MERRICK & MEMORIAL






Merrick and Memorial Neighborhood Study

West Springfield, MA

Phase II

Draft Report – May 2014

Prepared in cooperation with the Massachusetts Department of Transportation, the U.S. Department of Transportation – Federal Highway Administration and Federal Transit Administration, Pioneer Valley Transit Authority, and the City of West Springfield.

PVPC
Prepared by the Pioneer Valley Planning Commission

TABLE OF CONTENTS

CHAPTER 1 **5**

INTRODUCTION 5

A. Transportation, Community, and System Preservation (TCSP) *6*

B. Study Area *6*

C. Phase One Study *8*

D. Summary of 2012 Merrick Revitalization Plan *10*

CHAPTER 2 **13**

EXISTING TRANSPORTATION CONDITIONS 13

A. Data Collection *13*

1. Daily Vehicle Volume 13
2. Hourly Vehicle Volume 16
3. Vehicle Classification 19
4. Travel Speeds 30
5. 2004 and 2014 Study Comparison 33

B. Infrastructure *36*

1. Pedestrian Infrastructure 36
2. Design of a Crosswalk 40
3. Non Intersection Crosswalks 40
4. Transit Service 42
5. Clearance 45
6. Parking Restrictions 47

C. Safety / Crash Experience *49*

D. Analysis Procedures *60*

1. Intersection Analysis 60
2. Capacity Analysis Summary 61

E. Title VI, Environmental Justice and Limited English Proficiency Populations *65*

F. Proposed Transportation Improvements *68*

G. Transportation Recommendations *71*

1. General Recommendations 71
2. Bicycle and Pedestrian Recommendations 72
3. Safety Recommendations 73
4. Congestion Recommendations 74
5. Truck Access Recommendations 75

CHAPTER 3 **77**

REDEVELOPMENT ASSESSMENT, OPPORTUNITIES AND RECOMMENDATIONS 77

A. Zoning, Land Use and Parking Regulatory Analysis and Recommendations *77*

1. Zoning Analysis and Recommendations 77

B. Merrick Neighborhood *86*

C. Main Street and Memorial Avenue Neighborhood Gateway *90*

1. Single and Two-Family Uses 90
2. Commercial Redevelopment 91

D. Parking in the Study Area *93*

E. Catalytic Redevelopment Opportunity Sites *93*

1. Focus Area: Main Street at Memorial Avenue Gateway 95
2. Focus Area: River Street at Memorial Avenue (Agawam Bridge) Gateway 103
3. Focus Area: River Street at Baldwin Street and Sears Way (Memorial Elementary School) Gateway 111
4. Focus Area: 380 Union Street Public Park Concept 117

F. Susceptibility to Change Analysis *123*

1. Overview 123
2. Focus Area: Agawam Bridge Gateway 124
3. Focus Area: River Dr./Baldwin St. Intersection 125
4. Focus Area: Memorial Neighborhood 125
5. Focus Area: Main St./Memorial Ave. Intersection 126

CHAPTER 4 **131**

COMPLETE STREETS 131

A. Overview *131*

B. Main Street *132*
1. Recommended Elements of the Complete Streets Program for Main Street 136
C. Union Street *137*
1. Recommended Elements of the Complete Streets Program for Union Street 140
D. Baldwin Street *141*
1. Recommended Elements of the Complete Streets Program for Baldwin Street 142
E. Memorial Avenue *143*
F. Traffic Calming *147*
1. What is traffic calming? 147
2. Developing a comprehensive program 148
G. Memorial School *149*
1. Background 149
2. Analysis 149
3. Safe Routes to School Program 150
4. Crossing Guard Guidance 151
5. Short Term Recommendations 151

CHAPTER 5 **153**

FUTURE DEVELOPMENT 153
A. Proposed MGM Springfield Casino *153*
B. Truck Access *154*
1. Alternative A 156
2. Alternative B 156
3. Alternative C 156
4. Alternative D 156
5. Alternative E 156
6. Analysis 157

CHAPTER 6 **159**

PUBLIC PARTICIPATION AND COMMUNITY ENGAGEMENT 159
A. Community Meetings *159*
1. Community Meeting #1: April 9, 2014 160
2. Community Meeting #2: May 14, 2014 162
B. West Springfield Redevelopment Authority Consultation 2012 to 2014 ..... *164*
C. Meetings with City and School Staff *164*
D. Meetings with Other Stakeholders *164*
E. Community Input from 2012 Merrick Neighborhood Revitalization Plan Process *165*

CHAPTER 7 **167**

RECOMMENDATIONS 167

INDEX OF TABLES

INDEX OF FIGURES III
TABLE 1-1 - STATUS OF RECOMMENDATIONS FROM PHASE I STUDY 8
TABLE 1-1 - STATUS OF RECOMMENDATIONS FROM PHASE I STUDY (CONT.) 9
TABLE 2-1 - AVERAGE ANNUAL DAILY TRAFFIC 14
TABLE 2-2 – PEDESTRIAN AND BICYCLE VOLUMES AT STUDY AREA INTERSECTIONS 19
TABLE 2-3 – VEHICLE CLASSIFICATION DATA 21
TABLE 2-3 – VEHICLE CLASSIFICATION DATA (CONT.) 22
TABLE 2-4 – CSX GATE COMPANY NAMES 28
TABLE 2-5 – VEHICLE TRAVEL SPEEDS (MPH) 31
TABLE 2-5 – VEHICLE TRAVEL SPEEDS (CONT.) 32
TABLE 2-6 - AADT COMPARISON 34
TABLE 2-7 - VEHICLE CLASS COMPARISON 35
TABLE 2-8 – STREETS WITH INCOMPLETE SIDEWALKS 36
TABLE 2-9 – EXISTING PVTA RIDERSHIP DATA (APRIL 2013) 42
TABLE 2-10 AVERAGE DAILY RIDERSHIP FOR PVTA STOPS IN STUDY AREA 44
TABLE 2-11 - CRASH HISTORY SUMMARY 51
TABLE 2-11 - CRASH HISTORY SUMMARY (CONT.) 52
TABLE 2-11 - CRASH HISTORY SUMMARY (CONT.) 53
TABLE 2-11 - CRASH HISTORY SUMMARY (CONT.) 54
TABLE 2-11 - CRASH HISTORY SUMMARY (CONT.) 55
TABLE 2-12 - LEVEL OF SERVICE (LOS) DESIGNATIONS - SIGNALIZED INTERSECTIONS 60
TABLE 2-13- LEVEL OF SERVICE (LOS) DESIGNATIONS - UNSIGNALIZED INTERSECTIONS 61
TABLE 2-14- LEVEL OF SERVICE OF SIGNALIZED INTERSECTIONS 62
TABLE 2-14- LEVEL OF SERVICE OF SIGNALIZED INTERSECTIONS (CONT.) 63
TABLE 2-15- LEVEL OF SERVICE OF UNSIGNALIZED INTERSECTIONS 64
TABLE 4-1 - DAILY TRAFFIC VOLUMES ON MAIN STREET (NUMBER OF VEHICLES) 135
TABLE 4-2 - VEHICLE TRAVEL SPEEDS (MPH) ON MAIN STREET SOUTH OF BRIDGE STREET 135
TABLE 4-3 - RECOMMENDED COMPLETE STREETS PROGRAM FOR MAIN STREET 136
TABLE 4-4 - DAILY TRAFFIC VOLUMES ON UNION STREET (NUMBER OF VEHICLES) 138
TABLE 4-5 - RECOMMENDED COMPLETE STREETS PROGRAM FOR UNION STREET 140
TABLE 4-6 - RECOMMENDED COMPLETE STREETS PROGRAM FOR BALDWIN STREET 142
TABLE 4-7 - RECOMMENDED COMPLETE STREETS PROGRAM FOR MEMORIAL AVENUE 147
TABLE 5-1 - TRUCK ACCESS ALTERNATIVES 158
TABLE 7-1 - AREA WIDE RECOMMENDATIONS 168
TABLE 7-2 – MAIN STREET RECOMMENDATIONS 169
TABLE 7-3 – UNION STREET RECOMMENDATIONS 170
TABLE 7-4 – MEMORIAL AVENUE RECOMMENDATIONS 171
TABLE 7-5 – BALDWIN STREET RECOMMENDATIONS 172

INDEX OF FIGURES

FIGURE 1-1 – STUDY AREA 7
FIGURE 2-1 – WEEKDAY ADT 15
FIGURE 2-2 – AM PEAK HOUR 17
FIGURE 2-3 – PM PEAK HOUR 18
FIGURE 2-4 – VEHICLE CLASSIFICATION DATA 23
FIGURE 2-5– HEAVY VEHICLE ARRIVAL TIMES 24
FIGURE 2-5– HEAVY VEHICLE ARRIVAL TIMES (CONT.) 25
FIGURE 2-5– HEAVY VEHICLE ARRIVAL TIMES (CONT.) 26
FIGURE 2-5– HEAVY VEHICLE ARRIVAL TIMES (CONT.) 27
FIGURE 2-6 – TRUCK ARRIVAL TIMES AT CSX GATE 28
FIGURE 2-7 – CROSSWALK LOCATIONS ON MAIN STREET AND UNION STREET 38

FIGURE 2-8 – CROSSWALK LOCATIONS ON BALDWIN STREET 39
FIGURE 2-9 – PVTA BUS ROUTES AND BUS STOPS 43
FIGURE 2-10 – PARKING RESTRICTIONS 48
FIGURE 2-11 - NORTH END BRIDGE COLLISION DIAGRAM 56
FIGURE 2-12 - MEMORIAL BRIDGE COLLISION DIAGRAMS 57
FIGURE 2-13 - MEMORIAL AVENUE AT UNION STREET COLLISION DIAGRAM 58
FIGURE 2-14 - PARK STREET/PARK AVENUE AT UNION STREET AND ELM STREET COLLISION DIAGRAM 59
FIGURE 2-15 - CENSUS BLOCK GROUPS WITH MINORITY POPULATIONS EXCEEDING REGIONAL AVERAGE OF 23.48% 65
FIGURE 2-16 - CENSUS BLOCK GROUPS WITH A POVERTY RATE EXCEEDING THE REGIONAL AVERAGE OF 15.47% 66
FIGURE 2-17 – PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS IN THE STUDY AREA 70
FIGURE 3-1: 2012 FORM-BASED DISTRICTS PROPOSED FOR MERRICK NEIGHBORHOOD 87
FIGURE 3-2: EXAMPLE REGULATING PLAN FROM REVISED FORM-BASED CODE PROPOSAL 89
FIGURE 3-3 - SITES SELECTED FOR ANALYSIS AND REDEVELOPMENT CONCEPT DEVELOPMENT 94
FIGURE 3-4 - TORNADO-DAMAGED BUILDINGS 97
FIGURE 3-5 - FOCUS AREA EXISTING STREET LEVEL PERSPECTIVES 98
FIGURE 3-6 - MAIN AT MEMORIAL CONCEPT 1: TWO-WAY TRAFFIC ON MAIN STREET AND OPEN SPACE 100
FIGURE 3-7 - MAIN AT MEMORIAL CONCEPT 2: NARROW MAIN STREET FOR ON-STREET PARKING AND NEW PARCEL AT MAIN/BRESNAHAN 101
FIGURE 3-8 - STREET LEVEL VIEW OF MEMORIAL AVENUE AND RIVER STREET FOCUS AREA FROM THE AGAWAM BRIDGE 104
FIGURE 3-9 - STREET LEVEL PERSPECTIVES OF MEMORIAL AVENUE AND RIVER STREET FOCUS AREA FROM THE AGAWAM BRIDGE 106
FIGURE 3-10 - MEMORIAL STREET AT RIVER STREET REDEVELOPMENT CONCEPT: MIXED USE MULTI-STORY BUILDING 108
FIGURE 3-11 - EXAMPLE STRUCTURES FOR MEMORIAL AVENUE AT RIVER STREET REDEVELOPMENT CONCEPT 109
FIGURE 3-12 – POTENTIAL INTERSECTION IMPROVEMENTS AT RIVER STREET AND BALDWIN STREET 115
FIGURE 3-13 - 380 UNION STREET: SITE PHOTOS (APRIL 2013) 119
FIGURE 3-14 – MERRICK NEIGHBORHOOD PARK CONCEPT 122
FIGURE 4-1 - MAIN STREET PAVEMENT WIDTHS (IN FEET) 132
FIGURE 4-2 - SAMPLE MAIN STREET ROADWAY CROSS SECTION 133
FIGURE 4-3 – SAMPLE CROSSWALK "BUMP OUT" CONCEPT 133
FIGURE 4-4 - LOCATIONS AND COSTS OF DAMAGE TO PROPERTY IN MERRICK NEIGHBORHOOD FROM JUNE 1, 2011 TORNADO 134
FIGURE 4-5 - UNION STREET PAVEMENT WIDTHS (IN FEET) 137
FIGURE 4-6 - SAMPLE UNION STREET ROADWAY CROSS SECTION 138
FIGURE 4-7 – PROPOSED CONCEPTUAL IMPROVEMENTS FOR UNION STREET AT DAY STREET INTERSECTION 139
FIGURE 4-8 - SAMPLE BALDWIN STREET ROADWAY CROSS SECTION 142
FIGURE 4-9 MEMORIAL AVENUE SAMPLE CROSS SECTION 143
FIGURE 4-10 – PROPOSED LEFT TURN LANE CONCEPT FOR CIRCUIT AVENUE 145
FIGURE 4-11 – PROPOSED ON-STREET PARKING CONCEPT FOR MEMORIAL AVENUE 146
FIGURE 4-12 - CROSSING GUARD STOP PADDLE 151
FIGURE 5-1 – CONCEPTUAL TRUCK ACCESS ALTERNATIVES 155
FIGURE 7-1 – SUMMARY OF RECOMMENDATIONS 173

CHAPTER 1

INTRODUCTION

The Merrick-Memorial Redevelopment Plan was a multidisciplinary effort of the Pioneer Valley Planning Commission (PVPC) and the City of West Springfield to develop a framework to enhance the viability of the neighborhood. Completed in 2004, this plan targeted areas for economic development and proposed a series of transportation and infrastructure improvements to improve access to the CSX railyard while preserving the quality of life in surrounding residential areas.

The first phase of this Transportation, Community, and System Preservation (TCSP) grant identified the restriction of truck access into both the CSX railyard and surrounding industry due to low bridge clearances as a major constraint. This resulted in the recommendation to upgrade the vertical clearance of the Union Street underpass to accommodate all truck traffic. MassDOT received a $1 million grant for design of a new bridge at the Union Street location. Mass DOT hired Fay Spofford and Thorndike to complete the design work for this new bridge. The project is currently in the pre-25% design phase.

CSX has recently completed a $10 million expansion of the West Springfield rail yard that is expected to significantly increase the volume of truck traffic coming in and out of the CSX property. West Springfield officials would like to significantly reduce the volume of truck traffic currently accessing the CSX yard and adjacent trucking companies via the two rotaries on the west side of the North End Bridge and the Memorial Avenue Bridge.

On June 1, 2011 Western Massachusetts was severely impacted by an EF-3 category tornado. The City of West Springfield estimated the damage resulting from the tornado, which primarily impacted the Merrick neighborhood, at $9.5 million. The resulting damage to the neighborhood has dramatically changed conditions since the completion of the Phase I Merrick-Memorial Neighborhood Redevelopment Plan. As a result, it will be important to reevaluate the recommendations of the 2004 plan in order to develop and advance a unified vision that addresses the future of land use, infrastructure, and traffic circulation in and around the Merrick and Memorial neighborhoods.

The goal of the Phase II study is to improve the efficiency of the regional transportation system to provide efficient access for all transportation modes to services and employment while encouraging development that enhances the livability of the Merrick and Memorial neighborhoods. It will be important to maximize use of the existing infrastructure and develop a process to involve residents and business

owners in the identification of strategies that advance sustainable transportation measures that enhance local mobility as well as the quality of life.

A. TRANSPORTATION, COMMUNITY, AND SYSTEM PRESERVATION (TCSP)

The Transportation, Community, and System Preservation (TCSP) Program is a federal initiative to fund comprehensive planning and research to investigate and address the relationship between transportation, community, and system preservation through the development and implementation of strategies which improve the efficiency of the transportation system. Phase II of the Merrick and Memorial Neighborhood Study meet the requirements of the TCSP Program by:

- Reducing the need for costly future public infrastructure investments.
- Ensuring efficient access to jobs, services and centers of trade.
- Encouraging private sector development patterns in the study area that enhance the livability of the neighborhood.
- Reduce environmental impacts of transportation through the encouragement of healthier modes of transportation.

B. STUDY AREA

The study area limits are defined by the boundaries of Park Street, the Connecticut River, Westfield River, Agawam Avenue and Memorial Avenue. The primary roadways to be studied include Riverdale Road (Route 5), Memorial Avenue, Park Street, River Street, Main Street, Union Street, Baldwin Street, Western Avenue and Day Street leading into the existing freight yard. Emphasis will also be placed on the entrances or "gateways" into the study area as they represent opportunities to create a welcoming environment and sense of identity for the neighborhoods. The complete study area is shown in Figure 1-1.

Figure 1-1 – Study Area

C. PHASE ONE STUDY

Completed in 2004, Phase I of the Merrick and Memorial Neighborhood Study provided the identification of targeted areas for economic development, transportation infrastructure improvements and neighborhood improvement strategies aimed at preserving the quality of life for the local residents. As a result, the recommendations of the 2004 plan were reevaluated to advance a unified vision that addresses the future of land use, infrastructure, and traffic circulation in and around the Merrick-Memorial Neighborhood.

Table 1-1 - Status of Recommendations from Phase I Study

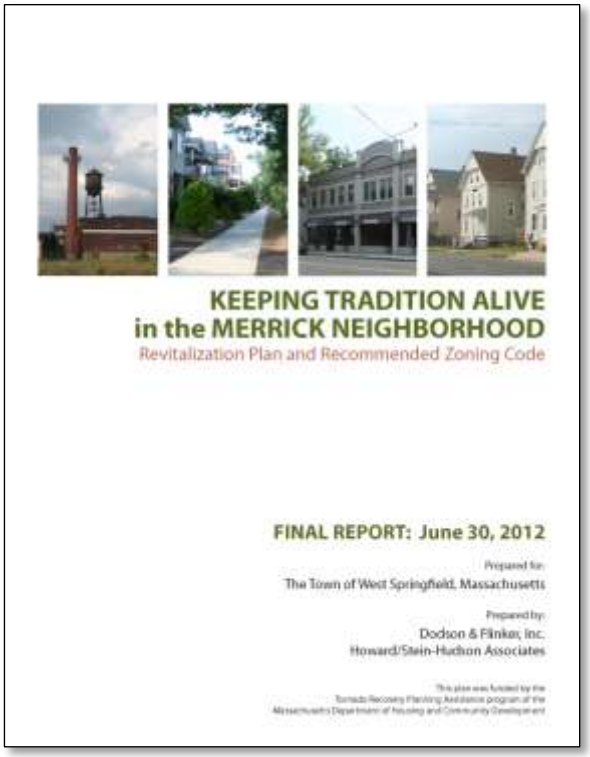
Recommendation	Status	Notes
Focus redevelopment efforts on priority sites within the study area, including West Springfield Trade Center, property at intersection of Western Avenue and Bliss Street, and Southern Industrial District.	• Environmental assessment and remediation complete • Six condominium units demolished • The Redevelopment Authority has not taken action to address reuse of the other priority sites, including the very large Southern Industrial District	Demolition of some of the city-owned condominiums has opened more of the property for redevelopment. The land opened up by the demolition of condos has been leased to CSX Rail for overflow parking. This lease expires soon and could be renegotiated.
Improve truck signage throughout city	• Completed in 2008	
Improve bridge clearance and sight distance at Union Street and River Street	• Not completed	The River Street Bridge is very low and it may not be feasible to improve sight distance. Improving clearance and sight distance at Union Street Bridge is still a significant priority. Several preliminary design alternatives have been developed. The latest design alternative proposed to install a prefabricated bridge.
Provide truck route enhancements with improved routing system to include a new internal truck service road and a new access road and linkage to Route 5	• Partially completed	As part of the site improvements completed by CSX in 2010, new trailer truck parking was established where the internal truck service road was previously recommended.
Create a truck access road located along the north side of the rail yard from Western Avenue/Day Street to Union Street at the Merrick Street intersection	• Not Completed	
Create a second access road between Union Street Extension and Route 5, beginning at the intersection of Union Street Ext. and Pearson Way	• Not Completed	A recommendation of the proposed Hard Rock Casino on the Eastern States Exposition property, this alternative has not advanced beyond the conceptual stage.

Table 1-1 - Status of Recommendations from Phase I Study (cont.)

Implement improvements to signal timing along Park Street, Union Street and Memorial Avenue	• Not completed	
Improve access on Park Street with removal of some on-street parking	• Not completed	
Improve geometry and alignment at Baldwin/River Street intersection	• Not completed	
Provide new sidewalks in areas where none currently exist	• Not completed	
Implement improvements to Memorial Avenue and North End Bridge rotaries	• Not completed	MassDOT has committed to restriping both rotaries.
Implement improvements to the rail yard, including new pavement, lighting, access control and fencing	• Partially completed by CSX in 2010.	
Exclude truck traffic on Main Street and other truck exclusion on certain streets.	• Not completed.	A truck exclusion will require approval by MassDOT.
Provide pedestrian enhancements and streetscape improvements along Union Street and Park Street including sidewalks, lighting, planting and furniture	• Not completed.	An assessment of pedestrian flow across Park Street in the vicinity of the Senior Center was completed in 2010 by a private consultant. A consulting firm has also been retained to develop a complete streets design for Park Street/Park Avenue.
Enforce existing building and zoning codes	• In Progress	There is a dedicated city Sanitary Code Inspector, and the Building Department addresses blight issues on an ongoing basis. In 2012, the Merrick Neighborhood Revitalization Plan recommended changes to the existing zoning code.
Implement an economic development and business retention program. Streamline permitting and approvals for businesses and designate a point person for economic development projects	• In Progress	The city created an Economic Development Director position and is in the process of streamlining its permitting processes. There is now a point person to welcome and shepherd new businesses into the community and to help existing businesses make improvements.
Implement selective infill and rehabilitation of residential structures to strengthen the mix of uses and homeownership potential within the neighborhood.	• In Progress	In process. These desired development outcomes will be promoted through the new zoning code. This effort has begun with the recent Merrick Neighborhood Plan, which proposes a new form-based zoning code.
Increase the amount of open space in the neighborhood and reclaim the flood plain and dike areas for recreational purposes	• Not completed	This was discussed and concepts were developed as part of the 2012 Merrick Neighborhood Revitalization Plan.

D. SUMMARY OF 2012 MERRICK REVITALIZATION PLAN

On June 1, 2011, a devastating EF-3 tornado struck the Merrick and Memorial Neighborhoods of West Springfield, as well as more than a dozen other communities in Western Massachusetts. High winds ripped roofs and siding off of many houses in the southern section of Merrick and the Bridge Street area (near the intersection of Main Street and Memorial Avenue), damaging a total of 88 structures and leaving many residents without shelter for weeks. Dozens of mature trees were reduced to their trunks, and power lines were torn from their poles. The tornado, one of seven that struck the region that day, caused an estimated $140 million in damage statewide, including approximately $5 million in West Springfield. The majority of damage in the City occurred in the Merrick Neighborhood of the TCSP study area.



To assist the City in developing long term responses to recover from this traumatic event, the Massachusetts Department of Housing and Community Development allocated a modest amount of federal disaster recovery funds to develop a revitalization plan for the Merrick Neighborhood. PVPC administered this project in cooperation with the West Springfield Department of Community Development. The planning team consulting firm of Dodson & Flinker, Inc. and Howard/Stein-Hudson Associates participated in an extensive engagement process lead by the City and PVPC, including four community meetings with residents, business owners and community leaders, as well as numerous individual stakeholder meetings. The plan, "Keeping Tradition Alive in the Merrick Neighborhood: Revitalization Plan and Recommended Zoning Code" (Appendix X), was published June 30, 2012 and featured numerous recommendations for zoning, street types, parking, open space and other long term improvements.

The key recommendations of Merrick Neighborhood revitalization plan were:

1. Neighborhood Zoning Plan and Uses

- Improve the balance among residential neighborhoods and neighborhood-scale businesses by establishing four subdistricts within the neighborhood with levels of development intensity allowed by right and scaled to community preferences and existing development context (the four subdistricts are: 1. Neighborhood Residential; 2. Neighborhood Business; 3. Mixed Used and Employment Target Zone; and 4. Natural and Civic).
- Encourage more mixed-used development to increase tax base.
- Encourage economic and job growth in the industrially zoned areas of the neighborhood.

2. Building and Lot Type Standards

- Help achieve the kind of neighborhood environment that is desired by residents and businesses.
- Improve the scale and relationships between buildings and the public realm (such as streets, open spaces, and civic buildings and places), the form and mass of buildings in relationship to one another, and the scale and type of streets and blocks.

3. Complete Streets for Better Street Design, Access, and Connectivity

- Improve public safety and the movement of vehicles, pedestrians and bicyclists with a better hierarchy of street types.
- Improve block dimensions, connectivity, access to businesses and homes.

4. Parking Standards

- Appropriate streetscape or pedestrian activity areas in the setback between any new building and the street line (where no parking is allowed), but use of on-street parking to separate pedestrian and motor vehicles.
- Review parking requirements for businesses and homes based on square footage and number of bedrooms.
- Encourage shared parking arrangements to reduce overall paved areas.
- Encourage parking in rear of buildings to improve building street facades and promote pedestrian and bicycle access to businesses and homes.

5. Landscaping, Screening and Lighting

- Landscaping should be used to define the street edge, buffer parking areas and add interest to open spaces.
- Streetscape amenities are focused on creating vibrant civic spaces (outdoor dining areas, vendors, displays, street trees, etc.).

6. Public and Civic Space

- Set aside areas as permanent open space.
- Protect existing parks, the cemetery.
- Explore opportunities for potential parks and civic gathering spaces.
- Provide access to the Connecticut River and other natural areas.

Since 2012, the City of West Springfield has continued to advance the key recommendations of the plan by developing a detailed formed-based zoning code for the Merrick Neighborhood that is consistent with the community input and recommendations of the 2012 Revitalization Plan. This proposed zoning approach, which incorporates elements of both form-based and more traditional municipal zoning, has been further revised to incorporate recommended "Complete Street" elements, parking standards and landscaping requirements.

In addition, in 2013 the City's Redevelopment Authority worked with PVPC as part of the TCSP project to advance the revitalization plan's recommendation to create more public parks and open space. This resulted in a concept for a public park at 380 Union Street, which is shown in Chapter 3 Section 4.

CHAPTER 2

EXISTING TRANSPORTATION CONDITIONS

This section provides a technical evaluation of the transportation components throughout the study area. It includes a presentation of the data collected, analysis of traffic operations, and a series of recommendations to improve traffic flow and increase safety.

A. DATA COLLECTION

A comprehensive data collection effort was conducted to identify existing deficiencies. This activity consisted of obtaining traffic volumes, crash information, and information on the existing transportation infrastructure. PVPC staff collected a large portion of the data used in this report. Additional data was obtained from the Massachusetts Department of Transportation (MassDOT) and the City of West Springfield.

