	325	77%
30	First Union Bank	Lot	76	100%

ID	NAME	TYPE	CAPACITY	UTILIZATION
31	George / College Lot	*Lot Removed For New Development*		
32	Horowitz Lot	Lot	60	100%
33	Lot N	Lot	90	56%
34	Lot O	Lot	68	85%
35	Neon Garage	*Closed at time of Count*		
36	NH Coliseum Surface Lot	Lot	471	66%
37	2 Howe Street	Garage	845	92%
38	269 Orange Street Lot	Lot	83	81%
39	The Eli	Lot	68	78%
40	250 Orange St Lot	Lot	48	100%
41	State / Audubon Lot	Lot	40	18%
42	Court Street Lot	Lot	38	61%
43	280 Crown Street	*Garage Removed for New Development*		
44	360 State Street	Garage	467	61%
45	Gateway Garage	Garage	600	93%
46	Fair Parking Lot	Lot	85	100%
47	Chapel St West	*Lot Removed For New Development*		
48	Courtyard Marriot	Garage	129	78%
49	Whitney Ave/Trumbull St Lot	Lot	42	100%
50	Orchard / Sherman Lot	Lot	487	109%
51	Legion / Howard / Sylvan Lot	Lot	440	63%
52	Dwight / Orchard Lot	*Lot Removed For New Development*		
53	Sherman / Tyler Lot	Lot	548	78%
54	Union Station	Garage/Lot	1140	99%
55	State St./Olive St #36	Lot	31	52%
56	State St. Lot #32	Lot	31	90%
57	Wall St./Temple St.	Lot	125	80%
58	Chapel St./Howe St.	Lot	37	95%
59	Yale Lot #37 Visitors	Lot	45	89%
60	Crown St. Public Lot	Lot	36	153%

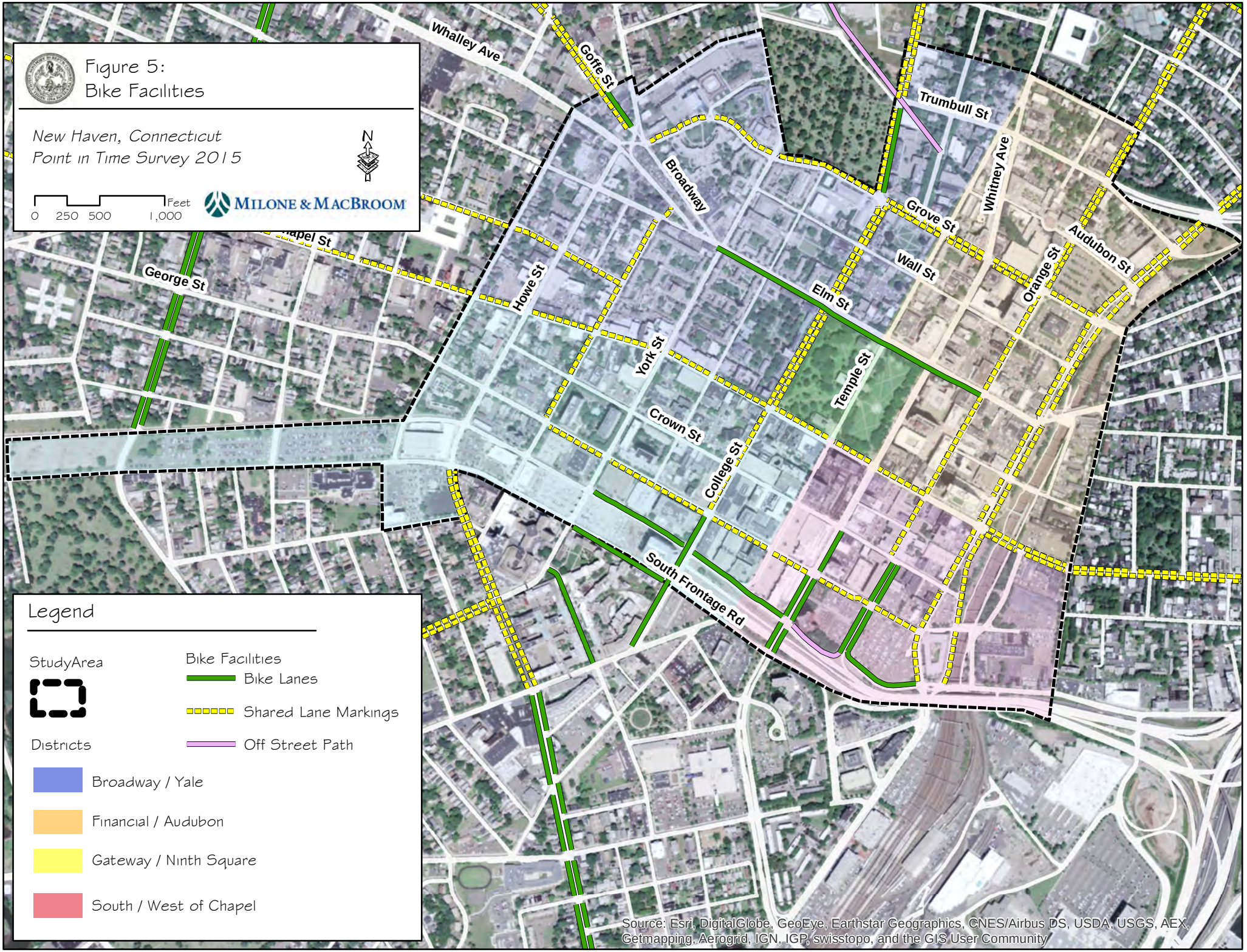
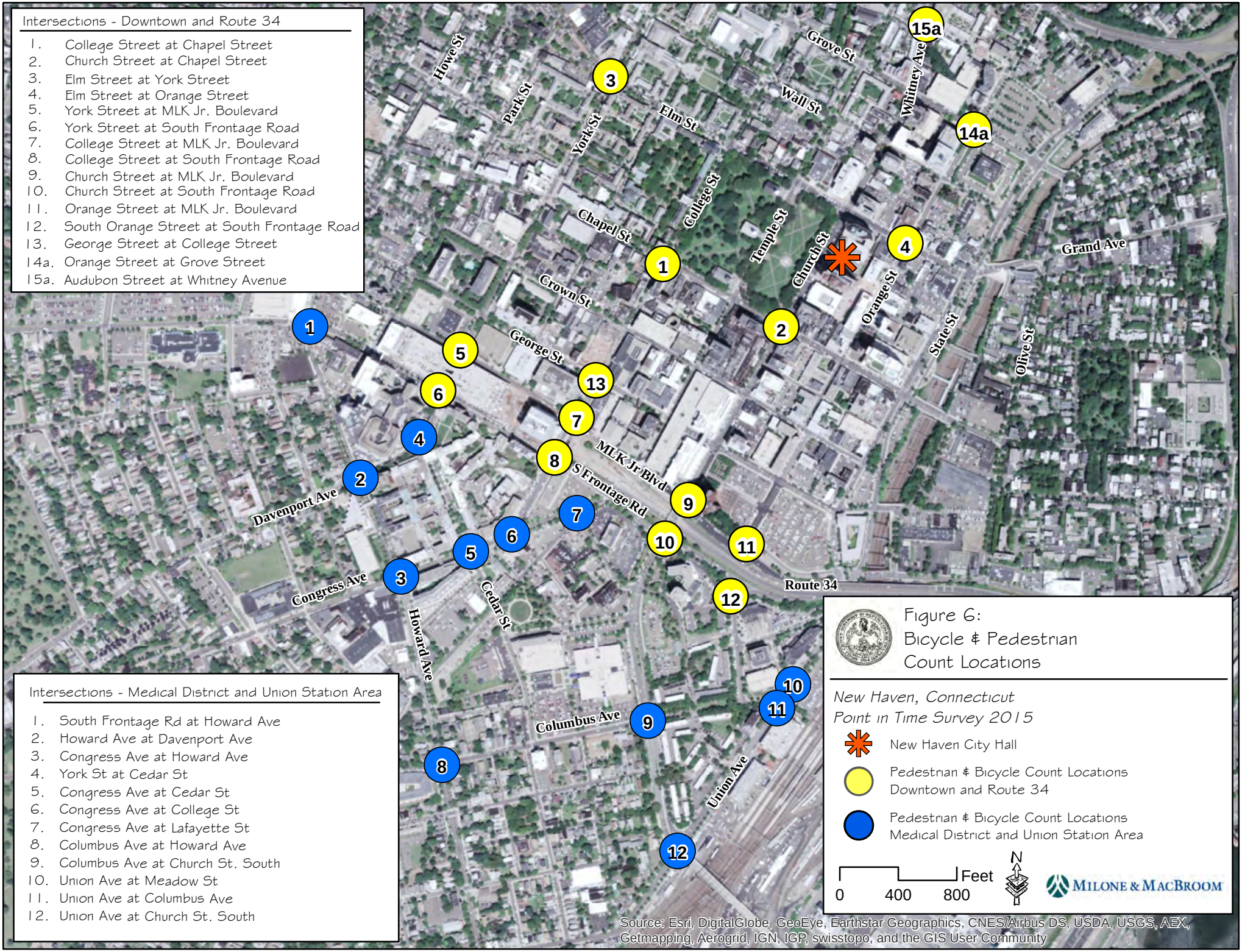
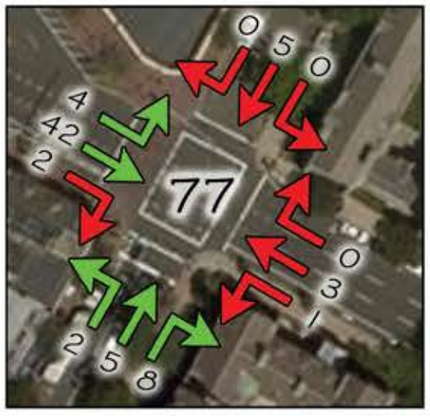


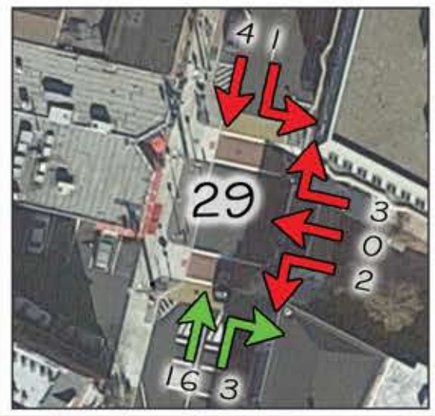
Figure 5:
Bike Facilities
New Haven, Connecticut
Point in Time Survey 2015
N
0 250 500 1,000 Feet
MILONE & MACBROOM
Whalley Ave
Goffe St
Trumbull St
Broadway
Whitney Ave
Grove St
Audubon St
Wall St
Orange St
Elm St
George St
Howe St
York St
Temple St
Crown St
College St
South Frontage Rd
Legend
StudyArea
Districts
Broadway / Yale
Financial / Audubon
Gateway / Ninth Square
South / West of Chapel
Bike Facilities
Bike Lanes
Shared Lane Markings
Off Street Path
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community


Intersections - Downtown and Route 34
1. College Street at Chapel Street
2. Church Street at Chapel Street
3. Elm Street at York Street
4. Elm Street at Orange Street
5. York Street at MLK Jr. Boulevard
6. York Street at South Frontage Road
7. College Street at MLK Jr. Boulevard
8. College Street at South Frontage Road
9. Church Street at MLK Jr. Boulevard
10. Church Street at South Frontage Road
11. Orange Street at MLK Jr. Boulevard
12. South Orange Street at South Frontage Road
13. George Street at College Street
14a. Orange Street at Grove Street
15a. Audubon Street at Whitney Avenue
Intersections - Medical District and Union Station Area
1. South Frontage Rd at Howard Ave
2. Howard Ave at Davenport Ave
3. Congress Ave at Howard Ave
4. York St at Cedar St
5. Congress Ave at Cedar St
6. Congress Ave at College St
7. Congress Ave at Lafayette St
8. Columbus Ave at Howard Ave
9. Columbus Ave at Church St. South
10. Union Ave at Meadow St
11. Union Ave at Columbus Ave
12. Union Ave at Church St. South
Howe St
Park St
York St
Elm St
Grove St
Wall St
Whitney Ave
College St
Chapel St
Temple St
Church St
Crown St
George St
Orange St
State St
Olive St
Grand Ave
MLK Jr Blvd
S Frontage Rd
Davenport Ave
Congress Ave
Howard Ave
Cedar St
Columbus Ave
Union Ave
Route 34
Figure 6:
Bicycle & Pedestrian
Count Locations
New Haven, Connecticut
Point in Time Survey 2015
New Haven City Hall
Pedestrian & Bicycle Count Locations
Downtown and Route 34
Pedestrian & Bicycle Count Locations
Medical District and Union Station Area
0
400
800
Feet
N
MILONE & MACBROOM
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

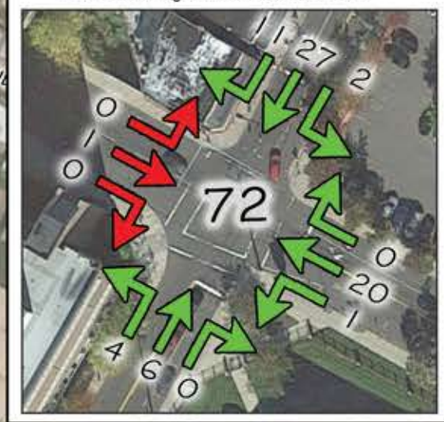
3: Elm St at York St



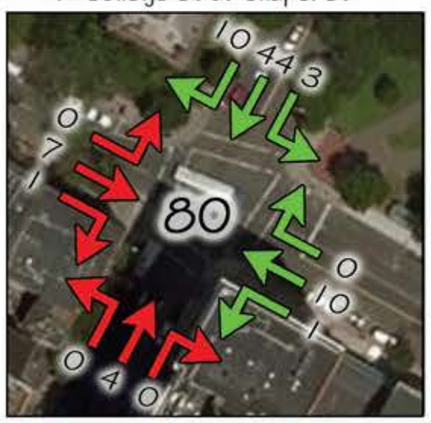
15a: Audobon St at Whitney Ave



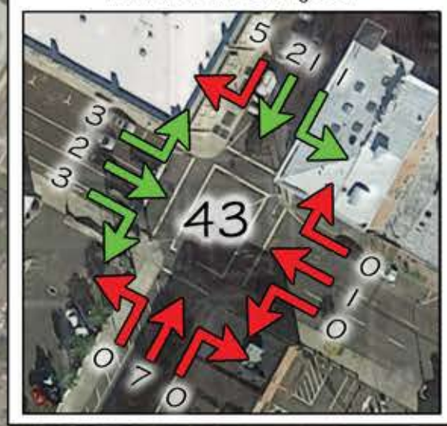
14a: Orange St at Grove St



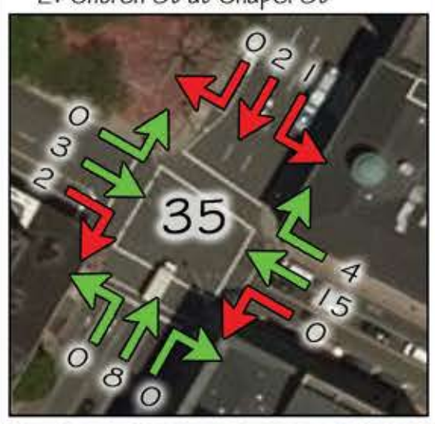
1: College St at Chapel St



4: Elm St at Orange St



2: Church St at Chapel St



3

15a

14a

4

1

2

York St

Elm St

Chapel St

College St

Church St

Orange St

Grove St

Figure 7:
Morning Bicyclist Volumes
Downtown 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Legal Turn

Illegal Turn

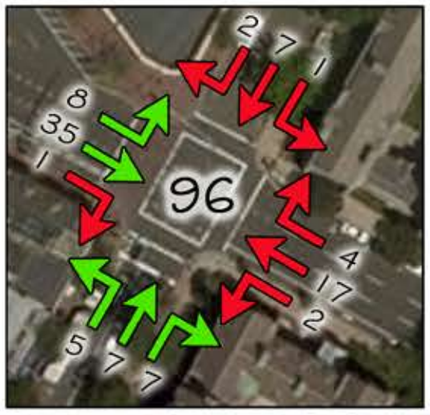
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

0 150 300 Feet

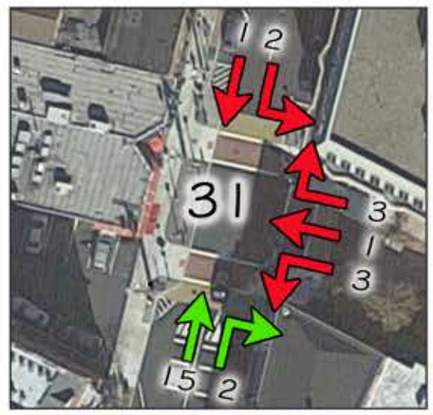
N

Milone & MacBroom

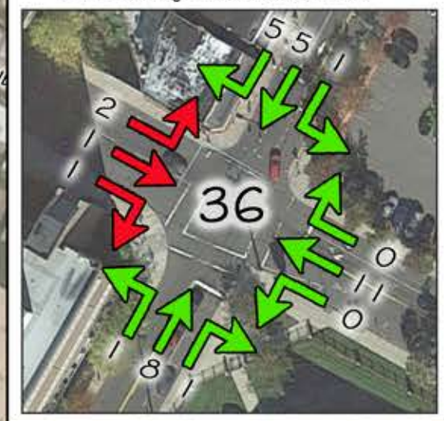
3: Elm St at York St



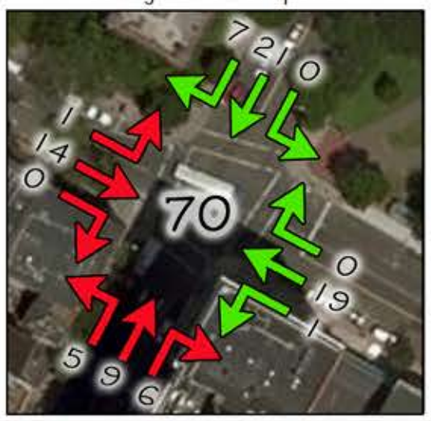
15a: Audobon St at Whitney Ave



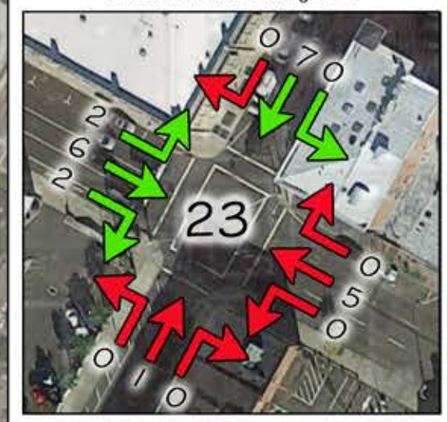
14a: Orange St at Grove St



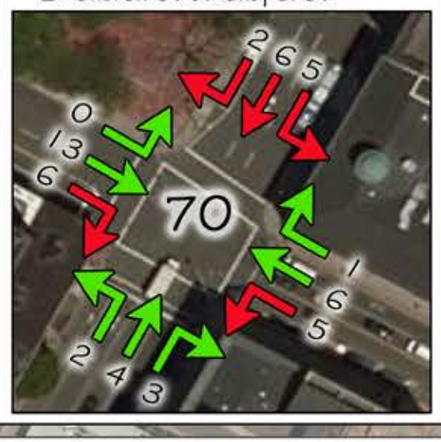
1: College St at Chapel St



4: Elm St at Orange St



2: Church St at Chapel St



York St

Elm St

Grove St

Orange St

Church St

Chapel St

College St

3

15a

14a

1

2

4

Figure 8:
Afternoon Bicyclist Volumes
Downtown 11:30am - 12:30 pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Legal Turn

