FINAL REPORT

CENTER STREET TRAFFIC MANAGEMENT STUDY AUBURN, MAINE

PREPARED FOR:

AVCOG / ATRC
125 Manley Road
Auburn, Maine 04210

PREPARED BY:

Gorrill-Palmer Consulting Engineers, Inc.
P.O. Box 1237, 15 Shaker Road
Gray, Maine 04039
(207)657-6910

February 2008

City of Auburn, Maine

"Maine's City of Opportunity"

Office of the City Manager

February 4, 2009

Mr. Robert Thompson, Chair
ATRC Policy Committee
125 Manley Road
Auburn, ME 04210

RE: CENTER STREET TRAFFIC SYSTEM MANAGEMENT STUDY

Dear Mr. Thompson:

Please accept this letter as an attachment to the Center Street Traffic System Management Study, conducted in 2008 by Gorrill-Palmer Consulting Engineers, Inc.

The purpose of this letter is to memorialize that the Public Advisory Committee and current administration at the City of Auburn have reservations regarding the practicality of the study's results; specifically regarding the potential utilization of roundabouts and medians.

Though the City and the Public Advisory Committee do not share the study's enthusiasm for roundabouts and medians, we understand the data captured during this study will serve as baseline for future traffic improvement decisions, i.e. synchronized traffic signals.

For future administrative reference, it is my understanding that any future projects proposed for the Center Street Corridor will need to be sponsored by the City of Auburn and therefore will be subject to a public process at both the City and the ATRC levels. Engaging the business community in light of any consideration of roundabouts or medians is an absolute must. Thank you for your time and cooperation in this matter

Sincerely,

Glenn E. Aho
City Manager

60 Court Street • Suite 243 • Auburn, ME 04210
(207) 333-6600 Voice • (207) 333-6601 Automated • (207) 333-6621 Fax
www.auburnmaine.org

Center Street TSM Study
Auburn, Maine

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(Note: Technical appendices E and F available upon request under separate cover)

Acknowledgements

Special thanks also go to those individuals who comprised the Advisory Committee itself and those individuals who attended the public meetings. The attendees and notes from the meetings are enclosed in the Appendix of this report.

Center Street Advisory Committee Members

Laurie Smith, Assistant City Manager, City of Auburn
Bob Belz, Public Works Director, City of Auburn
Eric Cousens, City Planner, City of Auburn
Eric Labelle, Community Services Director, City of Auburn
Roland Miller, Economic Development Director, City of Auburn
Dick Gleason, Former Ward 1 Councilor/Gleason Media Services, City of Auburn
Robert Hayes, City Councilor, Ward 2 Councilor, City of Auburn
Doug Weisz, Evergreen Subaru
George Greenwood, Remax River Cities
Sharon Millett, Millett Realty
Mike Gotto, Technical Services, LLC

Executive Summary

Preface

Auburn, with a population of approximately 24,000 people (based on the 2000 Census), is Maine's fifth-largest community and faces ever-increasing transportation demands. A major transportation corridor within Auburn is Center Street, which is a continuation of the Route 4 corridor from Union Street Bypass and Minot Avenue to the south, and is one of the few roadways in Lewiston-Auburn placed on the National Highway System. For some time now, this corridor, a principal arterial providing work and vacation-based connections to Turner and other towns to the north, has been primarily commercial in nature, ranging from retail to dining to auto-based establishments.

Because this roadway is the only significant access to and from the north of Auburn, its ongoing ability to accommodate travel demands of local (and other) users is of great importance. It currently carries between 25,000 and 30,000 vehicles per day based on historic counts published by MaineDOT, making it one of the most heavily traveled roadways in Auburn. Thirty years ago, Center Street was typically a two-lane roadway, but significant development, ranging from the construction of the Auburn Mall to commercial sites all along the corridor increased demand to where this roadway is now typically a five-lane section.

Along the portion of Center Street from Turner Street to south of the Veteran's Bridge overpass, the roadway is a five-lane section with a two-way center left turn lane. Most commercial sites along this portion are smaller business than those closer to the Auburn Mall, and access control is minimal, with a proliferation of driveways. Center Street from the north side of the Veteran's Bridge overpass to Joline Drive is characterized with greater access control to larger retail developments, including the Auburn Mall and Shaw's Plaza. Rather than a center turn lane, left turns are typically made in dedicated lanes and often at traffic signals.

Although growth along the corridor is currently only about one percent per year, due to the buildout of many lots adjacent to Center Street, development in and around the Auburn Mall area is planned and already taking place, which will impact the Center Street corridor. In addition, some sites have been redeveloped, which has resulted in changes to access control. This corridor has numerous safety concerns, due to everything from poor access management to excessive delay and queuing, primarily in the vicinity of Turner Street/Union Street and the Veteran's Bridge.

ATRC formed an Advisory Committee to oversee this study of the Center Street corridor. The transportation consulting services of Gorrill-Palmer Consulting Engineers, Inc. were retained to complete traffic forecasting, capacity analysis, and to work with the Committee on the potential concepts for the corridor. The forecasting was completed for 2015 and 2030, eight and twenty-three year horizons respectively, and completed utilizing information provided by ATRC, MaineDOT and the Consultant. Capacity analyses were completed for the 2007, 2015 and 2030 traffic volumes to determine the operations of the corridor.

Crash History

A review of the crash data indicates that safety is a major issue along the corridor. Six locations were considered High Crash Locations (HCL's), and three more locations were close to reaching HCL status. A review of the data indicated that safety issues occurred not only at specific intersections along Center Street, but also along portions of the corridor, primarily in the section with five lanes. Further review indicated that many of these conflicts were related to left turns either into or, more commonly, from unsignalized driveways along the five-lane section. In addition, traffic volumes along Center Street appear to have reached the point where small increases in peak volumes result in greatly increased crash rates, potentially due to the reduction in available gaps in traffic. For example, the count data indicated that volumes along Center Street were fifteen percent higher on a Friday than during the other days of the week, yet total crashes were 34 percent higher, potentially due to greater congestion, fewer gaps in traffic, and potentially more drivers unfamiliar with the area. As such, it is anticipated that if traffic volumes continue to increase, so might collisions.

Forecasting/Analysis Findings

Based on the forecasting completed for the Center Street corridor, traffic volumes along this roadway are anticipated to increase by approximately 0.7 percent per year for the next seven years, as well as from 2015 to 2030. This will result in a seventeen percent increase in traffic along the roadway by 2030. The traffic growth forecasts were derived from the regional TransCAD model, maintained by ATRC. Our office researched historic growth rates along the corridor, and found that the forecast volume increases are compatible with prior growth.

Even with the recent improvements to the Veteran's Bridge intersections, including the construction of the overpass to Mount Auburn Avenue, capacity constraints are already observed on this portion of the roadway, as well as southerly at the intersection of Union Street Bypass with Turner Street and Center Street. This situation is somewhat exacerbated by 2015, and becomes a serious issue by 2030. Without improvements to the system, the Veteran's Bridge area will experience long delays and very long queues, such that intersections to the north will be impacted as far as Joline Drive. Delays for Union Street approaching Center Street will also become very excessive, with queues potentially as far back as Hampshire Street. Operational deficiencies on such a level often results in travel diversions to other roadways, which in the case of Center Street, would result in more traffic on residential streets.

In addition, peak hour volumes that were collected at the signalized study area intersections were examined, and it was determined that Center Street at North River Road and Center Street at Lake Auburn Avenue only marginally satisfied traffic signal warrants; also, the intersection of Center Street with Auburn Plaza did not satisfy traffic signal warrants. As a result, through traffic on Center Street is being impeded by a relatively small volume of side-street entering traffic; as such, removal of some of the traffic signals may aid with overall corridor mobility.

Site Observations

Observations at Center Street with Turner Street and Union Street revealed significant queuing, and queuing was also observed at the Veteran's Bridge interchange and Auburn Mall Drive. Queues several hundred feet in length were observed at critical approaches to these intersections.

Although Center Street has been primarily designed for the private passenger vehicle, bicycle and pedestrian use was observed. In the case of bicycles, a few bicycles an hour were observed to travel the corridor, and would travel on the outer edge of the outer travel lane. As the roadway currently has no shoulder, vehicles would have to move away from the bicycles and into the inner travel lane, a sometimes difficult maneuver.

Pedestrians were occasionally observed at the signalized intersections along the corridor, and typically crossed when the pedestrian phase was called up. However, pedestrians were also observed crossing Center Street between Lake Auburn Avenue and the Veteran's Bridge. This segment has no signal control or any refuge for pedestrians, and as such, they would cross two lanes, wait until traffic had cleared in the next two lanes upon reaching the center left turn lane, and then cross the rest of Center Street. The pedestrians ranged from children under the age of ten to an elderly couple.

Traffic System Management Recommendations

Constraints and Needs of Recommendations

The traffic system management recommendations and options should attempt to maintain Center Street's existing width as much as possible and limit widening to isolated locations, primarily at locations that are currently signalized intersections, given the proximity of utility poles, businesses proximity to the roadway, difficulty for pedestrians to cross the roadway, and limited right-of-way. However, this being said, a major arterial such as Center Street must also satisfy the demands and needs of other modes, particularly bicycle and pedestrian.

Prior to the completion of any of the recommendations, or future studies resulting in other recommendations, it will be critical to involve the public, local businesses, and other stakeholders. This will allow for the balancing of public desires and concerns with engineering expertise and judgement.

Lastly, recommendations are needed that result in adequate traffic flow for the foreseeable future, while maintaining or improving upon safety. Even with a relatively small growth rate forcast of 0.7 percent per year based on information from ATRC, this still results in an almost twenty percent increase in traffic by 2030.

Description of Options

What follows is a description of the transportation improvement recommendations. The figures illustrating these recommendations are enclosed in Appendix B.

- *Signal Optimization and Coordination along Center Street:* Based on the analysis, many of the study area intersections, particularly in the vicinity of the Veteran's Bridge, would benefit from updated signal timing and coordination and signal warrant efforts recommended in this study. ATRC has already begun to improve signal operations as part of a separate project.
- *Improvements at Joline Drive and Stetson Street and at Center and Union Streets:* Improvements have been slated for the intersection of Joline Drive and Stetson Road at Center

Street by MaineDOT, which includes additional lanes for the side streets and improved signal operations via a new controller. The second improvement would consist of changes to the lane structure to the intersection of Center Street at Turner Street and Union Street. As part of the approvals for a Walgreen's project, a separate left turn lane would be added to the southeast bound Turner Street approach. This change will result in slight reductions in overall delay at this location.

- *Improvements in the Vicinity of the Vet's Memorial Bridge:* Given that even with signal retiming and coordination, this interchange as well as the Auburn Mall Drive intersection to the north will eventually reach capacity and result in very high levels of delay and queuing. In order to resolve this issue, the two separate intersections for the Veteran's Memorial Bridge would be combined into one single signalized intersection, known as a Single Point Urban Interchange, or SPUI. The intersection of Auburn Mall Drive/Kmart Drive with Center Street would become a roundabout, and the traffic signal at Auburn Plaza would be removed. The traffic signal at Shaw's Plaza would be coordinated with the upgraded Joline Drive intersection to the north. The resulting improvements would result in less delay along this portion of the corridor based on the 2030 scenario than is experienced today.
- *Long-Term Improvement Concept for Center Street at Turner/Union Street:* If the anticipated modifications at this location associated with the proposed pharmacy project are constructed, the changes will allow the City a few more years to work toward a long-term solution. Although the long-term concept will include property acquisition and a more significant level of roadway reconstruction, substantial operational improvements could be realized at this location. Gorrill-Palmer's recommendation for this location is a hybrid intersection that combines the one-way circulation of a roundabout with two-phase traffic signal control, resulting in three distinct intersections that are fully coordinated. To accomplish this change, Benjamin Street would be removed, and Union Street northbound would come into Turner Street at the former southeast end of Benjamin Street. The result would be a safer intersection with high capacity, operating with less delay in 2030 than the current intersection does today.
- *Access Management/Safety Plans:* As the crash data indicates, the proliferation of full-access driveways is a major concern along Center Street. Given the safety findings, it is important for the City to work with local businesses to make access management part of any site redevelopment plan. The most important portions of any access management plan are reducing curb cuts, reducing curb widths, providing site interconnections, and use of side streets where feasible and appropriate. The City of Auburn could help realize the improvements by requiring them as part of the site redevelopment process for businesses along the corridor. Some potential interconnection locations are included in the Appendix of this report; it should be noted that they are for illustrative purposes, as their final location will depend on specific development on the street. Lastly, it is recommended that ATRC and/or the City make the funding of an access management plan along Center Street a high priority.

Additional Possible Improvements/Strategies

Current forecasts for highway funding over the next several biannual cycles indicates that funding will not be available to implement any changes of significance along Center Street, simply due to

budget constraints and competition with other transportation improvement projects. As such, implementation of various options will need to be completed incrementally, and other techniques/policies should be examined prior their construction.

The mobility of Center Street, while of high importance given its classification in the National Highway System, should continue to be balanced with the needs of the business community as well as residents and users of other modes. In the end, however, safety, as always with roadways that serve the traveling public, remains the overriding concern and should be reflected in any improvements that are implemented.

Recommended additional strategies are as follows:

- *Transportation Demand Management:* With the continuing growth in traffic along Center Street, and few changes to the roadway system proposed in future years currently in the BTIP/local funding mechanisms, measures to reduce traffic growth will increase in importance. One significant group of measures, Transportation Demand Management (TDM), includes but is not limited to staggered work hours, carpooling and vanpooling, secure bicycle areas, and subsidized bus passes. Although such measures have not previously been used in the Lewiston/Auburn area, municipalities in Maine such as Portland as well as MaineDOT have begun to implement such strategies in order to reduce not only peak hour traffic volumes, but also parking demand. It is strongly recommended that the City of Auburn require that the potential for these programs be evaluated as part of site plan approval for future developments, particularly if a project may result in significant employment, and thus, the potential for large-scale vehicular trip generation.
- *Bypass Roadway:* If traffic growth were to continue, and accelerate, despite measures to reduce it (perhaps due to significant population and economic growth not currently foreseen), the potential of a bypass roadway would also need to be revisited. Plans have ranged from an extension of the circumferential roadway (i.e. extension of Mount Auburn Avenue) from the Veteran's Bridge to Hotel Road to a new north-south roadway to provide access from Turner and other points north to the Maine Turnpike. While this would significantly reduce traffic on Center Street, it would reduce available pass-by traffic to businesses, require significant property takings, and would require an extensive long public process via the National Environmental Policy Act. This being said, right-of-way should be identified and preserved for this route, if possible.

Other Possible Long-Term Strategies

The crash data and the long-term traffic forecasts indicate that the potential exists for significant safety deficiencies along Center Street between Turner Street and the Veteran's Bridge if the above measures are not taken. However, even with these measures, there remains a possibility that safety will remain a major concern. The possible additional measures are discussed below:

- *Roundabouts at North River, Lake Auburn and Alpha:* If, despite the access management, transportation demand management, and other measures are not able to result in the reduction of traffic growth and collision rates along Center Street between Turner Street and the Veteran's Memorial Bridge, roundabouts should be considered at North River Road, Lake Auburn Avenue, and Alpha Street to allow for vehicles to reverse direction once making lefts

to and from side streets becomes too difficult. For the location at Alpha Street, Broadview Avenue would be dead-ended with traffic accessing Newell Avenue or Coburn Street instead. As the roundabouts would have multi-lane approaches, it is anticipated that pedestrians would actuate crossing lights, to comply with upcoming Americans with Disability Act regulations.

Given the various funding constraints, and the need to give drivers time to acclimate to change, it is recommended that a single roundabout be constructed first, perhaps at Alpha Street where no traffic signal currently exists. This would be used as a test case prior to conversion of other locations to roundabouts, and may allow for funding to make changes incrementally.

- *Medians from Turner Street to Veteran's Bridge:* If even the combination of the roundabouts with access management and other techniques still results in safety problems, medians should be considered between the roundabouts, from Turner Street to the Veteran's Bridge. If drivers are familiar with the concept of reversing direction via the roundabouts, businesses could be easily accessed. The other benefit of the medians is that they would consume less width than the existing center turn lane, which would allow for the placement of shoulders/bike lanes on Center Street. Following the February public meeting where public concerns were expressed regarding the use of medians, research was conducted into the matter. However, it is important to note that the Center Street business community remains concerned about these measures, and as such, extensive additional research would be required if such a measure were ever to take place. If it were ever to take place, additional meetings would be required with the affected businesses to determine how specific modifications to the roadway would impact each business, and what measures could be taken to minimize these impacts. Ultimately, the goal is to make Center Street a safe corridor for the traveling public and maintain access to businesses.

Access for East Auburn

At the request of the City of Auburn our office also examined the potential for a traffic signal from Fair Street by combining access from other nearby street to Center Street. Although this location did not meet signal warrants, our office did determine several options that could be explored in greater detail in the future if so desired. These would consist of the following:

- Construction of a five-lane section fronting Fair Street
- Construction of a Florida 'T' style intersection fronting Fair Street
- Construction of a roundabout at a relocated Fair Street/public boat launch

These measures are discussed in greater detail in Chapter 5.

In summary, approaching improvements to Center Street in an incremental manner, while examining other methods to make operations along Center Street as efficient as possible, will provide for improved safety, improved mobility, access for several travel modes while working to maintain access for local businesses for the foreseeable future. In addition, several options exist to mitigate accessibility deficiencies in the East Auburn area, even though the side streets there do not warrant a traffic signal.

Chapter 1
Introduction

Project Background

Auburn, is Maine's fifth largest city, and as a sister city to the larger neighbor city of Lewiston to the east, experiences traffic demand commensurate with being part of Maine's second-largest metropolitan area. Center Street plays a significant role in the transportation network for Auburn, and serves significant development occurring in the area, most significantly, in the vicinity of the Auburn Mall. Also designated as Route 4, it is the primary route for communities ranging from Turner to Farmington, and is designated on the National Highway System; Center Street is one of the few roadways in Lewiston/Auburn that provides access for both businesses and recreational traffic.

Center Street at Turner Street.

Additional residential development in outlying areas of Auburn and more particularly, Turner, combined with the construction of the overpasses on both approaches to the Veteran's Memorial Bridge has resulted in ongoing traffic growth along this roadway. In addition, the last significant upgrade to this roadway has not taken place in some time, with the exception of the Veteran's Bridge area. As such, issues of safety, access management, and capacity are beginning to become significant issues along the corridor.

By the year 2030, it is anticipated that traffic volumes will have increase by over seventeen percent, placing additional strain on the roadway and in particular at the signalized intersections. Significant delay and queueing will become the norm unless changes are made in the way this corridor operates. Despite the desire for maintaining mobility along Center Street, these other issues should be kept in mind:

Adjacent Uses (Commercial): As Center Street is a principal arterial, the land uses along the roadway are primarily commercial in nature, as businesses desire to have access to high levels of traffic volume. However, much of the development was done prior to the implementation of current access management standards, and as a result, many small sites have multiple driveways and no connections to immediately adjacent sites. This results in traffic turning on and off of the roadway at all possible locations south of the Veteran's Bridge, and appears to have resulted in a higher rate of crashes.

Adjacent Uses (Residential): Although most development along Center Street is commercial in nature, land use off of the roadway tends to be residential. As a result, pedestrian activity is higher than may be expected along the roadway, and pedestrians are often seen crossing the street, even at mid-block locations without the benefit of crosswalks or pedestrian signal phases. A review of the crash data indicates that three pedestrian collisions have taken place, confirming this issue.

Access Management: Center Street between Turner Street and the Veteran's Bridge consists of a five-lane section with numerous curb cuts at various (primarily commercial) properties. Many of these properties have multiple access points onto Center Street and are largely not interconnected. As such, significant turning traffic occurs at numerous points between signalized intersections. As a result, collision patterns have been observed indicating higher than normal rates of angle and rear-end collisions for left turns to and from unsignalized locations.

Study Area

The study area primarily consists of Center Street from Turner Street and Union Street Bypass to Joline Drive and Stetson Road. The intersections included in the study are as follows:

- Center Street at Turner Street and Union Street Bypass
- Center Street at North River Road and Center Street Plaza
- Center Street at Lake Auburn Avenue
- Center Street at Veteran's Bridge Eastbound and West Bowdoin Street
- Center Street at Veteran's Bridge Westbound
- Center Street at Auburn Mall Drive and Kmart South Drive
- Center Street at Shaw's Plaza Drive and Kmart North Drive
- Center Street at Auburn Plaza
- Center Street at Joline Drive and Stetson Road

As discussed above, a key focus on Center Street from Turner Street to Joline Drive, and in particular, south of the Veteran's Bridge is that of access management issues. Crash data and site observations, as well as published information indicate that the current five-lane configuration and proliferation of driveways cannot be sustained indefinitely; as such, recommendations along this corridor will be made.

In addition, the East Auburn area, in particular, the area east of the recreational area at the southern end of Lake Auburn has been examined for the potential of improved access, as making left turns to and from this area from Center Street (Route 4) results in extensive delay and has associated safety concerns.

Project Goals

It is important to develop a set of goals to serve as a benchmark by which to evaluate the effectiveness and impact of various alternatives and in particular a recommended set of improvements. The goals are as follows:

1.) Utilize strategies that maximize corridor mobility.

2.) Recognize the importance of the business community along Center Street in making the roadway important from an economic perspective.

3.) Examine various improvements to improve safety along the corridor.

4.) Improve facilities for other modes of travel, e.g. pedestrian, bicycle, and transit.

5.) Implement access management strategies to minimize curb cuts, provide direct connections between businesses, and help to clarify access points along the corridor.

6.) Create an incremental strategy that allows for a sequence of improvements, and as such, not requiring that all improvements be undertaken simultaneously.

As shown in the goals above, the balancing of competing needs is of the greatest importance along this corridor. Although state and federal funding for this road necessitates the preservation of access for through traffic (including truck traffic) along Center Street, residents, commuters, students, and seasonal travelers should be able to feel relatively safe and secure along its length.

Chapter 2
Existing Conditions

Center Street provides access from the downtown area as well as Union Street Bypass/Minot Avenue for vehicles traveling through Auburn to locations to the north, including Turner and ultimately, communities such as Farmington and Jay. Center Street is a principal arterial; the main purpose of an arterial is to move traffic between communities, so mobility is considered to be of paramount importance, along with safety. It should also be noted that unlike most roadways in the Lewiston/Auburn area that Center Street is on the National Highway System, which gives its need for mobility an ever greater stature than many other nearby arterials.

While much of Center Street has changed little in recent years, one major change was the completion of the Veteran's Bridge overpass several years ago, which provided direct access from Lewiston to Mount Auburn Avenue and Turner Street. As a result, much of the recent land development in the area has taken place away from Center Street but still in close enough proximity to the roadway to impact traffic volumes, particularly toward the northern end of the corridor.

Data Collection

Our office collected the following turning movement counts:

- Friday, September 28, 2007, from 3:30 to 5:30 PM:
  - Center Street at Turner Street and Union Street Bypass
  - Center Street at North River Road and Center Street Plaza
  - Center Street at Lake Auburn Avenue
  - Center Street at Veteran's Bridge Eastbound and West Bowdoin Street
  - Center Street at Veteran's Bridge Westbound
  - Center Street at Auburn Mall Drive and Kmart South Drive
  - Center Street at Auburn Plaza
  - Center Street at Joline Drive and Stetson Road

Based on the turning movement counts, the peak hours for the corridor are from 4:30 to 5:30 PM. In addition, ATRC completed a turning movement count on Friday, October 5, 2007 from 4:30 to 5:30 PM at the intersection of Center Street at Shaw's Plaza Drive and Kmart north drive. The raw counts are summarized on Figure 2 in the Appendix.

ATRC also placed their Wavetronix automatic traffic recorder (ATR) on Center Street north of the Veteran's Bridge westbound for the following periods:

- Friday, August 24, 2007 to Friday, August 31, 2007
- Monday, September 24, 2007 to Monday, October 1, 2007
- Friday, October 5, 2007 to Tuesday, October 9, 2007

The Wavetronix counter was also set at out Center Street at the Lake Auburn recreational area from Monday, October 1, 2007 to Friday, October 5, 2007 to update information previously gathered by ATRC in the East Auburn area.

In addition to the turning movement counts, Gorrill-Palmer Consulting Engineers, Inc. collected speed and classification data on Center Street the week of September 24, 2007 at the following locations:

- Between Turner Street and North River Road
- Between Lake Auburn Avenue and Veteran's Bridge
- Between Auburn Plaza and Joline Drive

The Wavetronix had been set out at the different times to determine the most appropriate design hour for the project. Based on the count completed in August, it was determined that the most active day of the week is Friday. This is to be expected, as the corridor sees primarily commuter and retail-based traffic. In addition, unlike many roadways in Lewiston and Auburn, there is a seasonal (i.e. tourist) traffic component along the corridor. The Wavetronix count also confirmed that the design hour occurs between 3:30 and 5:30 PM.

The follow up counts confirmed that the counts completed on September 28 were completed when traffic volumes were at their highest. The September volumes were greater than either the August or October (beginning of Columbus Day weekend) volumes. This may be attributable to the fact that in August, most of the higher education institutions (Bates College, University of Southern Maine, Central Maine Community College, etc.) are less active than in September. As for the Columbus Day counts, the lower peak hour volumes may be attributable to the fact that many employees take the Friday of Columbus Day weekend off or have a shortened work day, resulting in less commuter traffic during the peak periods. This also suggests that while there is a seasonal component along the roadway, it does not contribute as much to peak hour traffic volumes as other locally-based and commuter-based traffic. As such, the peak hour was determined to be from 4:15 to 5:15 PM based on the turning movement counts, and no seasonal adjustment was required.

Based on the vehicle classification completed as part of the data-collection effort, trucks comprise three to five percent of the traffic on Center Street during the PM peak period, and as much as ten percent of overall traffic during the course of a typical weekday. This is higher than usual for an urban roadway, and reflects the influence of land uses far to the north on Route 4.

Speed Analysis

As part of the data collection effort, speed data at four locations was obtained. The average and 85th percentile speed data along Center Street is compiled and compared to the posted speeds in the following table:

Table 2.1: Speed Data Along Center Street

Location	Posted Speed	50th Percentile Speed	85th Percentile Speed
Between Turner and North River	35 mph	33 mph	40 mph
Between Lake Auburn and Veteran's Bridge	35 mph	34 mph	40 mph
Between Veteran's Bridge and Auburn Plaza	30 mph	30 mph	36 mph
Between Auburn Plaza and Joline	35 mph	27 mph	38 mph

As shown in the above table, the 50th percentile speeds (typically referred to as "average" vehicle speeds) indicates that vehicles are typically traveling at or about the posted speed. The lowest average speed was found just south of Joline Drive; based on site observations, it appears that queues at this location between Joline and Auburn Plaza impact the speeds in this area, as stopped traffic comes into contact with the recording equipment.

The 85th percentile traffic, or that traffic in the top fifteen percent of speed, does show that it is not uncommon for vehicles to be traveling at five miles an hour above the posted speed in the segments between major intersections. As with many locations, there are also isolated and occasional vehicles traveling well in excess of the posted speed (ten miles an hour or more). While this is not uncommon for wider arterials, higher speeds often translate to safety deficiencies.

Historic Growth

Historical data was obtained from the Maine Department of Transportation (Maine DOT) from 1992 to 2006. Based on this information, it appears that the roadway volumes along Center Street have been increasing by approximately one percent per year, although this rate appears to be higher in some locations. This rate of growth is fairly typical of historic increases in the Lewiston/ Auburn area.

2007 Design Volumes

As discussed earlier in this chapter, based on data compiled by the Wavetronix device, it appears that the late September counts are higher than those in August or October. In addition, the Friday daily traffic count is significantly higher (approximately fifteen percent) than the Tuesday through Thursday volumes. This is to be expected, as a significant component of traffic along Center Street is retail-related as well as some portion of seasonal traffic.

As such, it appears that the turning movement counts completed on September 28th are sufficient for the 30th higher hour; i.e. a design hour where only 29 days have higher traffic volumes. As such, no seasonal adjustment was required. Peak hour traffic volumes may be slightly higher on a Friday afternoon in December, but this would be representative of the peak hour for the year, or designing for the top 0.01 percent of the time. Any roadway designed to accommodate such a period would result in unrealistic costs.

The raw turning movement volumes are shown on Figure 2 of Appendix A for the PM peak hour. The 2007 balanced volumes (i.e. 2007 design volumes) are shown on Figure 3 of Appendix A for the PM peak hour.

Pedestrian Volumes

As part of the collection of turning movement data, our office also collected data on the number of pedestrian movements at each intersection along the corridor during the peak hour. This pedestrian data is summarized below:

Table 2.2: Peak Hour Pedestrian Volumes

Intersection	Number of Pedestrians (PM Peak Hour)
Center Street at Turner Street and Union Street Bypass	1
Center Street at North River Road	8
Center Street at Lake Auburn Avenue	7
Center Street at Veteran's Bridge Eastbound	2
Center Street at Veteran's Bridge Westbound	9
Center Street at Auburn Mall Drive/Shaw's Plaza	9
Center Street at Auburn Plaza	6
Center Street at Joline Drive	6

As can be seen in the above table, pedestrian activity, while infrequent, is still present. Given the width of the roadway and the high volumes of traffic along Center Street, as well as the significant distances between destinations for the purposes of walking, even the volumes observed may be viewed as significant. It should also be noted that observations along the corridor indicate frequent mid-block crossings by pedestrians between Turner Street and the Veteran's Bridge overpass, something that is highly unsafe. More is discussed on this matter in the field findings section of this chapter.

It should also be noted that some bicycle traffic has been observed along the corridor, something to be expected given the significance of Center Street as a travel corridor as well as the presence of a bicycle shop to the north of the study area. However, the roadway does not currently have shoulders or bicycle lanes, so bicyclists must share lanes with automobile traffic.

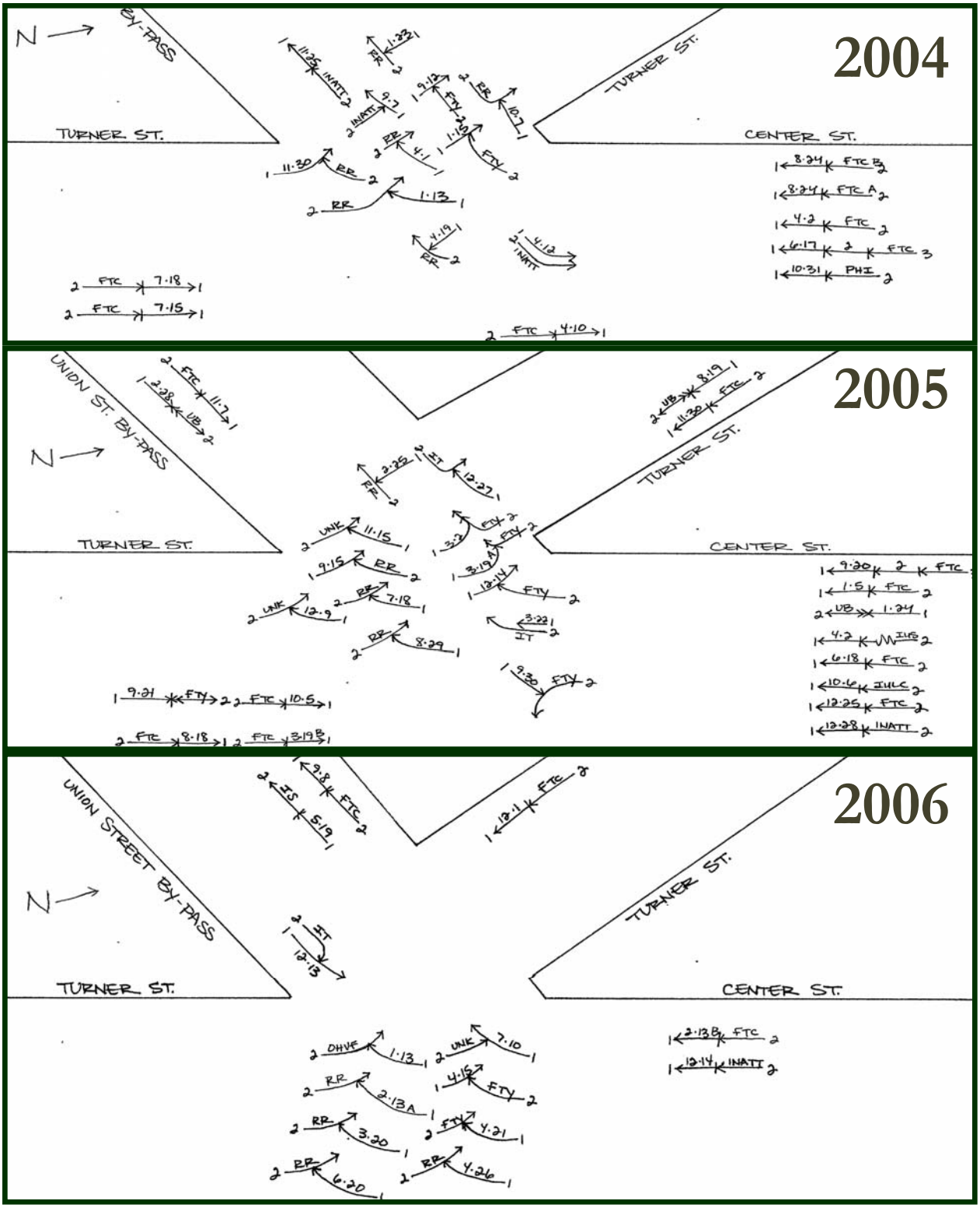
Collision History

Our office obtained the collision history for the Center Street corridor from the Maine Department of Transportation (MaineDOT) for 2004-2006, the latest three-year period available. A location is classified as a High Crash Location (HCL) if it meets both of the following criteria:

1. Eight or more crashes over a three-year period, and;
2. A Critical Rate Factor (CRF) of 1.00 or greater for the same three-year period. A CRF compares the actual crash rate of each intersection or road segment to the Statewide crash rate of similar locations. A CRF less than 1.00 indicates a lower than average crash rate.

Based on the crash data, six locations were considered High Crash Locations. In addition, three locations were close to HCL status, and two locations experienced fatalities. The entire study area experienced 418 collisions for the three-year period. Our office obtained the crash reports from the MaineDOT and compiled the collision diagrams. Each is shown on the following pages with a discussion following the respective diagram.

Center Street at Turner Street and Union Street



Figures 2.1a-c: 2004-2006 Crash History for Center Street at Turner Street and Union Street

This location experienced 62 collisions from 2004-2006, with a critical rate factor of 2.26. As can be seen in the preceding figures, there are several crash patterns associated with this location. Thirty, or approximately half of the collisions were rear-end in nature, with half of these occurring with southbound traffic on Center Street. 21 of the collisions (about one third of the total) are angle collisions, resulting from northbound Turner Street left turning traffic colliding with southbound Center Street traffic. It should be noted that almost half of these incidents were the result of red light running, and that at least two of the incidents were the result of a left turn movement from Turner Street to Union Street Bypass.

Based on site observations, it appears that phase failure is common at this intersection, which may contribute to red-light running, or moving queues suddenly having to stop. For the short term, the proposed mid-term improvements later in this report may reduce the frequency of phase failure due to increases in operational efficiency, thus reducing the crash rate. Long-term, conversion of this location to a hybrid rotary/roundabout as discussed later in this report should further reduce the crash rate at this location.

Center Street at North River Road

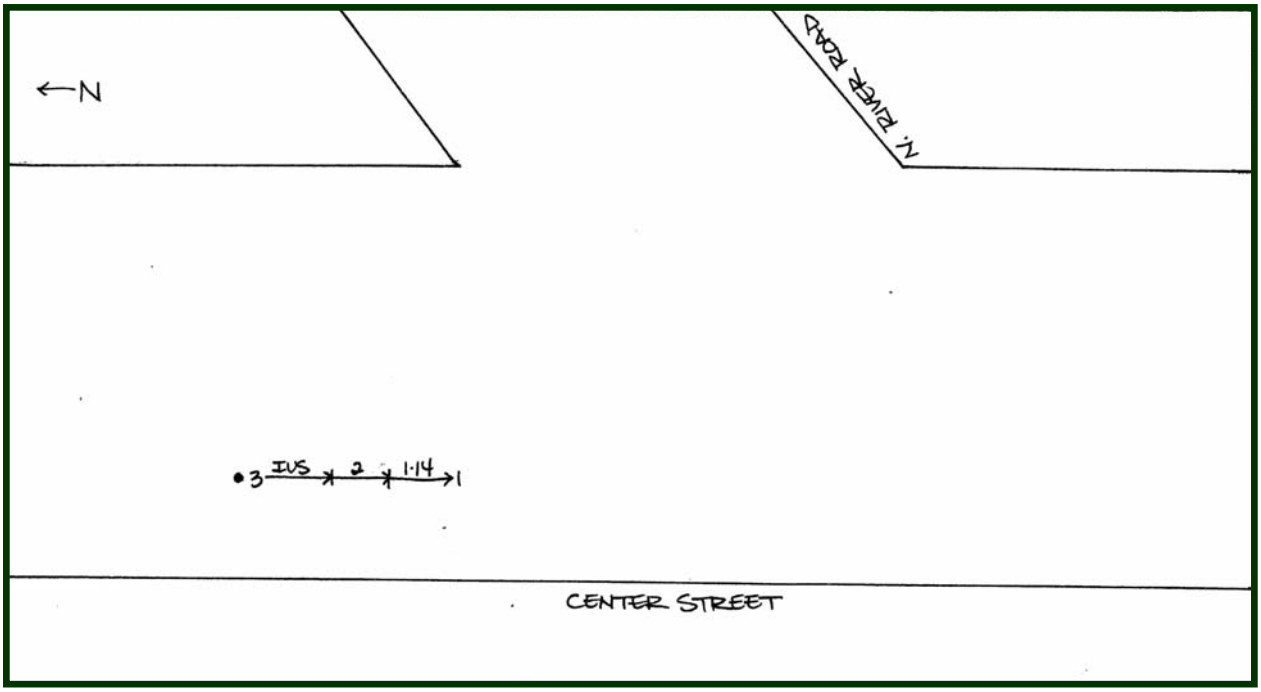


Figure 2.2: Fatality for Center Street at North River Road

What is shown above is a collision resulting in a fatality, which occurred when an elderly driver apparently rear-ended several vehicles stopped at the traffic signal. The elderly driver was unresponsive when emergency personnel arrived, and was later declared dead. It does not appear that any potential safety deficiency at the intersection contributed to this situation. MaineDOT updated this intersection in 2008 with the provision of left turn phasing from Center Street.

Center Street from North River Road to Stanley Street

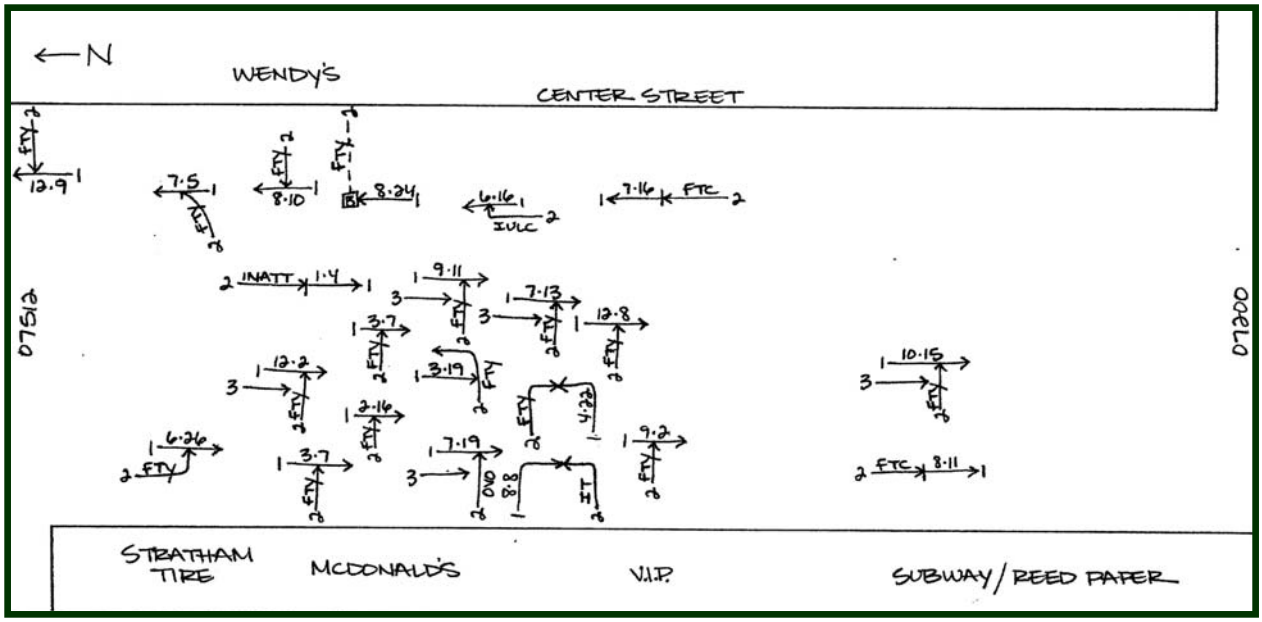


Figure 2.3: Center Street from North River Road to Stanley Street

This location experienced 23 collisions from 2004 to 2006. Thirteen collisions, or 56 percent of all collisions, involved traffic exiting McDonald's in some manner. Typically, these incidents occurred when a vehicle turning left from McDonald's was struck by oncoming traffic. Two collisions were the result of McDonald's and VIP traffic exiting simultaneously and colliding with each other. Three incidents were rear-end collisions along the roadway segment, one incident involved a vehicle striking a bicycle, and the remainder were miscellaneous in nature. It should be noted that the bicyclist was riding erratically when struck, potentially an unavoidable incident.

An examination of these collisions indicates that excessive driveway proliferation and the inability to easily make left turns from driveways may be a major contribution to the safety deficiencies along this portion of the corridor. Access management measures, such as left turn prohibitions and driveway consolidation, may result in improved safety along this portion of Center Street.

Center Street at Lake Auburn Avenue

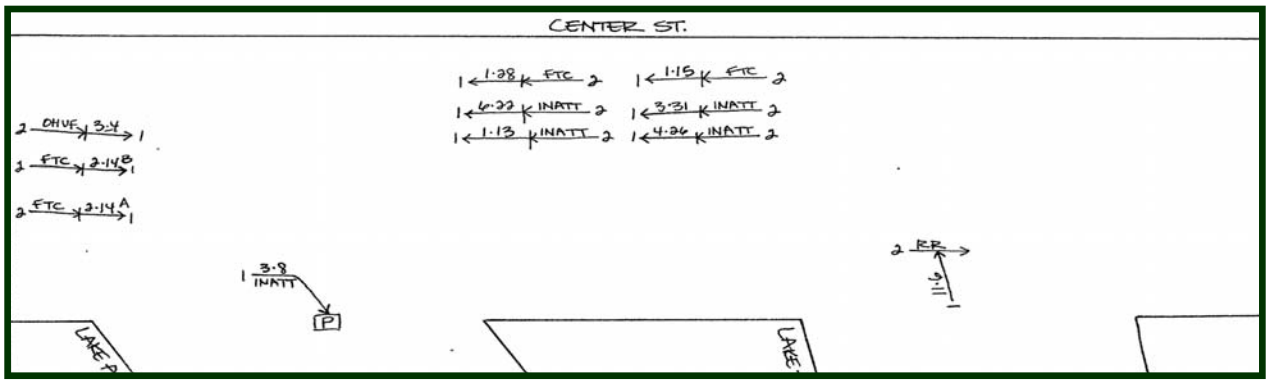


Figure 2.4: Center Street at Lake Auburn Avenue

This location experienced eleven collisions from 2004 to 2006. The majority of these collisions were rear-end in nature, and typically resulted from driver error ranging from distractions by cell phone to reaching for objects in the car to falling asleep at the wheel. One collision was an angle collision due to a driver on Center Street running a red light, and one vehicle struck a pedestrian while turning right onto Lake Auburn Avenue. There does not appear to be significant recommendations for improvements to this intersection, as they are typically for a signalized location.

Center Street from Lake Auburn Avenue to Newell Street

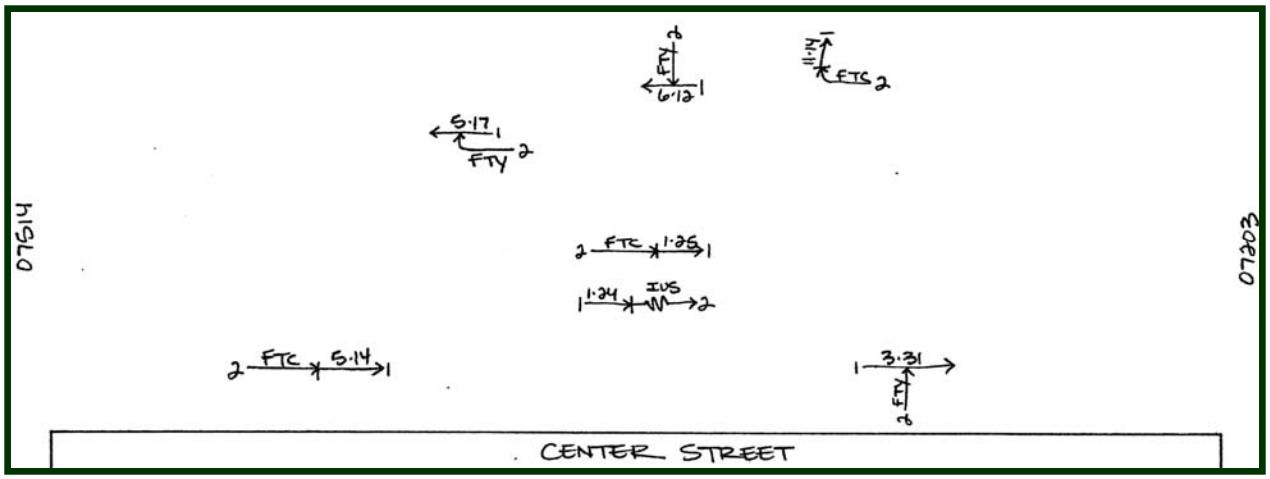


Figure 2.5: Center Street from Lake Auburn Avenue to Newell Street

This portion of Center Street experienced seven collisions, placing it close to High Crash Location status. There was no consistent pattern or location associated with the collisions, but most appear to be due to vehicles attempting to enter or exit the many driveways along the corridor. As with portions of Center Street to the south, access management measures may benefit this portion of the roadway.

Center Street at Veteran's Bridge Eastbound

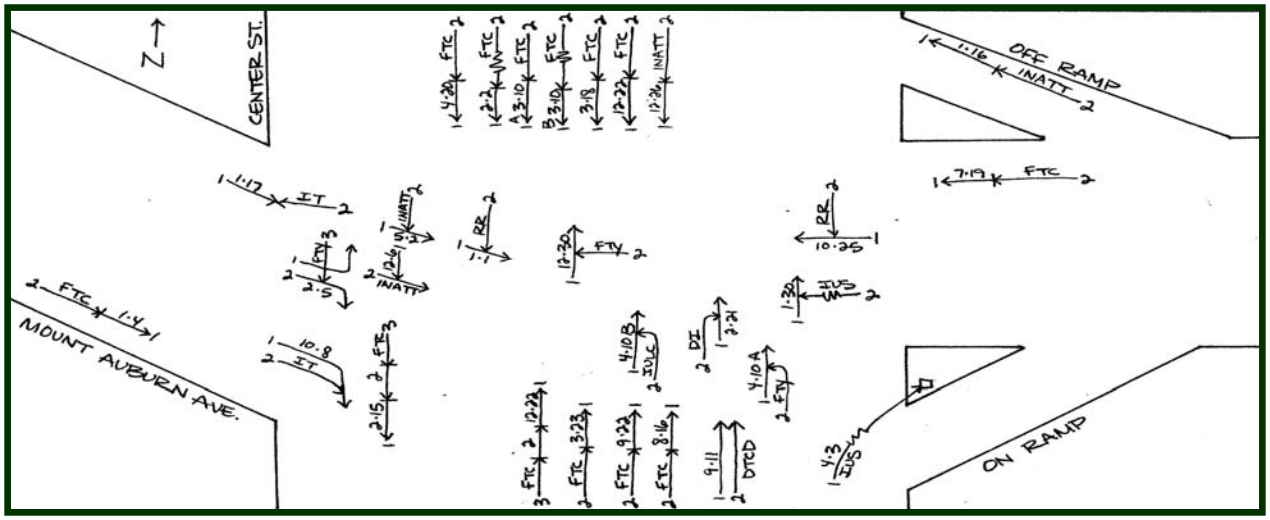


Figure 2.6: Center Street at Veteran's Bridge Eastbound

Center Street at the Veteran's Bridge experienced 31 collisions from 2004 to 2006. Of these, fifteen, or approximately half, were rear-end in nature. Most of these were southbound traffic coming from the eastbound ramps. The other collisions ranged from angle collisions to improper lane changes, to, in one case, a vehicle being struck head on while attempting to enter the exit ramp. As with the intersection of Center Street with Turner Street and Union Street Bypass, frequent phase failure may be playing a role in the crash rate at this location, and significant changes to the nature of this location would be required to have a significant impact on the location's overall safety.

Center Street at from Veteran's Bridge Eastbound to Auburn Mall Entrance

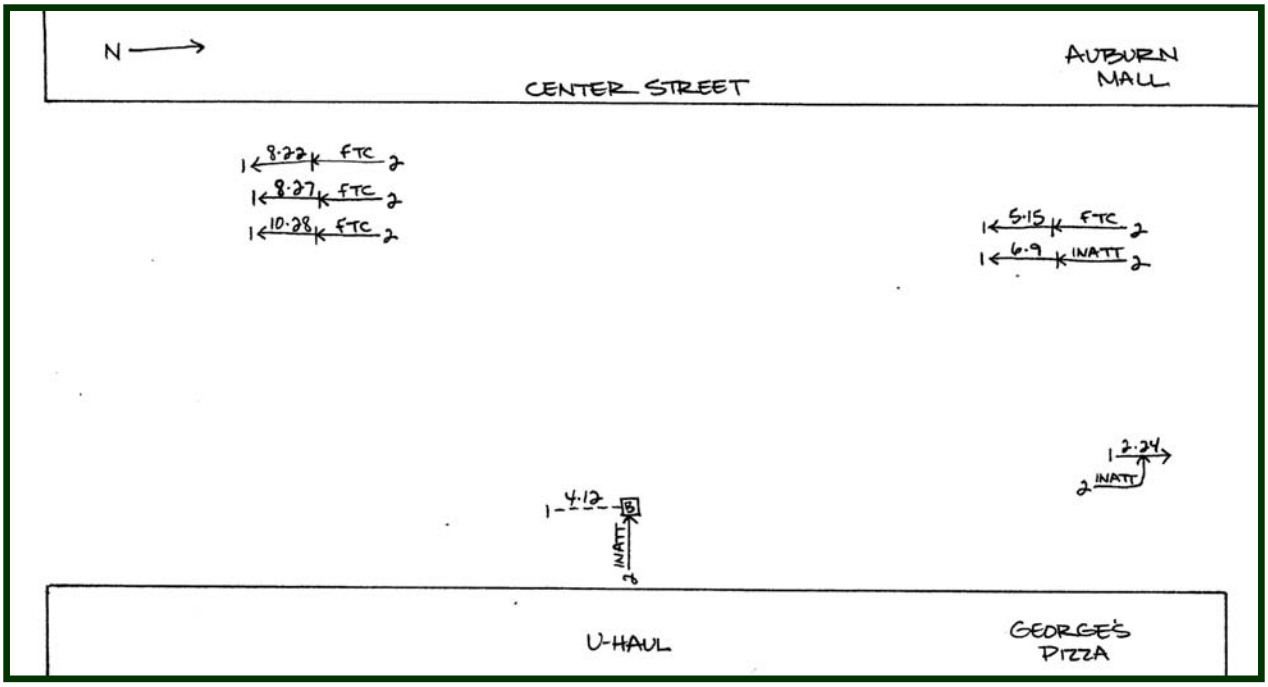
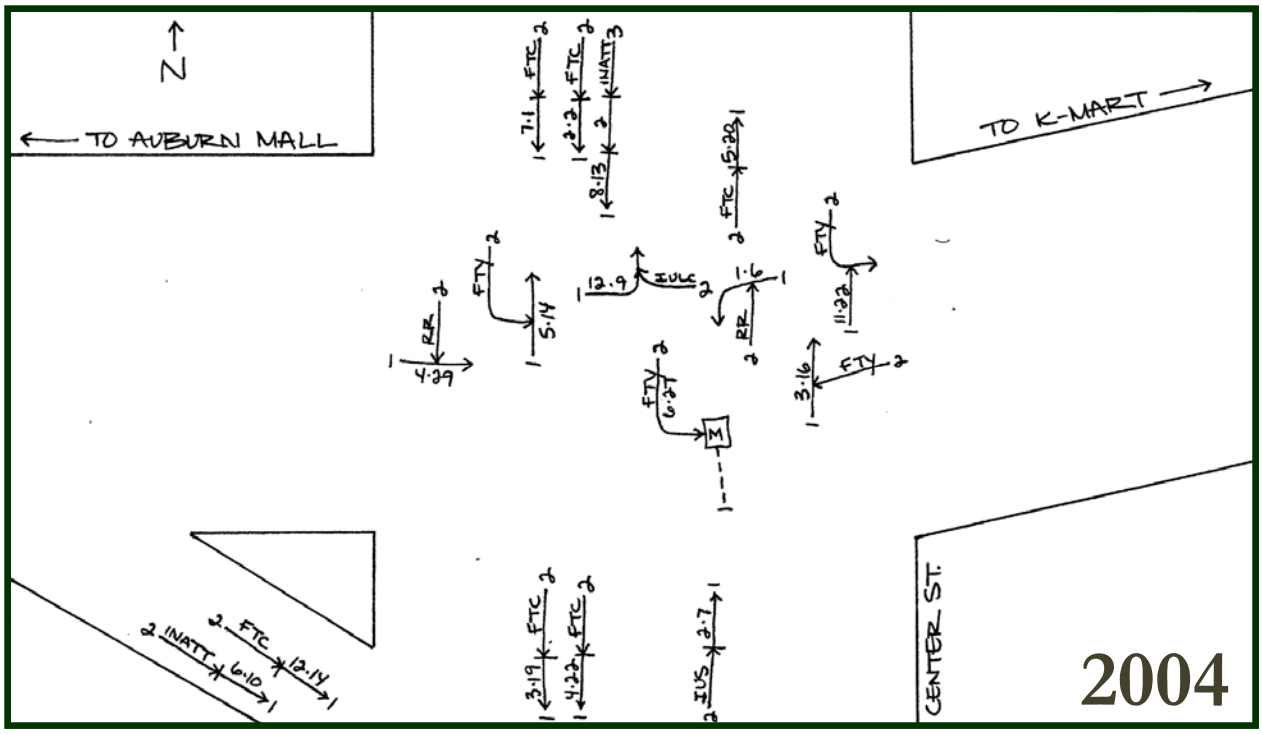


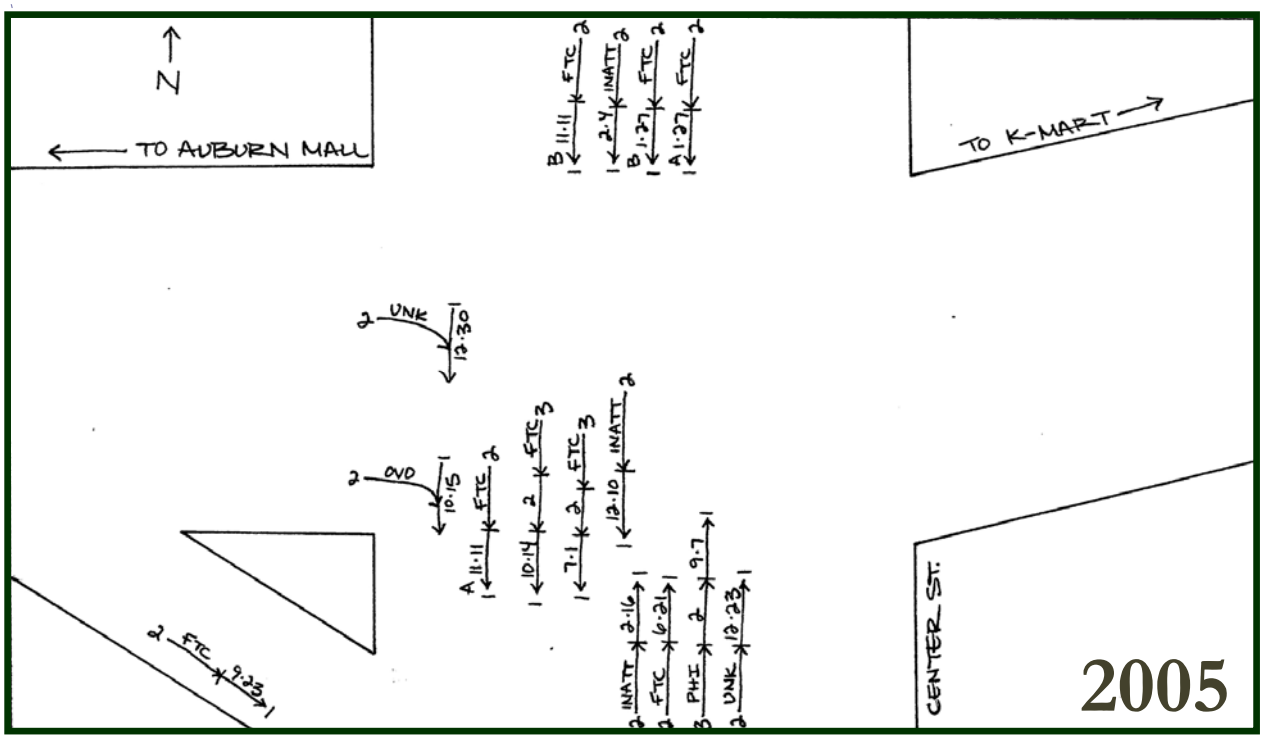
Figure 2.7: Center Street from Veteran's Bridge Eastbound to Auburn Mall Entrance

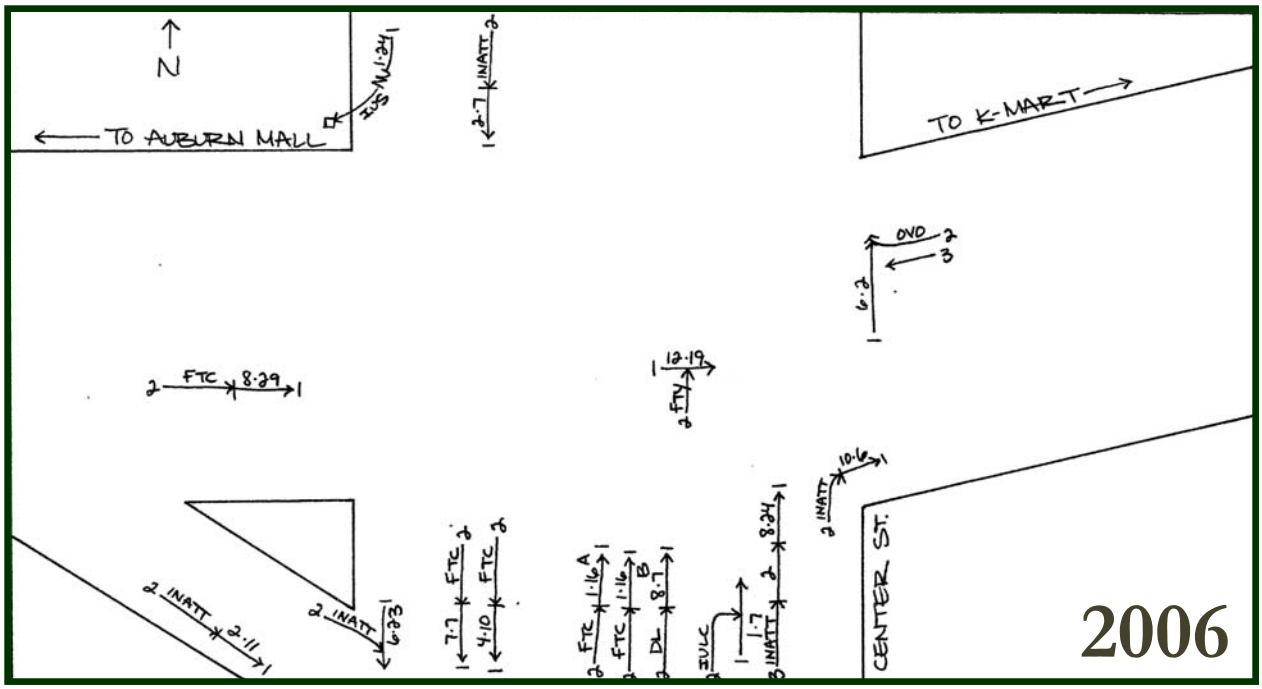
This portion of Center Street was close to HCL status during the 2004-2006 period. Five of the seven incidents were rear-end in nature, and a review of the collision reports indicate that these are primarily due to queuing from the Veteran's Bridge westbound intersection. One incident was an improper lane change, and one was due to a vehicle exiting the U Haul facility striking a bicyclist.

Center Street at Auburn Mall Drive

The collision frequency at this location is such that a diagram was prepared for each of the three years in the 2004-2006 period obtained from MaineDOT. These diagrams are shown on the following page:


N
TO AUBURN MALL
TO K-MART
CENTER ST.
2004


N
TO AUBURN MALL
TO K-MART
CENTER ST.
2005



Figures 2.8a-c: 2004-2006 Crash History for Center Street at Auburn Mall Drive

This location experienced 46 collisions from 2004 to 2006. 31 of these, or two-thirds of the incidents, where rear-end in nature. About half of these incidents involved southbound traffic on Center Street, while the remainder was divided between northbound traffic on Center Street and the Auburn Mall approach. A number of angle collisions occurred, although the pattern is not consistent. The other crashes were miscellaneous in nature.