1. Daily Vehicle Volume

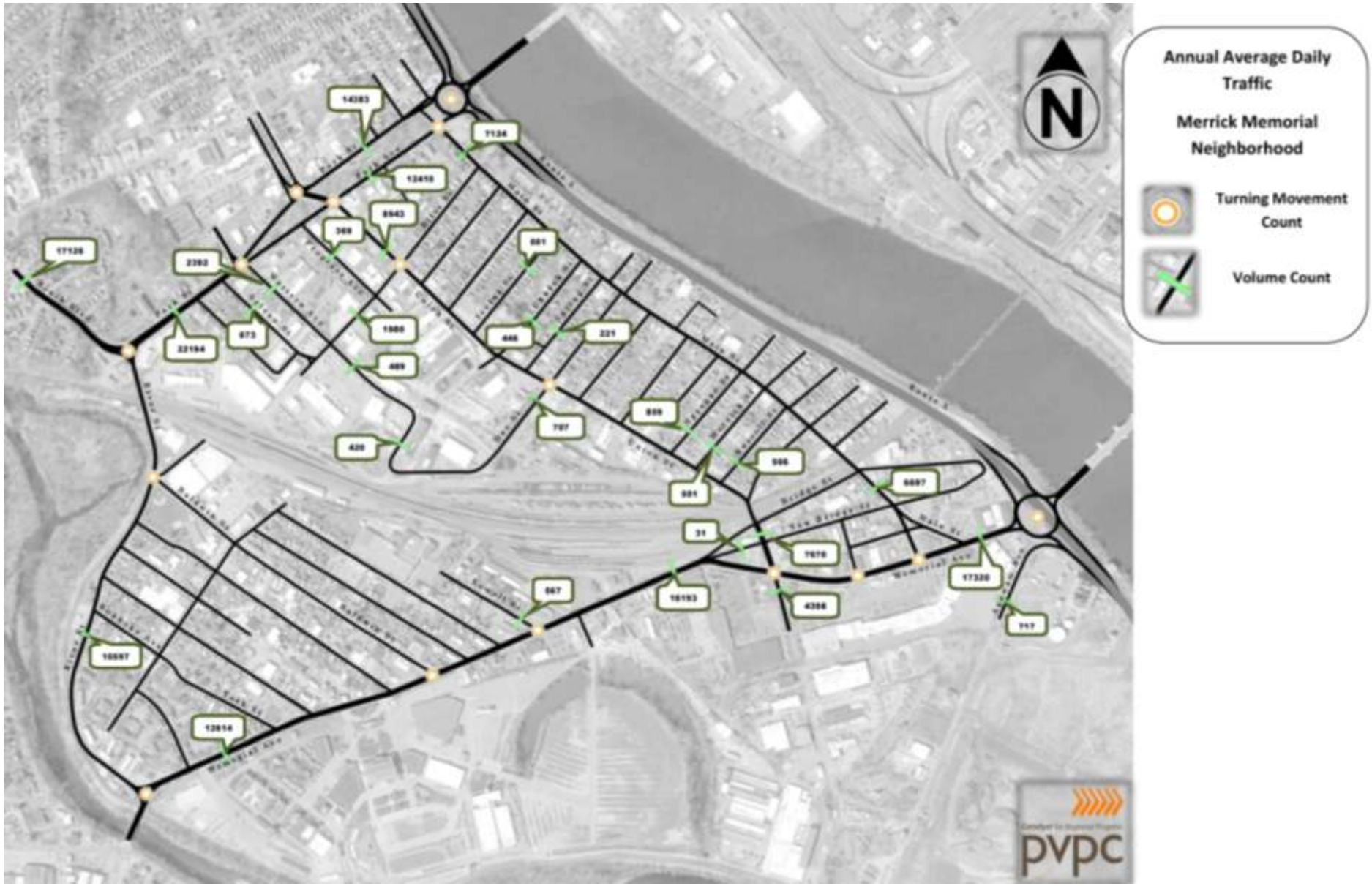
Vehicle volume data was collected for use in the transportation analysis in order to measure the travel demands on an average weekday. Average Daily Traffic (ADT) volumes were compiled for typical weekday 48-hour periods at various mid-block locations within the study area using Automatic Traffic Recorders (ATRs). All ADT volumes were factored using adjustment factors provided by the Massachusetts Department of Transportation (MassDOT) to represent Average Annual Daily Traffic (AADT) levels. The daily traffic counts conducted as part of this study were performed from 2012 - 2014. Table 2-l presents a summary of the weekday AADT volumes. Daily traffic volumes are shown graphically on Figure 2-l.

Table 2-1 - Average Annual Daily Traffic

Location	NB/EB	SB/WB	Total
Main Street south of Park Avenue	3,414	3,710	7,124
Main Street south of Bridge Street	3,587	3,110	6,697
Union Street south of Bridge Street	3,161	4,509	7,670
Union Street north of Bliss Street	4,426	4,517	8,943
Memorial Avenue east of Main Street	8,067	9,253	17,320
Memorial Avenue east of Dyke Avenue	8,382	7,811	16,193
River Street south of Roanoke Avenue	4,984	5,612	10,597
Western Avenue south of Park Avenue	1,375	1,017	2,392
Union Street Extension south of Memorial Avenue	2,082	2,316	4,398
Agawam Avenue south of Route 5	560	157	717
Sylvan Street south of Park Street	367	307	673
Progress Avenue south of Park Avenue	208	161	369
Day Street west of Union Street	330	377	707
South Blvd west of Webster Avenue	7,614	9,512	17,126
Park Street west of Kelso Avenue	12,137	10,058	22,194
Park Avenue west of Park Avenue Connector	12,410	-	12,410
Bliss Street west of Progress Avenue	866	1,114	1,980
Memorial Avenue west of Big E Gate 1	6,465	6,149	12,614
Lowell Street north of Memorial Avenue	278	288	567
Day Street At Railyard	244	176	420
Park Street west of Lathrop Street	-	14,383	14,383
Western Avenue south of Bliss Street	229	260	489
New Bridge Street between Memorial Avenue and Union Street	27	4	31
Irving Street between Main and Union Street	267	235	501
Church Street between Main and Union Street	253	193	446
Spring Street between Main and Union Street	-	221	221
Sprague Street between Main and Union Street	472	387	859
Merrick Street between Main and Union Street	253	247	501
Russell Street between Main and Union Street	320	245	566

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Figure 2-1 – Weekday ADT



2. Hourly Vehicle Volume

Manual Turning Movement Counts (TMC) were conducted at several intersections within the study area. The TMCs were conducted during the peak commuter periods. The weekday commuter period occurs during the morning hours of 7:00 AM to 9:00 AM and the afternoon hours of 4:00 PM to 6:00 PM. At each location two-hour TMCs were conducted to identify the peak four consecutive 15-minute periods of traffic through the intersection. These consecutive peak 15-minute periods constitute a location's "Peak Hour Volume". The peak hour of traffic volume represents the most critical period for operations and will be the focus for the intersection analysis.

The TMC data also identifies the peak hour factor and vehicle classifications. The peak hour factor (PHF) accounts for variations in travel demand during the peak hour. The PHF is defined as the ratio of the volume occurring during the peak hour to the maximum rate of flow during the highest interval within the peak hour.[1] The information is used to determine how uniform the arrival of traffic was over the course of the peak hour and is used to determine the operational characteristics of the intersection. All vehicles, pedestrians, and bicyclists are manually classified during the turning movement counts to determine their level of use at the intersection. The percentage of heavy vehicles (trucks) that utilize the intersection is important as large vehicles have different operating characteristics than normal passenger vehicles. Pedestrians and bicyclists are also counted as to understand to assess how well each intersection accommodates non-vehicular traffic.

All turning movement counts were adjusted by factors provided by MassDOT to reflect average month conditions. Turning movement count data for the AM and PM Peak Hours is summarized on Figures 2-2 and 2-3 respectively.

[1] Institute of Transportation Engineers, Transportation and Traffic Engineering Handbook,

Figure 2-2 – AM Peak Hour

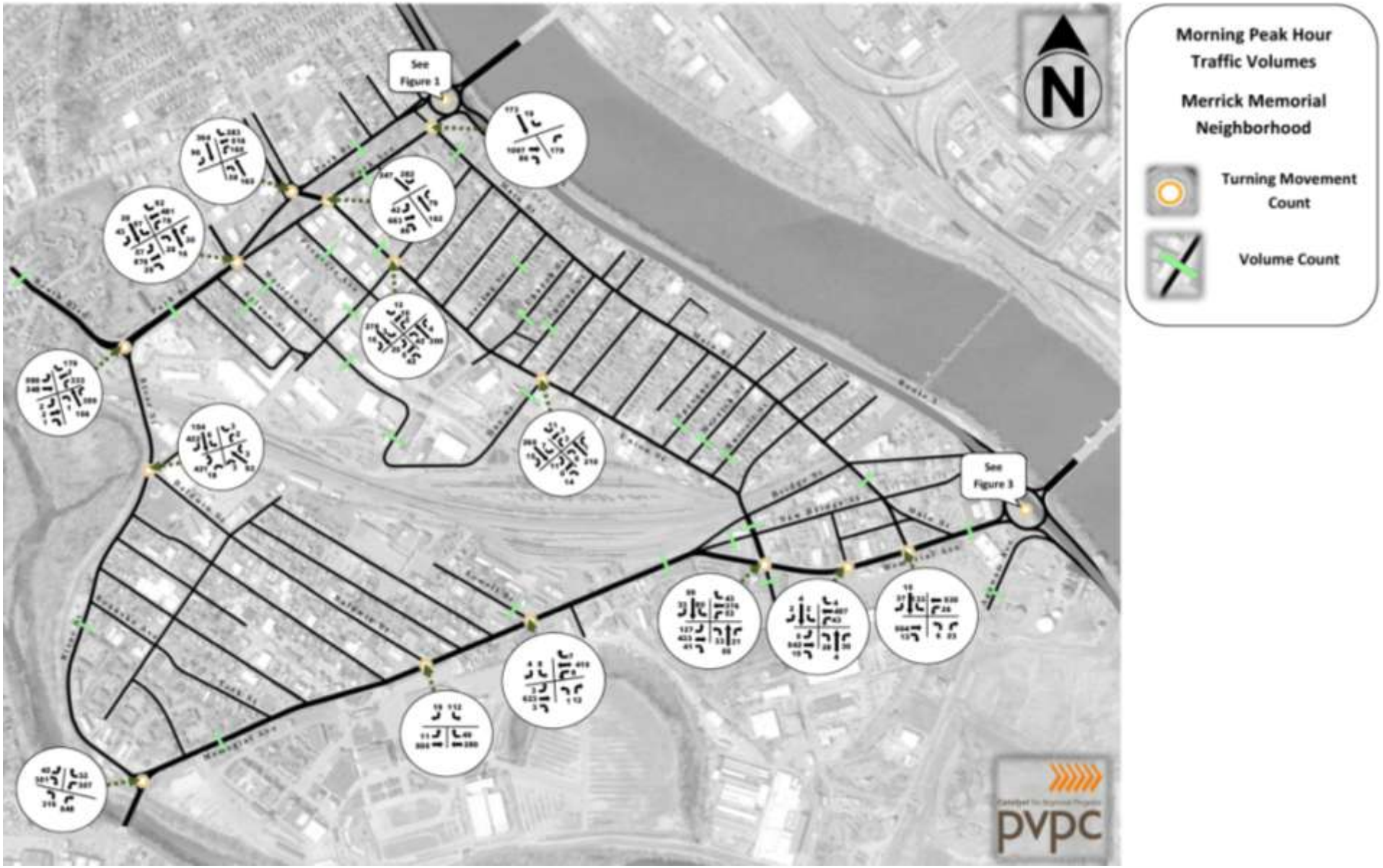
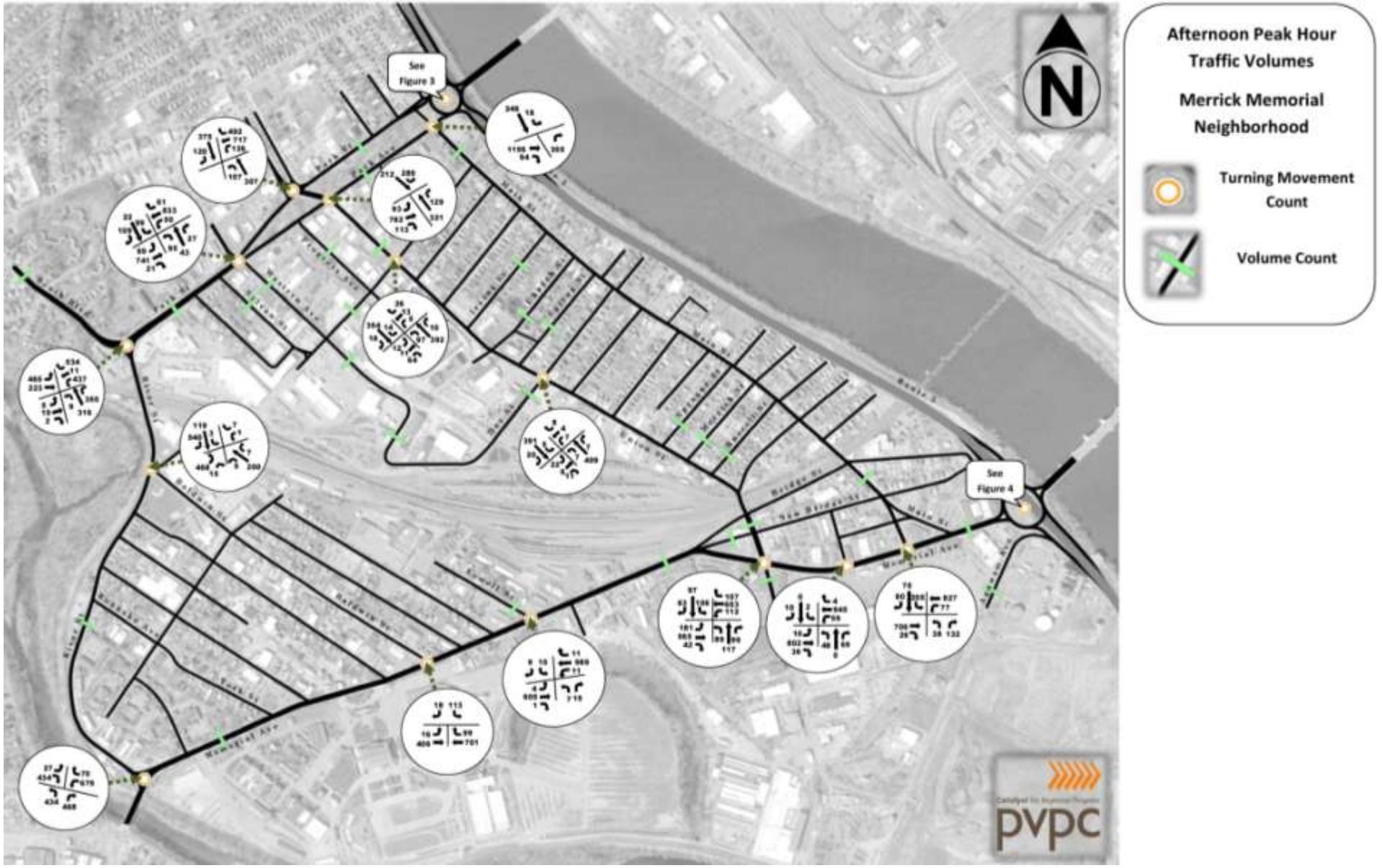


Figure 2-3 – PM Peak Hour



During the public participation process, many people stated that the Merrick and Memorial neighborhoods were "walking neighborhoods" and expressed the importance of infrastructure to accommodate the needs of residents that walk in the study area. Table 2-2 summarizes the pedestrian and bicycle data collected at each of the study area intersections during the morning and afternoon peak hours. As can be seen from the table, the intersection of Park Street with Elm Street experienced the highest volume of pedestrian traffic, particularly during the afternoon peak hour. Pedestrian and bicycle volumes are also generally higher in the afternoon than in the morning. Volumes for pedestrians and bicyclists were not recorded during the morning peak hour at the intersection of River and Baldwin Street but can be expected to be in the same range as the afternoon peak hour volumes due to the close proximity of the Memorial School to this intersection.

Table 2-2 – Pedestrian and Bicycle Volumes at Study Area Intersections

		AM Peak		PM Peak	
Street	**Cross Street**	**Pedestrians**	**Bicyclists**	**Pedestrians**	**Bicyclists**
River	Baldwin	0	0	56	26
Park	Van Deene	15	1	30	7
Memorial	Baldwin	17	1	28	9
Memorial	Bresnahan	16	3	52	11
Memorial	Union	7	3	31	7
Park	Main	15	8	45	15
South	Park	13	1	40	18
Park	Elm	36	6	68	29
Union	Day	19	8	29	9
Memorial	River	27	8	26	10
Park	Union	27	0	29	12
Memorial	Barnard	19	7	27	4
Memorial	Lowell	9	3	17	8
Union	Bliss	22	6	29	24

3. Vehicle Classification

Vehicle classification data is used to identify the percentage of heavy vehicles and passenger cars on the roadway. Heavy vehicles include trucks, recreational vehicles and buses. The percent of heavy vehicles in the traffic flow is an important component in calculating the serviceability of a corridor or intersection. Trucks impact traffic flow because they occupy more roadway space than passenger cars and have poorer operating capabilities with respect to acceleration, deceleration and maneuverability. The percentage of heavy vehicle traffic is also an important factor in the pavement design of a roadway.

Classification counts were conducted at key locations in the vicinity of the CSX facility to gain a better understanding of how trucks travel in the study area. Vehicles are classified based on the number of axles and the distance between each axle. Buses, two axle, six tire vehicles and vehicles with three or more axles are classified as a "truck" or heavy vehicle. This information is shown in Table 2-3.

As shown in the table, there is a relatively high percentage of truck traffic which utilizes the study area roadways. Day Street, Union Street and Western Avenue experienced the highest amount of truck traffic as these roadways all serve commercial and industrial land uses. Figure 2-4 displays the weekday heavy vehicle traffic percentages by direction of travel.

The vehicle classification data was also examined to determine the time of day at which heavy vehicles are driving through the study area. This information is shown in Figure 2-5 for the roadways that were found to have the highest levels of heavy vehicle traffic as well as a mixture of commercial and residential land uses.

Western Avenue experiences a distinct difference in the directional distribution of truck traffic during the morning and afternoon peak hours. Truck traffic is higher in the northbound direction during the morning and higher in the southbound direction in the afternoon. River Street also has a clear difference between northbound and southbound traffic. From 6 AM to 6 PM southbound truck traffic is about three times greater than northbound traffic. This could be due to the vertical clearance restrictions at the River Street railroad overpass or a result of trucks using an alternate route such as Baldwin Street or Norman Street to Memorial Avenue to travel in the northbound direction.

Trucks volumes are similar in both directions along Main Street and on Day Street. Day Street does, however, experience the highest volume of truck due to its many industrial land uses and the access gate to the CSX railyard. Truck traffic on Bliss Street is generally higher in the morning in the eastbound direction and the majority of truck traffic on Agawam Avenue travels in the northbound direction.

Table 2-3 – Vehicle Classification Data

Street	Cross Street	Direction	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	> 3 Axle	%Heavy
Union St	north of Bliss St	NB	1.49%	64.11%	20.87%	1.64%	6.30%	1.83%	3.77%	13.53%
		SB	1.71%	79.63%	11.10%	0.68%	2.78%	1.31%	2.78%	7.55%
Union St	south of Bridge St	SB	2.82%	84.26%	10.17%	0.20%	1.03%	0.95%	0.57%	2.76%
		NB	4.49%	84.69%	8.55%	0.08%	0.94%	0.82%	0.44%	2.27%
Union St Extension	south of Memorial Ave	SB	1.34%	74.12%	13.44%	0.52%	4.38%	1.13%	5.07%	11.10%
		NB	1.34%	79.42%	11.71%	0.51%	3.04%	0.67%	3.31%	7.53%
Main St	south of Bridge St	SB	2.38%	87.24%	8.64%	0.21%	0.90%	0.53%	0.11%	1.74%
		NB	0.79%	86.24%	10.16%	0.18%	2.20%	0.26%	0.18%	2.81%
Main St	south of Park Ave	SB	2.34%	83.37%	10.48%	0.57%	2.39%	0.46%	0.39%	3.81%
		NB	1.60%	83.00%	11.41%	0.46%	2.42%	0.68%	0.44%	4.00%
River St	south of Roanoke Ave	NB	1.42%	83.17%	12.17%	0.70%	1.85%	0.38%	0.32%	3.25%
		SB	3.13%	82.38%	11.02%	0.44%	1.59%	1.03%	0.41%	3.47%
Western Ave	south of Park Ave	NB	2.48%	71.05%	14.98%	0.51%	3.49%	1.71%	5.78%	11.49%
		SB	1.38%	75.17%	5.19%	0.09%	3.55%	1.82%	12.80%	18.25%
Progress Ave	south of Park Ave	NB	0.86%	80.17%	11.21%	1.72%	3.88%	1.29%	0.86%	7.76%
		SB	1.16%	83.82%	10.40%	0.58%	2.89%	0.58%	0.58%	4.62%
Sylvan St	south of Park St	SB	0.51%	71.83%	20.81%	1.02%	1.27%	1.27%	3.30%	6.85%
		NB	2.92%	75.44%	15.79%	0.00%	2.05%	1.75%	2.05%	5.85%
Agawam Ave	south of Route 5	NB	0.78%	68.38%	17.76%	1.25%	4.98%	0.93%	5.92%	13.08%
		SB	2.91%	84.88%	9.30%	0.00%	0.58%	0.58%	1.74%	2.91%
Memorial Ave	east of Dyke Ave	WB	2.28%	83.32%	10.02%	0.34%	1.25%	1.36%	1.43%	4.38%
		EB	2.65%	84.49%	8.95%	0.37%	1.65%	0.64%	1.25%	3.90%
Memorial Ave	east of Main St	EB	3.31%	85.31%	6.08%	0.21%	0.95%	2.32%	1.81%	5.30%
		WB	3.35%	80.53%	10.43%	0.53%	1.94%	1.11%	2.12%	5.69%
Day St	west of Union St	WB	4.75%	25.14%	17.60%	1.68%	3.07%	10.06%	37.71%	52.51%
		EB	3.37%	27.64%	24.52%	1.20%	3.61%	15.63%	24.04%	44.47%
South Blvd	west of Webster Ave	WB	2.65%	72.15%	17.81%	0.65%	4.03%	1.67%	1.03%	7.38%
		EB	2.26%	69.82%	19.67%	0.69%	5.31%	1.10%	1.15%	8.25%
Park St	west of Kelso Ave	EB	1.40%	85.23%	8.66%	0.32%	0.87%	1.51%	2.01%	4.71%
		WB	1.46%	83.26%	9.63%	0.39%	1.90%	1.48%	1.89%	5.65%
Park Ave	west of Park Ave Connector	EB	1.32%	82.71%	7.59%	0.85%	1.70%	2.05%	3.76%	8.37%
		N/A	-	-	-	-	-	-	-	-
Bliss St	west of Progress Ave	EB	1.20%	69.08%	16.57%	0.70%	6.22%	1.20%	5.02%	13.15%
		WB	0.32%	76.83%	17.10%	0.55%	3.70%	0.39%	1.10%	5.75%

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Table 2-3 – Vehicle Classification Data (cont.)

Street	Cross Street	Direction	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	> 3 Axle	%Heavy
Memorial Ave	west of Big E Gate 1	WB	1.80%	83.28%	10.90%	0.32%	1.74%	1.01%	0.95%	4.02%
		EB	2.21%	84.20%	9.83%	0.31%	1.43%	1.00%	1.02%	3.76%
Lowell St	north of Memorial Ave	SB	5.34%	67.06%	21.36%	0.30%	5.04%	0.89%	0.00%	6.23%
		NB	0.64%	69.87%	21.79%	0.00%	4.49%	1.92%	1.28%	7.69%
Day St	At Railyard	NB	7.69%	44.02%	27.78%	0.85%	6.41%	7.26%	5.98%	20.51%
		SB	10.49%	43.83%	24.69%	0.00%	6.79%	6.79%	7.41%	20.99%
Park St	west of Lathrop St	WB	1.71%	81.58%	9.56%	0.67%	1.88%	1.16%	3.44%	7.14%
		-	-	-	-	-	-	-	-	-
Western Ave	south of Bliss St	NB	1.28%	41.45%	28.63%	1.28%	18.38%	3.85%	5.13%	28.63%
		SB	1.05%	56.14%	27.72%	0.00%	6.32%	2.81%	5.96%	15.09%
New Bridge St	between Memorial Ave and Union St	EB	6.67%	46.67%	33.33%	0.00%	13.33%	0.00%	0.00%	13.33%
		WB	0.00%	85.71%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%
Irving St	between Main and Union St	EB	1.24%	88.43%	5.79%	0.41%	2.48%	1.65%	0.00%	4.55%
		WB	0.00%	87.67%	7.93%	0.44%	3.96%	0.00%	0.00%	4.41%
Church St	between Main and Union St	EB	0.00%	92.67%	6.33%	0.00%	0.33%	0.33%	0.33%	1.00%
		WB	0.44%	96.44%	2.67%	0.00%	0.44%	0.00%	0.00%	0.44%
Spring St	between Main and Union St	-	-	-	-	-	-	-	-	-
		WB	0.00%	91.71%	5.37%	0.00%	0.98%	1.95%	0.00%	2.93%
Sprague St	between Main and Union St	EB	0.48%	86.51%	11.08%	0.24%	0.96%	0.72%	0.00%	1.93%
		WB	0.20%	89.07%	9.92%	0.00%	0.81%	0.00%	0.00%	0.81%
Merrick St	between Main and Union St	EB	1.47%	81.25%	11.76%	0.37%	2.94%	0.37%	1.84%	5.51%
		WB	1.52%	77.19%	18.25%	0.00%	2.28%	0.76%	0.00%	3.04%
Russell St	between Main and Union St	EB	0.00%	72.63%	24.82%	0.00%	2.55%	0.00%	0.00%	2.55%
		WB	0.59%	89.68%	6.78%	0.59%	0.88%	0.29%	1.18%	2.95%

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Figure 2-4 – Vehicle Classification Data