Illegal Turn

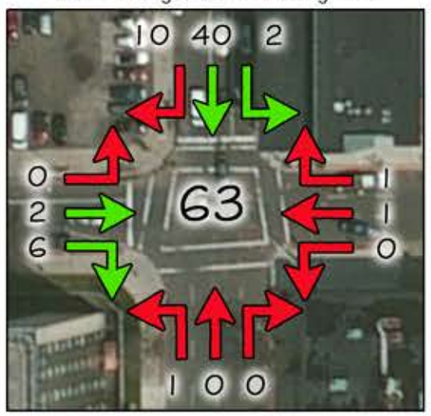
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

0 150 300 Feet

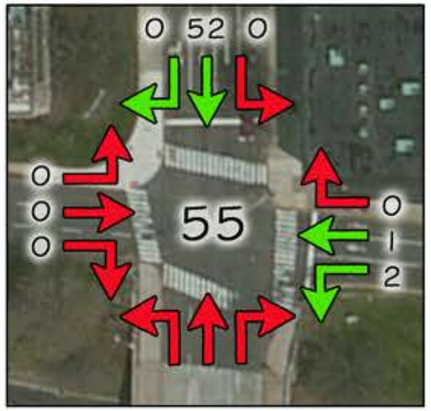
N

Milone & MacBroom

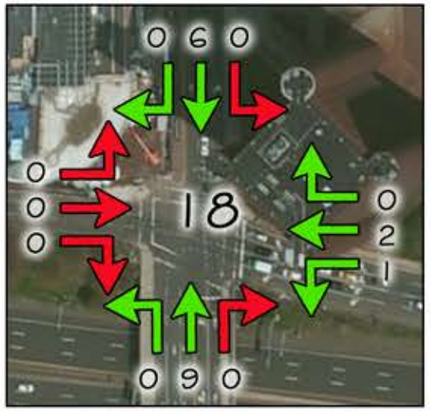
13: College St at George St



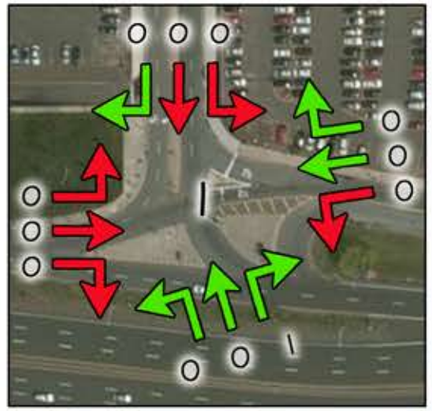
7: College St at MLK Jr. Blvd



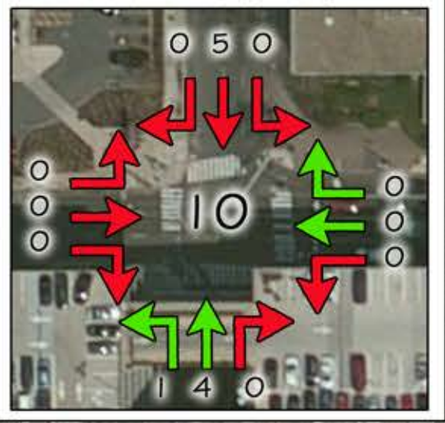
9: Church St at MLK Jr. Blvd



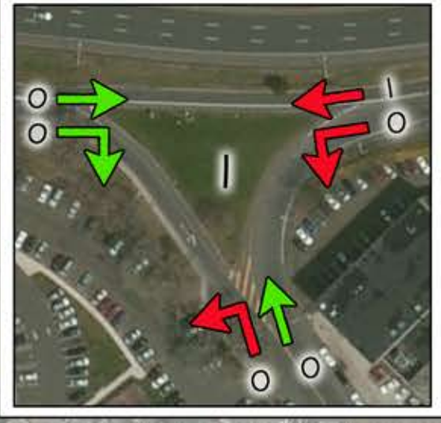
11: S Orange St at MLK Jr. Blvd



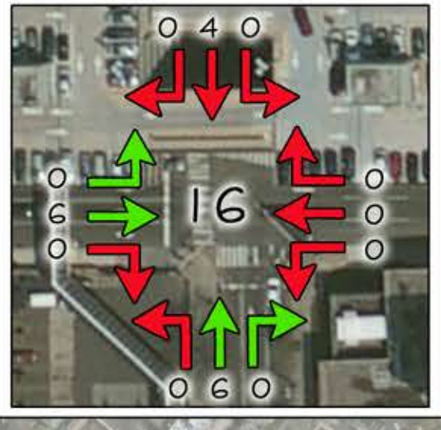
5: York St at MLK Jr. Blvd



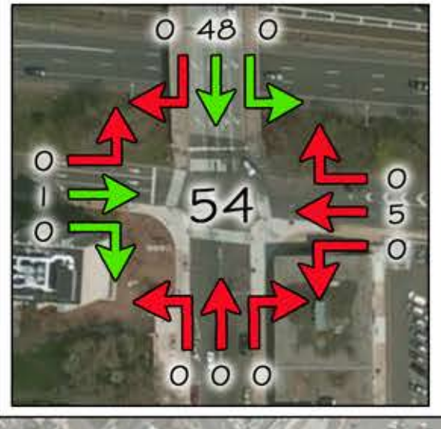
12: S Orange St at South Frontage Rd



6: York St at South Frontage Rd



8: College St at South Frontage Rd



10: Church St at South Frontage Rd

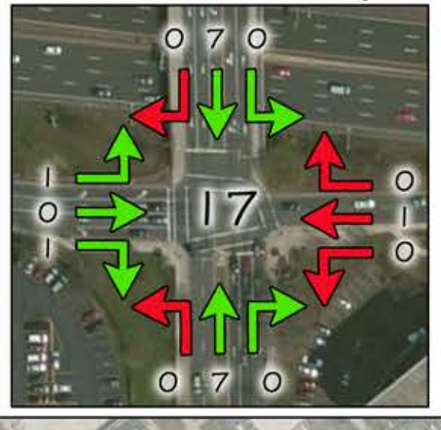


Figure 9:
Morning Bicyclist Volumes
Route 34 Corridor 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

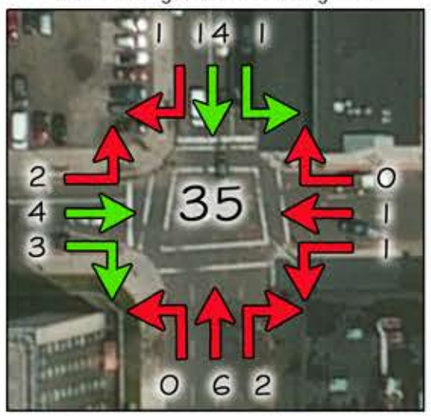
Intersections
Legal Turn
Illegal Turn

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

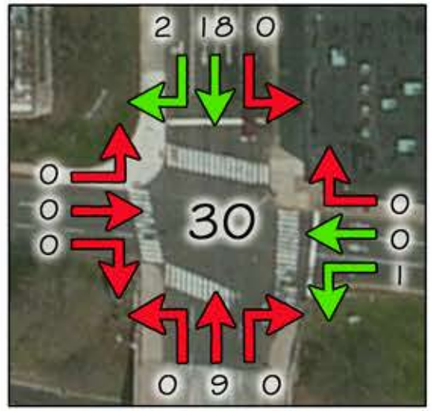
Feet
0 150 300

Milone & MacBroom

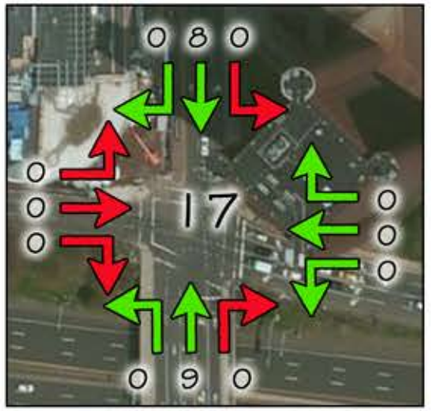
13: College St at George St



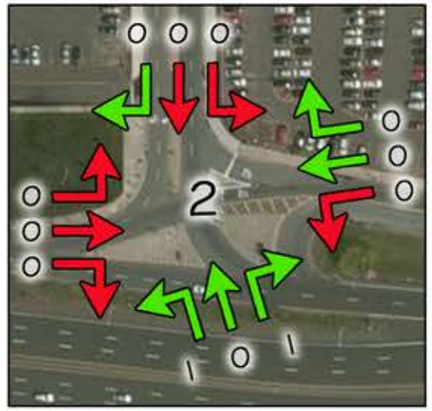
7: College St at MLK Jr. Blvd



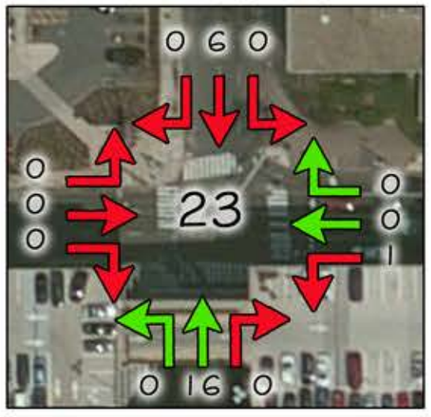
9: Church St at MLK Jr. Blvd



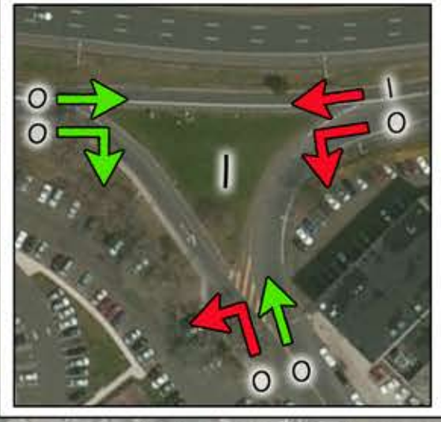
11: S Orange St at MLK Jr. Blvd



5: York St at MLK Jr. Blvd



12: S Orange St at South Frontage Rd



6: York St at South Frontage Rd

8: College St at South Frontage Rd

10: Church St at South Frontage Rd

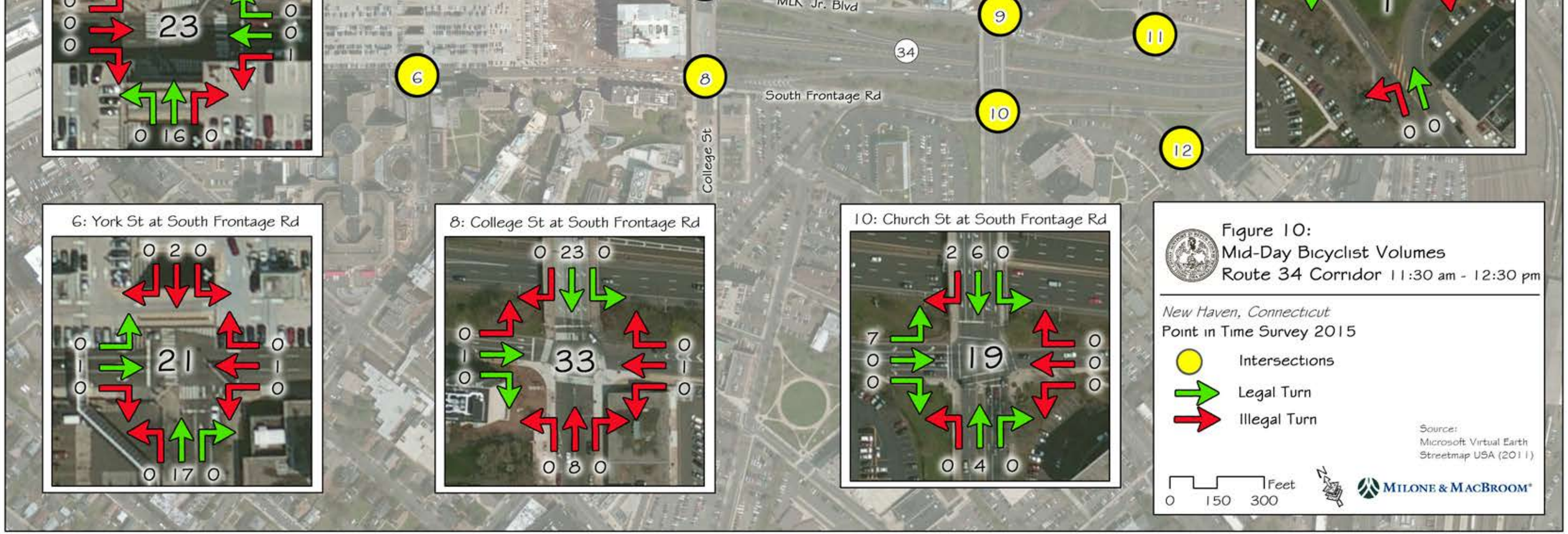


Figure 10:
Mid-Day Bicyclist Volumes
Route 34 Corridor 11:30 am - 12:30 pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections
Legal Turn
Illegal Turn

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

Feet
0 150 300

MILONE & MACBROOM®

1: South Frontage Rd at Howard Ave

5: Congress Ave at Cedar St

6: College St at Congress Ave

7: Congress Ave at Lafayette St

2: Howard Ave at Davenport Ave

3: Howard Ave at Congress Ave

4: York St at Cedar St

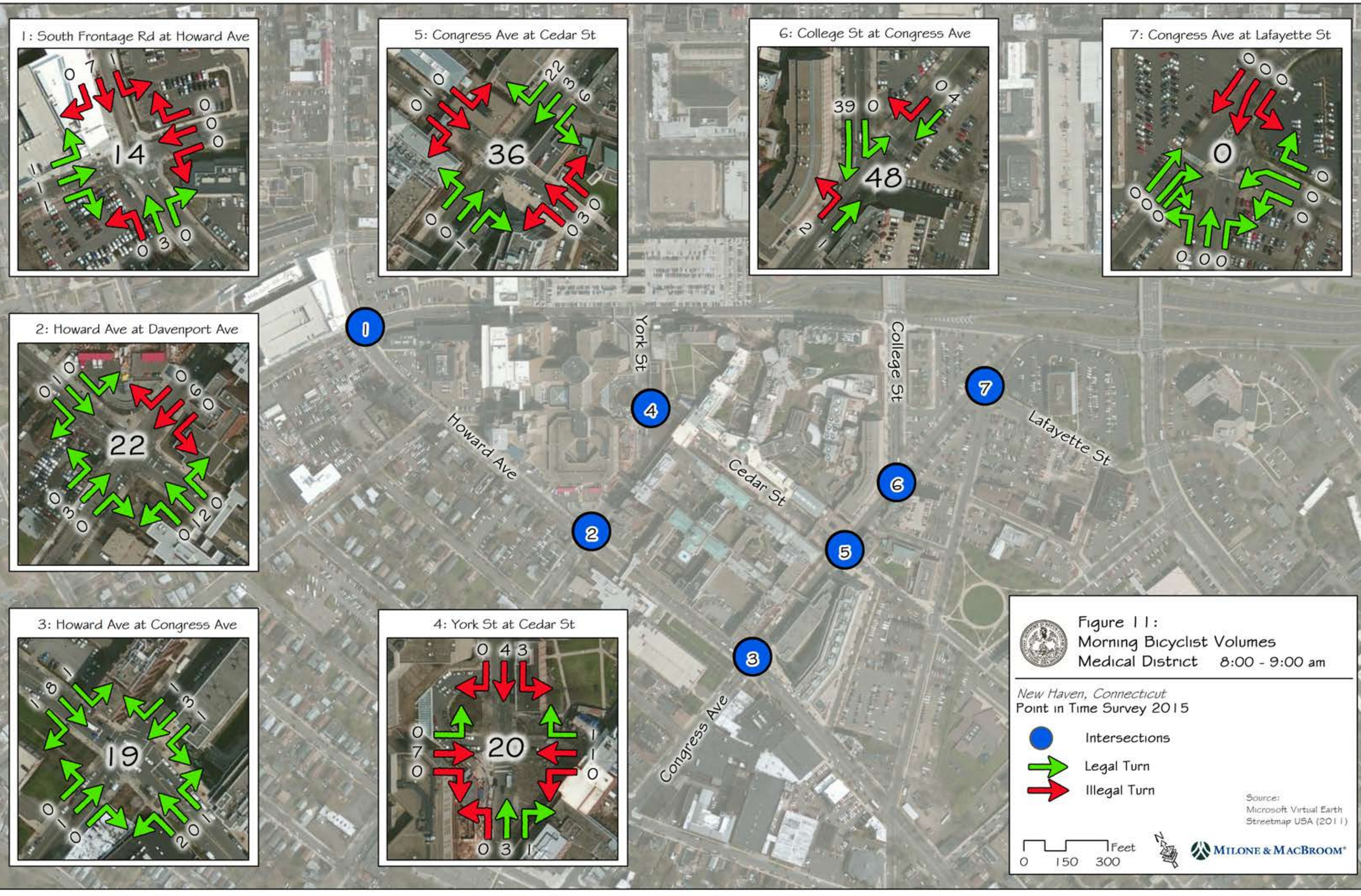


Figure 11:
Morning Bicyclist Volumes
Medical District 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

Intersections
Legal Turn
Illegal Turn

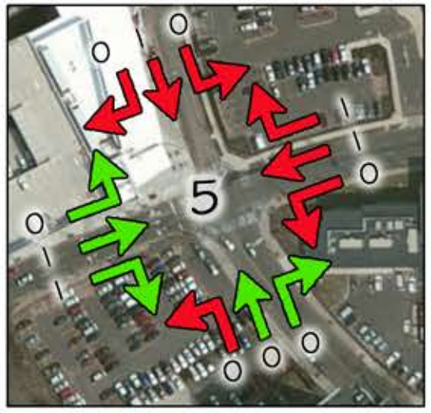
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

Feet
0 150 300

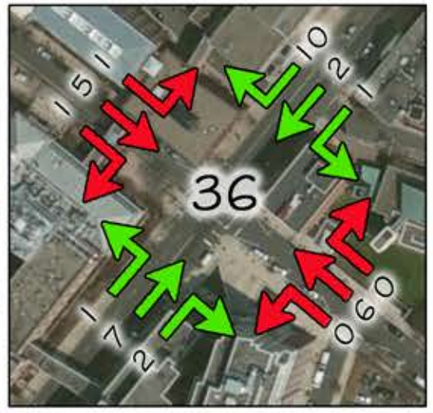
N

Milone & MacBroom

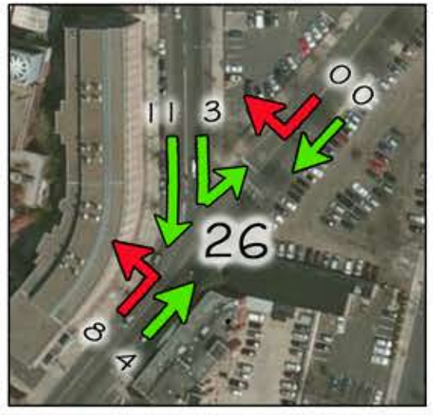
1: South Frontage Rd at Howard Ave



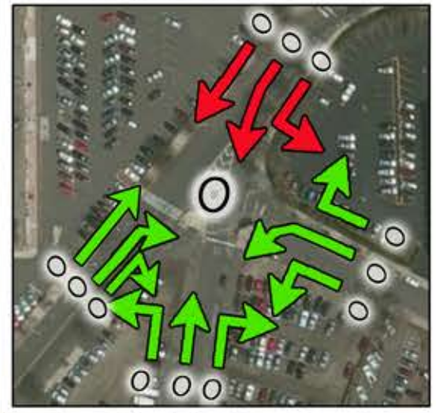
5: Congress Ave at Cedar St



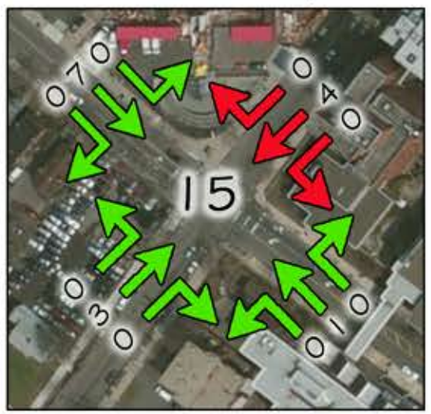
6: College St at Congress Ave



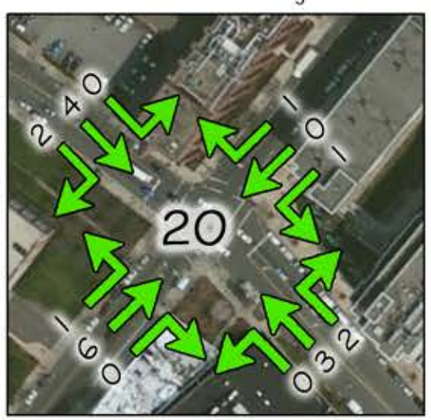
7: Congress Ave at Lafayette St



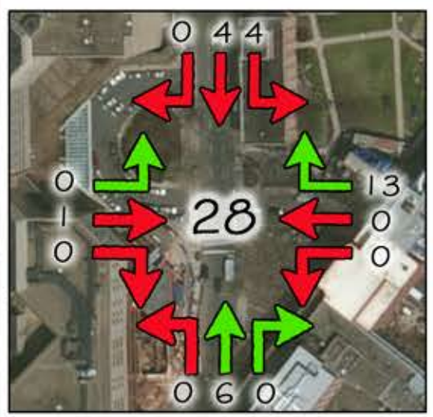
2: Howard Ave at Davenport Ave



3: Howard Ave at Congress Ave



4: York St at Cedar St



1
2
3
4
5
6
7
York St
Howard Ave
Cedar St
College St
Congress Ave
Lafayette St

Figure 12:
Mid-Day Bicyclist Volumes
Medical District 11:30 - 12:00 pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections
Legal Turn
Illegal Turn