This intersection would benefit from signal coordination, at least in the short-term, which may help to reduce the number of rear-end collisions. In addition, the long slip lane for right turning traffic from the Auburn Mall would be expected to experience fewer collisions if it were pulled closer into the intersection and its radius reduced.

Center Street from Auburn Mall Drive to Shaw's

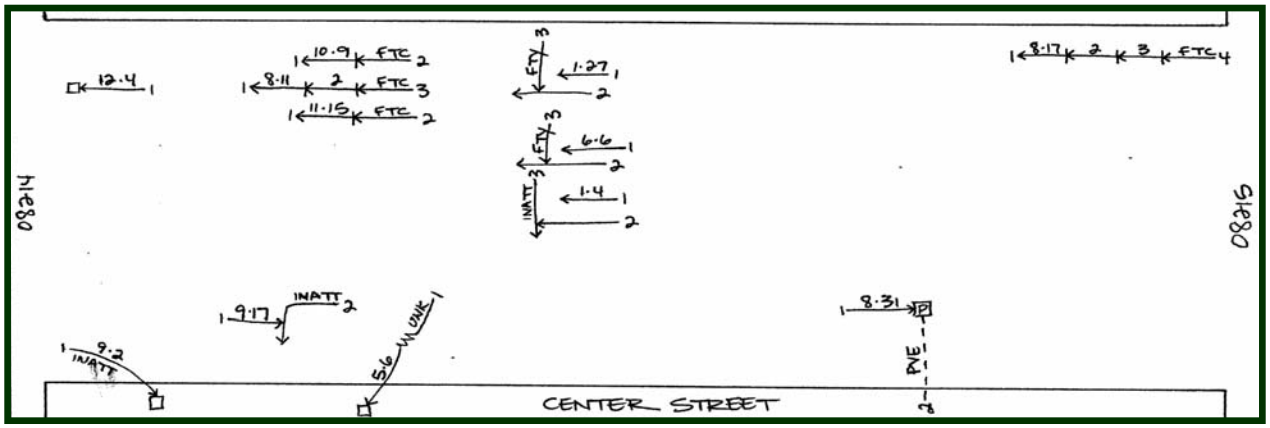


Figure 2.9: 2004-2006 Crash History for Center Street from Auburn Mall Drive to Shaw's

This location experienced eleven collisions from 2004 to 2006. The most frequent pattern was rear-end crashes for the southbound direction on Center Street, followed by angle collisions by improper exiting from the driveways along this section of roadway. The remaining collisions were primarily miscellaneous in nature, including one incident with a pedestrian. There are no specific recommendations for this segment, although more aggressive access management measures could result in a slight reduction in the crash rate at this location.

Center Street at Joline Drive and Stetson Road

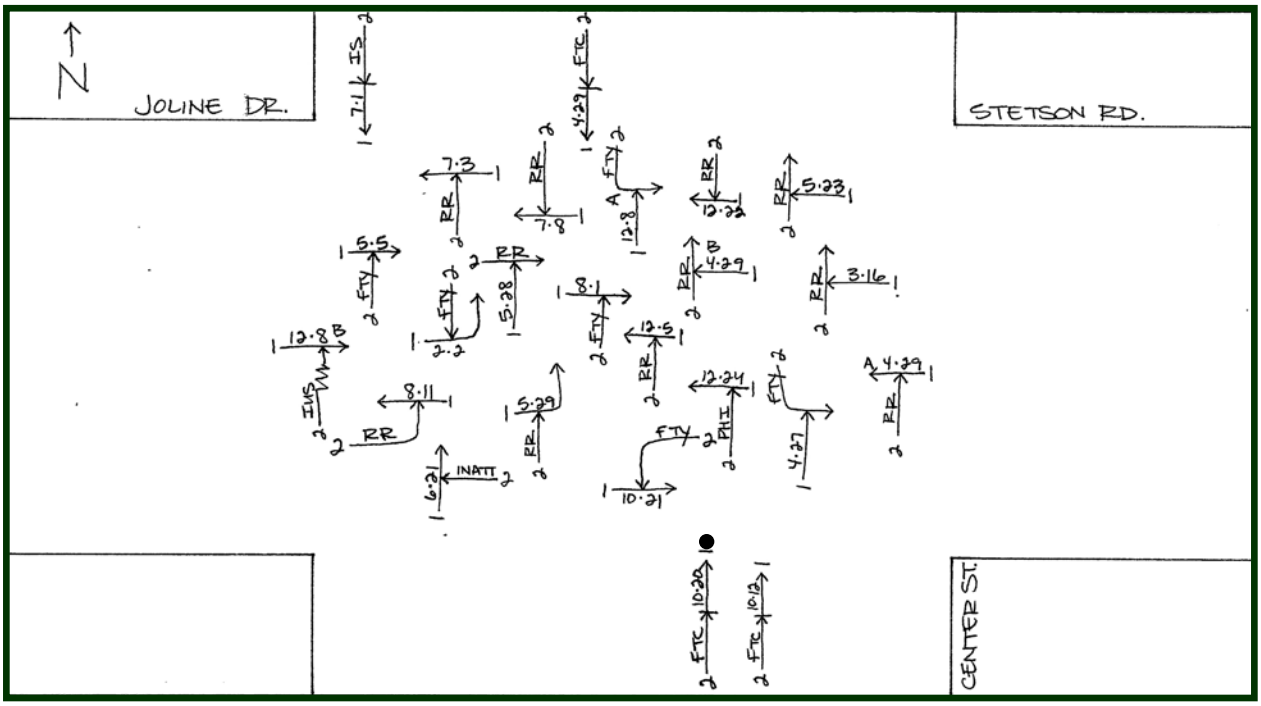


Figure 2.10: 2004-2006 Crash History for Center Street at Joline Drive and Stetson Road

Center Street at Joline Drive and Stetson Road experienced 26 collisions between 2004 and 2006, including one fatality. Most collisions were angle collisions taking place when either the main line or the side street ran a red light, and was struck by a vehicle with the green light. The remaining four collisions were rear-end in nature, including the fatality; it does appear that the age of the deceased passenger from that rear-end event may have been a factor.

It should be noted that the installation of the strobe flashers does not appear to have resulted in a reduction in the collision rate at this location, although more time may be needed to make a full determination of this issue. However, as this location is to be reconstructed within the next few years by MaineDOT, it is recommended that an evaluation will be completed following the installation of the updated and more visible signal equipment.

Overall Conclusions from Collision Analysis

Based on a review of the collision history and specific reports, the following issues are of concern along the corridor:

- The overall study area experienced 418 collisions, two fatalities, three pedestrian collisions, and two bicycle collisions.
- The high number of high crash locations and close to high crash locations along the roadway segments indicate that access management measures should be implemented.
- Five collisions with pedestrians or bicycles indicate that these modes are a presence on the roadway and are not served adequately.
- A significant number of rear-end collisions at the signalized locations seem to indicate a combination of phase failure and excessive queuing at many of the locations.
- Volume and safety may be connected on this corridor, as the day of the week with the greatest volume of traffic, Friday, also has the most collisions (21% of the total).

Follow-up Findings from Site Visits

Several site visits were conducted, typically around the PM peak hour, in late September of 2007, to assess issues not easily determined from crash data and turning movement counts.

Intersection Operations

The level of stopped delay varied widely depending upon the portion of the corridor being observed and driven through. The intersection of Center Street with Turner Street and Union Street had extensive delay, primarily for the left turns from Turner Street northbound remaining on Turner Street, and the northwest bound approach of Union Street. Queuing was significant for these approaches, on the order of several hundred feet.

Northbound queues approaching the Veteran's Bridge.

In addition, significant congestion was observed in the vicinity of the Veteran's Bridge ramps. Northbound traffic on Center Street was queued up to and past Dartmouth Street at times, or well over 500 feet. Southbound traffic at the Veteran's Bridge typically queued into the Auburn Mall/Kmart intersection, and at times, would continue to queue as far back as the Shaw's Plaza/Kmart intersection.

As part of the site visit, time trials were conducted on Friday, September 21, 2007 from 4:00 to 5:00 PM to determine the typical speed of a vehicle from the Rite Aid driveway on Union Street to Niskayuna Street along Center Street. Based on these trials, the average time it took to travel northbound on Center Street was six minutes, 36 seconds, which translates to an average speed of 17 miles per hour. Heading southbound, there was less delay (typically less delay exists for a

reverse commuting direction), at five minutes, 17 seconds, or 21 miles per hour. While average travel speed along a corridor is almost always less than the posted speed (typically 35 miles per hour for Center Street), the northbound travel speed, less than half the posted speed, suggests a fair amount of congestion.

Roadway Operations

Turning conflicts south of Lake Auburn Avenue.

Other than at the key locations discussed above, much of Center Street was observed to operate without significant delay, particularly from North River Road to the Veteran's Bridge. However, given the proliferation of driveways along this portion of the corridor, it was commonly observed that left turning vehicles would encounter conflicts with left turning vehicles headed in the opposite direction. Both vehicles would be utilizing the five-lane section as prescribed, but the frequency of driveways and poor driveway alignment did not allow for use of the center turn lane with complete safety. In addition, significant delay was observed for vehicles attempting to turn left out of driveways, even for those utilizing two-stage gap acceptance (i.e. utilizing the center turn lane as a center median) to complete the left turn.

Use by Pedestrians and Bicyclists

Although Center Street has been primarily designed for the private passenger vehicle, bicycle and pedestrian use was observed during both the site visits and the turning movement counts. In the case of bicycles, a few bicycles an hour were observed to travel the corridor, and would travel on the outer edge of the outer travel lane. As the roadway currently has no shoulder, vehicles would have to move away from the bicycles and into the inner travel lane, a sometimes difficult maneuver.

Pedestrians were occasionally observed at the signalized intersections along the corridor, and typically crossed when the pedestrian phase was called up. However, pedestrians were also observed crossing Center Street between Lake Auburn Avenue and the Veteran's Bridge. This segment has no signal control or any refuge for pedestrians, and as such, they would cross two lanes, wait until traffic had cleared in the next two lanes upon reaching the center left turn lane, and then cross the rest of Center Street. The pedestrians ranged from children under the age of ten to an elderly couple.

Given the proximity of residential areas along both sides of Center Street, as well as the location of a bicycle shop north of the study area along Center Street, it is to be expected that some non-motorized users will continue to use this corridor. However, given the current configuration of the roadway, such use can be exceptionally dangerous.

Existing Traffic Volumes and Traffic Signal Warrants

Following a review of the turning movement counts at the study area intersections, it was noted that some of the approach volumes on the side streets for certain intersections may be lower than those set forth for meeting traffic signal warrants in the Manual on Uniform Traffic Control Devices (MUTCD).

In order to justify the use of a traffic signal, the location must meet one or more of the traffic signal warrants published in the 2003 Edition of the Manual on Uniform Traffic Control Devices. The eight warrants are listed below:

Warrant #	Description
1	Eight-Hour Vehicular Volume
2	Four-Hour Vehicular Volume
3	Peak Hour
4	Pedestrian Volume
5	School Crossing
6	Coordinated Signal System
7	Crash Experience
8	Roadway Network

Typically, when a signal warrant analysis is undertaken, it is done using the volume-based warrants (Warrants 1-3) or safety based (Warrant 7). This corridor would not satisfy Warrants 4 and 5, as they have fairly significant requirements for pedestrian crossings, and there are no schools along Center Street. The intent of Warrant 8 is to encourage flow of traffic along certain corridors, and would not typically apply along this corridor.

What follows is a discussion of the intersections that are either marginal in meeting the signal warrant or clearly do not meet warrants.

Center Street at North River Road and Center Street Plaza

Based on a review of the turning movement counts collected as part of this project at this location, this intersection does not appear to satisfy Warrants 2 and 3, the four-hour vehicular volume (projected) and the peak hour volume (actual). A full-day count (12-hour) would be required to determine whether or not this traffic signal is justified under the current MUTCD system.

Center Street at Lake Auburn Avenue

Based on a review of the turning movement counts at this location, this location marginally meets signal warrants as set forth by the MUTCD. As such, unless an adequate alternative form of traffic control can be successfully implemented at this location, it appears that the signal shall remain. Given the presence of an elementary school along Lake Auburn Avenue, providing some type of controlled access to Center Street remains important.

Center Street at Veteran's Bridge Eastbound

Based on a review of the turning movement counts at this location, this intersection does not satisfy any of the volume-based warrants. However, the system warrant may be worth consideration, as this intersection is part of the system with the westbound ramps, and as such may be able to continue to be considered for signalization.

Center Street at Auburn Plaza

The volumes at this location indicate that the left turns from Auburn Plaza are far below those required for a signal warrant; reoccupation of the small amount of remaining empty retail at this location is not anticipated to aid with meeting signal warrants. However, it is recommended that twelve-hour counts be conducted at this location on a weekday and a Saturday to make a formal determination as to the potential removal of a traffic signal.

Design Years

The forecast years for this project are 2015 and 2030. The forecasting was completed with the TransCAD-based model provided by ATRC. The forecasting is based on detailed demographic projections as well as information provided to ATRC from the projections created in association with the Auburn Mall Master Plan. The model was first calibrated to represent current travel volumes and conditions, and the anticipated growth added for ten and twenty year forecast periods to result in the future volumes. Additional calibration was completed by our office utilizing historic growth information obtain for the past 25 years from MaineDOT. A memorandum discussing the growth methodology is included in Appendix C of this report.

Based on crash analysis, safety deficiencies exist along the corridor, and issues observed at the Veteran's Bridge as well as at Center Street at Turner Street and Union Street become more actute in future years. Proposed improvements for the corridor are discussed in Chapter 3, and a summary of the capacity analysis is provided in Chaper 4.

Chapter 3
Transportation Improvement Options/Recommendations

Constraints and Needs of Options

For a corridor such as Center Street, finding a balance between access, mobility and safety is a critical one. The corridor is almost exclusively commercial, and is forecast to carry between 30,000 and 40,000 cars per day by 2030. However, the roadway is typically 60 feet in width, with the sidewalks against the curb line, and utility poles frequently located in the sidewalks. As such, widening the roadway beyond its current width would result in significant property impacts to buildings. Given the level of impact, significant widening along Center Street does not appear feasible, nor would we recommend it.

Therefore, any transportation improvement options should attempt to maintain the existing road width as much as possible and limiting widening to isolated locations, primarily at locations that are currently signalized intersections. However, this being said, a major arterial such as Center Street must also satisfy the demands and needs of other modes, particularly bicycle and pedestrian.

Another significant issue is that of the current five-lane configuration, primarily from Turner Street to the Veteran's Bridge. Crash data and site observations have both indicated that the portion of Center Street from Turner Street to Veteran's Bridge has safety issues related to the proliferation of driveways and lack of driveway alignment. In addition, it appears that the volumes along Center Street are becoming such that utilizing a five-lane section is becoming marginal; this is best demonstrated by a small increase in volumes in Friday resulting in a significant increase in collisions.

Lastly, recommendations should provide options that result in adequate traffic flow for the foreseeable future. Although the design year volumes are from 2007, the forecast is out to the year 2030, almost a quarter century. For perspective, a quarter century ago, Center Street was ungergoing its widening to five lanes, no overpass from the Veteran's Bridge existed, and the retail area along Turner Street and Mount Auburn Avenue did not exist. As such, the options should accommodate significant changes in volume over the coming years.

Implementation of Options

Current forecasts for highway funding over the next several biannual cycles indicates that funding will not be available to implement any plan of significance along Center Street, simply due to budget constraints. As such, options will need to be phased, and other techniques/policies should be examined to delay or eliminate the need for implementation of the full array of options.

Description of Options

Despite the above-discussed measures, certain improvements are already slated for Center Street, and some may happen in a shorter time frame than others. What follows is an in-depth discussion of the options. The concept drawings for many of the Options are located in Appendix B.

Capacity Improvement-Related Options

The first items are those looking to improve operations from a capacity standpoint, primarily at the signalized locations along the corridor.

Signal Optimization and Coordination

One of the issues along Center Street, particularly in the vicinity of the Veteran's Bridge, is that current signal timing plans were established some time ago, and traffic volumes have changed considerably over the years. However, ATRC is currently completing a review of the traffic system plan for its region, and as a result is updating signal timing plans, providing improved signal coordination. The goal of this work is to improve efficiency with existing traffic signal equipment, thus delaying the need for more expensive changes to signal equipment or intersection geometry.

Currently Planned or Identified Improvements

Two intersections are currently proposed for improvements. The first is the intersection of Center Street and Joline Drive/Stetson Road at the northern end of the study area. MaineDOT has begun design of this location, which includes widening of Joline Drive and the provision of two approach lanes for both Joline Drive and Stetson Road. These improvements were initially cited in an Auburn Mall area study and are expected to be implemented within two years. It is also anticipated that the traffic signal at this location would be given its own controller; currently, it shares a signal controller with the signal at Auburn Plaza.

An improvement plan which may move ahead for the intersection of Turner Street, Union Street and Center Street is in association with a Walgreen's drug store (disclosure: the Consultant retained for that project is Gorrill-Palmer Consulting Engineers, Inc.), which includes the addition of an exclusive left turn lane from Turner Street inbound. At the time of this report's writing, it appears that the project has received formal approval from the City.

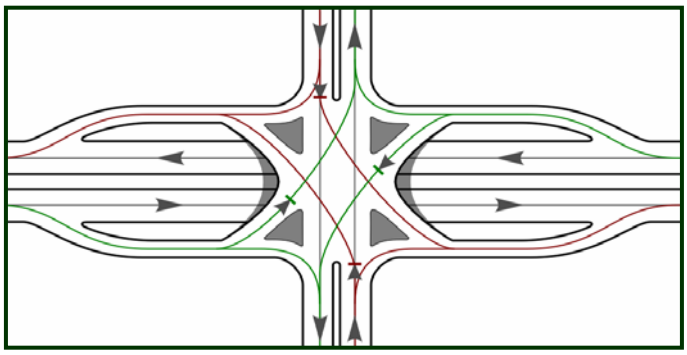
Other options have also been examined for this location, and are discussed below:

- *Changes to Existing Geometry:* One option examined earlier as part of this study analyzed changes to the lane structure for the Center Street and Turner Street approaches, eliminating left turns from Turner Street and thereby taking out of the phases of the intersection operation. This change would provide and provide more efficient operations while requiring little widening and no additional right-of-way. Based on the capacity analysis, it is anticipated that these changes would maintain or improve the current level of service for at least ten years. However, as it does prohibit one movement, the City does not currently desire for this Option to be used, but it can be explored again in the future if desired.

- *Closure of Turner Street Approach from the Northwest:* Examined as part of the Auburn Downtown Parking and Traffic Study in 2000, also by Gorrill-Palmer Consulting Engineers, Inc., the potential of closing the northwesterly approach of Turner Street completely was examined at the request of the City. The change would result in an intersection with three approaches and only two traffic phases. However, this would also result in the relocation of approximately 7,000 vehicles per day to Center Street between Turner Street and the Veteran's Bridge, resulting in potentially significant issues along the five-lane section as well as increased pressures with the Center Street/Veteran's Bridge interchange. Without significant changes to Center Street and the Veteran's Bridge, it is unlikely that this plan is feasible, and the City has not elected to examine it in more detail.
- *Relocation of Turner Street to Benjamin Street:* At the request of Chip Morrison of the Chamber and part of the public process, our office investigated the potential of rerouting Turner Street to Benjamin Street and closing Turner from Benjamin to Center. Although a series of improvements can be designed that would allow this option to operate at an acceptable level of service, the close proximity of the relocated Turner intersection with the northwesterly Turner intersection result in the need for dual left turn lanes onto both Turner Street approaches; since these overlap, Union Street in this area would have to be widened to eight lanes, Benjamin to four, and Turner northwesterly to four. The resulting properly impacts would be significant, and still not yield the level of improvement cited in a longer-term option discussed later in this report. Further, the Center Street southbound approach would queue back to North River Road. As such, it is unlikely that this option would see additional future investigation.

Improvements in Vicinity of Veteran's Memorial Bridge

The Veteran's Memorial Bridge overpass comes into Center Street and results in three signals in close proximity. Two of the signals are related to the ramps, and the other is for traffic coming off of the jughandle at the end of Bowdoin Street. In addition, the traffic signal at Shaw's is in close proximity to the Veteran's Bridge and the queues from this intersection are an issue as well as the ones to the south.



Schematic of a SPUI (courtesy Wikipedia).

Proposed for this location would be the conversion of the Veteran's Bridge intersections to a single point urban interchange, often known by its acronym, the SPUI. The first such interchange was constructed in 1974 in Clearwater Florida, and more recently, New England has its first such interchange along Route 101 in Stratham, New Hampshire.

A SPUI takes two separate full-access ramp intersections (typically known as a diamond interchange) in close proximity and combines them into one intersection. The resulting intersection is an efficient, three signal phase configuration with additional storage available and significant operational capacity. It should also be noted that studies completed by the Federal

Highway Administration and the American Society of Civil Engineers have concluded that crash rates and severities tend to be lower for a SPUI than a diamond interchange.

These interchanges are typically difficult to retrofit into an existing interchange designs due to the significant width required under the overpass bridge for adequate geometrics and turning radii. However, the Veteran's Bridge overpass, with seven travel lanes and a median, has sufficient width for an interchange design, and can even accommodate the movements of the largest tractor trailer vehicles (WB-67 interstate vehicle). The SPUI configuration is shown to operate with less delay for 2030 forecast volumes than the 2007 existing volumes.

Existing single-point urban interchanges in Stratham, New Hampshire (left) and Orlando, Florida (right). (Courtesy Google Earth/Google Maps)

The resulting change to the intersection configuration will result in the removal of the traffic signal at the terminus of Bowdoin Street; however, it should be noted that turning movement counts indicated very few left turn movements per hour from this street. Left turns from Center Street will remain. It is recommended that Dewey Avenue be extended from West Dartmouth Street to Bowdoin Street to maintain the ability to make left turns onto Center Street.

The intersection of Auburn Mall/Kmart along Center Street does not operate acceptably with the 2015 and 2030 forecast volumes, and widening to add travel lanes is not practical, particularly in the southbound direction due to grading issues and the width of the Veteran's Bridge overpass. However, the conversion to a roundabout with two travel lanes for the major approaches and a single circulating lane for the minor approaches does result in acceptable operations, and with a net reduction of approach lanes, allows for provision of bicycle lanes. As with the SPUI, this improvement can accommodate 2030 forecast volumes with less delay than the existing configuration with 2007 volumes.

Lastly, the intersection of Auburn Plaza with Center Street does not meet traffic signal warrants, due to the low volume of left turning traffic from the Plaza driveway. As such, this location is

proposed to have its traffic signal removed. This change is beneficial from a traffic progression standpoint, as the proximity of this signal with the one at Joline Drive sometimes results in queuing concerns. The intersection would be reconfigured to have a median-protected left turn lane into the Plaza driveway, and the driveway would have a flared island to allow for right turns only. Left turners from Auburn Plaza could still access Center Street and head north via the Auburn Plaza driveway on Joline Drive.

Finally, the traffic signal remaining at the Shaw's Plaza/Kmart driveway would be coordinated with the one at Joline Drive (to be improved by MaineDOT in the next few years) to improve vehicular progression and reduce delay.

Long-Term Improvement Options for Center Street at Turner/Union

As discussed earlier, there are several options, relatively small in scale that can improve operations at this intersection. One of them, in association with a proposed pharmacy, may be moving toward implementation. However, somewhere between 2020 and 2025, based on the forecast volumes, it appears that a fairly significant change to this intersection configuration will be required to accommodate 2030 volumes.

A recommended option for this location is a hybrid intersection that combines the one-way circulation of a roundabout with two-phase traffic signal control, resulting in three distinct intersections that are tightly coordinated. To accomplish this change, Benjamin Street would be removed, and Union Street northbound would come into Turner Street at the former southeast end of Benjamin Street.

The benefits of this configuration are higher capacity, lower delay, a simplified traffic signal operation, and sufficient space and opportunities for bicycle and pedestrian facilities. In addition, this configuration results in less property taking than a multi-lane roundabout or some other form of signalized control.

Other Potential Options

As discussed, increases in traffic volumes as well as the safety of drivers along the roadway (both commuters and business patrons) result in capacity constraints and a high rate of crashes in the project study area. What follows are additional options than can be utilized or implemented to address these issues. Each one should follow careful consideration and receive public input prior to full implementation. The needs of drivers, businesses, and users of other modes should all be considered as part of this process.

Access Management

As the crash data indicates, the proliferation of full-access driveways is a major concern along Center Street. Given the crash history and its correlation with traffic volumes, it is clear that the driveways are affecting safety on the corridor. With or without major changes to the corridor, it is recommended that the City to work with local businesses to make access management part of any site redevelopment plan, and ultimately, to develop an overall plan for the corridor.

Access management typically consists of several aspects, and are listed as follows:

- Sight distances
- Spacing between driveways/entrances
- Spacing between traffic signals/roundabouts/major intersection controls
- Corner clearance
- Double frontage lots
- Driveway/entrance width
- Number of curb cuts per lot

What follows is discussion on the most important aspects of access management as shown above.

Typically, the most-utilized aspect of access management is that of reducing the number of curb cuts or reducing potential turning movements at certain driveways. For example, if a small site has three-full access driveways, or worse, a single large curb cut with no clear delineation as to where vehicles should enter or exit, the potential for conflicts with other vehicles becomes very significant. If the driveways are reduced to two or one, and appropriate signage is utilized, the ability for motorists to understand where they need to be will be made clear.

The arrangement of driveways is also potentially critical. For example, on Center Street, there are so many driveways along some portions of the roadway, and on both sides of the street, that it is not uncommon to observe a vehicle traveling northbound to make a left turn into a business come to a stop to wait for a vehicle headed southbound in the same lane to also turn into a business on the opposite side of the street.

Lastly, the use of side streets can be very important in having effective access management. For example, the more businesses that can direct exiting vehicles to North River Road, the fewer turning conflicts happen along Center Street and the movements are concentrated at an established intersection where drivers already expect turning movements to occur.

It is recommended that the City of Auburn evaluate each parcel along Center Street through the approvals process when they are redeveloped to ensure that each one takes into account access management measures and does so in context with adjacent parcels. By doing this, fewer turning conflicts will take place, safety will improve, and the need for major changes such as medians will be delayed or eliminated.

Potential interconnections and access management measures are provided in the Appendix for illustrative purposes. The final design of any interconnection will ultimately depend on the nature of development/redevelopment taking place along Center Street, to be subject to the City's Site Review process.

This entire corridor could be examined as part of a detailed access management study. As such, it is recommended that the City and/or ATRC undertake such a study to work in detail with property owners and determine implementation strategies. Ideally, the study would result in a safer corridor with clear points in ingress and egress at Center Street businesses.

Transportation Demand Management

With the forecast continuing growth in traffic for Auburn (as well as Lewiston), and few changes to the roadway system proposed in future years currently in the BTIP/local funding mechanisms, alternative measures to keep traffic volumes from increasing will have greater importance assessed to them. One significant group of measures has been typically clustered under the umbrella of Transportation Demand Management (TDM). TDM measures include many techniques, but what follows is a brief discussion of many of the most common ones:

- *Staggered work hours*: Particularly for hourly employees, workers coming to and from a place of employment results in brief periods of time where roadways are often overwhelmed with traffic, yet it is unrealistic to redesign transportation infrastructure to accommodate brief periods of traffic surges. If employers can work with their employees to adjust work hours (perhaps from 7:30 to 4:30, or 9:00 to 6:00), peak periods can be extended, and the rise in volumes, more gradual.
- *Carpooling/Vanpooling*: If drivers with similar hours commute to and from the same town, sharing rides can significantly cut down on peak hour traffic volumes. Ideally, if clusters of employers communicate with each other on worker needs, the potential for carpooling is increased. For larger employers with many workers from the same town, use of a vanpool with a can driver may also be an option.
- *Secure Bicycle Facilities*: For some people with short commutes, one impediment to using a bicycle for a mode of transit, or even walking to work is the lack of secured bicycle storage areas. Provision of such facilities can encourage workers interested in such travel modes.
- *Subsidized Bus Passes*: To encourage use of the local citylink bus system, employers can partially or even fully subsidize bus passes or fares. This cost is far less than construction of structured parking, and typically is a far lower cost than providing health care or other benefits.

As employers may be skeptical of such measures at first, local agencies and municipalities can assist with provisions of incentives. For example, the City of Auburn, after determining that TDM measures are less costly than significant upgrades to local infrastructure upgrades, may elect to provide tax incentives, in the form of credits, to employers who volunteer the initiation of a TDM program. As time passes and more employers become involved, a consortium of employers and even Auburn and Lewiston themselves (being large employers in their own right) can form groups to oversee TDM initiatives and coordinate them in the community.

While such measures were once relegated to large metropolitan areas, mandatory TDM requirements are already practiced in the City of Portland, and the Maine Department of Transportation has begun assessing fees for creation of various TDM programs in several regions of the state. Again, while there may be initial skepticism of such measures, in the long run they can ultimately save money, and help to preserve such corridors as Center Street and other principal arterials in the Auburn area dealing with capacity constraints. In the end, the measures should be tailored to specific employers, as the impacts and ability to mitigate those impacts by a small employer would be different than a large one.

New Bypass Roadway

If traffic growth were to continue, and accelerate, despite measures to reduce it (perhaps significant population and economic growth not currently foreseen), the potential of a bypass roadway may also need to be revisited. The Blackwell Plan, drafted over fifty years ago, foresaw the need for a third bridge, which was built a few decades later and is now known as the Veteran's Memorial Bridge. This plan also explored the potential for extending this connection via Mount Auburn Avenue, and eventually to Hotel Road.

More recent concepts have been ever wider-ranging, including the possibility of a new north-south connector that would bring traffic from Turner and other points north as far south as the Maine Turnpike without ever utilizing Center Street. These measures would certainly have the potential to remove significant traffic from Center Street, but there would be many hurdles and consequences of such construction.

New roadways are often extremely costly and require significant environmental assessment as well as remediation. As the cost for such infrastructure is often beyond the ability of a municipality to fund, state and federal funding will often be a necessity. In this case, the project is subject to the National Environment Policy Act (NEPA), signed into law by President Nixon in 1970. The NEPA process requires several stages of investigation, beginning at assessment of alignment alternatives and resulting with determinations of final construction plans. As part of this project, environmental impact statements (EIS's) are required, which take into account all aspects of impacts, ranging from wetlands to socio-economic. Public input can represent a significant part of the process as well. Constructing a roadway via the NEPA process can take decades, and if public support never materializes, the project can fail.

Lastly, it should be noted that shifting significant volumes of traffic away from more local arterials in favor of higher-speed controlled-access roadways reduces the potential for economic activity along a roadway. For certain businesses (particularly convenience-based ones), loss of traffic can equal loss of business. And certainly, this would be one issue of many weighed in upon during the completion of the NEPA process. It is strongly recommended that if such a roadway is desired, that the City of Auburn work with ATRC to prepare a preliminary feasibility study for said road. In addition, right-of-way should be identified for this route and preserved if at all possible.

Additional Long-Term Potential Options

The potential for a median on Center Street as well as roundabouts (in additional to the other options discussed in this report) were discussed in the February public meeting consisting primarily of local business representatives along Center Street. Those in attendance were concerned about changes in access on businesses and driver use of the corridor. While the following changes address safety issues, the business community has and remains concerned about their implementation, as it would impact left turns in and out of existing full-access unsignalized driveways and require these movements to reverse direction at adjacent roundabouts.

Therefore, it is recommended that the access management and TDM options be implemented and evaluated prior to any additional work on the following concepts. In addition, further evaluation should be undertaken in a comprehensive public manner, primarily focused on the Center Street business community before any final concepts or designs. Each business should be consulted with to determine how to mitigate any impacts that would result from potential changes.

Possible Roundabouts at North River, Lake Auburn, and Alpha

As previously discussed, this report recommends the use of access management, transportation demand management, and other measures to improve operations along Center Street from Turner Street to the Veteran's Bridge (in particular between North River Road and Lake Auburn Avenue). The goal of these measures is to preserve the existing five-lane section as long as possible.

However, if the forecast volumes do come to pass, at some point, left turns will be difficult into businesses, and extremely difficult out of businesses, primarily in the vicinity of peak periods. As such, drivers may eventually begin to treat the roadway as if left turns are not permitted to avoid long delays and safety concerns. Therefore, it is recommended that prior to any medians that roundabouts be considered at the intersections referenced above. A single roundabout could be constructed to determine how well it operates and to allow for limited funding to allow for such an incremental change. The Alpha Street location is recommended for this first location, as it is not currently under signalized control.

Similar to the roundabout proposed for the Auburn Mall/Kmart intersection, these roundabouts would provide two circulation lanes for Center Street traffic. They would have to be sized such that large interstate tractor trailers would be able to travel side-by-side through the roundabouts, as larger trucks frequent this corridor. These roundabouts would also have to provide pedestrian amenities in the form of crosswalks at each of the approaches and the ability to cross one direction of traffic at a time.

In order to accommodate the roundabout at Alpha Street, Broadview Avenue would most likely be dead-ended to simplify the intersection configuration. Those currently utilizing Broadview would be able to utilize Newell Avenue or Coburn Street instead.

The roundabouts will allow drivers uncomfortable with turning left the ability to easily and safety reverse direction along Center Street, which may make access to local businesses easier for those not wishing to adjust their route so that only right turns in and out of local driveways are required. In addition, when and if medians are constructed, the construction of the roundabouts will facilitate their use with a minimum of disruption.

As has been noted, the proposed roundabouts would have two lanes in the northbound and southbound directions. Some individuals and agencies, particularly advocates for the blind and disabled, have argued that the constant flow of traffic within a roundabout may pose a danger to a pedestrian who has to listen or use some other alternative method to determining crossing a street. While studies in the United States, Great Britain, and other countries have shown that pedestrians are generally safer at a roundabout than a signalized (or unsignalized) intersection, these concerns have remained. As a result, the Americans with Disabilities Act is anticipating calling for language requiring the use of pedestrian-actuated signals at all roundabouts with more than one lane approaches. These signals would bring entering traffic to a stop on an approach that a pedestrian would cross. Ideally, the signals would be pedestal-mounted, and would activate a signal that would flash yellow, go to all yellow, and flash red when the pedestrian crossing took place.

Medians from Turner Street to Veteran's Bridge

This report recommends the use of access management, transportation demand management, and other measures to improve operations along Center Street from Turner Street to the Veteran's Bridge (in particular between North River Road and Lake Auburn Avenue). The goal of these measures is to preserve the existing five-lane section as long as possible, as the center left turn lane maximizes convenience into local businesses.

However, as volumes continue to grow, and if the various measures recommended are unable to result in improved safety along the corridor, the placement of medians should be considered. This determination would be related to a future safety analysis of the corridor to determine if crash rates were dropping from current levels; if they continued to increase, it would trigger the need for medians. As they would be the last option implemented, businesses would have significant time (about twenty years) to adjust to the changes, as would customers, longer if access management and TMD measures have an impact on traffic growth. However, based on the reaction from the business community, this strategy should be considered only when all other options have been exhausted, and safety remains a concern.

The use of the roundabouts along with the medians would make reversal of direction much simpler than the older style of median controlled roadways, where jughandles would be utilized. The medians themselves, while most likely only four feet in width, would provide opportunities for city-maintained or adopt-a-spot style plantings. The nature of the plantings would most likely be in the form of annuals similar to the Turner Street median approaching Court Street, which is an even narrower median. The placement of the medians, therefore, could result in a significant improvement on the visual aspect of the Center Street corridor.

Another benefit of the medians would be the need for less pavement width for the four travel lanes (down from five). As a narrow island and two lanes in each direction would be the only requirements to accommodate traffic along Center Street, less pavement width would be necessary to accommodate vehicular traffic. Our office recommends the use of eleven foot travel lanes, even on arterials, if it can prevent or reduce costly roadway widening. Based on recent studies, urban arterials with speeds of 35 miles per hour or less can accommodate lanes of width at eleven feet. The city of Portland (Maine) frequently does roadway design now with eleven foot lanes, including on arterials.

Given this reduction in width, the roadway can accommodate bicycle lanes on both sides of the roadway within the existing curb to curb width. It should be noted that the southern portion of Center Street (from Turner Street to North River Road) is previously identified on ATRC's 2030 Vision for Bicycling and Walking to have bicycle facilities. The goal of the 2030 Vision was to then continue the bicycle facilities onto North River Road. However, this roadway is not a federally designated roadway, and accommodating bicycle facilities may not be cost effective.

Again, it must be stressed that the goal of this Plan will be to minimize the need for placement of the medians via measures such as transportation demand management, access management, and increased use of other travel modes. But as the forecast volumes do indicate longer-term issues with the five-lane section, the Plan must accommodate potential changes to the section in order to preserve mobility and minimize safety concerns.

Impacts on Businesses Due to Access Management and Medians

The primary concern expressed by business owners at the public meeting held on February 6, 2008 was that future placement of medians, as well as other access management measures, could have a significant effect on business activity along Center Street. Certainly, one of the reasons that the less invasive options would be implemented first as discussed earlier in this report is to provide the area with opportunities to delay implementation of a median and hopefully negate the need by sucessful implementation of the other measures described in this report. Prior to any implementation, a full public process that would include local businesses would need to occur.

Chapter 4
Capacity and Level of Service Results

Capacity and Level of Service Results

As part of this project, capacity analyses were completed for the 2008, 2015, and 2030 analysis periods. Based on the recommendations contained in Chapter 3, the scenarios were analyzed as follows:

2007 PM Peak Hour (Existing Conditions)

This analysis was completed with conditions as determined in the field. As this is the base condition, no improvements were added to the model.

2015 PM Peak Hour

This analysis was completed with the following improvements:

- Provision of intermediate improvements proposed for Center Street at Turner Street and Union Street in association with the proposed pharmacy as discussed earlier in this report.
- Use of protected left turn movements from Center Street at the North River Road intersection as implemented by MaineDOT in the summer of 2008.
- Implementation of the MaineDOT-scheduled improvements for Center Street at Joline Drive and Stetson Road.
- Retiming and coordination of the traffic signals along the corridor.

2030 PM Peak Hour

This analysis was completed with the following improvements:

- Provision of the long-term improvements proposed for Center Street at Turner Street and Union Street.
- Provision of roundabouts at North River Road, Lake Auburn Avenue, and the Auburn Mall.
- Conversion of the Veteran's Bridge Interchange to a single-point urban interchange (SPUI).
- Removal of the traffic signal from the Auburn Plaza driveway and relocation of the exiting lefts from the site to Joline Drive via the site's driveway along Joline Drive.
- Updated signal timing and coordination for the signals remaining on the Center Street system.

Our office performed the analysis of the capacity and level of service of the signalized and unsignalized intersections using the Synchro/SimTraffic software. The SimTraffic results were run five times with the final results averaged. The roundabout analyses were completed with the SIDRA roundabout analysis package. Level of service rankings are similar to the academic ranking system where and 'A' represents little control delay and an 'F' represents significant delay. A Level of Service (LOS) 'D' or higher is typically desirable for a signalized intersection or a roundabout. At an unsignalized intersection, if the level of service falls below a 'D', an evaluation should be made to determine if a traffic signal is warranted.

The following table summarizes the relationship between control delay and level of service for a signalized intersection or a roundabout:

Table 4.1: Level of Service (LOS) Criteria for Signalized Intersections/Roundabouts

Level of Service (LOS)	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The following table summarizes the relationship between control delay and level of service for an unsignalized intersection:

Table 4.2: Level of Service (LOS) Criteria for Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

The capacity results are shown in the following tables. It should also be noted that the 2015 and 2030 volumes were analyzed with the existing conditions scheme (aka a no-build scenario) for comparative purposes.

Table 4.3: LOS Results for Center Street at Turner Street and Union Street

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Turner EB	22	C	40 (26)	D (C)	9 (29)	A (C)
Turner NB	43	D	56 (50)	E (D)	20 (71)	C (E)
Union NWB	77	E	75 (>100)	E (F)	25 (>100)	C (F)
Center SB	32	C	44 (36)	D (D)	17 (37)	B (D)
Overall	**44**	**D**	**55 (56)**	**E (E)**	**19 (68)**	**B (E)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on medium-term improvement plan for Center at Turner and Union approved by the City.
2030 analysis based on long-term improvement plan for Center at Turner and Union.

Based on the above table, there is delay for the current condition, particularly for the northeasterly approach of Union Street. Implementation of the mid-term concept for this location would result in a slight reduction in overall delay in 2015. With the implementation of the long-term plan, operations in 2030 would result in less delay than they do currently. Without any implementation plan, delays would be severe by 2030, with a level of service 'E' and 'F' for northbound and northeastbound approaches, respectively.

Table 4.4: LOS Results for Center Street at North River Road

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Center St Plaza EB	15	B	28 (18)	C (B)	7 (19)	A (B)
N. River WB	16	B	34 (20)	C (C)	17 (22)	B (C)
Center NB	7	A	9 (8)	A (A)	5 (9)	A (A)
Center SB	8	A	11 (12)	B (B)	5 (12)	A (B)
Overall	**8**	**A**	**11 (11)**	**B (B)**	**6 (11)**	**A (B)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on signal retiming and coordination.
2030 analysis based on conversion of the intersection to a roundabout.

Given the information shown in the previous table, delays are not significant at this intersection. With the introduction of updated signal timing and coordination, there is little overall impact on this location, primarily due to the fact that it operates well under capacity and appears to only marginally satisfy traffic signal warrants. Based on the analyses, if the intersection were converted to a roundabout, delay would be less than with the current signalized configuration.

Table 4.5: LOS Results for Center Street at Lake Auburn Avenue

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Lake Auburn EB	12	B	33 (11)	C (B)	12 (13)	B (B)
Center NB	7	A	8 (7)	A (A)	6 (8)	A (A)
Center SB	4	A	4 (4)	A (A)	4 (4)	A (A)
Overall	**6**	**A**	**8 (6)**	**A (A)**	**5 (6)**	**A (A)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on signal retiming and coordination.
2030 analysis based on conversion of the intersection to a roundabout.

As with North River Road, coordination of the signal by 2015 does not translate into a significant improvement for overall operations, although small benefits are realized for through traffic on Center Street. Again, this is largely due to the fact that this location only marginally meets traffic signal warrants to begin with. Based on the analyses, if the intersection were converted to a roundabout, delays would not be significantly impacted.

Table 4.6: LOS Results for Center Street at Veteran's Bridge EB

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Vet's Bridge EB	34	C	32 (38)	C (D)	13 (92)	B (F)
Center NB	41	D	25 (90)	C (F)	18 (>100)	B (F)
Center SB	26	C	20 (27)	C (C)	16 (27)	B (C)
Overall	**33**	**C**	**23 (56)**	**C (E)**	**16 (>100)**	**B (F)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on signal retiming and coordination.
2030 analysis based on conversion of the intersection to a single point urban interchange (SPUI).

This location currently has queuing issues, particularly for northbound traffic. By 2015, with the current signal timing and coordination, delay increases significantly for northbound traffic, and the overall intersection delay is an 'E'. Retiming and coordination of the existing signal system results in a significant improvement in operations, with less delay for the intersection than is currently

experienced. Conversion of this location to a SPUI results in less delay in 2030 than in 2007. If the current configuration remains, the intersection is forecast to largely break down by 2030, with very high delays for all but the southbound approach.

Table 4.7: LOS Results for Center Street at Veteran's Bridge WB

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Vet's Bridge WB	30	C	38 (31)	D (C)	36 (48)	D (D)
Center NB	14	B	14 (14)	B (B)	18 (14)	B (B)
Center SB	50	D	36 (62)	D (E)	16 (63)	B (E)
Overall	**33**	**C**	**30 (37)**	**C (D)**	**23 (45)**	**C (D)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on signal retiming and coordination.
2030 analysis based on conversion of the intersection to a single point urban interchange (SPUI).

Based on the above table, the provision of updated signal timing and coordination in 2015 results in a reduction of delay over the 2007 condition. Without this change, overall intersection delay will increase by 2015 to a LOS D and the southbound movement, an 'E'. Conversion of this location to a SPUI results in less delay in 2030 than in 2007.

Table 4.8: LOS Results for Center Street at Auburn Mall Drive/KMart

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Auburn Mall EB	12	B	16 (14)	B (B)	9 (14)	A (B)
KMart WB	52	D	44 (80)	D (F)	17 (95)	B (F)
Center NB	13	B	11 (14)	B (B)	6 (15)	A (B)
Center SB	38	D	52 (66)	D (E)	19 (97)	B (F)
Overall	**23**	**C**	**28 (36)**	**C (D)**	**11 (47)**	**B (D)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on signal retiming and coordination.
2030 analysis based on conversion of the intersection to a roundabout.

Providing that updated signal timing and coordination is completed at this location, the intersection will be able to maintain a level of service 'D' or better for all approaches by 2015. Without this improvement and coordination to the Veteran's Bridge, delay and queuing goes up significantly by 2015, particularly for the southbound and westbound approaches. Conversion of this location to a roundabout would result in a significant reduction in delay, to a level of service 'B' in 2030. Without changes to this location, the southbound traffic will experience significant delay, and all but constant spillback to the intersection with Shaw's Plaza to the north.

Table 4.9: LOS Results for Center Street at Shaw's Plaza/KMart

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Shaw's Plaza EB	17	B	35 (22)	D (C)	34 (40)	C (D)
Kmart WB	12	B	26 (17)	C (B)	24 (33)	C (C)
Center NB	8	A	6 (10)	A (B)	7 (13)	A (B)
Center SB	8	A	12 (24)	B (C)	13 (>100)	B (F)
Overall	**9**	**A**	**11 (17)**	**B (B)**	**12 (56)**	**B (E)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 and 2030 analysis based on signal retiming and coordination.

Provision of signal timing and coordination results in little more overall intersection delay projected for 2015 than in 2007, and less delay than would be expected from use of the existing signal timing and no coordination. Delays remain low in 2030 with coordination to Joline Drive to the north and conversion of Auburn Mall Drive to a roundabout to the south. Without changes to the intersections to the south, traffic from Auburn Mall Drive will queue through this location throughout the peak hour and result in a dramatic increase in delay by 2030.

Table 4.10: LOS Results for Center Street at Auburn Plaza

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Auburn Plaza EB	7	A	10 (10)	B (B)	8 (46)	A (D)
Center NB	11	B	7 (11)	A (B)	3 (9)	A (A)
Center SB	6	A	5 (6)	A (A)	3 (39)	A (D)
Overall	**9**	**A**	**6 (9)**	**A (A)**	**3 (23)**	**A (C)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on signal retiming and coordination.
2030 analysis based on removal of traffic signal and relocation of left turns to Joline Drive.
2030 Level of Service results based on criteria for unsignalized intersection.

Based on the above table, this intersection operates with little delay in both 2007 and 2015. Given that it does not currently satisfy traffic signal warrants, this is to be expected. Conversion of this location to an unsignalized driveway and reallocation of the lefts to Joline Drive results in reductions in delay to lower than 2007 levels. If the intersections to the south are not improved, vehicles headed southbound at Auburn Mall Drive and Shaw's Plaza will at times queue past this intersection, resulting in noticeable increases in delay by 2030.

Table 4.11: LOS Results for Center Street at Joline Drive/Stetson Road

Approach	2007 PM Peak Hour		2015 PM Peak Hour		2030 PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS
Joline EB	13	B	22 (16)	C (B)	26 (24)	C (C)
Stetson WB	19	B	33 (18)	C (B)	43 (31)	D (C)
Center NB	7	A	16 (8)	B (A)	16 (11)	B (B)
Center SB	11	B	18 (11)	B (B)	21 (56)	C (E)
Overall	**10**	**B**	**18 (11)**	**B (B)**	**21 (30)**	**C (C)**

Notes: Results in parenthesis based on existing (no build) signal operations and intersection geometry.
2015 analysis based on anticipated improvements by MaineDOT.
2030 analysis based on anticipated improvements by MaineDOT.

This location is forecast to operate without significant delay for all scenarios; all approaches are forecast to operate at a level of service 'D' or better. If the intersections to the south are not improved, vehicles headed southbound at Auburn Mall Drive and Shaw's Plaza will at times queue to this intersection, resulting in noticeable increases in delay for southbound traffic by 2030.

Chapter 5
East Auburn Access to Center Street

At the first Advisory Committee meeting, it was requested by Roland Miller, Director of Economic Development that the area around Fair Street be re-examined to determine if some type of traffic control could be accommodated in this area to improve access for Fair Street, Martin Street and Oak Hill Road. This area was last examined in 2003 by ATRC, and it was found that even if the entering traffic were combined from these side streets, this location did not justify a traffic signal. As several years had gone by, it was requested that as part of this project, this issue be revisited.

Our office worked with ATRC for the data collection and background on this effort. We obtained the previous information compiled in 2003, and ATRC provided our office with update ATR counts via their Wavetronix device the week of October 1, 2007. We examined the data and completed a signal warrant analysis. Once again, it did not appear that volumes at this location would satisfy traffic signal warrants due to the low volume of side street traffic.

However, we did investigate several alternatives to a signal to provide East Auburn with improved access. Each option is discussed below with a schematic of the alternative.

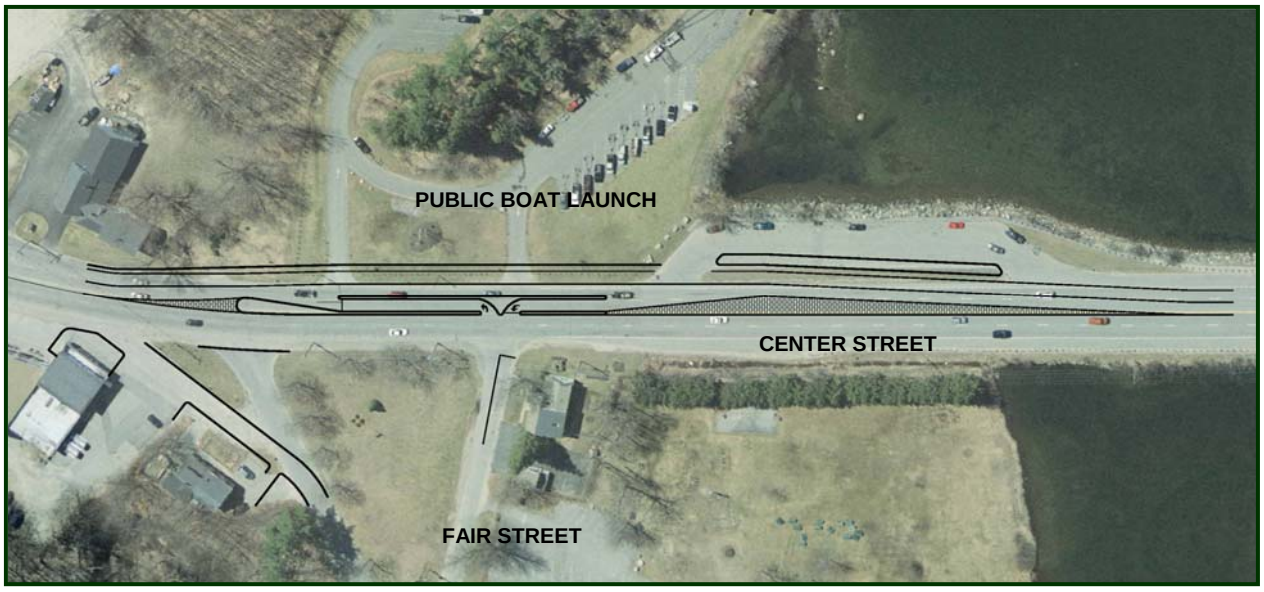
Five-Lane Section

One possible solution would be to modify Center Street in the Vicinity of Fair Street as a five-lane section. All exiting traffic would be directed to Fair Street, Martin Street would become one-way away from Center Street, and the public boat launch would be given a single driveway.

If the shoulders were reduced to a minimum width, say, four feet, this alternative could be completed with a minimum of roadway widening. In addition, it would also benefit the scenic turnout immediately to the north on Center Street. However, as volumes continue to increase on

this portion of Center Street, some of the safety issues observed and documented to the south on the other five-lane section could become an issue. In addition, as speeds dramatically increase at this point along the corridor, the differential between turning and through traffic may be an issue. Lastly, if MaineDOT required that the shoulders remain at eight feet or greater, significant widening along a significant stretch of Center Street would be required, increasing cost and potentially requiring significant permitting.

Florida 'T'-Style Intersection

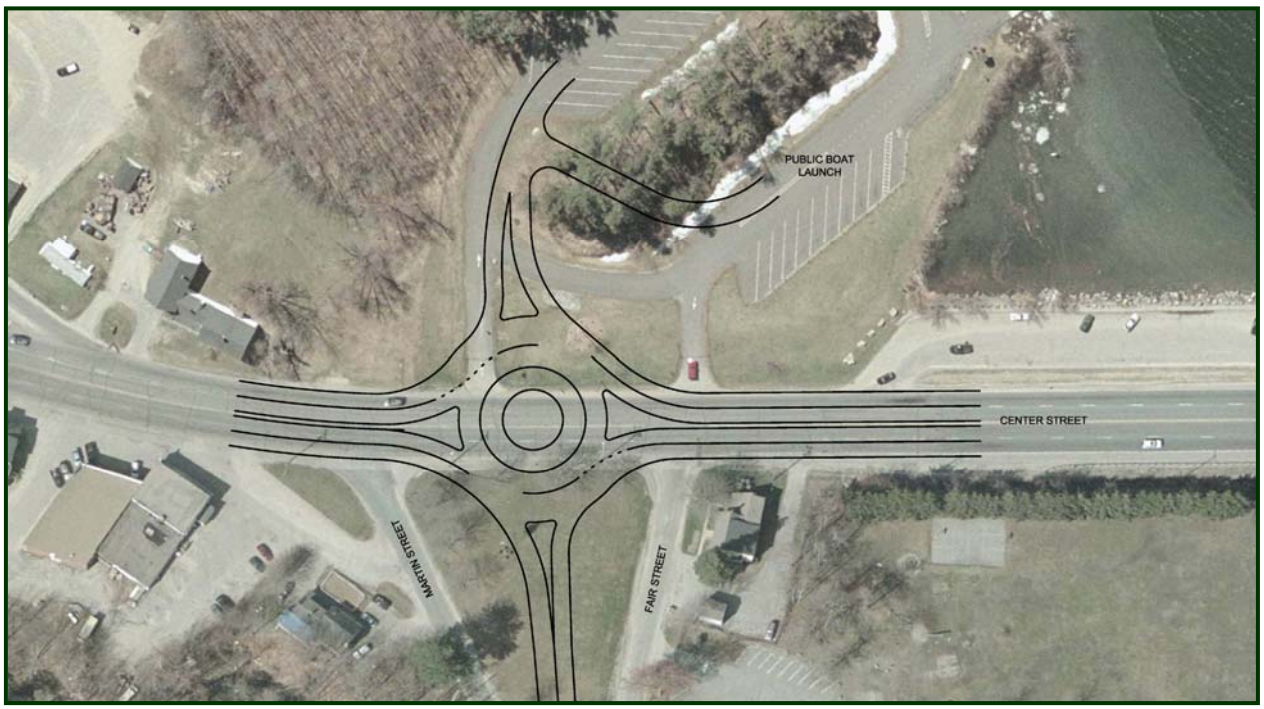


While not common in New England, and particularly Maine, one type of intersection control that is relatively safe and does not require a traffic signal is a Florida 'T' intersection. This type of intersection consists of a median in the center of the roadway, and is designed to allow left turns to and from a side street. The lefts are protected in the median, and channelization is very clear to drivers.

However, this option would require quite a bit of widening to Center Street, and would only allow for right turns to and from the scenic turnout and the public boat launch. It would likely be more costly than the five-lane section, although a safer alternative. Although the concept shows widening on the west side of Center Street, this was done in order to avoid property taking at the residence on the corner of Fair Street and Center Street. Any actual design of a concept such as this one may wish to consider widening on one or both sides of Center Street depending on the information gathered from a formal survey and discussions with stakeholders and property owners.

Roundabout

As with any location that side street access is desired and meeting of traffic signal warrants is simply not feasible, the potential for a roundabout can be considered. A design similar to those shown in the main part of the concept plan could be constructed at this location.



The roundabout offers several benefits that the other options do not. For one, given experience with similar designs throughout the world, this design alternative would be safer than the current condition, the other alternatives, or even the installation of a traffic signal. Another benefit is that this portion of Center Street transitions abruptly from 35 miles per hour to 55 miles per hour, and site visits have indicated that southbound traffic in particular often does not fully reduce its speed upon reaching the 35 mile per hour zone. The use of a roundabout would result in all entering traffic slowing to twenty to 22 miles per hour, and could serve as a much more formalized way to delineate the speed zones. In addition, for vehicles on the eastern side of Center Street south of the roundabout and those using the scenic turnout, it would no longer be necessary to make lefts onto a busy roadway. Vehicles could turn right and use the roundabout to reverse direction. Lastly, if well designed, maintained, and landscaped, it could serve as an attractive gateway treatment that would complement the already scenic nature of this portion of Center Street.

However, the roundabout would result in widening of Center Street within the roundabout area itself. In addition, the need to realign approaches to the roundabout would result in changes to the layout of some of the boat launch area. It would also be necessary to realign Fair Street to come into the roundabout, and adjust access for Martin Street or close part of it altogether. However based on the available aerial information, no residences or businesses would have significant property impacts.