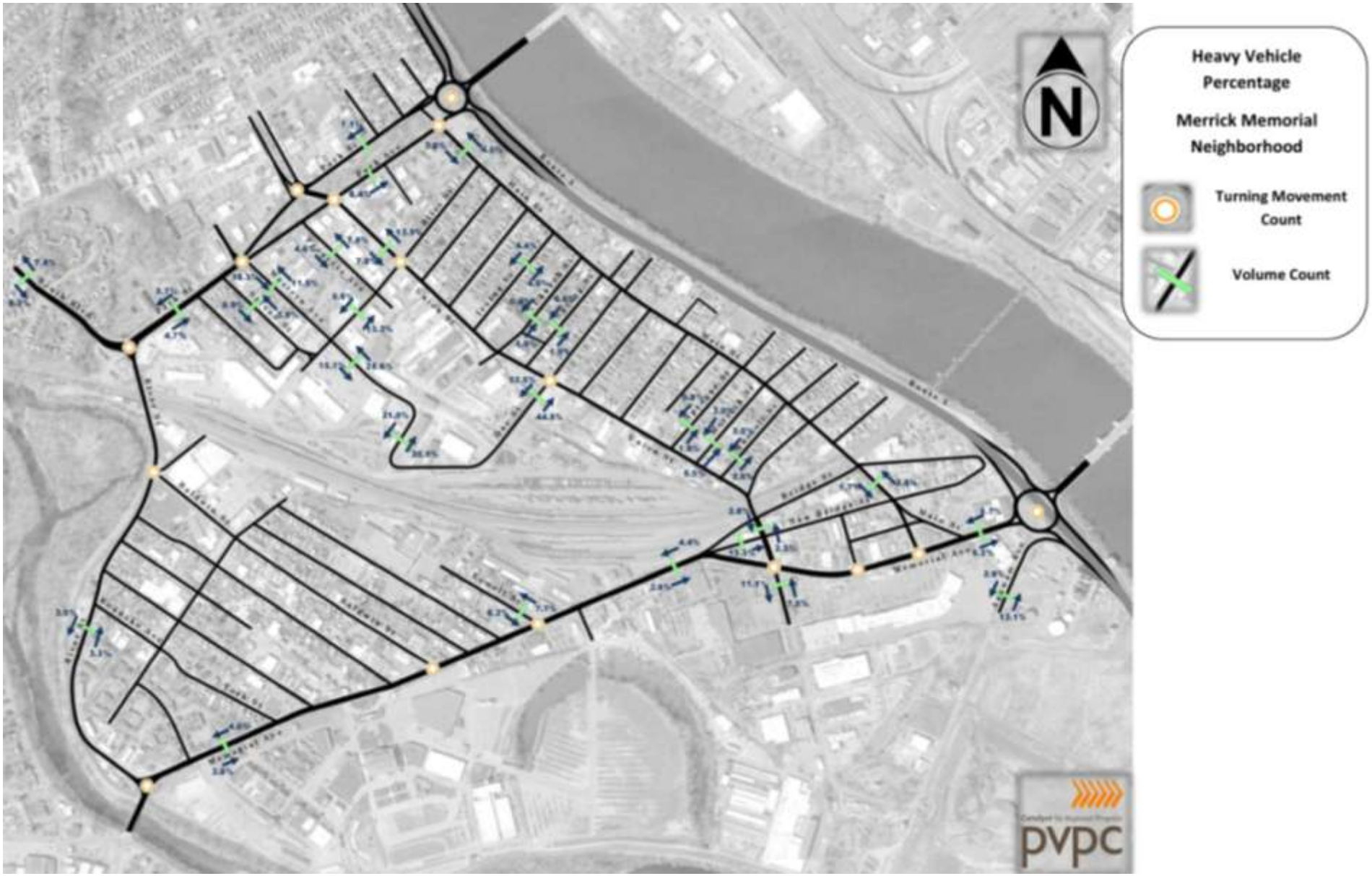
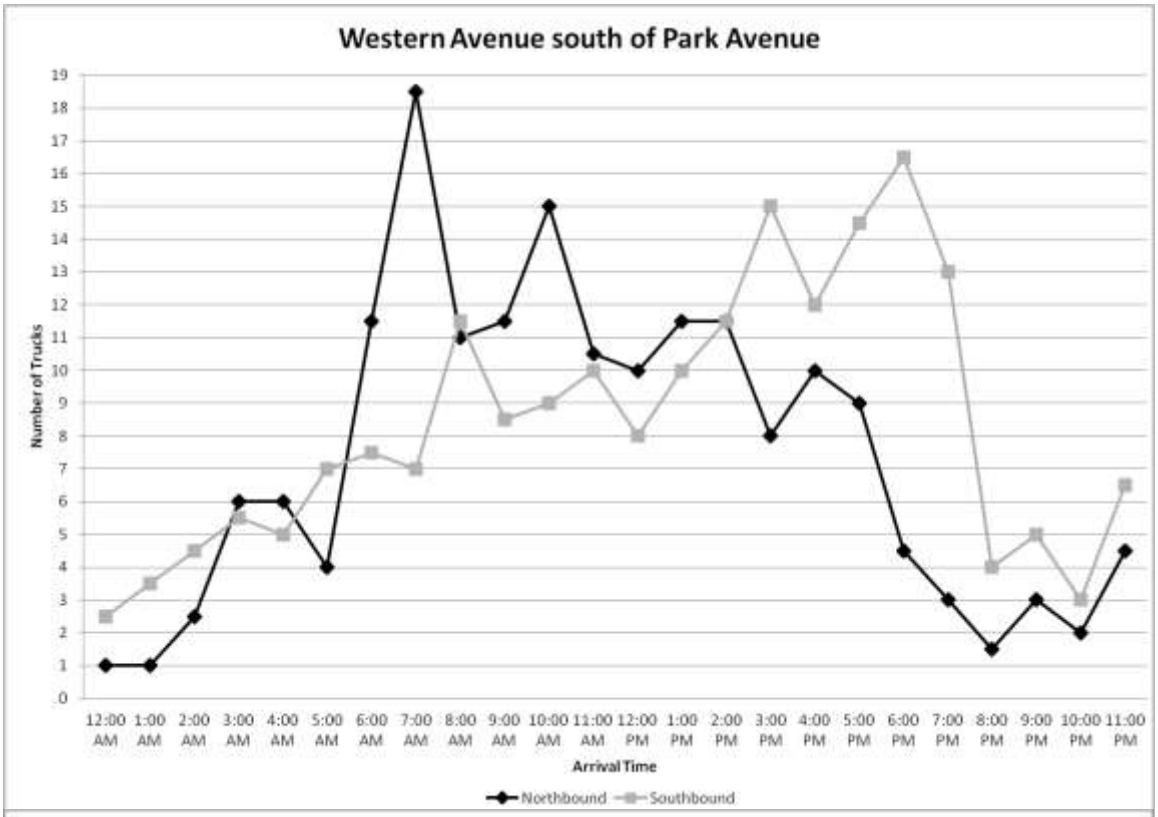


Figure 2-5– Heavy Vehicle Arrival Times



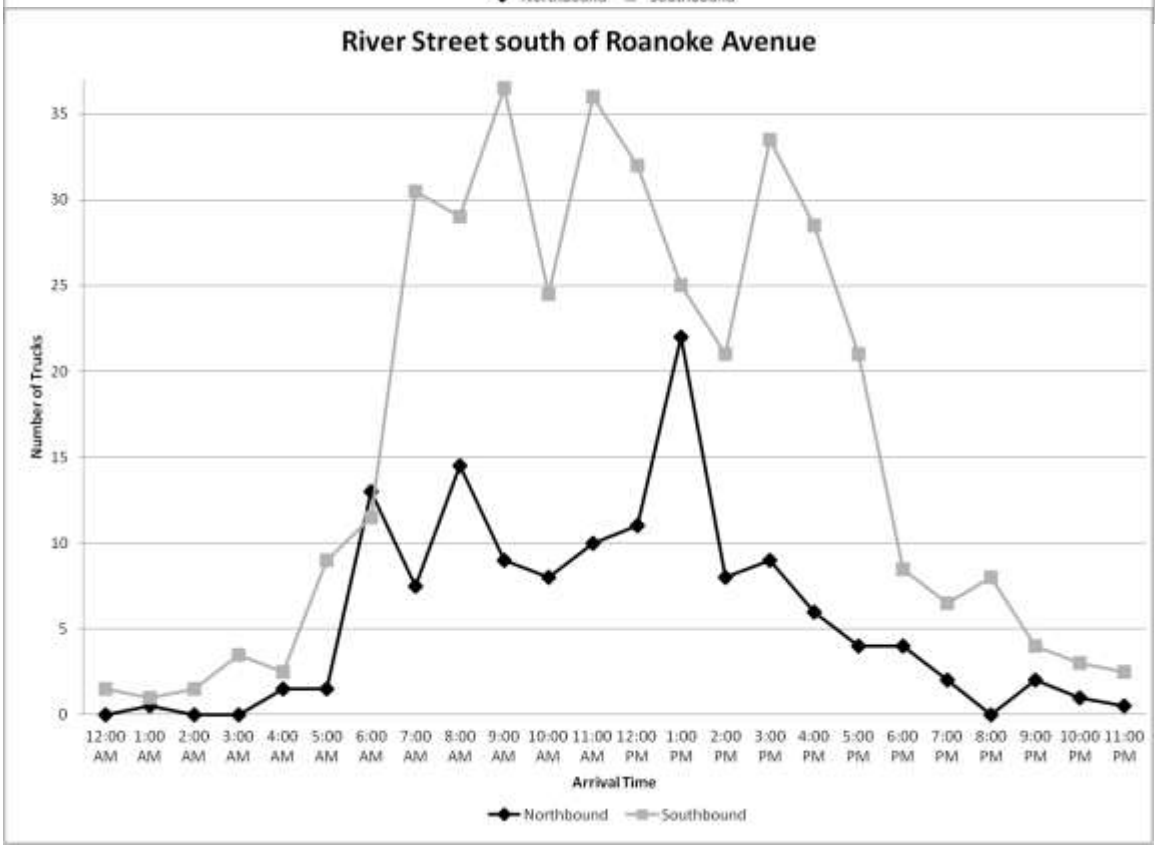
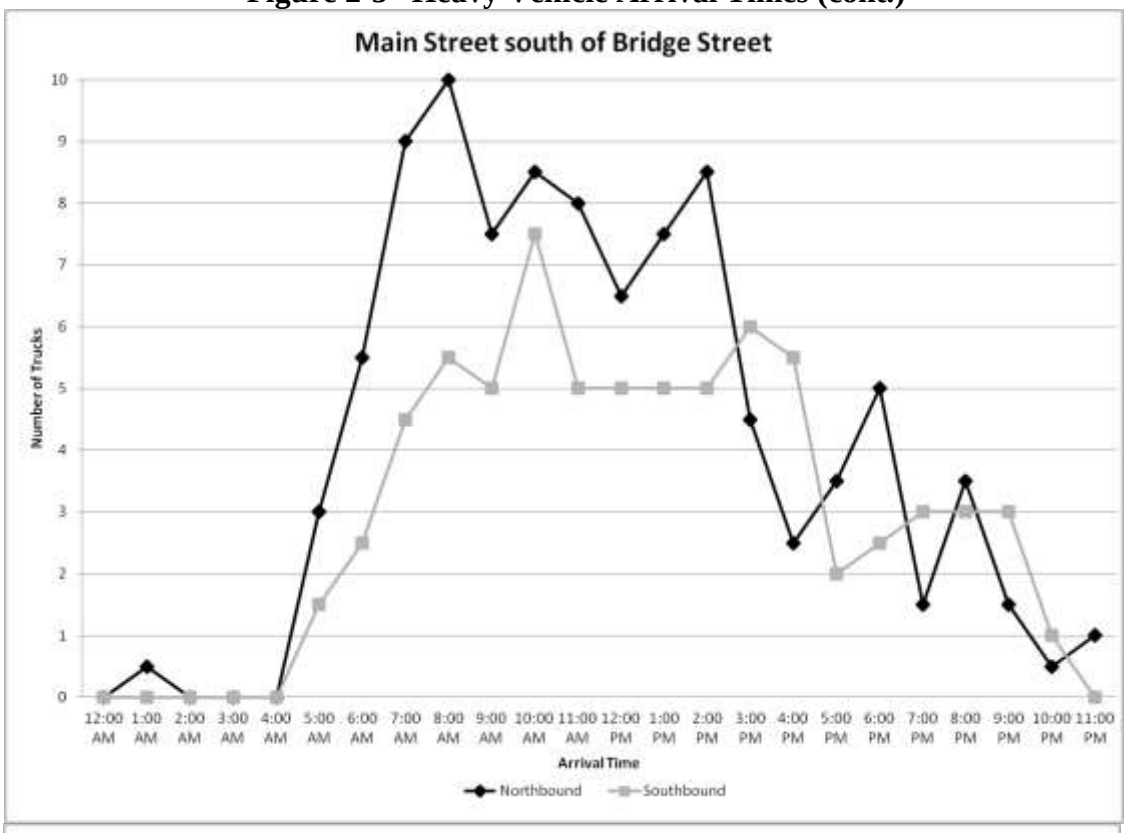


Figure 2-5– Heavy Vehicle Arrival Times (cont.)



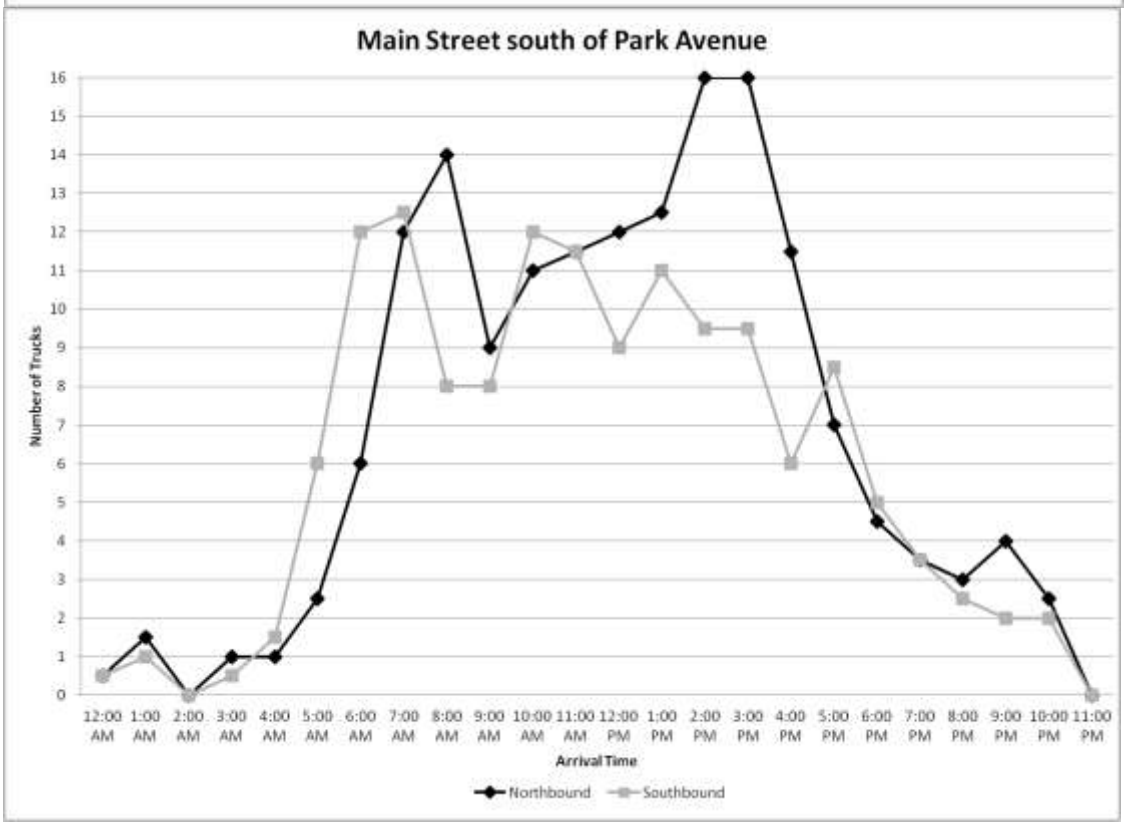
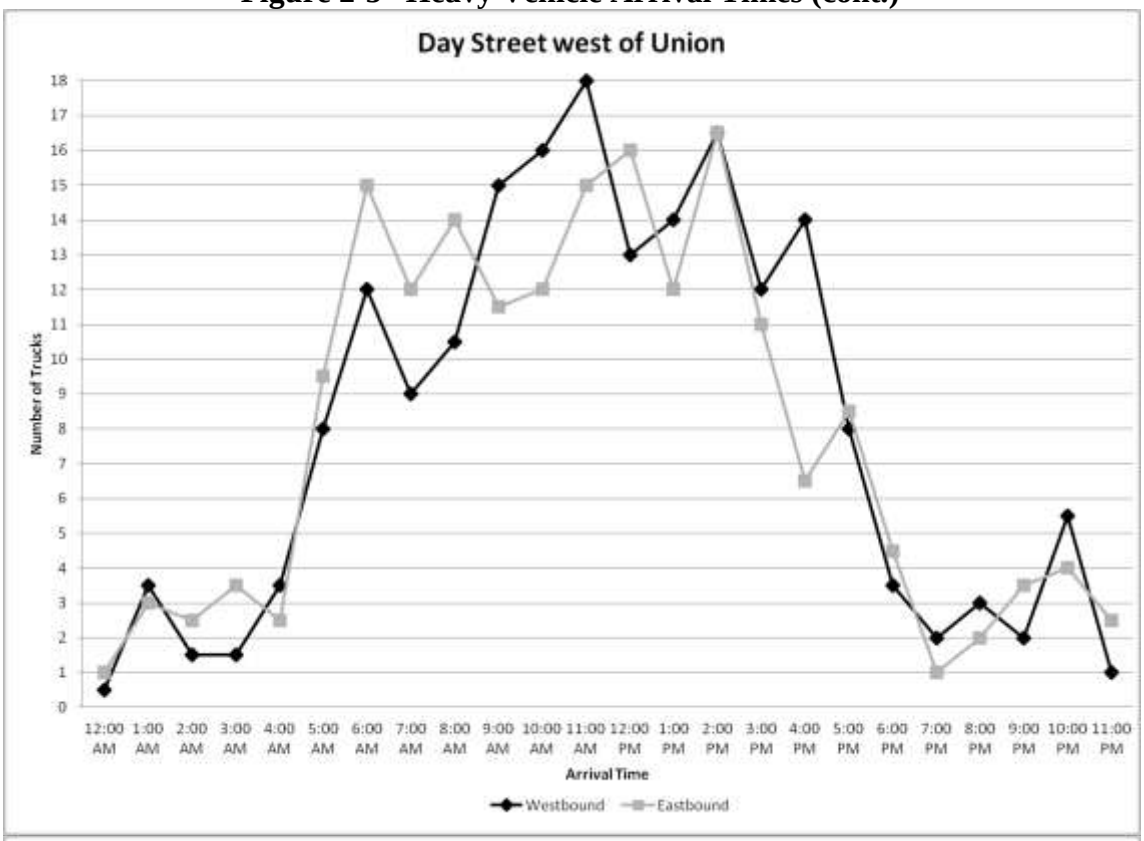


Figure 2-5– Heavy Vehicle Arrival Times (cont.)



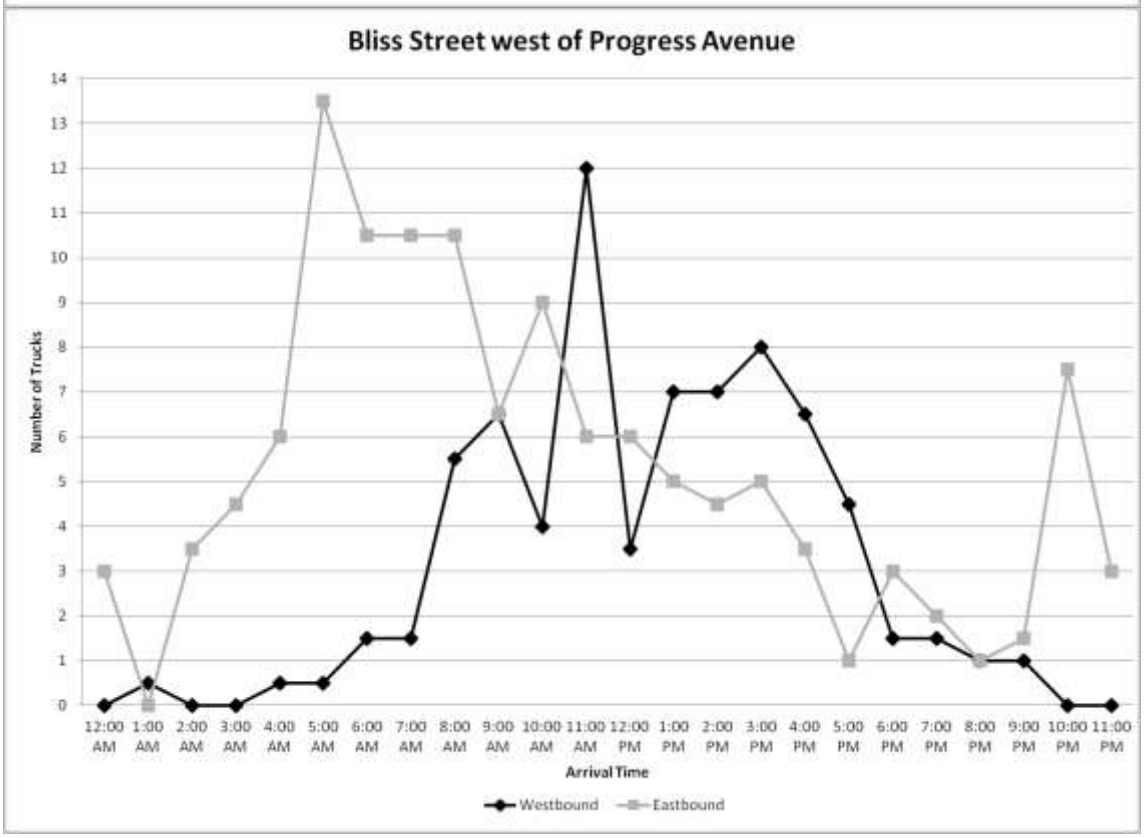
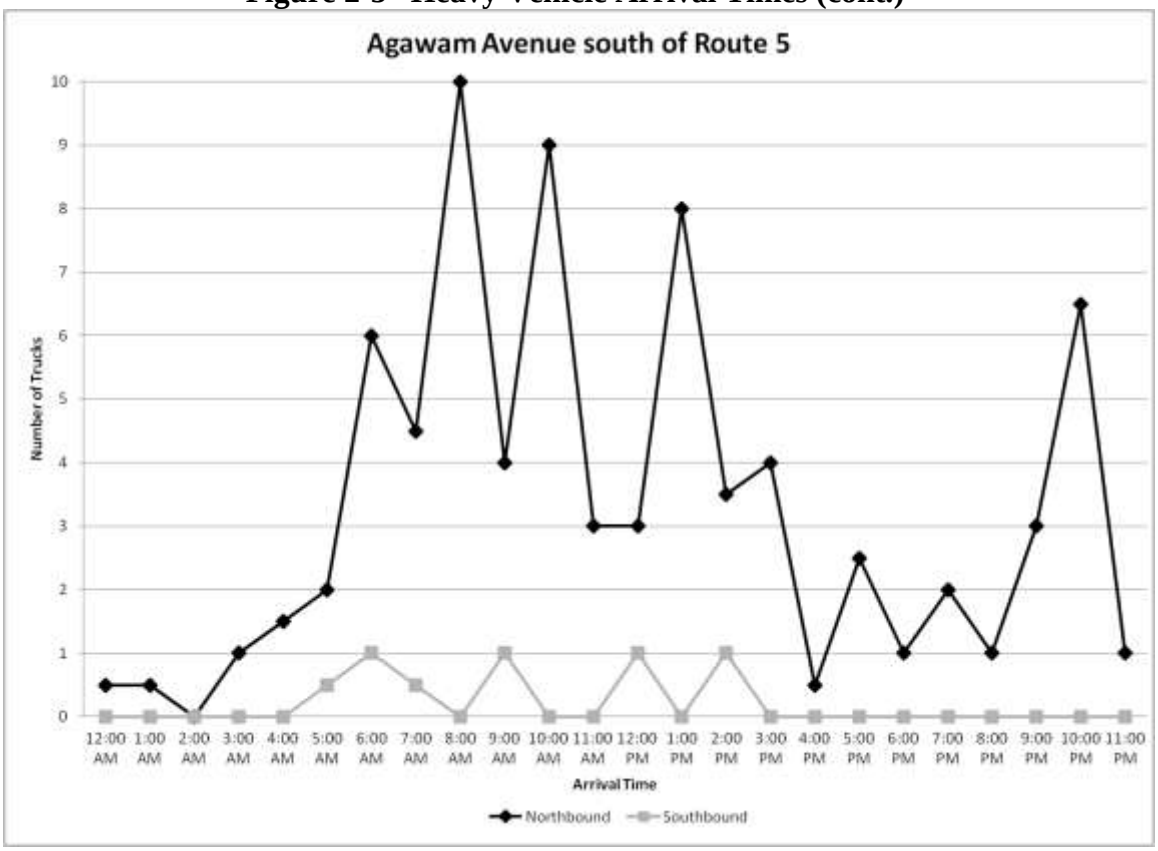


Figure 2-5– Heavy Vehicle Arrival Times (cont.)



a) CSX Gate Study

Data was collected on the truck arrival times at the CSX main entrance on Day Street. The results are shown in Figure 2-6. The peak arrival and departure times for this facility were found to be 12:00 PM to 1:00 for exiting vehicles and 2:00 PM to 3:00 PM for entering vehicles. In addition, information on the type of vehicles that access the facility was also recorded. The company information displayed on the truck cabins and trailers using the gate were recorded. Table 2-4 summarizes the top 10 companies on the date of the survey. This information will be useful to track over time to determine the impact of growth on truck traffic in the future.

Figure 2-6 – Truck Arrival Times at CSX Gate

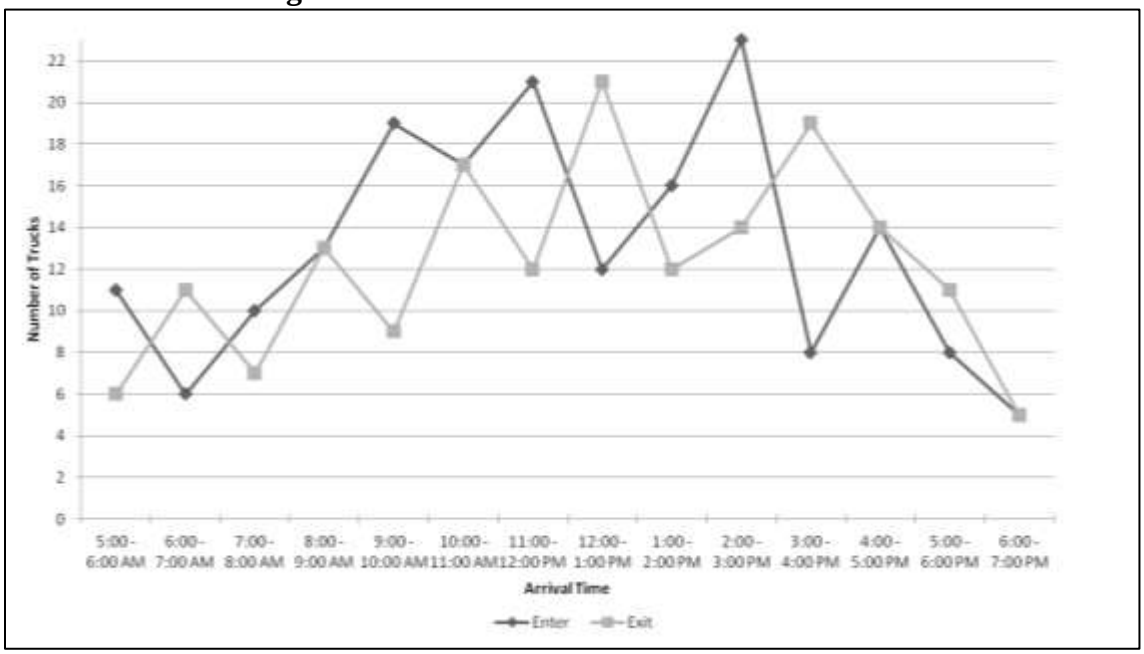


Table 2-4 – CSX Gate Company Names

Trailer Name	Total	Cab Name	Total
Schneider	73	CSX	73
CSX	61	Schneider	54
UMAX	59	Responsive Trucking	45
Pacer Stacktrain	25	Manchester Motor Freight	40
Marten	14	Unmarked	27
Unknown	7	Marten	16
Alliance Shippers	7	UPS	14
Unmarked	6	Atlantic	8
Swift	4	Coast to Coast	8
Werner Enterprises	3	Pacer Stacktrain	8

b) Truck Exclusions

One of the recommendations of the Phase I portion of the study was to consider application for a truck exclusion to assist in keeping trucks off of the residential street system that connects Union Street to Main Street. PVPC collected traffic volume data on six of the connecting roadways between Union Street and Main Street to determine the total traffic volume and percentage of truck traffic that utilize these roadways. This information was previously summarized in Table 2-3.