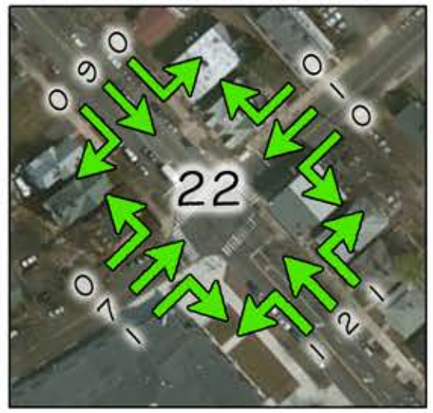
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

Feet
0 150 300

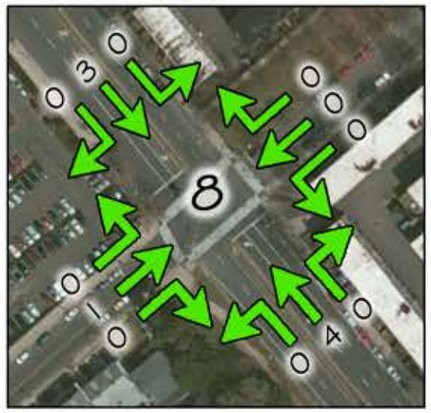
N

Milone & MacBroom

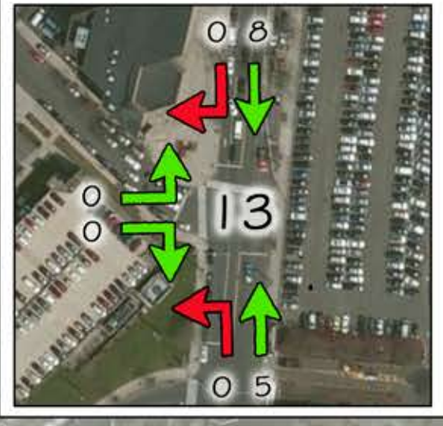
8: Columbus Ave at Howard Ave



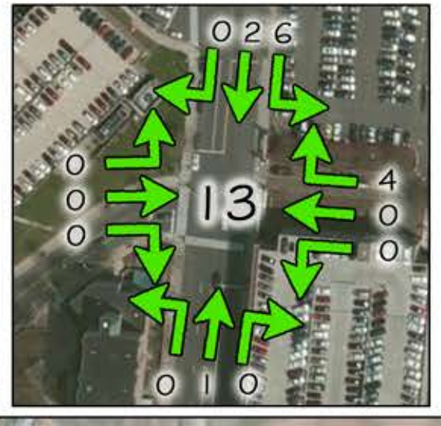
9: Columbus Ave at Church St South



10: Union Ave at Meadow St



11: Union Ave at Columbus Ave



12: Union Ave at Church St South

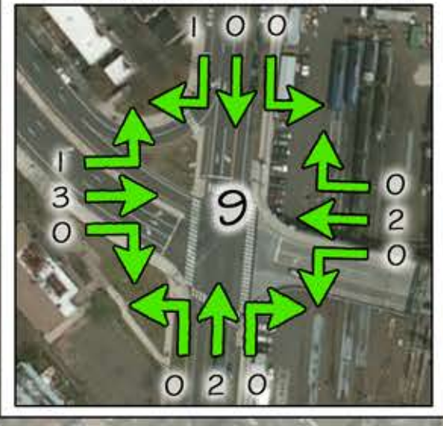


Figure 13:
Morning Bicyclist Volumes
Union Station Area 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

Intersections

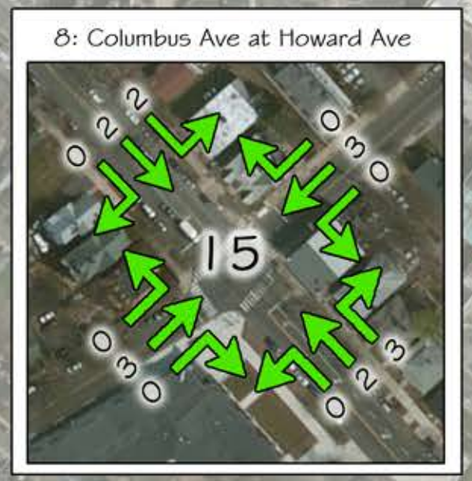
Legal Turn

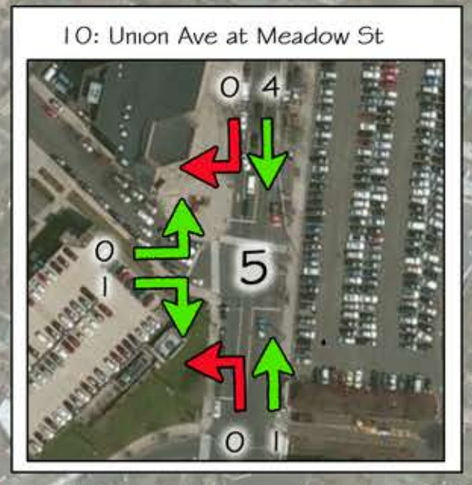
Illegal Turn

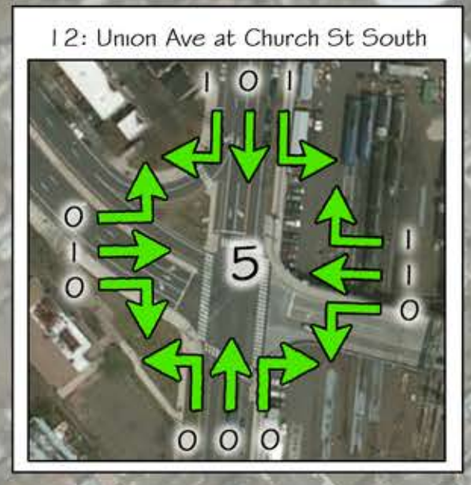
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

Feet
0 150 300

MILONE & MACBROOM







Church St South

Union Ave

Congress Ave

Howard Ave

Columbus Ave

10

11

9

12

8

Figure 14:
Midday Bicyclist Volumes
Union Station Area 11:30am - 12:00pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Legal Turn

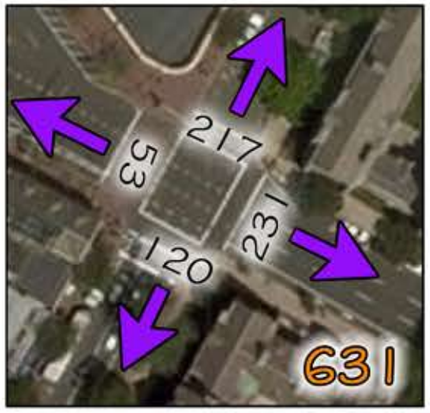
Illegal Turn

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

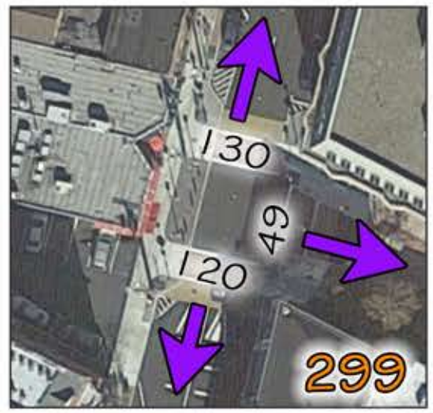
Feet
0 150 300

MILONE & MACBROOM

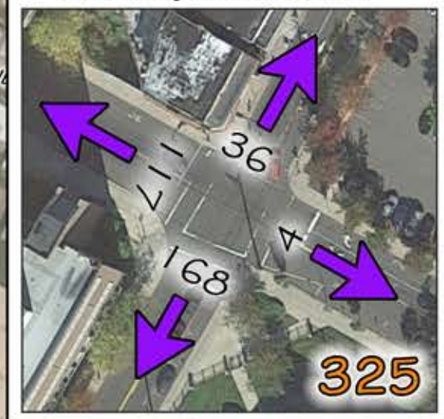
3: Elm St at York St



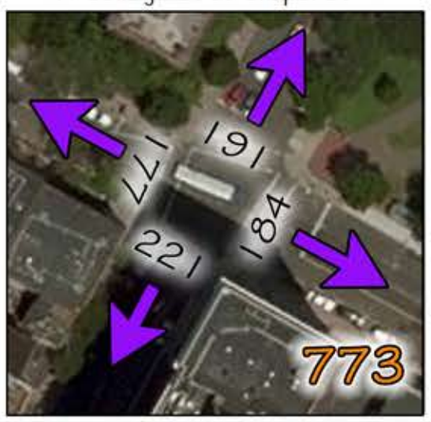
15a: Audobon St at Whitney Ave



14a: Orange St at Grove St



1: College St at Chapel St



4: Elm St at Orange St

2: Church St at Chapel St

York St
Elm St
Chapel St
College St
Church St
Orange St
Grove St
Audu

15a
3
14a
1
2
4

Figure 15:
Morning Pedestrian Volumes
Downtown 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

Total Pedestrians

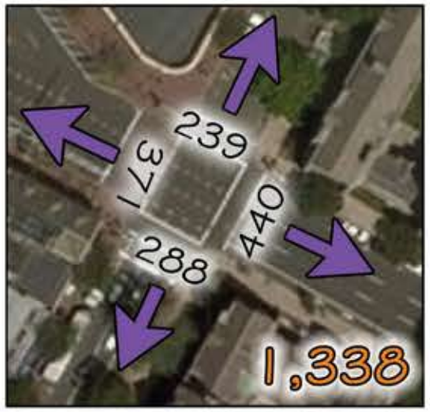
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

0 150 300 Feet

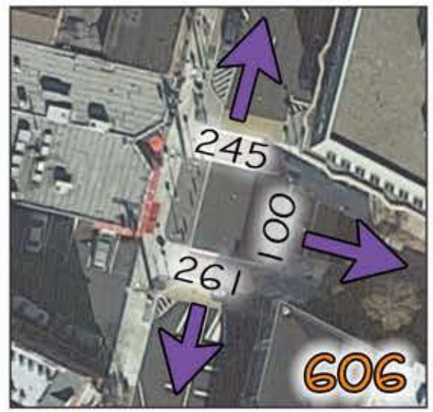
N

Milone & MacBroom

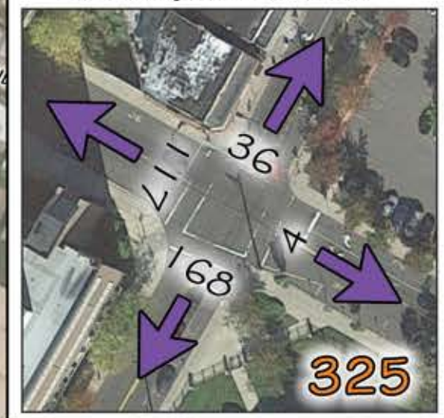
3: Elm St at York St



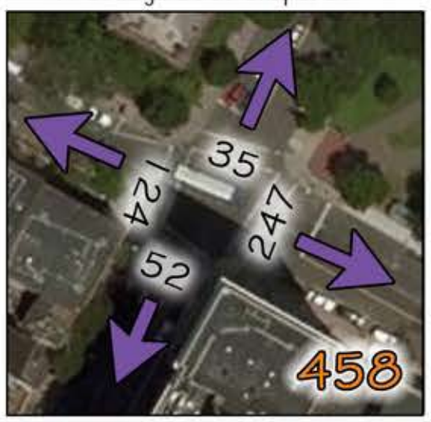
15a: Audobon St at Whitney Ave



14a: Orange St at Grove St

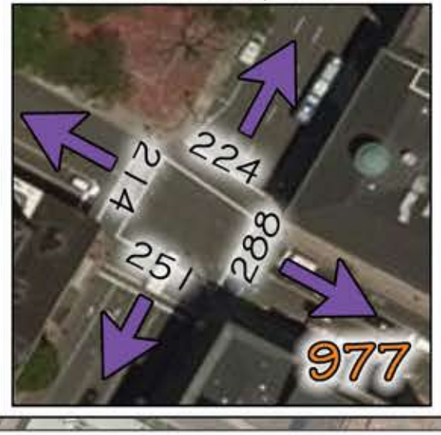


1: College St at Chapel St



4: Elm St at Orange St

2: Church St at Chapel St



York St
Elm St
Chapel St
College St
Church St
Orange St
Grove St
3
15a
14a
1
2
4

Figure 16:
Mid-Day Pedestrian Volumes
Downtown 11:30 am - 12:30 pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

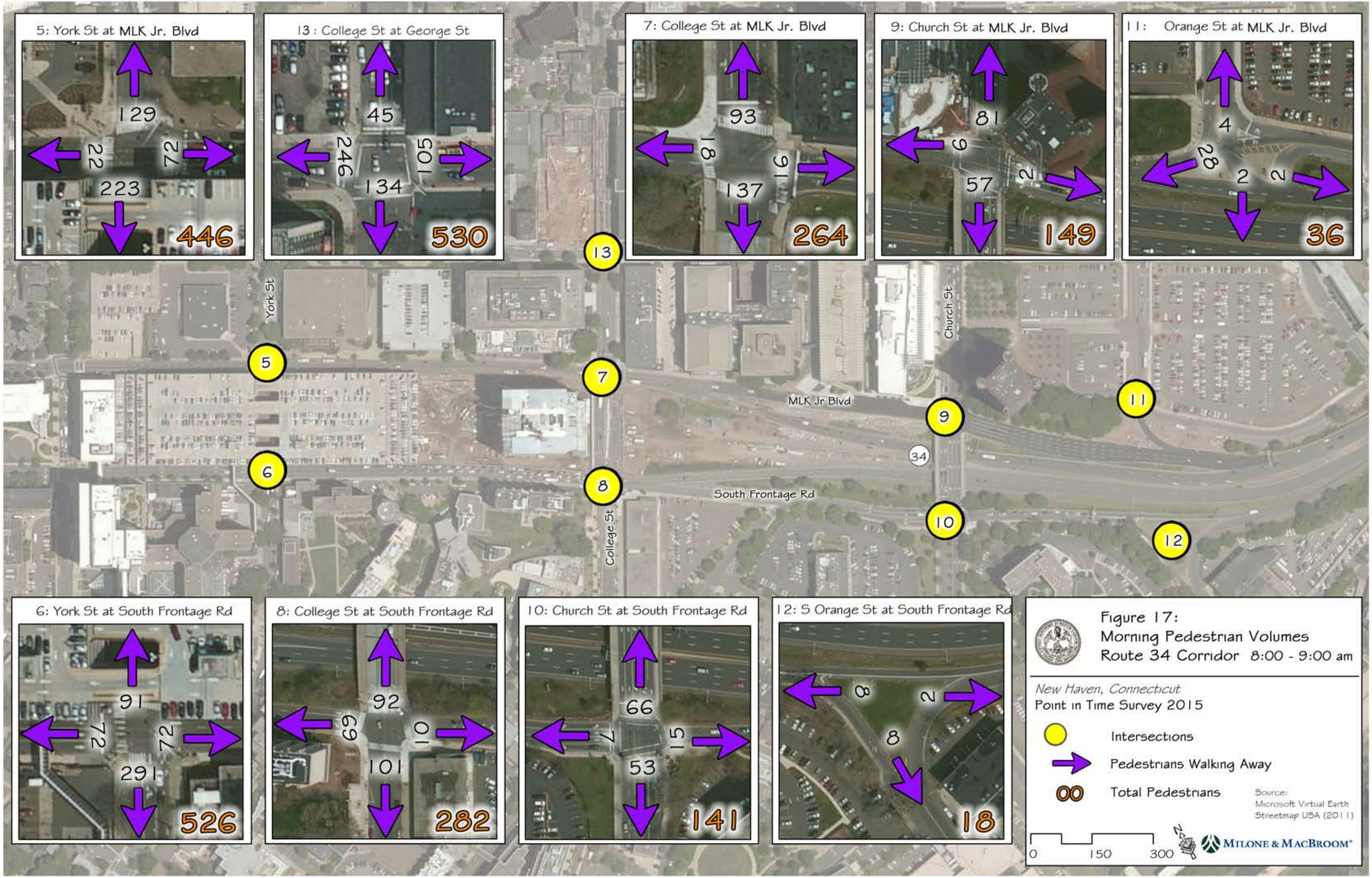
Total Pedestrians

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

0 150 300 Feet

N

Milone & MacBroom


5: York St at MLK Jr. Blvd
129
22
72
223
446
13 : College St at George St
45
246
105
134
530
7: College St at MLK Jr. Blvd
93
18
91
137
264
9: Church St at MLK Jr. Blvd
81
9
57
2
149
11 : Orange St at MLK Jr. Blvd
4
28
2
2
36
York St
Church St
MLK Jr Blvd
South Frontage Rd
College St
5
6
7
8
9
10
11
12
13
34
6: York St at South Frontage Rd
91
72
72
291
526
8: College St at South Frontage Rd
92
69
10
101
282
10: Church St at South Frontage Rd
66
7
15
53
141
12: S Orange St at South Frontage Rd
8
2
8
18
Figure 17:
Morning Pedestrian Volumes
Route 34 Corridor 8:00 - 9:00 am
New Haven, Connecticut
Point in Time Survey 2015
Intersections
Pedestrians Walking Away
00 Total Pedestrians
Source:
Microsoft Virtual Earth
Streetmap USA (2011)
0
150
300
Milone & MacBroom