Appendix A
Study Area Map
Turning Movement Diagrams

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Traffic and Civil Engineering Services
PO Box 1237
15 Shaker Road
Gray, ME 04039
207-657-6910
Fax: 207-657-6912
mailbox@gorrillpalmer.com
www.gorrillpalmer.com

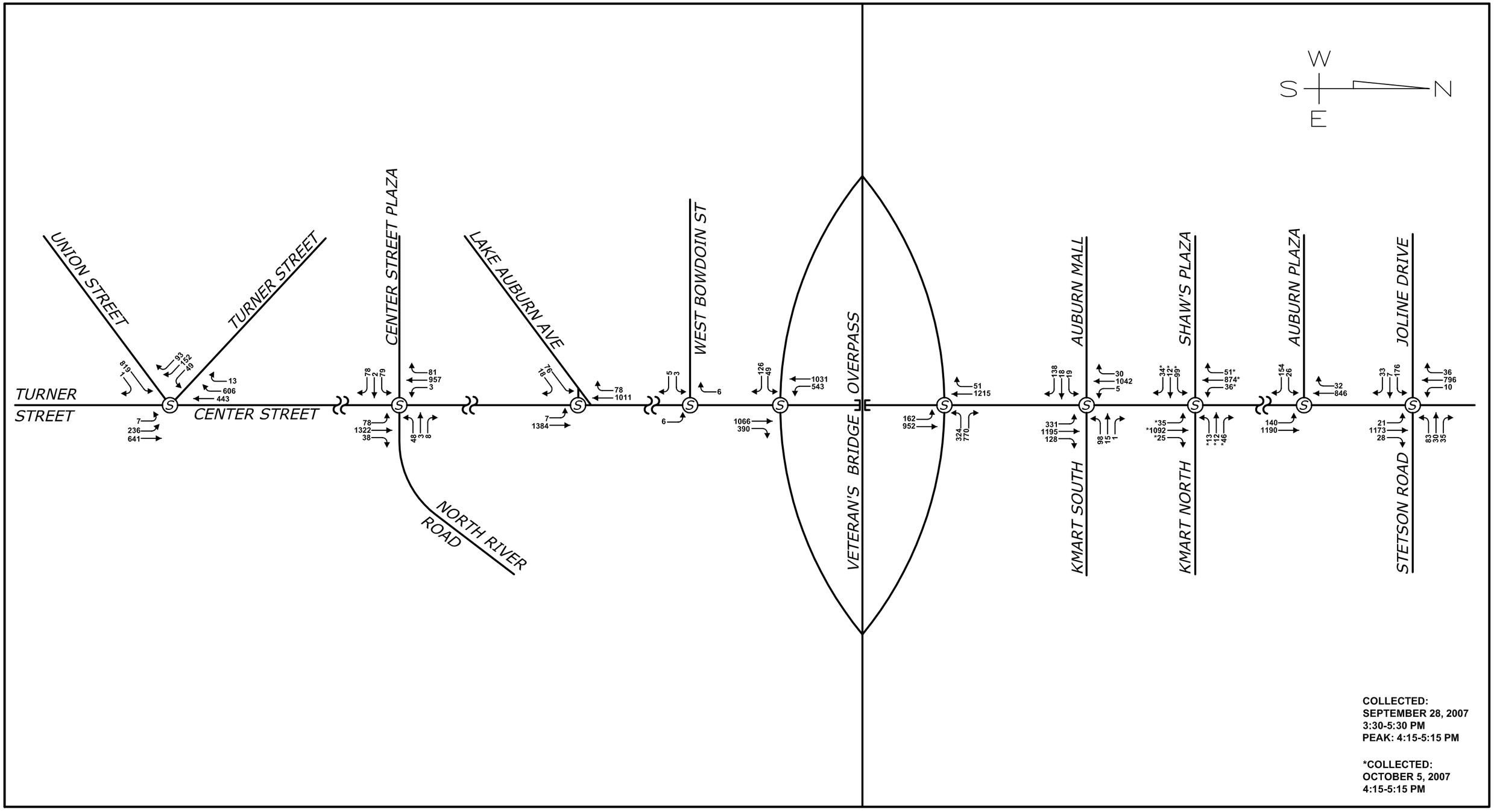
CENTER STREET TRAFFIC MANAGEMENT STUDY
AUBURN, MAINE

Feet
500 0 500 1,000

JN: 1919
DATE: AUGUST 2007
SOURCE: MAINE GIS WEBSITE

Raw Volumes: Weekday PM Peak Hour (4:15-5:15 PM)

Figure No. 2



COLLECTED:
SEPTEMBER 28, 2007
3:30-5:30 PM
PEAK: 4:15-5:15 PM

***COLLECTED:**
OCTOBER 5, 2007
4:15-5:15 PM

CENTER STREET TSM STUDY, AUBURN, MAINE

Design: JJB Scale: NONE
Draft: LMC Date: OCT 2007
Checked: JLW File Name: 1919-traf.dwg

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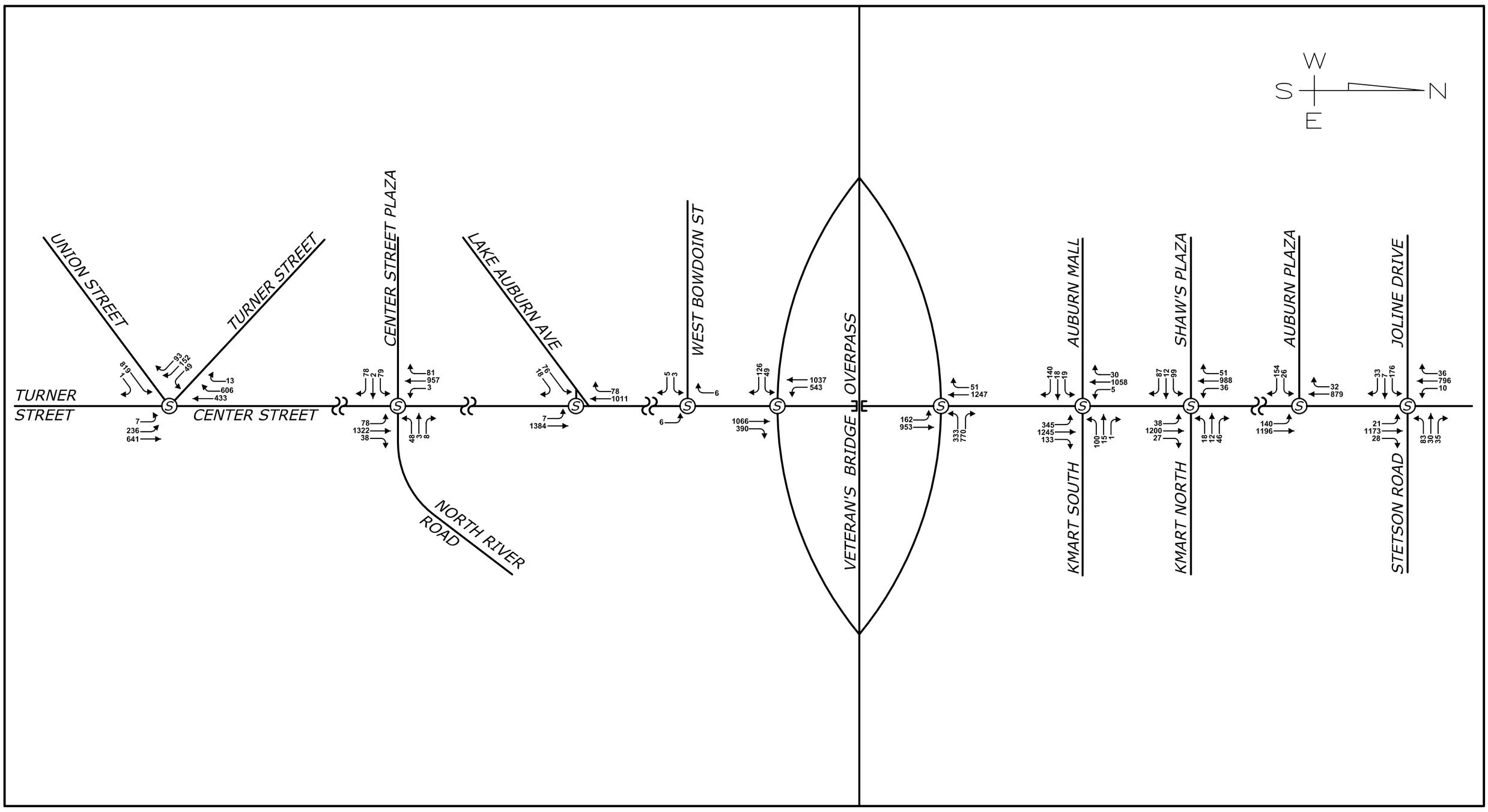
2007 Balanced Volumes: Weekday PM Peak Hour (4:15-5:15 PM)

Figure No. 3



CENTER STREET TSM STUDY, AUBURN, MAINE

Design: JJB Scale: NONE
Draft: LMC Date: OCT 2007
Checked: JLW File Name: 1919-traf.dwg

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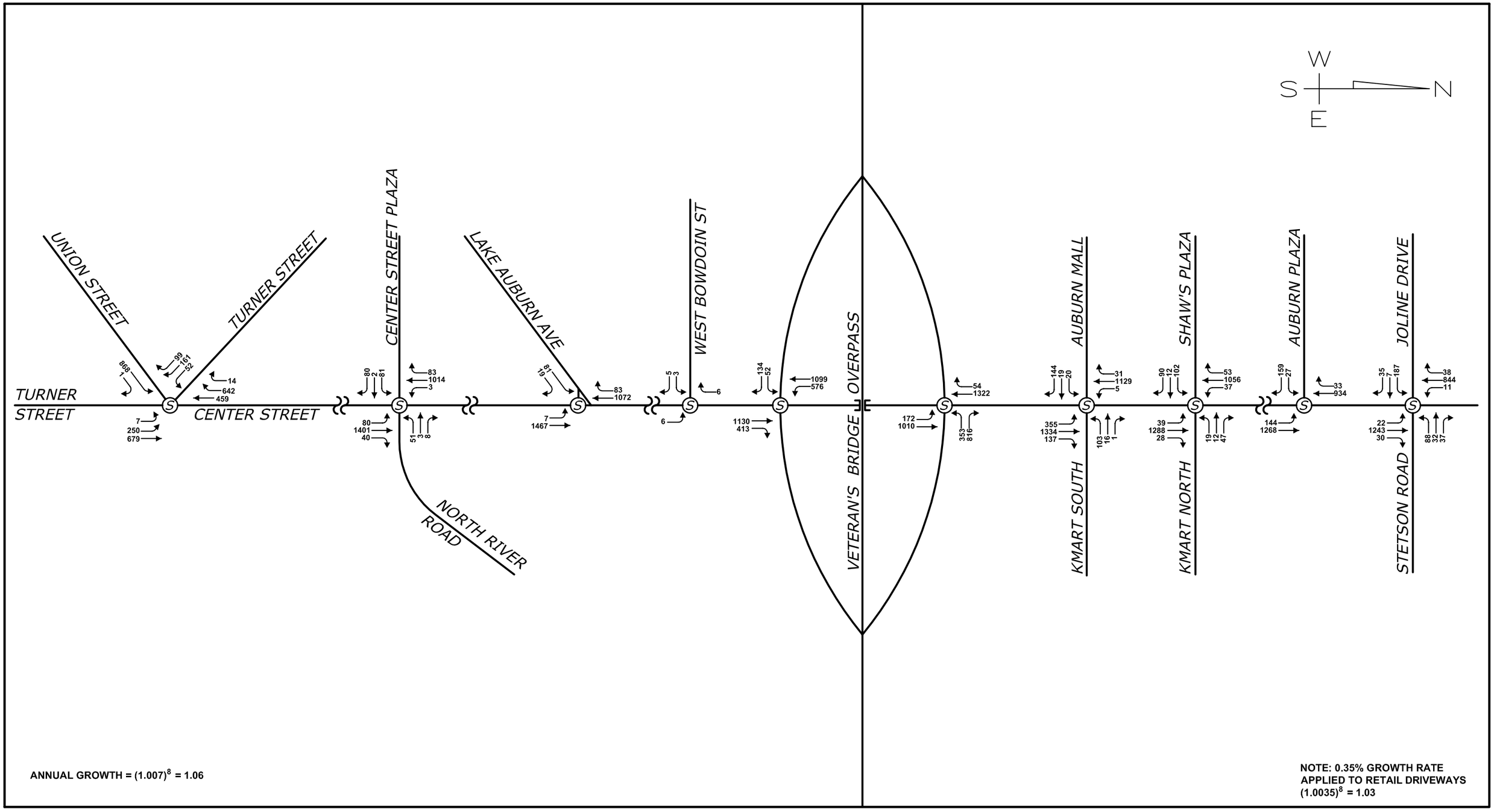
2015 Volumes: Weekday PM Peak Hour (4:15-5:15 PM)

Figure No. 4



ANNUAL GROWTH = $(1.007)^8$ = 1.06

NOTE: 0.35% GROWTH RATE APPLIED TO RETAIL DRIVEWAYS $(1.0035)^8$ = 1.03

CENTER STREET TSM STUDY, AUBURN, MAINE

Design:	JJB	Scale:	NONE
Draft:	LMC	Date:	OCT 2007
Checked:	JLW	File Name:	1919-traf.dwg

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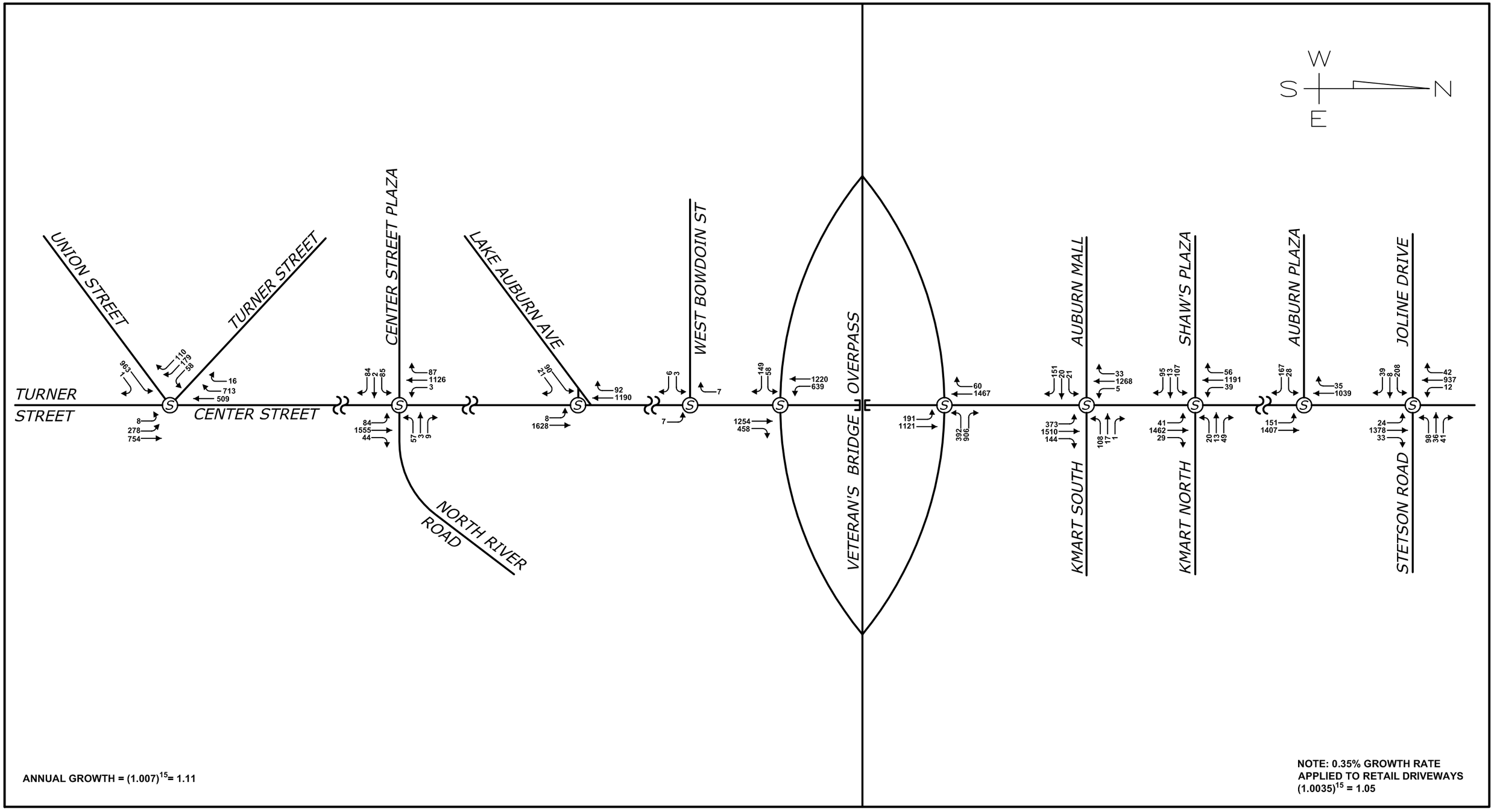
2030 Volumes: Weekday PM Peak Hour (4:15-5:15 PM)

Figure No. 5



ANNUAL GROWTH = $(1.007)^{15}$= 1.11

NOTE: 0.35% GROWTH RATE APPLIED TO RETAIL DRIVEWAYS $(1.0035)^{15}$ = 1.05

CENTER STREET TSM STUDY, AUBURN, MAINE

Design: JJB Scale: NONE
Draft: LMC Date: OCT 2007
Checked: JLW File Name: 1919-traf.dwg

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Appendix B
Concept Plans

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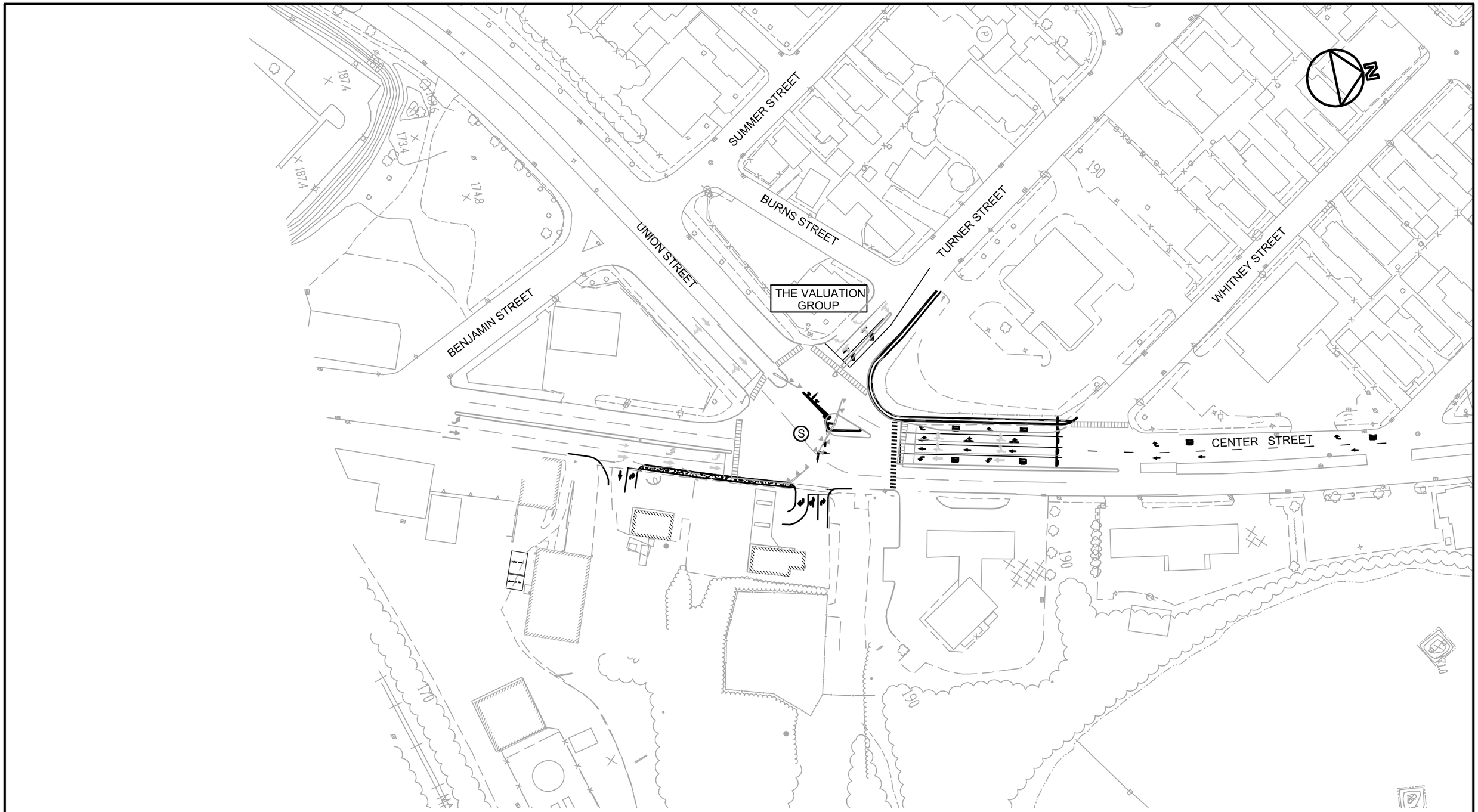

Rev.	Date	Revision
–	–	–

Design: JJB	Date: JAN 2008
Draft: JBC	Job No.: 1919
Checked: –	Scale: 1"=100'
File Name: 1919_pbase_CONCEPT3	

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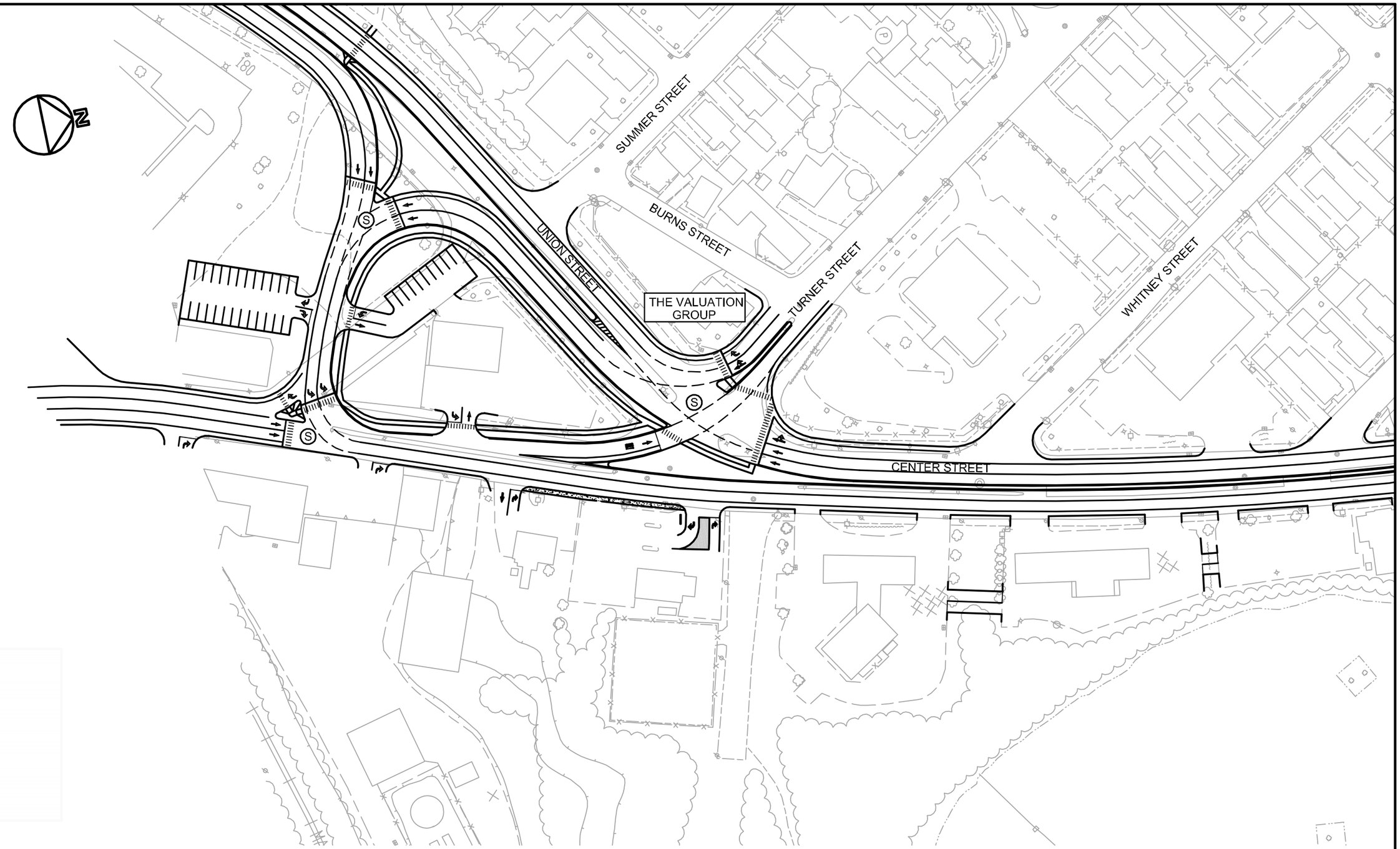
Drawing Name:
Conceptual Roadway Improvements Plan

Project:
CENTER STREET TRAFFIC MANAGEMENT STUDY, AUBURN, ME

Figure No.
A-1



Rev.	Date	Revision
–	–	–

Design: JJB	Date: JAN 2008
Draft: JBC	Job No.: 1919
Checked: –	Scale: 1"=100'
File Name: 1919_pbase_CONCEPT1	

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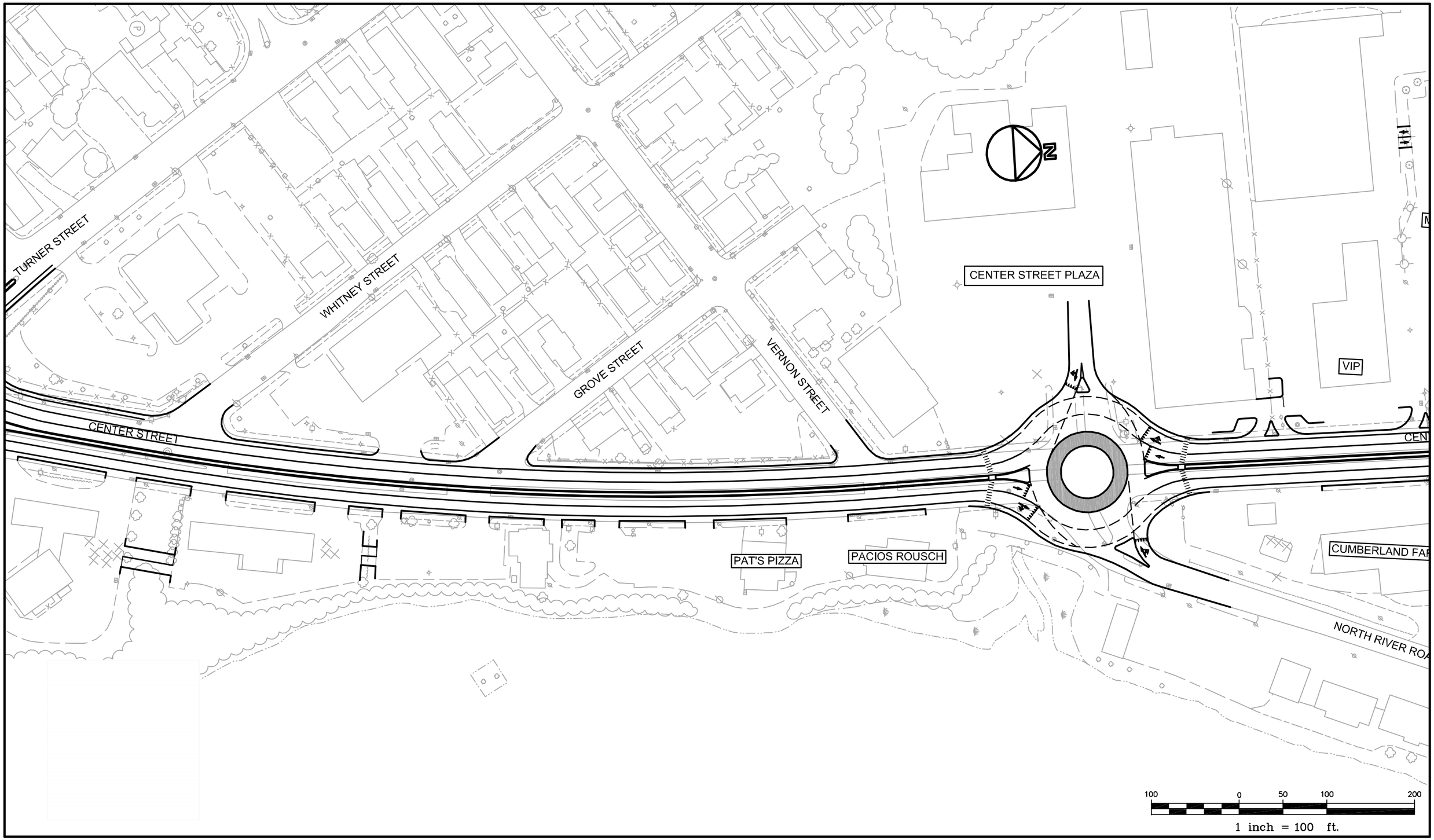
Drawing Name:
Conceptual Roadway Improvements Plan

Project:
CENTER STREET TRAFFIC MANAGEMENT STUDY, AUBURN, ME

Figure No.
A-2



Rev.	Date	Revision
–	–	–

Design:	JJB	Date:	JAN 2008
Draft:	JBC	Job No.:	1919
Checked:	–	Scale:	1"=100'
File Name: 1919_pbase_CONCEPT1			

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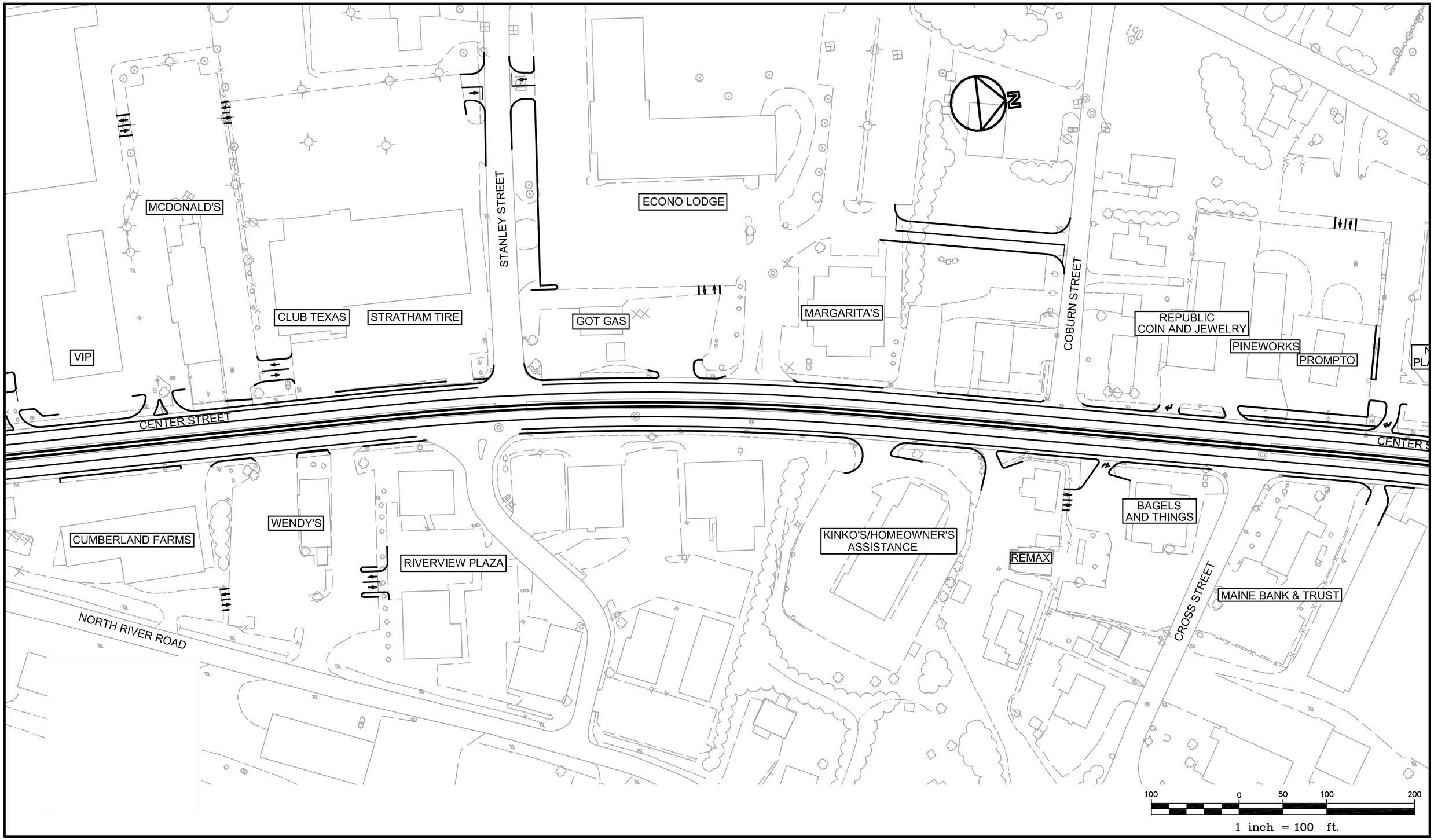
Drawing Name:
Conceptual Roadway Improvements Plan – Long Term

Project:
CENTER STREET TRAFFIC MANAGEMENT STUDY, AUBURN, ME

Figure No.
B



Rev.	Date	Revision
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Design: JJB	Date: JAN 2008
Draft: JBC	Job No.: 1919
Checked: –	Scale: 1"=100'
File Name: 1919_pbase_CONCEPT1	

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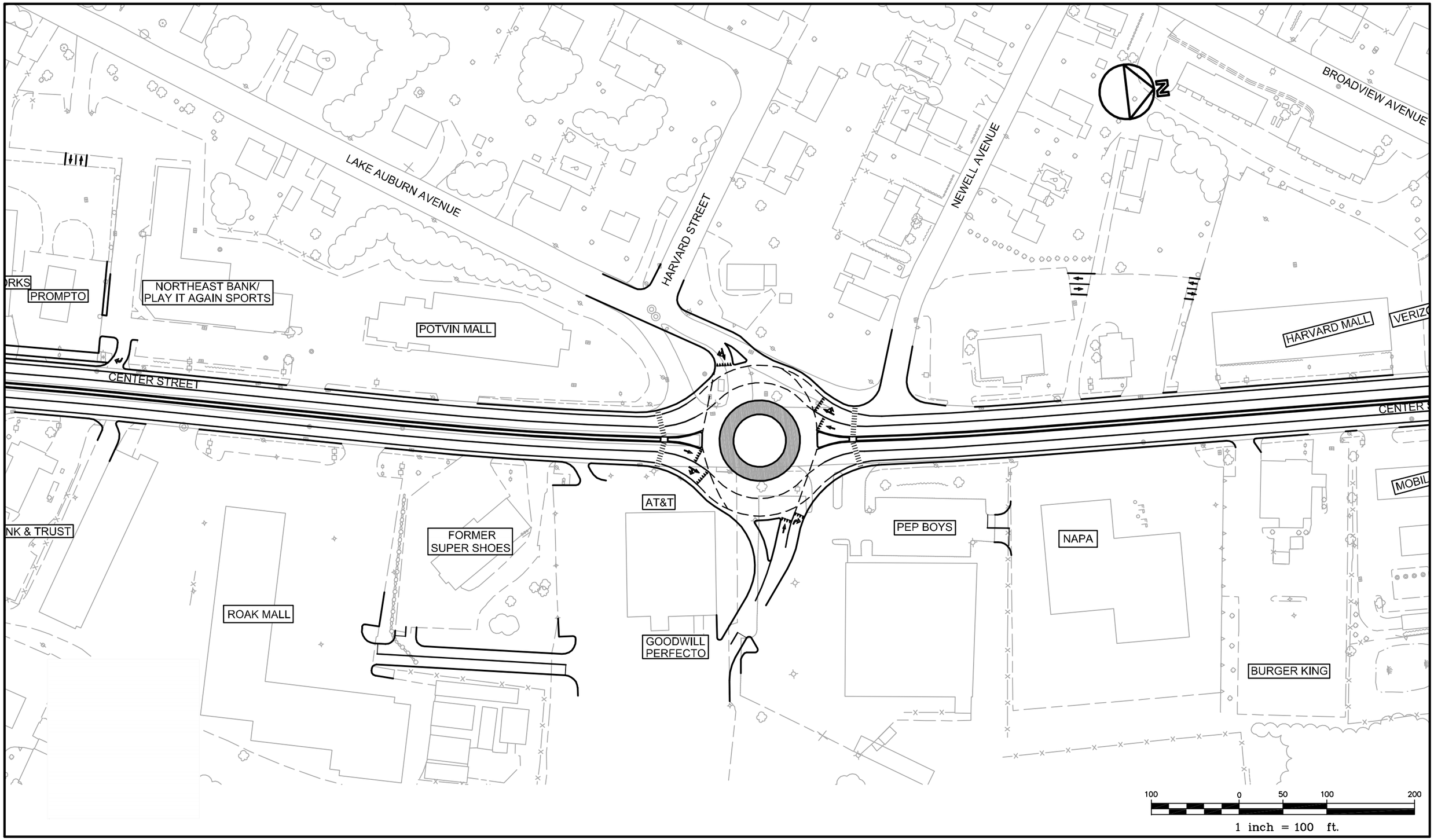
Figure No.
C



Rev.	Date	Revision
–	–	–

Design: JJB	Date: JAN 2008		
Draft: JBC	Job No.: 1919		
Checked: –	Scale: 1"=100'		
File Name: 1919_pbase_CONCEPT1			

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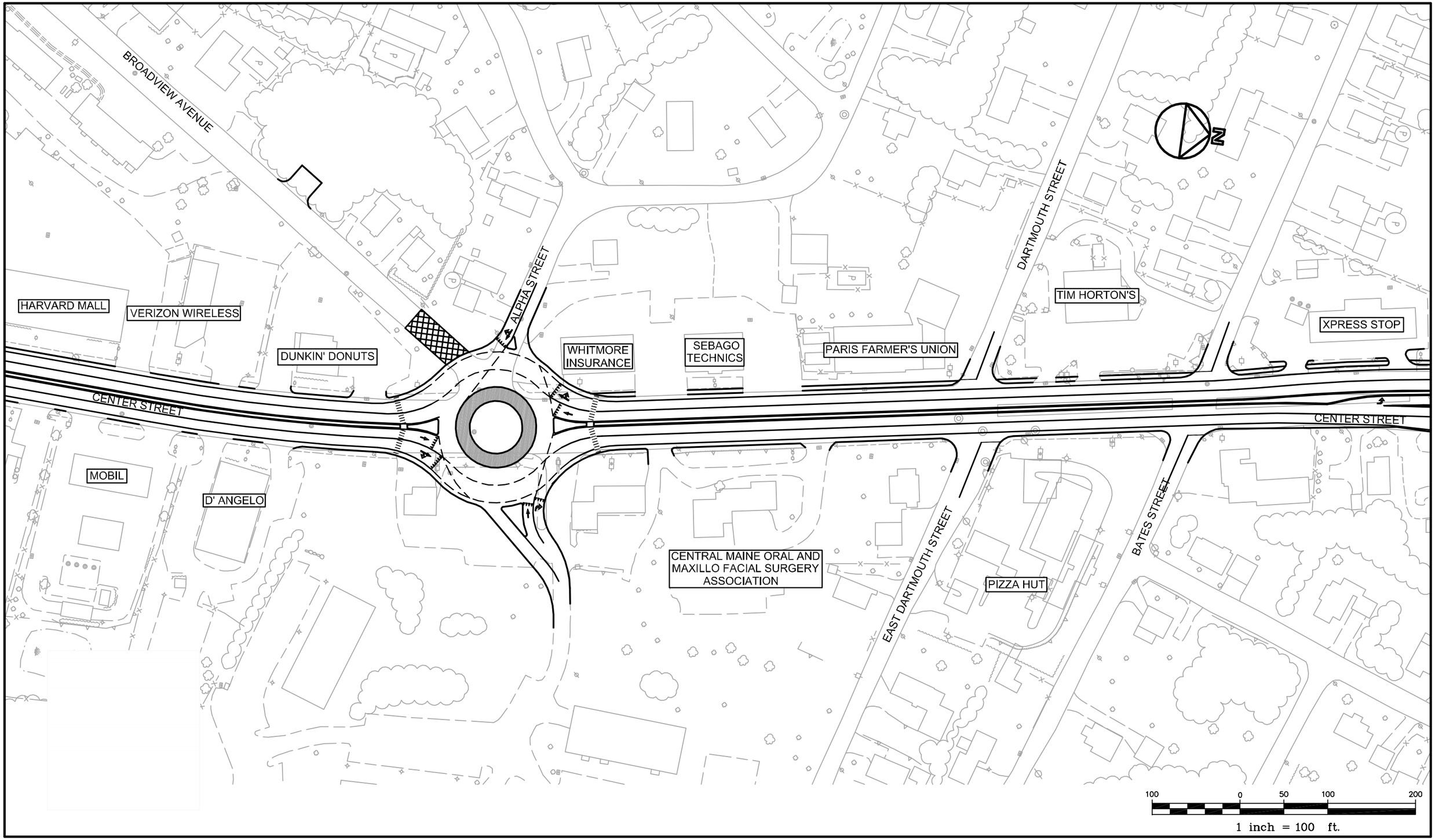
Figure No.
D



Rev.	Date	Revision
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Design:	JJB	Date:	JAN 2008
Draft:	JBC	Job No.:	1919
Checked:	–	Scale:	1"=100'
File Name: 1919_pbase_CONCEPT1			

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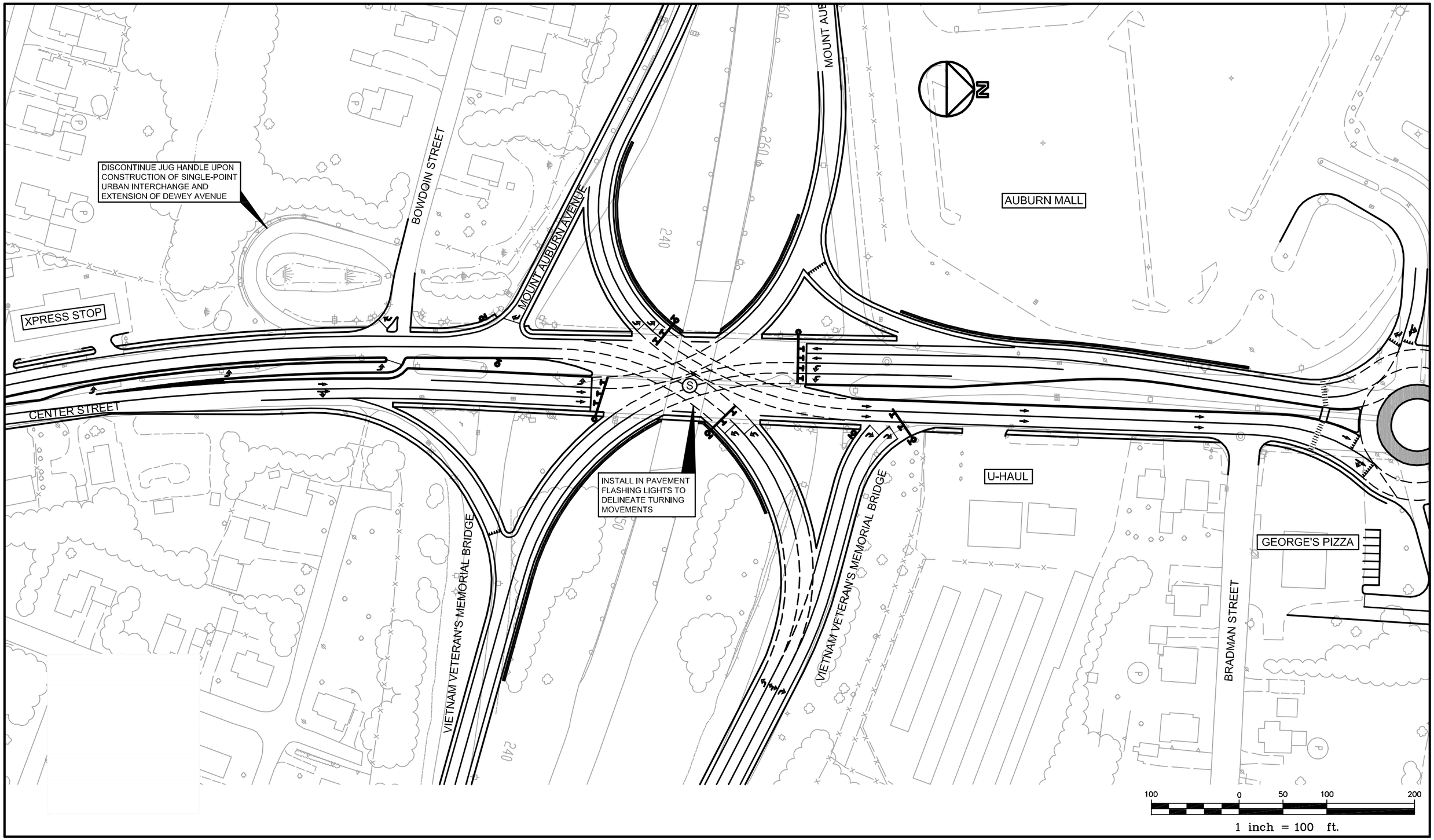
Figure No.
E



Rev.	Date	Revision
–	–	–

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Draft:	JBC	Job No.:	1919
Checked:	–	Scale:	1"=100'
File Name: 1919_pbase_CONCEPT1			

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Drawing Name:
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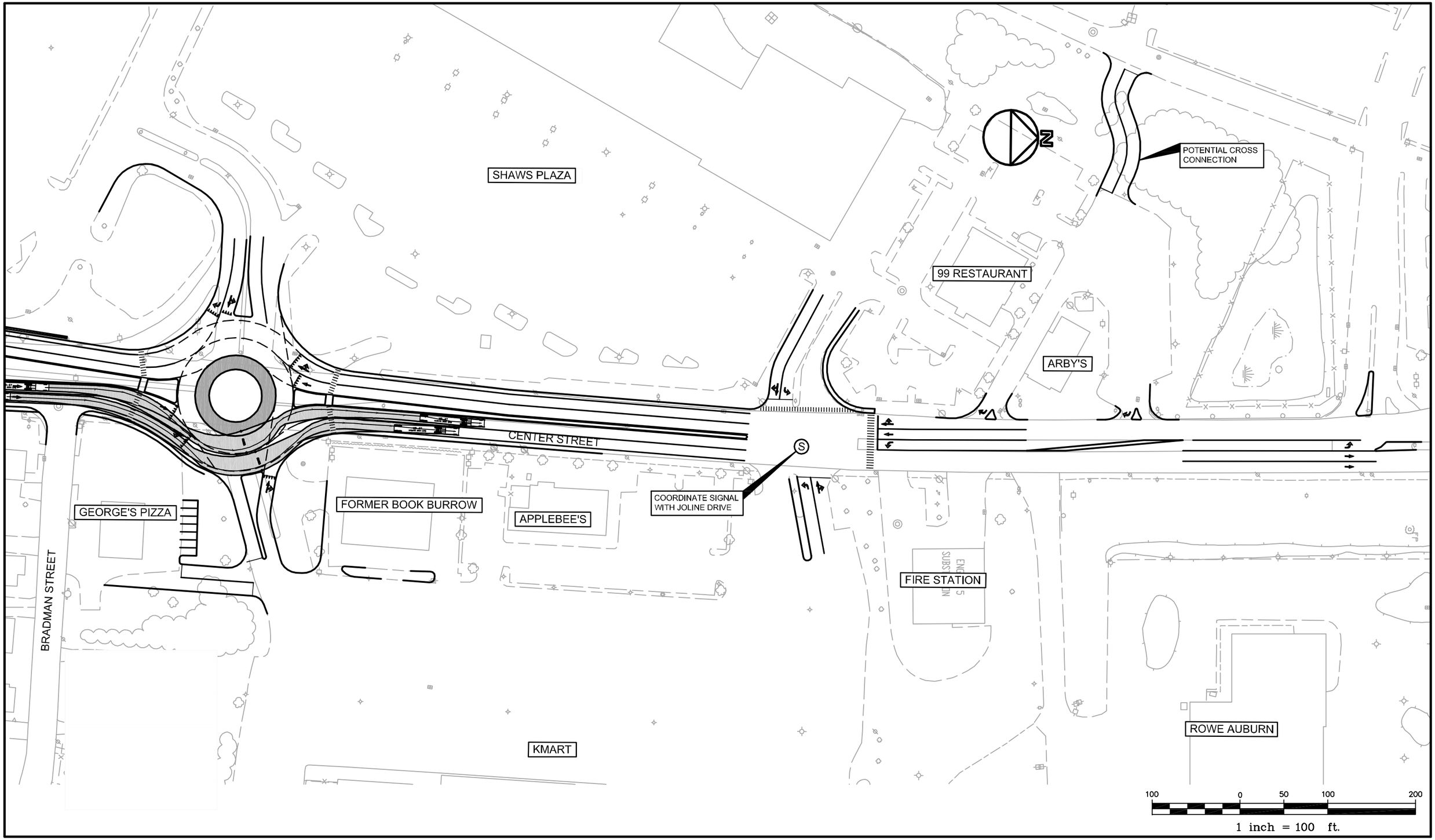
Figure No.
F



Rev.	Date	Revision
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Design:	JJB	Date:	JAN 2008
Draft:	JBC	Job No.:	1919
Checked:	–	Scale:	1"=100'
File Name: 1919_pbase_CONCEPT1			

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Figure No.
G

AUBURN PLAZA

JOLINE DRIVE

EVERGREEN SUBARU

NISKAYUNA STREET

MALIBU DRIVE

JOHN F MURPHY HOMES

XIVRAY STREET

AUBURNDALE CLEANING

IMPROVEMENTS TO BE COMPLETED BY MAINE DOT

CENTER STREET

CENTER STREET

INVESTIGATING POTENTIAL OF REMOVING TRAFFIC SIGNAL

STETSON ROAD

ROWE AUBURN

LEE NISSAN

N

100 0 50 100 200

1 inch = 100 ft.

Rev.	Date	Revision
–	–	–

Design:	JJB	Date:	JAN 2008
Draft:	JBC	Job No.:	1919
Checked:	–	Scale:	1"=100'
File Name: 1919_pbase_CONCEPT1			

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Drawing Name:
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Project:
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Figure No.
H

Appendix C
Collision Data Forecasting Results

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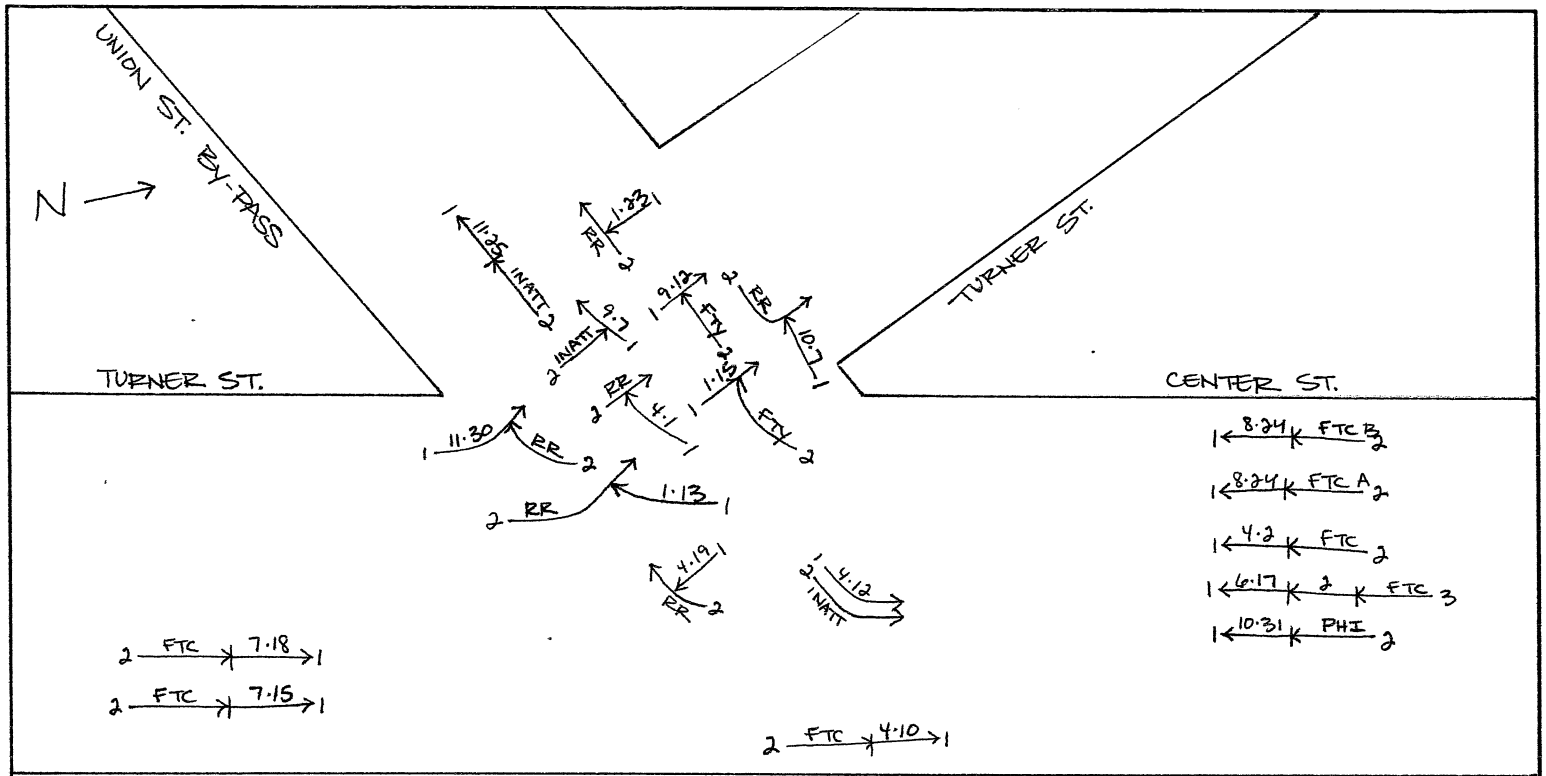
COLLISION DIAGRAM

LOCATION INTERSECTION OF CENTER STREET, UNION STREET, AND TURNER STREET

TOWN AUBURN, MAINE NODE NO(S) 08967

YEARS REVIEWED 2004 — 2006 (2004 SHOWN) DATE PREPARED 9/20/07



CRITICAL RATE FACTOR 2.24 EQUIV. PROP. DAMAGE ACC/YEAR 18 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	→	PEDESTRIAN	→ P	FATAL ACCIDENT	●
BACKING	←←	REAR END	→|		
FIXED OBJECT	→□	SIDE SWIPE	⇉	VEHICLE (MOVING)	→
HEAD ON	→|←	TURNING MOVE	↩	BICYCLE	--- B
OVERTURN	→○	CHANGE LANE	⇉	ANIMAL	--- A
PARKED VEHICLE	⊘	OUT OF CONTROL	⇝	SLED	--- S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01255	01.13.04	16:30				2	4	2	V1 = 3,5 V2 = 5	
01265	01.15.04	09:41					2	1	2, 10	
02269	01.23.04	15:40					2	1	5	
09833	04.01.04	17:34				1	3	1	5, 15	
09834	04.02.04	14:04				1	2	2	4	
10647	04.12.04	10:35					2	1	V1 = 14 V2 = 14	
12063	04.19.04	10:10					2	1	5	
17271	06.17.04	10:55				1	2	1	4	

COLLISION DIAGRAM

LOCATION INTERSECTION OF CENTER STREET, UNION STREET, AND TURNER STREET

TOWN AUBURN, MAINE NODE NO(S) 08967

YEARS REVIEWED 2004 – 2006 (2004 SHOWN) DATE PREPARED 9/20/07

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
25929	07.15.04	11:10					2	1	4	
25938	07.18.04	10:00			1		2	1	4	
26044	08.24.04 A	09:35					2	1	4, 14	
26046	08.24.04 B	16:35					2	1	4	
26083	09.07.04	16:20					2	1	V1 = 14 V2 = 14	
26969	09.12.04	15:50			1	1	2	1	2, 5	
28206	10.07.04	14:54				1	2	1	5	V2 MADE ILLEGAL TURN
33036	10.31.04	14:02					2	1	17	
33105	11.25.04	17:22					4	2	14	
35200	11.30.04	09:42					2	1	5, 2	

S:/SHEETS/COLLISION DIAGRAM.DWG

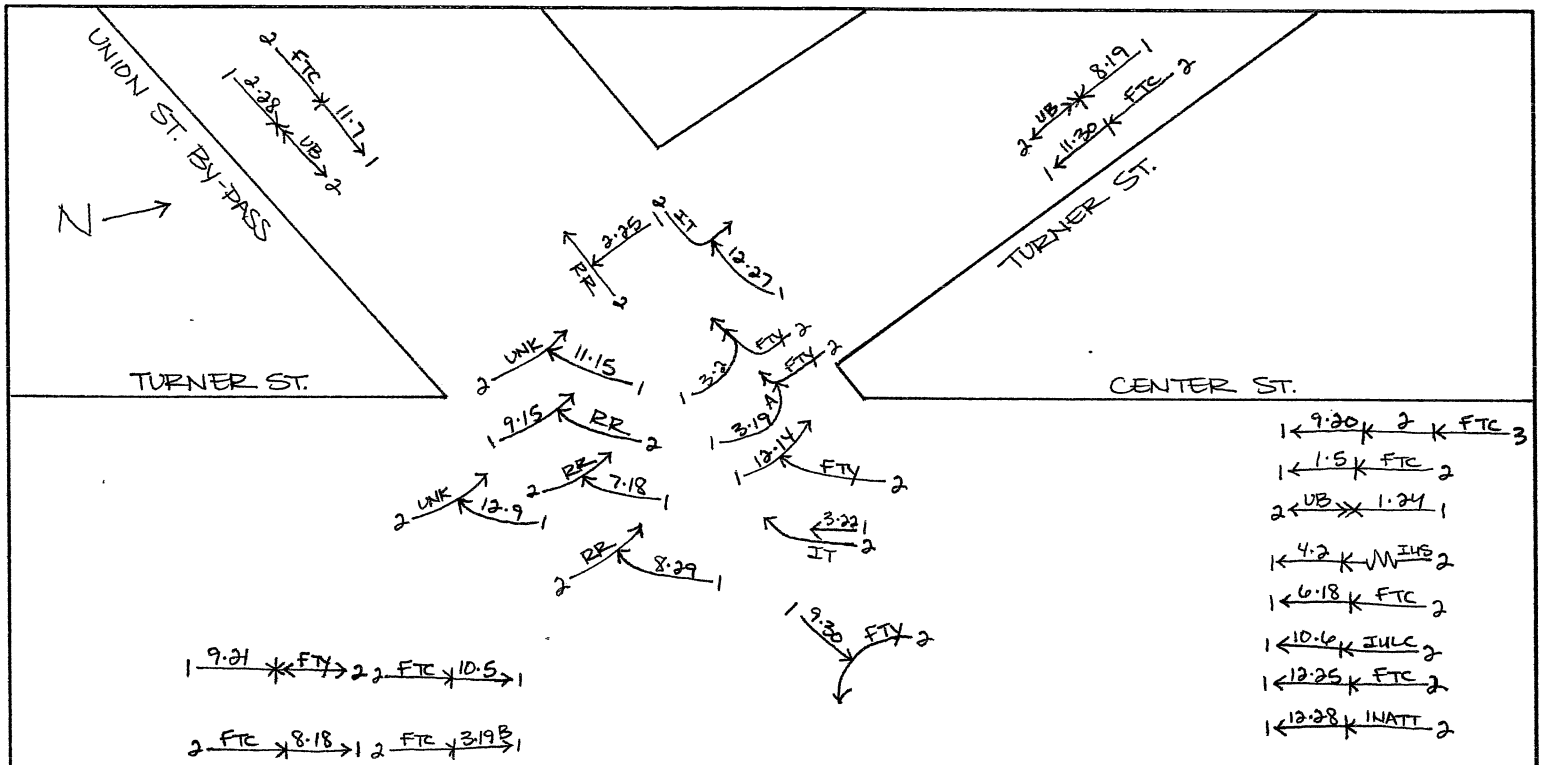
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION INTERSECTION OF CENTER STREET, UNION STREET, AND TURNER STREET

TOWN AUBURN, MAINE NODE NO(S) 08967

YEARS REVIEWED 2004 – 2006 (2005 SHOWN) DATE PREPARED 9/20/07



CRITICAL RATE FACTOR 2.24 EQUIV. PROP. DAMAGE ACC/YEAR 28 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

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1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
06784	01.05.05	13:23					2	1	4, 14	
06859	01.24.05	15:42					2	2	11	
07002	02.25.05	13:31					2	2	5	
07011	02.28.05	18:00					4	1	11	
07018	03.02.05	13:30					2	2	2, 10	
10096	03.19.05 A	09:40					2	1	2	
10097	03.19.05 B	14:22					2	1	4, 14	
10109	03.22.05	13:32					2	1	10	SIDESWIPE

COLLISION DIAGRAM

LOCATION INTERSECTION OF CENTER STREET, UNION STREET, AND TURNER STREET

TOWN AUBURN, MAINE NODE NO(S) 08967

YEARS REVIEWED 2004 – 2006 (2005 SHOWN) DATE PREPARED

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
11224	04.02.05	18:20					4	2	3	
17910	06.18.05	16:18				1	2	1	4, 14	
20378	07.18.05	17:10				2	2	1	3, 5	
26510	08.18.05	17:26					2	1	4	
26518	08.19.05	20:52					4	1	14, 11	
26549	08.29.05	07:36					2	2	5, 2	
26597	09.15.05	11:15					2	1	5, 2	
26608	09.20.05	13:44				1	2	2	4, 3	
30558	09.21.05	22:00					4	1	2, 12	
30562	09.30.05	20:30			1		4	1	2	
30577	10.05.05	15:00			1		2	1	4	
30579	10.06.05	18:55					4	1	8, 14	
31645	11.07.05	10:30					2	1	4, 14	
31674	11.15.05	16:46				1	4	2	V1 = 51 V2 = 51	
36149	11.30.05	12:24					2	2	4, 14	
36184	12.09.05	12:48					2	4	V1 = 51 V2 = 51	
36207	12.14.05	09:42				1	2	1	2, 14	
38980	12.25.05	13:50					2	2	4	
38983	12.27.05	10:20					2	2	10, 2	
38991	12.28.05	21:12					4	1	14	

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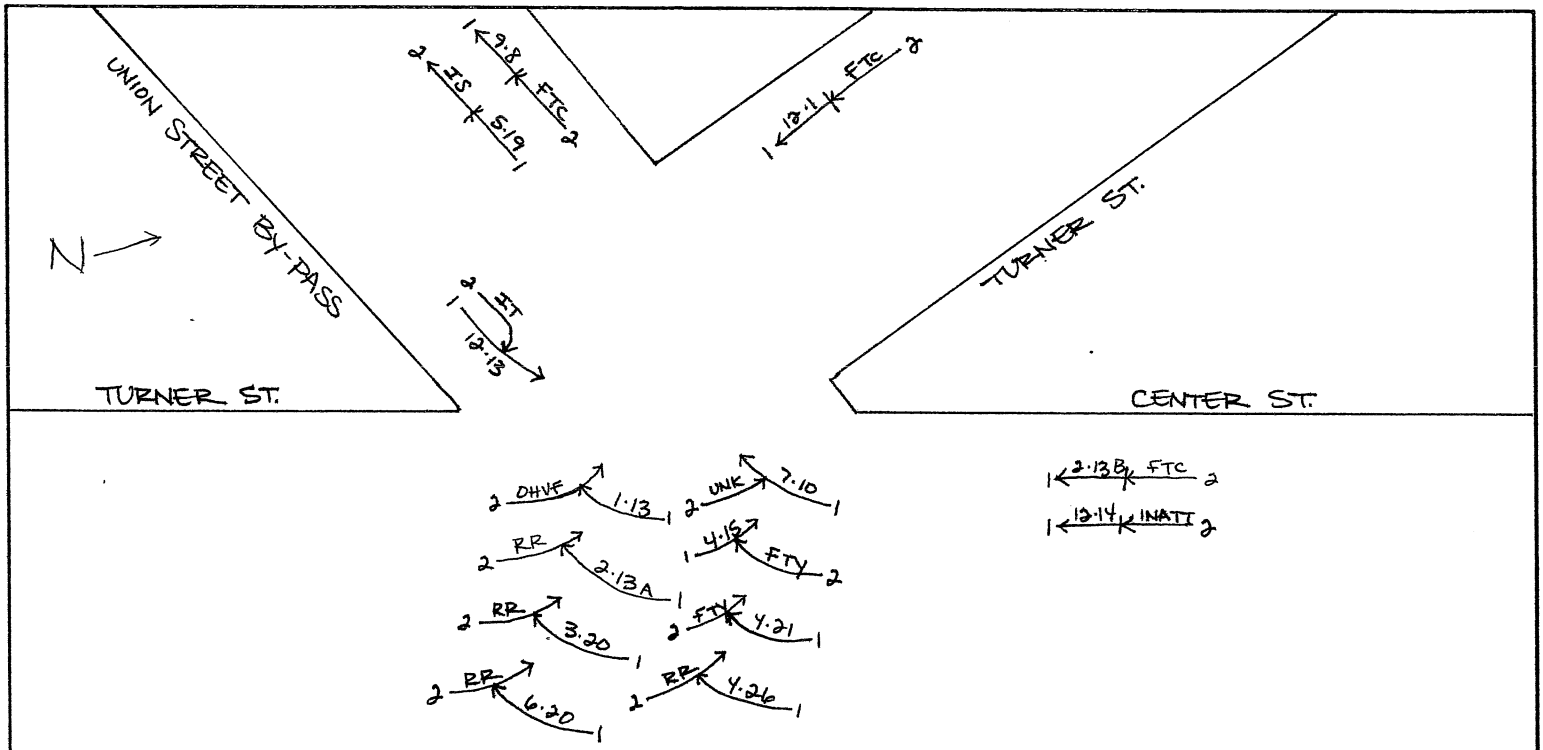
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION INTERSECTION OF CENTER STREET, UNION STREET, AND TURNER STREET