(i) Truck Exclusion Requirements

The Massachusetts Department of Transportation (MassDOT) is the responsible agency for authorizing truck exclusions from municipal roadways. MassDOT requires that an engineering study be performed for the roadway or roadway segments proposed for a truck exclusion. In addition, one of three warrants must be met in order to consider a roadway for a truck exclusion.

- **Warrant 1**: A volume of heavy commercial vehicles, which usually is in the range of 5 - 8 %, reduces the utilization of the facility and is cause for a substantial reduction in capacity or safety.
- **Warrant 2**: The condition of the pavement structure of the route to be excluded indicates that further repeated heavy wheel loads will result in severe deterioration of the roadway.
- **Warrant 3**: In certain instances where land use is primarily residential in nature and a municipality has requested an exclusion only during hours of darkness, a specific night time exclusion may be granted.

During the process of considering an alternate truck route, it is important to consider the impact of shifting the trucks from the impacted street to other residential areas. Any proposed alternate route should have adequate width, height clearance, and weight limits to accommodate the trucks. Consideration should also be given to intersections which do not provide an adequate turning radius for trucks.

In addition, the following data should be submitted by the city for consideration by MassDOT:

- A twenty four hour consecutive count of all vehicles using the subject street (twelve hours for a twelve hour exclusion). The count shall be broken into one-half hour intervals, distinguishing between:
  - commercial vehicles with a carrying capacity of over 2.5 tons
  - other vehicles
- A map of the area with the proposed exclusion route marked in red, and the proposed alternate route marked in green.
- A description of the physical characteristics of the excluded and alternate streets in question, detailing the street length, width, type, pavement condition, and type of sidewalk.

- A description of the types of buildings or property abutting the street, (i.e. residential, business, school, park, etc.).
- The current zoning of the streets.
- The proximity of the proposed alternate route to the proposed excluded route, and the additional distance which much be traveled using the alternate route.
- The existing types of traffic control on both routes.
- The hours in which the proposed exclusion is to be in effect.
- A written statement from local officials documenting the need for such an exclusion.

Approval of a request for a truck exclusion by MassDOT give the city the right to post signs indicating that trucks are prohibited from travelling along the roadway with the exception of those with business along the roadway. It also allows the city to legally enforce the restriction and issue citations to vehicles found to be in violation of the restriction.

Based on the data collected by PVPC, only Merrick Street currently meets the minimum volume requirements of Warrant #1 for a truck exclusion. While the percentage of truck traffic on Church Street, Irving Street, Spring Street, Sprague Street, Russell Street does not currently meet the minimum volume requirements for consideration for a full time truck exclusion, all of these roadways are primarily residential in nature and could be considered for a night time truck exclusion.

4. Travel Speeds

Travel Speed data was collected to establish the ranges in which vehicles were measured to be traveling. This data was used to establish "bins" of data to summarize the ranges in which vehicles were measured to be traveling. Speed data is summarized in Table 2-5.

Most roadways in the study area are not posted with speed limits. Several roadways are posted as "Thickly Settled" which under Massachusetts law are designated for a speed limit of 30 mph. Most vehicles were recorded to travel in the 31 – 35 mph range. It should be noted that the collected data may not represent true "free-flow" speed conditions as traffic count equipment cannot always be safely placed in an ideal location.

Over 28% of all vehicles travelling in the southbound direction on River Street were found to exceed 40 mph. Approximately 10% of vehicles travelling eastbound on Memorial Avenue were recorded to exceed 40mph while over 40% were recorded to travel over 35 mph. Over 20% of all vehicles were recorded to travel over 35 mph on Union Street north of Bliss Street. This could be a result of the wide travel lanes in this area.

Table 2-5 – Vehicle Travel Speeds (mph)

Street	Cross Street	Direction	0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	>50
Union St	north of Bliss St	NB	8.9%	4.6%	9.5%	19.7%	31.6%	19.7%	5.0%	0.8%	0.2%
		SB	6.9%	4.0%	12.4%	26.7%	34.5%	13.0%	2.1%	0.3%	0.1%
Union St	south of Bridge St	SB	14.0%	31.7%	44.2%	9.1%	0.9%	0.1%	0.0%	0.0%	0.0%
		NB	17.6%	18.5%	44.8%	17.4%	1.7%	0.1%	0.0%	0.0%	0.0%
Union St Extension	south of Memorial Ave	SB	5.7%	13.9%	36.0%	31.6%	10.9%	1.8%	0.2%	0.0%	0.0%
		NB	7.9%	31.7%	40.0%	15.1%	4.5%	0.7%	0.1%	0.1%	0.0%
Main St	south of Bridge St	SB	9.9%	6.7%	26.5%	40.1%	14.8%	1.7%	0.2%	0.0%	0.0%
		NB	11.3%	2.9%	15.5%	34.1%	26.0%	8.5%	1.5%	0.2%	0.0%
Main St	south of Park Ave	SB	8.4%	6.3%	11.7%	32.8%	30.8%	8.8%	1.1%	0.1%	0.0%
		NB	9.5%	5.4%	10.4%	25.0%	34.2%	12.6%	2.6%	0.1%	0.2%
River St	south of Roanoke Ave	NB	6.3%	1.9%	5.5%	25.1%	47.2%	12.8%	0.9%	0.1%	0.1%
		SB	5.5%	1.0%	1.7%	5.5%	19.2%	38.7%	22.1%	5.3%	1.1%
Western Ave	south of Park Ave	NB	13.0%	17.8%	30.3%	26.5%	9.9%	2.1%	0.3%	0.0%	0.0%
		SB	12.8%	19.2%	43.5%	22.5%	1.9%	0.1%	0.0%	0.0%	0.0%
Progress Ave	south of Park Ave	NB	34.9%	34.9%	19.4%	9.4%	1.4%	0.0%	0.0%	0.0%	0.0%
		SB	35.1%	31.0%	20.2%	11.6%	2.1%	0.0%	0.0%	0.0%	0.0%
Sylvan St	south of Park St	SB	42.2%	38.9%	18.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
		NB	25.4%	42.6%	28.5%	3.5%	0.1%	0.0%	0.0%	0.0%	0.0%
Agawam Ave	south of Route 5	NB	10.0%	6.6%	13.7%	25.5%	28.5%	11.8%	3.0%	0.6%	0.2%
		SB	38.8%	7.5%	20.5%	19.3%	11.8%	1.6%	0.6%	0.0%	0.0%
Memorial Ave	east of Dyke Ave	WB	12.4%	1.8%	3.9%	21.5%	41.2%	16.5%	2.3%	0.3%	0.1%
		EB	18.6%	2.0%	1.8%	7.4%	28.5%	30.0%	9.9%	1.5%	0.2%
Memorial Ave	east of Main St	EB	20.5%	9.4%	27.0%	32.3%	9.4%	1.2%	0.2%	0.0%	0.0%
		WB	19.0%	5.8%	17.5%	33.1%	20.2%	3.9%	0.5%	0.0%	0.0%
Day St	west of Union St	WB	22.8%	25.7%	27.0%	15.2%	6.7%	2.1%	0.4%	0.0%	0.0%
		EB	27.2%	26.2%	21.6%	16.9%	6.5%	1.4%	0.1%	0.0%	0.0%
South Blvd	west of Webster Ave	WB	8.8%	1.5%	6.0%	26.2%	40.5%	14.7%	2.0%	0.2%	0.1%
		EB	5.9%	0.2%	1.4%	10.3%	46.5%	31.0%	4.1%	0.4%	0.1%
Park St	west of Kelso Ave	EB	5.5%	2.0%	9.5%	36.7%	37.3%	8.1%	0.8%	0.1%	0.0%
		WB	8.2%	5.2%	12.8%	28.3%	30.4%	12.1%	2.4%	0.4%	0.1%
Park Ave	west of Park Ave Ct	EB	13.4%	4.8%	13.2%	28.5%	27.6%	10.1%	2.0%	0.3%	0.1%
		-	-	-	-	-	-	-	-	-	-

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Table 2-5 – Vehicle Travel Speeds (cont.)

Street	Cross Street	Direction	0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	>50
Bliss St	west of Progress Ave	EB	7.1%	11.0%	29.5%	38.0%	12.9%	1.0%	0.4%	0.1%	0.0%
		WB	3.8%	7.2%	25.8%	41.3%	18.3%	3.2%	0.3%	0.0%	0.0%
Memorial Ave	west of Big E Gate 1	WB	11.6%	5.6%	10.1%	25.4%	30.9%	13.4%	2.5%	0.4%	0.1%
		EB	10.6%	2.5%	2.8%	20.1%	44.5%	17.4%	1.7%	0.2%	0.0%
Lowell St	north of Memorial Ave	SB	45.8%	31.3%	21.0%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%
		NB	35.8%	31.1%	28.8%	4.2%	0.2%	0.0%	0.0%	0.0%	0.0%
Day St	At Railyard	NB	48.3%	28.0%	19.6%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%
		SB	48.4%	29.8%	19.8%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Park St	west of Lathrop St	WB	4.3%	2.0%	9.4%	33.3%	36.6%	12.1%	2.0%	0.2%	0.0%
		-	-	-	-	-	-	-	-	-	-
Western Ave	south of Bliss St	NB	4.6%	8.4%	16.2%	27.9%	26.3%	12.2%	4.0%	0.2%	0.2%
		SB	8.2%	6.0%	21.3%	33.8%	24.0%	6.0%	0.7%	0.0%	0.0%
New Bridge St	between Memorial Ave and Union St	EB	50.0%	8.0%	22.0%	10.0%	10.0%	0.0%	0.0%	0.0%	0.0%
		WB	37.5%	6.3%	18.8%	25.0%	12.5%	0.0%	0.0%	0.0%	0.0%
Irving St	between Main and Union St	EB	34.6%	32.2%	20.8%	9.4%	2.4%	0.4%	0.0%	0.2%	0.0%
		WB	40.9%	29.8%	19.5%	7.5%	1.3%	0.4%	0.6%	0.0%	0.0%
Church St	between Main and Union St	EB	20.0%	22.8%	31.3%	20.0%	5.2%	0.8%	0.0%	0.0%	0.0%
		WB	35.5%	24.2%	27.7%	10.2%	2.4%	0.0%	0.0%	0.0%	0.0%
Spring St	between Main and Union St	-	55.6%	11.1%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		WB	23.0%	36.8%	29.7%	9.7%	0.7%	0.2%	0.0%	0.0%	0.0%
Sprague St	between Main and Union St	EB	32.8%	40.4%	21.7%	4.7%	0.3%	0.0%	0.0%	0.0%	0.0%
		WB	33.5%	36.6%	24.1%	5.4%	0.4%	0.0%	0.0%	0.0%	0.0%
Merrick St	between Main and Union St	EB	28.0%	29.8%	28.4%	10.2%	3.1%	0.4%	0.0%	0.0%	0.0%
		WB	25.6%	24.5%	26.2%	16.9%	6.0%	0.6%	0.2%	0.0%	0.0%
Russell St	between Main and Union St	EB	20.1%	28.9%	34.6%	13.2%	3.0%	0.2%	0.0%	0.0%	0.0%
		WB	19.1%	21.4%	30.1%	21.8%	6.6%	0.8%	0.2%	0.0%	0.0%

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

a) Speed Laws in Massachusetts

MGL Chapter 90, Section 18 allows for the posting of numerical limits on the typical speed limit sign. This law also indicates that the limit must be based on an engineering study and requires approval of a Special Speed Regulation by both the Registry of Motor Vehicles (RMV) and MassDOT. A regulatory speed limit sign not posted under this procedure is in violation of the law and is not legally enforceable.

MGL Chapter 90, Section 17 applies to unposted roadways and specifically states that it shall be prima facie evidence of a rate of speed greater than is reasonable and proper as aforesaid (1) if a motor vehicle is operated on a divided highway outside a thickly settled or business district at a rate of speed exceeding fifty miles per hour for a distance of a quarter of a mile, or (2) on any other way outside a thickly settled or business district at a rate of speed exceeding forty miles per hour for a distance of a quarter of a mile, or (3) inside a thickly settled or business district at a rate of speed exceeding thirty miles per hour for a distance of one-eighth of a mile, or (4) within a school zone which may be established by a city or town as provided in section two of chapter eighty-five at a rate of speed exceeding twenty miles per hour.

Source: Baystate Roads - Mass Interchange, Spring 2014

b) Setting Speed Limits

Municipalities should contact MassDOT to request speed limit posting on state-owned roadways. It is the responsibility of the municipality to follow the procedures for locally-owned roadways, which require approval by both MassDOT and the RMV.

The establishment of a speed limit is required to be based upon an engineering study, and any resulting posting must be in increments of 5 mph. One major basis for the setting of speed limits is that most motorists are able to select a reasonable and safe speed. Speed limits are typically established based on the 85th Percentile speed calculated as part of the engineering study. Characteristics such as shoulders, roadway pavement condition, grade, sight distance, curves, on-street parking, pedestrian and bicycle activity, crash history, and existing development all have an impact on the selection of the posted speed limit.

Source: Baystate Roads - Mass Interchange, Spring 2014

5. 2004 and 2014 Study Comparison

Since the completion of the Phase I Merrick-Memorial Neighborhood Redevelopment Plan transportation conditions have changed in the neighborhood including different traffic patterns and volumes. A comparison of Annual Average Daily Traffic (AADT) from 2003 to 2012 is displayed in Table 2-6.

Table 2-6 - AADT Comparison

Location	2003	2012	% Difference
Main Street south of Park Avenue	7,934	7,124	-11.4%
Main Street south of Bridge Street	6,056	6,697	9.6%
Union Street south of Bridge Street	7,883	7,670	-2.8%
Union Street north of Bliss Street	9,876	8,943	-10.4%
Memorial Avenue east of Main Street	12,134	17,320	29.9%
Memorial Avenue east of Dyke Avenue	15,712	16,193	3.0%
River Street south of Roanoke Avenue	10,986	10,597	-3.7%
Western Avenue south of Park Avenue	2,803	2,392	-17.2%
Union Street Extension south of Memorial Avenue	4,253	4,398	3.3%
Agawam Avenue south of Route 5	653	717	8.9%
Sylvan Street south of Park Street	383	673	43.1%
Progress Avenue south of Park Avenue	437	369	-18.3%

The Annual Average Daily Traffic volume in the study area has increased overall by 4.8% since 2003. Traffic volumes have increased the most on Memorial Avenue east of Main Street. Sylvan Street traffic has nearly doubled since 2003. A number of location show a decrease in traffic volume from 2003 to 2012. Most notably, traffic volumes on sections of Main Street and Union Street were recorded to be lower than 2003 volumes. This could be a result of the slow recovery of these areas from the June 1, 2011 tornado.

Similarly, Table 2-7 shows how the percentages of heavy vehicle traffic have changed from 2003 to 2012. The percentage of heavy vehicle traffic using Western and Union streets has increased over this time period. This is likely a result of the improvements made to the CSX railyard in 2010 which have anecdotally been attributed to have resulted in an increase in truck traffic. Truck traffic has declined in most other areas when compared to 2003 volumes. This may not be entirely a result of less trucks travelling through the study area, but rather more passenger vehicles travelling along the roadway, resulting in an overall lower percentage of trucks.

Table 2-7 - Vehicle Class Comparison

Street	Cross Street	Direction	%Heavy 2003	%Heavy 2012	% Difference
Union St	north of Bliss St	NB	7.37%	13.53%	6.16%
		SB	8.72%	7.55%	-1.17%
Union St Ext.	south of Memorial Ave	SB	13.36%	11.10%	-2.26%
		NB	14.89%	7.53%	-7.36%
Main St	south of Bridge St	SB	6.65%	1.74%	-4.91%
		NB	7.86%	2.81%	-5.05%
Main St	south of Park Ave	SB	8.57%	3.81%	-4.76%
		NB	7.18%	4.00%	-3.18%
River St	south of Roanoke Ave	NB	9.28%	3.25%	-6.03%
		SB	6.47%	3.47%	-3.00%
Western Ave	south of Park Ave	NB	10.08%	11.49%	1.41%
		SB	13.33%	18.25%	4.92%
Progress Ave	south of Park Ave	NB	8.08%	7.76%	-0.32%
		SB	5.45%	4.62%	-0.83%
Sylvan St	south of Park St	SB	8.82%	6.85%	-1.97%
		NB	8.56%	5.85%	-2.71%
Agawam Ave	south of Route 5	NB	13.94%	13.08%	-0.86%
		SB	11.68%	2.91%	-8.77%

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

B. INFRASTRUCTURE

1. Pedestrian Infrastructure

The PVPC staff conducted an inventory of all existing sidewalks in the study area. In general, sidewalks are present on at least one side of the roadway in residential areas with the exception of a portion of Allston Avenue, Exposition Terrace, Windsor Street and Burford Avenue. Many streets such as Western Avenue that consist almost entirely of commercial land uses do not have sidewalks. This issue may need to be reviewed on a periodic basis based on changes in the extent and type of land uses along these roadways. A complete list of streets with partial or missing sidewalks is shown in Table 2-8.

Table 2-8 – Streets with Incomplete Sidewalks

Roadway	Missing Sidewalk Location	Roadway	Missing Sidewalk Location
Allston Avenue	Eastern side, some of western side	Moseley Avenue	Both sides after the curve
Bliss Street	Both sides, west of Union Street	New Bridge Street	North side, west of Union Street
Bosworth Street	Most of western side	Norman Street	Western side, north of 140 Norman Street
Bridge Street	Both sides in between Main and Union Street	Railroad Street	North and east sides
Burford Avenue	South side	River Street	Western side
Century Way	Both sides	Roanoke Avenue	Western side
Circuit Avenue	Both sides	Sears Way	Both sides
Cold Springs Avenue	Most of northern side	Spring Street	South side
Cook Street	Eastern side	Summer Street	Both sides
Day Street	Both sides	Sylvan Street	Both sides
Exposition Avenue	Both sides	Union Street Extension	Both sides
Exposition Terrace	Both sides	West School Street	South side, west of 62 School Street
Heywood Avenue	Eastern side	Western Avenue	Both sides
Lowell Avenue	Both sides	Windsor Street	Most of western side
Lowell Street	Eastern side	York Street	Most of western side

Many locations in the study area do not meet current Americans with Disabilities Act (ADA) requirements. The ADA guarantees that people with disabilities have the same opportunities as everyone else to participate in all activities. This includes accessibility to public infrastructure such as sidewalks via ramps that allow wheelchairs safe and efficient access to sidewalks and crosswalks. Wheel chair ramps must be wide enough to accommodate wheelchairs with a gentle slope that can be safely navigated by a manually powered wheelchair. Inverted tactile domes are also required at the bottom of all ramps to clearly identify the edge of the roadway for people with visual impairment.

A number of crosswalks in the study area were found to be very faded and in need of new paint to maximize visibility. Many crosswalks lack proper warning signs and advance pavement markings on high volume roadways. In addition, some crosswalks do not align properly with existing wheelchair ramps or direct pedestrians into an existing driveway opening when wheel chair ramps are not present. This notably occurs directly in front of the Memorial School at two crosswalks on Norman Street. Some wheelchair ramps were also observed to be blocked with snow during field observations this past winter. Figure 2-7 show all existing crosswalks on Main Street and Union Street in the study area.

Roadways accommodate a variety of pedestrians who have a different physical, cognitive, and sensory abilities. Their abilities vary in agility, balance, cognition, coordination, endurance, flexibility, hearing, problem solving, and strength. Some pedestrians require more time to cross a street and pedestrians who are visually impaired may require audible and tactile cues.

The Bureau of Census data indicates that:

- Approximately 20 percent of all Americans have a disability, and that percentage is increasing.
- By the year 2030, one in five Americans will be 65 years or older.

Universal design principles are based on creating an environment that is usable for people of all abilities. Incorporating these principles into all aspects of sidewalk development can eliminate the barriers and create a truly functional sidewalk system.

The following notes are summarized from MassDOT guidance and are not meant to replace or used as interpretation of the regulations:http://www.massdot.state.ma.us/Portals/8/docs/construction/WheelchairRampNotes20120309.pdf

The MassDOT recommends a walking surface width not less than 5’-0”. When the sidewalk is to be constructed adjacent to a curb, it is shown on the plans as 5’-6” which includes the curb width. When the sidewalk is separated from the curb by a planting strip, it is generally dimensioned separately and is at least 5’-0”. An unobstructed 3’-0” path of travel, excluding curb must be maintained, past any sidewalk obstruction, including but not limited to utility poles, mail boxes, trees and open areas around them, street lights, traffic signal bases and pre-cast foundations and other signal hardware, hydrants, signs and poles.

Figure 2-7 – Crosswalk Locations on Main Street and Union Street

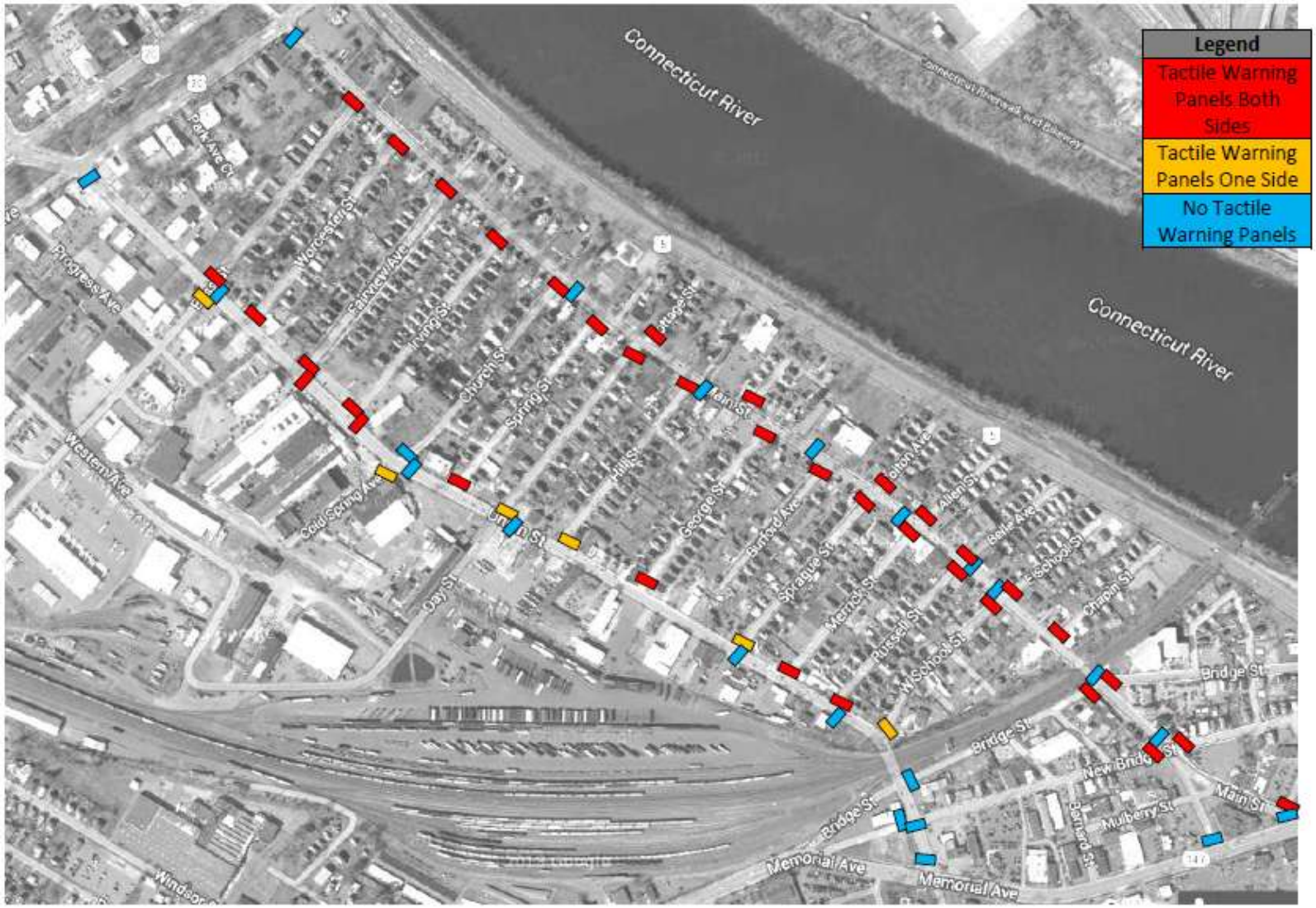
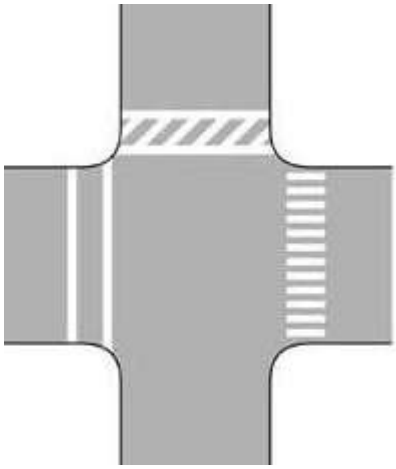


Figure 2-8 – Crosswalk Locations on Baldwin Street

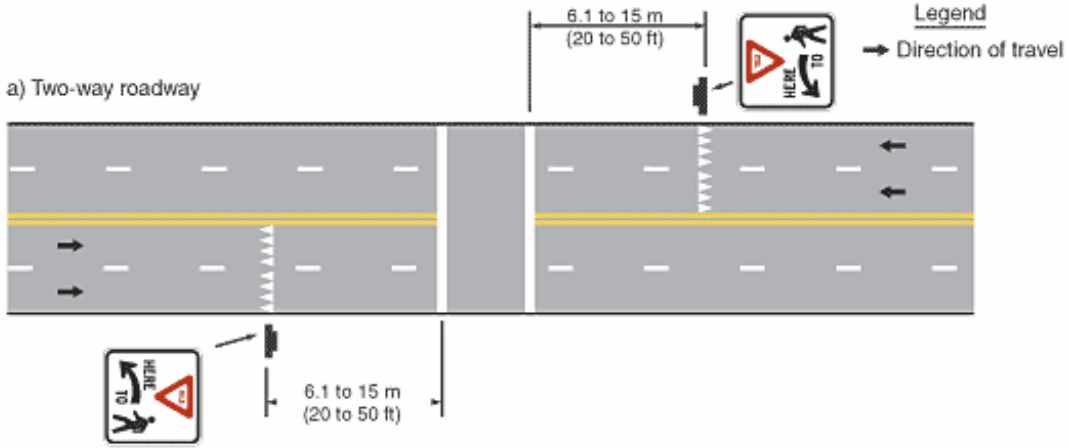
2. Design of a Crosswalk



Crosswalk markings provide guidance for pedestrians who are crossing roadways. Minimally, crosswalks must consist of two parallel lines that shall not be less than 6 inches or greater than 24 inches in width. The crosswalk should have a width of no less than six feet. For added visibility additional marking opportunities exist. For example, the preferred type of crosswalk marking in many municipalities is the ladder, or continental" pattern consisting of white longitudinal lines parallel to traffic flow, however "zebra" (diagonal) striping may also be used. Longitudinal or diagonal lines should be 12 to 24 inches wide and spaced 12 to 60 inches apart. Crosswalk markings should be spaced so that the lines are not in wheel paths. In addition, the spacing should not exceed 2.5 times the width of the lines. See the Manual on Uniform Traffic Control Devices(MUTCD Section 3B.16) for more information. http://mutcd.fhwa.dot.gov/HTM/2003r1/part3/fig3b-16_longdesc.htm

3. Non Intersection Crosswalks

At non intersection locations, in addition to the crosswalk markings, yield lines may be used to indicate the point at which vehicles should yield to pedestrians. Yield lines consist of solid white triangles pointing toward approaching vehicles and extend across the approach lane. The individual triangles have a base 12 to 24 inches wide and a height of 1.5 times the base, and are spaced 3 to 12 inches apart. If used, yield lines should be placed next to a "Yield Here to Pedestrians" (R15) sign. Please see MUTCD Section 3B.15 for additional details at these locations.



a) Park Street

A 2010 consultant study evaluated the effectiveness and safety of the existing pedestrian crosswalk located across the Park Street in front of the West Springfield Senior Center. The study noted that the existing crosswalk originates at the sidewalk in front of the Center and routes pedestrian traffic through the bus stop to the sidewalk on the Town Green. The study developed three conceptual designs to improve this pedestrian crossing as follows:

- Upgrade the existing crosswalk to provide ADA compliant wheelchair ramps and advance warning signs.
- Relocate the crosswalk approximately 100 feet east to separate the crosswalk from the bus stop. Install ADA compliant wheelchair ramps and install new signs and pavement markings. This would require the loss of 3 parking spaces but shorten the pedestrian crossing distance.
- A third alternative builds upon the previous alternative to also install a push-button activated flashing warning beacon for Park Street.