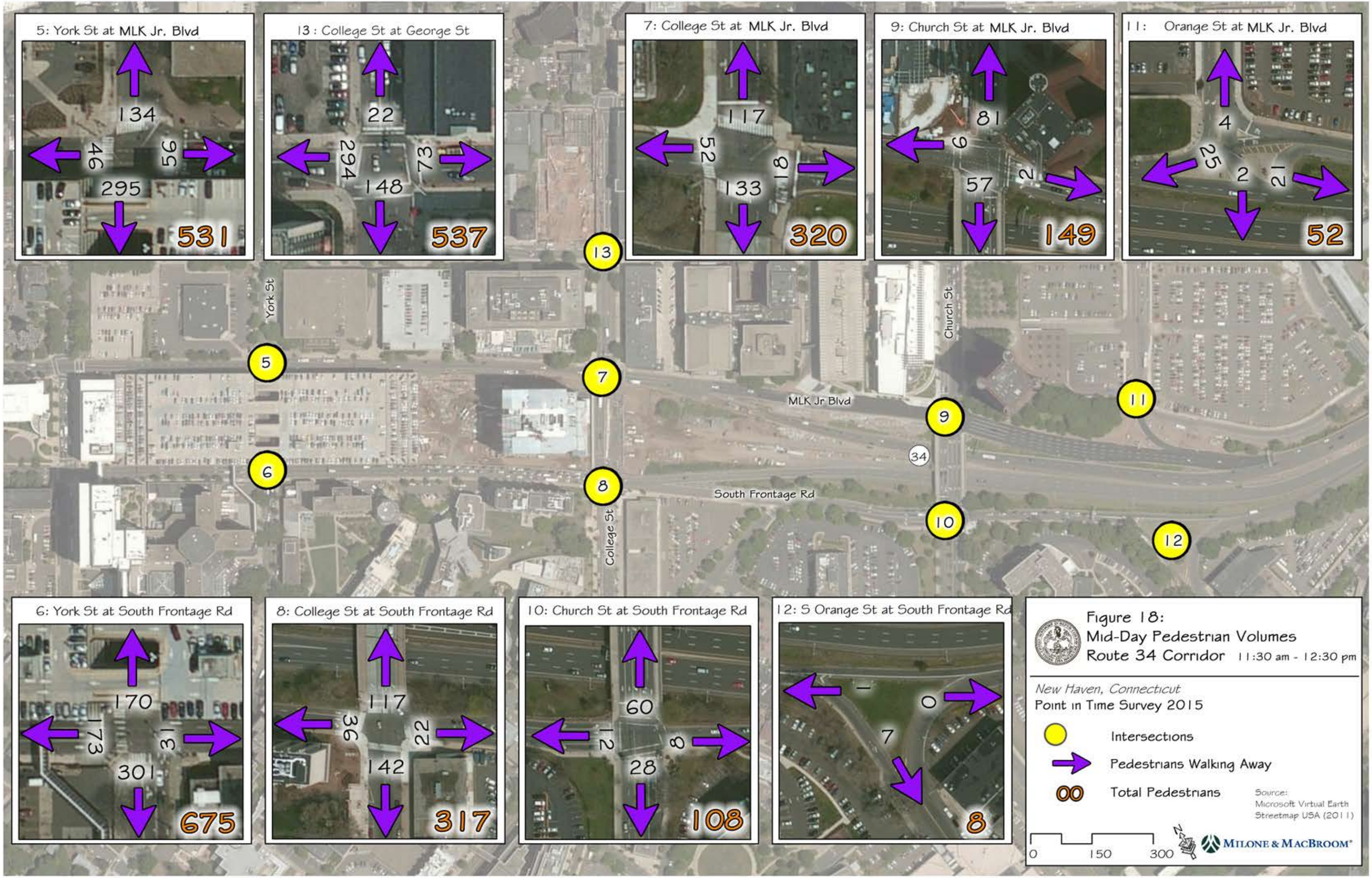


Figure 18:
Mid-Day Pedestrian Volumes
Route 34 Corridor 11:30 am - 12:30 pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

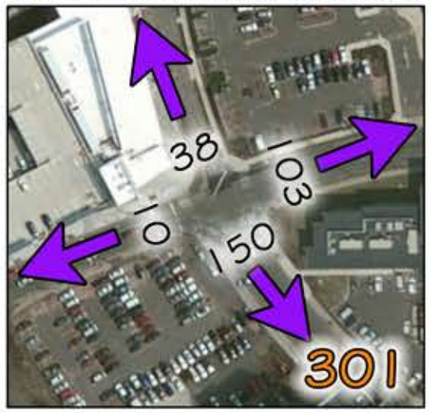
00 Total Pedestrians

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

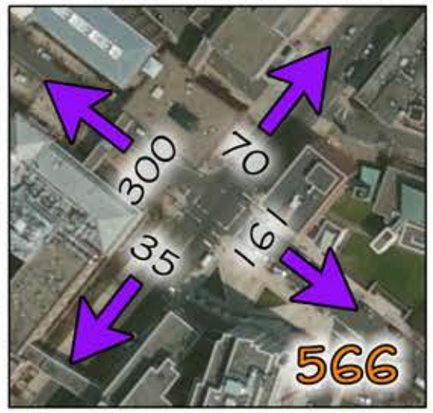
0 150 300

Milone & MacBroom

1: South Frontage Rd at Howard Ave

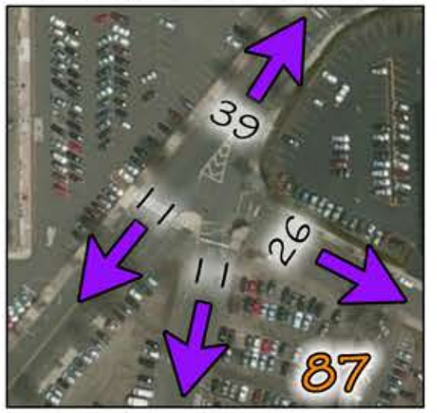


5: Congress Ave at Cedar St



6: College St at Congress Ave

7: Congress Ave at Lafayette St



2: Howard Ave at Davenport Ave

3: Howard Ave at Congress Ave

4: York St at Cedar St

1
2
3
4
5
6
7

York St
College St
Howard Ave
Cedar St
Lafayette St
Congress Ave
Davenport

Figure 19:
Morning Pedestrian Volumes
Medical District 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

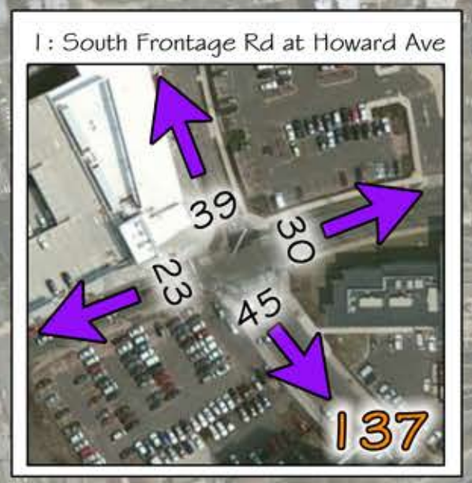
00 Total Pedestrians

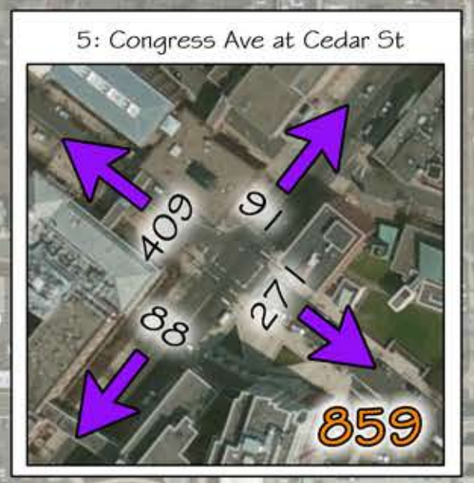
Source:
Microsoft Virtual Earth
Streetmap USA (2011)

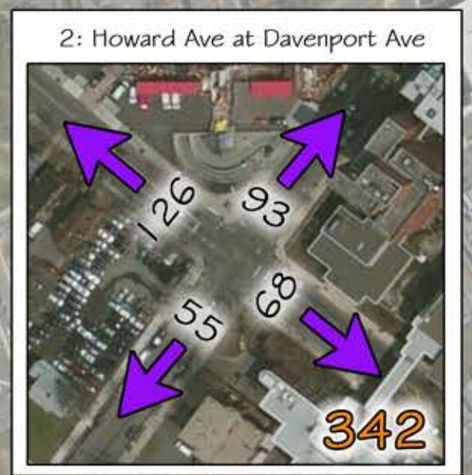
0 150 300 Feet

N

Milone & MacBroom







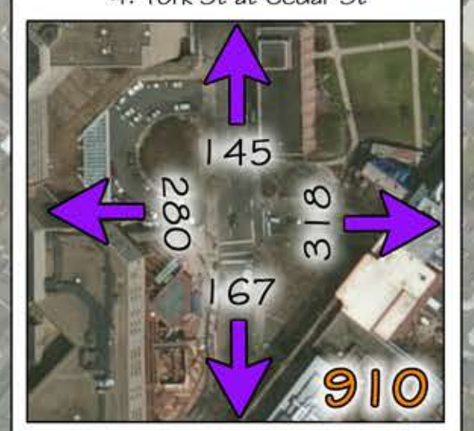


Figure 20:
Mid-Day Pedestrian Volumes
Medical District 11:30 am - 12:30 pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

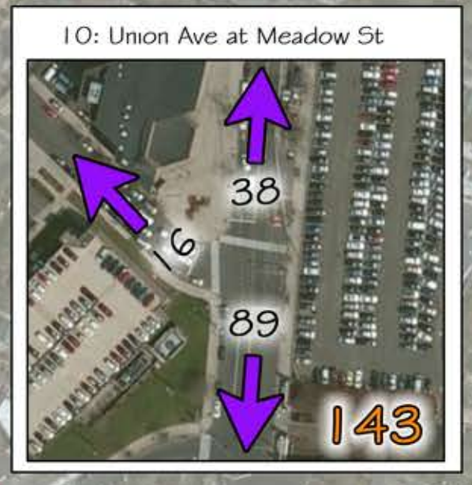
00 Total Pedestrians

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

0 150 300 Feet

N

Milone & MacBroom



Church St South

Union Ave

Congress Ave

Howard Ave

Columbus Ave

10

11

9

12

8

Figure 21:
Morning Pedestrian Volumes
Union Station Area 8:00 - 9:00 am

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

00 Total Pedestrians

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

Feet
0 150 300

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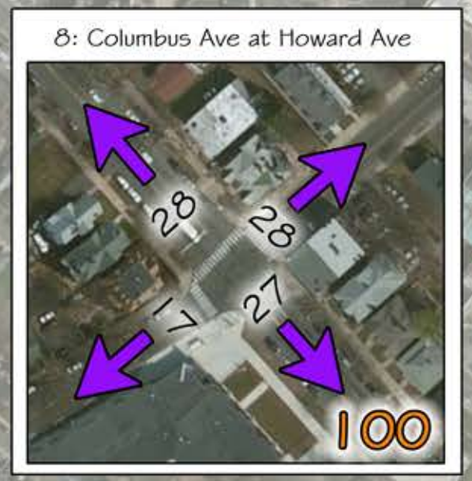

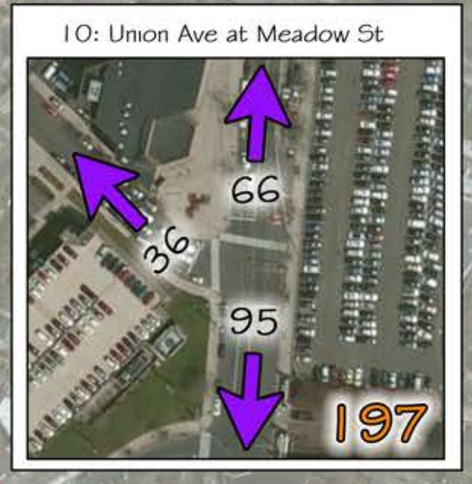

Church St South

Union Ave

Congress Ave

Howard Ave

Columbus Ave

10

11

9

12

8

Figure 22:
Mid-Day Pedestrian Volumes
Union Station Area 11:30am - 12:00pm

New Haven, Connecticut
Point in Time Survey 2015

Intersections

Pedestrians Walking Away

00 Total Pedestrians

Source:
Microsoft Virtual Earth
Streetmap USA (2011)

0 150 300 Feet

N

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APPENDIX A

	Appendix A: Summary of Parking Utilization by Facility Type – 2015						
	Facility	**ID**	**District**	**Garage/Lot**	**Supply**	**Utilization**	**Utilization Rate**
Broadway / Yale	The Study Hotel	26	Broadway / Yale	Garage	64	26	**41%**
	Broadway Plaza	17	Broadway / Yale	Lot	140	79	**56%**
	Broadway / Elm Lot	7	Broadway / Yale	Lot	48	28	**58%**
	Courtyard Marriot	48	Broadway / Yale	Garage	129	100	**78%**
	Yale Lot #37 Visitors	59	Broadway / Yale	Lot	45	40	**89%**
	Chapel St./Howe St.	58	Broadway / Yale	Lot	37	35	**95%**
	On Street Parking				827	606	**73%**
				District Sub Total	**1,290**	**914**	**71%**
Financial / Audubon	State / Audubon Lot	41	Financial / Audubon	Lot	40	7	**18%**
	Bullard Lot (East Side of Orange St.)	28	Financial / Audubon	Lot	76	23	**30%**
	Elm / Orange Lot	20	Financial / Audubon	Lot	63	30	**48%**
	State / Grand Lot	15	Financial / Audubon	Lot	99	54	**55%**
	Financial Center Garage	11	Financial / Audubon	Garage	668	375	**56%**
	Grove Street Garage	12	Financial / Audubon	Garage	599	351	**59%**
	Court Street Lot	42	Financial / Audubon	Lot	38	23	**61%**
	360 State Street	44	Financial / Audubon	Garage	467	287	**61%**
	Granite Square	19	Financial / Audubon	Garage	221	152	**69%**
	The Eli	39	Financial / Audubon	Lot	68	53	**78%**
	Century Garage	9	Financial / Audubon	Garage	599	475	**79%**
	269 Orange Street Lot	38	Financial / Audubon	Lot	83	67	**81%**
	State / Trumbull	21	Financial / Audubon	Lot	35	29	**83%**
	Audubon Court Garage	5	Financial / Audubon	Garage	283	236	**83%**
	State St./Lot #32	56	Financial / Audubon	Lot	31	28	**90%**
	Wells Fargo Building Lot	25	Financial / Audubon	Lot	46	42	**91%**
	250 Orange St Lot	40	Financial / Audubon	Lot	48	48	**100%**
	Whitney Ave/Trumbull St Lot	49	Financial / Audubon	Lot	42	42	**100%**
	State / Wall Lot	22	Financial / Audubon	Lot	100	100	**100%**
	Wall St./Temple St.	57	Financial / Audubon	Lot	75	73	**97%**
	State St./Olive St #36	55	Financial / Audubon	Lot	31	16	**52%**
	On Street Parking				705	599	**85%**
				District Sub Total	**4,417**	**3,110**	**70%**

Appendix A: Summary of Parking Utilization by Facility Type – 2015 (continued)

	Facility	ID	District	Garage/Lot	Supply	Utilization	Utilization Rate
Gateway / Ninth Square	Lot N	33	Gateway / Ninth Square	Lot	90	50	**56%**
	NH Coliseum Surface Lot	36	Gateway / Ninth Square	Lot	471	309	**66%**
	25 George St Lot	27	Gateway / Ninth Square	Lot	42	29	**69%**
	Kresege's Garage / Mid Block Garage	2	Gateway / Ninth Square	Garage	114	87	**76%**
	Chapel Square Garage / Omni	29	Gateway / Ninth Square	Garage	325	251	**77%**
	Temple Street Garage	24	Gateway / Ninth Square	Garage	1,235	956	**77%**
	Bromley Lot / Crown St Lot	8	Gateway / Ninth Square	Lot	42	33	**79%**
	Kresege's Lot	3	Gateway / Ninth Square	Lot	65	54	**83%**
	Lot O	34	Gateway / Ninth Square	Lot	68	58	**85%**
	7 Orange Street / 53 George Street	1	Gateway / Ninth Square	Lot	78	68	**87%**
	Ninth Sq. State Street	14	Gateway / Ninth Square	Garage	266	237	**89%**
	Ninth Sq. George Street	13	Gateway / Ninth Square	Garage	366	332	**91%**
	Gateway Garage	45	Gateway / Ninth Square	Garage	600	560	**93%**
	First Union Bank	30	Gateway / Ninth Square	Lot	76	76	**100%**
	Horowitz Lot	32	Gateway / Ninth Square	Lot	60	60	**100%**
	Fair Parking Lot	46	Gateway / Ninth Square	Lot	85	85	**100%**
	On Street Parking				195	151	**77%**
				District Sub Total	**4,178**	**3,396**	**81%**
South / West of Chapel	280 Crown Street	43	South / West of Chapel	Garage	Garage Removed for New Development in 2015		
	British Art Center *	6	South / West of Chapel	Lot	66	16	**24%**
	Neon Garage	35	South / West of Chapel	Garage	Garage Closed to Public at time of Counts		
	Kirk's Lot / 255 Crown Lot	4	South / West of Chapel	Lot	168	93	**55%**
	Legion / Howard / Sylvan Lot	51	South / West of Chapel	Lot	560	354	**63%**
	Sherman / Tyler Lot	53	South / West of Chapel	Lot	548	429	**78%**
	Temple Medical Garage	23	South / West of Chapel	Garage	371	330	**89%**
	Air Rights Garage	16	South / West of Chapel	Garage	2,601	2,445	**94%**
	2 Howe Street	37	South / West of Chapel	Garage	845	776	**92%**
	Chapel / York Garage	10	South / West of Chapel	Garage	489	474	**97%**
	Crown Street Garage	18	South / West of Chapel	Garage	720	704	**98%**
	Orchard / Sherman Lot	50	South / West of Chapel	Lot	487	573	**118%**
	Crown St. Public Lot	61	South / West of Chapel	Lot	36	55	**153%**
	On Street Parking				395	413	**105%**
				District Sub Total	**7,286**	**6,662**	**91%**
Union Station	Union Station Garage / Lot	54		Garage/Lot	1,140	1,128	**99%**
Total	District Total				17,171	14,082	**82%**
	Grand Total (with Union Station)				18,311	15,210	**83%**

*Lot was under construction at time of counts – supply was reduced to approximately sixteen spaces.