TOWN AUBURN, MAINE NODE NO(S) 08967

YEARS REVIEWED 2004 – 2006 (2006 SHOWN) DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 2.24 EQUIV. PROP. DAMAGE ACC/YEAR 14 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01246	01.13.06	19:25					4	1	30	
07241	02.13.06A	10:15					2	2	5	
07243	02.13.06B	13:30					2	2	4	
07316	03.20.06	15:53			1		2	1	5	
09573	04.15.06	10:15					2	2	2	
11654	04.21.06	10:38					2	1	2	
11665	04.26.06	12:45			1		2	1	5	
16110	05.19.06	14:20					2	2	9	

COLLISION DIAGRAM

LOCATION INTERSECTION OF CENTER STREET, UNION STREET, AND TURNER STREET

TOWN AUBURN, MAINE NODE NO(S) 08967

YEARS REVIEWED 2004 — 2006 (2006 SHOWN) DATE PREPARED 9/21/07

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
16120	06·20·06	14:58	—	—	1	—	2	1	5	
17728	07·10·06	13:00	—	—	—	—	2	1	V1 = 51 V2 = 51	
26712	09·08·06	12:31	—	—	—	—	2	1	4	
35939	12·01·06	09:57	—	—	—	—	2	2	4	
35969	12·13·06	09:34	—	—	—	—	2	2	10	
35312	12·14·06	21:00	—	—	1	—	4	1	14	

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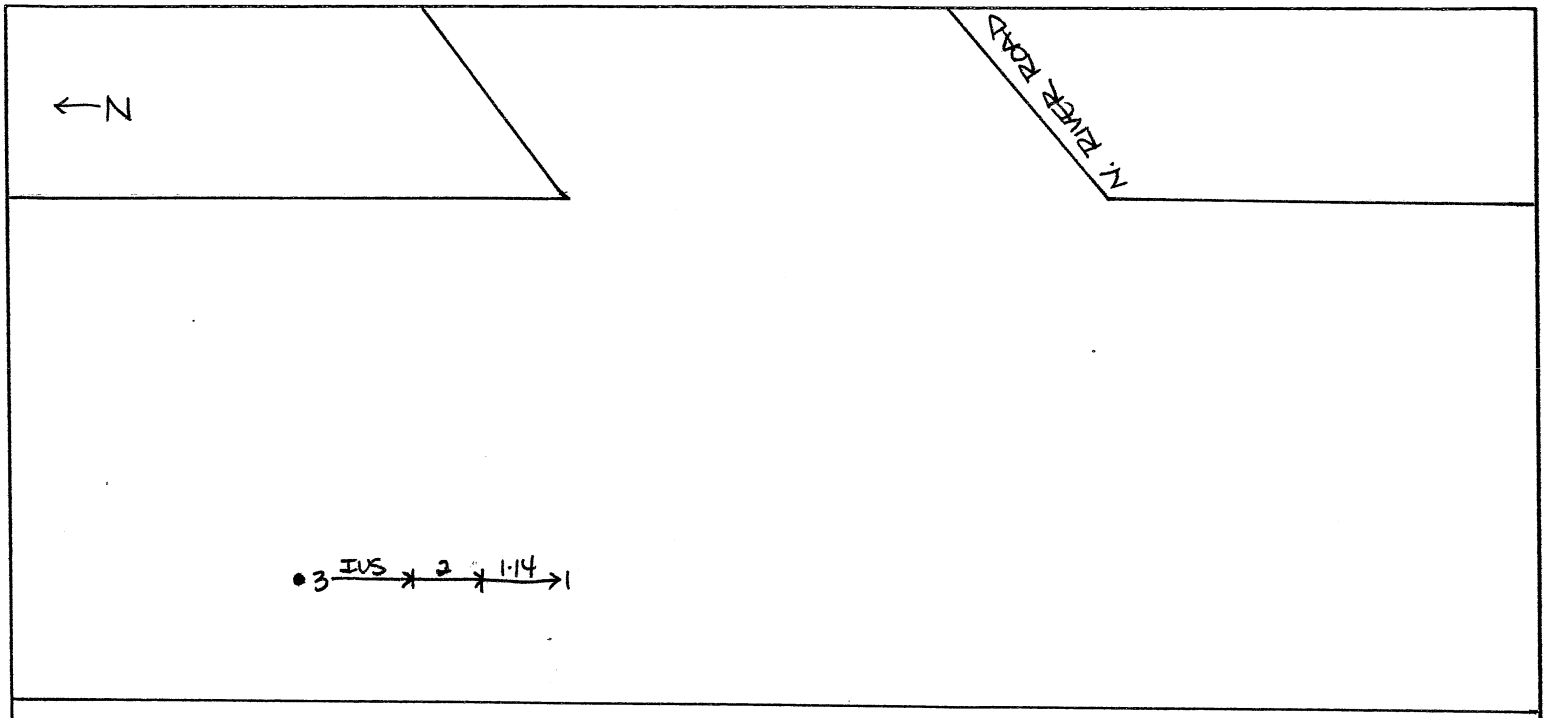
COLLISION DIAGRAM

SHEET 1 OF 1

LOCATION INTERSECTION OF CENTER STREET AND NORTH RIVER ROAD

TOWN AUBURN, MAINE NODE NO(S) 07200

YEARS REVIEWED 2004 DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 0.57 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 17 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	●
BACKING		REAR END			
FIXED OBJECT		SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	B
OVERTURN		CHANGE LANE		ANIMAL	A
PARKED VEHICLE		OUT OF CONTROL		SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01260	01·14·04	09:25	1	—	—	2	2	1	3, 14	

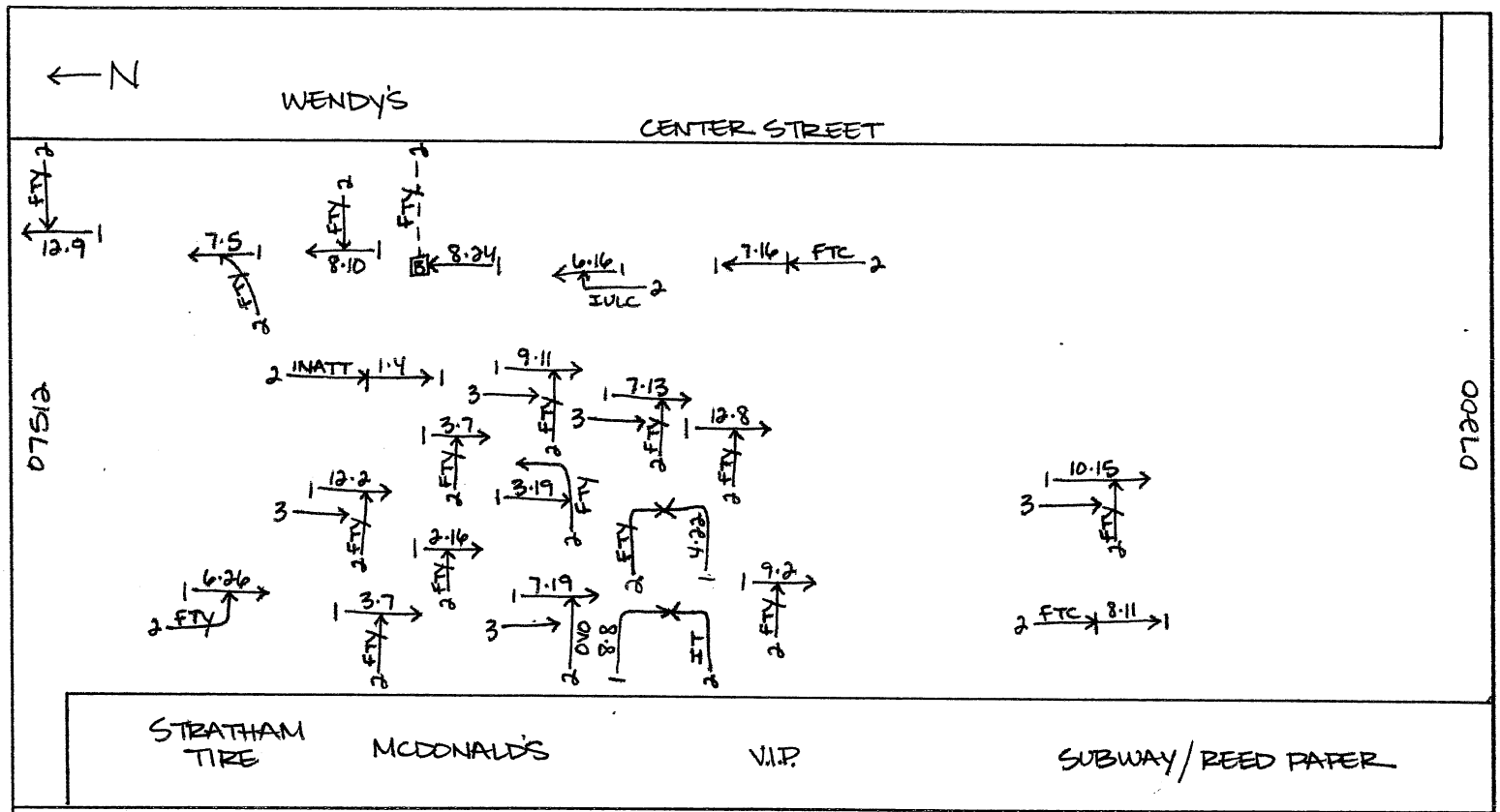
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION BETWEEN INTERSECTIONS CENTER/N. RIVER ROAD AND CENTER/STANLEY

TOWN AUBURN, MAINE NODE NO(S) 07200, 07512

YEARS REVIEWED 2004—2006 DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 1.18 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 23 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 32. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	B
OVERTURN	CHANGE LANE	ANIMAL	A
PARKED VEHICLE	OUT OF CONTROL	SLED	S

WEATHER
C - CLEAR F - FOG R - RAIN
SL - SLEET S - SNOW CL - CLOUDY
XW - CROSS WINDS

INJURIES
K - FATAL B - NON-INCAPACITATING
A - INCAPACITATING C - POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
04703	02.16.04	13:14				1	2	1	2,14	V2 EXITING MCDONALD'S
09770	03.07.04	12:14					2	1	2	V2 EXITING MCDONALD'S
09806	03.19.04	11:35					2	1	2	V2 EXITING MCDONALD'S
25943	07.19.04	16:12					2	2	20	V2 EXITING MCDONALD'S
26003	08.10.04	12:40					2	1	2	V2 EXITING WENDY'S
26010	08.11.04	15:29				1	2	1	4,14	
26047	08.24.04	17:05		1			2	1	2,30	
26072	09.02.04	13:55					2	1	2,20	V2 EXITING V.I.P.

COLLISION DIAGRAM

LOCATION BETWEEN INTERSECTIONS CENTER/N RIVER ROAD AND CENTER/STANLEY

TOWN AUBURN, MAINE NODE NO(S) 07200, 07512

YEARS REVIEWED 2004 - 2006 DATE PREPARED 9/21/07

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
26967	09.11.04	14:14					2	1	2	V2 EXITING MCDONALD'S
35207	12.02.04	13:45					2	1	2	V2 EXITING MCDONALD'S
10072	03.07.05	12:46				1	2	2	2	V2 EXITING MCDONALD'S
17902	06.16.05	11:22					2	1	8, 14	
17947	06.26.05	11:05					2	1	2	
20373	07.16.05	15:07				1	2	1	4, 14	
26488	08.08.05	16:55					2	1	V1 = 10 V2 = 10	
30608	10.15.05	13:39				1	2	2	2, 14	V2 EXITING SUBWAY
36182	12.09.05	11:12					2	3	2, 14	
01187	01.04.06	12:23					2	1	14	
11656	04.22.06	18:36					3	1	2	
17726	07.05.06	10:17					2	1	2	
17742	07.13.06	12:35					2	1	2	V2 EXITING MCDONALD'S
35948	12.08.06	13:55					2	2	2	V2 EXITING MCDONALD'S

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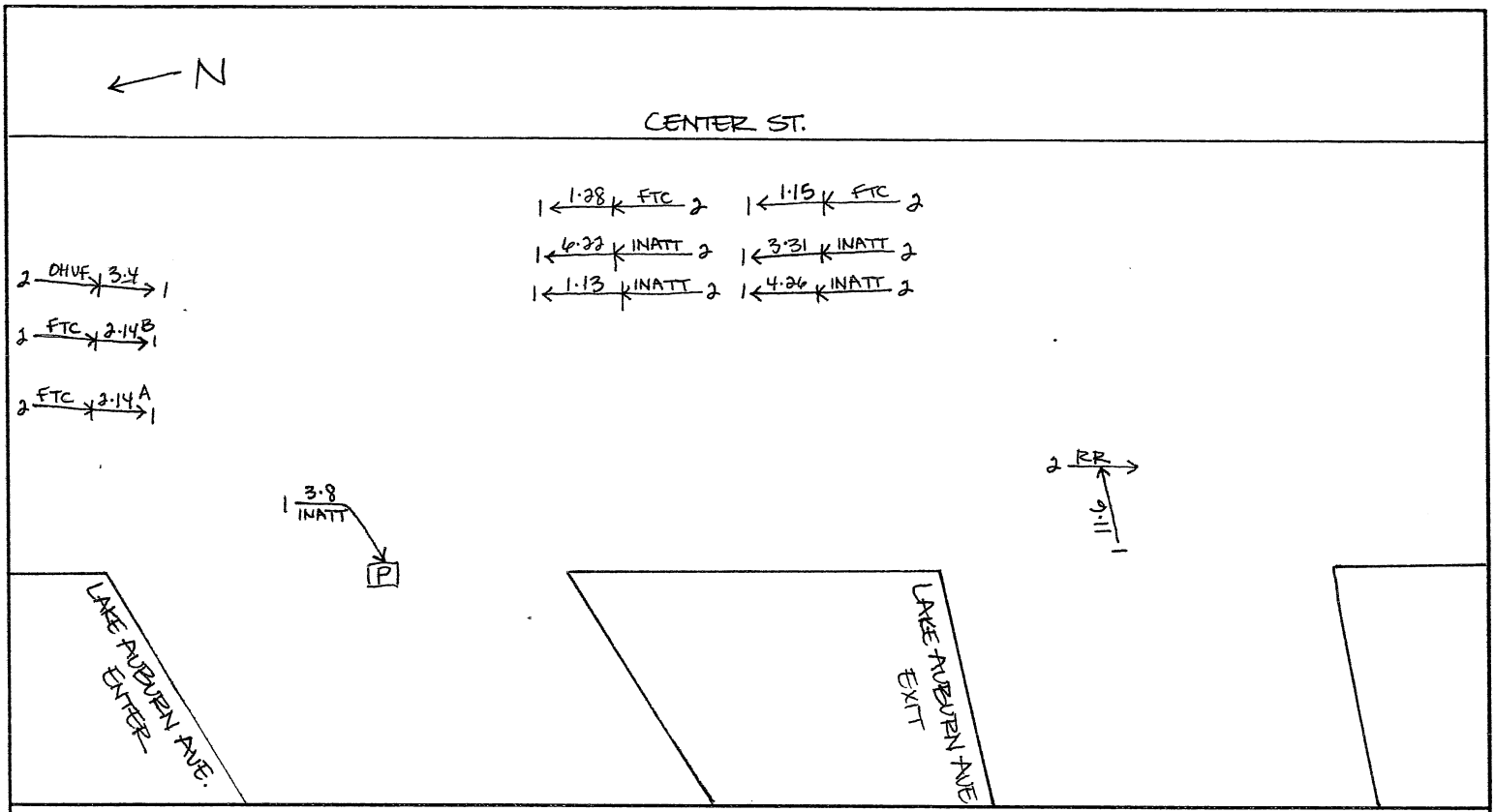
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CENTER STREET AND LAKE AUBURN AVENUE

TOWN AUBURN, MAINE NODE NO(S) 07203

YEARS REVIEWED 2004 - 2006 DATE PREPARED 9/20/07



CRITICAL RATE FACTOR 1.29 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 11 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS 19. VISION OBSCURED - RUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	●
BACKING		REAR END			
FIXED OBJECT		SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	B
OVERTURN		CHANGE LANE		ANIMAL	A
PARKED VEHICLE		OUT OF CONTROL		SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01269	01.15.04	17:11				—	4	1	4, 14	
33052	11.06.04	09:24			1	—	2	1	5, 14	
06899	01.28.05	11:22				—	2	1	4, 14	
06972	02.14.05 A	15:54				1	2	2	V1 = 9 V2 = 4	
06973	02.14.05 B	15:54					2	2	4	
07029	03.04.05	07:18					2	1	30	V2 FELL ASLEEP
11215	03.31.05	13:50					2	1	14, 4	
12510	04.26.05	16:40					2	1	14, 5	

COLLISION DIAGRAM

LOCATION CENTER STREET AND LAKE AUBURN AVENUE

TOWN AUBURN, MAINE NODE NO(S) 07203

YEARS REVIEWED 2004 – 2006 DATE PREPARED 9/20/07

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
17928	06.22.05	19:10	—	—	1	—	2	1	14, 15	
01245	01.13.05	12:50	—	—	—	—	2	1	14, 4	
07286	03.08.06	13:45	—	—	—	1	2	1	14	

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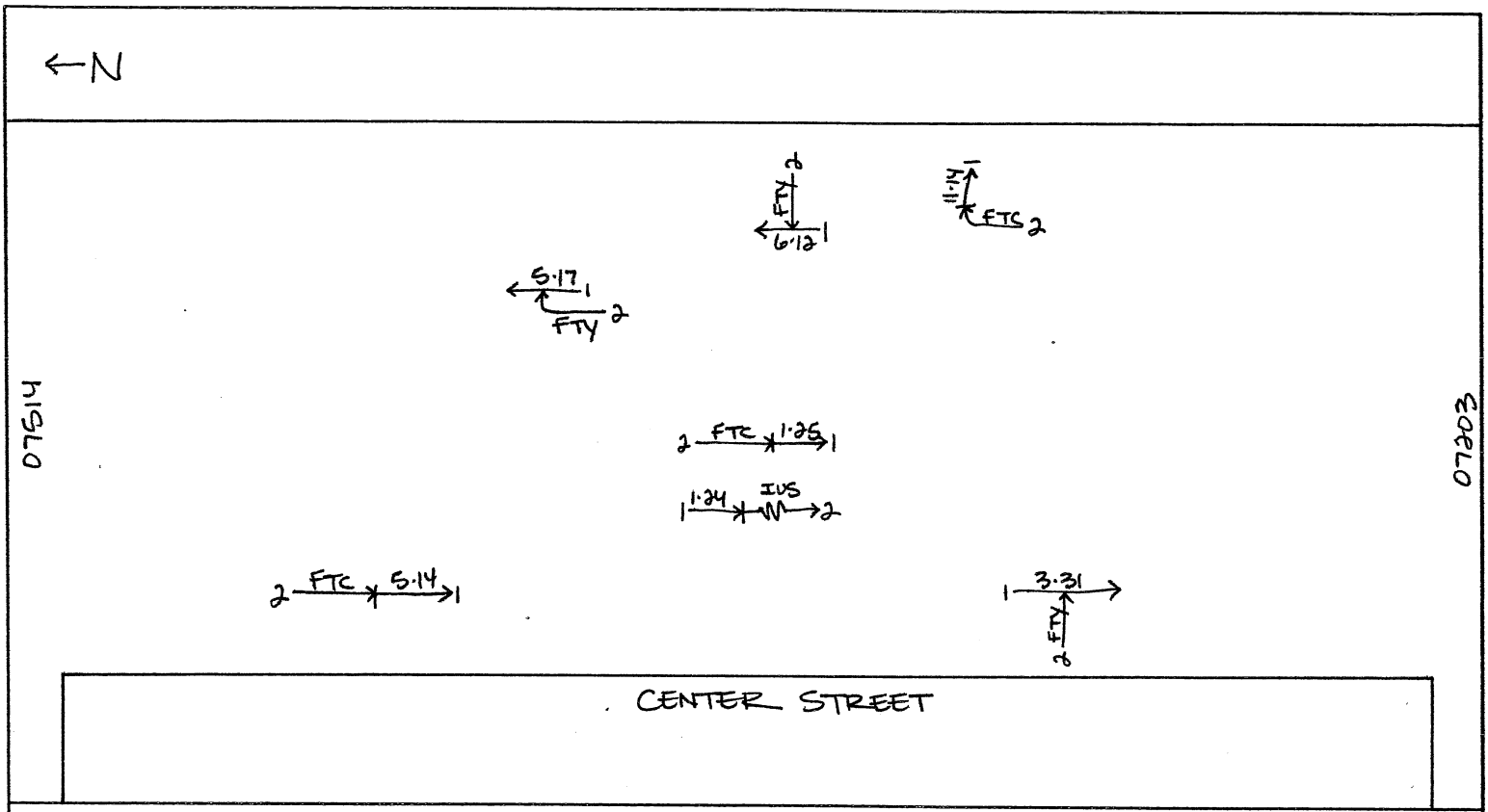
COLLISION DIAGRAM

SHEET 1 OF 1

LOCATION CENTER STREET FROM LAKE AUBURN AVENUE TO NEWELL AVENUE

TOWN AUBURN, MAINE NODE NO(S) 07203, 07514

YEARS REVIEWED 2004 – 2005 DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 1.23 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 7 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 32. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN [P]	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE [B]	
OVERTURN	CHANGE LANE	ANIMAL [A]	
PARKED VEHICLE	OUT OF CONTROL	SLED [S]	

WEATHER
C - CLEAR F - FOG R - RAIN
SL - SLEET S - SNOW CL - CLOUDY
XW - CROSS WINDS

INJURIES
K - FATAL B - NON-INCAPACITATING
A - INCAPACITATING C - POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
17154	05·14·04	16:55					2	1	4, 14	
17164	05·17·04	09:10					2	1	2	
06853	01·24·05	09:49					2	4	V2 = 3 V1 = 4	
06863	01·25·05	12:48					2	2	4, 14	
11214	03·31·05	09:23					2	1	2, 14	V2 EXITING DUNKIN D.
17891	06·12·05	12:00					2	1	2	V2 EXITING BURGER KING
31668	11·14·05	10:58					2	1	4	

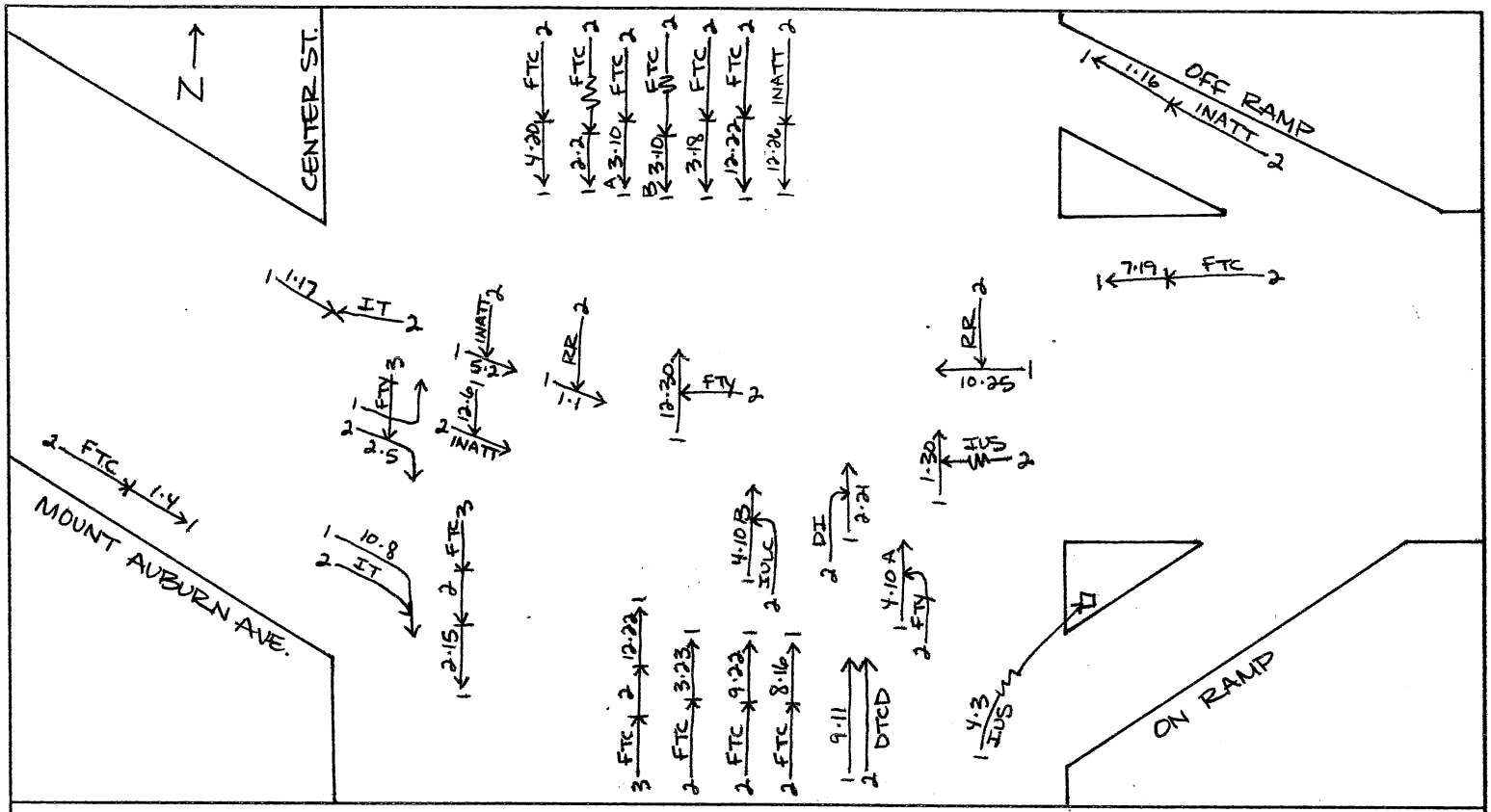
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION INTERSECTION OF CENTER ST. AND MOUNT AUBURN AVE/ON RAMP

TOWN AUBURN, MAINE NODE NO(S) 08202

YEARS REVIEWED 2004—2006 DATE PREPARED 9/22/07



CRITICAL RATE FACTOR 1.07 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 32 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCUREMENT - RAIN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	B
OVERTURN	CHANGE LANE	ANIMAL	A
PARKED VEHICLE	OUT OF CONTROL	SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01280	01.17.04	18:06			1		4	1	10	
12082	04.20.04	21:48					4	1	4	
26026	08.16.04	19:55					4	2	4, 14	
36808	09.11.04	20:05					3	1	5, 7	
06928	02.05.05	11:36					2	2	2	
06989	02.21.05	09:51					2	9	4	
10052	03.10.05A	07:55			1		2	4	4	
10059	03.10.05B	13:15					2	3	4	

COLLISION DIAGRAM

LOCATION INTERSECTION OF CENTER ST. AND MOUNT AUBURN AVE / ON RAMP

TOWN AUBURN, MAINE NODE NO(S) 08202

YEARS REVIEWED 2004 – 2006 DATE PREPARED 9/22/07

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
10092	03.18.05	10:58				1	2	1	4	
11227	04.03.05	03:39				2	4	2	3	STRUCK UTILITY POLE
13198	05.02.05	14:45					2	1	14	
27120	09.22.05	19:05					4	1	4	
30586	10.08.05	15:55					2	2	V1 = 10 V2 = 10	
30637	10.25.05	12:20					2	2	5	
36171	12.06.05	20:40					4	1	14, 2	
38970	12.22.05	17:15					4	1	4	
01183	01.01.06	21:04					4	1	5, 14	
01189	01.04.06	16:45			1		4	1	4	
01260	01.16.06	12:42					2	1	14	
02631	01.30.06	21:36					3	9	3	
07249	02.15.06	12:40					2	1	V2 = 4 V3 = 4	
07258	02.21.06	13:50					2	1	15	
09532	03.23.06	15:30					2	1	4	
09561	04.10.06 A	11:12					2	1	2	
10130	04.10.06 B	15:15					2	1	8, 14	
17746	07.13.06	18:00		1			2	1	3	UNKNOWN
26790	10.19.06	16:39					2	1	2	UNKNOWN
36015	12.22.06	17:06					4	1	4, 14	
36003	12.30.06	11:09					2	8	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

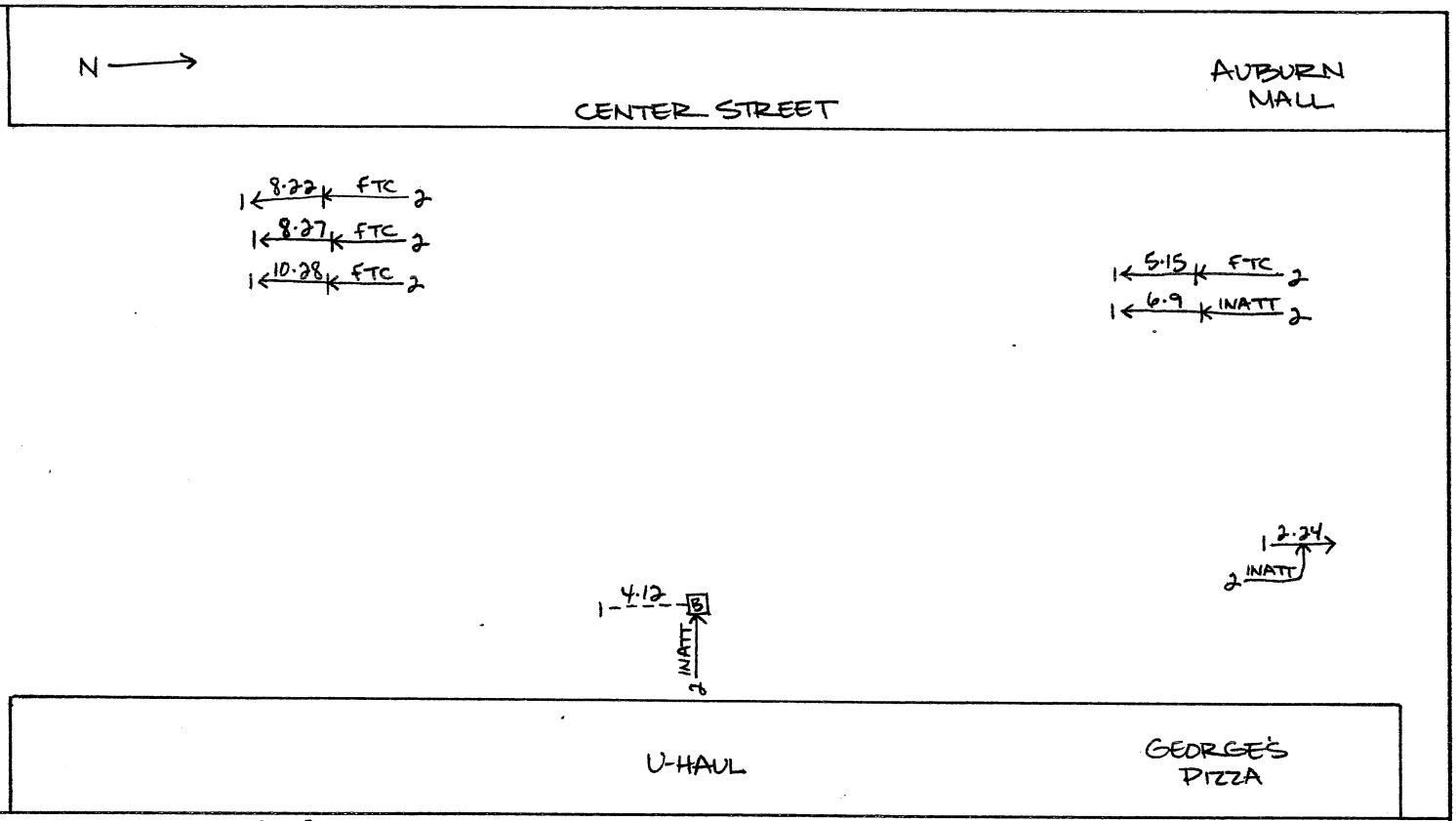
COLLISION DIAGRAM

SHEET 1 OF 1

LOCATION CENTER STREET FROM VETERAN'S BRIDGE EB TO SHAW'S PLAZA

TOWN AUBURN, MAINE NODE NO(S) 07209, 08965

YEARS REVIEWED 2004 – 2006 DATE PREPARED 9/22/07



CRITICAL RATE FACTOR 1.08 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 7 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 32. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	--B
OVERTURN	CHANGE LANE	ANIMAL	--A
PARKED VEHICLE	OUT OF CONTROL	SLED	--S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CY = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

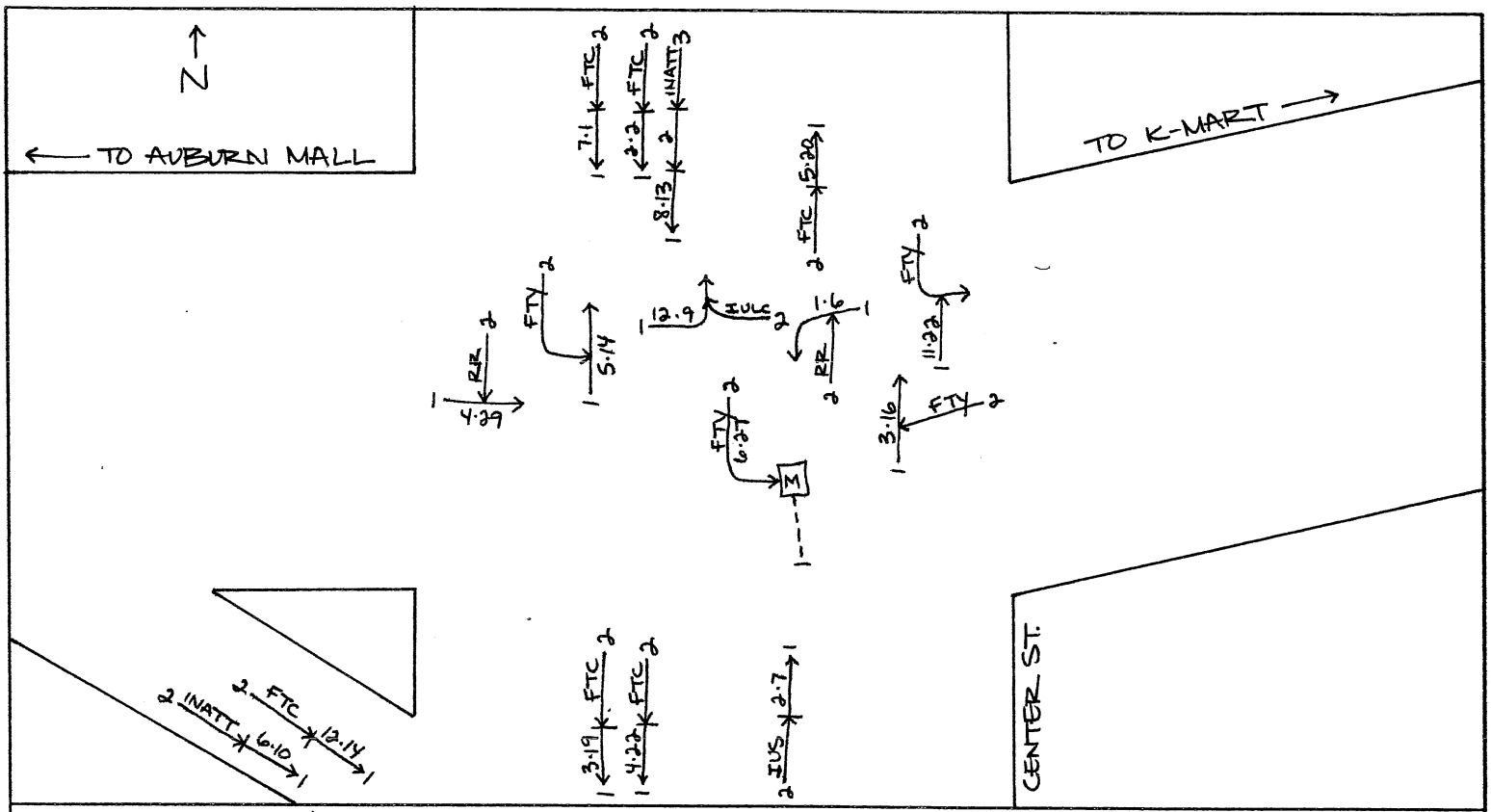
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
10648	04.12.04	11:35			1		2	1	14	V2 EXITING U-HAUL
10011	02.24.05	11:45					2	1	14	
26524	08.22.05	13:05					2	1	4, 14	
26541	08.27.05	12:44					2	1	4, 14	
30651	10.28.05	12:10				1	2	1	4, 14	
11715	05.15.06	16:24					2	2	4	
14058	06.09.06	13:40					2	1	14, 4	

COLLISION DIAGRAM

LOCATION CENTER STREET AT SHAW'S PLAZA SOUTH DRIVE

TOWN AUBURN, MAINE NODE NO(S) 08214

YEARS REVIEWED 2004 – 2006 (2004 SHOWN) DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 1.27 EQUIV. PROP. DAMAGE ACC/YEAR 16 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	→	PEDESTRIAN	→ P	FATAL ACCIDENT	●
BACKING	←→	REAR END	→		
FIXED OBJECT	→□	SIDE SWIPE	⇒	VEHICLE (MOVING)	→
HEAD ON	→←	TURNING MOVE	↱	BICYCLE	--B
OVERTURN	→○	CHANGE LANE	⇒	ANIMAL	--A
PARKED VEHICLE	▨	OUT OF CONTROL	⇝	SLED	--S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
00274	01.06.04	12:12					2	1	5	
03554	02.02.04	12:14				2	2	1	4, 14	
04013	02.07.04	11:28					2	3	3	
09798	03.16.04	18:45				2	4	1	2, 20	
09807	03.19.04	12:54					2	1	4	
12088	04.22.04	13:04					2	1	4	
12201	04.29.04	08:40				1	2	1	5	
17153	05.14.04	12:25					2	1	2, 14	

COLLISION DIAGRAM

LOCATION CENTER STREET AT SHAW'S PLAZA SOUTH DRIVE

TOWN AUBURN, MAINE NODE NO(S) 08214

YEARS REVIEWED 2004 — 2006 (2004 SHOWN) DATE PREPARED 9/21/07

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
17178	05.20.04	17:16					2	1	4	
17245	06.10.04	15:49					2	1	14	
17299	06.27.04	11:34				1	2	1	2	
18869	07.01.04	12:33				1	2	1	4	
26017	08.13.04	17:08					2	1	14	
33090	11.22.04	11:50					2	1	2	
36818	12.09.04	12:57					2	2	8, 14	
36835	12.14.04	14:56				1	2	1	4, 14	

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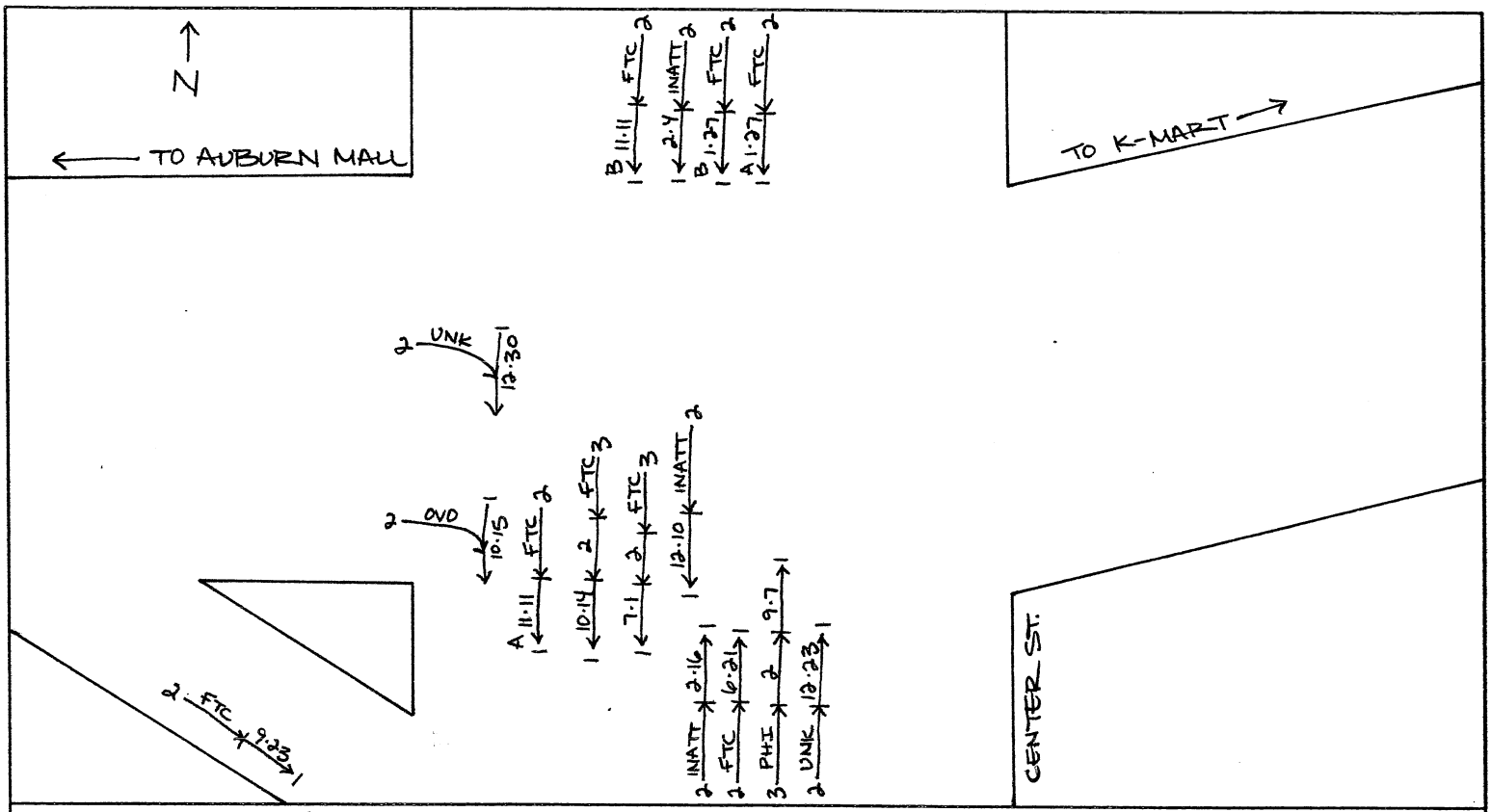
COLLISION DIAGRAM

LOCATION CENTER STREET AT SHAW'S PLAZA SOUTH DRIVE

TOWN AUBURN, MAINE NODE NO(S) 08214

YEARS REVIEWED 2004 – 2006 (2005 SHOWN) DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 1.27 EQUIV. PROP. DAMAGE ACC/YEAR 15 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - W/WINDSHIELD GLASS
19. VISION OBSCURED - RUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 32. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
06892	01-27-05 A	12:50				1	2	1	4	
06895	01-27-05 B	16:41					2	2	4	
06925	02-04-05	11:10					2	2	14	
06978	02-16-05	08:12					2	2	14, 4	
17923	06-21-05	12:44				1	2	1	4	
20330	07-01-05	15:35				1	2	2	4	
26576	09-07-05	12:50			2	2	2	1	17, 4	
27112	09-23-05	14:05					2	1	4	

COLLISION DIAGRAM

LOCATION CENTER STREET AT SHAW'S PLAZA SOUTH DRIVE

TOWN AUBURN, MAINE NODE NO(S) 08214

YEARS REVIEWED 2004 — 2006 (2005 SHOWN) DATE PREPARED 9/21/07

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
30599	10.14.05	17:04	—			—	2	2	V2 = 41, 4 V3 = 4	
30610	10.15.05	21:45	—			—	4	2	20, 14	
31661	11.11.05 A	11:48	—			—	2	1	4	
31662	11.11.05 B	12:04	—			—	2	1	4	
36192	12.10.05	12:53	—			—	2	2	14	
38977	12.23.05	21:00	—				6	3	UNKNOWN	
39002	12.30.05	09:37	—				2	1	UNKNOWN	

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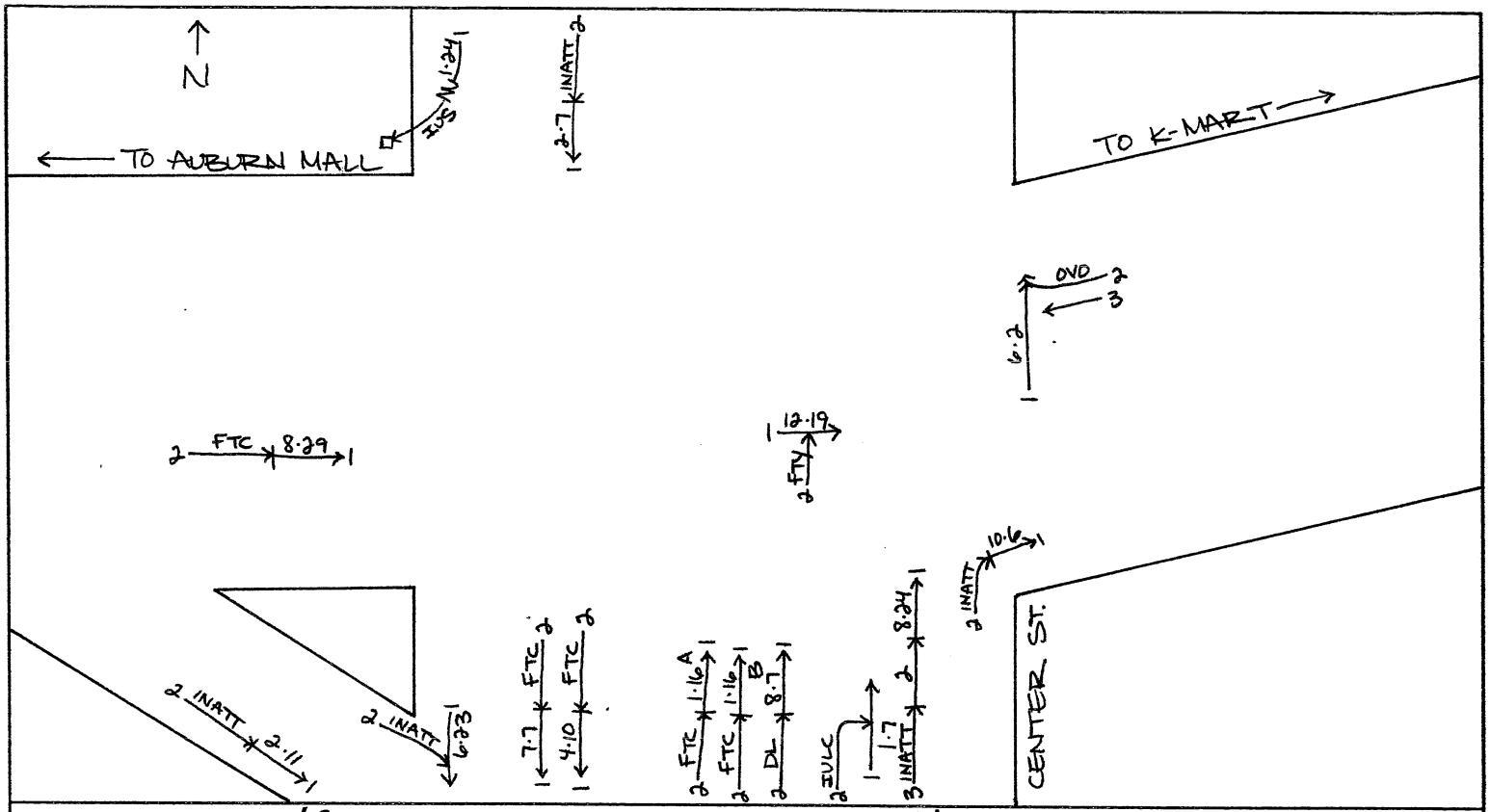
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CENTER STREET AT SHAW'S PLAZA SOUTH DRIVE

TOWN AUBURN, MAINE NODE NO(S) 08214

YEARS REVIEWED 2004 — 2006 (2006 SHOWN) DATE PREPARED 9/21/07



CRITICAL RATE FACTOR 1.27 EQUIV. PROP. DAMAGE ACC/YEAR 14 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01214	01.07.06	17:06					4	2	8	
01259	01.16.06 A	12:11					2	4	4	
01263	01.16.06 B	14:00					2	4	4	
01749	01.24.06	12:18					2	2	3	
07217	02.07.06	09:20					2	2	14	
07236	02.11.06	12:50					2	1	14	
09562	04.10.06	12:07					2	1	4	
14037	06.02.06	16:18					2	1	20	

COLLISION DIAGRAM

LOCATION CENTER STREET AT SHAW'S PLAZA SOUTH DRIVE

TOWN AUBURN, MAINE NODE NO(S) 08214

YEARS REVIEWED 2004 — 2006 (2006 SHOWN) DATE PREPARED 9/21/07

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
16131	06.23.06	13:21				1	2	1	14, 4	
17363	07.07.06	14:10					2	1	4	
26823	08.07.06	17:18					2	1	43, 4	
26830	08.24.06	15:12					2	1	14, 5	
26779	10.06.06	08:32					2	1	14	
35976	12.19.06	18:50					4	1	2, 30	

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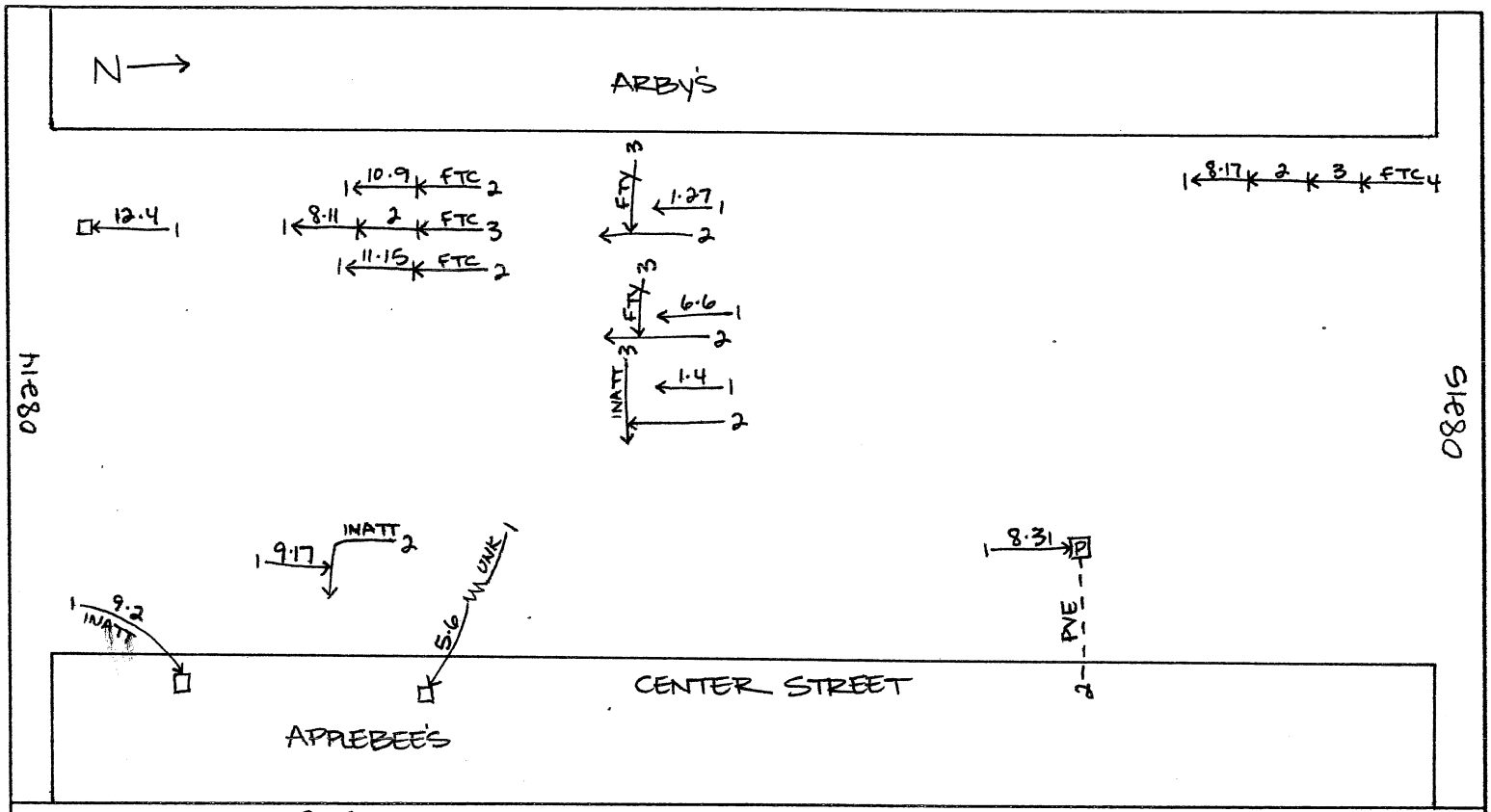
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CENTER STREET BETWEEN SHAW'S PLAZA AND KMART DRIVES

TOWN AUBURN, MAINE NODE NO(S) 08214, 08215

YEARS REVIEWED 2004 — 2006 DATE PREPARED 9/22/07



CRITICAL RATE FACTOR 2.11 EQUIV. PROP. DAMAGE ACC/~~YEAR~~ 13 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 32. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	
BACKING		REAR END			
FIXED OBJECT		SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	B
OVERTURN		CHANGE LANE		ANIMAL	A
PARKED VEHICLE		OUT OF CONTROL		SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
12901	05.06.04	11:31					2	1	51	ROLLED FROM SHAW'S
26028	08.17.04	11:35				1	2	1	4, 14	
26068	08.31.04	13:48			1		2	1	16	
26077	09.02.04	21:25			2		4	1	14, 3	HIT PHONE POLE
28215	10.09.04	14:43				1	2	1	4, 14	
35245	12.04.04	18:45					4	1	1	HIT PIECE OF ASPHALT
06894	01.27.05	15:55					2	2	2	V3 EXITING ARBY'S
17873	06.06.05	13:44					2	2	2, 20	V3 EXITING ARBY'S

COLLISION DIAGRAM

LOCATION CENTER STREET BETWEEN SHAW'S PLAZA AND KMART DRIVES

TOWN AUBURN, MAINE NODE NO(S) 08214, 08215

YEARS REVIEWED 2004 – 2006 DATE PREPARED 9/22/07

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
26491	08.11.05	13:05					2	1	4, 15	
26599	09.17.05	18:57				1	4	1	V1=3 V2=14	V2 ENTERING APPLEBEE'S
31672	11.15.05	12:15					2	2	4, 14	
01188	01.04.06	13:08				2	2	1	14, 2	V3 EXITING ARBY'S
02613	01.27.06	11:00				1	2	1	4	UNKNOWN

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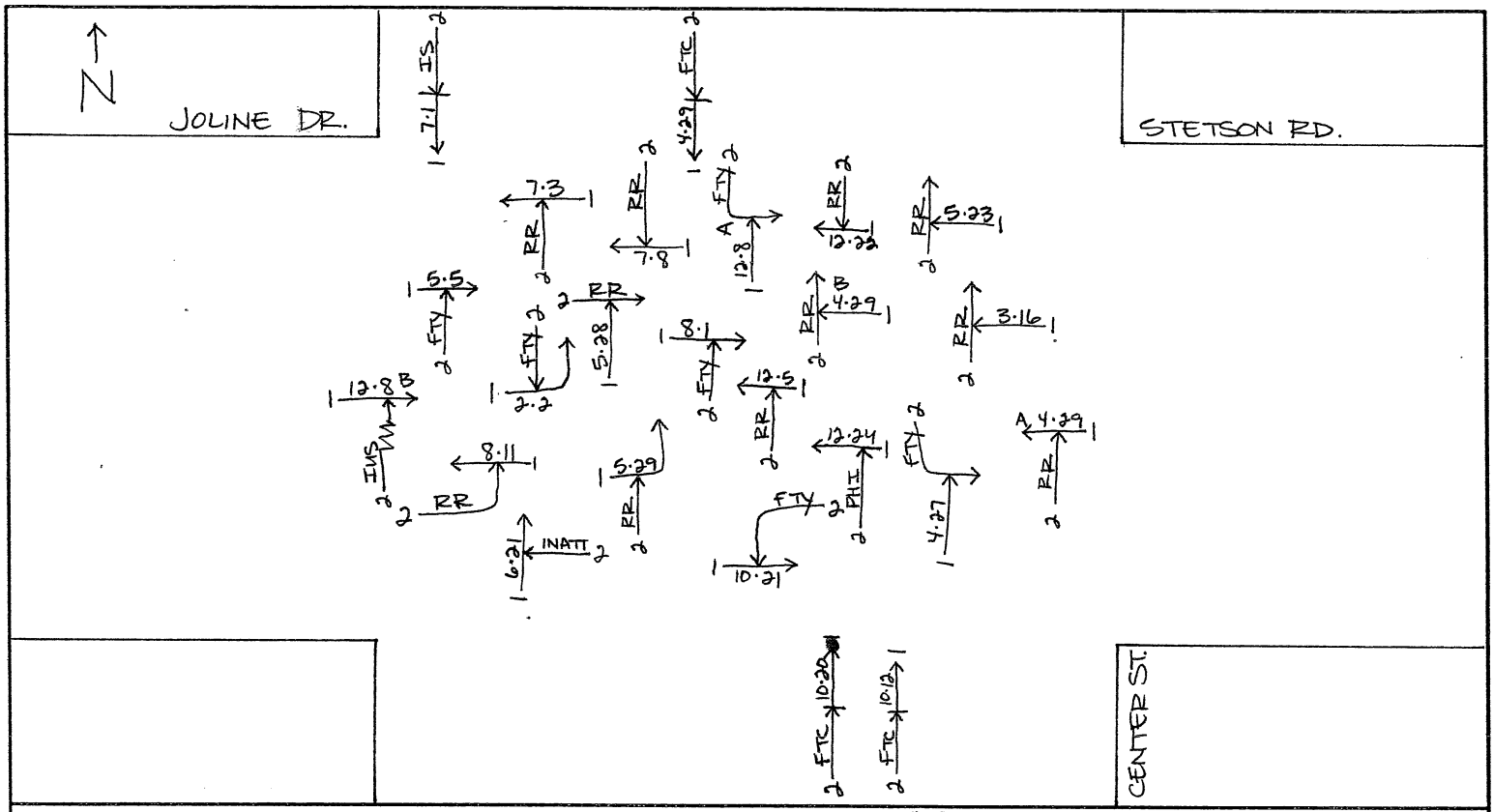
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION INTERSECTION OF JOLINE DRIVE AND CENTER STREET

TOWN AUBURN, MAINE NODE NO(S) 07211

YEARS REVIEWED 2004 – 2006 DATE PREPARED 9/19/07



CRITICAL RATE FACTOR 1.03 EQUIV. PROP. DAMAGE ACC/YEAR 25 ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
03555	02.02.04	14:29	—	1	—	1	2	1	2	
09796	03.16.04	10:12	—	—	—	—	2	1	5, 14	
12102	04.27.04	13:20	—	—	—	—	2	1	2, 14	
12202	04.29.04 A	12:20	—	—	—	—	2	1	5	
12203	04.29.04 B	13:37	—	—	—	—	2	1	5	
18870	07.01.04	12:50	—	—	1	—	2	1	9, 14	
18889	07.08.04	10:34	—	—	—	—	2	2	5, 14	
28221	10.12.04	11:49	—	—	—	1	2	2	4	

COLLISION DIAGRAM

LOCATION INTERSECTION OF JOLINE DRIVE AND CENTER STREET

TOWN AUBURN, MAINE NODE NO(S) 07211

YEARS REVIEWED 2004 – 2006 DATE PREPARED 9/19/07

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
33003	10.21.04	13:20					2	1	2,14	
17827	05.23.05	15:10					2	2	5	
17842	05.29.05	13:16					2	2	5	
21982	08.01.05	16:12				1	2	1	2	
26492	08.11.05	16:55					2	1	2	
36163	12.05.05	10:50					2	1	5	
36176	12.08.05A	12:05					2	1	2	
38979	12.24.05	17:15					4	2	17,5	V2 = DRUNK DRIVER
07310	03.17.06	15:47					4	1	2	UNKNOWN
11688	04.29.06	17:30					2	1	4	
11689	05.05.06	13:30				1	2	1	2,14	
16112	05.28.06	17:00					2	1	5	
16124	06.21.06	13:15					2	1	14	
17356	07.03.06	11:20					2	1	5	
26826	08.10.06	13:51				1	2	1	14	UNKNOWN
26791	10.20.06	12:57				1	2	2	4	
35960	12.08.06B	09:22			1		2	4	3,2	V2 SKIDDED ON ICE
35989	12.22.06	18:55					3	2	5,14	

S:/SHEETS/COLLISION DIAGRAM.DWG

JUL 30,2007 AT 11:08

TINACC30

MAINE DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY INPUT

TYPE OF STUDY: NODES AND LINKS TYPE OF REQUEST: ACCIDENT I & II WITH LINK DETAIL
STUDY PERIOD: FROM MONTH 01 YEAR 2004 TO MONTH 12 YEAR 2006

INPUT COMMENTS

REQUEST: CENTER ST (RTE 4)
TOWN: AUBURN

INPUT DATA

ROUTE	COUNTY	FIRST NODE	EXCLUDE FIRST	DISTANCE	SECOND NODE	LAST NODE	EXCLUDE LAST	DISTANCE
0004X	01	08967	0	0.00	07197	07211	0	0.00
0004S		07207	1	0.00	08647	07515	1	0.00
		07515	1	0.00	08646	08202	1	0.00
		08202	1	0.00	08205	08965	1	0.00
		08965	1	0.00	08214	08214	1	0.00