4. Transit Service

The Pioneer Valley Transit Authority (PVTA) operates three fixed route bus routes in the Merrick and Memorial Neighborhoods: P20, R10 and R14. Ridership is presented in Table 2-9

Table 2-9 – Existing PVTA Ridership Data (April 2013)

Route	Start	End	Average Weekday Ridership	Monthly Ridership	Yearly Ridership
R10	Springfield Bus Terminal	Westfield State University/Westfield Center	1297	23,872	286,465
R14	Springfield Bus Terminal	Feeding Hills	463	8,730	104,758
P20	Springfield Bus Terminal	Holyoke Transportation Center	3,298	65,636	787,633

Ridership data was collected from PVTA's intelligent transportation system. One of the functions of this system is that it automatically counts boarding's and alighting's along with the exact bus stop location. For this data set one week (the week of April 8th, 2013) of data was extracted to calculate average use of each bus stop.

PVTA route P20 travels along Route 20 on the northern edge of the Merrick Neighborhood. The P20 has the most frequency of any Merrick bus route along with the longest span of service. The P20 traveling in the northbound direction travels over the North End Bridge, through the Rotary to Park Street, then turns right onto Elm Street. The P20 traveling in the southbound direction turns left onto Park Avenue from Elm Street, through the rotary to the North End Bridge. Once over the bridge the P20 services the Springfield Bus Terminal (SBT). This route provides the fastest connection to the terminal as the trip should take approximately 5 minutes.

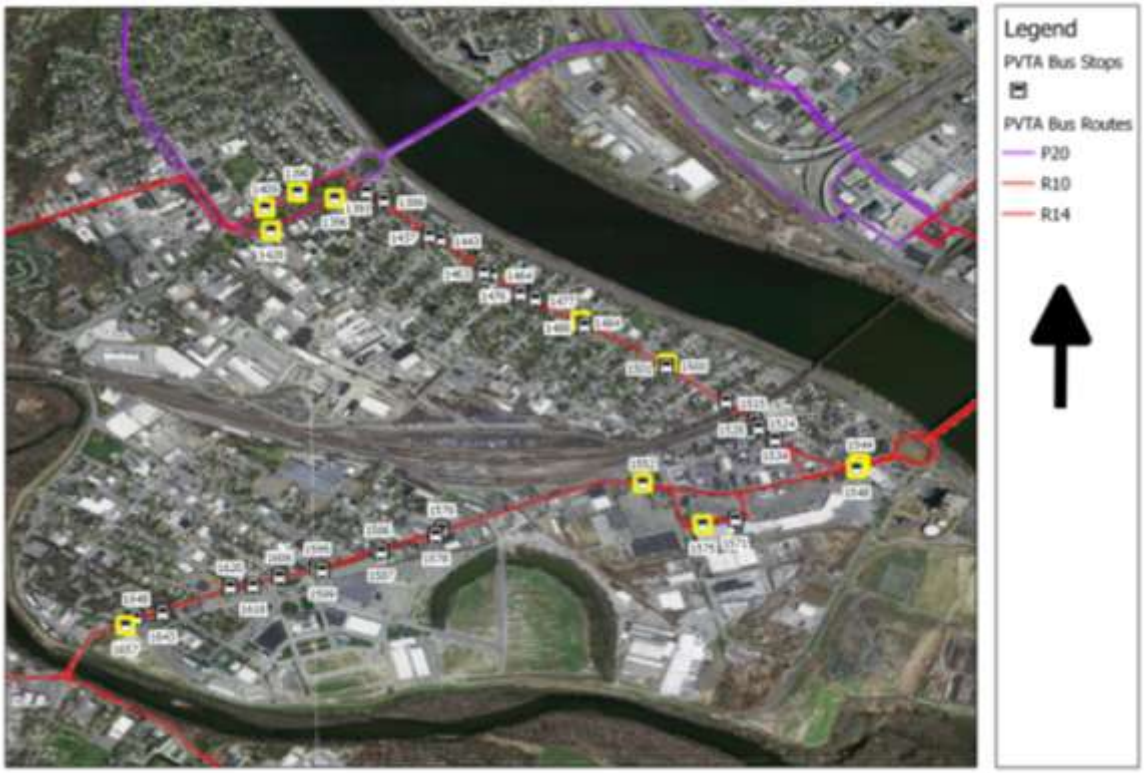
The R10 is the only route that runs north-south through the Merrick neighborhood by utilizing the Main Street corridor. This route also provides the most geographic coverage of the neighborhood. The R10 services the eastern part of Memorial Avenue as well as Park Avenue/Park Street from Elm Street to the Rotary. The westbound R10 travels over Memorial Bridge, through the Rotary to Memorial Avenue, turns right onto Main Street, travels through the North End Bridge rotary to Park Street, and then turns right onto Park Avenue. The eastbound R10 turns left

onto Park Avenue from Elm Street, turns right onto Main Street, turns left onto Memorial Drive, and travels through the rotary to the Memorial Bridge.

The R14 travels on the southern side of the Merrick Neighborhood using the Memorial Avenue corridor. This route services Century Plaza, the Big E and the Feeding Hills neighborhood. The westbound R14 travels over the Memorial Bridge, through the rotary to Memorial Avenue, turns left into Century Plaza, then turns left onto Memorial Avenue and continues to Agawam. The eastbound R14 travels on Memorial Avenue from Agawam, turns right into Century Plaza, turns right onto Memorial Avenue and travels through the rotary to the Memorial Bridge. Both the R14 and the R10 provide transit service to the central business district of Springfield.

Table 2-10 presents ridership information for all PVTA bus stops located in the Merrick and Memorial neighborhoods. Bus stops that have high ridership are highlighted on Figure 2-9 PVTA Bus Routes and Bus Stops.

Figure 2-9 – PVTA Bus Routes and Bus Stops



In October, 2011 PVTA conducted a series of public outreach meetings with local groups that have Limited English Proficiency, including Somali, Russian, Burmese, Spanish and Chinese native speakers. The meetings were held on October 6th and 20th, 2011 at Lutheran Social Services on 593 Main St, West Springfield MA. At the meetings, PVTA and PVPC staff provided information about how to use PVTA's bus and van service and answered any questions or concerns that came up during the meeting. The meetings included a 15-minute ride on a PVTA bus to demonstrate vehicle features, boarding and fare payment, and safety items.

Table 2-10 Average Daily Ridership for PVTA Stops in Study Area

Bus Stop ID	Stop Name	Daily Average Alights	Daily Average Boards
1390	PARK / LATHROP	33.6	15.4
1391	MAIN / US HWY 20	4.0	3.0
1396	US HWY 20 / MAIN	17.8	21.4
1399	MAIN / BLISS	7.4	2.0
1409	PARK / PARK	20.0	12.0
1428	US HWY 20 / PARK	13.8	25.6
1437	MAIN / FAIRVIEW	2.8	4.2
1443	MAIN / FAIRVIEW	6.0	1.4
1463	MAIN / CHURCH	0.3	0.7
1464	MAIN / CHURCH	3.0	0.0
1476	MAIN / JAMES	1.0	4.0
1477	MAIN / COTTAGE	5.0	6.4
1484	MOSLEY / MAIN	22.8	4.0
1488	MAIN / GEORGE	2.0	15.4
1500	MAIN / ALLEN	17.0	12.0
1501	MAIN / ALLEN	6.2	16.2
1515	CHAPIN / MAIN	NA	NA
1524	MAIN / BRIDGE	7.2	6.4
1528	MAIN / BRIDGE	2.8	5.6
1534	MAIN / NEW BRIDGE	2.2	3.2
1544	MEMORIAL / MAIN	76.0	16.0
1548	MEMORIAL / MAIN	22.2	55.0
1552	MEMORIAL / MEMORIAL	30.6	11.4
1571	CENTURY PLAZA DRIVE / MEMORIAL	6.2	1.4
1575	CENTURY PLAZA DRIVE / UNION STREET	25.0	37.0
1576	MEMORIAL / LOWELL	1.7	0.0
1578	MEMORIAL / LOWELL	1.0	0.3
1586	MEMORIAL / BOSWORTH	2.0	0.0
1587	MEMORIAL / BOSWORTH	0.0	3.8
1595	MEMORIAL / EAST	1.0	0.0
1599	MEMORIAL / EAST	0.0	1.3
1606	EXPOSITION / MEMORIAL	8.0	0.2
1618	MEMORIAL / EXPOSITION	0.0	12.8
1620	MEMORIAL / HEYWOOD	5.4	0.2
1643	MEMORIAL / AVENUE OF THE STATES	0.3	1.3
1648	MEMORIAL / CIRCUIT	17.0	1.0
1657	MEMORIAL / COLONY	1.6	38.0

5. Clearance

Railroad underpasses occur on Main Street, River Street and Union Street in the study area. All three underpasses provide 12 feet of vertical clearance which restrict the ability of larger vehicles to serve the study area. The American Association of State Highway and Transportation Officials (AASHTO) recommends a minimum of 14.5 feet of vertical clearance, with a desirable vertical clearance of 16.5 feet to compensate for roadway resurfacing and snow and ice accumulation.

The railroad underpass on Union Street is also restricted by an existing curve on its southbound approach. Both Main Street and Union Street also intersect with Bridge Street in close proximity to the railroad underpass. Sight distance for vehicles traveling in this area is restricted by the structural supports for the underpass.

The Main Street railroad underpass is the widest of the three. Sidewalks are provided on both sides of the roadway, however, the existing support beams restrict the width of the sidewalk. Sight distance to Bridge Street to vehicles travelling south on Main Street is restricted by the overpass.

The Union Street underpass is the most centrally located and offers direct access to the CSX railyard for vehicles that can clear it's posted 12 foot, 1 inch vertical clearance. Union Street intersects with West School Street to the north of the structure and Bridge Street south of the structure impacting sight distance for vehicles travelling in both directions. A narrow sidewalk is provided on the west side of Union Street. This location is also prone to flooding during significant rain events.

Clearance for the River Street underpass is currently posted at 12 feet, 4 inches. A single sidewalk is provided on the eastern side of the road. Directional guide signs to Route 20 are posted on the side of the underpass, this sign is damaged and is difficult to read.

A major recommendation of the Phase I portion of the study was the upgrade of the existing Union Street railroad underpass. The Union Street underpass serves as a major entry point into the Merrick Industrial Area from the south via Memorial Avenue connecting with Interstate 91. Due to the height limitation of the underpass, trucks cannot utilize this entry point and are forced to access the industrial area using either Union Street or Western Ave via Route 20 along Park Street/Park Avenue.

The CSX Union Street Bridge, located over Union Street at the southerly boundary of the Merrick Industrial Area, currently supports six active railroad tracks. Two of these six tracks are main-line tracks for the CSX Boston line, which is the major rail freight corridor servicing New England, operating with as many as 30 trains per day. Two additional tracks on either side of the main-line tracks serve as the lead tracks into both the carload and intermodal portions of the West Springfield freight rail yard. Due to the extensive distance that would be necessary to make the vertical changes necessary in a way to minimize grade change for rail car use, raising the railroad tracks to achieve the necessary clearance is not physically and financially feasible.

This northerly access point via the boulevard configuration at this section of Route 20 (Park Street/Park Avenue) between Main Street on the east and Western Avenue on the west creates difficulties for larger vehicles attempting to turn south to access the industrial area due to pockets of on-street parking and intersection radii that are substandard for use by most trucks. Larger vehicles also interfere with the operation of the complex intersection of Park Street with Elm Street, Park Avenue and Union Street. There is less than 100 feet of queuing capacity for vehicles between Park Street and Park Avenue, and this contributes to significant congestion in this area. This situation can be further complicated when larger vehicles queue between the two roadways, often causing the line of vehicles to extend into the intersection and block opposing traffic. The use of Route 20 (Park Street/Park Avenue) by trucks servicing the Merrick Industrial Area creates inferior traffic conditions. Diversion of larger vehicles to an alternative route via Route 147 (Memorial Avenue) to Union Street from the south, through an upgraded underpass, would reduce congestion as well as the impact of larger vehicles on the historic common/park area defined by Park Street and Park Avenue.

Land uses along Memorial Avenue are almost entirely commercial in nature. Similar to Park Street, Memorial Avenue provides four travel lanes; however, on-street parking is not permitted. The intersection of Memorial Avenue with Union Street is configured to allow for greater maneuverability of larger vehicles, and has more capacity than the intersection of Park Street with Elm Street, Park Avenue and Union Street. Union Street serves a mixture of commercial and residential land uses between Park Avenue and the underpass; however, the many side streets connecting Union Street with Main Street in this area are entirely residential. Providing an access point into the Merrick Industrial Area from the south side of the Union Street Underpass, which serves only commercial uses and is significantly wider, would dramatically reduce the impact of current truck traffic on the Merrick neighborhood, resolving what has been an ongoing concern to neighborhood residents for many years. In short, the Union Street Underpass improvements will provide significantly enhanced

access and improved traffic flow for trucks utilizing the active Merrick Industrial Area.

The upgrade of the Union Street Underpass is included as a High Priority Project in the current Regional Transportation Plan for the Pioneer Valley. The City of West Springfield has worked in cooperation with MassDOT and CSX to identify a possible design alternative for increasing the vertical clearance at this location. While several possible design alternatives have been developed, a final design has not yet been accepted by all parties. Recently, CSX responded to MassDOT's latest design proposal with two suggested alternatives that may provide a solution that is agreeable to all parties. It will be important to continue to advance potential solutions for this location to assist in improving substandard vertical clearance, address the restricted width of the road, and provide an opportunity for future economic development.

6. Parking Restrictions

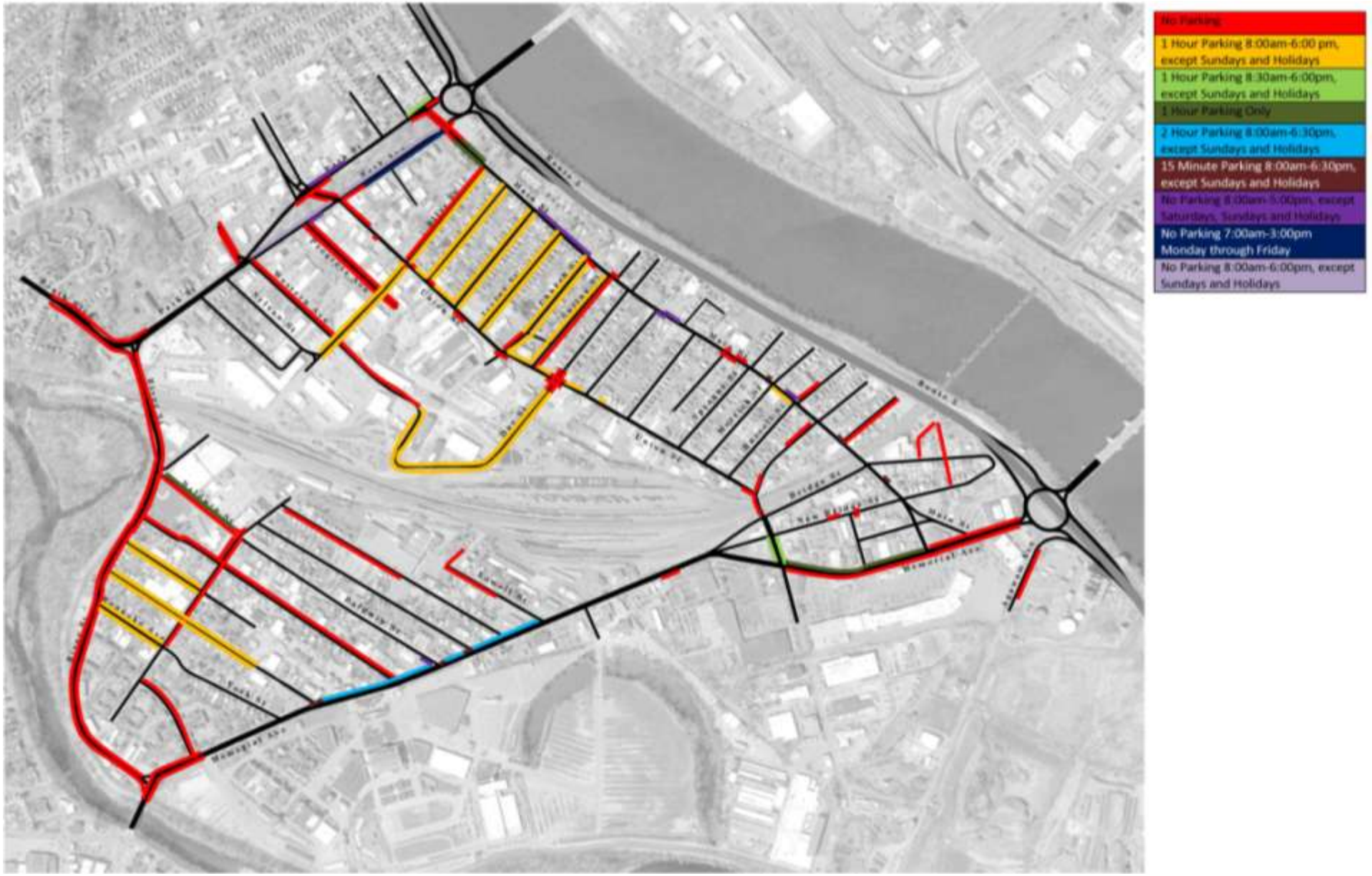
Parking regulations were taken from West Springfield Traffic Rules and Orders recodified by the Town Council on September 09, 2009. All areas with prohibited or restricted parking are shown in Figure 2-10. Parking is not allowed on River Street or Progress Street for the entire length of both streets.

Most of the side streets between Main Street and Union Street have signs announcing a winter parking ban along one side of the street is in effect December 1 to April 1. This exact language was not found in the Traffic Rules and Orders. Language is included in Article IV, Section 16 on "Emergency Parking Bans" that appears to cover this restriction.

A number of locations designated for parking restrictions in the Traffic Rules and Orders do not appear to be signed to reflect the actual language included in the Traffic Rules and Orders. As an example, on-street parking is restricted to 2 hours from 8 AM to 6:30 PM on the northern side of Memorial Avenue between Lowell Street and Exposition Terrace however no regulatory signs were observed along the road in this area.

Many vehicles were also observed to be in violation of posted "No Parking" areas along many roadways in the study area. A number of vehicles park in close proximity to the corner of the intersection, interfering with sight distance for vehicle attempting to exit off of side streets. Many existing regulatory signs were observed to only include text and no international symbols. It is recommended the city consider installing some no parking signs with international symbols (R7-2) to potential assist in better compliance with posted no parking zones.

Figure 2-10 – Parking Restrictions



C. SAFETY / CRASH EXPERIENCE

Information on the crash history at fifteen intersections in the study area was researched through West Springfield Police Department records. Table 2-11 summarizes the number of crashes by location and type for the 2010-2012 calendar years to identify any common conditions and possible causes.

A total of 278 crashes were recorded for the fifteen intersections over the three year period. Nearly 25 percent of all crashes results in a personal injury. Most crashes occurred under dry roadway conditions indicating that weather did not contribute to the crash.

A crash rate analysis was performed to compare the value at the study area intersections to the average value for MassDOT District 2 intersections. The crash rate per million entering vehicles (MEV) was calculated. In theory, crash rates can increase as the traffic volume along the roadway increases or as the potential for conflict is increased. The crash rate per million entering vehicles takes into consideration the number of crashes at an intersection and the number of vehicles that enter the intersection over the course of an average day. Based on MassDOT data, the average crash rate for signalized intersections in District 2 is 0.82.

Six of the fifteen intersections averaged five or more crashes over the three year analysis period. The North End Bridge rotary has the highest average of 29 crashes per year along with the highest crash rate per MEV, 1.8 crashes per MEV. Memorial Bridge rotary has averages 14 crashes per year with a 0.96 crashes per MEV. Park Avenue at Union Street and Elm Street, a signalized intersection follows the Memorial Bridge rotary with 13.6 crashes per year and 0.92 crashes per MEV. This crash rate exceed the average for signalized intersections in MassDOT District 2.

The three intersections listed above have an increase in crashes from 2010 to 2012 which is contrary to many other intersections in our study area. This can be caused by fading lane markings and the intersection traffic signal timing plan becoming outdated over time. It is very important to have a good asset management strategy to keep all of the intersections in a good state of repair and suitable for current traffic flows to reduce the possibility of crashes.

Figure 2-11 shows crashes at the North End Bridge rotary. Most crashes are sideswipe or angle crashes that are caused by drivers in the inside travel lane conflicting with drivers in the outside travel lane as they attempt to exit the rotary onto the North End Bridge and Park Street. The lack of pavement markings in the rotary contributed to driver confusion in this area. Similarly, Figure 2-12 shows crashes at the Memorial Avenue Bridge rotary. Sideswipe and rear-end crashes are common. Five crashes were reported with drivers entering the rotary from the bridge and hitting the guardrail opposite this approach.

Figure 2-13 displays crashes at the Memorial Avenue and Union Street intersection. As can be seen from the figure, a number of crashes attributed to this intersection actually occur to the south at the intersection of Union Street extension with the Big Y/Big Lots access driveways.

Figure 2-14 displays crashes at the Park Street/Elm Street/Union Street intersections. Rear-end crashes are very common as well as crashes with drivers attempting a left turn onto Park Street and Park Avenue. This intersection allows both protected and permitted left turns. Protected left turns are controlled by a solid green arrow and are not opposed by through moving traffic. Permitted left turns are controlled by a solid green ball and must yield to opposing traffic. The short distance between Park Street and Park Avenue does not allow for long vehicle queues and requires the need to allow non-protected left turns. One possible solution to improve safety at this location would be to study the feasibility of upgrading the existing traffic signal equipment to include a flashing yellow arrow. A flashing yellow arrow provides more information to left turning vehicles on their requirement to yield to oncoming traffic.

Table 2-11 - Crash History Summary

Intersection	Year	Total Crashes	Type		Severity		Road Surface		Lighting		Day		EPDO	Crash Rate (per MEV)
North End Bridge Rotary	2010	29	Angle	44	Property Damage	73	Dry	85	Daylight	48	Monday	15	148	1.8
	2011	26	Rear end	19	Injury	13	Wet	2	Dawn/Dusk	17	Tuesday	8		
	2012	32	Head on	0	Fatal	1	Snow/Ice	0	Darkness	22	Wednesday	14		
			Backing	1					Unknown	0	Thursday	17		
	Total	87	Single Veh.	5							Friday	16		
			Pedestrian	2							Saturday	11		
			Sideswipe	16							Sunday	6		
Memorial Bridge Rotary	2010	11	Angle	17	Property Damage	34	Dry	39	Daylight	25	Monday	5	74	0.96
	2011	15	Rear end	14	Injury	8	Wet	0	Dawn/Dusk	3	Tuesday	5		
	2012	16	Head on	0	Fatal	0	Snow/Ice	3	Darkness	14	Wednesday	3		
			Backing	0					Unknown	0	Thursday	9		
	Total	42	Single Veh.	8							Friday	9		
			Pedestrian	0							Saturday	5		
			Sideswipe	3							Sunday	6		
Park Avenue at Union Street and Elm Street	2010	11	Angle	20	Property Damage	25	Dry	37	Daylight	26	Monday	6	105	0.92
	2011	13	Rear end	15	Injury	16	Wet	1	Dawn/Dusk	1	Tuesday	5		
	2012	17	Head on	0	Fatal	0	Snow/Ice	3	Darkness	14	Wednesday	11		
			Backing	0					Unknown		Thursday	2		
	Total	41	Single Veh.	2							Friday	13		
			Sideswipe	3							Saturday	2		
			Unknown	1							Sunday	2		

EPDO = Equivalent Property Damage Only
MEV = One Million Entering Vehicles

Table 2-11 - Crash History Summary (cont.)

Intersection	Year	Total Crashes	Type		Severity		Road Surface		Lighting		Day		EPDO	Crash Rate (per MEV)
Memorial Avenue at Union Street and Union Street extension	2010	10	Angle	18	Property Damage	17	Dry	23	Daylight	15	Monday	2	52	0.79
	2011	6	Rear end	3	Injury	7	Wet	0	Dawn/Dusk	5	Tuesday	5		
	2012	8	Head on	0	Fatal	0	Snow/Ice	1	Darkness	4	Wednesday	5		
			Backing	0					Unknown	0	Thursday	4		
	Total	24	Single Veh.	1							Friday	6		
			Pedestrian	1							Saturday	1		
			Sideswipe	0							Sunday	1		
			Unknown	1										
Park Street at River Street and South Boulevard	2010	4	Angle	4	Property Damage	15	Dry	15	Daylight	11	Monday	1	25	0.55
	2011	8	Rear end	6	Injury	2	Wet	0	Dawn/Dusk	1	Tuesday	4		
	2012	5	Head on	1	Fatal	0	Snow/Ice	2	Darkness	4	Wednesday	1		
			Backing	1					Unknown	1	Thursday	5		
	Total	17	Single Veh.	3							Friday	4		
			Pedestrian	0							Saturday	0		
			Sideswipe	1							Sunday	2		
			Unknown	1										
Park Street at Western Avenue and Van Deene Street	2010	4	Angle	6	Property Damage	7	Dry	8	Daylight	9	Monday	2	17	0.36
	2011	3	Rear end	2	Injury	2	Wet	1	Dawn/Dusk	0	Tuesday	2		
	2012	2	Head on	1	Fatal	0	Snow/Ice	0	Darkness	0	Wednesday	1		
			Backing	0					Unknown	0	Thursday	4		
	Total	9	Single Veh.	0							Friday	0		

EPDO = Equivalent Property Damage Only
MEV = One Million Entering Vehicles

Table 2-11 - Crash History Summary (cont.)