Appendix A: New Haven Point-In-Time Survey - Bicyclist Volumes - 2014 vs. 2015

District	Intersections	MORNING			MIDDAY		
		2014	2015	% Change	2014	2015	% Change
Downtown	College at Chapel	59	80	36%	42	70	67%
	Church at Chapel	40	35	-13%	45	70	56%
	Elm at York	84	77	-8%	76	96	26%
	Elm at Orange	42	43	2%	39	23	-41%
	Orange at Grove	-	72	-	-	36	-
	Whitney at Audubon	-	29	-	-	31	-
	Total:	**225**	**336**	**4%**	**202**	**259**	**28%**
Route 34	York at MLK Jr. Blvd.	16	10	-38%	24	23	-4%
	York at South Frontage	15	16	7%	30	21	-30%
	College at MLK Jr. Blvd.	59	55	-7%	22	30	36%
	College at South Frontage	53	54	2%	18	33	83%
	Church at MLK Jr. Blvd.	14	18	29%	16	17	6%
	Church at South Frontage	12	17	42%	17	19	12%
	Orange at MLK Jr. Blvd.	4	1	-75%	0	2	100%
	S. Orange at South Frontage	2	1	-50%	3	1	-67%
	College at George	66	63	-5%	32	35	9%
	Total:	**241**	**235**	**-3%**	**162**	**181**	**12%**
Medical District	S. Frontage at Howard	7	14	100%	8	5	-38%
	Howard at Davenport	21	22	5%	8	15	88%
	Congress at Howard	19	19	0%	13	20	54%
	York at Cedar	27	20	-26%	5	28	460%
	Congress at Cedar	34	36	6%	19	36	89%
	Congress at College	35	48	37%	18	26	44%
	Congress at Lafayette	0	0	0%	0	0	0%
	Total:	**143**	**159**	**11%**	**71**	**130**	**83%**
Union Station Area	Columbus at Howard	14	22	57%	12	15	25%
	Columbus at Church St. S.	4	8	100%	9	3	-67%
	Union at Meadow	14	13	-7%	8	5	-38%
	Union at Columbus	15	13	-13%	8	5	-38%
	Union at Church St. S.	6	9	50%	6	5	-17%
	Total:	**53**	**65**	**23%**	**43**	**33**	-23%
Total Districts:		**662**	**694**	**5%**	**478**	**603**	**26%**
						Total % Change:	**14%**

Note: Totals do not include the two intersections added this year (Orange/Grove and Whitney/Audubon)

Appendix A: New Haven Point-In-Time Survey - Pedestrian Volumes - 2014 vs. 2015							
District	Intersections	MORNING			MIDDAY		
		2014	2015	% Change	2014	2015	% Change
Downtown	College at Chapel	419	288	-31%	828	458	-45%
	Church at Chapel	642	773	20%	979	977	0%
	Elm at York	569	631	11%	1,230	1,338	9%
	Elm at Orange	287	303	6%	380	319	-16%
	Orange at Grove	-	325	-	-	370	-
	Whitney at Audubon	-	299	-	-	606	-
	Total:	**1,917**	**1,995**	**4%**	**3,417**	**3,092**	**-10%**
Route 34	York at MLK Jr. Blvd.	388	446	15%	486	531	9%
	York at South Frontage	572	526	-8%	633	675	7%
	College at MLK Jr. Blvd.	230	264	15%	307	320	4%
	College at South Frontage	249	282	13%	386	317	-18%
	Church at MLK Jr. Blvd.	115	149	30%	143	149	4%
	Church at South Frontage	113	141	25%	144	108	-25%
	Orange at MLK Jr. Blvd.	37	36	-3%	41	52	27%
	S. Orange at South Frontage	7	18	157%	12	8	-33%
	College at George	537	530	-1%	517	440	-15%
	Total:	**2,248**	**2,392**	**6%**	**2,669**	**2,600**	**-3%**
Medical District	S. Frontage at Howard	168	301	79%	167	137	-18%
	Howard at Davenport	304	271	-11%	396	342	-14%
	Congress at Howard	266	260	-2%	302	337	12%
	York at Cedar	662	606	-8%	975	910	-7%
	Congress at Cedar	732	566	-23%	906	859	-5%
	Congress at College	249	108	-57%	300	308	3%
	Congress at Lafayette	146	87	-40%	108	156	44%
	Total:	**2,527**	**2,199**	**-13%**	**3,154**	**3,049**	**-3%**
Union Station Area	Columbus at Howard	160	134	-16%	75	100	33%
	Columbus at Church St. S.	69	190	175%	78	81	4%
	Union at Meadow	135	143	6%	139	197	42%
	Union at Columbus	180	195	8%	176	237	35%
	Union at Church St. S.	39	47	21%	18	38	111%
	Total:	**583**	**709**	**22%**	**486**	**653**	**34%**
Total Districts:		**7,275**	**7,295**	**0%**	**9,726**	**9,394**	**-5%**
						Total % Change:	**-2%**

Note: Totals do not include the two intersections added this year (Orange/Grove and Whitney/Audubon)

APPENDIX B

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: _____

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
Example | = 1 parked car 𝍸 = 5 parked cars		

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: _____

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

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.), or bagged meters

Mark Count Results in the Boxes Below

Legally Parked Vehicles	Parked Outside of Legal Space	Unusable Spaces

BICYCLE INTERSECTION COUNT FORM

Name: _____ **Location:** _____

Date: _____

Start Time: _____

End Time: _____

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

Approx. Temperature: _____

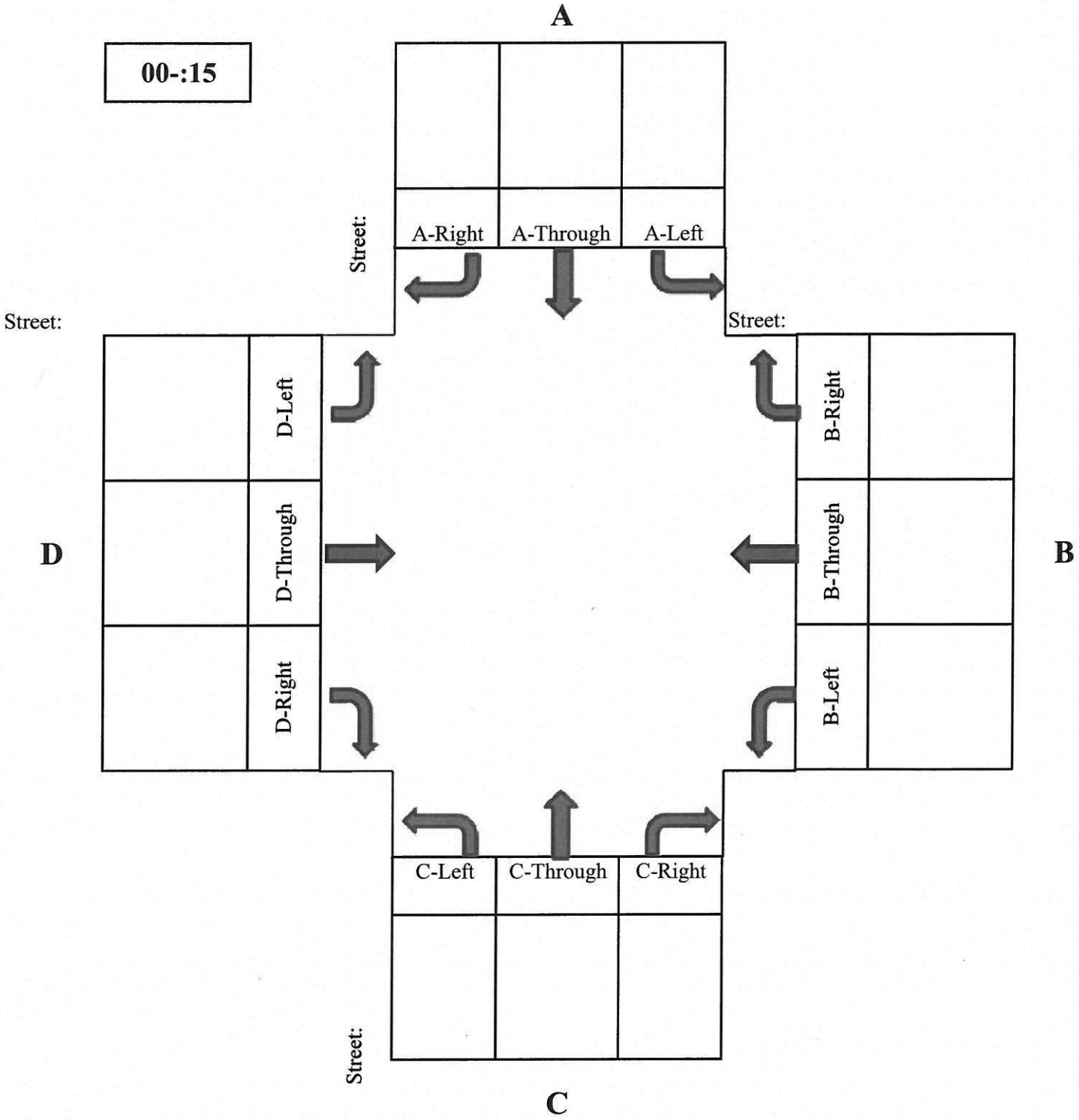
INSTRUCTIONS

- Count all bicyclists moving through the intersection under the appropriate catergory 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

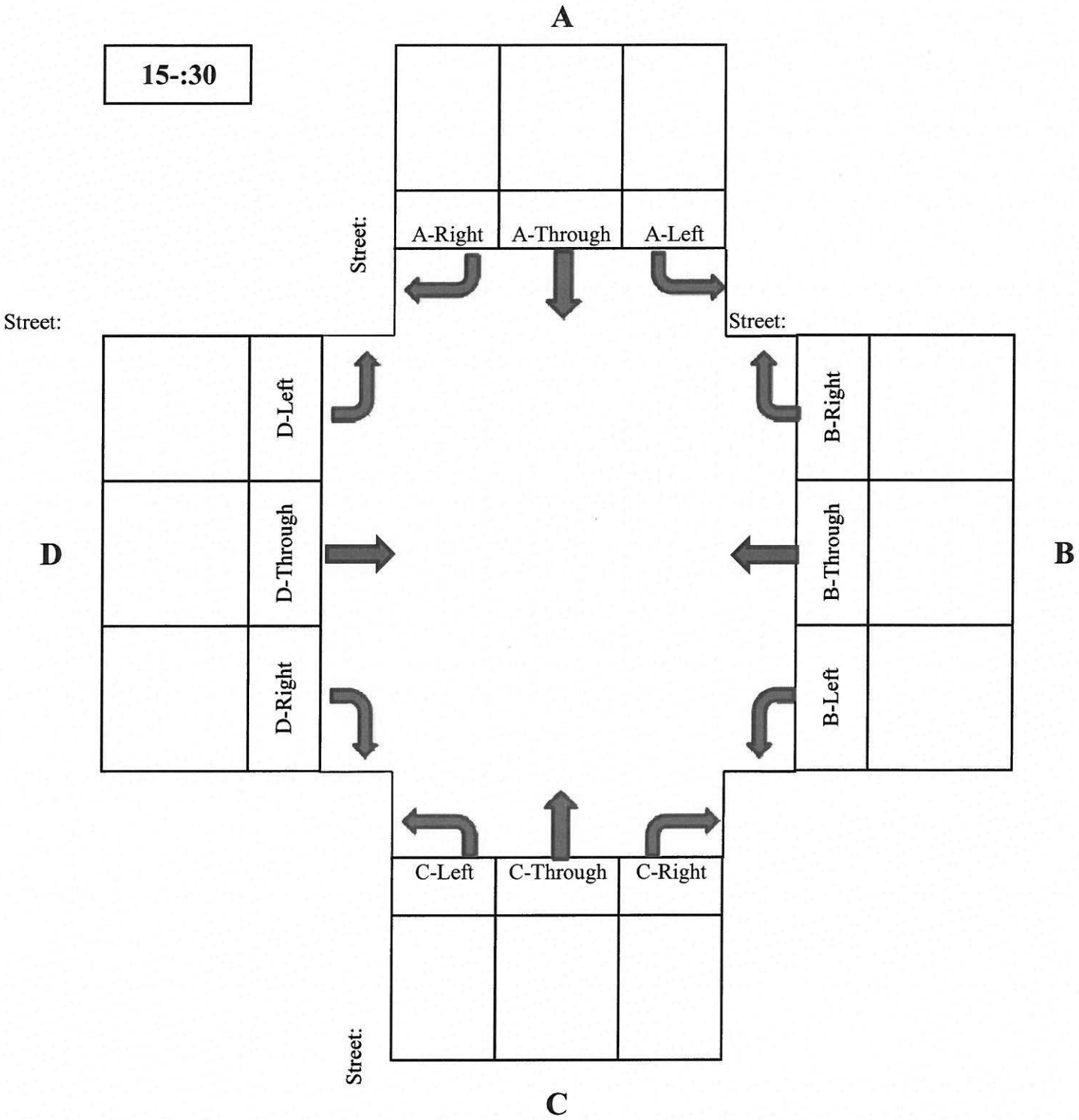
Notes:

Count forms based on "Standard Bicycle Intersection Count Form"
soure: National Bicycle and Pedestrian Documentation Project
http://bikepeddocumentation.org

BICYCLE INTERSECTION COUNT FORM

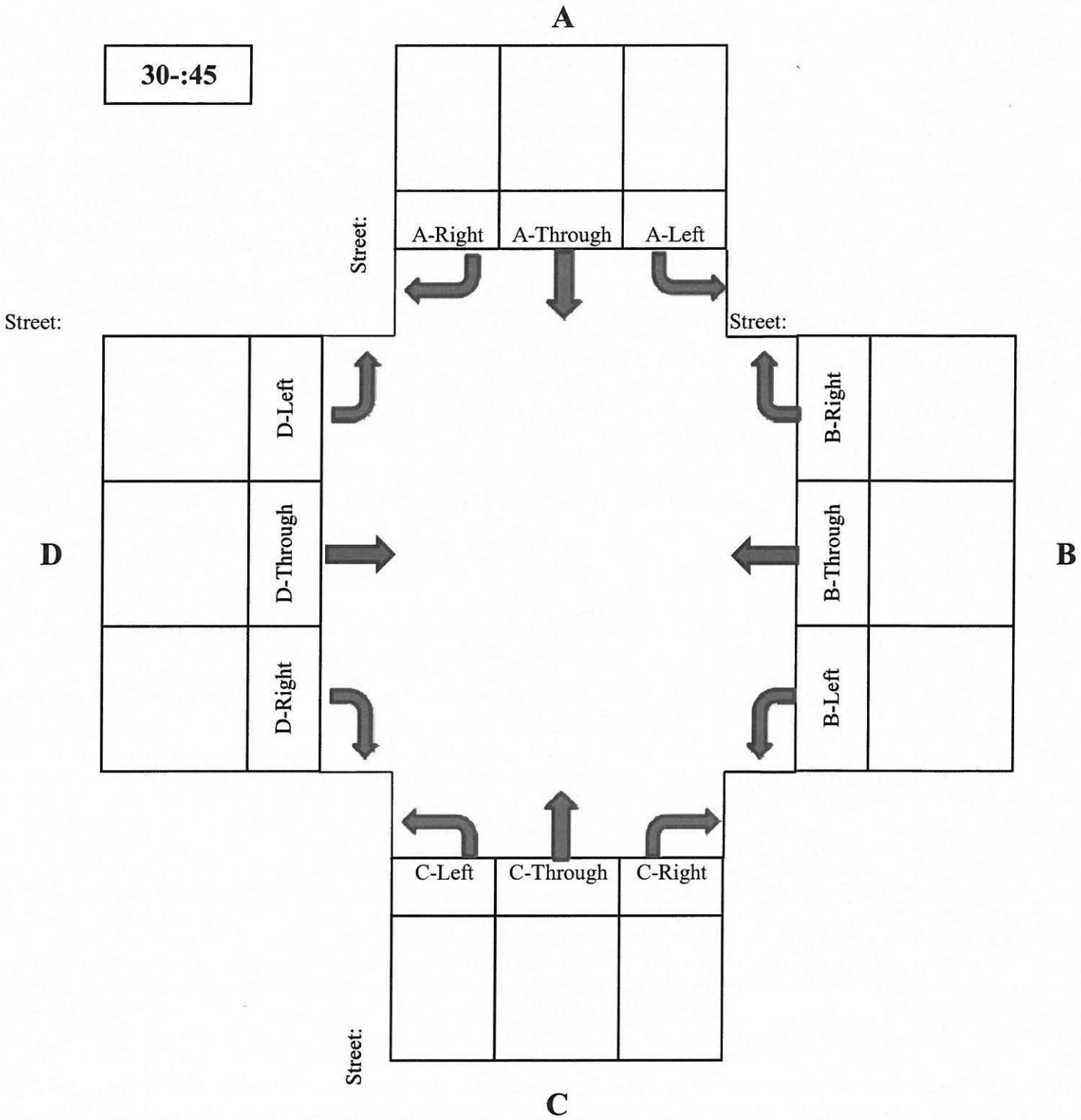


BICYCLE INTERSECTION COUNT FORM



BICYCLE INTERSECTION COUNT FORM

30-:45



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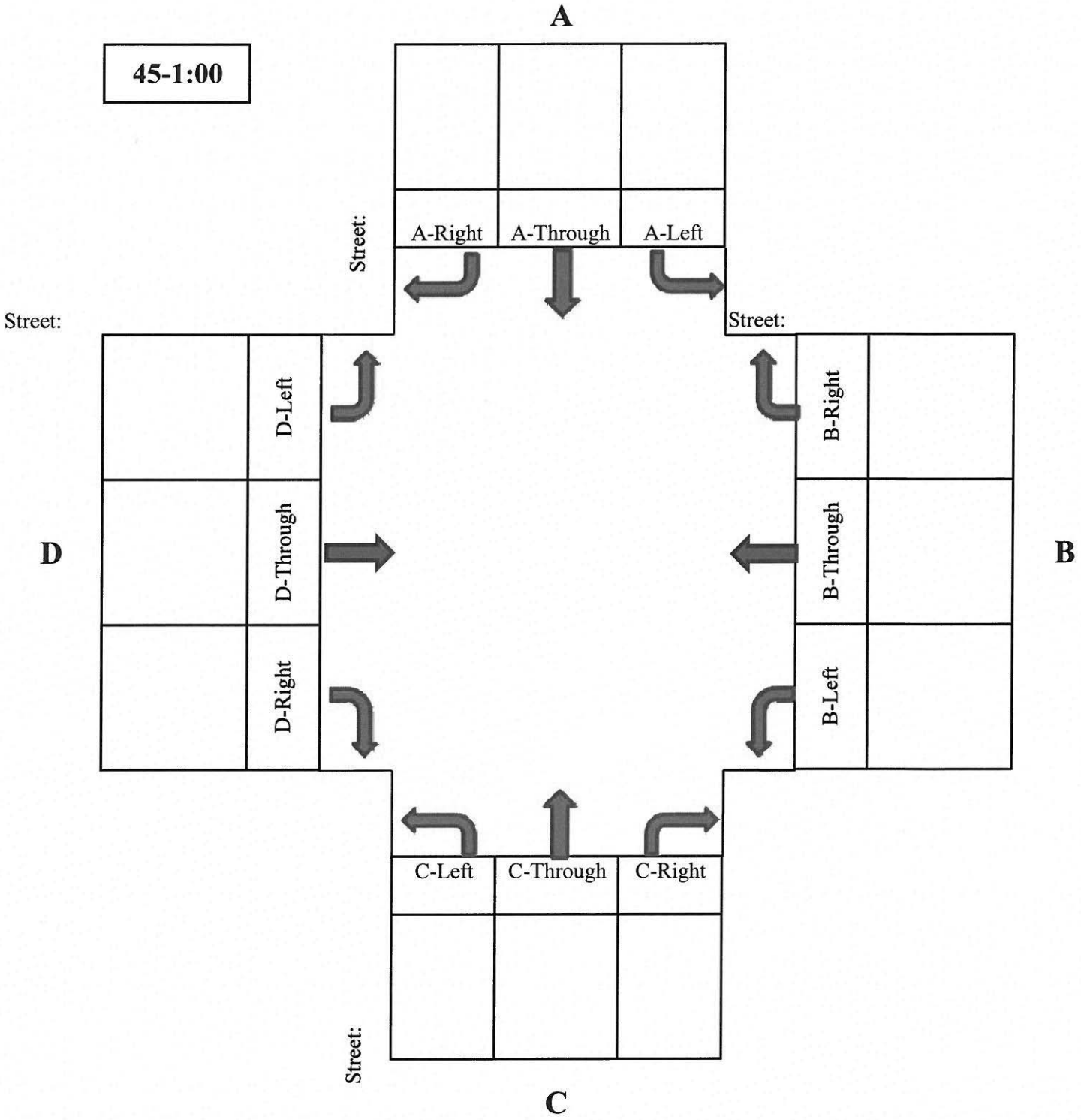
BICYCLE INTERSECTION COUNT FORM

45-1:00



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PEDESTRIAN COUNT FORM

Name: _____ **Location:** _____

Date: _____

Assigned Count Leg: (Circle One)

Start Time: _____ *see attached map*

A **B** **C** **D**

End Time: _____

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

Approx. Temperature: _____

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 skaterboarders, 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:

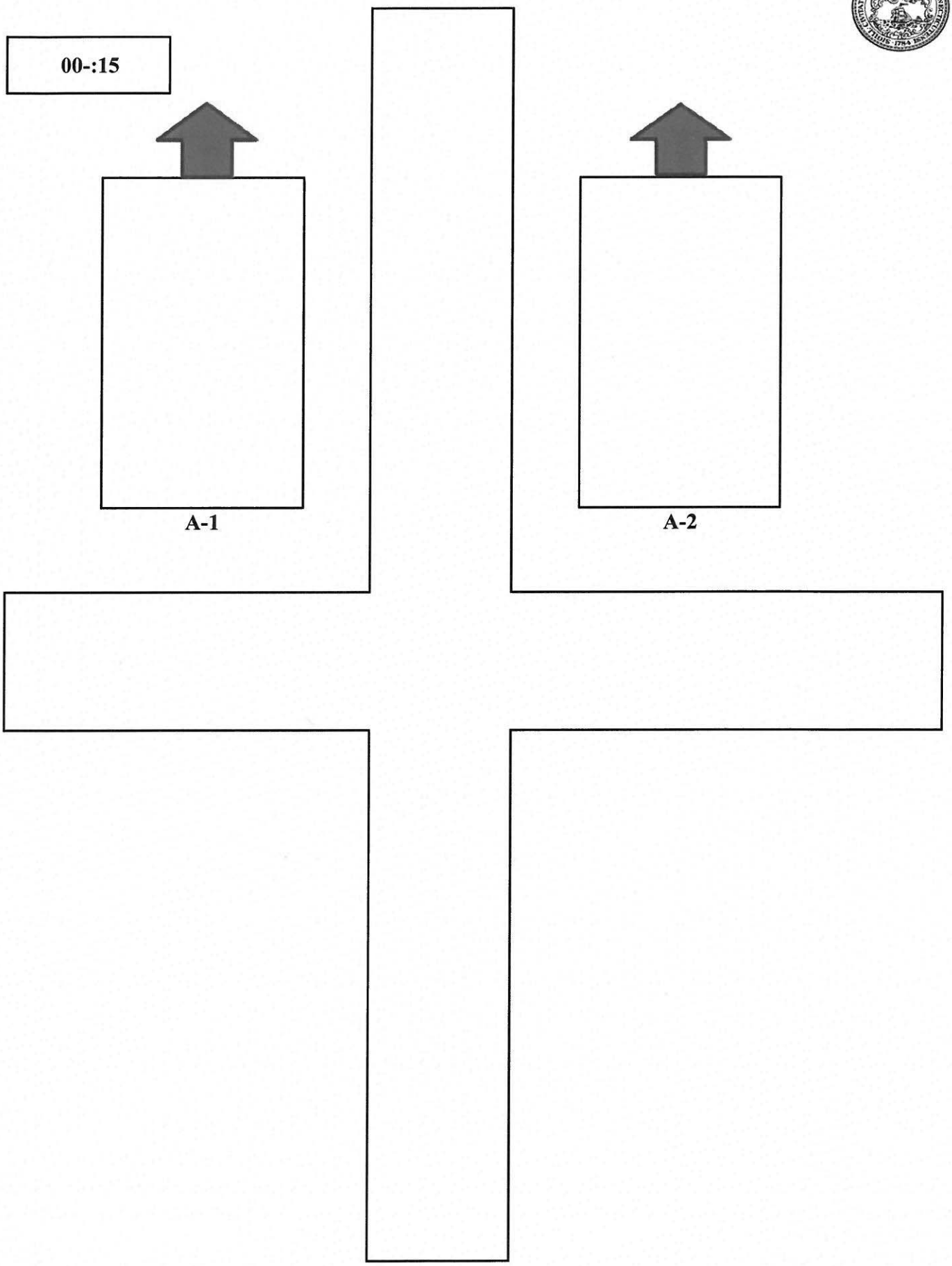
Count Instructionos based on screenline count instructions

soure: National Bicycle and Pedestrian Documentation Project

http://bikepeddocumentation.org

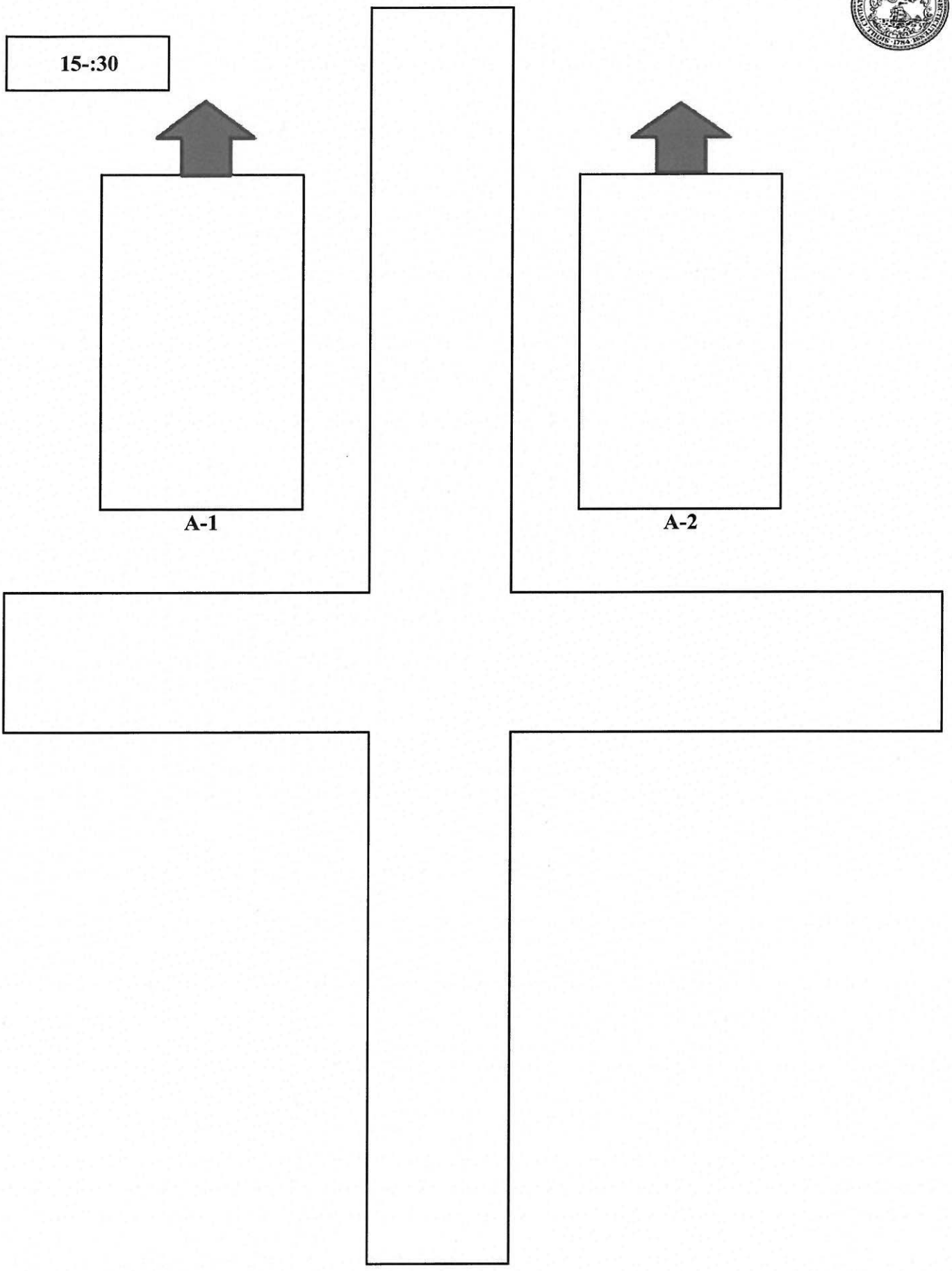
PEDESTRIAN COUNT FORM

00-:15



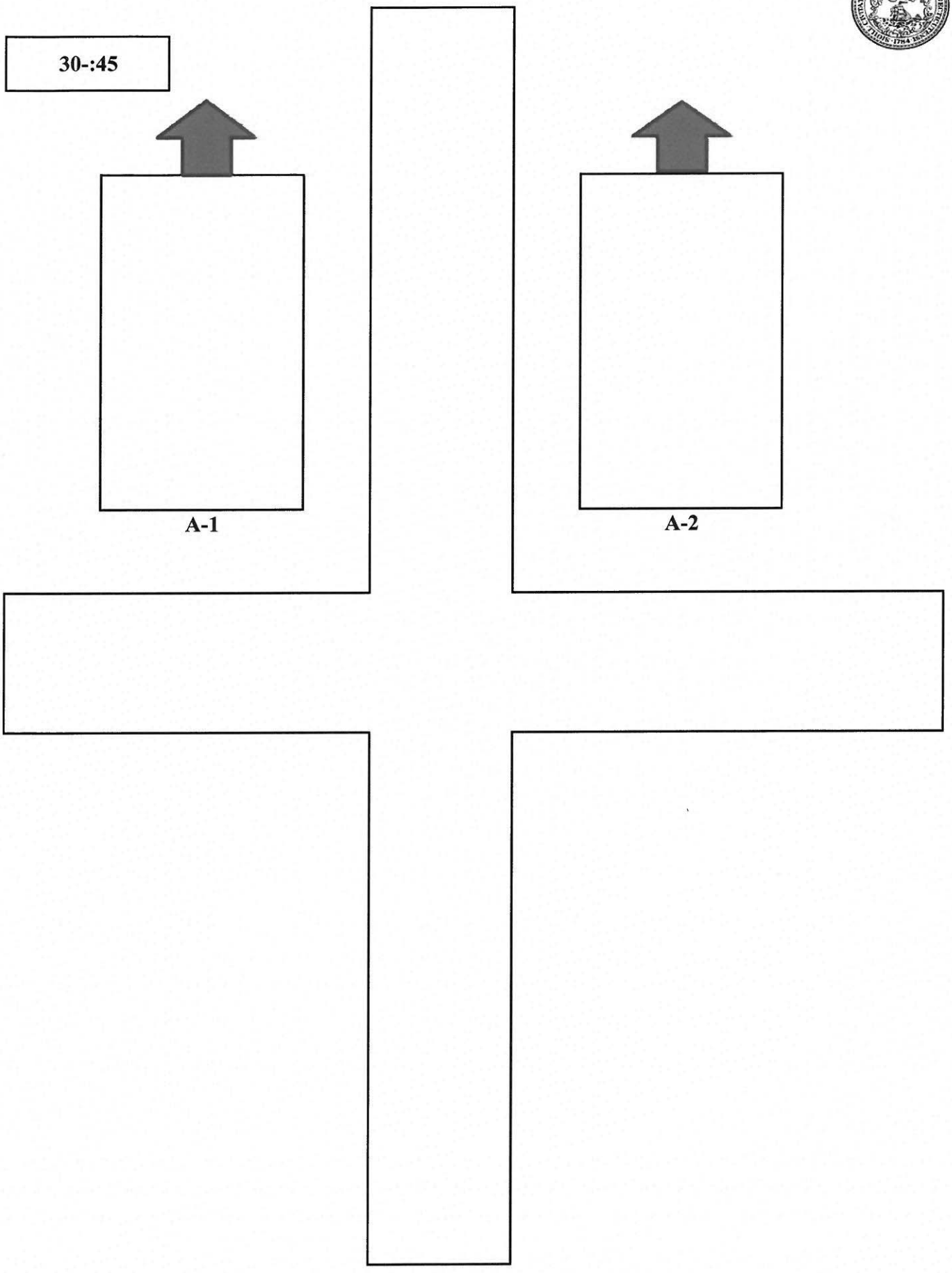
PEDESTRIAN COUNT FORM

15-:30



PEDESTRIAN COUNT FORM

30-:45

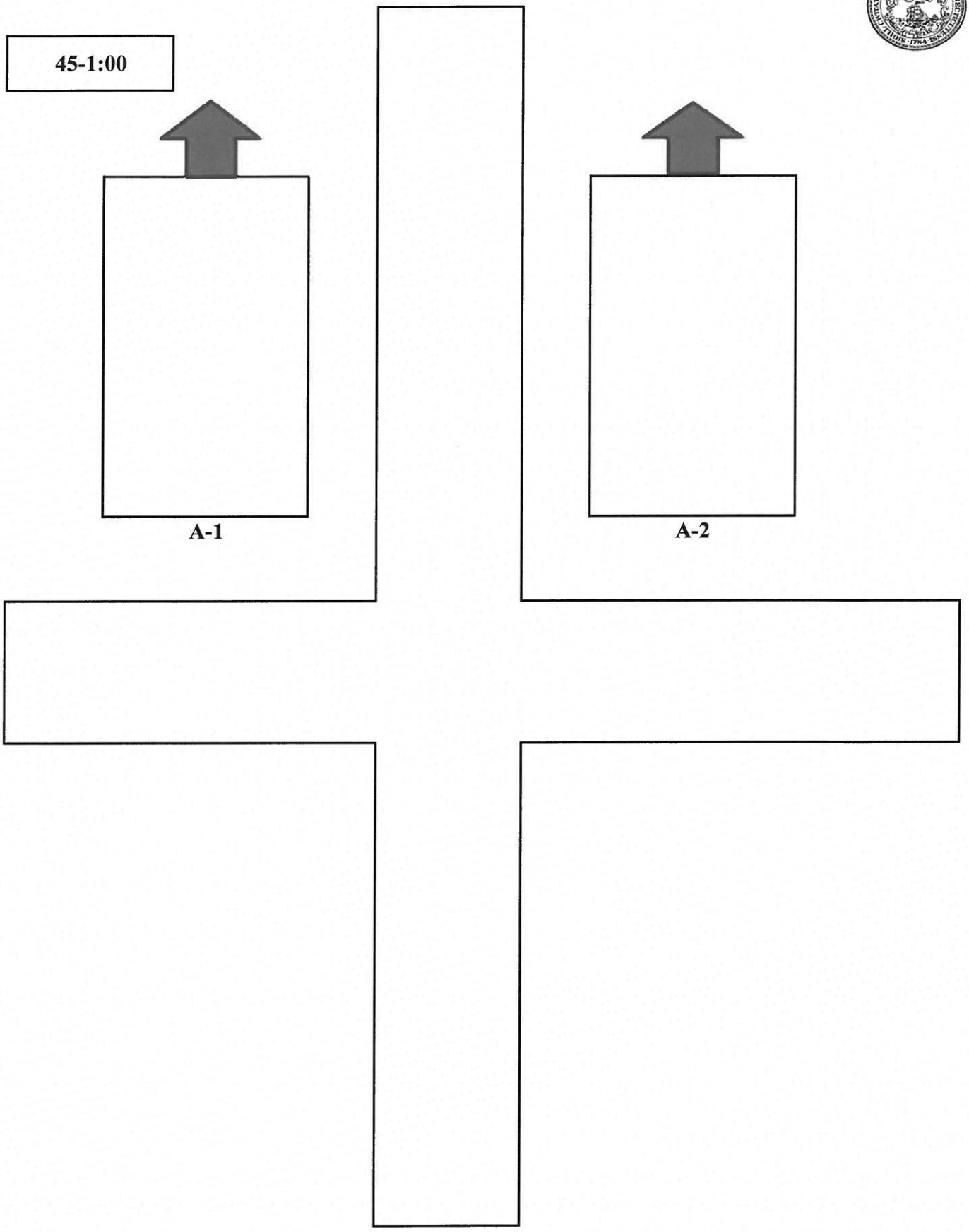


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

45-1:00



MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

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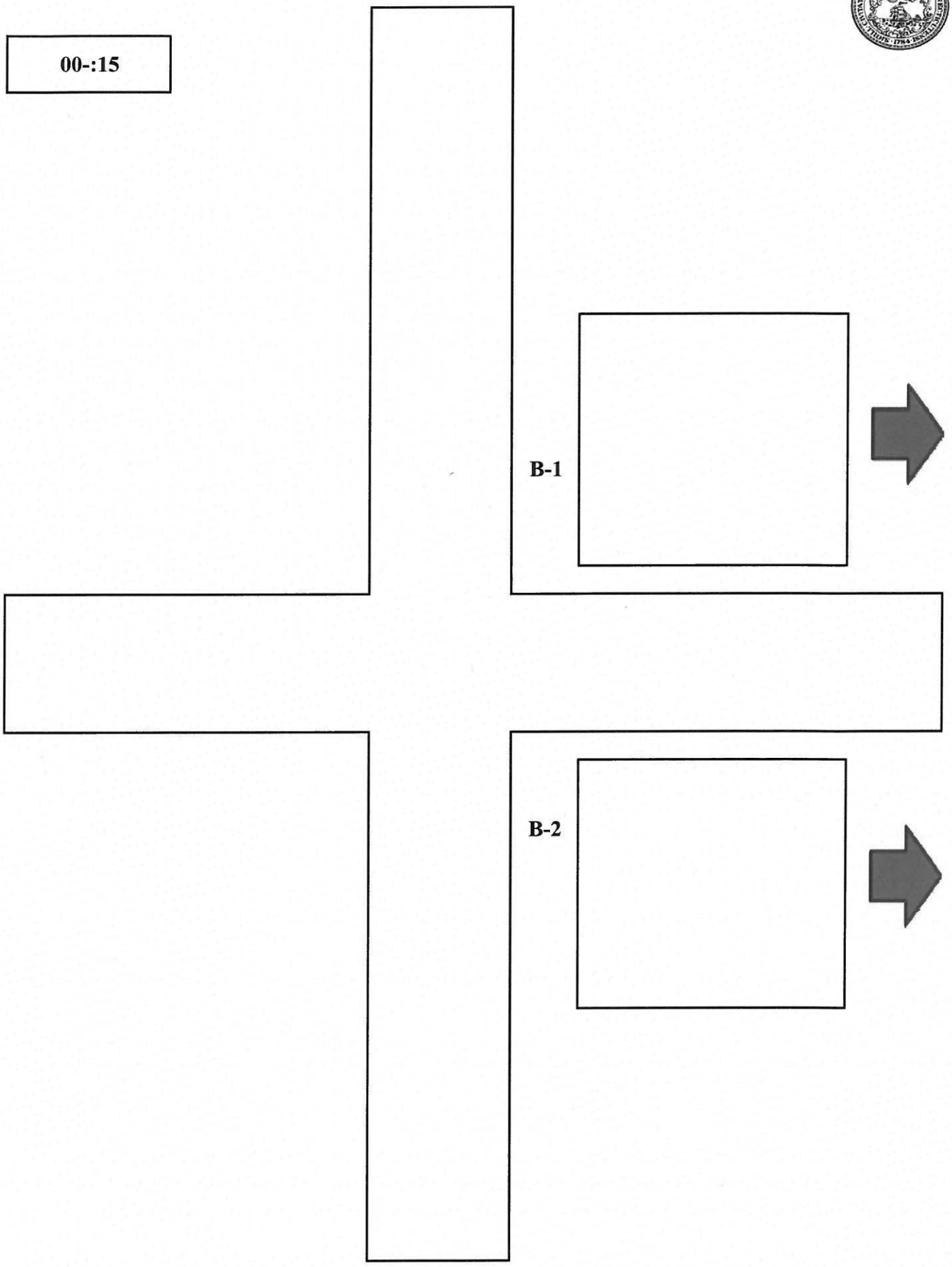
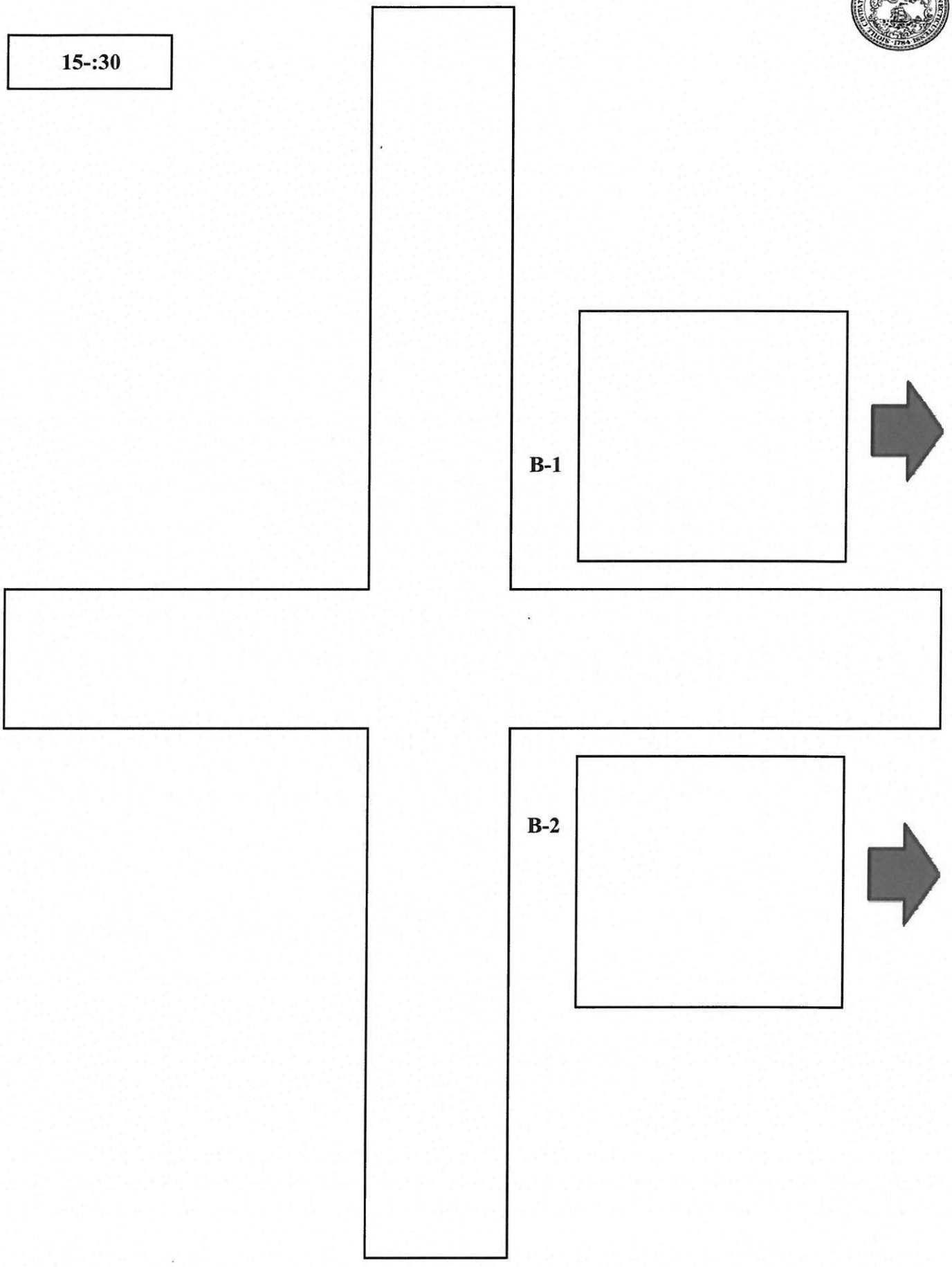