JUL 30,2007 AT 11:08

TINACC30

MAINE DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY I

	COUNTY TOWN#	LOW NODE	HIGH NODE	STREET NAME OR ROUTE #	U/R	TOTAL ACCTS	LINK LENGTH	INJURY ACCIDENTS K	A	B	C	PD	PERCENT INJURY	ANNUAL HM VEH-MILES	ANNUAL M ENT-VEHS	ACCIDENT-RATES LINK	NODE	CRITI RATE	CRF	
HCL	01	08967	AUB,CENTER,TURNER,UNION		9	62		0	0	8	10	44	29.0		9.513		2.17	0.97	2.24	
	01	07197	AUB,CENTER,WHITNEY ST		2	4		0	0	0	2	2	50.0		7.453		0.18	0.30	0.00	
	01	07198	AUB,CENTER ST,GROVE ST		2	1		0	0	0	1	0	100.0		9.935		0.03	0.28	0.00	
	01	07199	AUB,CENTER ST,VERNON ST		2	1		0	0	0	1	0	100.0		10.177		0.03	0.28	0.00	
Fatal	01	07200	AUB,CENTER ST,NORTH RIV		9	17		1	0	1	4	11	35.3		10.284		0.55	0.96	0.00	0.57
	01	07512	AUB,CENTER ST,STANLEY S		2	2		0	0	0	0	2	0.0		10.165		0.07	0.28	0.00	
	01	07513	AUB,CENTER ST,UNN#1 PW		2	0		0	0	0	0	0	0.0		10.227		0.00	0.28	0.00	
	01	07201	AUB,CENTER ST,COBURN ST		2	0		0	0	0	0	0	0.0		10.268		0.00	0.28	0.00	
	01	07202	AUB,CENTER ST,CROSS ST		2	3		0	0	0	1	2	33.3		10.311		0.10	0.28	0.00	
HCL	01	07203	AUB,CENTER ST,LAKE AUBU		2	11		0	0	2	2	7	36.4		10.167		0.36	0.28	1.29	
	01	07514	AUB,NEWALL AVE,CENTER S		9	1		0	0	0	1	0	100.0		10.260		0.03	0.96	0.00	
	01	07204	AUB,CENTER,ALPHA,BROADV		2	4		0	0	1	1	2	50.0		9.975		0.13	0.28	0.00	
	01	07205	AUB,CENTER ST,DARTMOUTH		2	3		0	0	0	2	1	66.7		9.866		0.10	0.28	0.00	
	01	07206	AUB,BATES,CENTER ST		2	4		0	0	1	0	3	25.0		10.092		0.13	0.28	0.00	
	01	07207	AUB,CENTER,NB,SB,.05N/O		2	1		0	0	0	0	1	0.0		10.371		0.03	0.28	0.00	
	01	07515	AUB,CENTER,BOWDOIN,RAMP		2	9		0	0	0	2	7	22.2		11.737		0.26	0.30	0.00	0.87
HCL	01	08202	AUB,CENTER,V.VET.BR,MT		9	32		0	1	3	4	24	25.0		10.316		1.03	0.96	1.07	
	01	08965	AUB,CENTER,V.VET.WB,MT		9	35		0	0	2	7	26	25.7		15.904		0.73	0.89	0.00	0.82
	01	07209	AUB,BRADMAN ST,CENTER S		2	3		0	0	0	0	3	0.0		5.579		0.18	0.36	0.00	
HCL	01	08214	AUB,CENTER,NB,SB,SHAWS,		9	46		0	1	1	10	34	26.1		13.053		1.17	0.92	1.27	
	01	08215	AUB,CENTER ST,TONS/TOYS		9	2		0	0	0	0	2	0.0		11.415		0.06	0.94	0.00	
	01	08429	AUB,CENTER ST,ENT RICH,		9	8		0	0	1	3	4	50.0		9.751		0.27	0.96	0.00	
Fatal ≈ HCL	01	07211	AUB,STETSON RD,CENTER S		9	25		1	1	2	3	18	28.0		8.548		0.97	0.99	0.00	0.78
	01	08647	AUB,CENTER SB,.03S/O BO		2	0		0	0	0	0	0	0.0		5.450		0.00	0.37	0.00	
	01	08646	AUB,CENTER SB,.01N/O BO		2	0		0	0	0	0	0	0.0		4.778		0.00	0.38	0.00	
	01	08205	AUB,CENTER ST SB,REV.DI		2	1		0	0	1	0	0	100.0		7.394		0.05	0.36	0.00	
			NODE SUBTOTALS-			275		2	3	23	54	193	29.8		252.989		0.36	0.37	0.00	

JUL 30,2007 AT 11:08

TINACC30

MAINE DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY I

COUNTY TOWN#	LOW NODE	HIGH NODE	STREET NAME OR ROUTE #	U/R	TOTAL ACCTS	LINK LENGTH	INJURY ACCIDENTS K	A	B	C	PD	PERCENT INJURY	ANNUAL HM VEH-MILES	ANNUAL M ENT-VEHS	ACCIDENT-RATES LINK	NODE	CRITI RATE	CRF
01010	07197	08967	CENTER ST	2	6	0.05	0	0	0	1	5	16.7	0.00244		819.67		550.87	1.49
	07197	07198		2	5	0.08	0	0	1	1	3	40.0	0.00782		213.13		500.73	0.00
	07198	07199		2	4	0.08	0	0	1	0	3	25.0	0.00803		166.04		497.76	0.00
	07199	07200		2	2	0.06	0	0	0	0	2	0.0	0.00617		108.05		528.75	0.00
HCL	07200	07512		2	23	0.15	0	1	0	5	17	26.1	0.01480		518.02		437.58	1.18
	07512	07513		2	2	0.09	0	0	1	0	1	50.0	0.00922		72.31		482.78	0.00
	07201	07513		2	2	0.03	0	0	0	0	2	0.0	0.00306		217.86		628.02	0.00
	07201	07202		2	6	0.05	0	0	1	3	2	66.7	0.00509		392.93		553.49	0.00
	07202	07203		2	7	0.16	0	0	0	1	6	14.3	0.01617		144.30		430.09	0.00
≈HCL	07203	07514		2	7	0.03	0	0	0	0	7	0.0	0.00301		775.19		630.66	1.23
	07204	07514		2	11	0.20	0	0	2	1	8	27.3	0.01994		183.88		413.50	0.00
	07204	07205		2	12	0.10	0	0	2	2	8	33.3	0.00987		405.27		475.70	0.00
	07205	07206		2	2	0.05	0	0	0	1	1	50.0	0.00491		135.78		558.32	0.00
	07206	07207		2	4	0.05	0	0	0	0	4	0.0	0.00510		261.44		553.23	0.00
	07207	07515		2	4	0.06	0	0	0	3	1	75.0	0.00306		435.73		538.77	0.00
	07515	08202		2	0	0.02	0	0	0	0	0	0.0	0.00095		0.00		725.00	0.00
	08202	08965		2	3	0.08	0	0	0	1	2	33.3	0.00412		242.72		499.37	0.00
≈HCL	07209	08965		2	7	0.08	0	0	1	1	5	28.6	0.00441		529.10		490.89	1.08
	07209	08214		2	3	0.04	0	0	0	0	3	0.0	0.00223		448.43		584.76	0.00
HCL	08214	08215		2	13	0.11	0	0	2	5	6	53.8	0.00988		438.60		207.53	2.11
	08215	08429		2	5	0.13	0	0	0	0	5	0.0	0.01135		146.84		461.80	0.00
	07211	08429		2	2	0.09	0	0	0	0	2	0.0	0.00739		90.21		507.17	0.00
	07207	08647	CENTER ST SB	2	1	0.03	0	0	0	0	1	0.0	0.00164		203.25		633.07	0.00
	07515	08647		2	1	0.03	0	0	0	0	1	0.0	0.00164		203.25		633.07	0.00
	07515	08646		2	3	0.01	0	0	0	0	3	0.0	0.00048		2083.33		835.44	2.49
	08202	08646		2	2	0.01	0	0	0	1	1	50.0	0.00048		1388.89		835.44	1.66
	08202	08205		2	1	0.05	0	0	0	0	1	0.0	0.00270		123.46		556.48	0.00
	08205	08965		2	0	0.03	0	0	0	0	0	0.0	0.00282		0.00		550.25	0.00
	08214	08965		2	5	0.12	0	0	0	3	2	60.0	0.00640		260.42		447.94	0.00
			LINK SUBTOTALS-		143	2.07	0	1	11	29	102	28.7	0.17518		272.10		288.92	0.00
			GRAND TOTALS-		418	2.07	2	4	34	83	295	29.4	0.17518	252.989	795.37		414.65	1.92

JUL 30,2007 AT 11:08

TINACC30

MAINE DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY II - CHARACTERISTICS

	HOUR OF DAY																								
	---AM---												---PM---												
DAY OF WEEK	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	UNKNOWN	TOTAL	
SUNDAY	0	0	0	1	0	0	0	0	0	0	3	3	4	6	2	3	1	1	1	0	0	1	0	0	0	26	S
MONDAY	0	0	0	0	0	0	0	2	1	4	10	4	8	7	7	9	3	5	1	3	3	3	0	0	0	70	M
TUESDAY	0	0	0	0	0	1	0	1	1	5	3	7	8	8	2	3	8	2	7	0	1	1	0	0	0	58	T
WEDNESDAY	0	0	0	0	0	0	1	1	1	4	2	2	6	7	4	6	4	2	2	3	0	1	1	0	0	47	W
THURSDAY	0	0	0	0	0	1	2	3	3	2	5	8	11	11	5	9	3	11	4	3	0	2	0	0	0	83	T
FRIDAY	1	0	0	0	0	0	1	1	1	5	6	11	16	11	6	4	6	7	4	2	3	1	0	1	0	87	F
SATURDAY	0	0	1	0	0	0	1	1	0	3	1	6	5	4	4	7	2	4	5	1	1	1	0	0	0	47	S
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	U
TOTAL	1	0	1	1	0	2	5	9	7	23	30	41	58	54	30	41	27	32	24	12	8	10	1	1	0	418	T

	YEAR		
	2004	2005	2006
TOTAL	418	144	163	111
JANUARY	55	14	17	24
FEBRUARY	34	5	19	10
MARCH	38	12	18	8
APRIL	34	17	7	10
MAY	26	7	11	8
JUNE	31	9	11	11
JULY	30	18	3	9
AUGUST	32	16	11	5
SEPTEMBER	27	11	12	4
OCTOBER	38	14	20	4
NOVEMBER	24	11	13	0
DECEMBER	49	10	21	18
UNKNOWN	0	0	0	0

TYPE OF UNIT

01-2 DOOR	70	10-BOBTAIL	0
02-4 DOOR	343	20-2ADT	14
03-CONVERTBLE	2	30-3ASU	2
04-STAT WGN	42	40-4ASU	1
05-VAN/CAMPER	74	21-2ASA	0
06-PICKUP TRK	155	22-2ATA	2
12-SCHOOL BUS	0	31-3ASA	1
13-MOTOR HOME	0	32-3ATA	6
14-MOTORCYCLE	7	33-3ATR	0
15-MOPED	0	42-4ATA	0
16-MOTOR BIKE	2	25-2AT1A2ATR	3
17-BICYCLE	2	35-3AT1A2ATR	2
18-SNOWMOBILE	0	36-3AT2A2ATR	1
19-PEDESTRIAN	3	50-OTHER	1
23-ATV	0	81-2AX CM BUS	0
07-SUV	108	82-3AX CM BUS	0
99-UNK/OTH	0	98-FARM/TRAC	0
TOTAL	841		

TINACC30

MAINE DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY II - CHARACTERISTICS

TYPE OF LOCATION

ACCIDENT TYPE	ST ROAD	CURV ROAD	**AT INTERSECTION** 3-LEG	4-LEG	5-LEG	DRIVE WAYS	BRIDGE	INTER CHANGE	UN KNOWN	TOTAL
OBJECT IN ROAD	1	0	1	1	0	0	0	0	0	3
REAR END/SIDESWIPE	72	0	30	19	105	3	0	1	0	230
HEAD-ON/SIDESWIPE	0	0	0	1	0	0	0	0	0	1
INTERSECTION MOVEMENT	0	0	13	34	61	51	0	0	0	159
PEDESTRIANS	1	0	2	0	0	0	0	0	0	3
TRAIN	0	0	0	0	0	0	0	0	0	0
RAN OFF ROAD	6	0	1	1	2	0	0	0	0	10
ANIMAL	0	0	0	0	0	0	0	0	0	0
DEER	1	1	0	0	0	0	0	0	0	2
MOOSE	1	0	0	0	0	0	0	0	0	1
BEAR	0	0	0	0	0	0	0	0	0	0
SLED/BIKE	1	0	0	0	0	1	0	0	0	2
OTHER	4	0	0	0	1	1	0	0	1	7
NON COLLISION	0	0	0	0	0	0	0	0	0	0
UNKNOWN	0	0	0	0	0	0	0	0	0	0
TOTAL	87	1	47	56	169	56	0	1	1	418

INJURY DATA

SEV CODE	INJURY ACCIDENTS	NUMBER OF INJURIES
K	2	2
A	4	4
B	34	38
C	83	113
PD	295	
TOTAL	418	157

FIXED OBJECT STRUCK

CONSTRUCTION BARRICADES	1
TRAFFIC SIGNAL	3
R/R CROSSING	0
LIGHT POLE	4
UTILITY POLE	3
SIGN POST	4
MAIL BOXES	0
OTHER POLES/POSTS	1
FIRE PLUG/PARK METER	0
TREE/SHRUBBERY	0
CRASH CUSHION	0
MEDIAN SAFETY BARRIER	1
BRIDGE PIERS	0
OTHER GUARDRAILS	1
FENCING NOT BARRIER	1
CULVERT HEADWALL	0
EMBANKMENT/DITCH	4
BUILDING WALL	1
ROCK OUTCROPPING/LEDGE	0
OTHER	1
UNKNOWN	0
TOTAL	25

TRAFFIC CONTROL DEVICES

TRAFFIC SIG STOP/GO	271
TRAFFIC SIG FLASHING	1
OVERHEAD FLASHERS	0
ALL WAY STOP	0
STOP SIGN/OTHER	31
YIELD SIGN	1
CURVE SIGN	0
OFFICER /SCHOOL PAT	1
SCHOOL BUS STOP ARM	0
SCHOOL ZONE SIGN	0
R/R CROSSING DEVICE	0
NO PASSING ZONE	0
NONE	112
OTHER	1
UNKNOWN	0
TOTAL	418

ROAD CHARACTER

LEVEL STRAIGHT	344
LEVEL CURVED	14
ON GRADE STRAIGHT	51
ON GRADE CURVED	6
TOP OF HILL STRAIGHT	0
TOP OF HILL CURVED	0
BOTTOM OF HILL STRAIGHT	3
BOTTOM OF HILL CURVED	0
UNKNOWN	0
TOTAL	418

TINACC30

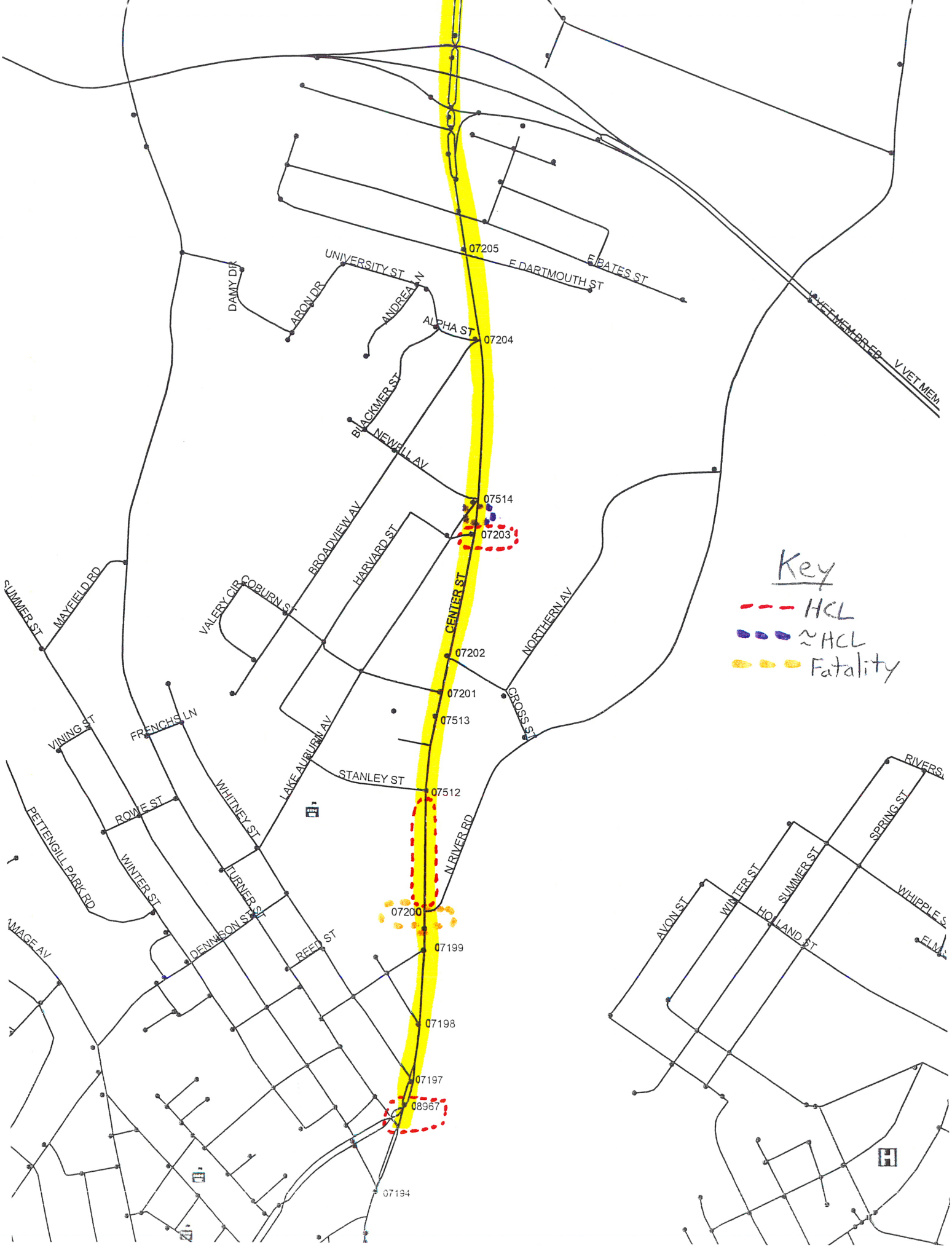
MAINE DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY II - CHARACTERISTICS

APPARENT CONTRIBUTING FACTOR	DR 1	DR 2	DR 3	DR 4	DR 5	OTHER	TOTAL
HUMAN FACTORS							
NO INPROPER DRIVING	108	282	19	3	0	0	412
FAIL TO YIELD R-WAY	85	22	0	0	0	0	107
ILLEGAL UNSAFE SPEED	17	3	0	0	0	0	20
FOLLOW TOO CLOSE	85	37	6	0	0	0	128
DISREGARD TRAF CONTROL	24	12	0	0	0	0	36
DRIVING LEFT OF CENTER	0	0	0	0	0	0	0
IMPROPER PASSING	0	3	0	0	0	0	3
IMPROPER LANE CHANGE	13	4	1	0	0	0	18
IMPROPER START/STOP	3	0	0	0	0	0	3
IMPROPER TURN	8	2	1	0	0	0	11
UNSAFE BACKING	3	0	0	0	0	0	3
NO PROPER SIGNAL	0	0	0	0	0	0	0
IMPEDING TRAFFIC	1	0	0	0	0	0	1
DRIVER INATTENTION	50	18	1	0	0	0	69
DRIVER INEXPERIENCE	2	0	0	0	0	0	2
PEDESTRIAN VIOLATION	1	0	0	0	0	0	1
PHYSICAL IMPAIRMENT	2	1	0	0	0	0	3
VISION OBSCURED GLASS	0	0	0	0	0	0	0
VISION OBSCURED LIGHT	1	2	0	0	0	0	3
VISION OBSCURED OTHER	4	3	0	0	0	0	7
OTHER HUMAN FACTOR	2	0	0	0	0	0	2
HIT & RUN	0	0	0	0	0	0	0
VEHICULAR FACTORS							
DEFECTIVE BRAKES	0	1	0	0	0	0	1
DEFECTIVE TIRE	0	0	0	0	0	0	0
DEFECTIVE LIGHTS	1	0	0	0	0	0	1
DEFECTIVE SUSPENSION	0	0	0	0	0	0	0
DEFECTIVE STEERING	0	0	0	0	0	0	0
OTHER VEHICLE DEFECT	3	0	0	0	0	0	3
UNKNOWN	4	3	0	0	0	0	7
TOTAL	417	393	28	3	0	0	841

APPARENT PHYSICAL CONDITION	DR 1	DR 2	DR 3	DR 4	DR 5	OTHER	TOTAL
NORMAL	404	389	28	3	0	0	824
UNDER THE INFLUENCE	4	1	0	0	0	0	5
DRINKING	1	0	0	0	0	0	1
USING DRUGS	1	0	0	0	0	0	1
ASLEEP	1	0	0	0	0	0	1
FATIGUED	0	1	0	0	0	0	1
ILL	0	0	0	0	0	0	0
HANDICAPPED	0	0	0	0	0	0	0
OTHER/UNKNOWN	6	2	0	0	0	0	8
TOTAL	417	393	28	3	0	0	841

AGE	TYPE OF UNIT: DRIVER	BIKE	SNOW SLED	PED	ATV	TOTAL
9-UNDER	0	0	0	0	0	0
10-14	0	1	0	0	0	1
15-19	93	0	0	0	0	93
20-24	128	0	0	0	0	128
25-29	74	0	0	0	0	74
30-39	149	0	0	1	0	150
40-49	129	0	0	0	0	129
50-59	113	0	0	1	0	114
60-69	66	1	0	0	0	67
70-79	51	0	0	1	0	52
80-OVER	31	0	0	0	0	31
UNKNOWN	2	0	0	0	0	2
TOTAL	836	2	0	3	0	841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E BATES ST
UNIVERSITY ST
DAMY DR
ARON DR
ANDREA LN
ALPHA ST
07204
V VET MEM BR FB
BLACKMER ST
NEWELL AV
07514
07203
BROADVIEW AV
HARVARD ST
CENTER ST
NORTHERN AV
SUMMER ST
MAYFIELD RD
VALERY CIR
COBURN ST
07202
07201
CROSS ST
07513
VINING ST
FRENCHS LN
LAKE AUBURN AV
STANLEY ST
07512
WHITNEY ST
ROWE ST
PETTENGILL PARK RD
WINTER ST
TURNER ST
N RIVER RD
07200
MAGE AV
DENNISON ST
REED ST
07199
07198
07197
08967
07194
Key
HCL
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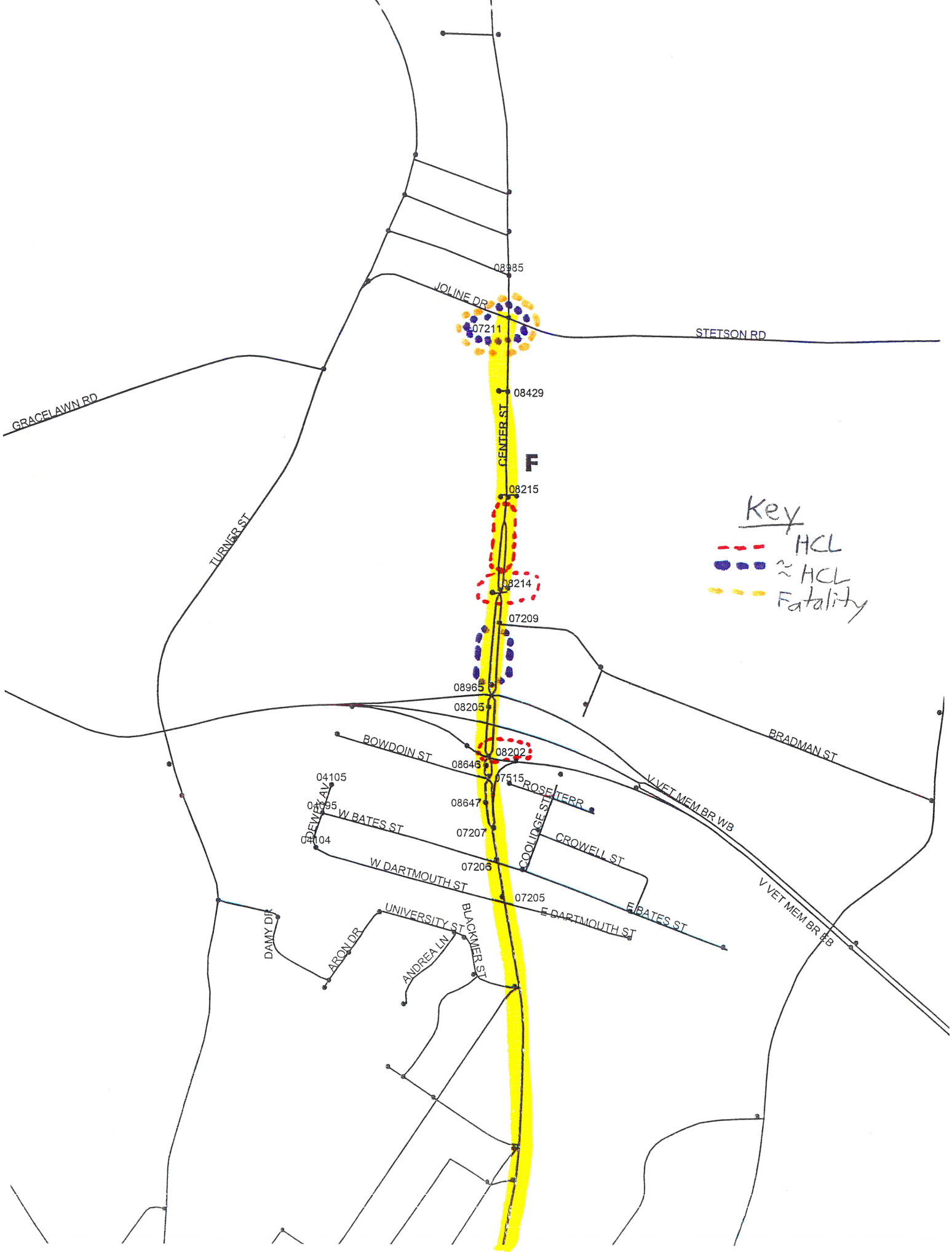
Fatality
RIVERSI
SPRING ST
WHIPPLE S
AVON ST
WINTER ST
SUMMER ST
HOLLAND ST
ELM S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GRACELAWN RD
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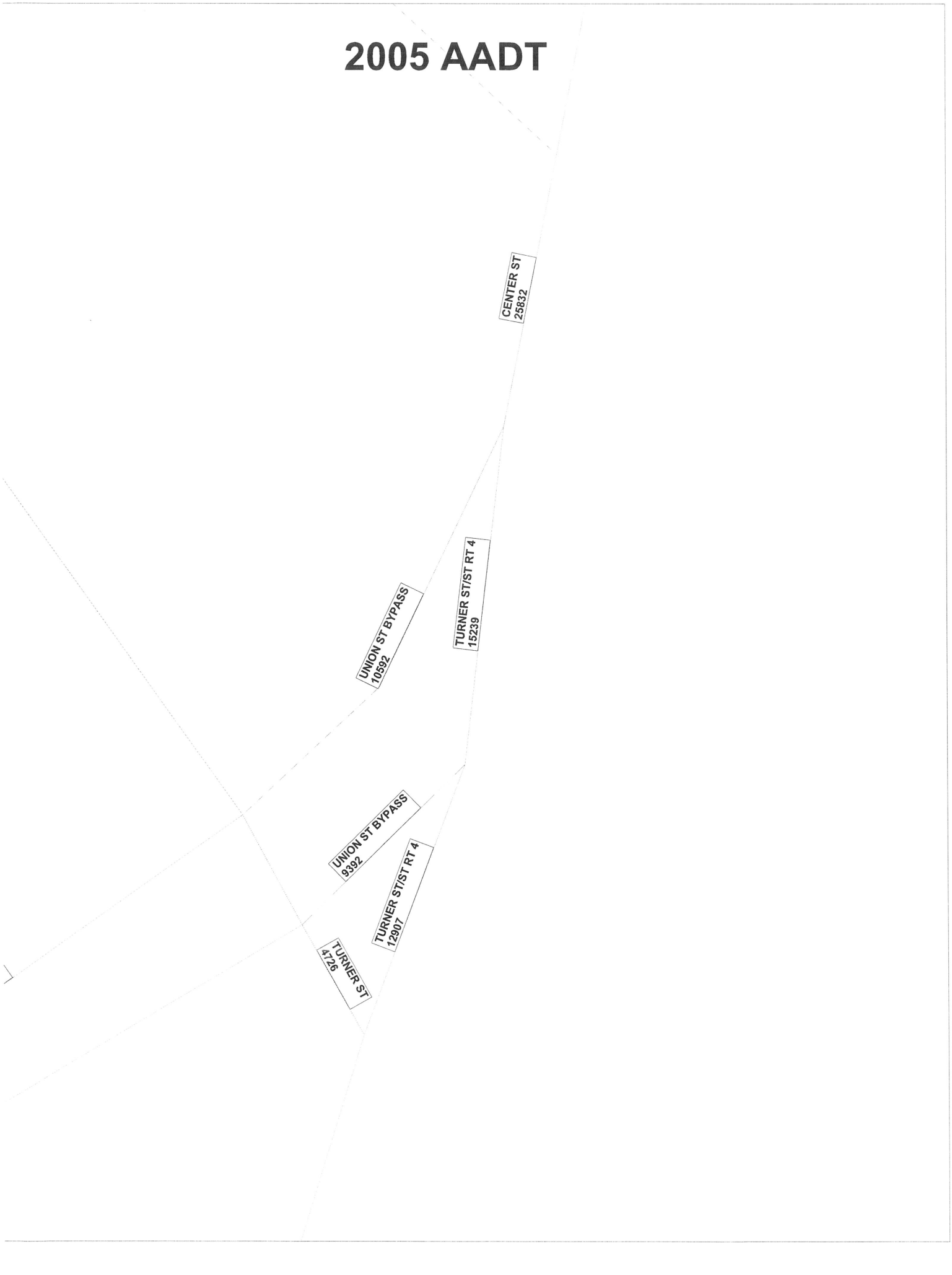
F
08215
TURNER ST
Key
HCL
≃ HCL
Fatality
08214
07209
08965
08205
BRADMAN ST
BOWDOIN ST
08202
08646
07515
ROSE TERR
V VET MEM BR WB
04105
DEWEY AV
04095
W BATES ST
08647
COOLIDGE ST
CROWELL ST
04104
07207
W DARTMOUTH ST
07206
07205
E DARTMOUTH ST
E BATES ST
V VET MEM BR EB
UNIVERSITY ST
BLACKMER ST
DAMY DR
ARON DR
ANDREA LN

Determination of Growth Rates for Auburn Center Street TSM - Based on ATRC Forecasts

Location	2005 Volume	2015 Volume	2030 Volume	2005-2015 Growth Rate	2015-2030 Growth Rate
Union s/o Center	19984	21567	23586	0.77%	0.60%
Turner s/o Center	12907	13614	15523	0.53%	0.88%
Center n/o Union	25832	27502	30565	0.63%	0.71%
North River e/o Center	199	212	226	0.63%	0.43%
Center n/o North River	25658	27317	30369	0.63%	0.71%
Center s/o Vet's Bridge	22841	24182	27416	0.57%	0.84%
Vet's Bridge EB Off Rmp	1173	1226	1260	0.44%	0.18%
Vet's Bridge EB On Rmp	10588	11177	13396	0.54%	1.21%
Center n/o Vet's EB	25376	26955	30279	0.61%	0.78%
Vet's Bridge WB Off Rmp	8853	9449	11078	0.65%	1.07%
Vet's Bridge WB On Rmp	1079	1111	1140	0.29%	0.17%
Center n/o Vet's Bridge	24150	27229	30133	1.21%	0.68%
Center s/o Stetson	21362	22793	24598	0.65%	0.51%
Joline w/o Center	1643	1564	1721	-0.49%	0.64%
Stetson e/o Center	402	423	478	0.51%	0.82%
Center n/o Stetson	19670	21212	22860	0.76%	0.50%
Overall	**221717**	**237533**	**264628**	**0.69%**	**0.72%**

2005 AADT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15239
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10592
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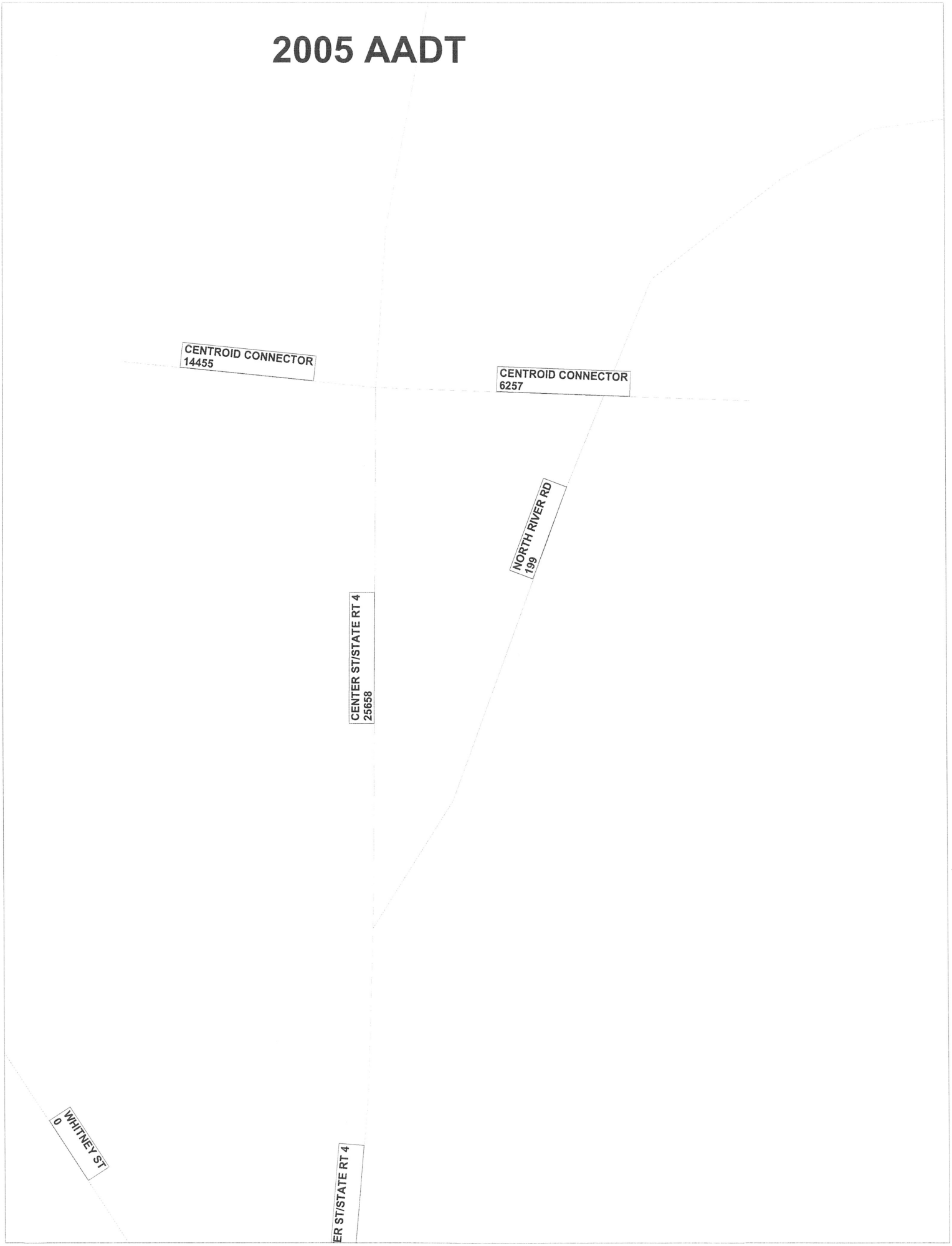
9392
TURNER ST/ST RT 4
12907
TURNER ST
4726

2005 AADT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14455
CENTROID CONNECTOR
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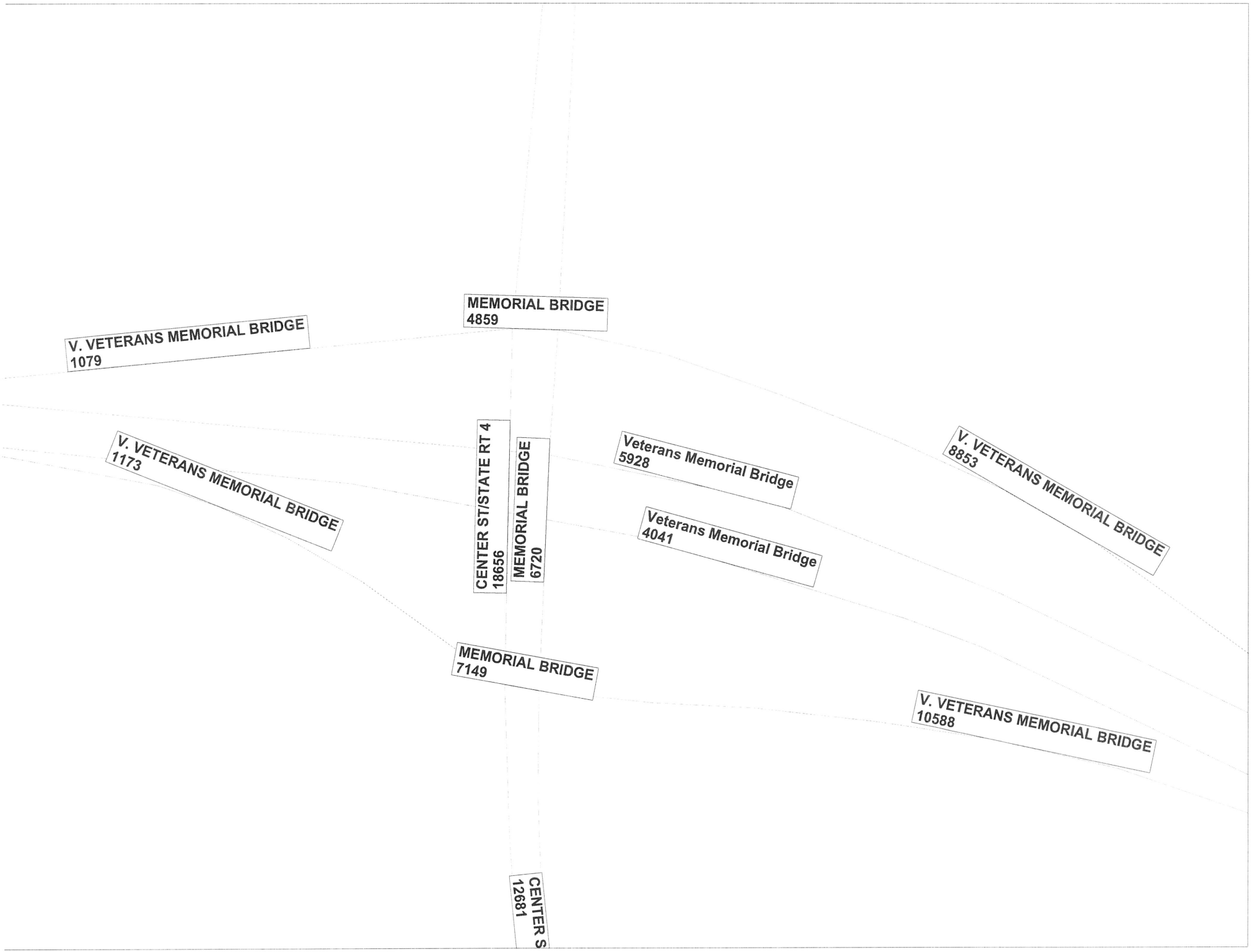
NORTH RIVER RD
199
CENTER ST/STATE RT 4
25658
WHITNEY ST
0
ER ST/STATE RT 4

2005 Center S/Veterans Bridge

CENTER ST/STATE RT 4
10160

CENTER ST/STATE RT 4
12681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MEMORIAL BRIDGE
6720
Veterans Memorial Bridge
5928
V. VETERANS MEMORIAL BRIDGE
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MEMORIAL BRIDGE
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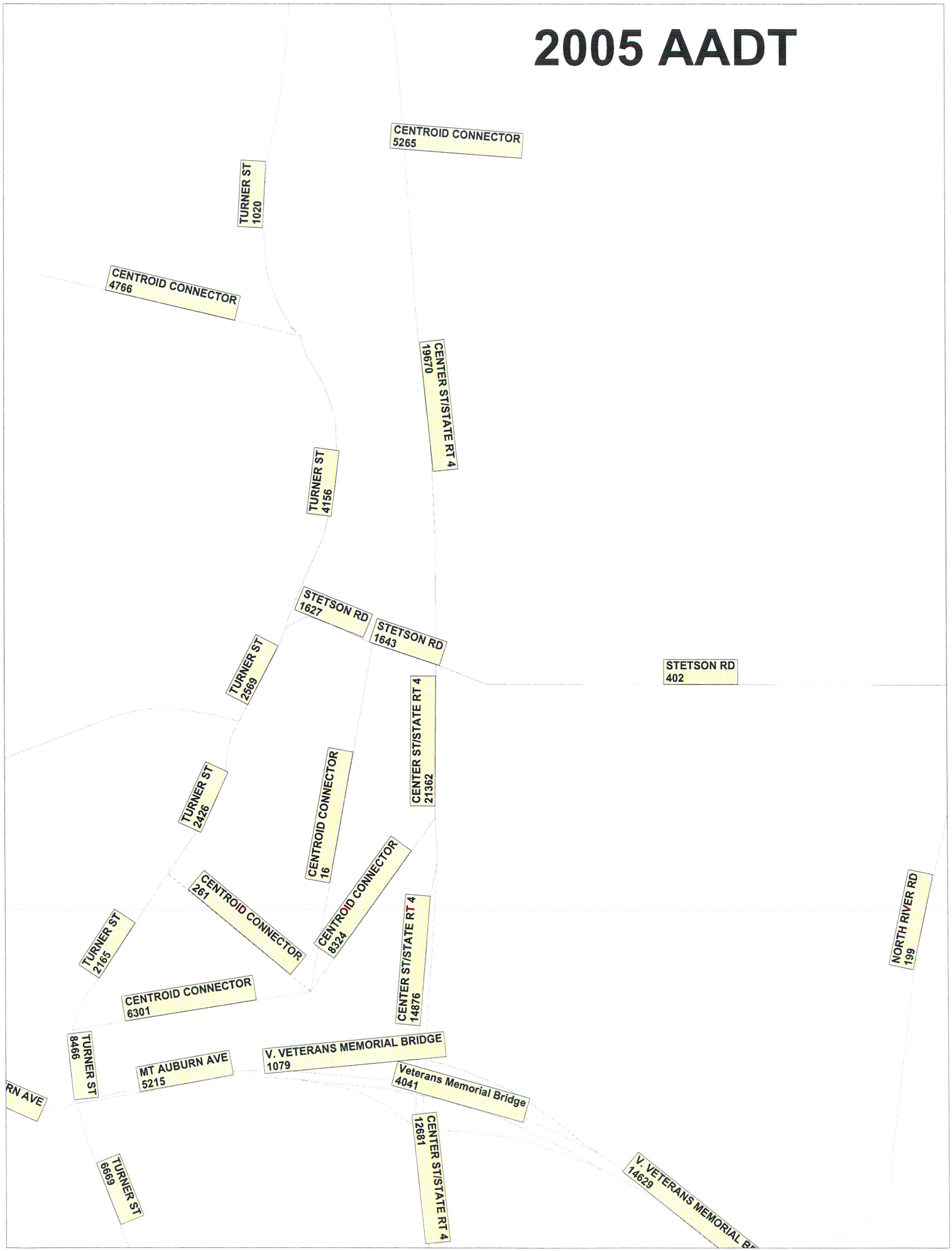
CENTER S
12681

2005 AADT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1627
STETSON RD
1643
STETSON RD
402
TURNER ST
2569
CENTER ST/STATE RT 4
21362
TURNER ST
2426
CENTROID CONNECTOR
16
CENTROID CONNECTOR
261
CENTROID CONNECTOR
8324
NORTH RIVER RD
199
TURNER ST
2165
CENTER ST/STATE RT 4
14876
CENTROID CONNECTOR
6301
TURNER ST
8466
V. VETERANS MEMORIAL BRIDGE
1079
MT AUBURN AVE
5215
Veterans Memorial Bridge
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RN AVE
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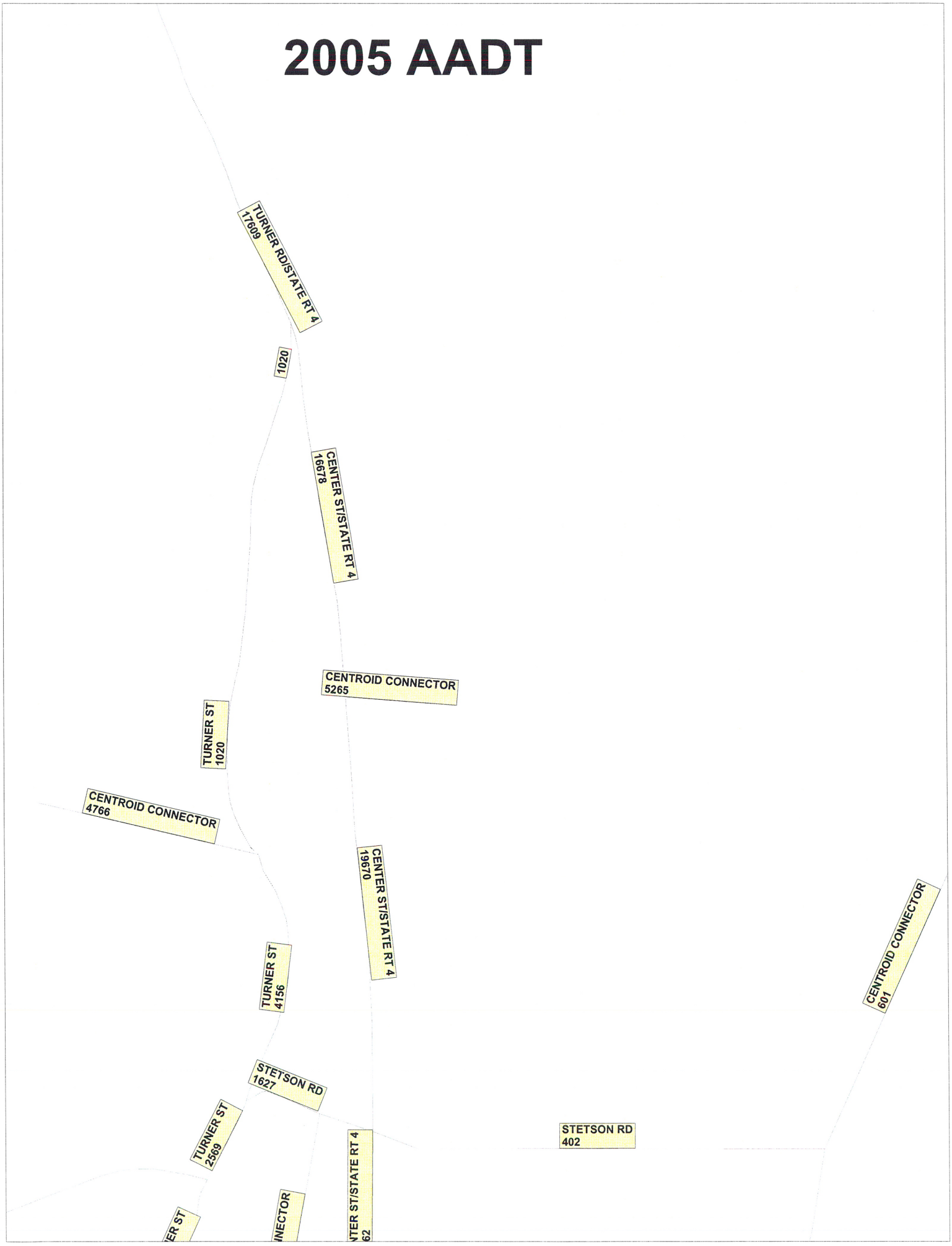
V. VETERANS MEMORIAL BR
14629

2005 AADT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TURNER ST
1020
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4766
CENTER ST/STATE RT 4
19670
TURNER ST
4156
CENTROID CONNECTOR
601
STETSON RD
1627
TURNER ST
2569
STETSON RD
402

2015 Daily

CENTER ST
27502
TURNER ST/ST RT 4
16153
UNION ST BYPASS
11349
TURNER ST/ST RT 4
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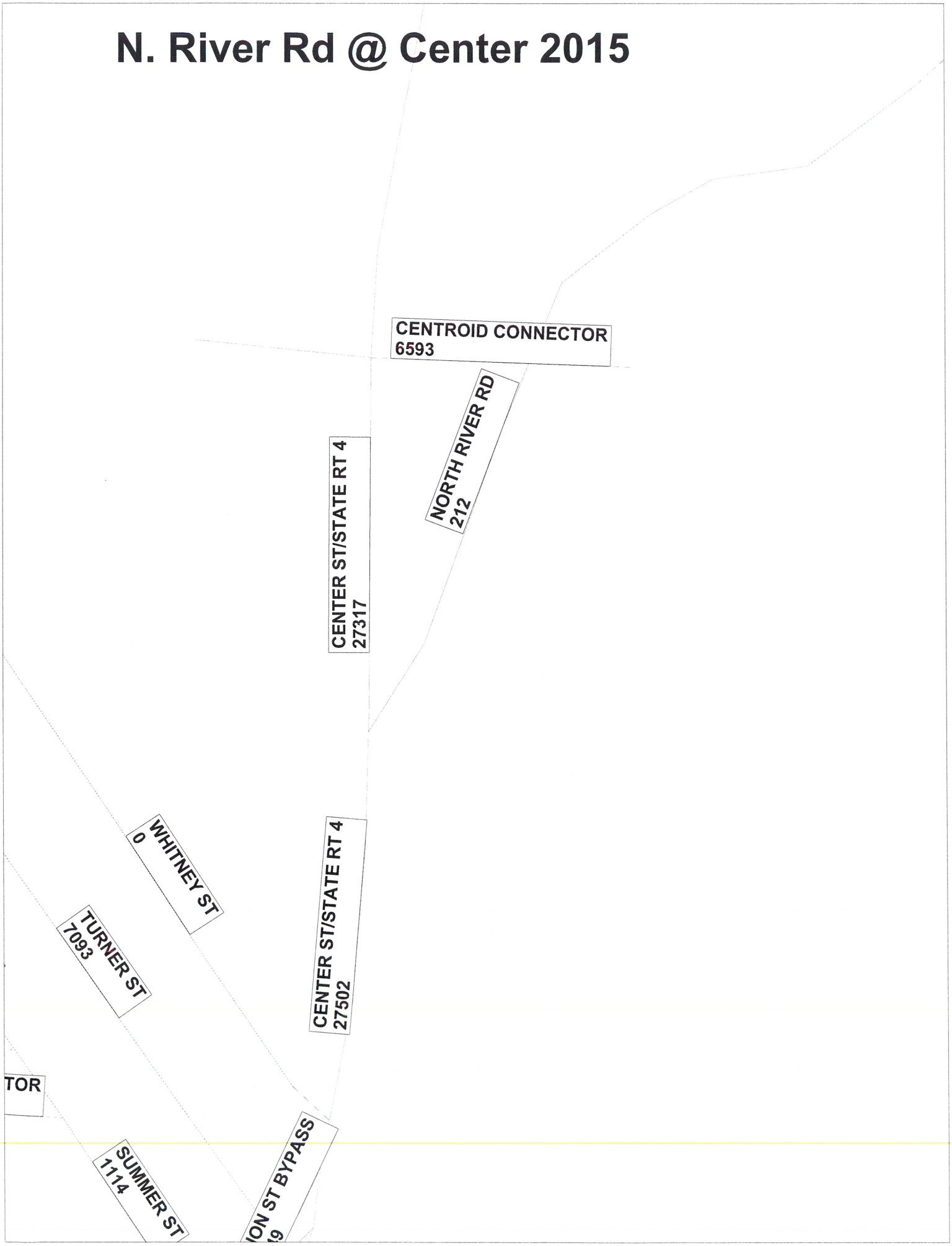
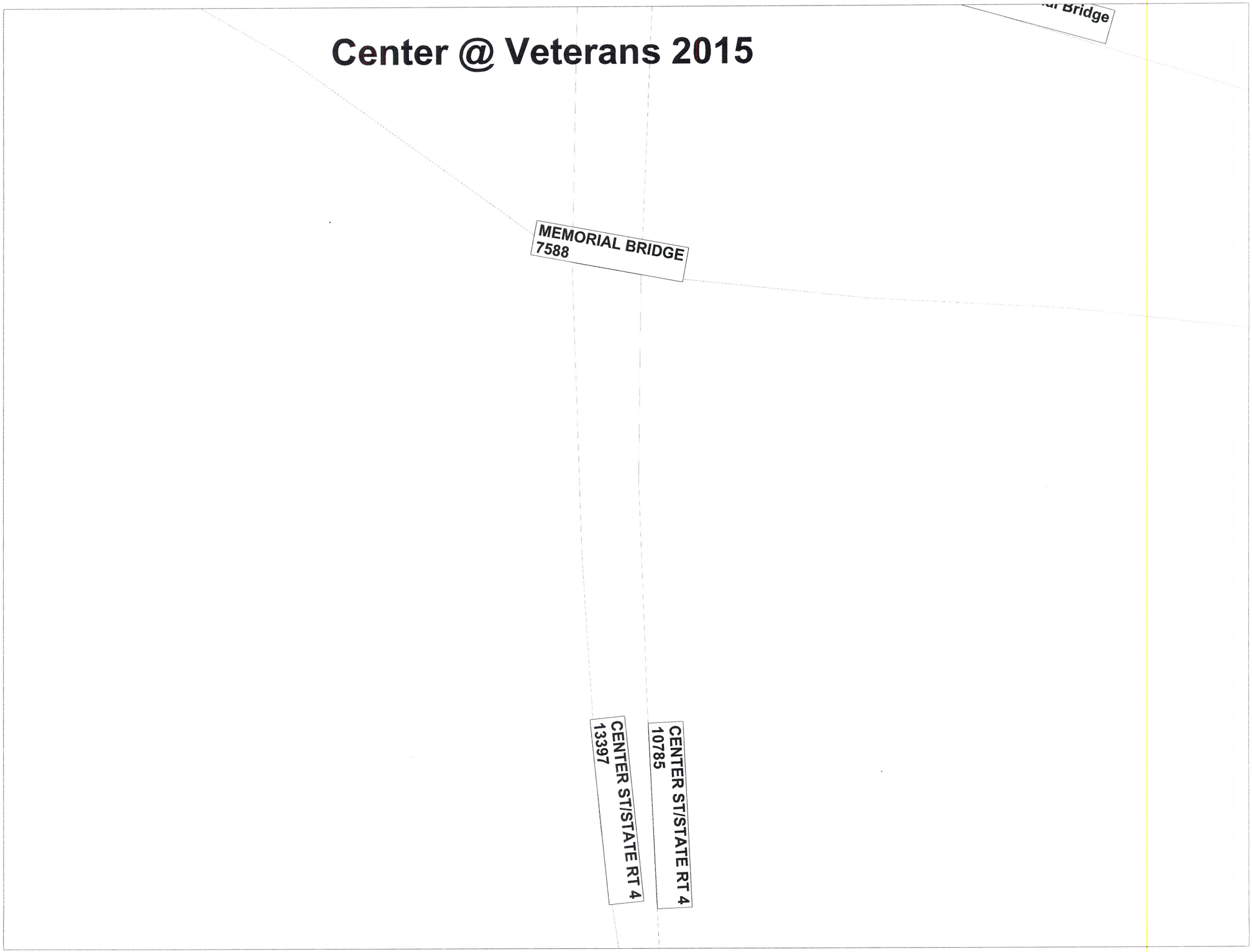
UNION ST BYPASS
10218
TURNER ST
5107

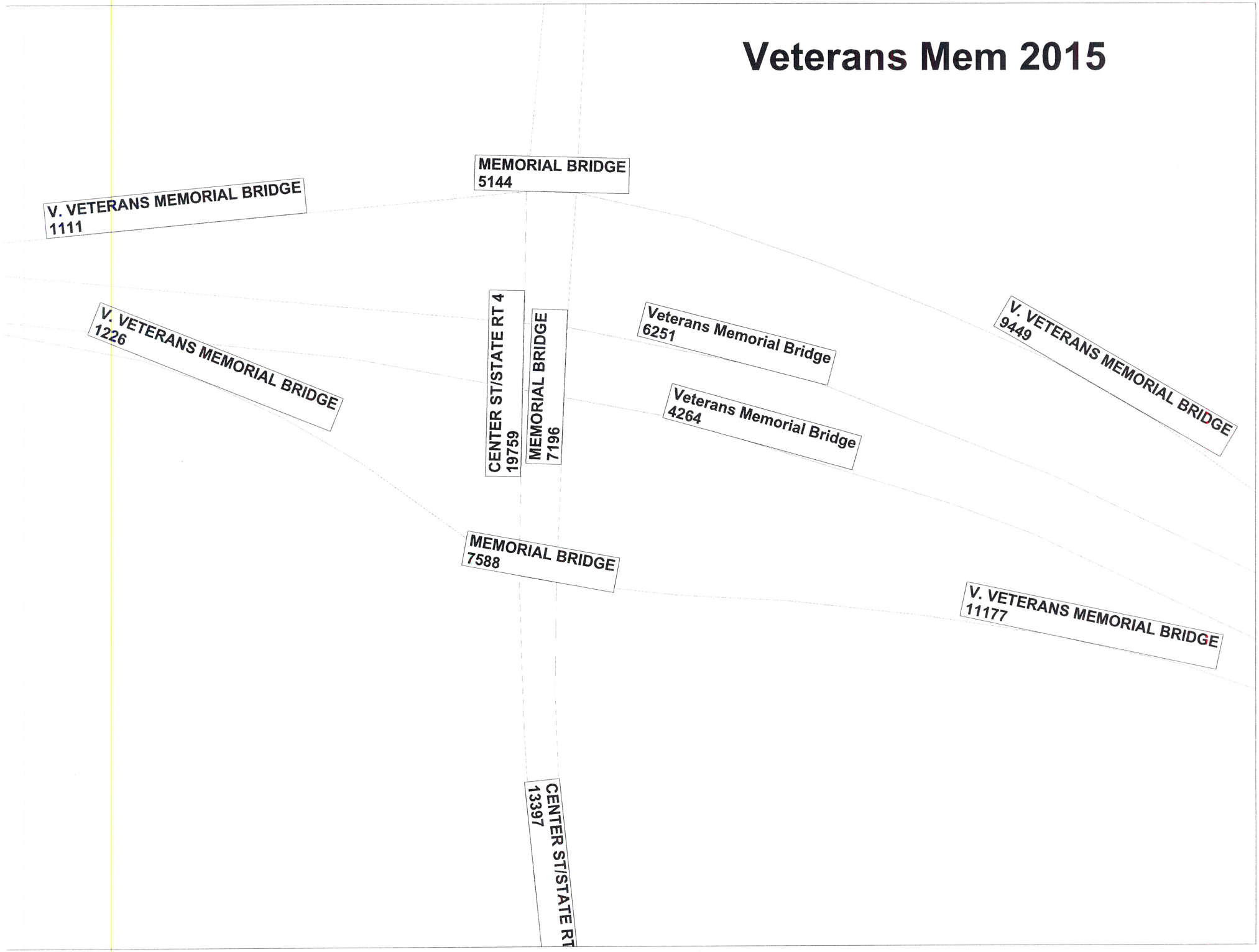
N. River Rd @ Center 2015



Center @ Veterans 2015



Veterans Mem 2015



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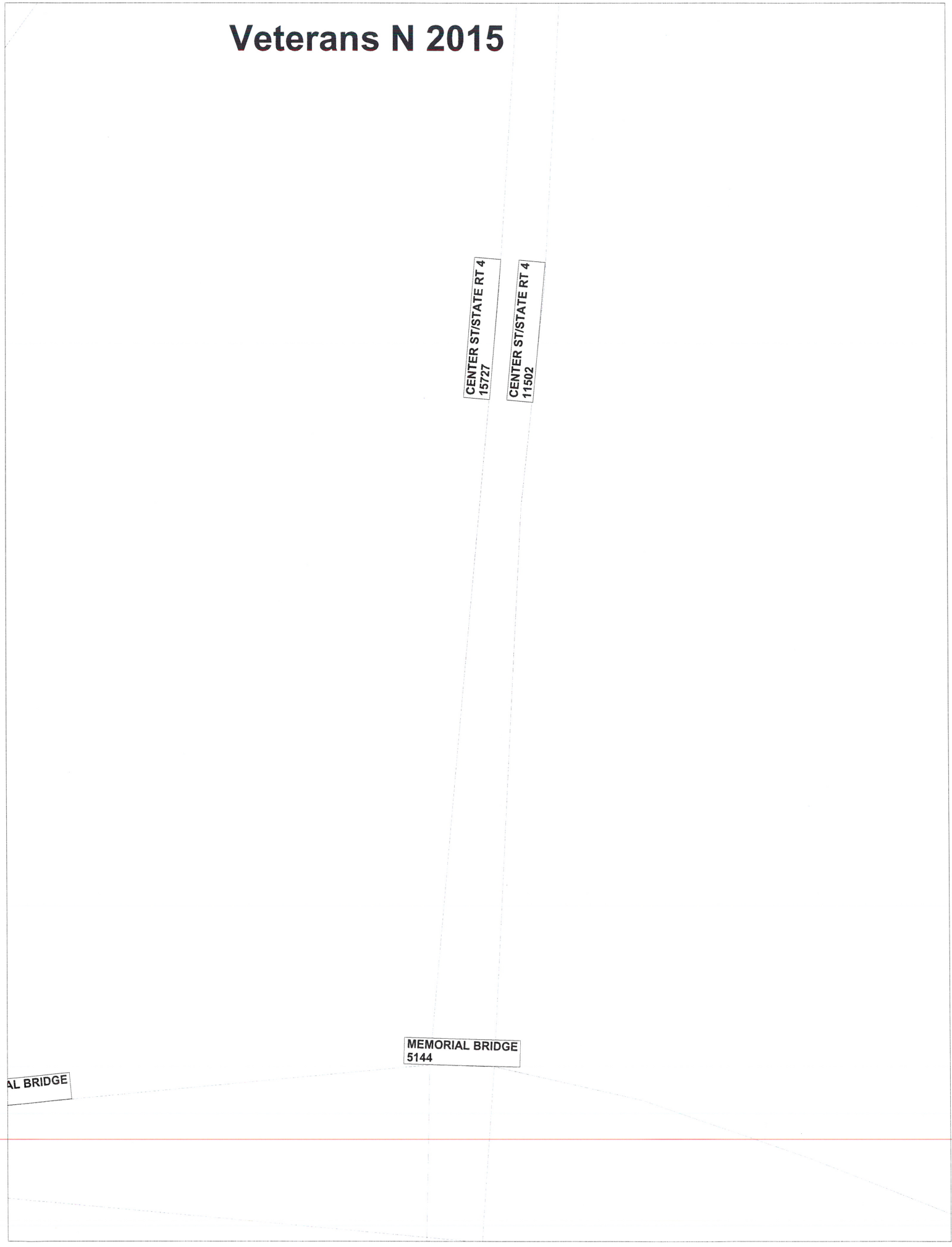