Intersection	Year	Total Crashes	Type		Severity		Road Surface		Lighting		Day		EPDO	Crash Rate (per MEV)
Park Avenue at Main Street	2010	3	Angle	3	Property Damage	4	Dry	5	Daylight	2	Monday	0	9	0.22
	2011	1	Rear end	1	Injury	1	Wet	0	Dawn/Dusk	0	Tuesday	1		
	2012	1	Head on	0	Fatal	0	Snow/Ice	0	Darkness	3	Wednesday	1		
			Backing	0					Unknown	0	Thursday	1		
	Total	5	Single Veh.	1							Friday	1		
			Pedestrian	0							Saturday	1		
Union Street at Day Street	2010	0	Angle	0	Property Damage	0	Dry	3	Daylight	3	Monday	0	15	0.24
	2011	2	Rear end	1	Injury	3	Wet	0	Dawn/Dusk	0	Tuesday	0		
	2012	1	Head on	0	Fatal	0	Snow/Ice	0	Darkness	0	Wednesday	0		
			Backing	0					Unknown	0	Thursday	1		
	Total	3	Single Veh.	1							Friday	1		
			Pedestrian	0							Saturday	1		
			Sideswipe	1							Sunday	0		
Memorial Avenue at Main Street	2010	1	Angle	0	Property Damage	1	Dry	0	Daylight	1	Monday	0	1	N/A
	2011	0	Rear end	1	Injury	0	Wet	0	Dawn/Dusk	0	Tuesday	0		
	2012	0	Head on	0	Fatal	0	Snow/Ice	3	Darkness	0	Wednesday	0		
			Backing	0					Unknown	0	Thursday	1		
	Total	1	Single Veh.	0							Friday	0		
Union Street at Bridge Street	2010	2	Angle	2	Property Damage	3	Dry	4	Daylight	1	Monday	0	8	N/A
	2011	2	Rear end	0	Injury	1	Wet	0	Dawn/Dusk	0	Tuesday	0		
	2012	0	Head on	0	Fatal	0	Snow/Ice	0	Darkness	3	Wednesday	1		
			Backing	1					Unknown	0	Thursday	1		
	Total	4	Single Veh.	1							Friday	0		
			Pedestrian	0							Saturday	1		
			Sideswipe	0							Sunday	1		
			Unknown	0										

EPDO = Equivalent Property Damage Only
MEV = One Million Entering Vehicles

Table 2-11 - Crash History Summary (cont.)

Intersection	Year	Total Crashes	Type		Severity		Road Surface		Lighting		Day		EPDO	Crash Rate (per MEV)
Union Street at New Bridge Street	2010	0	Angle	0	Property Damage	5	Dry	5	Daylight	4	Monday	1	10	N/A
	2011	5	Rear end	1	Injury	1	Wet	1	Dawn/Dusk	0	Tuesday	1		
	2012	1	Head on	1	Fatal	0	Snow/Ice	0	Darkness	2	Wednesday	2		
			Backing	1					Unknown	0	Thursday	0		
	Total	6	Single Veh.	1							Friday	0		
			Sideswipe	2							Sunday	2		
Memorial Avenue at Bresnahan Street	2010	3	Angle	9	Property Damage	9	Dry	14	Daylight	12	Monday	1	49	0.58
	2011	6	Rear end	4	Injury	8	Wet	0	Dawn/Dusk	0	Tuesday	4		
	2012	8	Head on	1	Fatal	0	Snow/Ice	3	Darkness	5	Wednesday	1		
			Backing	1					Unknown	0	Thursday	2		
	Total	17	Single Veh.	1							Friday	2		
			Pedestrian	1							Saturday	2		
			Sideswipe	0							Sunday	5		
Memorial Avenue at River Street	2010	6	Angle	2	Property Damage	11	Dry	11	Daylight	6	Monday	2	21	0.45
	2011	1	Rear end	6	Injury	2	Wet	1	Dawn/Dusk	0	Tuesday	1		
	2012	6	Head on	0	Fatal	0	Snow/Ice	1	Darkness	7	Wednesday	3		
			Backing	0					Unknown	0	Thursday	3		
	Total	13	Single Veh.	5							Friday	3		
			Pedestrian	0							Saturday	0		
			Sideswipe	0							Sunday	1		

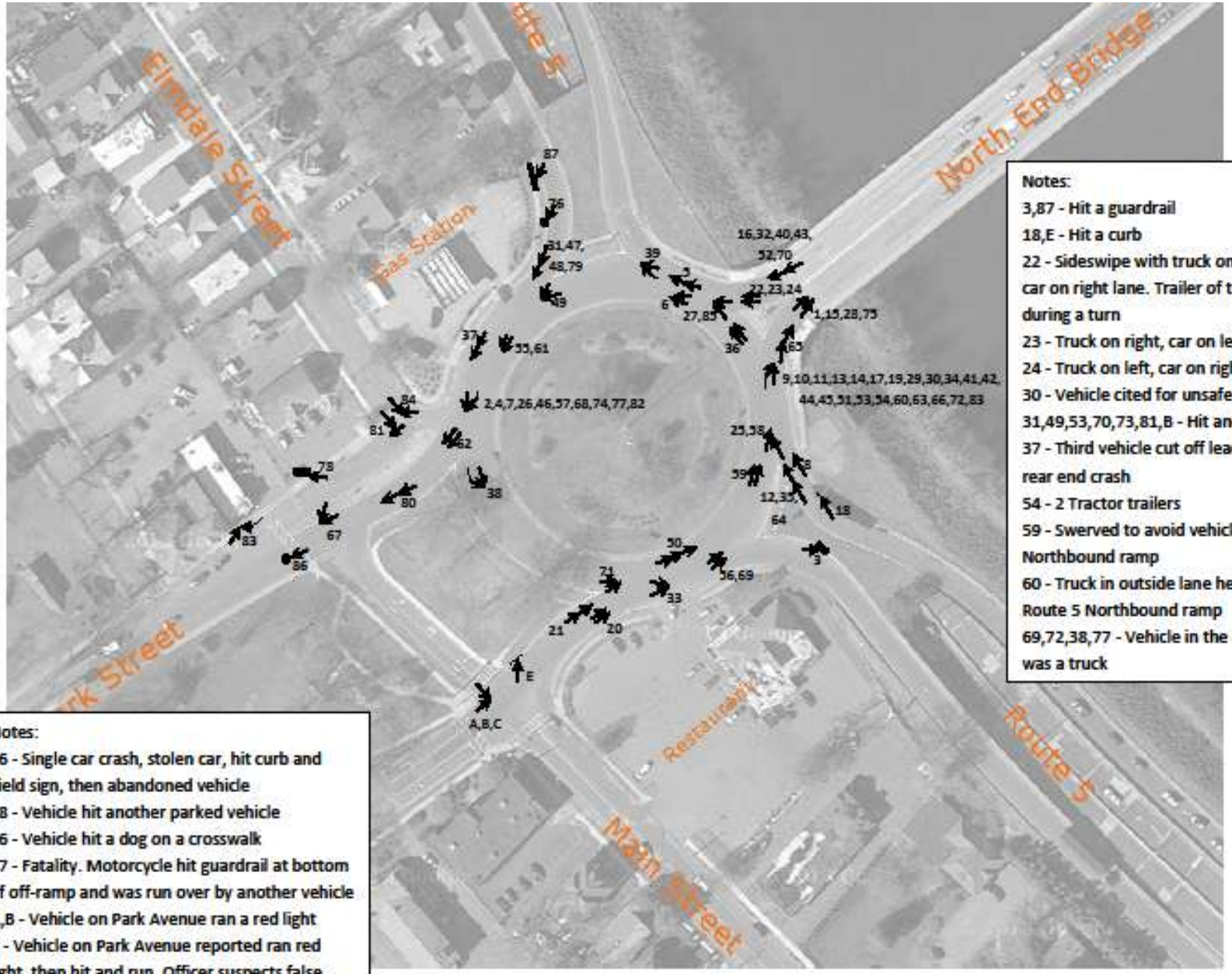
EPDO = Equivalent Property Damage Only
MEV = One Million Entering Vehicles

Table 2-11 - Crash History Summary (cont.)

Intersection	Year	Total Crashes	Type		Severity		Road Surface		Lighting		Day		EPDO	Crash Rate (per MEV)
Memorial Avenue at Baldwin Street	2010	1	Angle	3	Property Damage	4	Dry	6	Daylight	3	Monday	0	19	0.38
	2011	3	Rear end	1	Injury	3	Wet	0	Dawn/Dusk	1	Tuesday	1		
	2012	3	Head on	0	Fatal	0	Snow/Ice	1	Darkness	3	Wednesday	0		
			Backing	0					Unknown	0	Thursday	0		
	Total	7	Single Veh.	2							Friday	3		
			Pedestrian	1							Saturday	1		
			Sideswipe	0							Sunday	2		
River Street at Baldwin Street	2010	0	Angle	1	Property Damage	2	Dry	2	Daylight	1	Monday	0	2	0.1
	2011	2	Rear end	1	Injury	0	Wet	0	Dawn/Dusk	0	Tuesday	0		
	2012	0	Head on	0	Fatal	0	Snow/Ice	0	Darkness	1	Wednesday	1		
			Backing	0					Unknown	0	Thursday	0		
	Total	2	Single Veh	0							Friday	0		
			Pedestrian	0							Saturday	1		

EPDO = Equivalent Property Damage Only
MEV = One Million Entering Vehicles

Figure 2-11 - North End Bridge Collision Diagram



Notes:
3,87 - Hit a guardrail
18,E - Hit a curb
22 - Sideswipe with truck on left lane and car on right lane. Trailer of truck struck car during a turn
23 - Truck on right, car on left, hit and run
24 - Truck on left, car on right
30 - Vehicle cited for unsafe lane change
31,49,53,70,73,81,B - Hit and Run
37 - Third vehicle cut off lead car, causing rear end crash
54 - 2 Tractor trailers
59 - Swerved to avoid vehicle from Route 5 Northbound ramp
60 - Truck in outside lane heading towards Route 5 Northbound ramp
69,72,38,77 - Vehicle in the outside lane was a truck

Notes:
76 - Single car crash, stolen car, hit curb and yield sign, then abandoned vehicle
78 - Vehicle hit another parked vehicle
86 - Vehicle hit a dog on a crosswalk
87 - Fatality. Motorcycle hit guardrail at bottom of off-ramp and was run over by another vehicle
A,B - Vehicle on Park Avenue ran a red light
C - Vehicle on Park Avenue reported ran red light, then hit and run. Officer suspects false police report based on evidence at scene

Figure 2-12 - Memorial Bridge Collision Diagrams

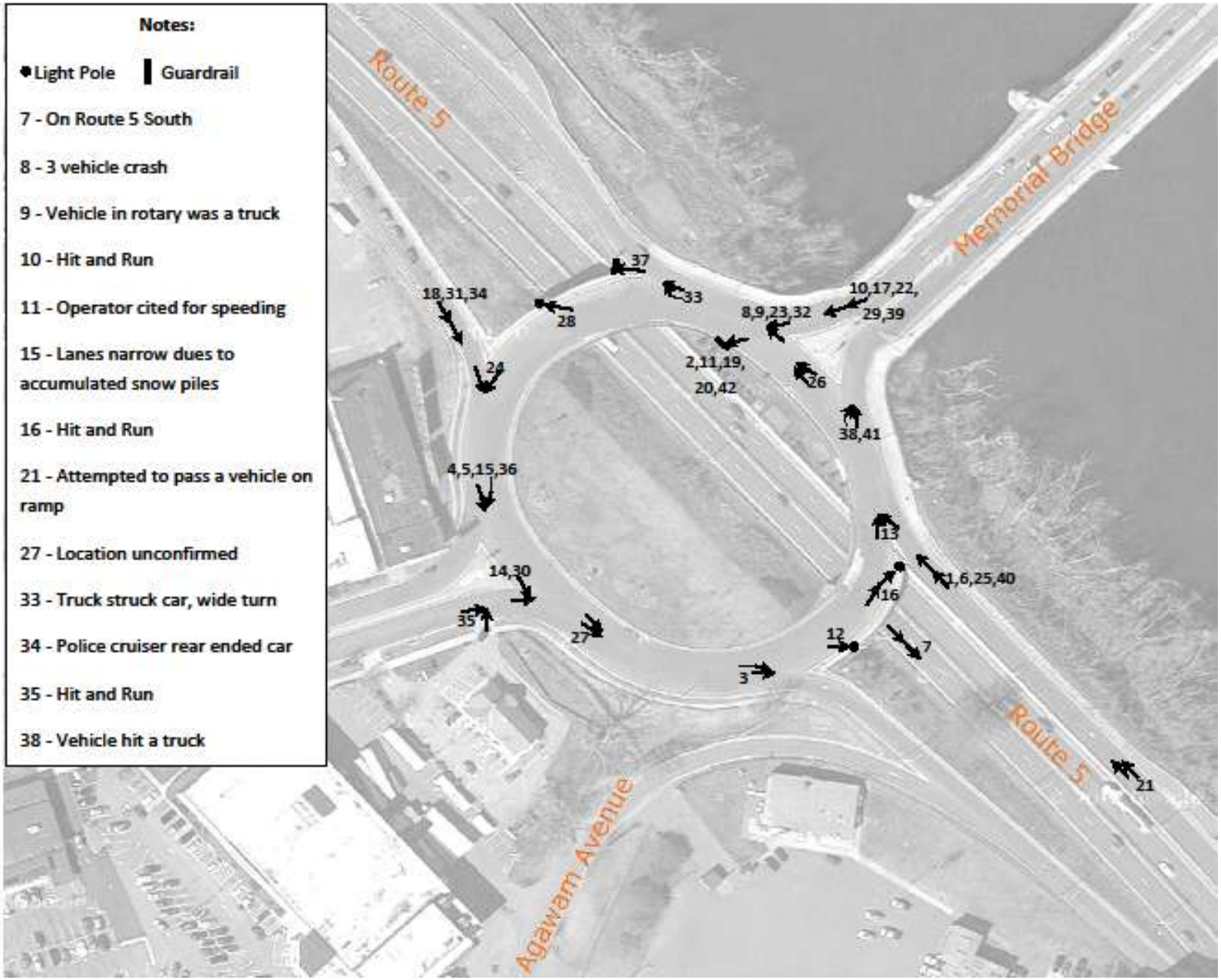


Figure 2-13 - Memorial Avenue at Union Street Collision Diagram

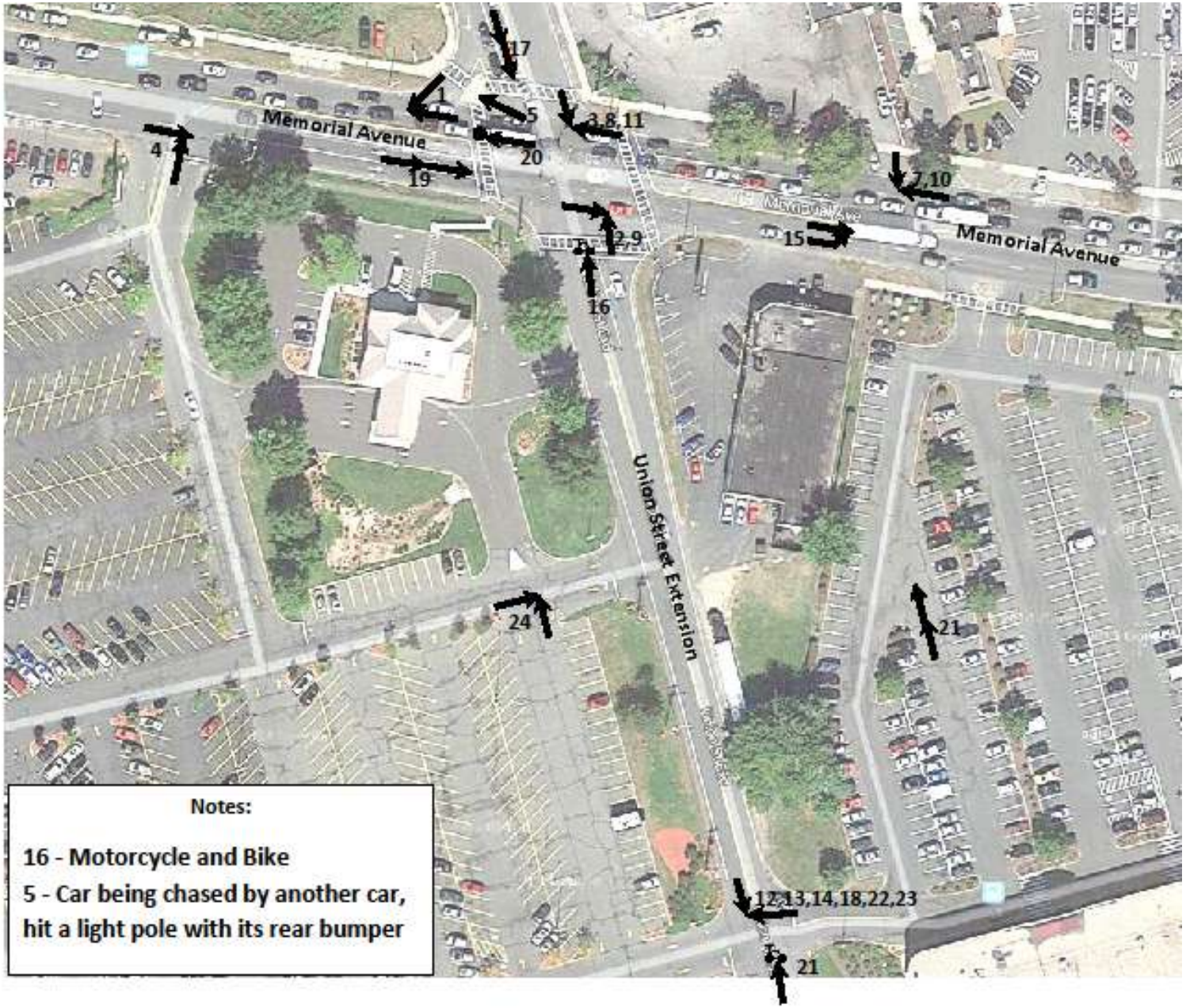
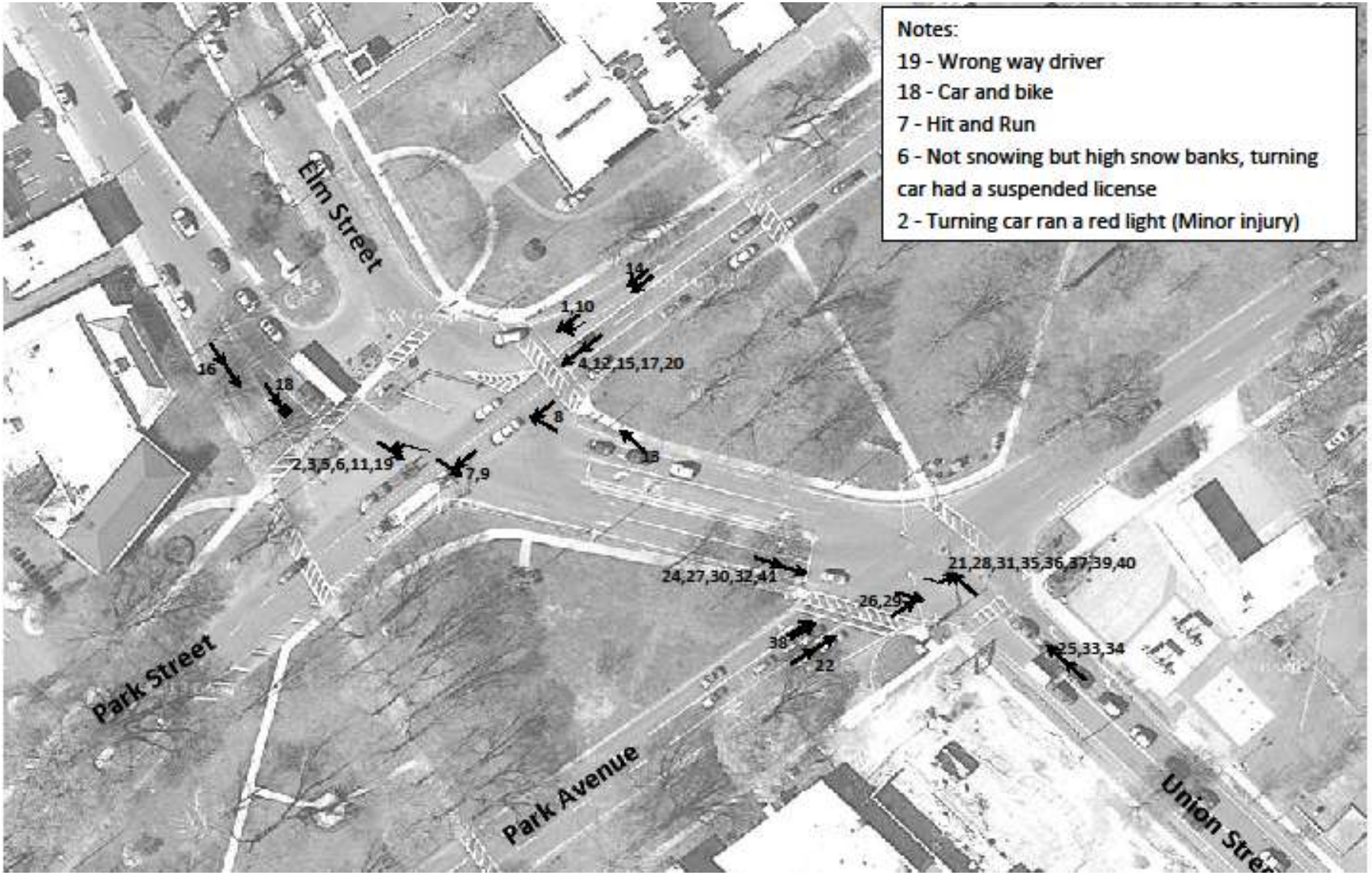


Figure 2-14 - Park Street/Park Avenue at Union Street and Elm Street Collision Diagram



D. ANALYSIS PROCEDURES

1. Intersection Analysis

Traffic operations were examined at nine signalized and five unsignalized intersections throughout the study area. Operation analyses have been conducted at the signalized intersections to determine capacity constraints for all approaches at each location.

The efficiency of traffic operations at a signalized location is based on the stopped delay per vehicle for a 15-minute analysis period. These conditions are measured using the nationally accepted standard methodology outlined in the *2010* Highway Capacity Manual (HCM). The HCM's measure of efficiency is quantified in terms of "Level Of Service" (LOS). The LOS refers to the quality of traffic flow along roadways and intersections. It is described in terms of A through F, where A represents the best possible conditions and F represents forced-flow of failing conditions. A basic assumption in assigning a value for LOS at an intersection is that vehicles stopped at a signalized intersection are willing to accept longer delays. Table 2-12 describes the level of service designations for signalized intersections.

Table 2-12 - Level Of Service (LOS) Designations - Signalized Intersections

Category	Description	Delay (in seconds)
LOS A	Describes a condition of free flow, with low volumes and relatively high speeds. There is little or no reduction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds. Little or no delays result for side street motorists.	< 10.0
LOS B	Describes a condition of stable flow, with desired operating speeds relatively unaffected, but with a slight deterioration of maneuverability within the traffic stream. Side street motorists experience short delays.	>10.0 to 20.0
LOS C	Describes a condition still representing stable flow, but speeds and maneuverability begin to be restricted. Motorists entering from side streets experience average delays.	>20.0 to 35.0
LOS D	Describes a high-density traffic condition approaching unstable flow. Speeds and maneuverability become more restricted. Side street motorists may experience longer delays.	>35.0 to 55.0
LOS E	Represents conditions at or near the capacity of the facility. Flow is usually unstable, and freedom to maneuver within the traffic stream becomes extremely difficult. Very long delays may result for side street motorists.	>55.0 to 80.0
LOS F	Describes forced flow or breakdown conditions with significant queuing along critical approaches. Operating conditions are highly unstable as characterized by erratic vehicle movements along each approach.	> 80.0

At an unsignalized intersection, LOS is determined by the average total delay which is defined as the total elapsed time from when a vehicle stops at the end of a queue to when the same vehicle departs from the stop line. The basic assumption at an unsignalized intersection is that through moving traffic on the major street is not hindered by other movements. In reality, as minor street delays increase, vehicles are more likely to accept smaller gaps in the traffic stream causing through moving vehicles to reduce speed and suffer some delay. The left turn movement off the minor street approach is the most heavily opposed movement and typically suffers the greatest delay. Therefore this movement is used as a gauge to determine the overall operations at an unsignalized intersection. Table 2-13 lists the level of service criteria for unsignalized intersections.

Table 2-13- Level Of Service (LOS) Designations - Unsignalized Intersections

Average Control Delay (sec/veh)	LOS	Expected Delay To Minor Street
0.0 to 10.0	A	Little or no delay
>10.0 to 15.0	B	Short traffic delays
>15.0 to 25.0	C	Average traffic delays
>25.0 to 35.0	D	Long traffic delays
>35.0 to 50.0	E	Very long delays
>50.0	F	Extreme delays

2. Capacity Analysis Summary

Intersection capacity analyses were conducted for the key locations in the study area. Traffic signal permit plans for signalized intersections were reviewed to determine the signal timing phase sequence and length and verified by field visits. The analysis presents information identifying the operational condition of intersections, both signalized and unsignalized. Acceptable conditions are those measured with Level Of Service (LOS) assignments of A through D, while unacceptable conditions are assigned E or F. The LOS for individual intersection approaches was calculated as well as for overall intersection operation. Table 2-14 presents the Level of Service (LOS) for the signalized intersections during the weekday AM and PM peak hour.

Vehicles traveling from Union Street Northbound onto Elm street are experiencing heavy delays resulting in a LOS "E" during the PM peak hour. The intersection of Park Street with South Boulevard and River Street experienced the most delay as it was calculated to operate at LOS “C” in the AM peak hour and LOS “D” during the PM peak hour.

Table 2-15 summarizes the level of service at the five unsignalized intersections analyzed in the study area during the weekday AM and PM peak hours.