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

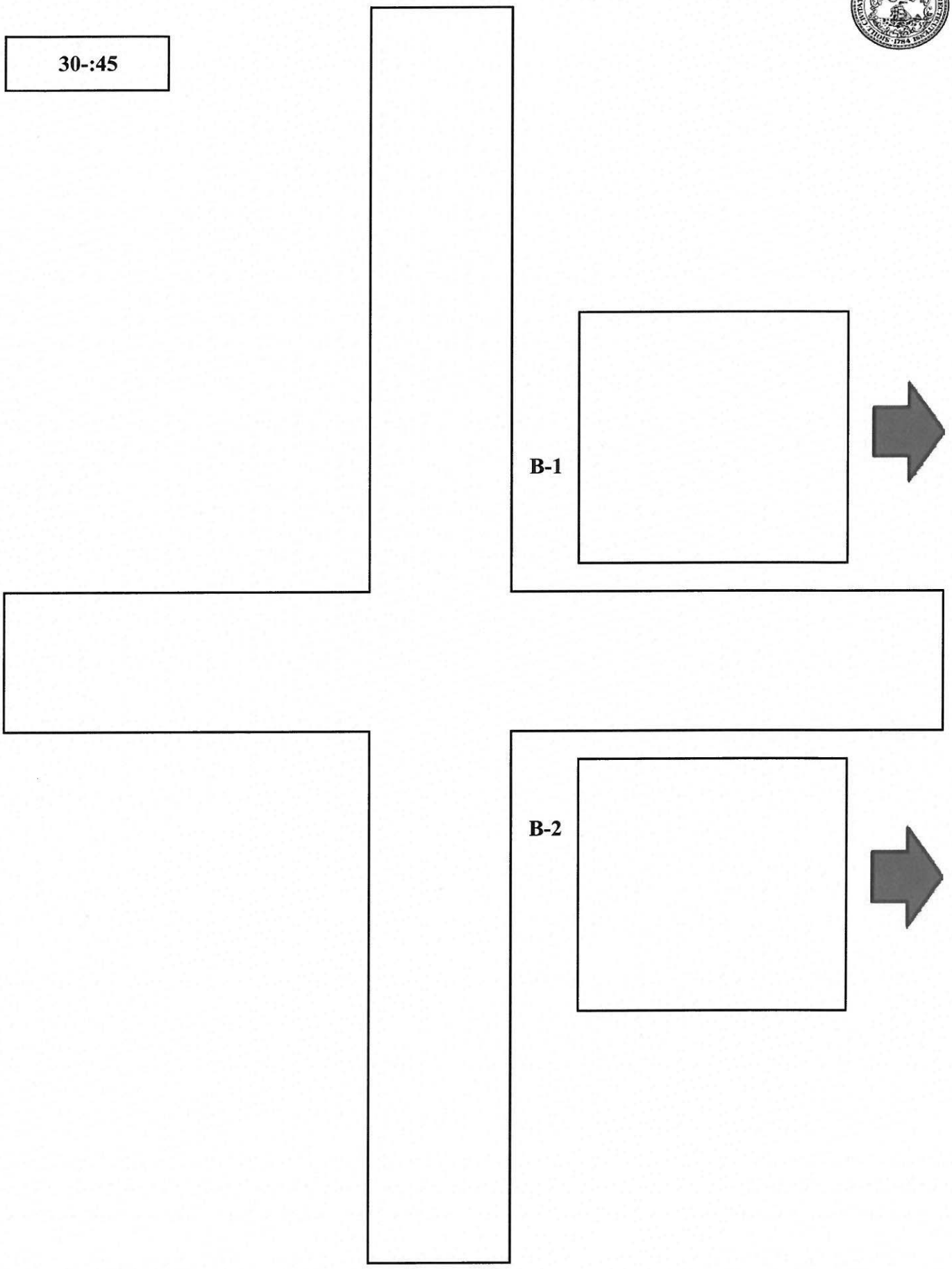
PEDESTRIAN COUNT FORM

15-:30



PEDESTRIAN COUNT FORM

30-:45

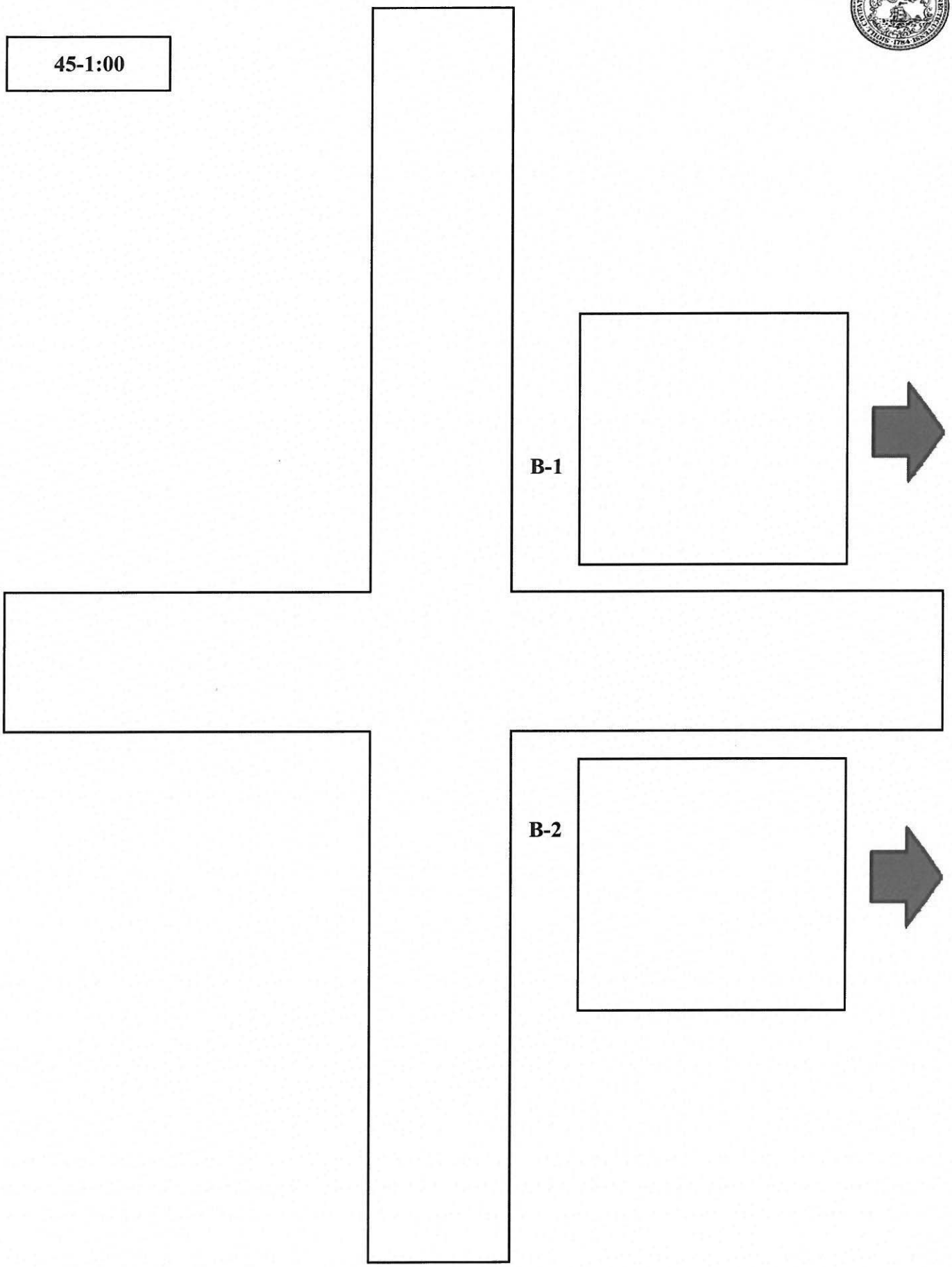


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

45-1:00

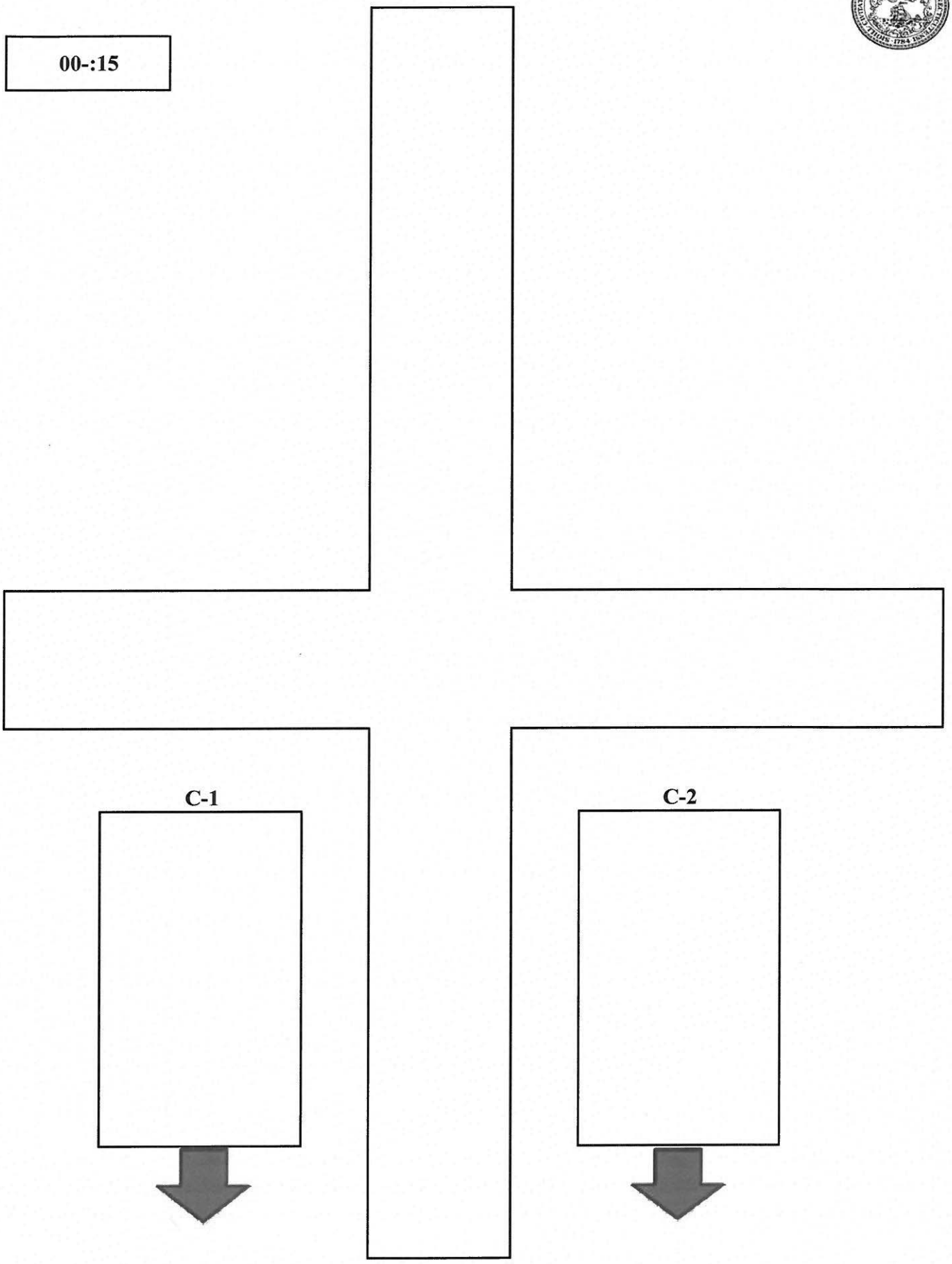


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

00-:15

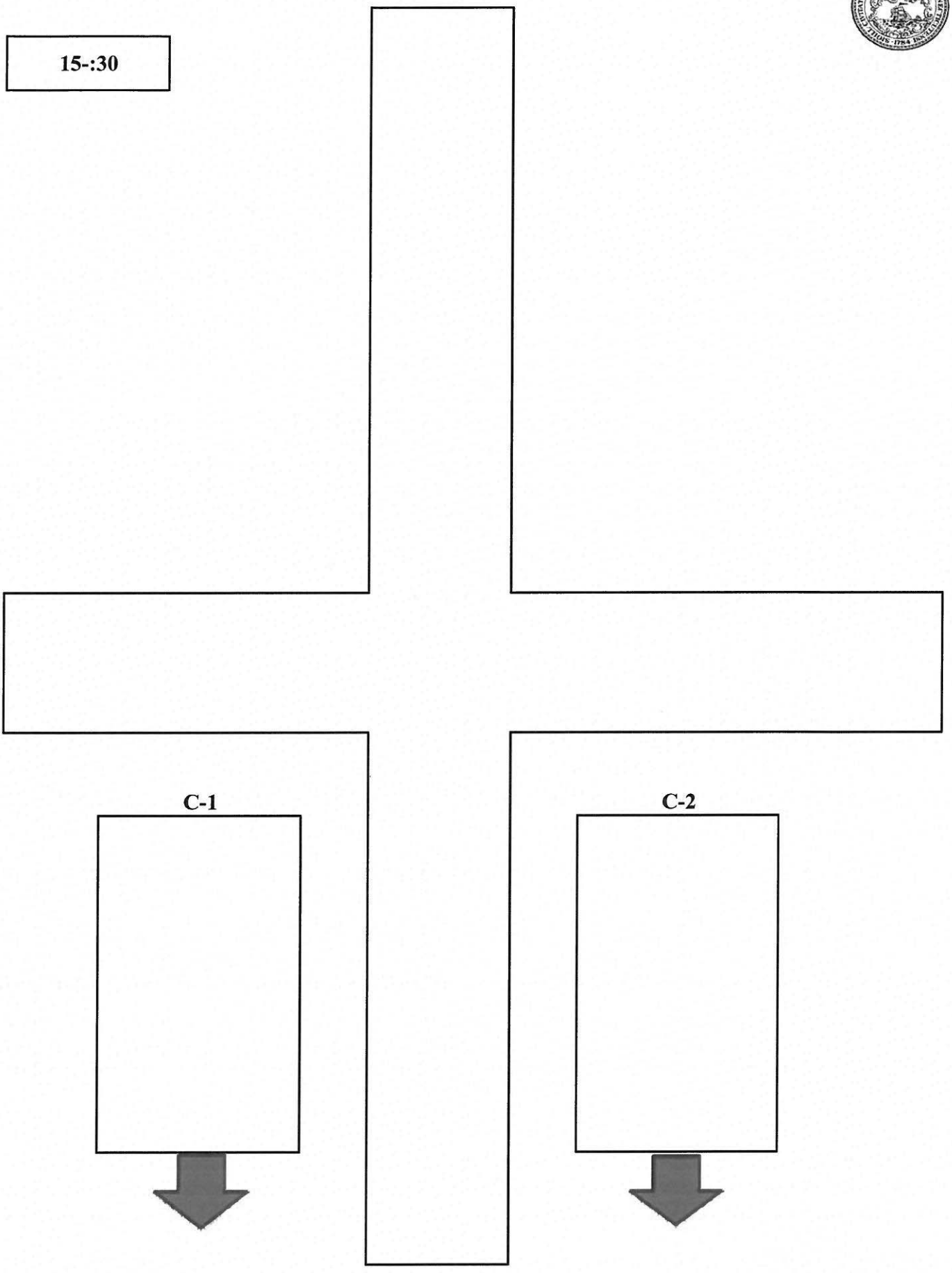


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

15-:30

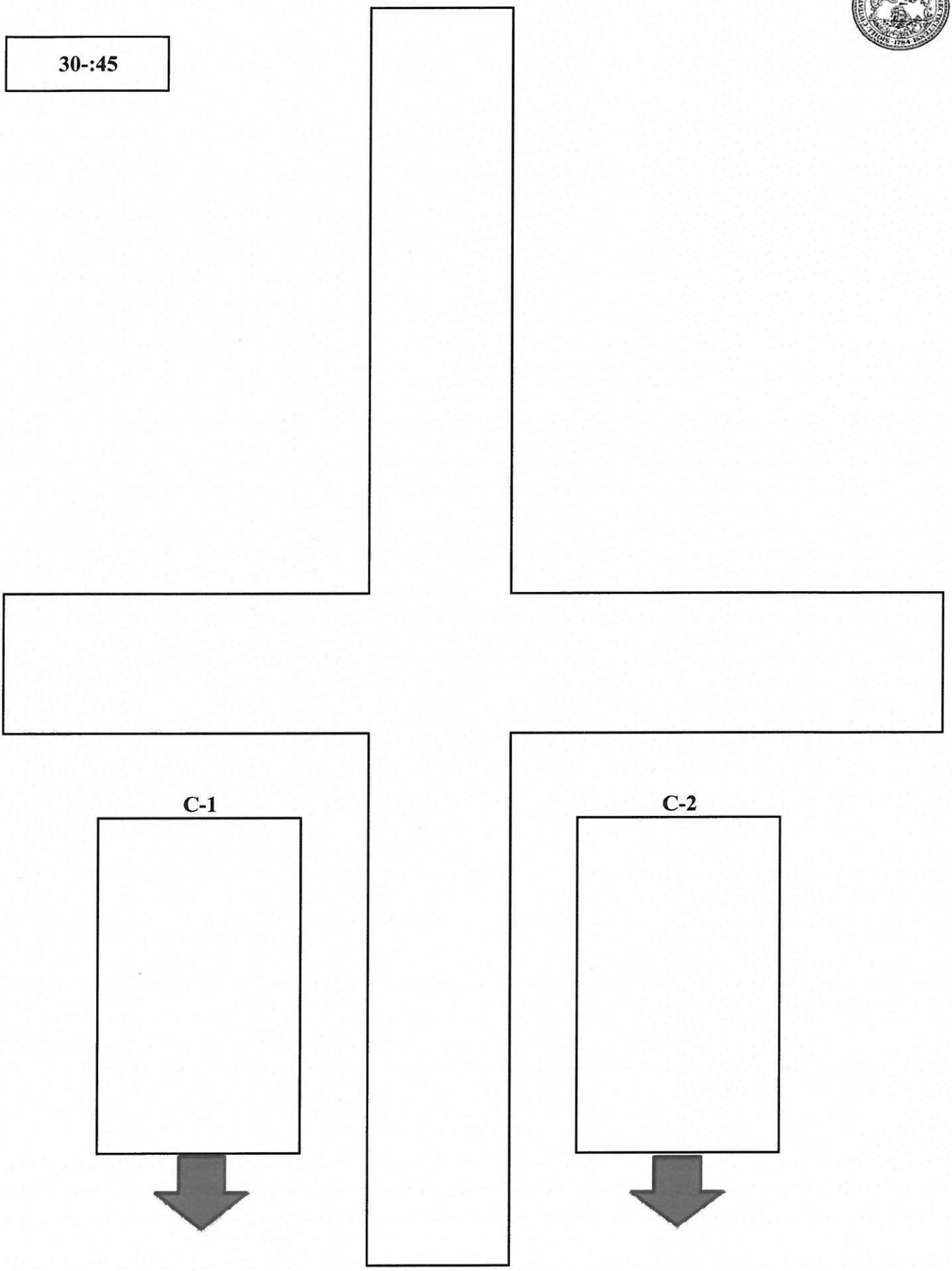


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

30-:45