STETSON
423

CENTER ST/STA
27228

CENTER ST/STATE RT 4
22793

STETSON RD
1564

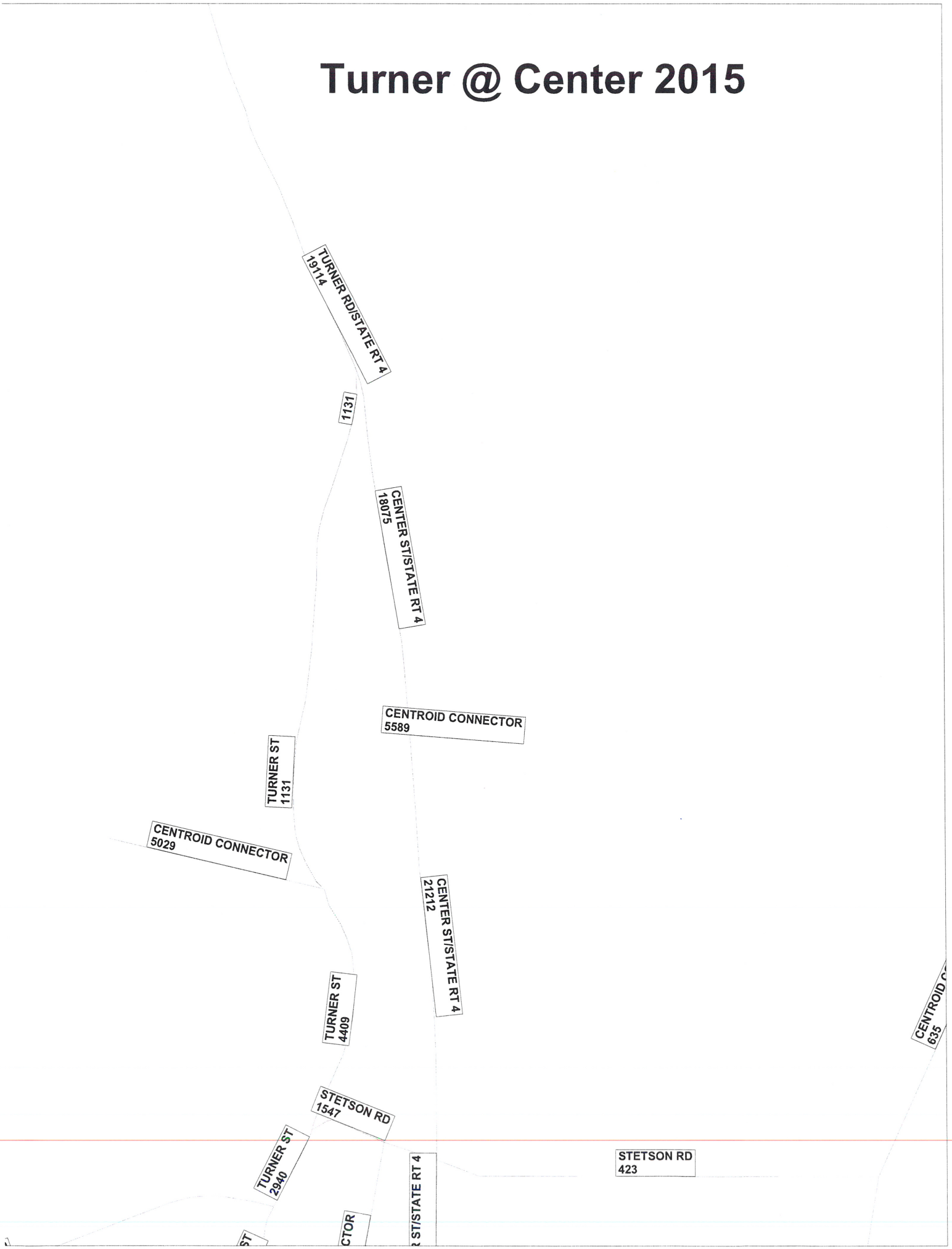
CENTROID CONNECTOR
17

STETSON RD
1547

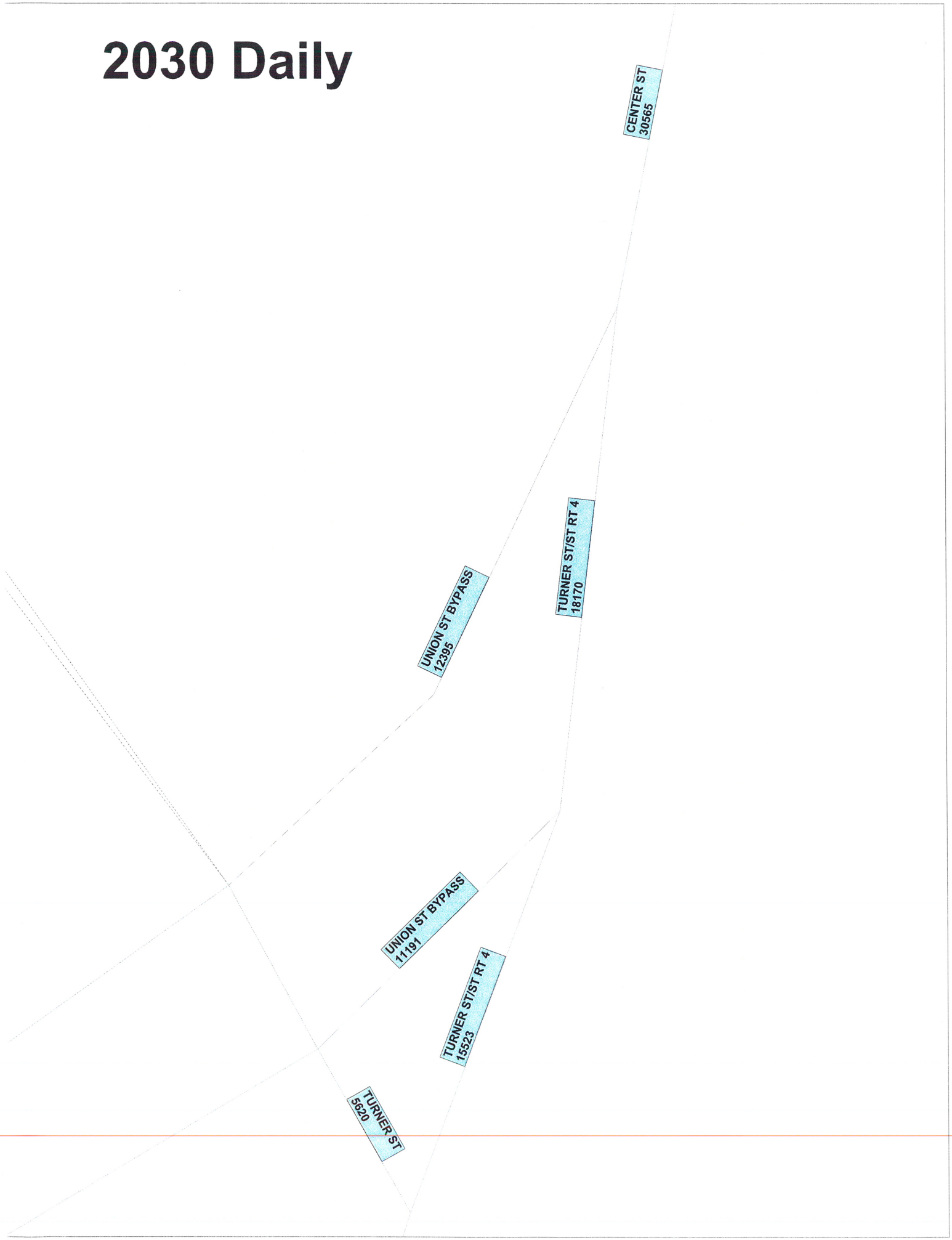
TURI
4409

TURNER ST
2940

Turner @ Center 2015



2030 Daily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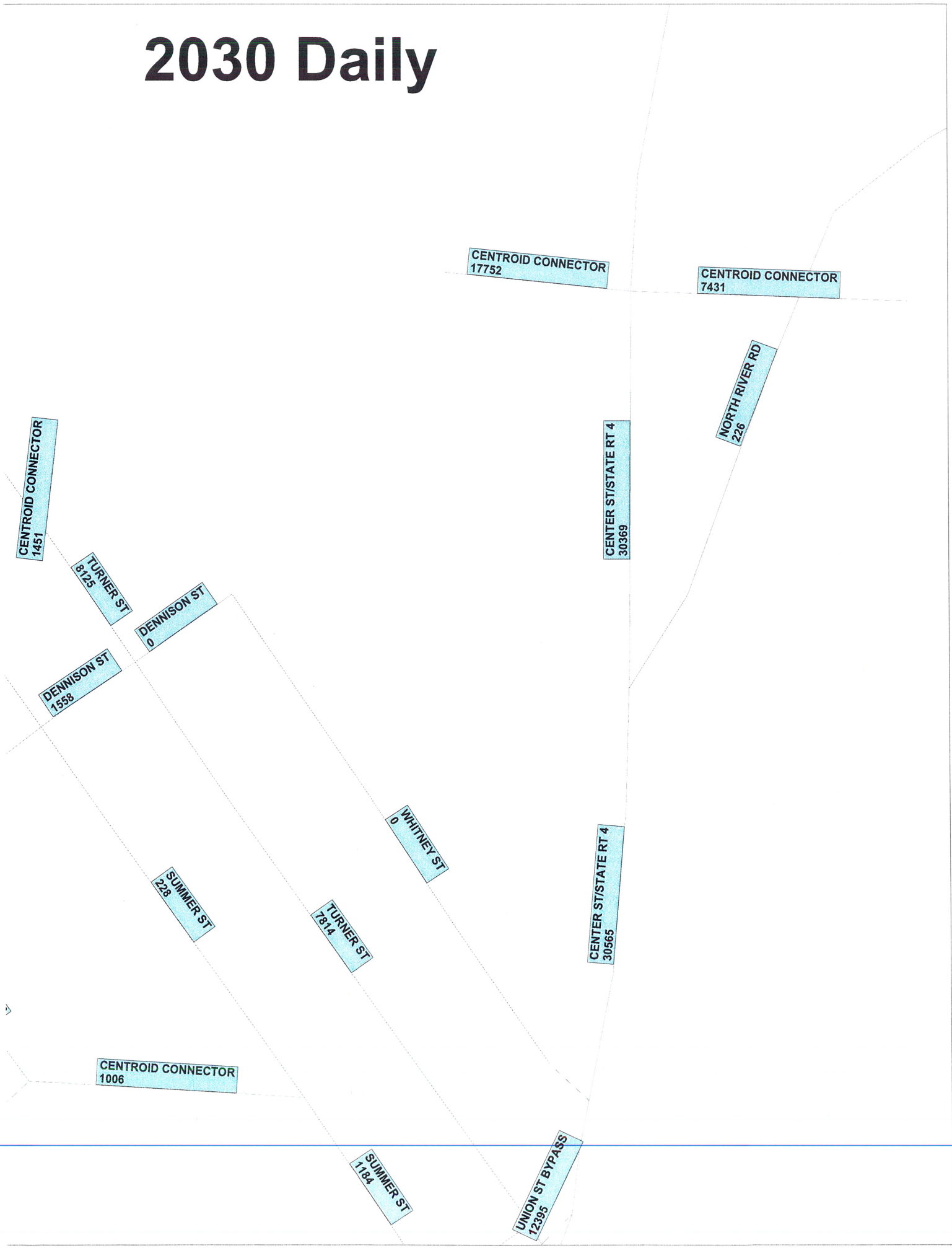
30565
TURNER ST/ST RT 4
18170
UNION ST BYPASS
12395
UNION ST BYPASS
11191
TURNER ST/ST RT 4
15523
TURNER ST
5620

2030 Daily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CENTROID CONNECTOR
7431
NORTH RIVER RD
226
CENTROID CONNECTOR
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CENTER ST/STATE RT 4
30369
TURNER ST
8125
DENNISON ST
0
DENNISON ST
1558
WHITNEY ST
0
CENTER ST/STATE RT 4
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SUMMER ST
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SUMMER ST
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UNION ST BYPASS
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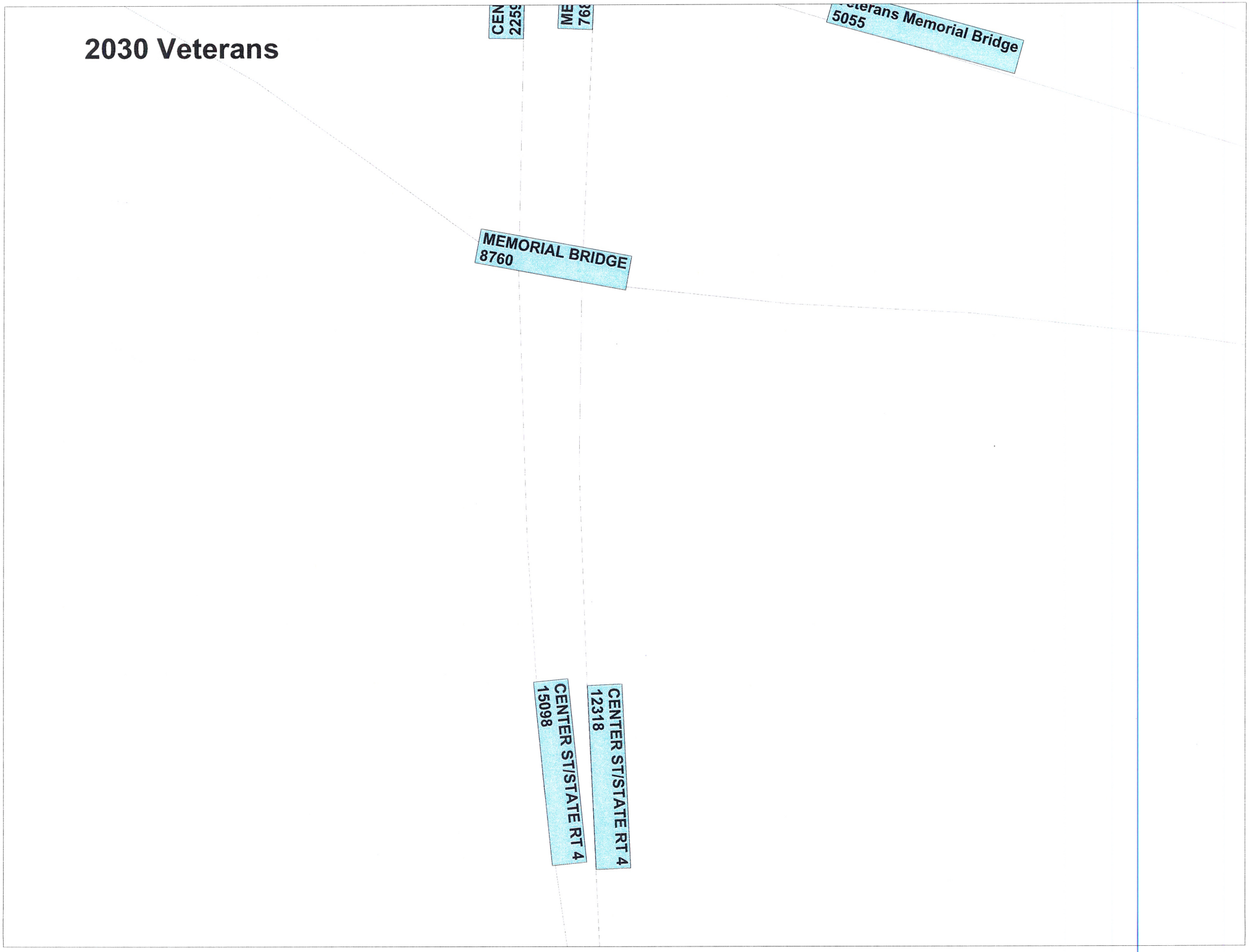
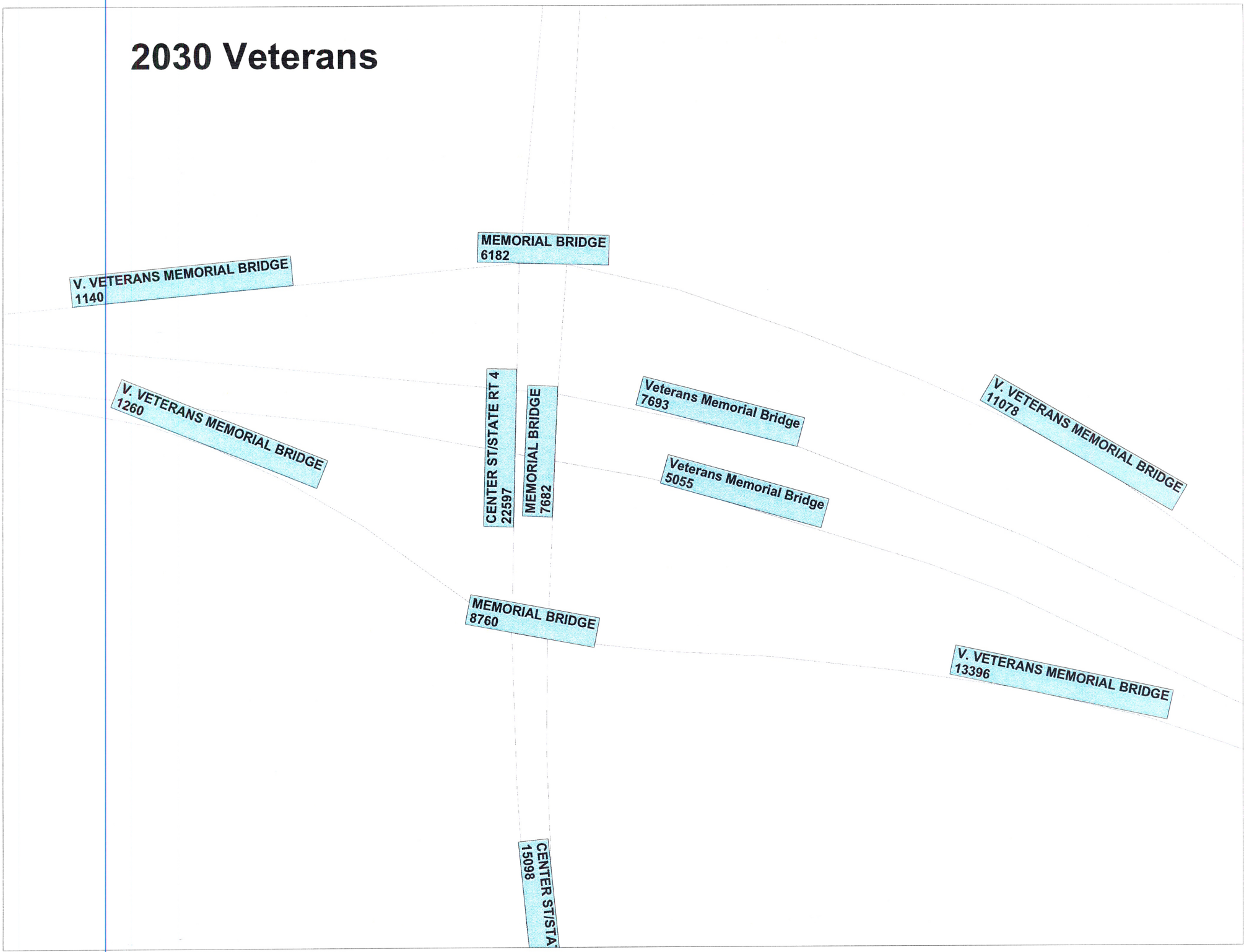
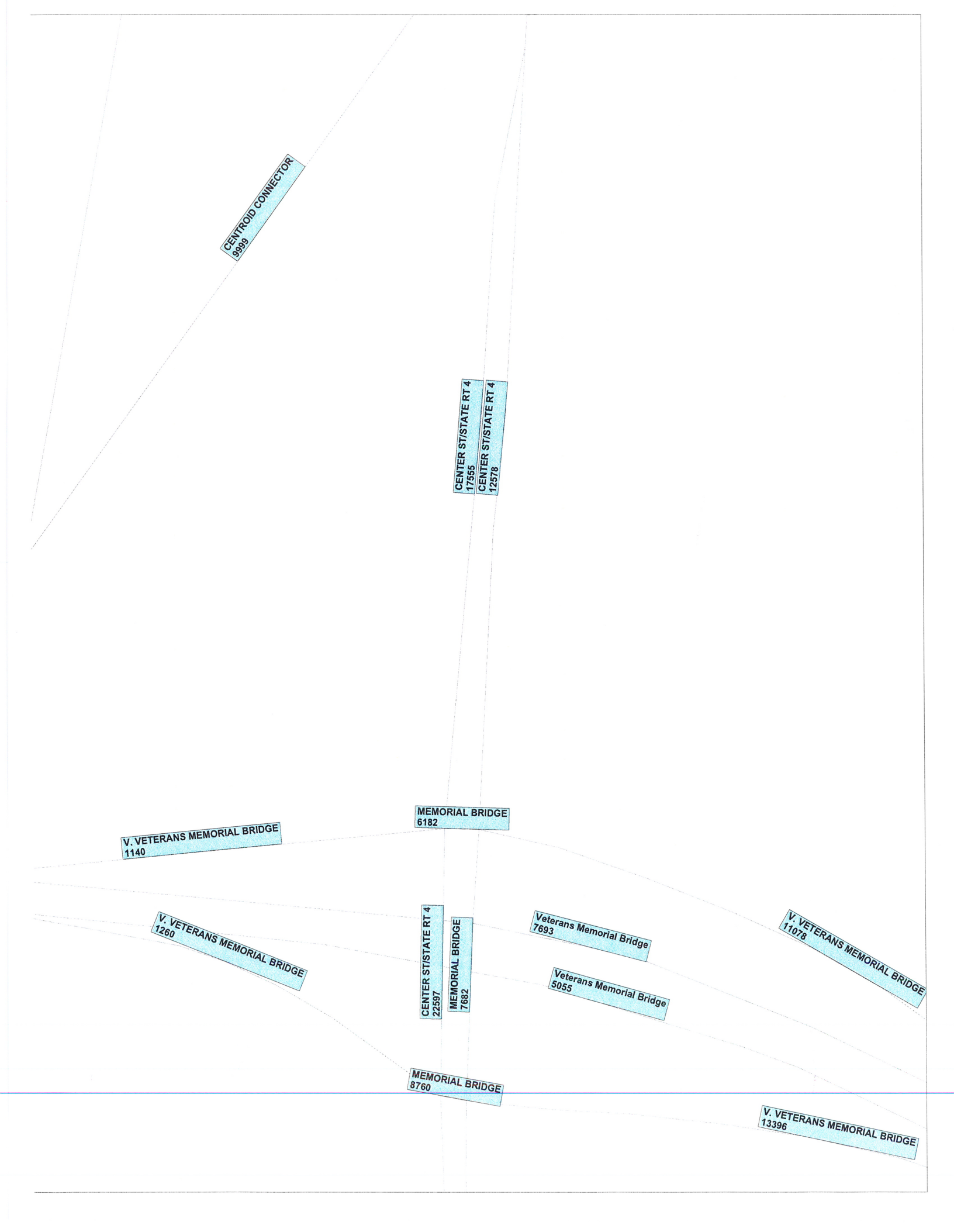
2030 Veterans



2030 Veterans

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17555
CENTER ST/STATE RT 4
12578
MEMORIAL BRIDGE
6182
V. VETERANS MEMORIAL BRIDGE
1140
V. VETERANS MEMORIAL BRIDGE
1260
CENTER ST/STATE RT 4
22597
MEMORIAL BRIDGE
7682
Veterans Memorial Bridge
7693
Veterans Memorial Bridge
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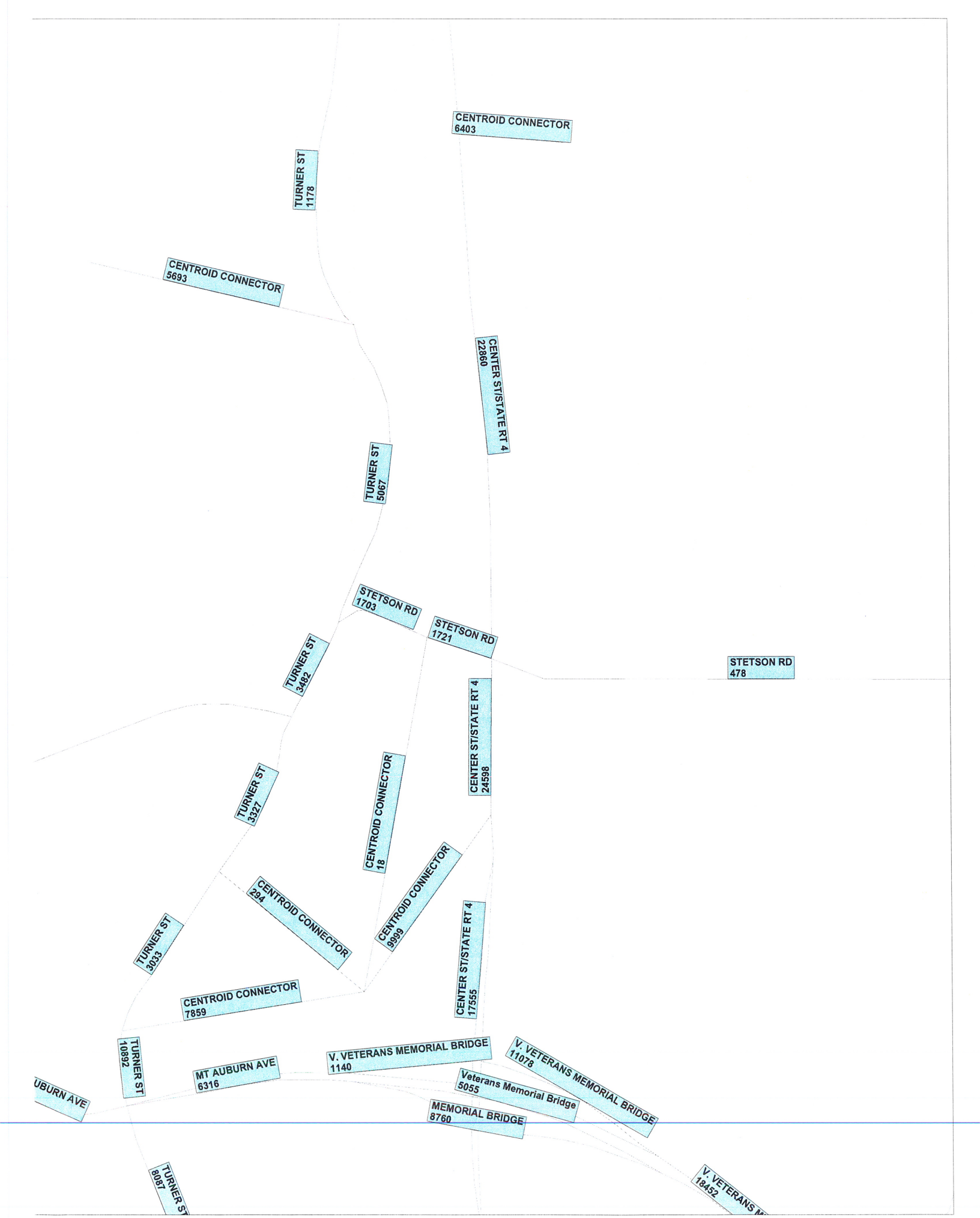
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TURNER ST
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1703
STETSON RD
1721
STETSON RD
478
TURNER ST
3482
CENTER ST/STATE RT 4
24598
TURNER ST
3327
CENTROID CONNECTOR
18
CENTROID CONNECTOR
294
CENTROID CONNECTOR
9999
CENTER ST/STATE RT 4
17555
TURNER ST
3033
CENTROID CONNECTOR
7859
TURNER ST
10892
MT AUBURN AVE
6316
V. VETERANS MEMORIAL BRIDGE
1140
V. VETERANS MEMORIAL BRIDGE
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8087
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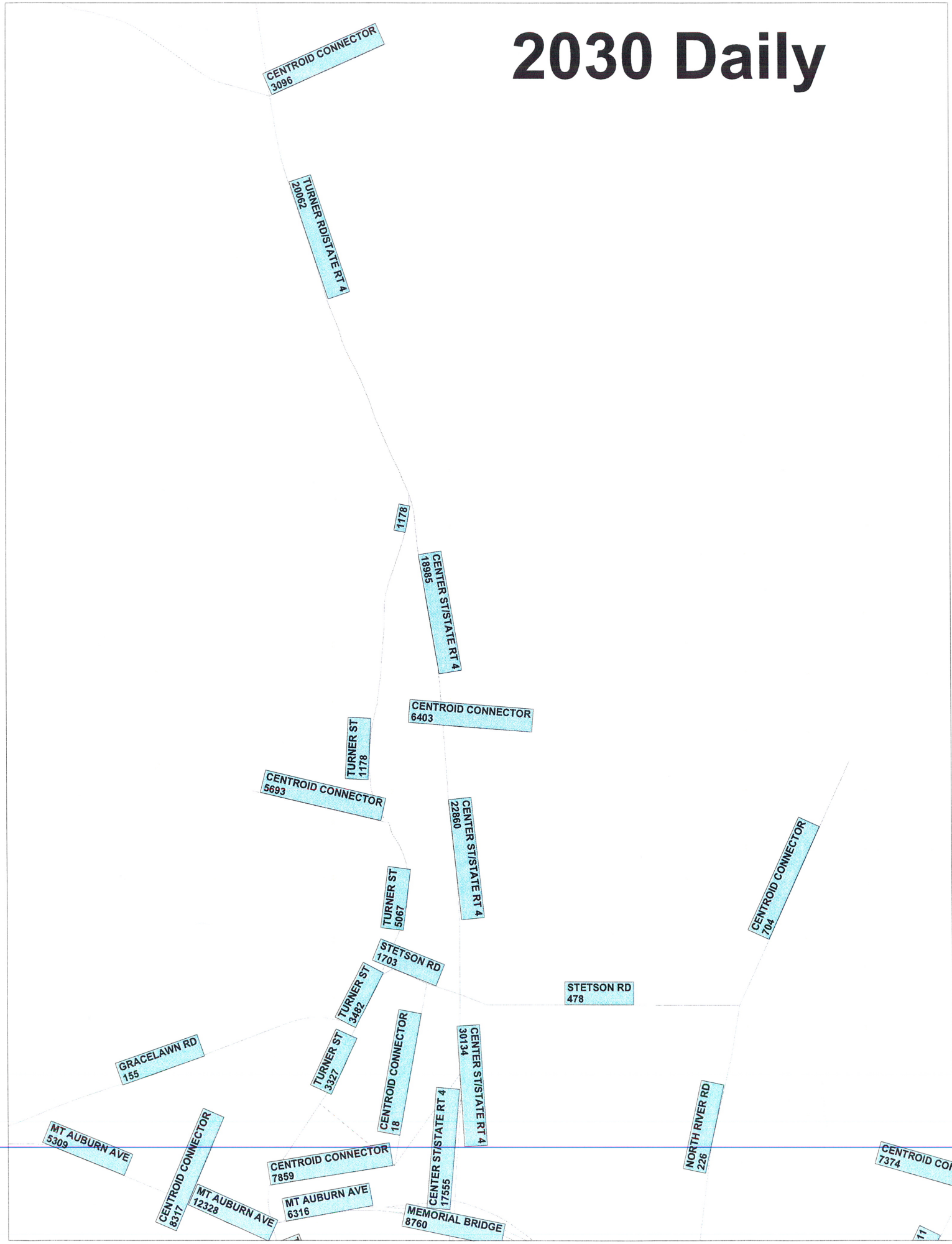
18452

2030 Daily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CENTROID CONNECTOR
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CENTER ST/STATE RT 4
22860
TURNER ST
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STETSON RD
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CENTROID CONNECTOR
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STETSON RD
478
TURNER ST
3482
GRACELAWN RD
155
TURNER ST
3327
CENTROID CONNECTOR
18
CENTER ST/STATE RT 4
30134
MT AUBURN AVE
5309
CENTROID CONNECTOR
8317
MT AUBURN AVE
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CENTROID CONNECTOR
7859
MT AUBURN AVE
6316
CENTER ST/STATE RT 4
17555
MEMORIAL BRIDGE
8760
NORTH RIVER RD
226
CENTROID CON
7374

Appendix D
Meeting Notes
Public Correspondence

Gorrill-Palmer Consulting Engineers, Inc.
Engineering Excellence Since 1998
P.O. Box 1237/15 Shaker Road
Gray, Maine 04039
207.657.6910/mailbox@gorrillpalmer.com

GP Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

PUBLIC MEETING NOTES – SEPTEMBER 25, 2007

By: Jeremiah Bartlett and Tom Gorrill

Date: September 25, 2007

Subject: Center Street TSM Study – GP Job #1919

Attendance: Roland Miller, Eric Labelle, Marsha Bennett, Joan Walton, Jason Ready, Bob Hayes, Robert Belz, Dick Gleason, Don Craig, Tom Gorrill, Jeremiah Bartlett

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Gorrill-Palmer gave a PowerPoint presentation on the background and various issues along Center Street in Auburn. The following deficiencies were noted:

- Six High Crash Locations (HCL's), two fatalities, multiple vehicle/pedestrian collisions
- Signal spacing too far apart on southern portion of corridor, too close together at Veteran's Bridge Ramps
- Shared signal controller at Joline Drive and Auburn Plaza leading to operational inefficiency
- Turning conflicts where vehicles in center turn lane drive toward each other
- Excessive queuing, particularly at Center Street/Turner Street/Union Street intersection and near Veteran's Memorial Bridge overpass
- No protected left turns from Center Street at Shaw's/Kmart north drives and at North River Road
- Excessive curb cuts from North River Road to Veteran's Bridge
- Lack of site interconnections from North River Road to Veteran's Bridge
- Excessively long left turn lane into Auburn Plaza; potential conflict with rear entry to Rowe Auto
- No shoulder or bike lane along Center Street
- Shaw's North Drive and Joline Drive intersections have no crosswalks
- Utility poles in sidewalks make accessibility a problem for handicapped users
- Residential areas near Center Street on both sides south of Veteran's Bridge; pedestrians cross in the middle of the roadway

Data collection has commenced for the ATR's and ATRC's Wavetronix counter. A week-long count completed by ATRC indicated that the peak hour was a Friday from 4:00 to 5:00 PM. Manual turning movement counts will commence at all signalized locations in the study area on Friday, September 28th from 3:30 to 5:30 PM.

GP Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

1. Several questions and comments were completed prior to viewing the boards. What follows are the questions/comments (with relevant answers, if applicable, in parenthesis):

   - This project should include the findings from the access study completed by Wilbur Smith Associates. (Eric Labelle will provide Gorrill-Palmer with a copy of this report.)
   - What about getting data for Columbus Day weekend? (ATRC will set out the Wavetronix from Friday afternoon until Tuesday at the same location – in front of the Auburn Mall – to provide us with any necessary calibration data.)
   - Center Street north of Stetson Road to Lake Shore Drive should be looked at. There are serious concerns with access to and from the roadway for various users, in particular to East Auburn School. (ATRC did do data collection in this area, and can supplement it with an additional count with the Wavetronix counter. Gorrill-Palmer can use this information to provide one concept plan on an aerial.)
   - What about recommendations for a bypass road, such as Hotel/North River? (This study will look at the capacity of Center Street, and may make recommendations for additional study of other corridors if this capacity is exceeded.)
   - What are measures that would allow for access to businesses without eliminating the access management? (Roundabouts are a solution that have the potential to address access, safety and capacity concerns, but it will be important to involve the business community, and this may be an issue for them.)
   - The project will need to look at the proposed redesign for Joline Drive, as more traffic is anticipated to exit from this roadway following the redesign. (Gorrill-Palmer will obtain this information.)
   - Examination should be given to the Veteran's Bridge overpass area, as it has capacity constraints and as such is becoming a critical location. (Gorrill-Palmer will obtain the design plans for this project from the City.)
   - The project should look at ways to mitigate traffic. (The role of fixed-route transit can be examined. The potential for improving pedestrian facilities may encourage more walking to destinations. Use of shared connections between properties may also reduce traffic on Center Street, delaying the need for roadway expansion.)

Center Street PAC Meeting

9/25/07

Meeting Notes

The consultant would like to address the issues of the corridor through the committee.

The presentation is outlined: background, objectives, data collection, concerns/ideas/hopes of corridor. Center Street (Route 4) is a hub for commercial and commuter traffic. It averages anywhere from 25-30,000 vehicles a day, and grows at about 1% annually. It is the only Auburn road that is a part of the National Highway System. It is generally 5 lanes wide. There are many high crash locations, and there are areas that are in need of access management.

Objectives

The objectives of this study are to maintain or improve mobility, safety, and bicycle/pedestrian areas. Widening of the road would be ideally minimized. The TSM will be projected out to the years 2015 and 2030. The consultant is seeking input from the advisory committee.

Safety

Many places on the corridor have safety concerns. There are 6 High Crash Locations, and 3 more places are close. There have been 2 fatalities in the last 3 years on the corridor.

Deficiencies

In the southern part of the corridor, the signals are spaced too far apart. In the northern section, notably by the Veterans Bridge, the signals are placed too close together. At the Joline/Stetson intersection, 2 signals sharing the same controller may cause conflict problems, loss of efficiency, and undesired delay. In some places there are turning conflicts from the shared center turning lane. There are excessive queues at times, such as at the Veteran's Bridge and west Dartmouth Street. Protected left turns are needed in places, such as at the Shaw's Plaza and North River Road. There are excessive curb cuts in places, for example near the Sam's. There is a lack of interconnection between businesses. They need all of the driveways they have, because there is no way to get from one business to another without driving back out onto Center Street, which then causes more turning traffic. There is excessive use of the turn lanes. There are no shoulders or bike lanes on Center Street. Pedestrian trips across Center Street are dangerous yet common, because of residences and businesses on both sides of the road.

Data Collection

The design hour was determined to be from 4-5 PM on Friday. Noontime and Saturday peak times were approximately 15% lower than at the design hour. A question was asked if this was constant throughout the year, in regards to other potential times, such as 'leaf peeping' and Christmas shopping traffic. It was said that "Christmas time is a nightmare…" and noting that to the north there were "ski destinations". Tubes will be set out as well as the ATRC's Wavetronix radar traffic counter to do more counts. The ATRC will put the counter up Columbus Day weekend.

The final design of the project will not use the 'design hour volume' but rather what engineers call the '30th highest hour [of the year].' This will allow the signal to not be underutilized.

Questions/Comments

A question was asked about resolving some problems north of the project area in East Auburn. A concern was made that this would involve 'scope creep' by expanding the study. Some work may be done as some data has already been taken, and only the solution needs to be resolved. There are many traffic conflicts near this area and the difficulty of turning make the boat launch area a turnaround.

A question was asked about whether the intersection of Center/Turner/Union Street bypass would be evaluated, and the consultant answered that a solution would be made for this intersection, including geometry.

A question was asked if the report would answer whether or not 'Center Street can handle x much traffic with x amount of improvements?' Yes, the study will. Capacity issues will be discussed. It was commented that greater capacity could be found if more attention was given to transit. Currently, the mall area is a 'free fare zone' where passengers can ride in the area to various stores without having to pay a fare. A comment was made that the city of Falmouth bought 15 years of time before improvements needed to be made just by interconnecting the businesses.

In Yarmouth, 2 roundabouts were designed at either end of a segment with a median. This increased the green space of the corridor, as well as eliminating left turns. Turning around was much easier, and easier than the 'jug handles' that Augusta's Western Avenue uses. There would be 'tremendous safety benefits' with this type of design. MDOT designers are reported to have said that 'jug handles' would not work on Center Street. Roundabouts are almost always initially opposed to in America, but as people get used to them and see their benefits they are quickly approved of.

Joline Drive will become more active with future MDOT improvements to the road and the intersections on either end.

A question was asked about crash data north of Joline Drive (the northern end of the study area).

Data collection has started, but the consultant would like input from the panel about any future data collection, or notes/concern/ideas about the placement/type of data collection.

Problems will need to be documented and a question was asked about 'why there would be resistance' to recommendations. It was explained that businesses tend to want to keep all of the curb cuts that they have.

Business and aesthetics will heartily be considered when recommendations in the report are made.

The ending Time frame of the study will be sometime around January and February 2008.

Center Street PAC
Meeting Notes 10/23/07

From 2004-2006 there were 6 High Crash Locations on the Center Street Corridor, from Union Street bypass to Joline Drive. There were 2 fatal accidents during this time. Red light running appears to be a significant problem in the corridor. A question was asked if some of the lights could be outfitted with a strobe light.

One of the fatal accidents was the result of a heart attack, and was not 'preventable.' It was noted that Jim Mansir from MaineDOT has some safety money to replace controllers.

Crash analysis was then reviewed.

- From N. River Road to Stanley, crashes appeared to occur because of the many driveways, and problems from entering and exiting them. There was one bicycle collision.
- Up further there were more rear end collisions This may be because that it is an isolated intersection and people drive more aggressively to get through it. There was a pedestrian incident identified here.
- From Lake Street to Newell, there were various problems identified, and this area is close to being a high crash location.
- Near the Veteran's Bridge to the Mall, there were many rear end collisions. This appeared to be from the queuing that occurs. There was one bike collision.
- At the Auburn Mall, there were a lot of rear end collisions. High queuing on left turns appeared to be causing some of these.
- From the Mall to Shaw's Plaza, there were more rear ends due to queuing. There also were numerous vehicles hitting fixed objects such as poles. There was one pedestrian incident.
- Up to Joline/Stetson, There is a red light running issue. There was one fatal accident here. There are strobes in the red lights in the north and south directions.

Data was collected and from looking at turning movement counts and traffic counter data, the peak hour was determined to be from 4:15 to 5:15 PM. September traffic counts were higher than October counts. The Friday peak hour was the highest, stemming from a combination of high commuter and retail traffic. It closely matches what the Institute for Traffic Engineers estimates for a similar area to have, about 20% more than other weekday peak hours. West Bowdoin Street has very low traffic volumes, but has its own phases.

Time Trials were conducted for the corridor. To get from Union Street Bypass to Niskayuna Street (using an average of 3 runs), it took 6 minutes and 37 seconds at an average speed of 17 MPH to go North. It took 5 minutes and 17 seconds at an average speed of 21 MPH to go South. This converts to a level of service of D and C respectively, with the scale typical of grade schools, where A is excellent and F is failing.

The 50^{th}% speed varies little by time of day for the corridor. South of Joline, there is great variation. The lower speed in the afternoon has be attributed to the queuing that occurs from congestion. The high speeds seem to occur from 11PM to 5AM, when the lights change to a flashing yellow.

Most intersections have a Level of Service of C or better. The Union/Turner/Center intersection currently operates at a level of service E, and is the worst intersection in the Lewiston Auburn Area according to a recent study.

The 'two way center left turn lane' that is currently being used on Center Street should be used when traffic is less than 24,000 vehicles per day. It may work well with vehicle volumes of 28,000 per day. Center street averages around 26,000 vehicles right now, but swell to almost 34,000 at times. It may be recommended that the center turn lane be phased out and replaced with a median to increase capacity and safety.

Traffic Signals were analyzed.

- The intersection of North River Road and Center Street in the corridor only had a marginal need for a traffic signal.
- The intersection of lake Auburn Ave and Center Street only had a marginal need for a traffic signal.
- The intersection at Auburn Plaza need for a traffic signal was unwarranted.

It is inefficient to stop all Center Street Traffic for just a few vehicles, and some alternatives should be looked into.

The East Auburn Neighborhood, which was requested to be investigated at the last PAC meeting, was looked into. Even if all of the streets that come together were consolidated together, a traffic signal is not warranted at the location. Three ideas were discussed which may possibly alleviate some of the problems.

- One possible improvement would be to turn this part of the road way into a five lane section. This would be minimally invasive, have 4' shoulders, and combine the ins and outs of the boat launch to the northern entrance. Turner street would be dead ended, but allow south bound traffic to use it as a slip lane. It was noted that this area was part of a bike route and considerations would have to be made. Road width and transition to a higher speed were also issues.
- Another possible improvement would be to create a Florida "T". This creates protected left turn bays and an area to transition and accelerate for traffic on the minor road. This is more invasive but the safety benefits are excellent.
- The final recommendation would be to put in a 2 lane roundabout. This would make the area considerably safer but would be much more costly. Right of way would also be needed. This could make a gateway for the urbanized and rural areas of Auburn, and help delineate the speed changes. There was a concern about trucks going through the area, but it was noted that it would be sized accordingly, and that most trucks wouldn't be making left turns.

Questions were then asked, such as restricting truck traffic to one lane. This would be looked into, but did not look promising (would create more problems.) Would there be dedicated through lanes? We seem to be heading that way with medians. The growth of the area is at about 1% and will be .7% a year. The Veterans Bridge is the biggest hurdle of the project. Would it help to put signs over head to reduce sign clutter?

Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

ADVISORY COMMITTEE MEETING NOTES – OCTOBER 23, 2007

By: Jeremiah Bartlett and Jennifer Williams

Date: October 23, 2007

Subject: Center Street TSM Study – GP Job #1919

Attendance: Joan Walton, Bob Belz, George Greenwood, Eric LaBelle, Jason Ready, Marsha Bennett, Don Craig, Jeremiah Bartlett, Jennifer Williams

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Gorrill-Palmer gave a PowerPoint presentation on the data collection and existing conditions analysis, including crash data, as well as options for the East Auburn area. The following deficiencies were noted during the presentation and discussion:

- Six High Crash Locations (HCL's), two fatalities, multiple vehicle/pedestrian collisions
- Conflicts where vehicles in center turn lane try to merge into traffic
- Turning conflicts because of close proximity of commercial driveways
- Residential areas near Center Street on both sides south of Veteran's Bridge; pedestrians cross in the middle of the roadway
- Excessive queuing, particularly at Center Street/Turner Street/Union Street By-Pass intersection and near Veteran's Memorial Bridge overpass
- Excessive curb cuts from North River Road to Veteran's Bridge
- Lack of site interconnections from North River Road to Veteran's Bridge
- No shoulder or bike lane along Center Street
- Shared signal controller at Joline Drive and Auburn Plaza leading to operational inefficiency

General discussion throughout the meeting follows:

- At the Center/Turner/Union intersection:
  - Is right on red allowed from Center St southbound to turn onto Turner St? (Not sure, need to verify this)
  - This was one of the intersections studied during the "Red Light Running Program". Was there a corresponding decrease in the number of rear-ends during that time period?
  - Maybe a strobe in the red signal would make it more visible.
  - Are the southbound Center St to Union St By-Pass collisions a result of the lack of visibility of the signal? As you are approaching the intersection to get to Union, you are

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rounding a bend and suddenly the signal is there; maybe "Red Signal Ahead" signs would help.

- There should probably be two right-turn lanes from Center St southbound to Union St By-Pass.
- A roundabout has been suggested for this intersection, from the CBD study.

- The Center St/North River Rd intersection has had safety money, but it will likely not be available, as most of the equipment has been replaced. There was one fatality at this intersection, but that was the result of an elderly driving having a heart-attack while approaching the intersection.

- Strobes were installed in the red signals on the Center Street approaches to the Stetson Road/Joline Drive intersection this past spring. It is too soon to quantify the impact of these. There was also one fatal collision at this intersection which was the direct result of red-light running. This location is where there is the most variation in average speed, with substantially higher speeds in the overnight hours (the signal is on "flash" from 11:00pm to 5:00am) and a fairly noticeable reduction in average speed during the late afternoon (PM peak hours) due to queuing from the signal.

- The two way left turn lane for the East Auburn area seems like a reasonable solution, except for the four-foot shoulders. This is part of a published bicycle loop. The needs of bicyclists should be considered in this stretch.

- Overall, the corridor is very busy visually; there are a lot of signs, signals, etc… Could this be a factor in the number of collisions along the corridor?

- Is there a possibility of designating a "truck only" lane on Center Street? Or a "through traffic only" lane? A median would almost create a de facto "through traffic only" lane with through traffic staying to the left to not be impeded by slower right-turning traffic.

- The Veteran's Bridge overpass area is probably the most difficult area of the corridor, as far as capacity issues and improvement options.

Center Street PAC
Meeting Notes 10/23/07

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Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

ADVISORY COMMITTEE MEETING NOTES – December 11, 2007

By: Jeremiah Bartlett and Tom Gorrill

Date: December 11, 2007

Subject: Center Street TSM Study – GP Job #1919

Attendance: Bob Belz, George Greenwood, Eric LaBelle, Bob Hayes Jason Ready, Marsha Bennett, Don Craig, Jeremiah Bartlett, Tom Gorrill

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Gorrill-Palmer placed concept plans on the meeting room wall. Two plans were presented, a short to medium-term plan (2010-2015) and a long-term plan (2015-2030). The following information was discussed by Gorrill-Palmer:

- The medium-term plan provides more delineation for left turns from Center Street and provides islands where parallel access streets and/or safety issues exist. In addition, the left turn areas would be designed to provide a positive offset, ensuring that a smaller left turning vehicle could see oncoming traffic behind a larger vehicle in the opposing left turn bay.
- Elimination of exiting traffic from Kmart Drive south driveway and restriction of right turns only to exiting the Auburn Mall driveway for the medium-term plan.
- Realigning the ramps with the Veteran's Bridge to create a single-point urban interchange (SPUI), minimizing land use and maximizing efficiency by combining two intersections into one for the medium-term plan.
- Changing Joline Drive and Stetson Road approaches to more reflect those in the 2000 Auburn Mall Master Plan study (GP understands that MaineDOT has begun design of these improvements).
- Providing shared access points between commercial sites in the medium-term and long-term plan to reduce traffic being moved onto Center Street if making multiple local trips.
- Use of roundabouts from North River Road to Broadview Avenue for long-term plan.
- Placement of a four-foot median along Center Street for long-term plan. Combined with roundabouts for reversing direction, this change would allow for shoulders/bicycle lanes along Center Street.
- Roundabouts may be used at the Kmart driveways, but a coordinated signal system would also prove effective.
- Creation of three one-way segments on Turner Street, Union Street and Benjamin Street to create a high-capacity configuration controlled by three two-phase coordinated (potentially with a shared controller) signal installations.

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General discussion throughout the meeting follows:

- At the Center/Turner/Union intersection:
  - Does the short-term/medium-term plan provide for traffic turning left from Turner Street and is Center Street southbound through traffic properly aligned with Turner Street? (The lefts could go through on Turner Street, and recirculate on Benjamin Street. The alignment is similar to that existing in the field.)
  - Will traffic back up into the other intersections in the long-term plan? (As there are only two phases at each intersection, the cycle lengths could be short, and analysis indicates that longer queues [spillback] will not typically occur.)
  - Was a roundabout investigated? (Several roundabout alternatives/designs were looked at, but all them required removal of The Valuation Group building and did not appear to operate as effectively at the currently proposed configuration.)

- At the Bowdoin/Center intersection:
  - What will happen to the cars turning left from this intersection currently? (These movements are infrequent and interfere with operations at the Veteran's Bridge. However, as interconnectivity for this residential area is important, it is recommended that the City investigate the potential for extending Dewey Avenue to provide a connection from West Dartmouth Street to Bowdoin Street. If more connectivity were desired, a connection from West Dartmouth and Dewey to Darry Drive/Plummer Street/ Turner Street could be pursued. Also, for residential areas along Broadview Avenue, Coburn Street could be extended to Turner Street just north of Mayfield Road.)

- At the Veteran's Bridge intersection:
  - How would the proposed SPUI operate? (This would operate in three signal phases. The first phase would be left turns from Center Street to the ramps. At the same time, right turns from the ramps would operate in an overlap phase. The second phase would consist of through traffic on Center Street, and the third phase would consist of left turns from the ramps.)

- At the Auburn Mall intersection:
  - If the exiting traffic from Kmart is relocated, how would signal warrants be satisfied? (Signal warrants would not be satisfied. However, if exiting traffic from Kmart is kept, but a dual left turn movement is striped, it could continue to work for some time.)
  - Can the right turn movement be realigned to provide more safety but prohibit the potential for left turns from this movement? (The lane has been realigned to remove the long slip movement causing the current rear-end collisions, but is also shifted to the south of the median on Center Street, eliminating the potential for left turns.)
  - Can a connection be provided for people on Bradman Street? (A connection from Bradman could be provided to the rear of George's Pizza to Kmart that would provide connections for the residents and the businesses in this area.)

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- At the Auburn Plaza intersection:
  - Is a traffic signal needed at this location? (The peak hour counts indicate that left turns from this location are not enough to meet a signal warrant. It is recommended that twelve-hour counts be completed on a weekday and a Saturday to confirm this situation.)
- At the Joline Drive intersection:
  - Is this configuration consistent with what is proposed by MaineDOT? (The design is based on that from the original Master Plan study, which DOT is using as their guide for this location.)
- Overall:
  - It would be good to provide more documentation on phasing in the recommendations. (This will be provided at the following meeting.)

The next meeting is scheduled for Tuesday, January 8 at 10:00 AM.

JJB/jb/jn1919/Meetingnotes 12-11-07.doc

Center Street PAC
Meeting Notes 12/11/07

Volumes were reviewed for the projected years of 2015 and 2030.

A 'single point interchange' was discussed as a possible remedy for the traffic pattern surrounding the Flyovers at the Veteran's Memorial Bridge and Center Street. More time can be bought for this area with signal coordination. All of the intersections will benefit from signal coordination but notably this one.

All of the concepts for the roadway stay within the current pavement width. Right of way is not anticipated to be 'taken' with the exception of some intersections, and in any future roundabout designs.

The Center Turn Lane currently in use will eventually no longer be usable with the increased level of traffic. This is sometimes evident even now as cars will wait a long time to find a break in 2 lanes of traffic while waiting to make the left hand turn.

A concept was suggested where minor streets that intersect with Center Street will be 're-routed' outside of Center Street to a signalized intersection to make some movements. This will decrease delay and increase safety to take left hand turns and minor intersections off the corridor.

The Jug Handle made specifically for Bradman could probably be eliminated with circulation improvements. There were only 6 vehicles using it in the peak hour.

A Phasing plan will be introduced at the next meeting, as well as discussion about public meetings.

A concern was brought up regarding neighborhood access when eliminating some turn movements and re-routing.

The next Center Street PAC Meeting will be at Auburn City Hall on January 8th, at 10:00.

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PUBLIC MEETING NOTES – February 6, 2008

By: Jennifer Williams

Date: February 6, 2008

Subject: Center Street TSM Study – GP Job #1919

Attendance: See Attached sign-in sheet

Don Craig (ATRC) provided a brief introduction of the purpose and background of the Center Street TSM Study, as well as a brief explanation of ATRC and the transportation planning process. Eric LaBelle (City of Auburn) then provided more detail of the purpose and need for this study, as well as the intent and goals of the public meeting. Tom Gorrill then outlined the study process, including data collection, safety problems/high crash locations, corridor deficiencies, and long-term recommendations, including signal improvements, access management, medians, roundabouts, interconnects between adjacent parcels, and other geometric improvements. Following Tom's presentation, the meeting was opened up to public comments and questions, as follows (any responses are included in italics):

- The interconnection between Prompto and the bank could result in queues blocking access to the bank.
- Mayor Jenkins asked what role speed plays in the traffic concerns along the corridor, and if speed is a problem, and what impact the roundabouts would have on speed. *(The combination of the medians and the roundabouts will lead to reductions in travel speeds. The roundabouts are typically designed for approximately 18-20 mph. In addition, the installation of the median may help recover enough width at the shoulders for bike lanes. These things lead to a perception of a narrower travelway, which leads to a reduction in speed.)*
- Apparently, Keene, NH, has recently installed roundabouts on Route 101. A study completed 6-months after construction showed a 5-time increase in the number of collisions, and the number of injuries remained the same. People are avoiding that area now because the crashes lead to grid-lock. This will be the same thing; it will drive people off Center Street and into residential neighborhoods. *(Typically, an "after" study is completed 12 months after the improvements/modifications have been implemented. Six-months is not enough time for people's travel patterns to adjust.)*
- But, 12-months for people to adjust is too long for the businesses along the corridor. Businesses will close by then.
- What about the Walgreen's that is going in at the intersection of Center Street, Turner Street, and Union Street; did the City ask for this access management to accommodate them? *(Walgreen's has not yet submitted a formal application to the City. The peer review process has not even begun yet.)*

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- Chip Morrison provided written testimony (attached to these notes), as well as the following comments. The medians were rejected by the City back in 1983 when the center turn lane was put in because people felt Center Street was going to become Western Avenue in Augusta, leading to loss of business and property tax revenue. Western Avenue is a "revolving door" for businesses, and the medians would just push drivers to other streets. *(We do not want to just move the problem from Center Street to other streets. Any implementation would include a monitoring program to look at the results, and fix things as necessary. Part of the issues with Western Avenue is that the jughandles are not spaced closely enough. The roundabouts proposed for Center Street are intended to keep traffic moving, and, as such, are located closer together. The Western Avenue model is really not applicable to Center Street.)*
- Aren't there other things that can be done that are less disruptive? *(Increased enforcement can help reduce the speeding problems that occur during off-peak hours, as well as reduce the instances of red-light running; renewed education on the use of the center turn lane...these things are all part of the solution.)*
- The traffic signals by the Auburn Mall have been a mess since day one.
- Center Street was/is not made for bicyclists and pedestrians. *(This is a long-range plan that must accommodate alternative modes of transportation. Bicyclists and pedestrians use Center Street today, and their needs must be accommodated as well.)*
- There was no citizen input during the design for the "improvements" in the Auburn Mall area. Who is responsible after the MaineDOT designs and implements a project, but it doesn't work? *(This study is looking at short-term and long-term improvements along Center Street. Part of the short-term improvements include re-timing of the traffic signals to improve operations.)*
- While Gorrill-Palmer Consulting Engineers Inc. does a lot of work with roundabouts, you aren't necessarily "designers" of roundabouts. I would hope you are aware of the various software tools available (SIDRA and Rodel, for example) and that any design would be peer-reviewed. *(We are aware of the various software tools, and currently use SIDRA for analysis purposes. Any project of this scope would be subject to peer review for MaineDOT, and likely the City as well, as was the case with the roundabouts on Turner Street; those were peer-reviewed by Michael Wallwork, who has designed numerous roundabouts throughout the country.)*
- People are now using Turner Street to by-pass Center Street. The proposed project for the intersection of Center/Turner/Union will have impacts.
- So far, at least through the first winter, the roundabouts on Turner Street have not been too hazardous, but what about in the future?
- Is there a standard limit to the volume/capacity of a roundabout? *(That is really dependent upon the distribution of traffic through the roundabout.)*
- What about the impacts to the private landowners? There are a lot of residences close to the Vietnam Veteran's Memorial Bridge. *(This plan is looking at all improvements being able to be completed within the existing curb-to-curb width, except for the roundabouts.)*
- Did you look at getting traffic off Center Street – ie. onto parallel routes such as North River Road, Lake Auburn Avenue, or Turner Street? Is this the only option? What about taking pass-through

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traffic right off of Center Street and onto alternative routes. *(Those routes were looked at more in the sense of providing alternative access to lots. In addition, those roads really are not intended to handle the volumes of through traffic like Center Street. Also, North River Road is not even on the Federal Functional Classification System, which means it is not eligible for any state or federal funding, which makes it very cost prohibitive to upgrade that road.)*

- This concept is likely going to cost somewhere between $25 and $30 million, based on a real quick estimate. This "concept" is going to scare away prospective business tenants along the corridor. If it truly is a concept, and one that likely won't get implemented due to costs, then don't present it. The interconnections are not going to happen; property owners are not going to want to do that.
- *Ultimately, if nothing is done to improve operational safety and efficiency along Center Street, this will become a concern of the MaineDOT. This is the opportunity to help in the planning of the corridor and provide suggestions. A "master plan" can be adopted by the City and developers will be aware of what the plan is, and how there proposed development fits into the "big picture".*
- *The City recognizes the need to work with the businesses along and adjacent to the Center Street corridor. Everyone seems to agree that problems exist, so the City and businesses should work together to fix things. Everyone needs to remember that any site development affects traffic.*
- What about ADA issues? For example, visually impaired people cannot cross a roundabout. Then there is also the frustration level for drivers; is a median really a solution to that, or will it cause more driver frustration?
- A median automatically cuts off 50% of the potential business traffic.
- More consideration needs to be given to the businesses on the side streets, off Center Street.
- If there are "easy fixes" such as retiming the traffic signals, why isn't that being done? *Retiming of the traffic signals can be done rather simply now that the data has been collected and the traffic count information is available. An overall upgrade to the signal system - including interconnections, coordination, upgraded equipment, etc – will take about 3 to 4 years to complete.*
- Where is the money for this project going to come from? Has the City adjusted revenue expectations for the decrease in property values that will occur along Center Street if this plan is implemented? *At this stage, this is still a concept plan; no design has been completed or budgeted for. And business/property owners can help delay the need for some of these long term improvements by implementing better access management, constructing interconnects between adjacent properties, etc.*
- The purpose of the interconnects is to get traffic off Center Street, but the medians just seem to lead to more traffic on Center Street, as people have to drive further and turn around. That seems to be defeating the purpose. *The medians provide for one-way traffic, with limited interference (driveways, etc.), which lets the traffic flow more efficiently.*
- Won't smoother flowing traffic lead to increase speed? *The roundabouts will help control speed, as they are designed for a speed of 18-20 mph.*
- What happened to the cameras that had been installed at some intersections? Why not use those for enforcement? *The use of cameras for speed or red-light running enforcement is currently illegal in*

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15 Shaker Road
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Maine; those cameras were part of a six-month pilot project. There is the fear of "Big Brother" and privacy issues with the cameras; it has been a contentious issue for the Legislature.