Table 2-14- Level of Service of Signalized Intersections

Signalized Intersections	AM Peak		PM Peak	
	Delay (s)	Level Of Service	Delay (s)	Level Of Service
Memorial Avenue at Bresnahan Street and Century Plaza				
Memorial Avenue EB All Moves	6.5	A	9.2	A
Memorial Avenue WB All Moves	7.1	A	12.5	B
Century Plaza NB Left Turns	10.3	B	16.6	B
Century Plaza NB Right Turns	5.3	A	6.8	A
Bresnahan Street SB Left Turns	14.2	B	22.4	C
Bresnahan Street SB Through/Right Turns	6.6	A	11.8	B
Overall	7.7	A	12.1	B
Memorial Avenue at Union Street				
Memorial Avenue EB Left Turns	24.9	C	49.5	D
Memorial Avenue EB Through/Right Turns	11.1	B	18.8	B
Memorial Avenue WB Left Turns	23.0	C	44.2	D
Memorial Avenue WB Through/Right	12.2	B	23.6	C
Union Street Ext. NB Left Turns	15.1	B	24.2	C
Union Street Ext. NB Through/Right	14.5	B	24.3	C
Union Street SB Left Turns	16.6	B	33.2	C
Union Street SB Through Traffic	14.1	B	20.9	C
Union Street SB Right Turns	0.0	-	0.0	-
Overall	13.9	B	26.0	C
Memorial Avenue at Baldwin Street				
Memorial Avenue EB All Moves	4.6	A	4.6	A
Memorial Avenue WB All Moves	3.9	A	5.0	A
Baldwin Street SB All Moves	25.4	C	25.7	C
Overall	7.2	A	7.1	A
Memorial Avenue at River Street				
Memorial Avenue EB Left Turns	13.2	B	18.1	B
Memorial Avenue EB Through Traffic	2.4	A	1.5	A
Memorial Avenue WB Through Traffic	15.1	A	21.8	C
River Street SB Left Turns	22.5	C	38.0	D
River Street SB Right Turns	1.8	A	17.6	A
Overall	7.7	A	16.2	B
Park Avenue at Main Street				
Park Avenue EB Through Traffic	12.3	B	19.3	B
Park Avenue EB Right Turns	1.6	A	2.1	A
Main Street NB Right Turns	15.3	B	28.2	C
Main Street SB Left Traffic	21.3	C	24.5	C
Main Street SB Through Traffic	8.8	A	8.3	A
Overall	12.9	B	20.6	C

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Table 2-14- Level of Service of Signalized Intersections (cont.)

Signalized Intersections	AM Peak		PM Peak	
	Delay (s)	Level Of Service	Delay (s)	Level Of Service
Park Avenue at Elm Street and Union Street				
Park Avenue EB All Moves	21.7	C	22.7	C
Union Street NB Through Traffic	41.0	D	62.3	E
Union Street NB Right Turns	5.7	A	7.2	A
Union Street SB Left Turns	14.7	B	13.2	B
Union Street SB Through Traffic	14.7	B	12.4	B
Overall	21.4	C	26.1	C
Park Street at VanDeene Ave. and Western Ave.				
Park Street EB Left Turns	5.3	A	10.7	B
Park Street EB Through/Right Turns	16.6	B	27.7	C
Park Street WB Left Turns	5.1	A	8.0	A
Park Street WB Through/Right Turns	11.6	B	22.1	C
Western Avenue NB All Moves	29.1	C	36.5	D
Van Deene Avenue SB Left Turns/Through	28.4	C	26.9	C
Van Deene Avenue Right Turns	27.1	C	25.3	C
Overall	15.7	B	25.3	C
Park Street at South Boulevard and River Street				
Private Way EB All Moves	50.6	D	59.2	E
Park Street WB Left Turns	38.2	D	55.3	E
Park Street WB Right Turns	1.4	A	8.6	A
River Street NB Left Turns	56.1	E	56.2	E
River Street NB Right Turns	11.2	B	12.8	B
South Boulevard SB Left Turns	36.2	D	48.0	D
South Boulevard SB Right Turns	46.6	D	55.1	E
Overall	31.9	C	37.6	D
Park Street at Elm Street and Union Street				
Park Avenue WB Through Traffic	27.2	C	28.4	C
Park Avenue WB Right Turns	5.1	A	15.3	B
Union Street NB Left Turns	9.8	A	13.4	B
Union Street NB Through Traffic	11.3	B	17.3	C
Elm Street SB Through Traffic	36.1	D	44.1	D
Elm Street SB Right Turns	30.9	C	35.7	D
Overall	23.2	C	27.0	C

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Table 2-15- Level of Service of Unsignalized Intersections

Unsignalized Intersections	AM Peak		PM Peak	
	Delay (s)	Level Of Service	Delay (s)	Level Of Service
Memorial Avenue at Century Plaza				
Memorial Avenue EB Left Turns	8.7	A	10.7	B
Memorial Avenue WB Left Turns	9.6	A	11.6	B
Barnard Street SB All Moves	14.5	B	19.1	C
Century Plaza NB Left Turns	29.5	D	264.7	F
Century Plaza NB Right Turns	11.2	B	14.0	B
River Street at Baldwin Street				
River Street SB Left Turns	9.1	A	9.1	A
Baldwin Street WB All Moves	14.6	B	21.3	C
Union Street at Day Street				
Union Street NB Left Turns	7.9	A	8.3	A
Union Street SB Left Turns	7.8	A	8.4	A
Day Street EB All Moves	13.7	B	26.8	D
Day Street WB All Moves	11.6	B	19.6	C
Union Street at Bliss Street				
Union Street NB Left Turns	8.4	A	8.7	A
Union Street SB Left Turns	7.8	A	8.4	A
Bliss Street EB All Moves	15.1	C	24.5	C
Bliss Street WB All Moves	14.8	B	25.5	D
Memorial Avenue at Lowell Street				
Memorial Avenue EB Left Turns	8.5	A	10.8	B
Lowell Street SB All Moves	15.7	C	33.9	D

Legend: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Vehicles attempting to turn left out of the Century Plaza driveway were calculated to operate at LOS "F" during the PM peak hour. Heavy traffic volumes on River Street contribute to long delays for exiting traffic from Baldwin Street, however, this intersection also has an unusual alignment as Baldwin Street is intersected by Sears Way immediately east of its intersection with River Street. Future improvements to this intersection could improve safety and LOS at the intersection.

E. TITLE VI, ENVIRONMENTAL JUSTICE AND LIMITED ENGLISH PROFICIENCY POPULATIONS

The Merrick/Memorial Neighborhood has significant low income, minority and limited English Proficiency populations. The neighborhood is within the defined "minority" and "low-income" geographic areas developed by the Pioneer Valley Metropolitan Planning Organization and approved by FHWA for the Pioneer Valley Metropolitan Organization (MPO).

The PVMPO method defines "minority" as "the population that is not identified by the census as White-Non-Hispanic" in the 2006-2010 ACS (2010 based Census). Under this definition, minority persons constitute 23.48% of the region's population. The racial or ethnic groups included are:

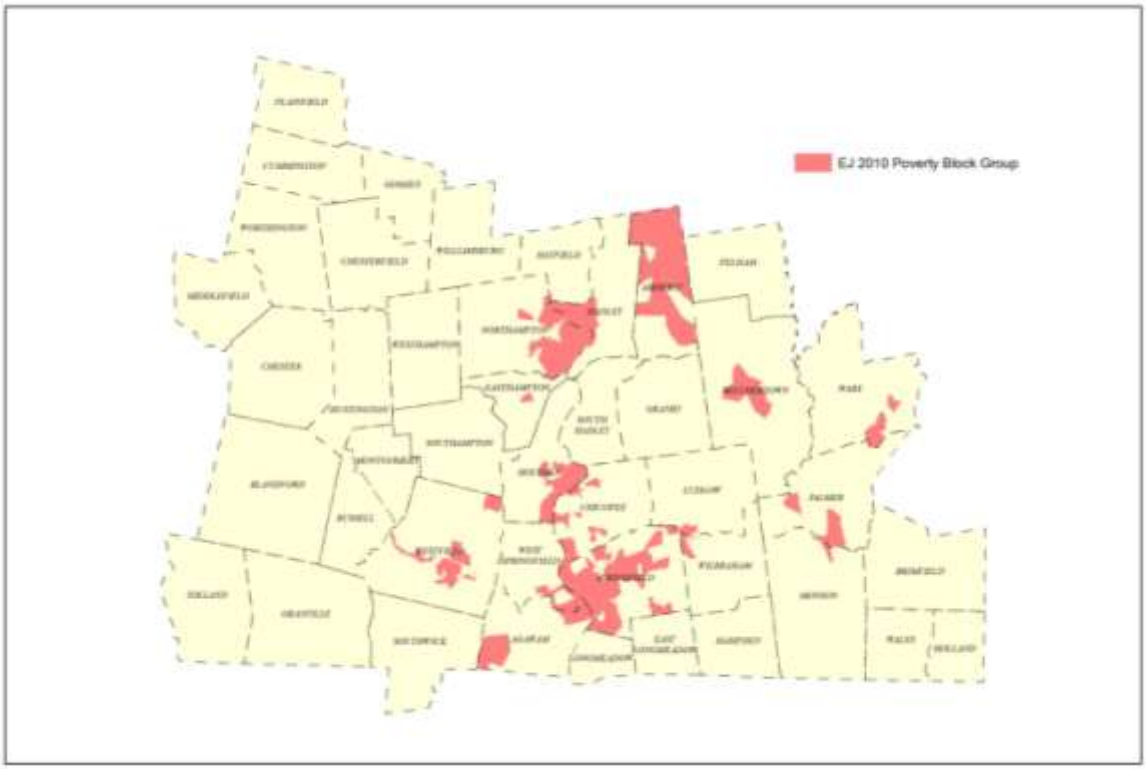
- White Non-Hispanic
- African-American or Black
- Hispanic or Latino (of any race)
- Asian (including Native Hawaiian, & other)
- American Indian (& Alaska Native)
- Some other race
- Two or More Races.

Figure 2-15 - Census Block Groups with Minority Populations Exceeding Regional Average of 23.48%

Source: ACS 2006-10 (2010 based Census)

The PVMPO defines a "low income" area as one with a proportion of people living at or below the federally defined poverty level that exceeds the proportion of people in poverty in the region as a whole, which is 15.47%. This analysis was also applied at the census block group geographic level and shows the Merrick and Memorial neighborhoods within the "Low Income" definition.

Figure 2-16 - Census Block Groups with a Poverty Rate Exceeding the Regional Average of 15.47%



Source: ACS 2006-10 (2010 based Census)

The Merrick Memorial neighborhood in West Springfield receives a high influx of immigrant populations from a wide range of nationalities. As a result of this influx the neighborhood has a significant population of residents that do not use English as a first language. A high number of residents have Russian as their native language. Other languages in the area are: Bhutan, Nepalese, Burmese, Chinese, Somali and Spanish languages. For the Merrick Memorial Study PVPC staff employed a strategic public engagement plan with an open approach to engage, inform and involve an ethnically diverse neighborhood in the decision making process.

PVPC's guiding principles included the following:

- Effective public participation is about relationship and trust building. Engaging people is challenging work and engaging people in transportation issues is especially challenging.
- As outsiders (PVPC is viewed as an outsider) we approach the low-income, minority, LEP populations where they live and where they gather and through established community-based organizations that interact with them. We strive to make connections.
- Outreach as an "ongoing process" that requires staff to evaluate the effectiveness of the approach and to be prepared to change and adapt to the community needs.

PVPC staff met with local officials and interviewed the Memorial Elementary school principal with regard to the languages spoken and minority groups encountered in the neighborhood. PVPC asked specifically what type of translation services are frequently needed or requested and how these needs are typically met.

During and after meetings, community groups and neighborhood contacts were asked about the best way to notify residents of future meetings or project development. This notification included:

- Email notice
- Ads in the newspaper with translations
- PVPC website
- Announcement from community group (religious, political, etc.)
- Telephone calls to key elected officials and city staff.

To facilitate involvement PVPC placed an emphasis on low tech visual aids with less text and more interaction and discussion. Handouts, maps, charts effectively engaged residents and contributed to overcoming language and cultural barriers. Healthy food and beverages were provided and Russian Interpreters were on-site and available when needed. Staff encouraged responses and feedback; "we would like to know if our assumption are correct from your perspective." Oral comments and a scribe was assigned to take notes or record comments.

F. PROPOSED TRANSPORTATION IMPROVEMENTS

There are a number of planned transportation improvements by the Massachusetts Department of Transportation and the City of West Springfield that will enhance the existing transportation system in the study. These improvements are summarized below and on Figure 2-17.

Union Street Underpass Improvements: The CSX tracks currently restrict truck traffic from travelling through West Springfield in the north/south direction due to low bridge clearances. There are three bridges located on Main Street, Union Street and River Street that can only accommodate vehicles measuring less than 12 feet in height. This requires all truck traffic to travel on Route 5 and exit at either the North End rotary or the Memorial Avenue rotary to reach a final destination. The existing Union Street underpass will be improved to provide adequate vertical clearance for large vehicles. The City of West Springfield has worked in cooperation with MassDOT and CSX to identify a possible design alternative for increasing the vertical clearance at this location. While several possible design alternatives have been developed, a final design has not yet been accepted by all parties. Recently, CSX responded to MassDOT's latest design proposal with two suggested alternatives that may provide a solution that is agreeable to all parties.

Morgan-Sullivan (Route 147) Bridge Reconstruction: A functional design report was completed in 2012 for this bridge over the Westfield River connecting West Springfield and Agawam. The purpose of this project is to reconstruct and widen the bridge and upgrade three intersections in its immediate vicinity. Traffic control equipment will be upgraded at the three signalized intersections: Route 147 (Springfield Street) at Walnut Street with Walnut Street Extension; Route 147 (Springfield Street / Memorial Avenue) at Route 75 (Suffield Street) and Route 159 (Main Street); and, Route 147 (Memorial Avenue) at River Street. The bridge will be widened from four to five lanes to provide an exclusive left turn lane in both directions. The project is currently in the preliminary design stage but could advance as a design/build project in the near future.

Superstructure replacement (Memorial Ave) over Riverdale Street (Route 5): The Memorial Bridge Rotary is elevated over Route 5 with two separate bridge structures to accommodate traffic flow. This project consists of the replacement of the existing single span steel superstructures with new steel stringer spans within the existing rotary. Funded as part of the Massachusetts Accelerated Bridge Program, the project will also add new pavement markings to the rotary to assist in improving safety. The project extends partially down Memorial Avenue and will result in improvements to the existing crosswalk near Main Street. This project been advertised for construction. Construction is expected to begin this year.

North End Bridge Rotary Improvements: MassDOT has developed a transportation improvement project to add new pavement markings to the North End Bridge Rotary to improve traffic flow and increase safety. This project is scheduled to begin in the summer of 2014 and will result in improvements to existing lane markings similar to

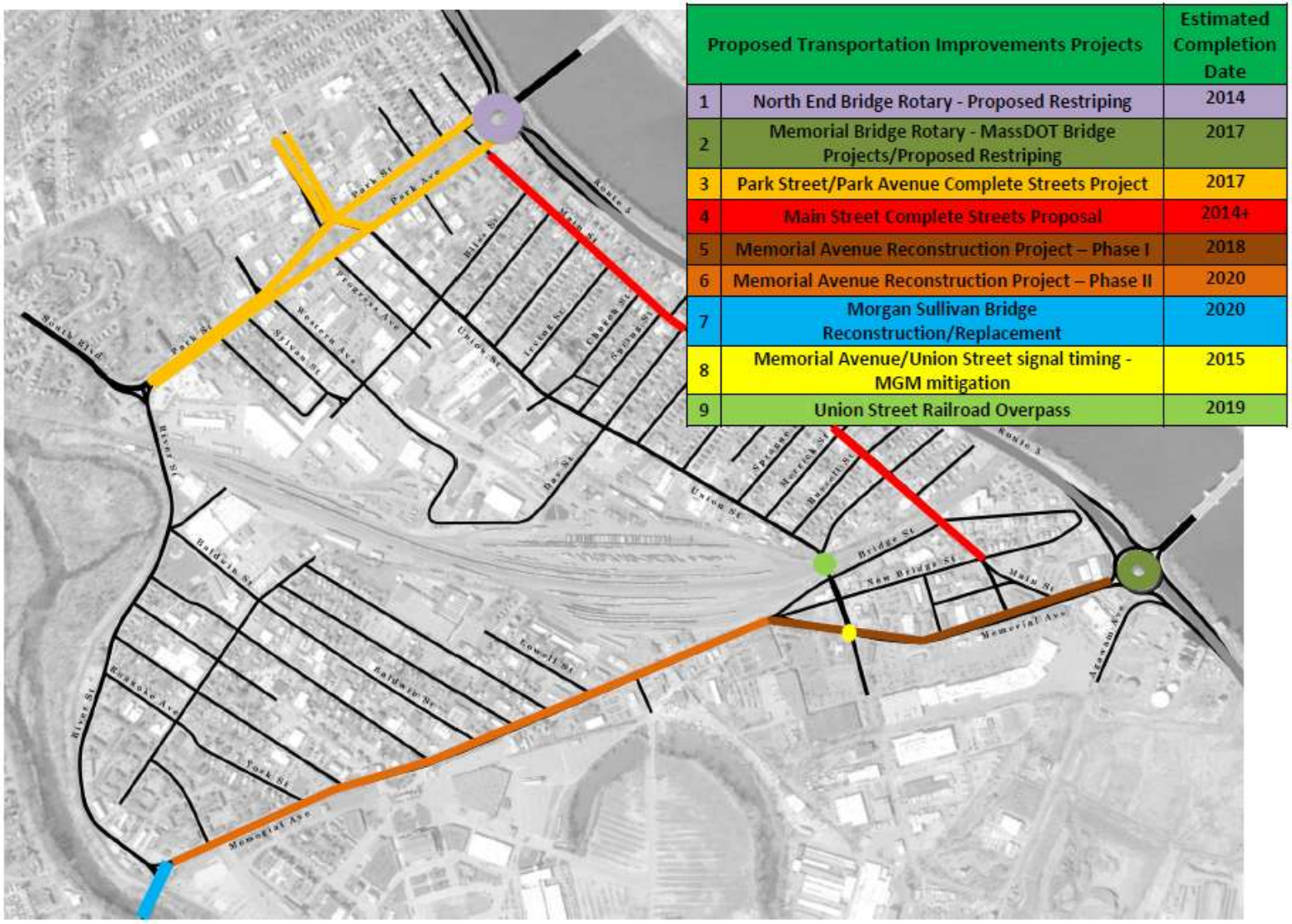
the improvements that were recently implemented at the South End Bridge Rotary in Agawam, MA. These improvements should be complete in 2014.

Park Street and Park Avenue Complete Streets Project: A study was completed in 2010 to develop improvement alternatives for the crosswalk on Park Street from the common to the Senior Center. The City of West Springfield has hired a private consultant to study the feasibility of implementing complete streets improvements for both Park Avenue and Park Street. This project is in its early stages but could result in a number of improvements to enhance safety for all users in this area.

Memorial Avenue Reconstruction Project: The City of West Springfield has a number of preliminary projects to improve traffic flow and safety along the Memorial Avenue corridor. A private consultant has been hired to study the feasibility of implementing complete streets improvements along Memorial Avenue from the rotary to Union Street. The proposed MGM casino project has included the intersection of Memorial Avenue with Union Street as part of its proposed mitigation plan in its Draft Environmental Impact Report (DEIR). This could result in improvements to the traffic signal timing and phasing for this intersection. Finally, the city has plans to reconstruct Memorial Avenue along its entire length. This project could potentially be advanced through the Transportation Improvement Program for the Pioneer Valley.

Main Street Complete Streets Project: The 2012 Revitalization Plan completed for the Merrick neighborhood identified a number of complete streets improvements for Main Street. This included recommendations for pedestrian "bump-outs" to enhance the safety and visibility of pedestrians at mid-block and intersection crosswalks. The city has shown interest in implementing these improvements at select locations along Main Street in the near future.

Figure 2-17 – Proposed Transportation Improvement Projects in the Study Area



G. TRANSPORTATION RECOMMENDATIONS

Based on the analysis of the existing conditions and observations from visiting the study area, the following recommendations are proposed to enhance transportation flow and increase safety. Both rotaries fall under the jurisdiction of the Massachusetts Department of Transportation (MassDOT) Highway Division - District 2 Office. Any proposed transportation improvements for the rotaries will require the approval of MassDOT prior to installation.

Recommendations regarding proposed improvements under study or locations currently in the design process have been addressed previously in this chapter and are not included as part of this section. Transportation recommendations have been summarized into five categories: general recommendations, bicycle and pedestrian recommendations, safety recommendations, congestion recommendations, and truck access recommendations.

1. General Recommendations

- The pavement condition on a number of roadways in the study area was observed to be in a state of disrepair. The City of West Springfield has an active pavement management system to assist in the identification of roadways in need of repair and the selection of pavement improvement projects to maximize the efficient use of available maintenance funds. It will be important to continue to evaluate pavement condition on a regular basis to assist in the development of future roadway improvement projects and ensure the pavement condition remains in a stat of good repair.
- It is recommended the city review the existing street lights in the study area to determine if they provide adequate lighting. A number of people at the public meetings for the study commented on the high percentage of residents that walk in both neighborhoods. Upgrades to street lighting could result in improved energy efficiency and pedestrian safety.
- A number of existing regulatory and warning signs in the study area were observed to be only in "text" format. Given the percentage of the population that have a limited proficiency in English a switch to a more universal "symbol" format for regulatory and warning signs when practical could assist in increased compliance, particularly with posted no parking zones.
- Retroreflective signs improve safety by reflecting light from vehicle headlights back to the driver's eyes. A number of the street signs in the study area were observed to be faded and may not meet current federal retroreflectivity standards. The city should make sure that all future replacement signs meet current retroreflectivity standards. It is also recommended that an inventory of all traffic signs be considered to assist in tracking sign condition and maintenance.
- Access to the CSX railroad tracks, particularly from Memorial Avenue, is not restricted by fencing or other security measures. The city should work with CSX to identify appropriate measures to increase security measures and restrict access to the railroad tracks.

- The demolition of the St. Ann Roman Catholic Church on Memorial Avenue has expanded the view of the existing CSX railyard. The implementation of a landscaping plan or other similar screening could enhance aesthetics and improve security for the rail yard. It is recommended the city work with CSX to develop appropriate measures to add screening along Memorial Avenue.
- Most of the roadways in the study area do not have posted speed limits. It is recommended the city consider conducted speed studies for select roadways for the purpose of requesting speed regulations from MassDOT and the RMV. Posted speed limits could assist in regulating traffic speeds along roadways such as Memorial Avenue and River Street and assist in the enforcement of speeding.

2. Bicycle and Pedestrian Recommendations

- While the study area has a good network of sidewalks, it will be important to maintain sidewalks to ensure that pedestrian can continue to walk safely and efficiently. A number of sidewalks do not meet current width standards or have obstacles such as utility poles that interfere with pedestrian travel. It will be important to upgrade these areas as part of future sidewalk maintenance projects. It will also be important to track and repair sections of sidewalk that present "trip hazards" due to frost heaves or tress roots.
- Many wheelchair ramps in the study area do not meet current ADA requirements. The city should inventory these locations and update this infrastructure as part of future transportation improvement projects.
- At the time of data collection, pedestrian crossings and the signage specifically dealing with pedestrian crossings were not consistent and did not meet the standards as defined in the MUTCD. It is recommended that all crosswalks be updated to meet both Americans with Disabilities Act (ADA) standards and the MUTCD. Many crosswalks were also noted to not be in alignment with existing wheelchair ramps or end in locations with no sidewalk or in a driveway. Specific locations include:
  - Norman Street at two locations in the vicinity of the Memorial School
  - Memorial Avenue in the vicinity of Circuit Avenue
  - Memorial Avenue in the vicinity of Baldwin Street
- Very few bicycle racks were observed in the study area. The availability of secure bicycle parking at bicycle racks at key locations such as parks, the temporary library, and other neighborhood destinations could encourage more residents to ride their bikes as opposed to making shorter trips via the car.
- Pavement markings and signs for the Memorial School Zone were noted to be faded and somewhat removed from the school. It will be important to have an efficient network of pavement marking and signs in the vicinity of the school to provide proper notice to drivers in this area.

3. Safety Recommendations

- At the time of the site visit, pavement markings were observed to be both faded and non-conforming to MUTCD standards. Pavement markings serve as a way to provide regulatory and warning information to the driver without diverting his/her attention from the roadway. It is important to maintain pavement markings on a regular basis to ensure that maximum visibility is maintained. It is recommended that the City of West Springfield improve pavement marking as defined in the MUTCD to clearly define vehicle travel lanes, crosswalks, and stoplines. A few areas were noted to have confusing pavement markings at the time of the field inventory and require specific attention:
  - The inner travel lane on the southbound approach of Park Street at its intersection with Van Deene Avenue is signed as "left turn only" but is marked with both left turn and through arrow pavement markings. These two controls are in conflict and could confuse drivers to think that through movements are permitted from this lane. New left turn only arrows should be painted in this lane.
  - Main Street is very wide between Memorial Avenue and Bresnahan Street. Vehicles were observed to travel down this section of Main Street at high travel speeds, cut through the Work Gear parking area, and disregard the "One way" travel pattern in this area. The use of additional traffic signs, curbing and pavement markings could be a short term solution to reduce speed and increase compliance with the existing "one way" traffic flow in this area.
  - Union Street is very wide between its intersection with Memorial Avenue and the railroad underpass. A pavement marking plan should be developed for this section of the road to clearly define the number of travel lanes and taper traffic down to two lanes of traffic prior to the railroad underpass.
- Implement improvements to Memorial Avenue and North End Bridge rotaries. MassDOT has committed to pavement marking improvements in the near future at both rotaries. The development of a clear pavement marking plan through the rotaries should assist in clearly defining travel lanes and exiting protocol. It will be important to have regular maintenance of the new pavement marking plan in order to maintain safe and efficient traffic flow.
- Work with property owners to improve sight distance and intersection controls along Union Street Extension at its intersection with Big Y and Big Lots driveways. A mature tree is located on the eastern side of Union Street extension in the vicinity of the Big Y access driveway. There is a pattern of angle collision occurring at this driveway. The City of West Springfield should measure the exiting sight distance from this driveway and removing or pruning this tree if necessary. Other potential measures to increase safety could be the use of larger Stop signs at the Big Y driveway and advance intersection warning signs on Union Street extension.

4. Congestion Recommendations

- The existing traffic signals in the study area should be periodically checked to ensure that the most effective timing and phasing plan is in use. Traffic volumes change over time as a result in changes in land use, population, and roadway improvement projects. This is of particular importance at the intersection of Park Street with Park Avenue, Union Street and Elm Street where vehicle queues between Park Street and Park Avenue contribute to congestion in this area. Modern traffic control equipment allows for better vehicle detection and the use of multiple timing plans to accommodate changes in traffic flow that occur over the course of an average weekday. Many intersections were observed to have long vehicle queues at specific times of day that could potentially be resolved through improvements to signal timing. All of the signalized intersections in the study area could benefit from new equipment and signal timings. The following locations are considered to most critical.
    - Memorial Avenue at Union Street experiences a significant amount of traffic. This location was identified for improvement by the proposed MGM casino as part of their draft mitigation plan.
    - Upgrade signal control equipment and timings at the intersection of Park Street/Park Avenue with Union Street/Elm Street. Consider implementing time of day specific timing plans to reduce congestion. Upgrade pedestrian amenities. Increase visibility and prominence of green left turn lanes (Flashing yellow arrow). Consider conducting a roadway safety audit in cooperation with MassDOT.
    - Park Street, River Street and South Boulevard. Long vehicle queues were observed on the Park Street and River Street approaches to this intersection. The expansion of the exclusive left turn lane on Park Street may be necessary.
    - While the intersection of Park Avenue with Main Street operates at an acceptable level of service, modifications to traffic signal timing at this intersection could assist in reducing congestion at the North End Bridge rotary by regulating how traffic enters the rotary from this approach.
- Parking is restricted on the south side of Park Avenue from 7 AM to 3 PM. This parking lane functions as a third travel lane during the peak traffic hours. Extension of this parking restriction to 6 PM could assist in improving traffic flow along Park Avenue by maintaining three travel lanes. If this change is not feasible, a pavement marking plan should be developed for Park Avenue north of its intersection with Union Street to taper through traffic down to two travel lanes prior to the on street parking area.
- The proposed MassDOT improvement project for the Morgan-Sullivan Bridge and intersection of Memorial Avenue with River Street is in the preliminary design stage and will improve congestion and safety in this location. The city should continue to work with MassDOT and the town of Agawam to advance this project towards construction. MassDOT should study the feasibility of constructing an exclusive right turn lane for Gate 1 of the Eastern States Exposition property to the east of the intersection to assist in processing special event traffic on Memorial Avenue. It is recommended that MassDOT discuss the

feasibility of an exclusive right turn lane on Memorial Avenue with representatives from the Eastern States Exposition.