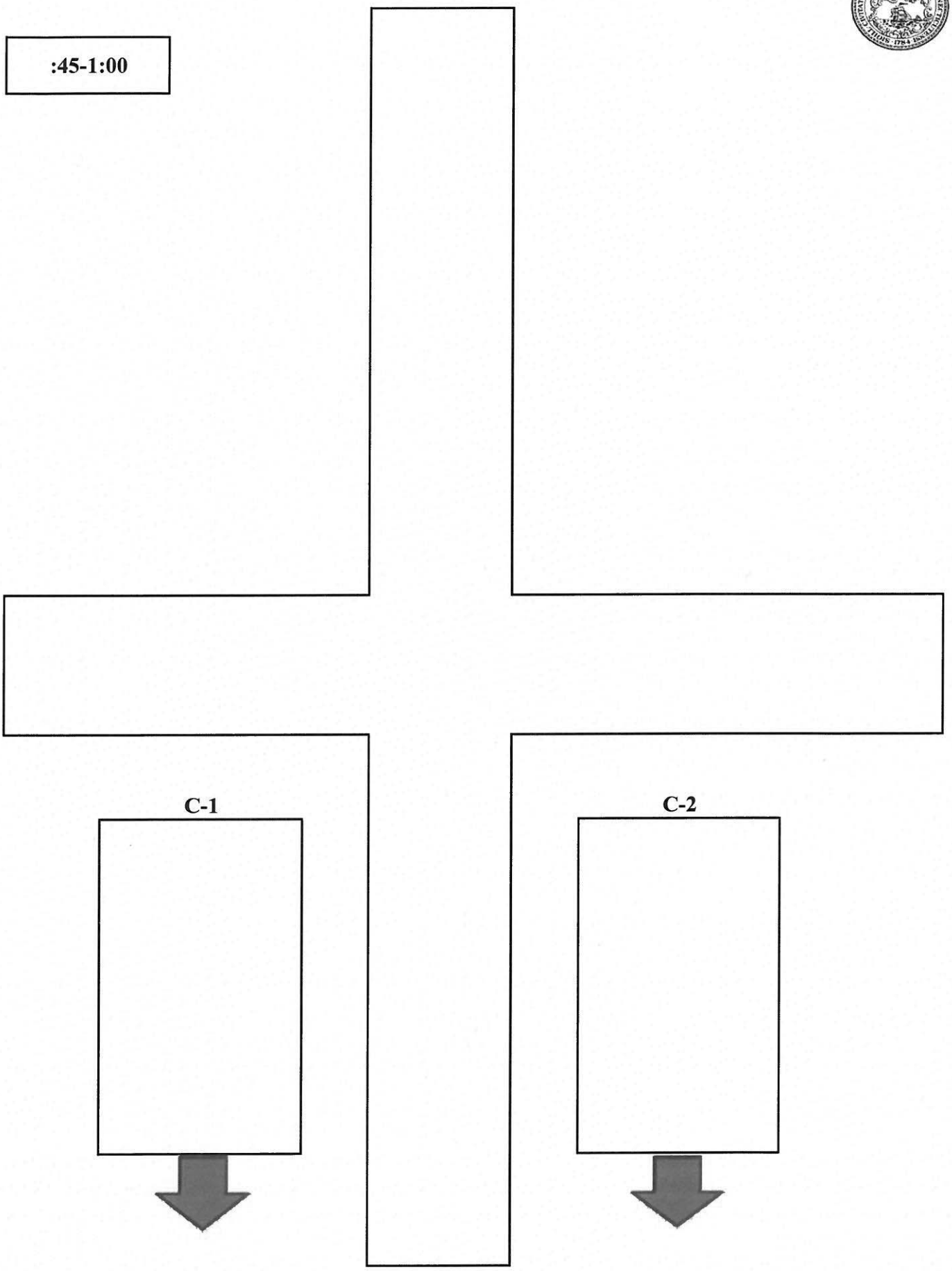


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

PEDESTRIAN COUNT FORM

:45-1:00

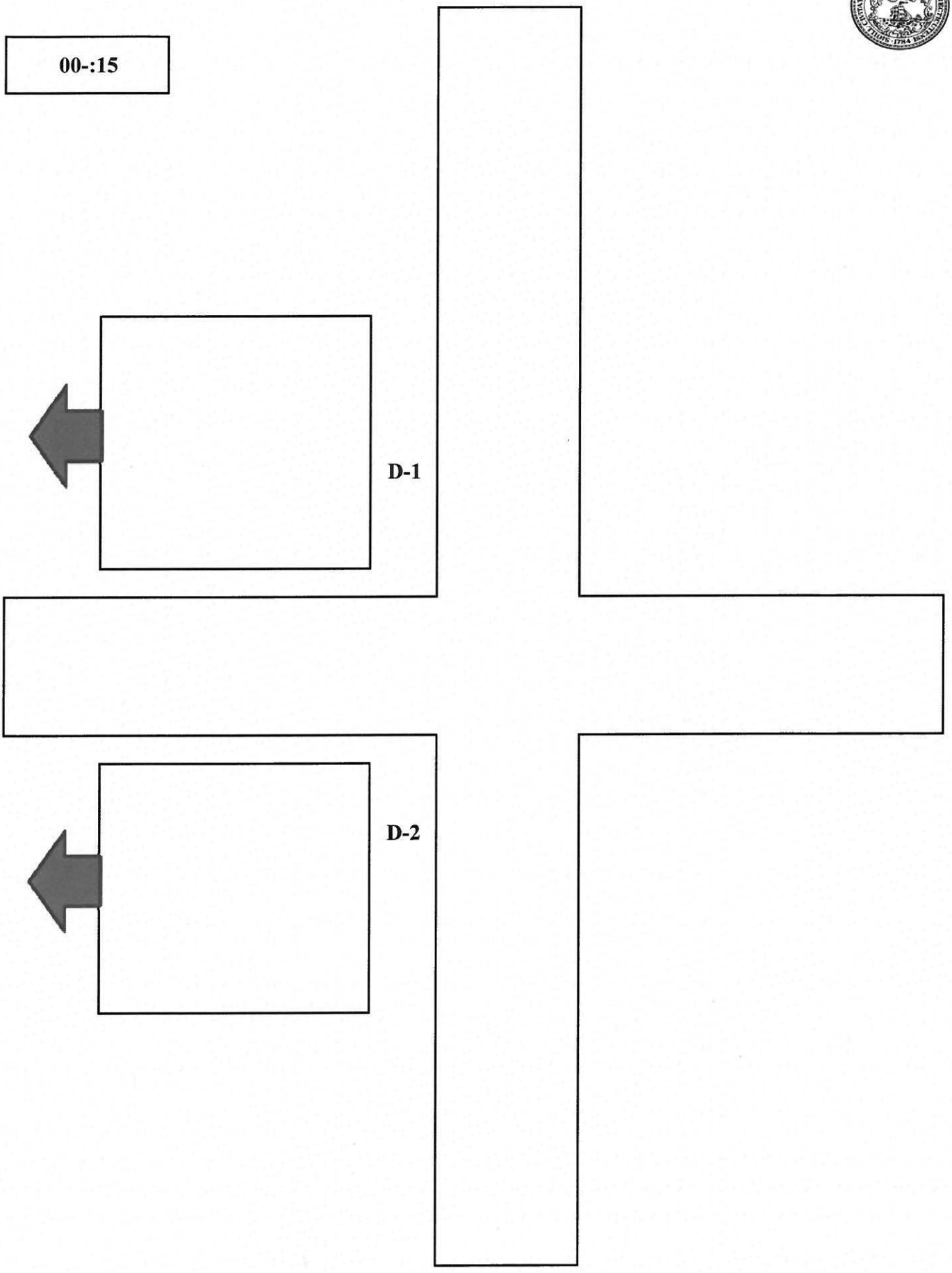


MILONE & MACBROOM®

NEW HAVEN IT ALL HAPPENS HERE

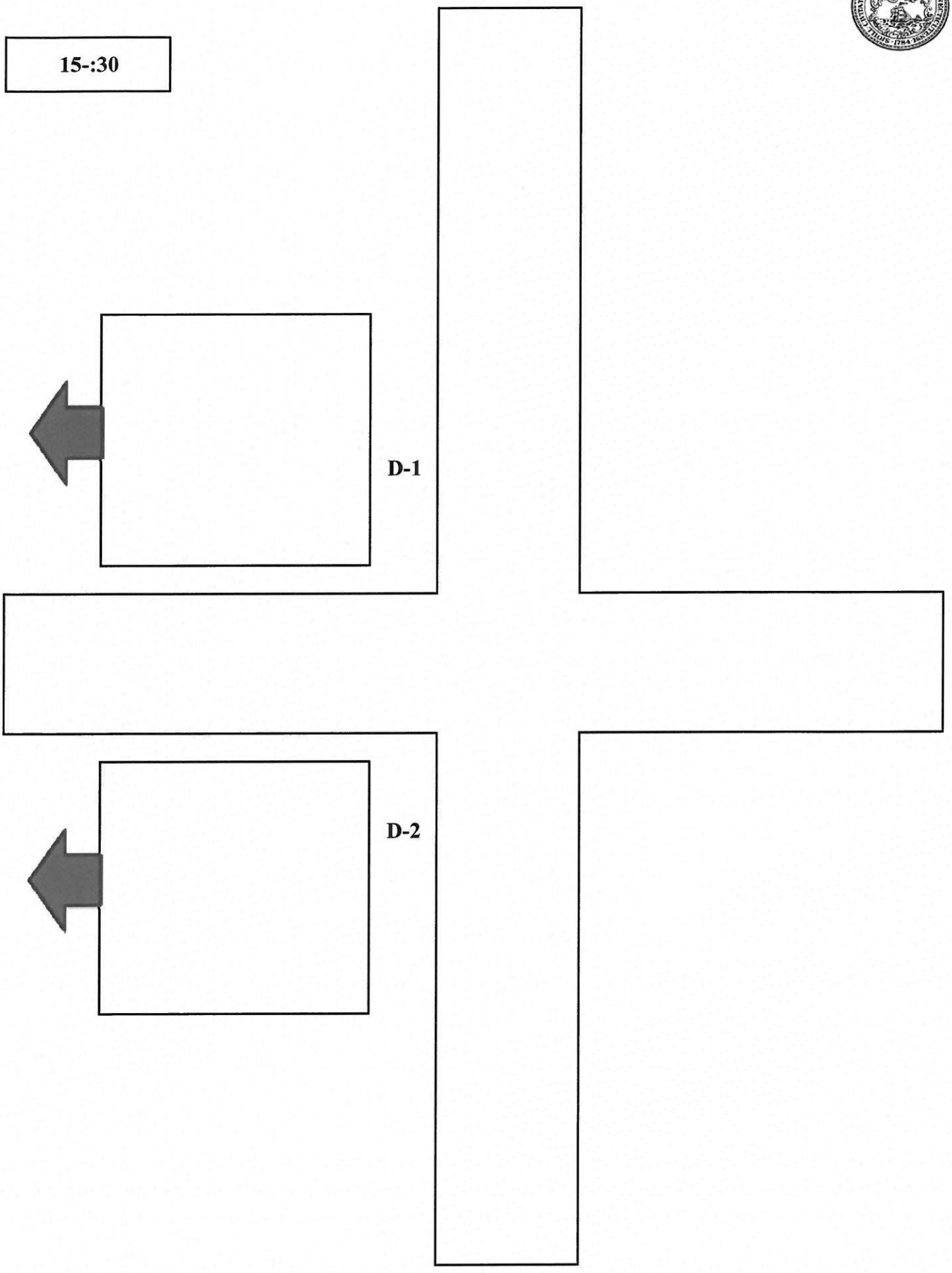
PEDESTRIAN COUNT FORM

00-:15



PEDESTRIAN COUNT FORM

15-:30



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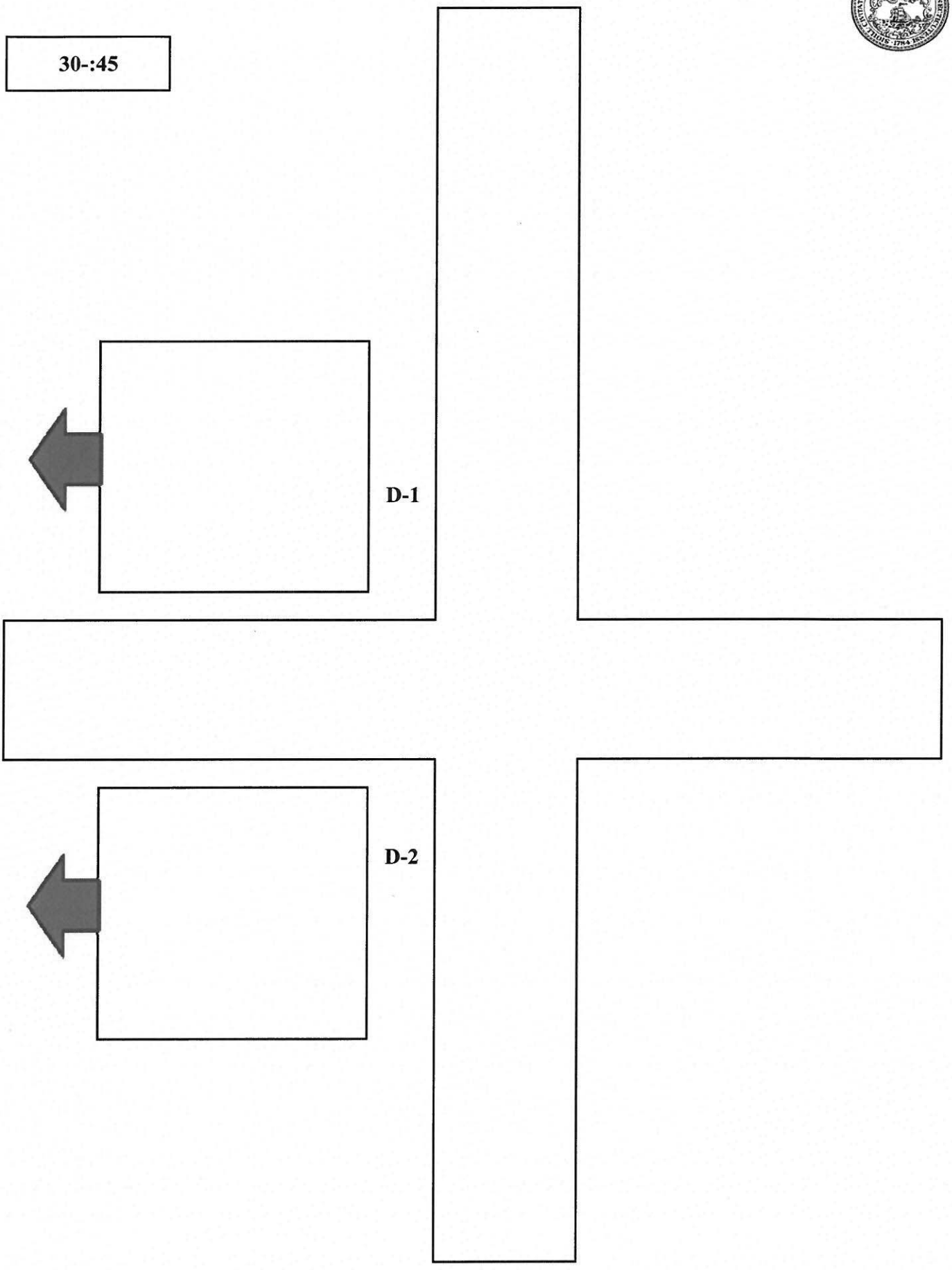
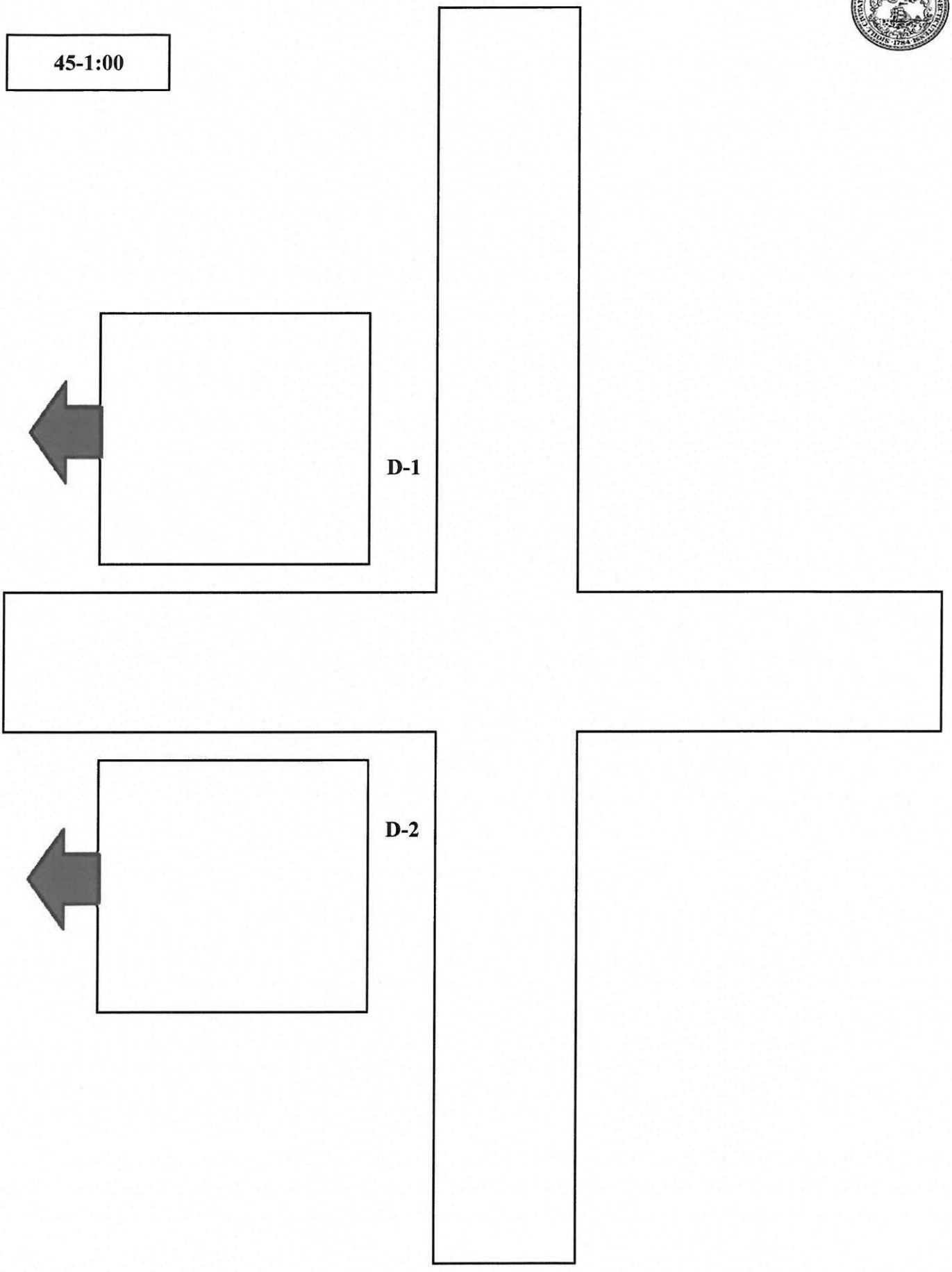
PEDESTRIAN COUNT FORM

30-:45



PEDESTRIAN COUNT FORM

45-1:00



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