- There were approximately 240 crashes in the City in 2007, and approximately 15% of those were on Center Street. Auburn PD knows that enforcement is critical, but that is a struggle for allocation of personnel. The department really is "call driven" – there were over 31,000 police calls in 2007. However, the PD is looking into establishing a traffic enforcement team.
- How can people get more involved?
- There are some issues that need to be addressed sooner: the VVMB ramps and the Center/Turner/Union intersection. The rest probably doesn't need to happen.
- If the medians are put in, what happens if there is an accident? Where does the traffic go?
- Have all the Advisory Committee members seen this? *All the Advisory Committee members were aware of all meetings, and have had the opportunity to see the recommendations and comment and provide input.*
- This "plan" goes beyond just getting the business and property owners along Center Street upset. Now the realtors know this information, and must disclose it to prospective buyers/tenants along Center Street. This will just scare people away. We would have been better off not knowing about this long-term "plan" that is still just a concept and that may never happen. *Public input must be part of the planning process, as well as future design and implementation. In order to get public input, concept plans, etc, must be presented to the public.*
- The City has to help educate developers, realtors, etc. of what can be done to delay (or prevent) the need for the median and roundabouts. Can the City provide information that can be used to help property owners evaluate the cost-to-benefit ratio (and the negatives) for each owner for property interconnects?
- How long has this project/study been going on? *The project began last fall, with data collection and analysis. The recommendations have come within the past month or two.*
- This is a good, thorough study. There are lots of cub cuts on Center Street. Right now, people just need to be patient and wait for gaps in the traffic to gain access. If the medians and roundabouts are put in, speeds will decrease, which will lead to fewer gaps and more congestion, which will lead to no more businesses, so there won't be a traffic problem any more.
- Traffic is a good problem to have. You need to be sensitive to the businesses along Center Street.
- *Remember, this study was requested by the City. The consultant is working for the City of Auburn ie. the citizens of Auburn.*
- If there are no signals, and all the traffic keeps moving, how will pedestrians cross the street? *It is State law for vehicles to stop for pedestrians in the crosswalk. These improvements include crosswalks and pedestrian improvements.*
- What is the critical accident rate for the whole corridor? *Critical rate factors are calculated by location (intersection or road segment between two intersections), not by an entire corridor.*
- There has been a lot of concern tonight for businesses along the corridor, as it should be, but what about residents? The queues at some of the traffic signals today block some of the residential side

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streets (especially East Bates Street). *The improvements we have outlined here tonight will reduce these queues and create more gaps for side street traffic.*

- How does one get onto the Advisory Committee? *The members of the Advisory Committee were asked by City staff, and include a variety of stakeholders along the corridor.*
- I would like to see Mike Gotto appointed to the Advisory Committee. *Mike Gotto was asked to serve on the Advisory Committee for the remainder of the study, and he accepted.*
- There were supposed to be trees as a buffer for the residents along the edge of the VVMB to reduce noise, etc. Will any traffic noise be abated by these changes? *These recommendations are not likely to impact the traffic noise from VVMB.*
- What about a study of some of the side streets and the impacts on them from these recommendations? Traffic seems to have increased on Summer Street since construction of the Mall area improvements. *One of the next steps, prior to implementation, will be to evaluate what a study area should be, collected baseline data, and then establish a program to monitor traffic impacts.*
- Dead River Oil Company, which will be impacted by the proposed changes at Center/Turner/Union, has 6 – 8 fuel oil transport trucks regularly, as well as home delivery trucks. The sight distance from our existing driveway closest to the railroad overpass is minimal. That driveway should be moved if possible, and your design does not include moving it. At what point do you involve the business/property owners? *We are at the point of involving the business and property owners along the corridor. This is not a final design plan; this is a conceptual and preliminary plan, which is meant to be built upon from this input and comments.*
- What are the next steps? *A final report will be issued late this spring or early summer, then it is up to the City to determine the next moves.*

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1919/E

TESTIMONY
OF
CHARLES MORRISON, PRESIDENT
ANDROSCOGGIN COUNTY CHAMBER OF COMMERCE

February 8, 2008

Thank you very much for holding this public meeting to allow those of us with concerns and questions to participate in the process. I am Charles Morrison, President of the Androscoggin County Chamber of Commerce. Last week, after we learned of the public meeting, I hastily called a meeting of Chamber members who I thought would be interested. I was overwhelmed with the response. Almost twenty attended a meeting on very short notice – and many others called to express their concerns.

As many of you know, I have long history in Auburn and was City Manager when the current center turn lane was planned and built. Back then, islands were talked about – and the conclusion the community reached was that they would do great harm to the growing commercial area – without much benefit.

I am here today to urge you to reconsider the traffic flow changes proposed for the Route 4 corridor, from the intersection with Turner Street northward. And what I am going to do is raise a series of questions and issues which I don't believe have been adequately answered or considered.

What Are the Current Needs?

1. Has traffic increased by such a dramatic amount that a drastic solution is warranted? By the data I've looked at, traffic on the southern end of Center Street has only increased 10-20% over the last ten years.
2. Have serious accidents occurred in the corridor where the improvements are proposed? It is my impression that the most serious accidents have happened north of the project area where speed has been a definite factor.
3. Is the project on the table only because of the proposed Walgreens development? If that is so, should those who have made incredible investments along Center Street over the years now be asked to pay the price for the proposed new development?
4. Have planners modeled what traffic pattern changes will happen when the Exit 80 retail development is built in Lewiston? Will this reduce the amount of traffic in the Center Street corridor?

What are the Possible Unintended Consequences of this proposal?

1. Force traffic into residential neighborhoods in order to reach desired Center Street locations which will clearly increase traffic on both Turner Street and North River Road.
2. Putting through traffic, including large semis and logging trucks, through a series of round-abouts is dangerous. Route 4 is a major north-south highway – and such a traffic pattern will be unfamiliar to visitors and infrequent travelers.
3. Loss of property tax revenues to the city, resulting from the lower value of properties which have only one-way access.
4. A serious accident would probably completely close (in one direction) a highway divided by a median strip.
5. Traffic islands will give the "feel" of a divided highway possibly resulting in higher speeds.

Have less costly and less disruptive solutions been considered?

1. Center Street needs more speeding and other traffic enforcements
2. If speeding is a problem (and I'm not sure it is in the lower portion of the street), what about speed bumps?
3. Continuing public education on the use of the current center turning lane
4. The traffic signals near the Auburn Mall clearly need to be better timed to prevent the traffic back-ups

I urge you to go back to the drawing boards. First, show us the data that demonstrates that change is even necessary. Second, design a more cost-effective and community respecting solution.

1919 (E)

NAME	ORGANIZATION	E-MAIL
Maureen Aube	Chamber of Commerce	MNaube@androscoggincounty.com
Derek Dube	Lake City Exports	DDube@aol.com
James P Dunn	Center St Dental	
Janice Davis	9 Rose Terrace	vantoy8/2@hotmail.com
Norton Davis	9 Rose Terrace	
Dan Cunliffe II	Republic Jewelry	Dan@republicjewelry.com
Dennis Morgan	The Sign Store & Flag Ctr.	Dennis@signstor.com
Judy Morgan		Judy@signstor.com
Kevin Fletcher	Coldwell Banker Millett Realty	KFLETCHER@MILLETTREALTY.com
Gina Letourneau	Coldwell Banker Millett Realty	theginateam@milletrealty.com
George Chomas	C.B. Millett Realty	gchomas@millettrealty.com
Hugh Keen	Community Credit Union	hugr.cook@aol.com
Roger Bosse	Community Credit Union	ROGERB@COMMUNITY.com
Jennifer Hogan	Community Credit Union	jenh@communitycreditunion.com
Kerry Wood	Community CU	Kerryw@communitycreditunion.com
Chip Morrison	The Chamber	cmorrison@androscoggincounty.com
Tom Fournier	Gipper's Sports Grill	CAMPERTOM@AOL.com
Janet Aliberti	Community Credit Union	JANA@communitycreditunion.com
Elizabeth Pettis	Community Credit Union	
Donna R. Steckino	Community CU	donnas@communitycreditunion.com
Rita Conner	Coldwell Banker Millett Realty	RCONNER@millettrealty.com
Bob Mennealy	Auburn City Council	glmpsk.00 at AOL
Jan Dwinal	Coldwell Banker Millett Realty	jdwinal@millettrealty.com
Bob Belz	City of Auburn Public Wks	bbelz@ci.auburn.me.us
Stan Pelletier	owner 1 Center St.	
Doris G Pelletier	owner 1 Center St	
Alane Bowles	RE/MAX River Cities/259 Lake St	abowles@rivercitiesrealestate.com
Sandra Tassinari	RE/MAX River Cities/195 Center St	sst@rivercitiesrealestate.com
Frank Minigell	FPM Donuts 5 location in Auburn	FPMDonuts@attglobal.net
Todd Bowles	citizen	
Frank Barron	Citizen Property Owner	
Tim St. Hilaire	Property Owner	
Bruce Bickford	City Council Ward 4	bick0585@AOL.com
Senator Lois Snowe Mello	State Senate	Senatorlois@yahoo.com
Anne Littlefield	Dead River Company	anne.littlefield@deadriver.com
Joanne Preble	Dead River Company	joanne.preble@deadriver.com
Jeff Preble	Auburn Resident	jdp@wright-pierce.com

NAME	ORGANIZATION	EMAIL
Scott Taylor	Sun Journal	
Mike Gotto	400 Center St	MGotto@sebagorealty?.com
John Gendron	50 Alfred Plourde Pkwy	Johng@gendroncorp.com
Paul Raymond	Coastal T-Shirts	PRaymond@CoastalT.com
RON LAGANIERE	120 CENTER ST PLAZA	
Michelle Gooding	KFC	MGooding716@yahoo.com
Bev Domenichello	KFC (Conifer Industries)	Beverlyd@conifrind.com
Gary Johnson	City of Auburn	gjohnson@ci.auburn.me.us
Laurie Smith	City of Auburn	LSmith@ci.auburn.me.us

Center Street TSM Study Advisory Committee Meeting
March 4, 2008 – 2:00 PM
Meeting Outline

1.) Discussion of process so far
   a. Completed data collection
   b. Completed safety analysis
   c. Completed capacity analysis
   d. Have had three Advisory Committee meetings
   e. Provided ATRC/City/Public with a concept plan
   f. Had a public meeting on February 6

2.) Findings
   a. Capacity constraints at Center/Turner/Union and in vicinity of Veteran's Bridge
   b. Signal warrants marginally met at North River, Lake Auburn
   c. Signal warrants not met at Auburn Plaza
   d. Corridor has six High Crash Locations, three other close to HCL status
   e. Crash problems at intersections and links – Center Street between North River Road and Stanley Street most significant
   f. Driveway spacing and frequency an issue
   g. Friday volumes fifteen percent higher, crashes 34 percent more frequent

3.) Preliminary Recommendations
   a. Short-term (Next one to five years)
      i. Update and improve signal timing and coordination
      ii. Modify Auburn Plaza driveway/eliminate traffic signal
      iii. MaineDOT improvements to Joline Drive at Center Street
      iv. Improvements to Center/Turner/Union for Walgreen's permitting process
      v. Recommend driveway consolidation and site interconnections
   b. Medium-Term (Ten years)
      i. Reconfigure Veteran's Bridge interchange as a Single Point Urban Interchange
      ii. Shaw's driveway becomes a roundabout
   c. Medium-Long Term (Fifteen years)
      i. Reconfigure Center/Turner/Union as one-way segments/hybrid intersection
   d. Long-Term (Fifteen to twenty-five years): <u>If</u> access management efforts <u>do not</u> improve safety
      i. Use of roundabouts at North River/Lake Auburn/Alpha – may reduce activity on center left turn lane
      ii. If crashes still an issue, medians may be pursued

4.) Process from here
   a. Will prepare a draft report for PAC and City review
   b. Ultimate decision rests with City
   c. Signal warrants not met at Auburn Plaza
   d. Corridor has six High Crash Locations, three other close to HCL status
   e. Crash problems at intersections and links – Center Street between North River Road and Stanley Street most significant
   f. Driveway spacing and frequency an issue

Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

COMMITTEE MEETING NOTES – May 21, 2008

By: Jeremiah Bartlett

Date: May 21, 2008

Subject: Center Street TSM Study – GP Job #1919

Attendance: Dick Gleason, Sharon Millett, Mike Gotto, Eric LaBelle, Laurie Smith, Bob Belz, Roland Miller, Don Craig, Joan Walton, Jason Ready, Marsha Bennett, Tom Gorrill, Jeremiah Bartlett

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Don Craig (ATRC) opened up the meeting to discuss the status of the project, and how the public process was involved. Laurie Smith followed up with additional information about the process that the City would take. Both Don and Laurie stressed that the report represented a snapshot of the issues as they are currently viewed. Given the long-term nature of the forecasting, findings, and recommendations, the recommendations for fifteen to twenty-five years out would have to be revisited prior to any kind of implementation. In addition, funding for any kind of improvements in Auburn remains an issue, and recommendations for improvements in other parts of Auburn made a number of years ago have yet to be implemented. Even in the case of all recommendations being implemented, it was doubtful that this would happen within the next few decades. The remainder of the meeting was followed up by discussion. What follows are questions and comments, with relevant responses (where necessary) included in italics:

- Mike Gotto was concerned about the recommendations, and stated that a large land deal went sour since the preliminary recommendations were issued. Brought up the point that this corridor serves many businesses, and that they are important. (*Don state that Center Street is part of Route 4 and is on the National Highway System. As such, safety and mobility are relevant issues to address in order to maintain this roadway for these purposes. This being said, while the proposed changes are far out, it is understandable that the level of change has businesses concerned, and the language can be adjusted for the final report to reflect this.*)
- Sharon Millett was concerned with the phased nature of the improvements and the specific years cited in the report. It appeared to create a sense of inevitability for the recommendations. *(Don said that the report spoke of TDM and access management aspects for the roadway that would defer or even eliminate the need for some of the improvements. The report could talk about the TDM, access management, and the medians as different approaches, rather than one versus another or one being required. Tom added that the language can certainly be softened to reflect this idea.)*
- Eric LaBelle was uncomfortable with the use of specific dates in the report, and wanted to make sure that the report made clear that the recommendations were largely borne from the needs of future forecast volumes and the need for increased safety. *(Tom stated that the references to specific years can be removed.)*

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PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

- Sharon Millett asked that for the sake of time, an updated draft final report be provided with an email that listed specific pages with changes on them. (*Tom said that this can be done.*)
- Sharon Millett was concerned that the City could require the specific site interconnections shown in the report to be completed without input from the owners. *(Tom stated that the connections were concepts for illustrative and discussion purposes. He said that it was ultimately up to the City to work with specific Applicants doing site plan approvals to work out access management issues. Eric LaBelle followed up by saying that this would come up during a Planning Board review process, and be undertaken on an Applicant by Applicant basis, such as the proposed Walgreen's project at the intersection of Turner, Union, and Center.)*
- Sharon Millett asked that a summary of the meeting be provided to Chip Morrison at the Chamber. *(The notes from this meeting will be provided to Chip.)*
- Roland Miller stated that it was helpful to have the public process, and an active Committee for the project. In the end, it is his opinion that the process itself can be more important than the study, as too often there is little public interest and input into these sorts of projects.
- Mike Gotto asked for more information on medians and impacts. (*Some information was provided to Mike at the meeting, and this information and additional information will be included in an Appendix of the draft final report.*)
- Mike Gotto asked if public streets could be cut off as opposed to business driveways via dead ends. *(Eric and Tom both mentioned that this is possible for certain streets, and in fact, the report does discuss the potential for dead-ending Broadview Avenue as it comes into an awkward intersection with Alpha Street.)*
- Eric Labelle expressed concern with the short-term improvement cited at the intersection of Turner, Union, and Center, as it was related to a specific development project. *(Where short versus long-term improvements were possible, the Consultant was charged with looking at both as part of the project. As the short-term plan addresses forecast traffic needs to ten to fifteen years at less cost and property impact than the long-term plan, it is the Consultant's opinion that it should be provided in the report whether or not the Walgreen's project ever takes place. Whether or not the City wishes to do a phased approach or simply allocate funding for the long-term recommendation is its decision.)*
- Mike Gotto asked about the removal of the traffic signal at Auburn Plaza. *(This location is nowhere near meeting traffic signal warrants, unlike the more marginal locations elsewhere on the corridor. Drivers will have the ability to turn left from Joline Drive, as they do now, but it will be easier in the future after MaineDOT redesigns the intersection and places Joline/Stetson on its own signal controller.)*
- Mike Gotto asked about the five percent trucks on Center Street. (*This information needs to be clarified: the five percent refers to PM peak periods when analysis was completed. Based on the overall, daylong automatic count data, truck percentages are more on the order of ten percent.*)
- Mike Gotto asked about the Wilbur Smith study referenced in the September 25, 2007 meeting notes. (*This matter refers to the Auburn Mall Master Plan Study completed in 2000. This study was focused primarily on Turner Street, but did have recommendations for Joline Drive which have*

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Gray, ME 04039

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Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

been reflected in the forecasting and improvements cited there in this project as well as the design work being done for this location by MaineDOT.)

- What about the visibility issue at Joline discussed in the October 23, 2007 notes? *(This location now has a strobe, and more crash data will be needed to determine if it helps with visibility and red-light running. This location will also obtain a significant upgrade when the MaineDOT improvements are implemented, which may change the way drivers view and obey the signal.)*

The draft report will be revised to reflect these comments and a draft final will be sent out for final comment and approval.

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Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

COMMITTEE MEETING NOTES – August 19, 2008

By: Jeremiah Bartlett, Tom Gorrill

Date: August 19, 2008

Subject: Center Street TSM Study – GP Job #1919

Attendance: Eric Labelle, Glenn Aho, Roland Miller, Chip Morrison, Sharon Millett, Mike Gotto, Dick Gleason, Jason Ready, Joan Walton, Don Craig, Robert Belz, George Greenwood, Tom Gorrill, Jeremiah Bartlett

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Don Craig (ATRC) opened up the meeting to discuss the status of the project, spoke of the role of the study itself. He noted that the study was a Transportation System Management (TSM) study; as such, the goal of this project was to determine methods to keep Center Street safe and efficient based on long-term forecast traffic demands. The project was comprised of four major portions: existing conditions, forecasting, analysis, and recommendations. All of this was to some extent affected by input from Auburn staff as well as the public, but the twin goals of safety and efficiency were paramount. He also noted that the intent of the recommendations was to make the medians part of a long-term set of potential tools; the medians were never considered an immediate solution, and at this time, funding for any of the improvements is far from materializing.

What follows are questions and comments, with relevant responses (where necessary) included in italics:

- Sharon Millett remained concerned about stating that the study was a 'Plan', as it gave the impression that the recommendations were set in stone. She also remained concerned about the feel that there still could be a quick transition to medians. (*The study can be referred to as just that, as any specific set of implementations would need additional data collection, engineering, and public input prior to implementation. As other potential solutions can be done on a site-by-site basis, or are based on City and local policies, the medians are also more costly, and as such, likely a last resort.)*
- Eric LaBelle, following up on Sharon's comment, noted that the public process will play a role in any study's recommendations. The end result is a guidance document, which, while the specifics may differ prior to implementation, gives planners a feel for the issues and potential solutions in an area.
- Glenn Aho expressed concern about the study potentially affecting livelihoods.
- Don Craig and Joan Walton mentioned that a number of TSM studies have been done in this area over the past 30 years, and recommendations can change, based on travel patterns, safety issues, and the available design technologies available.

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Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

- Mike Gotto stated that the report stated a traffic improvement plan, rather than a TSM study. (*This will be updated for the next draft report.)*
- Tom Gorrill mentioned that there is a balance that needs to be struck between site access, vehicular safety and overall corridor operations. This report was a snapshot based on turning movement counts collected in September of 2007, and since then traffic overall in Maine has been reduced by seven percent. As time goes on, there may be other changes that can affect operations along this corridor in ways that cannot be foreseen.
- Mike wanted discussion to focus more explicitly on the connections between medians and safety. (*Language in the report can be adjusted to make this connection more explicit.*)
- Tom stated that the recommendations for various policy and physical improvements give the City and ATRC (and MaineDOT) a menu of options for the future.
- Mike asked which is more important: strategies or specific improvements? *(The strategies may cost less, but require more structural changes from a policy level. Which is more important will ultimately come down to long-term traffic volumes, site configurations, safety, modal splits, and even demographics changes.)*
- Don stated that it is not necessarily about choosing a specific design solution over a specific policy change, or vice-versa. Options can be done together as time and funding allow.
- Chip Morrison stated that Center Street is a commercial street **and** an arterial. We still don't know how the changes in the Mall area (due to new development and the implementation of the Mall Master Plan traffic improvements) will affect traffic along Center Street. It is good that traffic light timing has been/will be adjusted along Center Street, and he concurs that access management is a good thing. He wondered why more wasn't discussed for bypasses, such as a new roadway or use of North River Road? He also stated that roundabouts are fine for side roads like Turner Street, but not for major arterials. Signals for pedestrians at roundabouts are not good, as there shouldn't be pedestrians on Center Street to begin with. He requested that the FHWA/etc. statement about roundabouts be removed from the Executive Summary on Page 7. *(North River Road is no longer under the state funding umbrella and therefore all work would be paid for locally. Pedestrians have been observed frequently using and crossing Center Street; given the proximity to residential areas, this is not expected to change. The statement on roundabouts can be removed.)*
- Tom followed up on Chip's concerns with arterial roundabouts by stating that they have been used for major roadways, including highway interchanges. *(Such use of roundabouts has been done in Colorado, Alaska, Maryland, and New York, as well as other states and countries.)*
- Don mentioned that one of the big concerns with medians in particular is what happened on Western Avenue. He noted that the way that roadway was implemented resulted in very long distances before anyone could reverse direction, and the provision of jughandles had not proven to be very effective. This plan has a very different take on reversing direction, in both the method and the spacing.
- Sharon remained concerned with the idea of numerous roundabouts being placed along Center Street. Tom replied by stating that most likely it would have to be done with a single roundabout, to be used as a test case. If it proved effective, then drivers would be used to their operation; if not,

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other methods could be stressed. *(The report will have language about placing a "test" roundabout first, if in the future it is determined that their placement would be beneficial.)*

- Chip mentioned that signals marginally meeting warrants should remain, if at all possible, as they allow drivers to get to and from Center Street more easily. *(Existing signals are typically retained unless they very clearly do not meet warrants, or result in an operational/safety deficiency that is more significant with their placement than without.)*
- Glenn stated that any improvements should be subject to the public process prior to implementation, and Don stated that this is indeed what must always happen.
- Chip mentioned an idea of closing Turner Street between Benjamin Street and Center Street, with the routing of traffic up Benjamin Street. *(This can be examined prior to the release of the next draft report.)*
- Chip and Don stated that additional language on public process prior to full implementation should be done. *(More language on the public process will be included.)*
- Roland Miller stated that the various objectives for Center Street from North River Road to the Veteran's Bridge should be framed as "options," as one does not preclude the other, and not all may have to be implemented. It is a "Study" and not a "Plan," and whatever comes out of it should strive to meet the needs of the traveling public as well as local businesses. In addition, a bypass would remove traffic least likely to use local businesses, so the report should at least recommend that right-of-way be preserved for a possible bypass. *(The report will be framed as a Study as opposed to a Plan.)*
- Tom concurred with Roland, and stated that the revision of the Plan would mention preserving right-of-way as well as recommending that a future study be conducted that examines the diversion of traffic volumes due to a bypass. The bypass strategy can also be moved up on the list of priorities.
- Mike mentioned that some streets or driveways can be closed as part of access management before medians are put in. *(The report has discussions and concepts for some as both, and recommends the strategies in general for Auburn to use as part of its toolbox. Auburn already utilizes access management strategies for site redevelopment along Center Street.)*
- Don followed up on Mike's comment that an access management study could be a follow-up study on Center Street, much like what has happened on Route 196. *(The report will discuss the recommendation for an access management study.)*
- Sharon mentioned that there is a typo in the Executive Summary, which should state "shoulders" and not "showers." *(This will be changed in the report, as well as any discussion on medians and their impact on businesses.)*
- Tom mentioned that the improvements are largely for safety, as there were several hundred crashes on Center Street, and safety is a major issue. Glenn spoke up and stated that safety issues are not engineering issues, but cultural issues. After some discussion, it was decided to keep safety part of the report. Mike again noted that medians should be tied into the safety issues, as opposed to operational issues.

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Traffic and Civil Engineering Services

PO Box 1237
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(207) 657-6910
Fax (207) 657-6912
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- Eric stated that the access management study should be the next study done on Center Street. Ongoing improvements should be made to traffic signal timing and phasing. *(This will be reflected in the report; the signal retiming work has already begun.)*
- Mike echoed that an access management study should be the first thing to happen, with other improvements to happen at a later date.
- Don mentioned that the signal timing work should be completed sometime this winter, and that MaineDOT was designing improvements to the intersection of Joline Drive, Stetson Road and Center Street.
- Roland and Mike mentioned ongoing issues at Turner and Union; different ideas have been examined there, including one when the Auburn downtown study took place a number of years ago. The intermediate improvement does not allow for lefts from Turner, something the public has taken issue with. *(The report will mention a few different intermediate options, retain analyses for the current one, and recommend additional alternatives analysis if anything other than the long-term improvements are pursued at this location complete with public input.)*

The draft final report will be revised to reflect these comments and a second draft final will be sent out for final comment and approval.

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Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

COMMITTEE MEETING NOTES – November 17, 2008

By: Jeremiah Bartlett

Date: November 17, 2008

Subject: Center Street TSM Study – GP Job #1919

Attendance: Eric Labelle, Glenn Aho, Chip Morrison, Sharon Millett, Mike Gotto, Jason Ready, Joan Walton, Don Craig, George Greenwood, Tom Gorrill, Jeremiah Bartlett

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Don Craig (ATRC) opened up the meeting to discuss the next steps following the completion of the project. Following the completion of the final report, it will be submitted to ATRC, which will accept it. Acceptance essentially means that the MPO deems the project as complete and finished, as opposed to a specific endorsement of various project components. The report does not tie the City or the State into funding for specific improvements, nor does it result in a boost of funding from any specific source.

Some aspects of the study's recommendations are already underway, such as the signal management (i.e. retiming/sequencing) work for locations in the ATRC region. The access management recommendations would be completed during the course of site redevelopment through the City, which currently has access management requirements for new projects (i.e. the project access management recommendations are conceptual only, as the nature of redevelopment along Center Street cannot be easily determined ahead of time).

The question of a bypass road had been raised a number of times, and is also in the report's recommendations. While this is a goal all involved with the Center Street study appeared to favor, funding of the project may be difficult, if not impossible, given the current economic climate for roadway improvements.

What follows are questions and comments, with relevant responses (where necessary) included in italics by Gorrill-Palmer:

- George Greenwood asked how/why funding is not available for roadways, including a bypass road. Don responded by stating that available money now is largely for maintenance; evening this level of funding is currently insufficient for basic maintenance of existing roadway infrastructure. While many of the report's recommendations can be considered modifications of an existing roadway, and therefore could be completed with maintenance dollars, new roadways are a different situation. Funding for new bypass or connector roadways, such as the one recently opened in Gorham or the Coastal Connector in Topsham have been historically based on earmarks. While earmarks may have once been available as additional funds, earmarks now come out of a state's standard federal infrastructure dollars; in other words, 50 million dollars for a new roadway translates into 50 million

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

dollars no longer available for items such as basic bridge maintenance. The State can also bond, or borrow money, for improvements. These funds have been largely for larger cost items such as bridges. (*Additional funding may become available in 2009 due to various stimulus packages proposed by the incoming Obama administration, but as of this time, it is difficult to determine the precise amount and allocation of those funds. Based on commentary from the incoming administration, however, it appears that the first priority will be for existing infrastructure improvements and maintenance.)*

- Chip Morrison asked if the recommendations bound the City to a specific set of improvements, i.e. "restricted" the funds coming to Auburn. Don responded by stating that this would not restrict funds.
- Sharon Millett asked what lead to the study being undertaken. Don responded that the City requested that ATRC fund a study of Center Street due to the high volume of vehicles on the roadway, as well as noted operational and safety deficiencies.
- Sharon Millet also expressed concern with the Transportation Demand Management (TDM) recommendations noted in the study, as they could tie employers to costly mitigation strategies. Eric Labelle followed up by stating that some of the recommendations may be useful for larger employers, and ultimately, it came down to measures that would be practical for specific perceived needs. Glenn Aho stated that the report did not distinguish differences between employers. *(The TDM measures are general in nature and are based on possible strategies that employers and the City may choose to undertake. Some measures, such as bicycle racks, could be undertaken by any employer, while larger ones, such as showers for employees, may be more appropriate for the City's largest employers. It should be noted that TDM requirements have been imposed in Portland and Bangor, and that the MaineDOT has begun imposing TDM requirements as part of its traffic permitting requirements. As the City of Auburn has delegated review authority, allowing it to complete the traffic movement permitting process in compliance with MaineDOT rules and regulations, it may be held to similar strategies at some point in order to retain its delegated status. The Center Street report merely provides a menu of strategies for reference.)*
- Chip asked about access management along Center Street. Eric Labelle responded by stating that the City has already begun to impose access management requirements on redevelopment projects along Center Street, but short of large-scale redevelopment, significant access management improvements will be a long time coming. However, access management is seen as a good first step for the City.
- Eric Labelle also mentioned that given the funding situation, the City may need to determine additional strategies for financing roadway improvements, such as impact fees. *(Impact fees are being used successfully in a number of Maine communities, including Portland, Brunswick, Scarborough, and Old Orchard Beach. Scarborough, for example, has the specific fees and methodology included in its Ordinance.)*
- Don Craig stated that prior to any actual construction of roadway modifications, a full public process would be required. This has been the case for Joline Drive, and was the case for the Main Street improvements. As such, additional meetings with the public would be held prior to any final design of construction of any elements of the recommendations from the report or any other modifications determined in the future.

Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Road
Gray, ME 04039

(207) 657-6910
Fax (207) 657-6912
E-mail: mailbox@gorrillpalmer.com

- Mike Gotto asked to confirm the locations meeting signal warrants in the report. *(As of this time, North River Road satisfies warrants and Lake Auburn Avenue is marginal, but removal of a signal is not currently recommended. However, the Auburn Plaza location does not meet warrants, nor is it close to doing so.)*
- Eric Labelle mentioned that the top priorities that the City will take from the report are access management and safety. The City currently does not have the funding to undertake changes of significance to the Center Street corridor in the near future. The City's main priorities at this time are the Washington Street Rotary and the Park Avenue corridor.
- Chip Morrison stated that it would be helpful if the City could provide a letter of intent stating what its first steps (i.e. signal work, access management, etc.) would be for the project.
- Eric stated that language on Page 28 should be modified to reflect that an elementary school is sited on this Lake Auburn Avenue.
- Mike Gotto asked about the actual improvements proposed for Center Street at Union Street and Turner Street. *(A set of improvements has recently been approved by the City in association with the Walgreen's pharmacy project; these improvements appear to be the only ones palatable to the City short of the long-term improvements. Additional discussion and relevant changes will be made in the final report to reflect this.)*
- Don wrapped up by stating that he would like to see a letter from the City that could be placed in the front of the report and referenced in the Executive Summary.

The final report will be completed upon receipt of a letter of intent from the City.

JJB/jn1919/Meetingnotes11-17-08.doc

Appendix E
Data for East Auburn/ Previous Findings by ATRC

Gorrill-Palmer Consulting Engineers, Inc.
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P.O. Box 1237/15 Shaker Road
Gray, Maine 04039
207.657.6910/mailbox@gorrillpalmer.com

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1.....	1.....	500	400	350	280	150	120	105	84
2 or more...	1.....	600	480	420	336	150	120	105	84
2 or more...	2 or more...	600	480	420	336	200	160	140	112
1.....	2 or more....	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1.....	1.....	750	600	525	420	75	60	53	42
2 or more...	1.....	900	720	630	504	75	60	53	42
2 or more...	2 or more...	900	720	630	504	100	80	70	56
1.....	2 or more....	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume.
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures.
[c] May be used when the major-street speed exceeds 70 km/h or exceeds 40 mph or in an isolated community with a population of less than 10,000.
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70 km/h or exceeds 40 mph or in an isolated community with a population of less than 10,000.

Signal Warrant Analysis Review
Center Street at Fair/Oak/Martin Street
Auburn, Maine

Hour Beginning	Warrant 1 (Eight Hour Volume) Condition A								
	Major Street (Center Street)				Minor Street (Fair/Oak Hill/Martin)				Warrant Satisfied?
	2007 Volume*	Adj. Volume	Threshold	Satisfied?	2007 Volume	Adj. Volume	Threshold	Satisfied?	
6:00 AM	1520	1414	600	Yes	24	24	150	No	No
7:00 AM	1328	1235	600	Yes	53	53	150	No	No
12:00 PM	1197	1113	600	Yes	28	28	150	No	No
1:00 PM	1281	1191	600	Yes	27	27	150	No	No
2:00 PM	1499	1394	600	Yes	35	35	150	No	No
3:00 PM	1796	1670	600	Yes	91	91	150	No	No
4:00 PM	1848	1719	600	Yes	78	78	150	No	No
5:00 PM	1355	1260	600	Yes	80	80	150	No	No

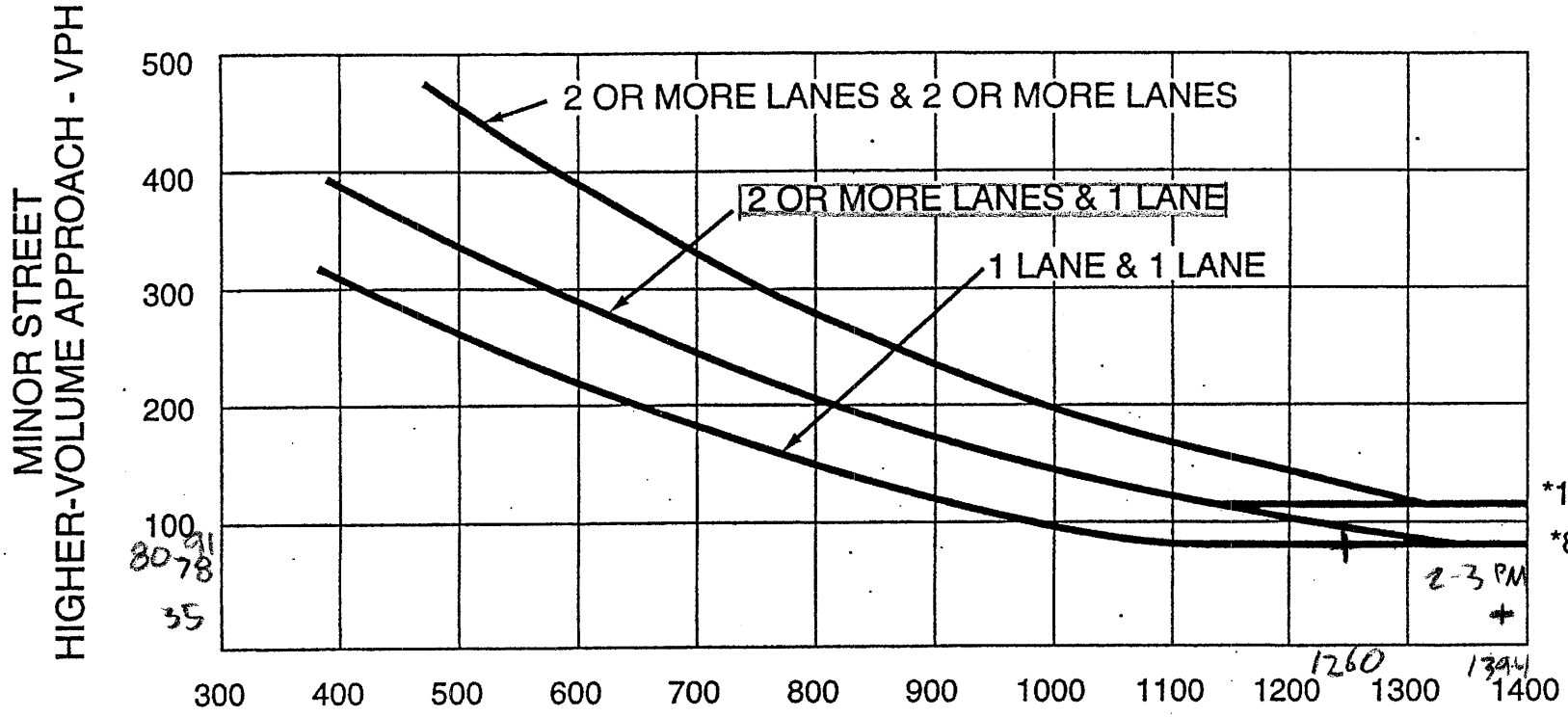
*Volumes collected October 4, 2007, reduced by seven percent to represent average volumes for Group I.

Hour Beginning	Warrant 1 (Eight Hour Volume) Condition B								
	Major Street (Center Street)				Minor Street (Fair/Oak Hill/Martin)				Warrant Satisfied?
	2007 Volume*	Adj. Volume	Threshold	Satisfied?	2007 Volume	Adj. Volume	Threshold	Satisfied?	
6:00 AM	1520	1414	900	Yes	24	24	75	No	No
7:00 AM	1328	1235	900	Yes	53	53	75	No	No
12:00 PM	1197	1113	900	Yes	28	28	75	No	No
1:00 PM	1281	1191	900	Yes	27	27	75	No	No
2:00 PM	1499	1394	900	Yes	35	35	75	No	No
3:00 PM	1796	1670	900	Yes	91	91	75	Yes	**Yes**
4:00 PM	1848	1719	900	Yes	78	78	75	Yes	**Yes**
5:00 PM	1355	1260	900	Yes	80	80	75	Yes	**Yes**

*Volumes collected October 4, 2007, reduced by seven percent to represent average volumes for Group I.

Center Street at
Fair/Oak Hill/Martin Street
Auburn, Maine

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

10/1/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	1111	1157	1385	1669	1772	1288	748	557	373	238	150	106
10/2/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total	67	84	77	162	497	967	1512	1360	997	1080	1103	1165	1113	1288	1430	1632	1662	1177	837	591	423	268	164	90
10/3/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total	71	61	73	167	493	985	1488	1267	1059	1023	1082	1135	1159	1253	1475	1705	1758	1217	896	618	461	248	176	102
10/4/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total	75	62	75	149	504	956	1520	1328	1123	1092	1102	1134	1197	1281	1499	1796	1848	1355	993	648	482	304	197	82
10/5/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total	82	72	99	151	462	884	1442	1235	1133	1149	1303	1412	1055	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

gps coordinates of count

44	8	40	N
70	13	39	W

10/1/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SBRLRTE4	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	400	372	396	398	395	355	190	128	94	79	37	24
SBLLRTE4	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	146	173	187	166	148	128	55	37	21	27	12	9
NBLLRTE4	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	198	231	353	474	542	331	198	162	103	56	49	27
NBRLRTE4	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	367	381	449	631	687	474	305	230	155	76	52	46
10/2/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SBRLRTE4	19	34	32	71	261	465	650	597	437	454	426	413	420	442	385	411	364	334	209	165	108	66	23	21
SBLLRTE4	12	15	15	54	136	290	464	374	182	162	155	150	136	157	170	192	215	177	94	39	26	24	12	8
NBLLRTE4	18	19	17	10	34	60	144	136	128	157	204	231	218	292	372	466	508	300	229	157	126	69	51	25
NBRLRTE4	18	16	13	27	66	152	254	253	250	307	318	371	339	397	503	563	575	366	305	230	163	109	78	36
10/3/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SBRLRTE4	25	21	36	75	244	484	661	538	506	430	393	392	397	407	398	436	394	349	237	148	121	81	28	14
SBLLRTE4	8	11	13	54	145	299	473	351	179	155	165	155	156	155	183	177	165	109	64	45	54	16	12	5
NBLLRTE4	13	15	10	12	30	59	119	132	129	149	196	198	242	265	396	502	515	314	236	158	112	62	57	32
NBRLRTE4	25	14	14	26	74	143	235	246	245	289	328	390	364	426	498	590	684	445	359	267	174	89	79	51
10/4/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SBRLRTE4	22	23	34	65	240	439	689	595	478	465	417	396	391	410	432	451	417	386	275	143	107	80	38	25
SBLLRTE4	7	14	15	50	144	297	476	370	202	158	165	132	184	173	202	165	179	155	92	34	25	21	24	11
NBLLRTE4	14	13	11	14	44	79	113	129	169	159	186	225	242	285	361	557	572	351	251	190	144	77	52	22
NBRLRTE4	32	12	15	20	76	141	242	234	274	310	334	381	380	413	504	623	680	463	375	281	206	126	83	24
10/5/2007	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SBRLRTE4	25	25	40	77	227	408	605	576	491	441	454	450	362	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
SBLLRTE4	11	9	25	38	138	254	438	322	180	178	179	194	143	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
NBLLRTE4	22	19	13	13	36	63	129	121	156	200	279	322	229	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
NBRLRTE4	24	19	21	23	61	159	270	216	306	330	391	446	321	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

ATRC
125 Manley Road
Auburn, ME 04210

ATRC :
: Oak Hill Rd, Auburn
Title3 : East of Center S

Site: 10405808991
Date: 10/22/02

Interval	WB			EB			Combined			Day: Tuesday
Begin	AM		PM	AM		PM	AM		PM	
12:00	2	2	*	1	1	*	3	3	*	
12:15	0		*	0		*	0		*	
12:30	0		*	0		*	0		*	
12:45	0		*	0		*	0		*	
01:00	0	0	*	0	0	*	0	0	*	
01:15	0		*	0		*	0		*	
01:30	0		*	0		*	0		*	
01:45	0		*	0		*	0		*	
02:00	0	0	*	1	1	*	1	1	*	
02:15	0		*	0		*	0		*	
02:30	0		*	0		*	0		*	
02:45	0		*	0		*	0		*	
03:00	0	0	*	0	0	*	0	0	*	
03:15	0		*	0		*	0		*	
03:30	0		*	0		*	0		*	
03:45	0		*	0		*	0		*	
04:00	0	1	*	0	1	*	0	2	*	
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04:30	0		*	0		*	0		*	
04:45	0		*	0		*	0		*	
05:00	0	0	*	0	2	*	0	2	*	
05:15	0		*	0		*	0		*	
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05:45	0		*	1		*	1		*	
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06:15	0		*	1		*	1		*	
06:30	0		*	0		*	0		*	
06:45	1		*	4		*	5		*	
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07:30	1		*	2		*	3		*	
07:45	3		*	1		*	4		*	
08:00	2	9	*	1	4	*	3	13	*	
08:15	3		*	1		*	4		*	
08:30	1		*	0		*	1		*	
08:45	3		*	2		*	5		*	
09:00	3	7	*	3	6	*	6	13	*	
09:15	0		*	2		*	2		*	
09:30	0		*	0		*	0		*	
09:45	4		*	1		*	5		*	
10:00	2	9	*	2	9	*	4	18	*	
10:15	4		*	4		*	8		*	
10:30	2		*	1		*	3		*	
10:45	1		*	2		*	3		*	
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11:30	1		*	1		*	2		*	
11:45	4		*	5		*	9		*	
Totals	46		0	48		0	94		0	
Split%	48.9		*	51.1		*				
Day Totals		46			48			94		
Day Splits		48.9			51.1					
Peak Hour	09:45		*	06:45		*	09:45		*	
Volume	12		*	14		*	20		*	
Factor	0.75		*	0.70		*	0.63		*	

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Oak Hill Rd, Auburn
Title3 : East of Center S

Site: 10405808991
Date: 10/21/02

Interval	WB				EB				Combined				Day: Monday
Begin	AM		PM		AM		PM		AM		PM		
12:00	*		1	5	*		1	5	*		2	10	
12:15	*		1		*		3		*		4		
12:30	*		2		*		0		*		2		
12:45	*		1		*		1		*		2		
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01:15	*		2		*		4		*		6		
01:30	*		1		*		0		*		1		
01:45	*		5		*		1		*		6		
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02:45	*		6		*		3		*		9		
03:00	*		3	21	*		4	15	*		7	36	
03:15	*		10		*		3		*		13		
03:30	*		6		*		5		*		11		
03:45	*		2		*		3		*		5		
04:00	*		3	16	*		2	7	*		5	23	
04:15	*		5		*		1		*		6		
04:30	*		5		*		3		*		8		
04:45	*		3		*		1		*		4		
05:00	*		2	23	*		1	7	*		3	30	
05:15	*		10		*		2		*		12		
05:30	*		7		*		2		*		9		
05:45	*		4		*		2		*		6		
06:00	*		1	16	*		2	9	*		3	25	
06:15	*		1		*		0		*		1		
06:30	*		8		*		7		*		15		
06:45	*		6		*		0		*		6		
07:00	*		4	13	*		2	5	*		6	18	
07:15	*		2		*		2		*		4		
07:30	*		3		*		0		*		3		
07:45	*		4		*		1		*		5		
08:00	*		0	2	*		1	5	*		1	7	
08:15	*		2		*		2		*		4		
08:30	*		0		*		1		*		1		
08:45	*		0		*		1		*		1		
09:00	*		2	2	*		0	1	*		2	3	
09:15	*		0		*		0		*		0		
09:30	*		0		*		0		*		0		
09:45	*		0		*		1		*		1		
10:00	*		2	2	*		1	1	*		3	3	
10:15	*		0		*		0		*		0		
10:30	*		0		*		0		*		0		
10:45	1		0		2		0		3		0		
11:00	0	6	0	1	3	6	1	3	3	12	1	4	
11:15	2		0		0		0		2		0		
11:30	1		1		2		2		3		3		
11:45	3		0		1		0		4		0		
Totals	7		123		8		72		15		195		
Split%	46.7		63.1		53.3		36.9						
Day Totals		130				80				210			
Day Splits		61.9				38.1							
Peak Hour	11:00		02:45		10:45		02:45		11:00		02:45		
Volume	6		25		7		15		12		40		
Factor	0.50		0.63		0.58		0.75		0.75		0.77		

125 Manley Road
Auburn, ME 04210

ATRC :
: Martin Street
Title3 : Auburn, ME

Site: 10405607518
Date: 10/22/02

Interval	WB				EB				Combined				Day: Tuesday
Begin	AM		PM		AM		PM		AM		PM		
12:00	0	0	4	10	0	0	1	3	0	0	5	13	
12:15	0		4		0		2		0		6		
12:30	0		1		0		0		0		1		
12:45	0		1		0		0		0		1		
01:00	0	0	0		0	0	0		0	0	0		
01:15	0		0		0		0		0		0		
01:30	0		0		0		0		0		0		
01:45	0		*		0		*		0		*		
02:00	0	0	*		0	0	*		0	0	*		
02:15	0		*		0		*		0		*		
02:30	0		*		0		*		0		*		
02:45	0		*		0		*		0		*		
03:00	0	0	*		0	0	*		0	0	*		
03:15	0		*		0		*		0		*		
03:30	0		*		0		*		0		*		
03:45	0		*		0		*		0		*		
04:00	0	1	*		0	0	*		0	1	*		
04:15	0		*		0		*		0		*		
04:30	0		*		0		*		0		*		
04:45	1		*		0		*		1		*		
05:00	0	1	*		0	0	*		0	1	*		
05:15	0		*		0		*		0		*		
05:30	1		*		0		*		1		*		
05:45	0		*		0		*		0		*		
06:00	2	12	*		0	2	*		2	14	*		
06:15	2		*		0		*		2		*		
06:30	4		*		2		*		6		*		
06:45	4		*		0		*		4		*		
07:00	5	30	*		1	6	*		6	36	*		
07:15	2		*		2		*		4		*		
07:30	11		*		1		*		12		*		
07:45	12		*		2		*		14		*		
08:00	9	32	*		0	4	*		9	36	*		
08:15	11		*		3		*		14		*		
08:30	10		*		1		*		11		*		
08:45	2		*		0		*		2		*		
09:00	4	13	*		0	2	*		4	15	*		
09:15	0		*		1		*		1		*		
09:30	6		*		1		*		7		*		
09:45	3		*		0		*		3		*		
10:00	4	11	*		0	0	*		4	11	*		
10:15	0		*		0		*		0		*		
10:30	5		*		0		*		5		*		
10:45	2		*		0		*		2		*		
11:00	6	12	*		1	3	*		7	15	*		
11:15	1		*		2		*		3		*		
11:30	1		*		0		*		1		*		
11:45	4		*		0		*		4		*		
Totals	112		10		17		3		129		13		
Split%	86.8		76.9		13.2		23.1						
Day Totals		122				20				142			
Day Splits		85.9				14.1							
Peak Hour	07:30		12:00		07:00		12:00		07:30		12:00		
Volume	43		10		6		3		49		13		
Factor	0.90		0.63		0.75		0.38		0.88		0.54		

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Martin Street
Title3 : Auburn, ME

Site: 10405607518
Date: 10/21/02

Interval	WB			EB			Combined			Day: Monday
Begin	AM	PM		AM	PM		AM	PM		
12:00	*	5	12	*	0	1	*	5	13	
12:15	*	3		*	1		*	4		
12:30	*	1		*	0		*	1		
12:45	*	3		*	0		*	3		
01:00	*	2	8	*	0	1	*	2	9	
01:15	*	3		*	1		*	4		
01:30	*	0		*	0		*	0		
01:45	*	3		*	0		*	3		
02:00	*	0	13	*	0	4	*	0	17	
02:15	*	3		*	2		*	5		
02:30	*	8		*	2		*	10		
02:45	*	2		*	0		*	2		
03:00	*	18	35	*	3	7	*	21	42	
03:15	*	5		*	2		*	7		
03:30	*	8		*	0		*	8		
03:45	*	4		*	2		*	6		
04:00	*	8	29	*	0	4	*	8	33	
04:15	*	8		*	2		*	10		
04:30	*	9		*	2		*	11		
04:45	*	4		*	0		*	4		
05:00	*	5	29	*	2	5	*	7	34	
05:15	*	8		*	0		*	8		
05:30	*	4		*	1		*	5		
05:45	*	12		*	2		*	14		
06:00	*	1	13	*	0	2	*	1	15	
06:15	*	2		*	1		*	3		
06:30	*	6		*	0		*	6		
06:45	*	4		*	1		*	5		
07:00	*	10	19	*	0	3	*	10	22	
07:15	*	4		*	2		*	6		
07:30	*	5		*	0		*	5		
07:45	*	0		*	1		*	1		
08:00	*	2	12	*	0	2	*	2	14	
08:15	*	2		*	0		*	2		
08:30	*	4		*	1		*	5		
08:45	*	4		*	1		*	5		
09:00	*	3	5	*	0	0	*	3	5	
09:15	*	0		*	0		*	0		
09:30	*	2		*	0		*	2		
09:45	*	0		*	0		*	0		
10:00	*	1	5	*	0	1	*	1	6	
10:15	*	2		*	0		*	2		
10:30	*	0		*	0		*	0		
10:45	*	2		*	1		*	3		
11:00	*	0	0	*	0	0	*	0	0	
11:15	*	0		*	0		*	0		
11:30	0	0		0	0		0	0		
11:45	0	0		0	0		0	0		
Totals	0	180		0	30		0	210		
Split%	*	85.7		*	14.3					

Day Totals	180	30	210
Day Splits	85.7	14.3	

Peak Hour	*	03:00	*	02:15	*	03:00
Volume	*	35	*	7	*	42
Factor	*	0.49	*	0.58	*	0.50

ATRC
125 Manley Road
Auburn, ME 04210

ATRC :
: Fair Street
Title3 : Auburn, ME

Site: 10405607212
Date: 10/22/02

Interval	WB			EB			Combined			Day: Tuesday
Begin	AM		PM	AM		PM	AM		PM	
12:00	1	1	*	0	0	*	1	1	*	
12:15	0		*	0		*	0		*	
12:30	0		*	0		*	0		*	
12:45	0		*	0		*	0		*	
01:00	0	0	*	0	0	*	0	0	*	
01:15	0		*	0		*	0		*	
01:30	0		*	0		*	0		*	
01:45	0		*	0		*	0		*	
02:00	0	1	*	0	0	*	0	1	*	
02:15	1		*	0		*	1		*	
02:30	0		*	0		*	0		*	
02:45	0		*	0		*	0		*	
03:00	0	0	*	0	0	*	0	0	*	
03:15	0		*	0		*	0		*	
03:30	0		*	0		*	0		*	
03:45	0		*	0		*	0		*	
04:00	0	1	*	0	0	*	0	1	*	
04:15	1		*	0		*	1		*	
04:30	0		*	0		*	0		*	
04:45	0		*	0		*	0		*	
05:00	0	0	*	0	1	*	0	1	*	
05:15	0		*	0		*	0		*	
05:30	0		*	0		*	0		*	
05:45	0		*	1		*	1		*	
06:00	0	11	*	2	8	*	2	19	*	
06:15	2		*	5		*	7		*	
06:30	4		*	0		*	4		*	
06:45	5		*	1		*	6		*	
07:00	4	17	*	2	8	*	6	25	*	
07:15	0		*	1		*	1		*	
07:30	4		*	1		*	5		*	
07:45	9		*	4		*	13		*	
08:00	8	28	*	5	11	*	13	39	*	
08:15	14		*	3		*	17		*	
08:30	4		*	2		*	6		*	
08:45	2		*	1		*	3		*	
09:00	4	11	*	1	7	*	5	18	*	
09:15	4		*	1		*	5		*	
09:30	2		*	3		*	5		*	
09:45	1		*	2		*	3		*	
10:00	2	13	*	0	2	*	2	15	*	
10:15	2		*	1		*	3		*	
10:30	5		*	1		*	6		*	
10:45	4		*	0		*	4		*	
11:00	3	7	*	3	4	*	6	11	*	
11:15	1		*	1		*	2		*	
11:30	2		*	0		*	2		*	
11:45	1		*	0		*	1		*	
Totals	90		0	41		0	131		0	
Split%	68.7		*	31.3		*				
Day Totals		90			41			131		
Day Splits		68.7			31.3					
Peak Hour	07:30		*	07:45		*	07:45		*	
Volume	35		*	14		*	49		*	
Factor	0.63		*	0.70		*	0.72		*	

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Fair Street
Title3 : Auburn, ME

Site: 10405607212
Date: 10/21/02

Interval	WB				EB				Combined				Day: Monday
Begin	AM		PM		AM		PM		AM		PM		
12:00	*		1	11	*		0	4	*		1	15	
12:15	*		6		*		2		*		8		
12:30	*		2		*		1		*		3		
12:45	*		2		*		1		*		3		
01:00	*		0	7	*		1	3	*		1	10	
01:15	*		1		*		1		*		2		
01:30	*		4		*		0		*		4		
01:45	*		2		*		1		*		3		
02:00	*		6	12	*		1	5	*		7	17	
02:15	*		1		*		0		*		1		
02:30	*		3		*		3		*		6		
02:45	*		2		*		1		*		3		
03:00	*		9	35	*		4	13	*		13	48	
03:15	*		10		*		4		*		14		
03:30	*		8		*		4		*		12		
03:45	*		8		*		1		*		9		
04:00	*		4	23	*		2	9	*		6	32	
04:15	*		4		*		4		*		8		
04:30	*		8		*		2		*		10		
04:45	*		7		*		1		*		8		
05:00	*		8	28	*		0	5	*		8	33	
05:15	*		10		*		2		*		12		
05:30	*		6		*		1		*		7		
05:45	*		4		*		2		*		6		
06:00	*		4	7	*		0	2	*		4	9	
06:15	*		2		*		1		*		3		
06:30	*		1		*		0		*		1		
06:45	*		0		*		1		*		1		
07:00	*		4	12	*		0	5	*		4	17	
07:15	*		5		*		3		*		8		
07:30	*		1		*		0		*		1		
07:45	*		2		*		2		*		4		
08:00	*		1	4	*		0	1	*		1	5	
08:15	*		0		*		0		*		0		
08:30	*		2		*		0		*		2		
08:45	*		1		*		1		*		2		
09:00	*		0	1	*		1	1	*		1	2	
09:15	*		1		*		0		*		1		
09:30	*		0		*		0		*		0		
09:45	*		0		*		0		*		0		
10:00	*		0	2	*		3	3	*		3	5	
10:15	*		0		*		0		*		0		
10:30	*		0		*		0		*		0		
10:45	*		2		*		0		*		2		
11:00	1	4	0	0	0	1	2	2	1	5	2	2	
11:15	0		0		0		0		0		0		
11:30	2		0		1		0		3		0		
11:45	1		0		0		0		1		0		
Totals	4		142		1		53		5		195		
Split%	80.0		72.8		20.0		27.2						

Day Totals		146				54				200			
Day Splits		73.0				27.0							
Peak Hour	11:00		03:00		11:00		02:45		11:00		03:00		
Volume	4		35		1		13		5		48		
Factor	0.50		0.88		0.25		0.81		0.42		0.86		

Memorandum

To: Roland Miller, Director of Economic Development

From: Jennifer Williams, Transportation Planner/Engineer

Date: March 31, 2003

Re: East Auburn Traffic Signal Analysis

I have performed a traffic signal warrant analysis of Route 4 in East Auburn, in the vicinity of Fair Street, Martin Street, Oak Hill Road and Turner Street. This analysis was conducted per the procedures contained in the Manual on Uniform Traffic Control Devices (MUTCD), December 2000. In order for a traffic signal to be installed, the location should meet one or more warrants as published in the MUTCD.

Considering the low traffic volumes on Fair Street, Martin Street, and Oak Hill Road, the analysis was conducted under the assumption of these three access points combined into one single access.

Traffic volume counts were conducted in various locations along the identified roads from October 21st through October 24th, 2002, and October 28th to October 30th, 2002. Utilizing the 2002 Weekly Group Mean Factor resulted in an adjusted peak hour volume on Route 4 of 1,780 vehicles. The raw traffic count data is enclosed.

Warrant 1, Eight-Hour Vehicular Volume (Interruption of Continuous Traffic, Condition B) – This warrant requires 900 vehicles per hour, for each of eight hours, on Center Street/Route 4 (total of both approaches) AND 75 vehicles per hour, for each of eight hours, (one direction only) on either Turner Street or the Fair/Martin/Oak Hill combination. The volumes on Center Street satisfy this criterion; however, the volumes on Turner Street or the Fair/Martin/Oak Hill combination do not satisfy this criterion; therefore, **this warrant is not met.**

Warrant 2, Four-Hour Vehicular Volume – Based on the hourly volumes on Center Street/Route 4, the corresponding hourly volumes for the same four-hour period on either Turner Street or the Fair/Martin/Oak Hill combination must be at least 80 vehicles per hour (one approach only). Neither the volumes on Turner Street or the Fair/Martin/Oak Hill combination satisfy this criterion; therefore, **this warrant is not met.**

Warrant 3, Peak Hour - The peak hour signal warrant is intended for use only in unusual cases. Based on the peak hour traffic volumes (from the October 2002 counts) for Center Street, the peak hour volume on the minor approach, either Turner Street or the Fair/Martin/Oak Hill combination must be approximately 100 vehicles per hour. The minor approach volumes do not meet this criterion; therefore, **this warrant is not met.**

Warrant 4, Pedestrian Volume – This warrant requires 100 crossings per hour for each of four hours, OR 190 crossings for one hour; AND fewer than 60 gaps, of adequate length, per hour in the traffic stream. Data was not collected for this evaluation, but it is unlikely that pedestrian volumes at this location would satisfy this criterion; therefore, **this warrant was not evaluated.**

Warrant 5, School Crossing – The school crossing signal warrant is intended for application whereby school children crossing the major street is a principal reason to consider installing a traffic signal. While there is a school not too far from this location, the school children are not walking across Center Street; therefore, **this warrant is not applicable to this location.**

Warrant 6, Coordinated Signal System – **This warrant is not applicable.**

Warrant 7, Crash Experience – The crash experience warrant is intended for application whereby the severity and frequency of crashes are the principal reasons to consider installing a traffic signal. This warrant requires the satisfaction of a number of criteria; one of which is five or more accidents of the type that could be corrected by a traffic signal within a 12-month period. Going back through the past three, three-year reporting periods, this location does not meet MDOT's definition of a High Crash Location (HCL). This location does not seem to satisfy the criteria; therefore, **this warrant is not met.**

Warrant 8, Roadway Network – **This warrant is not applicable to this location.**

In summary, a traffic signal on Route 4 in East Auburn, in the vicinity of Fair Street, Martin Street, Oak Hill Road and Turner Street, does **not** meet the warrants outlined in the MUTCD.

In addition to completing a signal warrant analysis, I have met with Steve Landry, MDOT's Assistant State Traffic Engineer, to look at the area and discuss any possible remedies. Based on the geometrics of the location, there does **not** appear to be any safe location to install a signal, even if one were warranted. Due to both the horizontal and the vertical curves along this segment of Route 4, sight distance is a primary concern.

In order to try to reduce the potential conflicts in the area of Turner Street, Martin Street, and Route 4, I offer the following suggestions:

- Close off the 'driveway' that connects from Center Street to Martin Street at Center Street/Route 4;

- Make the end of Martin Street, closest to Center Street/Route 4, a one-way, providing access into the East Auburn neighborhood while not allowing access back onto Route 4. This will shift traffic to either Fair Street or Oak Hill Road; however, given the relatively low traffic volumes, this slight increase should not be noticeable.

In summary, given the geometrics of the area, options for 'easy' improvements are quite limited. If you have any questions or require any additional information, please contact me at 783-9186 or jwilliams@avcog.org.

DRAFT

Meeting Notes

East Auburn Community Meeting
East Auburn Community School
Tuesday, March 26, 2002

Roland Miller began the meeting at 7:30 p.m. with a brief welcome and introductions of ATRC and City of Auburn staff present, including: Roland Miller (Auburn), Jennifer Williams (ATRC), Lee Jay Feldman (Auburn), and Robert Belz (Auburn).

Residents were invited to speak of issues/concerns and suggestions for improvements along Route 4, from the Causeway to Stetson Road. One of the general concerns voiced by those present was the speed of vehicles traveling along Route 4. While the posted speed limit is 40 mph, many vehicles seem to travel in excess of that. Arthur Whitman (East Auburn Community Unit) presented some overall comments regarding the area

Fair Street/Boat Launch Access/Route 4

Henry Davenport - 1964 there were approximately 19,000 veh/day along this stretch of Route 4; 2002 there are approximately 27,000 veh/day. While we may not need to do anything now, we will soon.

Terry Delano (former Auburn PD?) - 4 main causes of accidents/conflicts: turning movements; poor visibility/sight distance; speed of vehicles; lack of platooning. In a relatively short stretch of road, the posted speed limit drops from 55 mph to 40 mph to 35 mph. Vehicles are trying to cross 4 lanes of traffic.

Jan Reed, Oak Hill Rd - It is hard to watch/keep track of 4 lanes of traffic when trying to access Route 4, especially with many drivers not using signals when changing lanes.

Web Harrison, Oak Hill Rd - Poor sight distance is an issue. During times of heavy traffic, will use Fair Street to access Route 4, but when traffic is lighter, prefers Martin Street. Southbound traffic on Route 4 nearly misses rear-ending vehicles waiting to turn left onto Fair Street; mainly due to speeds. During the winter, with snow banks, the sight distance is horrible.

Beth Whitman, formerly Oak Hill Rd - As per previous discussions with Kyle Hall (former AVCOG), understands that Route 4 was designed as 'super highway' and as such, will virtually never get vehicles to slow down. In order to slow vehicles, particularly southbound, maybe the road should be redesigned beginning at a point further north. Also, the boat launch access has further compounded the situation in the summer; it is confusing to drivers. Finally, if all the access points are combined into one, will it meet signal warrants?

Barry Fraser - Son (pedestrian) was hit by a southbound vehicle while crossing Route 4 near the boat launch. The speed of southbound traffic is too fast. Maybe flashing warning lights should be installed with the speed limit signs, especially where the speed limit drops.

Arnold Burgess, Turner St - During fishing season, there are often times trucks with trailers parked along Fair & Martin Streets, creating more problems for drivers.

Stephanie Peasley, West Bowdoin St - School buses uses Fair Street regularly to get to and from the East Auburn School. Sight distance and vehicle speeds are issues. Would a signal save lives?

Marianne Whitman, Oak Hill Rd - If traveling southbound on Route 4, it is very difficult to turn left onto Fair Street; many times have had to go further south, then turn around and backtrack.

Martin Street/Route 4

Terry Delano - City had previously tried to discontinue the "driveway with 2 stop signs", but was unsuccessful. Makes for a confusing intersection. During the winter, the snowplows leave an ice ridge approximately 10' away from the curb, making the right turn from Route 4 onto Martin St difficult. In effect, the road is approximately 10' narrower during the winter months.

Arthur Whitman - There is a utility pole quite close to the road at that intersection, and it is not well lit. At nighttime, it is especially difficult to judge to location of the pole versus Martin Street.

Web Harrison - In order to maneuver around the utility pole, northbound traffic almost has to bear left a bit before turning right. Could the pole be relocated, and the turn widened?

Tim Letourneau, Turner St - If Martin Street is closed, would it help the Fair Street intersection meet signal warrants?

Bill Saucier, Blanchard Rd - Martin Street is an easy "bail out". Maybe Martin St should be kept as a One-Way in only.

Beth Whitman - How about a deceleration lane for Fair Street?

Tim Ouellette, Oak Hill Rd - Many people are using the driveway at Rainbow Bicycle as a turnaround onto Martin Street, ignoring the stop sign.

Terry Delano - Due to the horizontal alignment of Route 4, the utility pole just beyond Martin Street gets hit often. Should it be moved/removed?

Arthur Whitman - School buses often have to use to parking area along the lake as a turnaround.

Turner Street/Route 4

Buck Buchanan, Turner St - Have there been any updated traffic counts since SDRHS relocated? The 'island' where the gas station is located is elevated, making it difficult to see around the corner. The gas station has changed hands many times over the years. How come no design changes were required of new owners? With 2 entrances onto Center Street, vehicles are often "hanging out" into the travel way. Maybe the right, southbound lane should become a right turn only lane from Route 4 onto Turner St.

Mike Dubois, Center St (across from Turner St) - Will never use Turner Street to access Route 4; it is too dangerous.

Deborah Houle, 1390 Turner St - Speed is biggest problem, especially students to/from CMTC. Over the years, CMTC has caused increases in area traffic because the majority of the students commute. SDRHS has not had a real big impact. Due to the increased volume of traffic, and higher than recommended speeds, walking in the area is also very dangerous. Many drivers also seem to be using Turner St to access Mt Auburn Ave and the overpass. Personally, avoids the Turner St/Route 4 intersection.

Jan Reed - Sight distance at the intersection is very poor; the alignment of the road is bad, and there are signs to contend with, as well as the utility pole at the island, and the Fireside Stove Shop. Also, the gas station offers discounted prices on Tuesday, so the issue is even worse, with vehicles stopped in traffic waiting to get into the gas station. Often times, drivers have to 'nose into traffic' to be able to see.

Beth Whitman - If traveling northbound, will avoid Turner Street; however, if traveling southbound, then will use Turner Street.

Art Lagasse - Sundays are awful as well because of the Baptist Church near the intersection; parked vehicles line both sides of Turner Street.

Web Harrison - Vehicles stopped in the travel way, waiting to access the gas station are a hazard.

Tim Letourneau - Turner Street is posted no through truck traffic at Stetson Road, but it is not enforced.

Henry Dubois - Trucks are speeding on Route 4.

Buck Buchanan - The streetlight at the gas station does not always work.

Oak Hill Road (west)/Route 4

Sheila Letourneau - The school bus has to cross Route 4 at this location, and sight distance is poor.

Buck Buchanan - Lack of sight distance is an issue.

Beth Whitman - Suggestion: Make Turner Street one-way, southbound only and narrow the road; swap land with the gas station to improve sight distance.

Linda Law, Oak Hill Rd - Always uses Stetson Road and Fair Street to access Route 4.

Oak Hill Road (east)/Route 4

Sight distance seems reasonable.

Terry Delano - Sight distance is deceiving looking north; can't clearly see southbound vehicles, especially due to speeds and with snow banks. It is hard to determine what lane the vehicles are in.

??? - This would be the most beneficial intersection for a signal.

Barry ? - Wouldn't a signal here create a 'bottleneck' on the westerly leg of Oak Hill Road (the short leg)?

Linda Law - Afraid that a signal at Oak Hill Road may lead to increased traffic on Oak Hill Road, and speeds are already too high there.

??? - Part of the reason that speeds on Oak Hill Rd are high is because of tailgating vehicles on Route 4, northbound. Vehicles can't slow down enough to make the right turn, and consequently have to make the turn at a faster speed then would like.

Web Harrison - It is a tight right turn onto Oak Hill Rd, and vehicles need to slow dramatically to make the turn. The problem is that vehicles have begun to increase their speed prior to this location.

Buck Buchanan - What about a fifth, turning, lane? Has to stop in traffic in the left lane (the fast lane) to get into driveway.

Jan Reed - As an interim measure, what about installing large flashing signs indicating the posted speed limit.

Terry Delano - Auburn PD can use radar and a sign to determine the need for enforcement.

Bobbin Mill Drive/Ivy League Streets

Arnold Burgess – Southbound on Turner Street, near JaLynne Trailer Park, as you crest the knoll, speeds are a problem.

Deborah Houle – Vehicles do not stay in the proper lane while making the curve and cresting the knoll (Turner St). It is also dangerous for bicyclists/pedestrians/joggers.

Buck Buchanan – Especially on the curve near CMTC (Turner St), vehicles do not stay in their lane.

Leslie ?, 1305 Turner St – Even though it is a posted road (Turner St), trucks are still speeding in front of JaLynne Park.

Xivray St/Hampden St/Niskayuna St

Tim Ouellette – Sight distance is good, but it can still be a long wait for gaps in the traffic flow.

??? – Sight distance at Hampden St/Turner St intersection is poor.

Stetson Road

Shirley Dana, Stetson Rd – The signal helps, but it is not perfect; vehicles do not always stop on the red signal on Center St.

Web Harrison – Wife was hit at Stetson Rd/Center St intersection by a vehicle that ran the red light.

Suzanne Roy, Stetson Rd near Turner St – Stetson Rd is narrow at Center Street; the road geometrics are bad. Concerned with vehicles turning from Turner St to Stetson Rd. Driveway is close to intersection, and has almost been rear ended many times while waiting to access driveway.

Beth Whitman – Suggestion: Widen Stetson Road; remove interconnect of signal with signal at Auburn Plaza; make Stetson Rd access to Plaza more primary than Center St access; use more signal interconnects between the Plaza, the malls, etc.

Joe Maloney, North River Rd – That signal is short. UPS uses it often. Probably about 90% of eastbound Stetson Road traffic turns left onto Center Street; you really need to be aware of turning traffic 'cutting you off' if you are westbound on Stetson Road.

Shirley Dana – It is virtually impossible for Stetson Road westbound vehicles to cross Center Street, with all the opposing turning traffic.

Walter Law - Is it possible to synchronize the signals from Stetson Road to the VVMB?

Beth Whitman – How about eliminating some of the signals in that stretch, especially where there are two signalized entrances for one parking lot/facility.

What is next?

Henry Dubois – Suggest talking to school bus drivers to get their input.

We will form a Citizen Advisory Committee to work with staff on the development of an RFP, selection of a consultant, and completion of the study.

Terry Delano – What can be done in the short term vs. long term?

Dan ??? – Can the speed limit be reduced?

Dick Fluellen, St. Phillip's Church – If trying to get the speed limit reduced, it should be reduced even before Roy's (southbound).

2/8/05 E. Auburn Issues

JLW, DTC, Roland Miller

recap public mtg – 2/17 5:30-7:00p E. Auburn Community

- what was done
- conclusions
- poss. strategies

crash data

vol. data (raw/factored)

timeline of process

Center St SE/O Oak Hill Rd

1999 - 21100

2001 - 22280

Center St S/O Lake Shore Drive

2001 - 17540

2003 - 19080

Center St @ Turner TL

1999 - 15700

2000 - 16270

2001 - 16000

2002 - 16190

2003 - 18050

2/17/05 ~~EAST~~ AUBURN MTG

lowering speed limit - request
40 - 45 - 55 - 45 in Turner
on Turner also - Church to Solue
School - K-6 in next ±2 yrs
talk to Steve!

truck restriction enforcement - Turner St

CLTR ⑤ to ③ of Oak Hill

@ lane @ Lake Shore

'01 - '03 HCL's

Turner / Center Node 8992

Center - Oakhill → Turner ~~Link~~ Nodes 8991 - 8992

Rte 4 - Four → CUL (0.04 mi) Nodes 7212 - 7519

Combined (WB approach only)

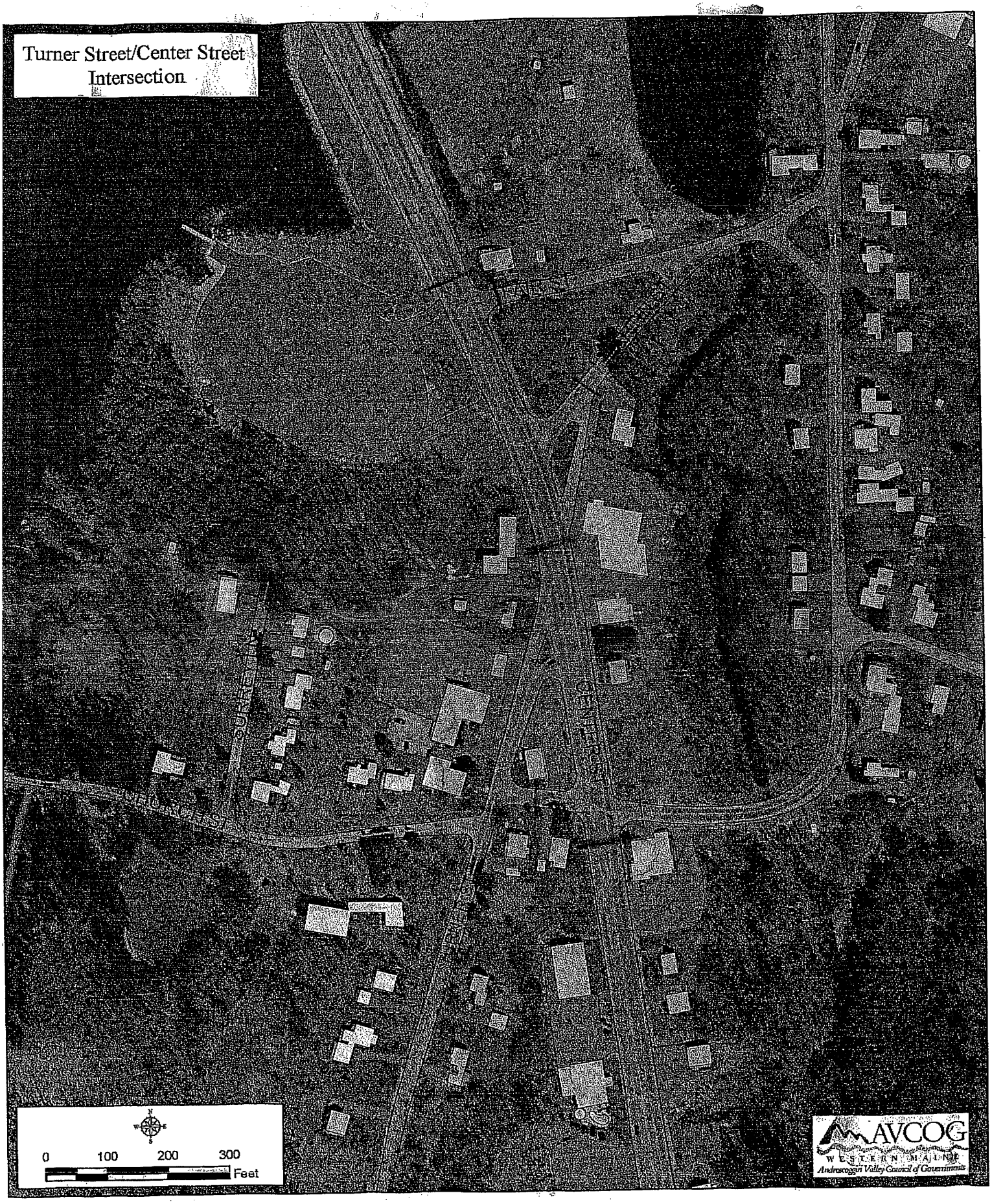
12 AM	3
1	0
2	1
3	0
4	3
5	1
6	24
7	53
8	69
9	31
10	33
11	17
12 PM	28
1	27
2	35
3	91
4	68
5	80
6	36
7	44
8	18
9	8
10	9
11	1

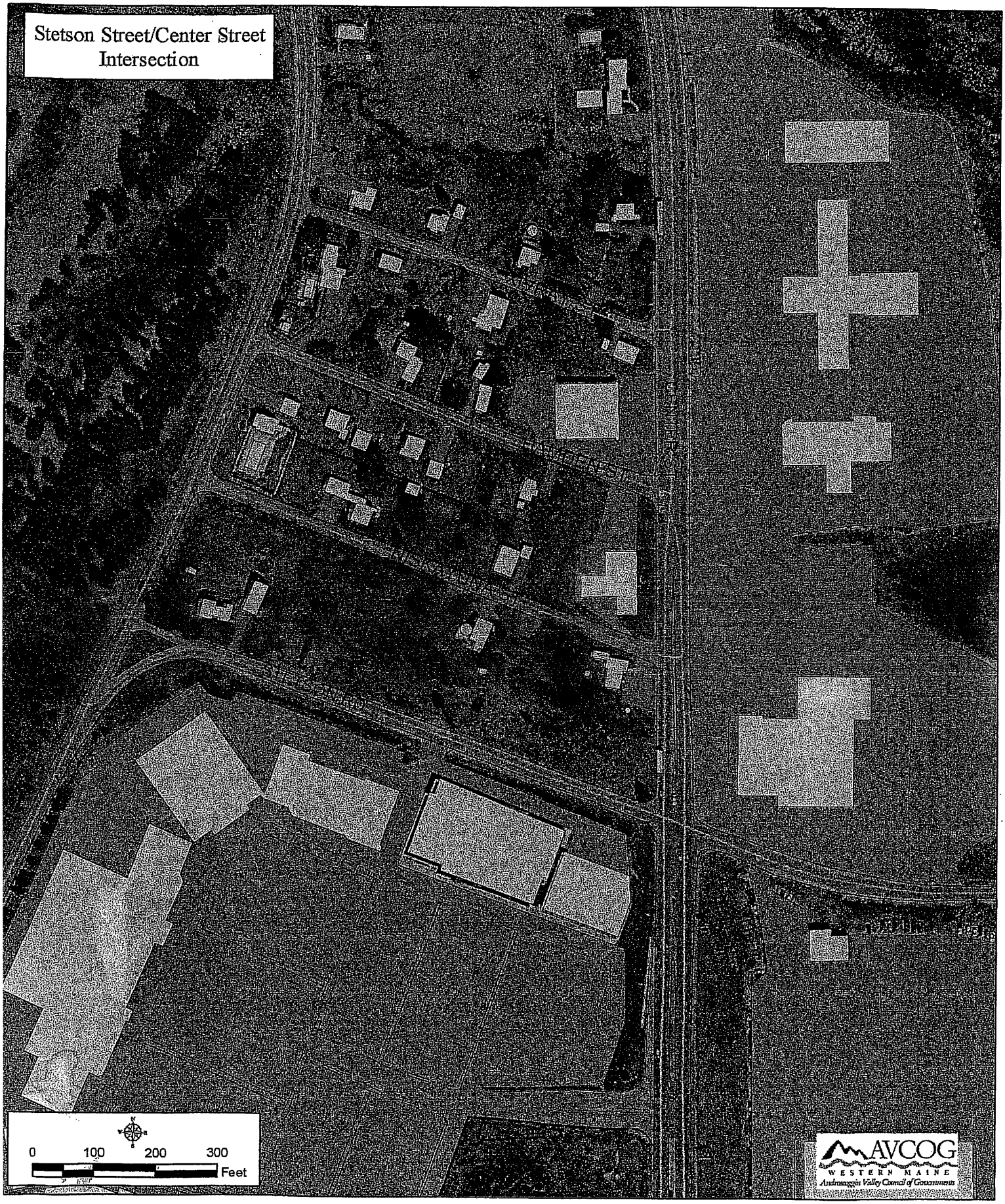
WB/NF

Rte 4 4hrs

3:00 PM	595	+ 742	1337
4	574	+ 738	1314
5	520	+ 620	1140
6	436	+ 408	844

Sat (NB) Not (SB)


Turner Street/Center Street
Intersection
0
100
200
300
Feet
AVCOG
WESTERN MAINE
Androscoggin Valley Council of Governments


Stetson Street/Center Street
Intersection
0
100
200
300
Feet
AVCOG
WESTERN MAINE
Androscoggin Valley Council of Governments

Colby & Brown Streets/ Center Street Intersection

	(28)	29,30,1,2,3	5	107.53	112.36	107.53
October	(5)	6,7,8,9,10	1	107.53	111.11	105.26
	(12)	14,15,16,17	2	104.17	105.26	97.09
	(19)	20,21,22,23,24	3	103.09	101.01	91.74
	(26)	27,28,29,30,31	4	102.04	98.04	85.47
November	(2)	3,4,5,6,7	1	101.01	96.15	82.64
	(9)	10,12,13,14	2	102.04	99.01	83.33
	(16)	17,18,19,20,21	3	102.04	102.04	84.03
	(23)	24,25,26	4	99.01	97.09	80.65
Nov/Dec	(30)	1,2,3,4,5	1	101.01	94.34	79.37
	(7)	8,9,10,11,12	2	96.15	89.29	74.63
	(14)	15,16,17,18,19	3	100.00	94.34	78.74
	(21)	22,23,24,26	4	93.46	90.91	74.63

2003 Maine Transportation Count Book

County	TOWN	STATION	ROAD	LOCATION	TYPE	GROUP	AADT99	AADT00	AADT01	AADT02	AADT03
Androscoggin											
01	AUBURN	01616	0004S	SR 4 (UNION ST) (SB) SW/O HAMPSHIRE ST	L	I	.	.	9630	.	11170
01	AUBURN	06302	0004S	SR 4/US 202 (WSHNGTN)(SB) NE/O MIAMI AVE	L	I	.	9120	9460	9240	9800
01	AUBURN	15016	0004S	SR 4/US 202 (SB)SW/O E HARDSCRABBLE RD	C	I	.	.	.	.	10760
01	AUBURN	00505	0004X	SR 4/11/100/121/US 202 (MINOT) S/O COURT	C	I	.	.	19600	.	.
01	AUBURN	01606	0004X	SR 4 (UNION ST) (NB) SW/O HAMPSHIRE ST	L	I	.	9080	.	.	10770
01	AUBURN	01612	0004X	SR 4 (UNION ST) (SB) NE/O HAMPSHIRE ST	C	I	.	.	.	9520	.
01	AUBURN	02401	0004X	SR 4 (CENTER ST) N/O E TURNER ST	L	I	27980	.	.	.	.
01	AUBURN	02901	0004X	SR 4 (CENTER ST) N/O NORTH RIVER RD	C	I	.	.	28430	.	29140
01	AUBURN	04301	0004X	SR 4/11/100/US 202 (MINOT) N/O HIGH ST	L	I	.	23510	22290	21640	23620
01	AUBURN	06402	0004X	SR 4/US 202 (WSHNGTN)(NB) NE/O MIAMI AVE	L	I	.	9600	10260	9570	10170
01	AUBURN	09905	0004X	SR 4 (CENTER ST) S/O STETSON RD	L	I	19680	.	.	.	.
01	AUBURN	12401	0004X	SR 4 (CENTER ST) N/O BATES ST	L	I	28470	27470	26830	24670	30770
01	AUBURN	15006	0004X	SR 4/US 202 (NB) SW/O E HARDSCRABBLE RD	C	I	.	.	.	.	10520
01	AUBURN	16702	0004X	SR 4/100 (WASHINGTON) NE/O TURKEY LA #1	C	I	.	.	11130	.	10750
01	AUBURN	18904	0004X	SR 4 (CENTER ST) SE/O OAK HILL RD	L	I	21100	.	22280	.	.
01	AUBURN	19105	0004X	SR 4 (CENTER ST) S/O LAKE SHORE DR	C	I	.	.	17540	.	19080
01	AUBURN	19400	0004X	SR 4 (CENTER ST) @ TURNER TL	L	I	15700	16270	16000	16190	18050
01	AUBURN	20100	0004X	SR 4/100/US 202 @ NEW GLOUCESTER TL	L	I	8810	8850	.	9310	9030

01	AUBURN	21201	0004X	SR 4 (CENTER ST) N/O NISKAYUNA ST	C	I	.	.	22760	.	24050
01	AUBURN	00103	0011X	SR 11/US 202 (COURT) E/O GREAT FLS @ BR	L	I	30980	.	.	34300	33980
01	AUBURN	00207	0011X	SR 11/100/US 202 (COURT ST) W/O HIGH ST	C	I	.	.	19360	.	21270
01	AUBURN	00503	0011X	SR 11/100/US 202 (COURT ST) E/O UNION ST	L	I	.	.	.	19180	21710
01	AUBURN	04806	0011X	SR 11/121 (MINOT AVE) SW/O FIRST AVE	C	I	.	.	.	.	19180
01	AUBURN	04902	0011X	SR 11/121 (MINOT AVE) NE/O SHERIDAN AVE	C	I	.	.	14290	.	.
01	AUBURN	07006	0011X	SR 11/121 (MINOT AVE) SW/O POLAND RD	C	I	.	.	.	.	12680
01	AUBURN	07903	0011X	SR 11/121 (MINOT AVE) E/O HOTEL RD	C	I	.	.	15360	.	16610
01	AUBURN	07907	0011X	SR 11/121 (MINOT AVE) W/O HOTEL RD	L	I	.	16280	16470	16950	17390
01	AUBURN	19900	0011X	SR 11/121 (MINOT AVE) @ MINOT TL	L	I	13020	12510	13690	13090	13420
01	AUBURN	10700	0122X	SR 122 (POLAND SPR RD) @ N GLOUCESTER TL	C	I	.	.	5000	.	.
01	AUBURN	17604	0122X	SR 122 (POLAND SPRING RD) SE/O HOTEL RD	C	I	.	.	3130	.	.
01	AUBURN	00105	0136X	SR 136 (MAIN) S/O SR 11/US 202 (COURT)	C	I	.	.	.	.	7740
01	AUBURN	04205	0136X	SR 136 (MAIN ST) S/O ACADEMY ST @RR-XING	L	I	21680	21560	.	20680	21110
01	AUBURN	05408	0136X	SR 136 (RIVERSIDE DR) NW/O DUNN ST	L	I	6920	.	.	.	6330
01	AUBURN	10400	0136X	SR 136 (RIVERSIDE DR) @ DURHAM TL	C	I	.	.	3800	.	3980

ATRC

125 Manley Road
Auburn, ME 04210

ATRC : Center Street (Route 4)
: south of Oak Hill Road
Title3 : Auburn, ME

Site: 010751708991
Date: 10/22/02

Interval	NB			SB			Combined			Day: Tuesday
Begin	AM	PM		AM	PM		AM	PM		
12:00	*	*		*	*		*	*		
12:15	*	*		*	*		*	*		
12:30	*	*		*	*		*	*		
12:45	*	*		*	*		*	*		
01:00	*	*		*	*		*	*		
01:15	*	*		*	*		*	*		
01:30	*	*		*	*		*	*		
01:45	*	*		*	*		*	*		
02:00	*	*		*	*		*	*		
02:15	*	*		*	*		*	*		
02:30	*	86		*	90		*	176		
02:45	*	166		*	199		*	365		
03:00	*	144	595	*	177	856	*	321	1,451	
03:15	*	151		*	228		*	379		
03:30	*	152		*	225		*	377		
03:45	*	148		*	226		*	374		
04:00	*	140	576	*	236	1,076	*	376	1,652	
04:15	*	156		*	276		*	432		
04:30	*	142		*	266		*	408		
04:45	*	138		*	298		*	436		
05:00	*	126	520	*	278	1,132	*	404	1,652	
05:15	*	122		*	318		*	440		
05:30	*	146		*	274		*	420		
05:45	*	126		*	262		*	388		
06:00	*	142	436	*	217	699	*	359	1,135	
06:15	*	119		*	201		*	320		
06:30	*	97		*	152		*	249		
06:45	*	78		*	129		*	207		
07:00	*	78	235	*	156	494	*	234	729	
07:15	*	63		*	120		*	183		
07:30	*	47		*	118		*	165		
07:45	*	47		*	100		*	147		
08:00	*	34	166	*	96	389	*	130	555	
08:15	*	50		*	108		*	158		
08:30	*	50		*	104		*	154		
08:45	*	32		*	81		*	113		
09:00	*	42	154	*	96	316	*	138	470	
09:15	*	42		*	84		*	126		
09:30	*	34		*	80		*	114		
09:45	*	36		*	56		*	92		
10:00	*	36	132	*	48	145	*	84	277	
10:15	*	37		*	39		*	76		
10:30	*	35		*	30		*	65		
10:45	*	24		*	28		*	52		
11:00	*	18	57	*	16	106	*	34	163	
11:15	*	11		*	30		*	41		
11:30	*	14		*	26		*	40		
11:45	*	14		*	34		*	48		
Totals	0	3,123		0	5,502		0	8,625		
Split%	*	36.2		*	63.8					
Day Totals		3,123			5,502			8,625		
Day Splits		36.2			63.8					
Peak Hour	*	02:45		*	04:45		*	04:45		
Volume	*	613		*	1,168		*	1,700		
Factor	*	0.92		*	0.92		*	0.97		

ATRC
125 Manley Road
Auburn, ME 04210

ATRC : Center Street (Route 4)
: south of Oak Hill Road
Title3 : Auburn, ME

Site: 010751708991
Date: 10/23/02

Interval	NB				SB				Combined				Day: Wednesday
Begin	AM		PM		AM		PM		AM		PM		
12:00	12	36	132	570	12	57	130	634	24	93	262	1,204	
12:15	9		138		16		181		25		319		
12:30	7		180		19		169		26		349		
12:45	8		120		10		154		18		274		
01:00	15	52	124	488	9	53	160	683	24	105	284	1,171	
01:15	10		123		8		178		18		301		
01:30	13		130		16		154		29		284		
01:45	14		111		20		191		34		302		
02:00	8	26	0		6	39	0		14	65	0		
02:15	9		*		14		*		23		*		
02:30	7		*		8		*		15		*		
02:45	2		*		11		*		13		*		
03:00	18	54	*		4	30	*		22	84	*		
03:15	6		*		10		*		16		*		
03:30	8		*		8		*		16		*		
03:45	22		*		8		*		30		*		
04:00	16	102	*		2	50	*		18	152	*		
04:15	16		*		18		*		34		*		
04:30	28		*		20		*		48		*		
04:45	42		*		10		*		52		*		
05:00	62	378	*		16	90	*		78	468	*		
05:15	82		*		26		*		108		*		
05:30	88		*		25		*		113		*		
05:45	146		*		23		*		169		*		
06:00	140	733	*		52	233	*		192	966	*		
06:15	156		*		53		*		209		*		
06:30	192		*		62		*		254		*		
06:45	245		*		66		*		311		*		
07:00	204	938	*		87	406	*		291	1,344	*		
07:15	196		*		110		*		306		*		
07:30	236		*		102		*		338		*		
07:45	302		*		107		*		409		*		
08:00	254	828	*		119	493	*		373	1,321	*		
08:15	219		*		116		*		335		*		
08:30	181		*		158		*		339		*		
08:45	174		*		100		*		274		*		
09:00	171	640	*		90	398	*		261	1,038	*		
09:15	151		*		105		*		256		*		
09:30	151		*		105		*		256		*		
09:45	167		*		98		*		265		*		
10:00	142	545	*		99	474	*		241	1,019	*		
10:15	129		*		144		*		273		*		
10:30	116		*		98		*		214		*		
10:45	158		*		133		*		291		*		
11:00	110	550	*		141	541	*		251	1,091	*		
11:15	148		*		140		*		288		*		
11:30	144		*		120		*		264		*		
11:45	148		*		140		*		288		*		
Totals	4,882		1,058		2,864		1,317		7,746		2,375		
Split%	63.0		44.5		37.0		55.5						
Day Totals		5,940				4,181				10,121			
Day Splits		58.7				41.3							
Peak Hour	07:30		12:00		11:00		01:00		07:45		12:15		
Volume	1,011		570		541		683		1,456		1,226		
Factor	0.84		0.79		0.96		0.89		0.89		0.88		

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Fair Street
Title3 : Auburn, ME

Site: 10405607212
Date: 10/21/02

Interval	WB				EB				Combined				Day: Monday
Begin	AM		PM		AM		PM		AM		PM		
12:00	*		1	11	*		0	4	*		1	15	
12:15	*		6		*		2		*		8		
12:30	*		2		*		1		*		3		
12:45	*		2		*		1		*		3		
01:00	*		0	7	*		1	3	*		1	10	
01:15	*		1		*		1		*		2		
01:30	*		4		*		0		*		4		
01:45	*		2		*		1		*		3		
02:00	*		6	12	*		1	5	*		7	17	
02:15	*		1		*		0		*		1		
02:30	*		3		*		3		*		6		
02:45	*		2		*		1		*		3		
03:00	*		9	35	*		4	13	*		13	48	
03:15	*		10		*		4		*		14		
03:30	*		8		*		4		*		12		
03:45	*		8		*		1		*		9		
04:00	*		4	23	*		2	9	*		6	32	
04:15	*		4		*		4		*		8		
04:30	*		8		*		2		*		10		
04:45	*		7		*		1		*		8		
05:00	*		8	28	*		0	5	*		8	33	
05:15	*		10		*		2		*		12		
05:30	*		6		*		1		*		7		
05:45	*		4		*		2		*		6		
06:00	*		4	7	*		0	2	*		4	9	
06:15	*		2		*		1		*		3		
06:30	*		1		*		0		*		1		
06:45	*		0		*		1		*		1		
07:00	*		4	12	*		0	5	*		4	17	
07:15	*		5		*		3		*		8		
07:30	*		1		*		0		*		1		
07:45	*		2		*		2		*		4		
08:00	*		1	4	*		0	1	*		1	5	
08:15	*		0		*		0		*		0		
08:30	*		2		*		0		*		2		
08:45	*		1		*		1		*		2		
09:00	*		0	1	*		1	1	*		1	2	
09:15	*		1		*		0		*		1		
09:30	*		0		*		0		*		0		
09:45	*		0		*		0		*		0		
10:00	*		0	2	*		3	3	*		3	5	
10:15	*		0		*		0		*		0		
10:30	*		0		*		0		*		0		
10:45	*		2		*		0		*		2		
11:00	1	4	0	0	0	1	2	2	1	5	2	2	
11:15	0		0		0		0		0		0		
11:30	2		0		1		0		3		0		
11:45	1		0		0		0		1		0		
Totals	4		142		1		53		5		195		
Split%	80.0		72.8		20.0		27.2						

Day Totals		146				54				200
Day Splits		73.0				27.0				
Peak Hour	11:00		03:00		11:00		02:45		11:00	03:00
Volume	4		35		1		13		5	48
Factor	0.50		0.88		0.25		0.81		0.42	0.86

ATRC :
: Fair Street
Title3 : Auburn, ME

Site: 10405607212
Date: 10/22/02

Interval	WB			EB			Combined			Day: Tuesday
Begin	AM		PM	AM		PM	AM		PM	
12:00	1	1	*	0	0	*	1	1	*	
12:15	0		*	0		*	0		*	
12:30	0		*	0		*	0		*	
12:45	0		*	0		*	0		*	
01:00	0	0	*	0	0	*	0	0	*	
01:15	0		*	0		*	0		*	
01:30	0		*	0		*	0		*	
01:45	0		*	0		*	0		*	
02:00	0	1	*	0	0	*	0	1	*	
02:15	1		*	0		*	1		*	
02:30	0		*	0		*	0		*	
02:45	0		*	0		*	0		*	
03:00	0	0	*	0	0	*	0	0	*	
03:15	0		*	0		*	0		*	
03:30	0		*	0		*	0		*	
03:45	0		*	0		*	0		*	
04:00	0	1	*	0	0	*	0	1	*	
04:15	1		*	0		*	1		*	
04:30	0		*	0		*	0		*	
04:45	0		*	0		*	0		*	
05:00	0	0	*	0	1	*	0	1	*	
05:15	0		*	0		*	0		*	
05:30	0		*	0		*	0		*	
05:45	0		*	1		*	1		*	
06:00	0	11	*	2	8	*	2	19	*	
06:15	2		*	5		*	7		*	
06:30	4		*	0		*	4		*	
06:45	5		*	1		*	6		*	
07:00	4	17	*	2	8	*	6	25	*	
07:15	0		*	1		*	1		*	
07:30	4		*	1		*	5		*	
07:45	9		*	4		*	13		*	
08:00	8	28	*	5	11	*	13	39	*	
08:15	14		*	3		*	17		*	
08:30	4		*	2		*	6		*	
08:45	2		*	1		*	3		*	
09:00	4	11	*	1	7	*	5	18	*	
09:15	4		*	1		*	5		*	
09:30	2		*	3		*	5		*	
09:45	1		*	2		*	3		*	
10:00	2	13	*	0	2	*	2	15	*	
10:15	2		*	1		*	3		*	
10:30	5		*	1		*	6		*	
10:45	4		*	0		*	4		*	
11:00	3	7	*	3	4	*	6	11	*	
11:15	1		*	1		*	2		*	
11:30	2		*	0		*	2		*	
11:45	1		*	0		*	1		*	
Totals	90		0	41		0	131		0	
Split%	68.7		*	31.3		*				
Day Totals		90			41			131		
Day Splits		68.7			31.3					
Peak Hour	07:30		*	07:45		*	07:45		*	
Volume	35		*	14		*	49		*	
Factor	0.63		*	0.70		*	0.72		*	

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Martin Street
Title3 : Auburn, ME

Site: 10405607518
Date: 10/21/02

Interval	WB			EB			Combined			Day: Monday
Begin	AM	PM		AM	PM		AM	PM		
12:00	*	5	12	*	0	1	*	5	13	
12:15	*	3		*	1		*	4		
12:30	*	1		*	0		*	1		
12:45	*	3		*	0		*	3		
01:00	*	2	8	*	0	1	*	2	9	
01:15	*	3		*	1		*	4		
01:30	*	0		*	0		*	0		
01:45	*	3		*	0		*	3		
02:00	*	0	13	*	0	4	*	0	17	
02:15	*	3		*	2		*	5		
02:30	*	8		*	2		*	10		
02:45	*	2		*	0		*	2		
03:00	*	18	35	*	3	7	*	21	42	
03:15	*	5		*	2		*	7		
03:30	*	8		*	0		*	8		
03:45	*	4		*	2		*	6		
04:00	*	8	29	*	0	4	*	8	33	
04:15	*	8		*	2		*	10		
04:30	*	9		*	2		*	11		
04:45	*	4		*	0		*	4		
05:00	*	5	29	*	2	5	*	7	34	
05:15	*	8		*	0		*	8		
05:30	*	4		*	1		*	5		
05:45	*	12		*	2		*	14		
06:00	*	1	13	*	0	2	*	1	15	
06:15	*	2		*	1		*	3		
06:30	*	6		*	0		*	6		
06:45	*	4		*	1		*	5		
07:00	*	10	19	*	0	3	*	10	22	
07:15	*	4		*	2		*	6		
07:30	*	5		*	0		*	5		
07:45	*	0		*	1		*	1		
08:00	*	2	12	*	0	2	*	2	14	
08:15	*	2		*	0		*	2		
08:30	*	4		*	1		*	5		
08:45	*	4		*	1		*	5		
09:00	*	3	5	*	0	0	*	3	5	
09:15	*	0		*	0		*	0		
09:30	*	2		*	0		*	2		
09:45	*	0		*	0		*	0		
10:00	*	1	5	*	0	1	*	1	6	
10:15	*	2		*	0		*	2		
10:30	*	0		*	0		*	0		
10:45	*	2		*	1		*	3		
11:00	*	0	0	*	0	0	*	0	0	
11:15	*	0		*	0		*	0		
11:30	0	0		0	0		0	0		
11:45	0	0		0	0		0	0		
Totals	0	180		0	30		0	210		
Split%	*	85.7		*	14.3					

Day Totals		180			30			210
Day Splits		85.7			14.3			
Peak Hour	*	03:00		*	02:15		*	03:00
Volume	*	35		*	7		*	42
Factor	*	0.49		*	0.58		*	0.50

ATRC :
: Martin Street
Title3 : Auburn, ME

Site: 10405607518
Date: 10/22/02

Interval	WB				EB				Combined				Day: Tuesday
Begin	AM		PM		AM		PM		AM		PM		
12:00	0	0	4	10	0	0	1	3	0	0	5	13	
12:15	0		4		0		2		0		6		
12:30	0		1		0		0		0		1		
12:45	0		1		0		0		0		1		
01:00	0	0	0		0	0	0		0	0	0		
01:15	0		0		0		0		0		0		
01:30	0		0		0		0		0		0		
01:45	0		*		0		*		0		*		
02:00	0	0	*		0	0	*		0	0	*		
02:15	0		*		0		*		0		*		
02:30	0		*		0		*		0		*		
02:45	0		*		0		*		0		*		
03:00	0	0	*		0	0	*		0	0	*		
03:15	0		*		0		*		0		*		
03:30	0		*		0		*		0		*		
03:45	0		*		0		*		0		*		
04:00	0	1	*		0	0	*		0	1	*		
04:15	0		*		0		*		0		*		
04:30	0		*		0		*		0		*		
04:45	1		*		0		*		1		*		
05:00	0	1	*		0	0	*		0	1	*		
05:15	0		*		0		*		0		*		
05:30	1		*		0		*		1		*		
05:45	0		*		0		*		0		*		
06:00	2	12	*		0	2	*		2	14	*		
06:15	2		*		0		*		2		*		
06:30	4		*		2		*		6		*		
06:45	4		*		0		*		4		*		
07:00	5	30	*		1	6	*		6	36	*		
07:15	2		*		2		*		4		*		
07:30	11		*		1		*		12		*		
07:45	12		*		2		*		14		*		
08:00	9	32	*		0	4	*		9	36	*		
08:15	11		*		3		*		14		*		
08:30	10		*		1		*		11		*		
08:45	2		*		0		*		2		*		
09:00	4	13	*		0	2	*		4	15	*		
09:15	0		*		1		*		1		*		
09:30	6		*		1		*		7		*		
09:45	3		*		0		*		3		*		
10:00	4	11	*		0	0	*		4	11	*		
10:15	0		*		0		*		0		*		
10:30	5		*		0		*		5		*		
10:45	2		*		0		*		2		*		
11:00	6	12	*		1	3	*		7	15	*		
11:15	1		*		2		*		3		*		
11:30	1		*		0		*		1		*		
11:45	4		*		0		*		4		*		
Totals	112		10		17		3		129		13		
Split%	86.8		76.9		13.2		23.1						
Day Totals		122				20				142			
Day Splits		85.9				14.1							
Peak Hour	07:30		12:00		07:00		12:00		07:30		12:00		
Volume	43		10		6		3		49		13		
Factor	0.90		0.63		0.75		0.38		0.88		0.54		

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Oak Hill Rd, Auburn
Title3 : East of Center S

Site: 10405808991
Date: 10/21/02

Interval	WB			EB			Combined			Day: Monday
Begin	AM	PM		AM	PM		AM	PM		
12:00	*	1	5	*	1	5	*	2	10	
12:15	*	1		*	3		*	4		
12:30	*	2		*	0		*	2		
12:45	*	1		*	1		*	2		
01:00	*	4	12	*	1	6	*	5	18	
01:15	*	2		*	4		*	6		
01:30	*	1		*	0		*	1		
01:45	*	5		*	1		*	6		
02:00	*	1	10	*	2	8	*	3	18	
02:15	*	3		*	0		*	3		
02:30	*	0		*	3		*	3		
02:45	*	6		*	3		*	9		
03:00	*	3	21	*	4	15	*	7	36	
03:15	*	10		*	3		*	13		
03:30	*	6		*	5		*	11		
03:45	*	2		*	3		*	5		
04:00	*	3	16	*	2	7	*	5	23	
04:15	*	5		*	1		*	6		
04:30	*	5		*	3		*	8		
04:45	*	3		*	1		*	4		
05:00	*	2	23	*	1	7	*	3	30	
05:15	*	10		*	2		*	12		
05:30	*	7		*	2		*	9		
05:45	*	4		*	2		*	6		
06:00	*	1	16	*	2	9	*	3	25	
06:15	*	1		*	0		*	1		
06:30	*	8		*	7		*	15		
06:45	*	6		*	0		*	6		
07:00	*	4	13	*	2	5	*	6	18	
07:15	*	2		*	2		*	4		
07:30	*	3		*	0		*	3		
07:45	*	4		*	1		*	5		
08:00	*	0	2	*	1	5	*	1	7	
08:15	*	2		*	2		*	4		
08:30	*	0		*	1		*	1		
08:45	*	0		*	1		*	1		
09:00	*	2	2	*	0	1	*	2	3	
09:15	*	0		*	0		*	0		
09:30	*	0		*	0		*	0		
09:45	*	0		*	1		*	1		
10:00	*	2	2	*	1	1	*	3	3	
10:15	*	0		*	0		*	0		
10:30	*	0		*	0		*	0		
10:45	1	0		2	0		3	0		
11:00	0	6 0	1	3	6 1	3	3	12 1	4	
11:15	2	0		0	0		2	0		
11:30	1	1		2	2		3	3		
11:45	3	0		1	0		4	0		
Totals	7	123		8	72		15	195		
Split%	46.7	63.1		53.3	36.9					

Day Totals		130			80			210		
Day Splits		61.9			38.1					
Peak Hour	11:00	02:45		10:45	02:45		11:00	02:45		
Volume	6	25		7	15		12	40		
Factor	0.50	0.63		0.58	0.75		0.75	0.77		

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Oak Hill Rd, Auburn
Title3 : East of Center S

Site: 10405808991
Date: 10/22/02

Interval	WB			EB			Combined			Day: Tuesday
Begin	AM		PM	AM		PM	AM		PM	
12:00	2	2	*	1	1	*	3	3	*	
12:15	0		*	0		*	0		*	
12:30	0		*	0		*	0		*	
12:45	0		*	0		*	0		*	
01:00	0	0	*	0	0	*	0	0	*	
01:15	0		*	0		*	0		*	
01:30	0		*	0		*	0		*	
01:45	0		*	0		*	0		*	
02:00	0	0	*	1	1	*	1	1	*	
02:15	0		*	0		*	0		*	
02:30	0		*	0		*	0		*	
02:45	0		*	0		*	0		*	
03:00	0	0	*	0	0	*	0	0	*	
03:15	0		*	0		*	0		*	
03:30	0		*	0		*	0		*	
03:45	0		*	0		*	0		*	
04:00	0	1	*	0	1	*	0	2	*	
04:15	1		*	1		*	2		*	
04:30	0		*	0		*	0		*	
04:45	0		*	0		*	0		*	
05:00	0	0	*	0	2	*	0	2	*	
05:15	0		*	0		*	0		*	
05:30	0		*	1		*	1		*	
05:45	0		*	1		*	1		*	
06:00	0	1	*	1	6	*	1	7	*	
06:15	0		*	1		*	1		*	
06:30	0		*	0		*	0		*	
06:45	1		*	4		*	5		*	
07:00	0	6	*	5	11	*	5	17	*	
07:15	2		*	3		*	5		*	
07:30	1		*	2		*	3		*	
07:45	3		*	1		*	4		*	
08:00	2	9	*	1	4	*	3	13	*	
08:15	3		*	1		*	4		*	
08:30	1		*	0		*	1		*	
08:45	3		*	2		*	5		*	
09:00	3	7	*	3	6	*	6	13	*	
09:15	0		*	2		*	2		*	
09:30	0		*	0		*	0		*	
09:45	4		*	1		*	5		*	
10:00	2	9	*	2	9	*	4	18	*	
10:15	4		*	4		*	8		*	
10:30	2		*	1		*	3		*	
10:45	1		*	2		*	3		*	
11:00	4	11	*	0	7	*	4	18	*	
11:15	2		*	1		*	3		*	
11:30	1		*	1		*	2		*	
11:45	4		*	5		*	9		*	
Totals	46		0	48		0	94		0	
Split%	48.9		*	51.1		*				
Day Totals		46			48			94		
Day Splits		48.9			51.1					
Peak Hour	09:45		*	06:45		*	09:45		*	
Volume	12		*	14		*	20		*	
Factor	0.75		*	0.70		*	0.63		*	

ATRC
125 Manley Road
Auburn, ME 04210

: Route 4
Title2 : between Martin and Turner
Title3 : Auburn, ME

Site: 010751808992
Date: 10/23/02

Interval	SB				NB				Combined				Day: Wednesday
Begin	AM		PM		AM		PM		AM		PM		
12:00	9	45	192	676	32	70	184	647	41	115	376	1,323	
12:15	6		182		13		148		19		330		
12:30	10		144		9		159		19		303		
12:45	20		158		16		156		36		314		
01:00	8	46	146	619	12	46	175	666	20	92	321	1,285	
01:15	10		135		12		175		22		310		
01:30	13		150		12		168		25		318		
01:45	15		188		10		148		25		336		
02:00	16	61	154	674	8	29	173	715	24	90	327	1,389	
02:15	10		164		5		176		15		340		
02:30	15		194		6		198		21		392		
02:45	20		162		10		168		30		330		
03:00	8	68	192	742	8	45	220	928	16	113	412	1,670	
03:15	15		192		18		228		33		420		
03:30	21		181		16		230		37		411		
03:45	24		177		3		250		27		427		
04:00	13	198	199	738	4	55	288	1,097	17	253	487	1,835	
04:15	39		203		26		242		65		445		
04:30	70		166		12		293		82		459		
04:45	76		170		13		274		89		444		
05:00	94	532	140	620	31	169	304	957	125	701	444	1,577	
05:15	114		162		32		261		146		423		
05:30	162		158		48		206		210		364		
05:45	162		160		58		186		220		346		
06:00	188	935	128	408	70	338	186	659	258	1,273	314	1,067	
06:15	248		88		59		176		307		264		
06:30	272		104		96		155		368		259		
06:45	227		88		113		142		340		230		
07:00	266	1,190	92	292	111	466	118	488	377	1,656	210	780	
07:15	294		68		108		127		402		195		
07:30	374		68		120		137		494		205		
07:45	256		64		127		106		383		170		
08:00	204	799	52	215	109	439	104	407	313	1,238	156	622	
08:15	219		60		98		87		317		147		
08:30	198		56		117		114		315		170		
08:45	178		47		115		102		293		149		
09:00	182	673	88	192	99	447	88	278	281	1,120	176	470	
09:15	150		36		103		72		253		108		
09:30	183		30		127		70		310		100		
09:45	158		38		118		48		276		86		
10:00	158	635	31	115	113	454	38	147	271	1,089	69	262	
10:15	164		26		125		40		289		66		
10:30	154		36		104		48		258		84		
10:45	159		22		112		21		271		43		
11:00	154	622	16	62	114	503	48	114	268	1,125	64	176	
11:15	143		26		95		28		238		54		
11:30	164		9		142		17		306		26		
11:45	161		11		152		21		313		32		
Totals	5,804		5,353		3,061		7,103		8,865		12,456		
Split%	65.5		43.0		34.5		57.0						
Day Totals		11,157				10,164				21,321			
Day Splits		52.3				47.7							
Peak Hour	07:00		03:30		11:00		04:30		07:00		04:00		
Volume	1,190		760		503		1,132		1,656		1,835		
Factor	0.80		0.94		0.83		0.93		0.84		0.94		

ATRC
125 Manley Road
Auburn, ME 04210

: Route 4
Title2 : between Martin and Turner
Title3 : Auburn, ME

Site: 010751808992
Date: 10/24/02

Interval	SB				NB				Combined				Day: Thursday
Begin	AM		PM		AM		PM		AM		PM		
12:00	9	45	150	648	32	70	146	611	41	115	296	1,259	
12:15	6		151		13		173		19		324		
12:30	10		180		9		158		19		338		
12:45	20		167		16		134		36		301		
01:00	8	46	174		12	46	177		20	92	351		
01:15	10		174		12		172		22		346		
01:30	13		0		12		0		25		0		
01:45	15		*		10		*		25		*		
02:00	16	61	*		8	29	*		24	90	*		
02:15	10		*		5		*		15		*		
02:30	15		*		6		*		21		*		
02:45	20		*		10		*		30		*		
03:00	8	68	*		8	45	*		16	113	*		
03:15	15		*		18		*		33		*		
03:30	21		*		16		*		37		*		
03:45	24		*		3		*		27		*		
04:00	13	198	*		4	55	*		17	253	*		
04:15	39		*		26		*		65		*		
04:30	70		*		12		*		82		*		
04:45	76		*		13		*		89		*		
05:00	94	532	*		31	169	*		125	701	*		
05:15	114		*		32		*		146		*		
05:30	162		*		48		*		210		*		
05:45	162		*		58		*		220		*		
06:00	188	935	*		70	338	*		258	1,273	*		
06:15	248		*		59		*		307		*		
06:30	272		*		96		*		368		*		
06:45	227		*		113		*		340		*		
07:00	266	1,190	*		111	466	*		377	1,656	*		
07:15	294		*		108		*		402		*		
07:30	374		*		120		*		494		*		
07:45	256		*		127		*		383		*		
08:00	204	799	*		109	439	*		313	1,238	*		
08:15	219		*		98		*		317		*		
08:30	198		*		117		*		315		*		
08:45	178		*		115		*		293		*		
09:00	182	673	*		99	447	*		281	1,120	*		
09:15	150		*		103		*		253		*		
09:30	183		*		127		*		310		*		
09:45	158		*		118		*		276		*		
10:00	158	635	*		113	454	*		271	1,089	*		
10:15	164		*		125		*		289		*		
10:30	154		*		104		*		258		*		
10:45	159		*		112		*		271		*		
11:00	154	628	*		114	579	*		268	1,207	*		
11:15	158		*		123		*		281		*		
11:30	164		*		173		*		337		*		
11:45	152		*		169		*		321		*		
Totals	5,810		996		3,137		960		8,947		1,956		
Split%	64.9		50.9		35.1		49.1						
Day Totals		6,806				4,097				10,903			
Day Splits		62.4				37.6							
Peak Hour	07:00		12:30		11:00		12:15		07:00		12:30		
Volume	1,190		695		579		642		1,656		1,336		
Factor	0.80		0.97		0.84		0.91		0.84		0.95		

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Fair Street
Title3 : Auburn, ME

Site: 10405607212
Date: 10/21/02

Interval	WB				EB				Combined				Day: Monday
Begin	AM		PM		AM		PM		AM		PM		
12:00	1	1	1	11	0	0	0	4	1	1	1	15	
12:15	0		6		0		2		0		8		
12:30	0		2		0		1		0		3		
12:45	0		2		0		1		0		3		
01:00	0	0	0	7	0	0	1	3	0	0	1	10	
01:15	0		1		0		1		0		2		
01:30	0		4		0		0		0		4		
01:45	0		2		0		1		0		3		
02:00	0	1	6	12	0	0	1	5	0	1	7	17	
02:15	1		1		0		0		1		1		
02:30	0		3		0		3		0		6		
02:45	0		2		0		1		0		3		
03:00	0	0	9	35	0	0	4	13	0	0	13	48	
03:15	0		10		0		4		0		14		
03:30	0		8		0		4		0		12		
03:45	0		8		0		1		0		9		
04:00	0	1	4	23	0	0	2	9	0	1	6	32	
04:15	1		4		0		4		1		8		
04:30	0		8		0		2		0		10		
04:45	0		7		0		1		0		8		
05:00	0	0	8	28	0	1	0	5	0	1	8	33	
05:15	0		10		0		2		0		12		
05:30	0		6		0		1		0		7		
05:45	0		4		1		2		1		6		
06:00	0	11	4	7	2	8	0	2	2	19	4	9	
06:15	2		2		5		1		7		3		
06:30	4		1		0		0		4		1		
06:45	5		0		1		1		6		1		
07:00	4	17	4	12	2	8	0	5	6	25	4	17	
07:15	0		5		1		3		1		8		
07:30	4		1		1		0		5		1		
07:45	9		2		4		2		13		4		
08:00	8	28	1	4	5	11	0	1	13	39	1	5	
08:15	14		0		3		0		17		0		
08:30	4		2		2		0		6		2		
08:45	2		1		1		1		3		2		
09:00	4	11	0	1	1	7	1	1	5	18	1	2	
09:15	4		1		1		0		5		1		
09:30	2		0		3		0		5		0		
09:45	1		0		2		0		3		0		
10:00	2	13	0	2	0	2	3	3	2	15	3	5	
10:15	2		0		1		0		3		0		
10:30	5		0		1		0		6		0		
10:45	4		2		0		0		4		2		
11:00	1	4	0	0	0	1	2	2	1	5	2	2	
11:15	0		0		0		0		0		0		
11:30	2		0		1		0		3		0		
11:45	1		0		0		0		1		0		
Totals	87		142		38		53		125		195		
Split%	69.6		72.8		30.4		27.2						
Day Totals		229				91				320			
Day Splits		71.6				28.4							
Peak Hour	07:30		03:00		07:45		02:45		07:45		03:00		
Volume	35		35		14		13		49		48		
Factor	0.63		0.88		0.70		0.81		0.72		0.86		

ATRC

125 Manley Road
Auburn, ME 04210

ATRC :
: Martin Street
Title3 : Auburn, ME

Site: 10405607518
Date: 10/21/02

Interval	WB				EB				Combined				Day: Monday
Begin	AM		PM		AM		PM		AM		PM		
12:00	0	0	5	12	0	0	0	1	0	0	5	13	
12:15	0		3		0		1		0		4		
12:30	0		1		0		0		0		1		
12:45	0		3		0		0		0		3		
01:00	0	0	2	8	0	0	0	1	0	0	2	9	
01:15	0		3		0		1		0		4		
01:30	0		0		0		0		0		0		
01:45	0		3		0		0		0		3		
02:00	0	0	0	13	0	0	0	4	0	0	0	17	
02:15	0		3		0		2		0		5		
02:30	0		8		0		2		0		10		
02:45	0		2		0		0		0		2		
03:00	0	0	18	35	0	0	3	7	0	0	21	42	
03:15	0		5		0		2		0		7		
03:30	0		8		0		0		0		8		
03:45	0		4		0		2		0		6		
04:00	0	1	8	29	0	0	0	4	0	1	8	33	
04:15	0		8		0		2		0		10		
04:30	0		9		0		2		0		11		
04:45	1		4		0		0		1		4		
05:00	0	1	5	29	0	0	2	5	0	1	7	34	
05:15	0		8		0		0		0		8		
05:30	1		4		0		1		1		5		
05:45	0		12		0		2		0		14		
06:00	2	12	1	13	0	2	0	2	2	14	1	15	
06:15	2		2		0		1		2		3		
06:30	4		6		2		0		6		6		
06:45	4		4		0		1		4		5		
07:00	5	30	10	19	1	6	0	3	6	36	10	22	
07:15	2		4		2		2		4		6		
07:30	11		5		1		0		12		5		
07:45	12		0		2		1		14		1		
08:00	9	32	2	12	0	4	0	2	9	36	2	14	
08:15	11		2		3		0		14		2		
08:30	10		4		1		1		11		5		
08:45	2		4		0		1		2		5		
09:00	4	13	3	5	0	2	0	0	4	15	3	5	
09:15	0		0		1		0		1		0		
09:30	6		2		1		0		7		2		
09:45	3		0		0		0		3		0		
10:00	4	11	1	5	0	0	0	1	4	11	1	6	
10:15	0		2		0		0		0		2		
10:30	5		0		0		0		5		0		
10:45	2		2		0		1		2		3		
11:00	6	7	0	0	1	3	0	0	7	10	0	0	
11:15	1		0		2		0		3		0		
11:30	0		0		0		0		0		0		
11:45	0		0		0		0		0		0		
Totals	107		180		17		30		124		210		
Split%	86.3		85.7		13.7		14.3						
Day Totals		287				47				334			
Day Splits		85.9				14.1							
Peak Hour	07:30		03:00		07:00		02:15		07:30		03:00		
Volume	43		35		6		7		49		42		
Factor	0.90		0.49		0.75		0.58		0.88		0.50		

125 Manley Road
Auburn, ME 04210

ATRC :
: Oak Hill Rd, Auburn
Title3 : East of Center S

Site: 10405808991
Date: 10/21/02

Interval	WB				EB				Combined				Day: Monday
Begin	AM		PM		AM		PM		AM		PM		
12:00	2	2	1	5	1	1	1	5	3	3	2	10	
12:15	0		1		0		3		0		4		
12:30	0		2		0		0		0		2		
12:45	0		1		0		1		0		2		
01:00	0	0	4	12	0	0	1	6	0	0	5	18	
01:15	0		2		0		4		0		6		
01:30	0		1		0		0		0		1		
01:45	0		5		0		1		0		6		
02:00	0	0	1	10	1	1	2	8	1	1	3	18	
02:15	0		3		0		0		0		3		
02:30	0		0		0		3		0		3		
02:45	0		6		0		3		0		9		
03:00	0	0	3	21	0	0	4	15	0	0	7	36	
03:15	0		10		0		3		0		13		
03:30	0		6		0		5		0		11		
03:45	0		2		0		3		0		5		
04:00	0	1	3	16	0	1	2	7	0	2	5	23	
04:15	1		5		1		1		2		6		
04:30	0		5		0		3		0		8		
04:45	0		3		0		1		0		4		
05:00	0	0	2	23	0	2	1	7	0	2	3	30	
05:15	0		10		0		2		0		12		
05:30	0		7		1		2		1		9		
05:45	0		4		1		2		1		6		
06:00	0	1	1	16	1	6	2	9	1	7	3	25	
06:15	0		1		1		0		1		1		
06:30	0		8		0		7		0		15		
06:45	1		6		4		0		5		6		
07:00	0	6	4	13	5	11	2	5	5	17	6	18	
07:15	2		2		3		2		5		4		
07:30	1		3		2		0		3		3		
07:45	3		4		1		1		4		5		
08:00	2	9	0	2	1	4	1	5	3	13	1	7	
08:15	3		2		1		2		4		4		
08:30	1		0		0		1		1		1		
08:45	3		0		2		1		5		1		
09:00	3	7	2	2	3	6	0	1	6	13	2	3	
09:15	0		0		2		0		2		0		
09:30	0		0		0		0		0		0		
09:45	4		0		1		1		5		1		
10:00	2	9	2	2	2	9	1	1	4	18	3	3	
10:15	4		0		4		0		8		0		
10:30	2		0		1		0		3		0		
10:45	1		0		2		0		3		0		
11:00	0	6	0	1	3	6	1	3	3	12	1	4	
11:15	2		0		0		0		2		0		
11:30	1		1		2		2		3		3		
11:45	3		0		1		0		4		0		
Totals	41		123		47		72		88		195		
Split%	46.6		63.1		53.4		36.9						
Day Totals		164				119				283			
Day Splits		58.0				42.0							
Peak Hour	09:45		02:45		06:45		02:45		09:45		02:45		
Volume	12		25		14		15		20		40		
Factor	0.75		0.63		0.70		0.75		0.63		0.77		