5. Truck Access Recommendations

- The existing geometry at the intersection of Union Street with Day Street does not allow trucks to make a right turn from Union Street onto Day Street without crossing over into the opposing travel lane. This results in congestion and confusion as trucks wait on Union Street for the opportunity to make a right turn. The construction of an exclusive right turn lane on Union Street at its intersection with Day Street would improve truck access/egress and improve traffic flow and visibility on Union Street. This will likely require the acquisition of private property to implement.
- The city should continue to work with CSX and MassDOT to advance reconstruction of the Union Street railroad underpass. The City of West Springfield has worked in cooperation with MassDOT and CSX to identify a possible design alternative for increasing the vertical clearance at this location. While several possible design alternatives have been developed, a final design has not yet been accepted by all parties. Recently, CSX responded to MassDOT's latest design proposal with two suggested alternatives that may provide a solution that is agreeable to all parties.

CHAPTER 3

REDEVELOPMENT ASSESSMENT, OPPORTUNITIES AND RECOMMENDATIONS

This chapter presents an assessment of potential redevelopment opportunities Merrick and Memorial Neighborhoods of the TCSP study area and recommends actions to support redevelopment at selected focus areas that could offer catalyzing economic development and livability benefits for the entire study area.

The information and recommendations presented in this chapter were developed through a two-year public engagement process, described in Chapter 6, and includes the input of community residents, business owners, the Springfield Redevelopment Authority, other City officials and numerous stakeholders.

This chapter includes the following sections:

- Zoning, Land Use and Parking Regulations Analysis and Recommendations
- Catalytic Redevelopment Opportunity Sites and Recommendations
- Existing Development in the Study Area Susceptible to Change

A. ZONING, LAND USE AND PARKING REGULATORY ANALYSIS AND RECOMMENDATIONS

This section presents analysis and recommendations related to the zoning, land uses and parking regulations of the study area.

1. Zoning Analysis and Recommendations

Zoning in the study area is currently the subject of significant interest and effort in both the Merrick and Memorial Neighborhoods. Sections A and B below present relevant zoning information and recommendations for these two neighborhoods. (Note: The Eastern States Exposition and Century Shopping Center properties are also within the study area, but the uses and development of these facilities are stable and so no changes or improvements to their zoning were developed for this study.)

a) Memorial Neighborhood -- A Mixed Use Neighborhood

The Memorial Neighborhood, generally defined as the area across from the Big E bounded by Memorial Avenue, Baldwin Street and River Street, has developed over the past century as a mixed use neighborhood. However, it is not a mixed use neighborhood in the traditional sense of the term (i.e. a mixture of residential uses with compatible commercial/retail uses serving the general neighborhood). Instead of local bakeries, butcher shops and haberdasheries the commercial uses now existing and permitted are of a more light industrialized nature including machine shops, automobile service, manufacturing, professional offices and wholesale, warehousing and distribution.

While historically the dominant land use in the neighborhood may have been residential comprised of a mixture of single family, two-three family and multi-family dwellings, it has always been a mixed use neighborhood. The 1953 Zoning Map (and likely earlier) shows the Memorial Neighborhood zoned Industrial permitting commercial and light industrial as well as residential uses. The neighborhood was zoned Business-B from at least 1963 to 1970, and Business B-1 from then up to the present (see Figure ___). Figure ___ shows that the change in zoning in this neighborhood has progressively increased the presence of commercial and industrial uses and reduced the presence of single and two family dwellings.

ZONING MAP DISTRICTS			
Year	**Memorial Neighborhood**	**Memorial Ave. (across from Big E**	**Main St. & Memorial Ave. Neighborhood**
1953	Industrial	Industrial	Industrial
1963	Business B	Business A	Business A
1967	Business B	Business A	Business A
1970	Business B-1	Business A	Business A
1975	Business B-1	Business A	Business A
1977	Business B-1	Business A	Business A
1978	Business B-1	Business A	Business A
1979	Business B-1	Business A	Business A
1980	Business B-1	Business A	Business A
1982	Business B-1	Business A	Business A
1985	Business B-1	Business A	Business A
1988	Business B-1	Business A	Business A
1989	Business B-1	Business A	Business A
Current	Business B-1	Business A	Business A

ZONING BYLAW USE COMPARISON ('53-'71)		
Year	**Zoning District**	
1953	**Business A**	**Business B**
New SF, 2F	Y	Y
New MF	Y	Y
Offices/commercial/retail	Y	Y
Wholesale/warehouse/ distribution	*N*	*Y*
Contractor yards/ fabricating/ manufacturing/assembling	*N*	*Y*
1971	**Business A**	**Business B-1**
New SF & 2F	N	N
New MF	Y	Y
Offices/Commercial/Retail	Y	Y
Wholesale/warehouse/distribution	*N*	*Y*
Contractor yards/ fabricating/ manufacturing/assembling	*N*	*Y*
Open Storage of materials	*N*	*Y*

ZONING BYLAW USE COMPARISON ('77-Current)		
Year	**Zoning District**	
1977	**Business A**	**Business B-1**
New SF & 2F	N	N
New MF	*N*	*Y*
Offices/Commercial/Retail	Y	Y
Wholesale/warehouse/distribution	*N*	*Y*
Contractor yards/ fabricating/ manufacturing/assembling	*N*	*Y*
Open Storage of materials	*N*	*Y*
Current	**Business A**	**Business B-1**
New SF & 2F	N	N
New MF	*N*	*Y (SPR)*
Offices/Commercial/Retail	Y (SPR)	Y (SPR)
Contractor yards/ fabricating/ manufacturing/assembling	*N*	*Y*
Used Motor Vehicle Sales	N	N
Adult entertainment	N	N
Self Storage Units	*N*	*Y (SPR)*

Commercial uses have long been a fixture in the Memorial Neighborhood. An inventory of the neighborhood found that there are currently 57 commercial buildings (see Appendix ___) located there. Of these, 40% (23 buildings) were constructed prior to 1953 (the oldest being the lumber company on Baldwin Street constructed in 1915) and many of the factory and office buildings date back to the 1920's and 1930's. While uses in the buildings may have changed over the years, they have remained in continuous commercial use.

Because of a perceived lack of available land for additional commercial development in the community, public officials are working to expand job opportunities and the

commercial tax base by encouraging additional commercial development in this neighborhood.

MEMORIAL NEIGHBORHOOD
INVENTORY OF COMMERCIAL BUILDINGS

Approx. Year Built	Address	Current Land Use Classification	Approx. Year Built	Address	Current Land Use Classification
1915	253 Baldwin St	Lumber yard	1956	36 Roanoke Ave	Truck terminal
1920	117 Allston Ave	Factory	1957	198 Norman St	Factory
1922	133 Norman St	Factory	1958	163 Norman St	Auto repair
1925	167 River St	Office building	1960	54 Heywood Ave	Office building
1925	160 Baldwin St	Office building	1960	44 Allston Ave	Warehouse
1925	64 Bosworth St	Store/shop	1960	130 Norman St	Auto sales/service
1930	176 Norman St	Factory	1960	37 Norman St	Auto repair
1930	80 Baldwin St	Office building	1960	101 Baldwin St	Office building
1932	137 Norman St	Factory	1962	168 Baldwin St	Office building
1935	180 Baldwin St	Factory	1962	266 Cold Spring Ave	Warehouse
1940	195 River St	Auto sales/service	1964	68 Baldwin St	Store/shop
1940	77 Heywood Ave	Factory	1966	42 Norman St	Store/shop
1941	379 Cold Spring Ave	Factory	1967	17 Allston Ave	Warehouse
1945	44 Exposition Ter	Auto repair	1971	26 Roanoke Ave	Fuel service
1945	170 Norman St	Factory	1972	427 Heywood Ave	Auto repair
1945	90 Baldwin St	Store/shop	1972	242 Norman St	Warehouse
1945	89 Baldwin St	Factory	1972	333 River St	Factory
1945	120 Bosworth St	Auto repair	1974	49 Heywood Ave	Warehouse
1946	64 Roanoke Ave	Factory	1974	43 Exposition Ave	Auto repair
1950	360 Cold Spring Ave	Factory	1976	147 Norman St	Charitable service
1950	349 Cold Spring Ave	Factory	1982	173 River St	Auto Repair
1951	194 Baldwin St	Truck terminal	1984	155 Allston Ave	Factory
1952	26 Sears Way	Warehouse	1988	6-10 Allston Ave	Store/shop
1954	115 York St	Warehouse	1988	86 Norman St	Warehouse
1954	57 York St	Store/shop	1989	21 Baldwin St	Hotel
1955	43-51 Allston Ave	Store/shop	1998	33 Allston Ave	Industrial/office
1955	140 Baldwin St	Factory	2005	87 Norman St	Gyms
1955	74 Baldwin St	Auto sales/service	2009	57 Norman St	Wholesale
1955	33 Norman St	Store/shop			

Source: West Springfield Assessor's Records

b) Prior Planning Efforts

The town's ***1962 Comprehensive Plan*** identified the Memorial Neighborhood as being zoned Industrial (as was originally the entire length of Memorial Avenue) noting that the Industrial zoning was "completely inconsistent with existing land use", which "is presently developed for residential use."

The Plan's Existing Land Uses Map showed the Memorial Neighborhood as being mostly residential with a half dozen industrial properties (although the current Assessor's records indicate that there are 37 current commercial uses in the neighborhood occupying buildings built prior to 1962). Memorial Avenue itself was shown as having commercial uses.

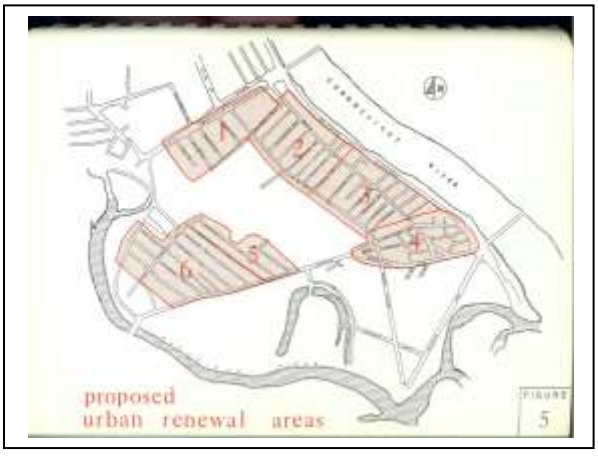
The Plan recommended changing the Memorial Avenue zoning from Industrial to an Exposition Commercial Area to allow for the development of hotels, parking, etc. A concern was expressed that the Eastern State's Exposition would relocate to available land in Agawam and it was recommended that they be permitted to build facilities north of Memorial Avenue.

The Plan also notes that:

"West Springfield has, in general, an exceptionally high quality of housing, and residential areas which are of as excellent condition as any in the State. For this reason those few areas which do have an appreciable number of sub-standard or blighted dwellings area all concentrated in the older southeast corner of Town, South of Park Street.

Where such conditions exist along with a wide variety of mixed uses and related environmental defects, it is usually almost impossible for individual owners to undertake corrective action, and too costly for the Town to do so.

In such instances, properly handled, Urban Renewal can be a useful tool by means of which the local community can avail itself of Federal funds to acquire land at fair market value, arrange for satisfactory relocation of any tenants affected, and rehabilitate, or if necessary demolish, buildings to make the property attractive to private developers."



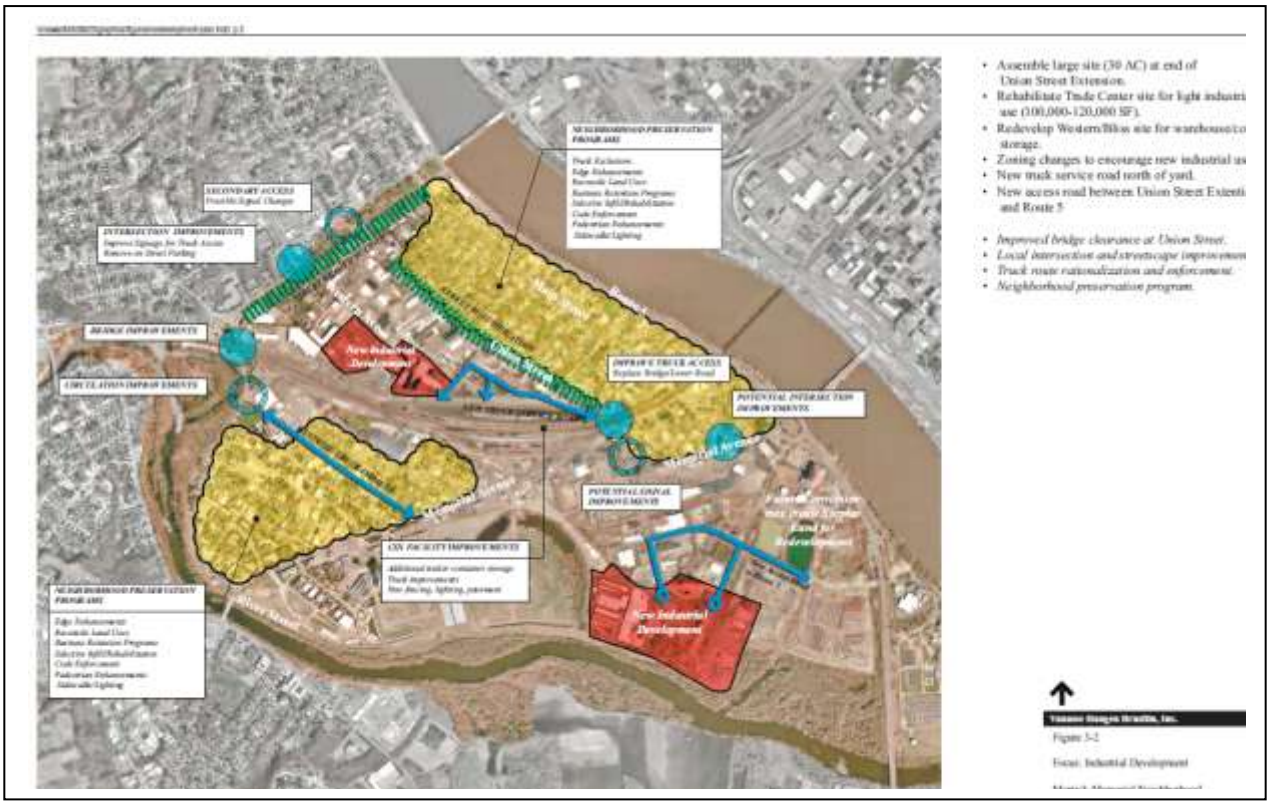
The areas identified on the map were essentially the Merrick and Memorial neighborhoods. To this end the Plan suggests that the Memorial Neighborhood be divided into two Urban Renewal Plans. The area between Bosworth Street and the railroad tracks (26 acres) was recommended for industrial re-use, while the area westerly from Bosworth Street or River Street was recommended for residential and Exposition oriented commercial uses such as "a hotel/motel complex with ample parking, swimming pool, etc, as well as related high quality gift and clothing shops, and a good restaurant."

The town acted on this recommendation by rezoning the Memorial Neighborhood to Business-B, which permitted single and two family uses as well as multi-family, offices, retail, wholesale/warehouse/distribution and manufacturing uses. In 1971 a new Zoning District (Business B-1) was created for this neighborhood which would now prohibit new single and two-family dwellings but permit multi-family dwellings, hotels/motels,

offices, retail, restaurants (including fast food), wholesale/warehouse/distribution and manufacturing uses.

The ***West Springfield Local Master Plan*** developed in 2000 included the need for "strengthening neighborhood based planning, especially in the Merrick and Memorial neighborhoods" and noted that "commercial development should not encroach into residential neighborhoods and that residential density in already congested areas should not be increased and efforts should be made to reduce the overall number of multi-family developments." While the Plan made a number of specific recommendations for the Merrick and Memorial neighborhoods in the areas of supporting citizen neighborhood councils/organizations to improve conditions and revitalize the neighborhoods, creating parks, reviewing development regulations in light of uses and dimensional regulations focused on the Merrick and Industrial neighborhoods and generally cleaning up the appearance of the neighborhoods, no specific recommendations were made relative to zoning.

The ***Memorial Neighborhood Redevelopment Plan*** prepared by VHB in 2004 described the Memorial neighborhood as "…a less cohesive residential neighborhood comprised of an often incompatible, awkward mix of residences, industrial users, and small businesses." While the plan provided particular emphasis on economic development and



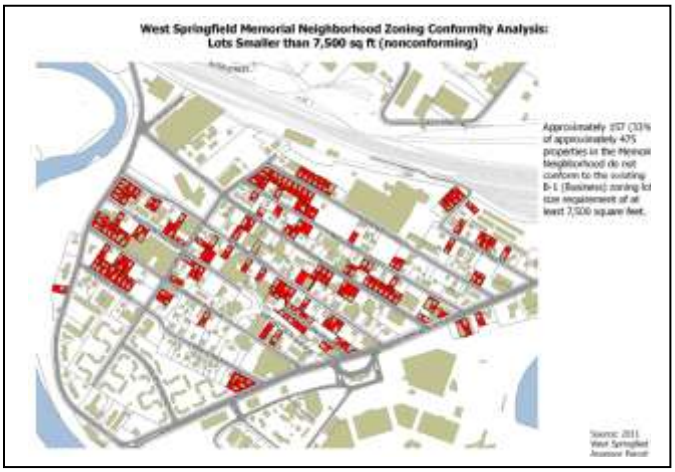
improved utilization of the rail yard, it also recommended developing a "Neighborhood Preservation Program" for the Memorial and Merrick neighborhoods (see Figure ___) including reconciliation of land uses, business retention programs, selective infill/rehabilitation, code enforcement, and pedestrian enhancements and sidewalk/lighting improvements.

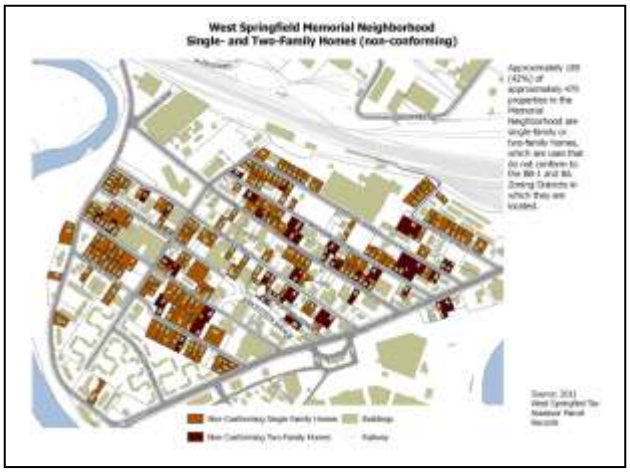
Because of the close proximity and intermixing of the residential and commercial/industrial uses, inevitable conflicts have arisen between two essentially incompatible land uses. Residents complain about truck traffic, early morning trash/dumpster removal/emptying and streets being blocked by loading and deliveries (because of the small lot sizes many businesses are not able to provide loading facilities on-site). Additional complaints of commercial lighting spilling over onto residential properties, late night noise and vehicles being parked on both sides of the street (due to insufficient on-site parking) were made at the Public Meetings. One neighbor noted that a home on Baldwin Street was sold three times in recent years.

Recommendation: *Impacts of commercial uses on nearby residential properties could be minimized by adopting more stringent Environmental Performance Standards and better enforcement of existing ones. Hours of operation should be considered and conditions placed on Site Plan Reviews.*

c) Single and Two-Family Uses

While the City has worked to further the transition of this neighborhood to more commercial uses by no longer permitting new single and two-family dwellings, 42% of the parcels remain currently occupied by such buildings, which are now considered pre-existing nonconforming uses (See Figure ____). In addition 33% of the parcels in this neighborhood have a lot size of less than the required 7,500 square foot minimum currently required under zoning, thus categorizing them as "pre-existing nonconforming lots" (see Figure __ ___). In comparing Maps ___ & ___ you can see that most of the pre-existing nonconforming lots are occupied by pre-existing nonconforming single-family and two-family uses. Because state law only permits the "grandfathering" of pre-existing nonconforming lots for single and two-family uses, the use of these parcels for commercial/industrial uses can only be achieved through the combining of these lots with other lots to increase the lot size, or through the granting of a Variance (which has strict criteria).





The housing stock comprised of single and two-family dwellings in the Memorial Neighborhood, while old, is of good quality and the properties are well maintained. Of the total 186 structures 79% are single family and 21% are two-family. Of the total 225 single family and two-family individual dwelling units, 65% are single-family and 35% are two-family. In terms of ownership 71.5% of the single-family buildings are owner-occupied while 28.5% are absentee landlord. Of the two-family buildings 33% are owner occupied and 67% are absentee landlord. Of the total 186 structures 63% are owner occupied and 37% are absentee landlord. Of the total 225 individual dwelling units 58% are owner occupied while 42% are absentee landlord.

Single and Two Family Ownership			
	Owner Occupied	Absentee Landlord	Total
Single family structures	105 (71.5%)	42 (28.5%)	147 (79%)
Two family structures	13 (33%)	26 (67%)	39 (21%)
Total	118 (63%)	68 (37%)	186

As the commercial and industrial uses in the Memorial Neighborhood grow, off-site impacts could affect "quality of life" issues of the residential uses. Over time this could result in the neighborhood becoming less desirable for residential purposes resulting in the value of the properties for residential uses to decline and, conversely, their value as commercial/industrial properties to increase prompting a change in use.

d) Rezone Section of BB-1 to RC

There is one portion of the Memorial Neighborhood that is still predominantly residential and has yet to be significantly intruded upon or impacted by commercial and industrial uses. Land uses westerly of Haywood Avenue to River Street is almost exclusively residential comprised of single and two family dwellings, multi-family dwelling, apartments and condominiums. As shown in Figure ____, the density and dimensional requirements for residential uses in the RC district are nearly identical to those in the BB-1 District. However, while permitting some professional offices, the RC District does not permit the commercial and industrial uses permitted in the BB-1 District.

RC and BB-1 Dimensional and Density Comparison											
Use	District	Minimum							Maximum		
		Lot Area	Lot Width	Frontage	Lot Depth	Front Yard Depth	Side Yard Width	Rear Yard Depth	Building Height	Number Stories	Building Coverage
Single family dwelling	RC BB-1	10,000sf -	90' -	75' -	- -	25' -	12' -	25' -	60' 60'	4 4	45% 60%
Two-family dwelling	RC BB-1	10,000sf -	90' -	75' -	- -	25' -	12' -	25' -	60' 60'	4 4	45% 60%
3 dwelling units	RC BB-1	21,000sf 21,000sf	100' 100'	100' 100 '	150' 150 '	30' 30 '	15' 15'	25' 25'	60' 60'	4 4	45% 60%
4 dwelling units	RC BB-1	28,000sf 28,000sf	100' 100'	100' 100 '	150' 150 '	30' 30 '	15 ' 15'	25 ' 25'	60' 60'	4 4	45% 60%
5 dwelling units	RC BB-1	36,000sf 36,000sf	125' 125'	100 ' 100'	150 ' 150'	30 ' 30'	15' 15 '	25' 25 '	60' 60'	4 4	45% 60%
6 or more dwelling units	RC BB-1	Note H Note G	150' 150'	100' 100 '	150' 150 '	30' 30 '	15' 15 '	25' 25 '	60' 60'	4 4	45% 60%
Auto repair/service, alcoholic beverage establishments	RC BB-1	- 7,500sf	- 75'	- 50 '	- -	- 25 '	- 10 '	- 25 '	60' 60'	4 4	45% 60%
Any other permitted use	RC BB-1	10,000sf 7,50sf	90' 75'	75' 50 '	- -	25' 25 '	12' 10 '	25' 25 '	60' 60'	4 4	45% 60%

***Recommendation**: The city should consider rezoning the portion of the Memorial Neighborhood from Haywood Avenue westerly to River Street to Residential C.*

e) Minimum Lot Size

The current 7,500 square foot minimum lot size in the neighborhood appears to be somewhat small for the commercial and industrial uses permitted. With Zoning requirements for building setbacks, parking to the side and rear yards, buffers and on-site loading requirements, not much is left for a substantial building and on-site landscaping. Most of the current commercial/industrial properties are somewhat utilitarian and lack design elements which could contribute towards enhancing the aesthetics of the neighborhood.

Recommendation: *The city should consider increasing the minimum lot size for commercial and industrial uses in the BB-1 District. As noted above, an increased lot size would enable developments to accommodate all of their required associated appurtenances on-site and greatly enhance the appearance of the district and neighborhood.*

f) Site Development and Performance Standards

West Springfield's Zoning Bylaw currently requires Site Plan Review for commercial projects in the BA and BB-1 Districts. However, the "Minimum Site Plan Review Requirement" for a buffer for lots of an acre or less is 10' along the street line and 5' along abutter property lines. While the Bylaws also contain a number of Sections which require additional compliance with Environmental Performance Standards (Section 9.6), Landscaping (Section 9.7) and Development Standards (Section 9.8) for commercial and industrial uses, they do not apply to the BB-1 or BA Districts.

Recommendation: *The city should consider expanding these Zoning Bylaw Sections to also include the BB-1 and BA Districts. This could result in more attractive commercial development in the neighborhood resulting in expanded development opportunities creating more jobs and increasing the tax base.*

B. MERRICK NEIGHBORHOOD

The topics of zoning, land use and parking have been a subject of ongoing community discussion in the Merrick Neighborhood since the start of the planning process that began in late 2011 as part of the tornado recovery and redevelopment plan, "Keeping Tradition Alive in the Merrick Neighborhood: Revitalization Plan and Recommended Zoning Code" (Appendix X).

That plan recommended a new approach to zoning in the Merrick Neighborhood using a primarily form-based code (FBC) model. The public process for that plan found that most community members like the look and feel of their neighborhoods' homes and businesses. Yet the vast majority of structures do not conform with the existing zoning code and could not be rebuilt as they are today without special permits or variances. This poses financial hardships on existing property owners and inhibits future business development. Both are barriers to enhancing the local tax base.

The public process resulted in a regulating plan for the FBC proposal with the following key goals:

- A strong relationship between neighborhood building types and uses, walkable streets, and civic spaces.
- Street and streetscape design standards that ensure a safe and attractive pedestrian environment through the appropriate placement (and replacement) of street trees and other selected street furnishings.
- Building types based on well-established precedents in the neighborhood and enhanced with complimentary local and regional building styles.
- Provisions for civic and public spaces with active uses that are connected to other open space amenities such as parks and playgrounds.
- A mix of appropriate and neighborhood scaled uses including residential, retail, dining, entertainment, institutional, office, and light industrial.
- Provide for open space and pathways that can be connected to local and regional systems encouraging healthier and extended transportation opportunities for neighborhood residents and workers.

This plan recommended that within the neighborhood four subdistricts be created:

Subdistrict 1 – Merrick Neighborhood Residential Zone (MNRZ)

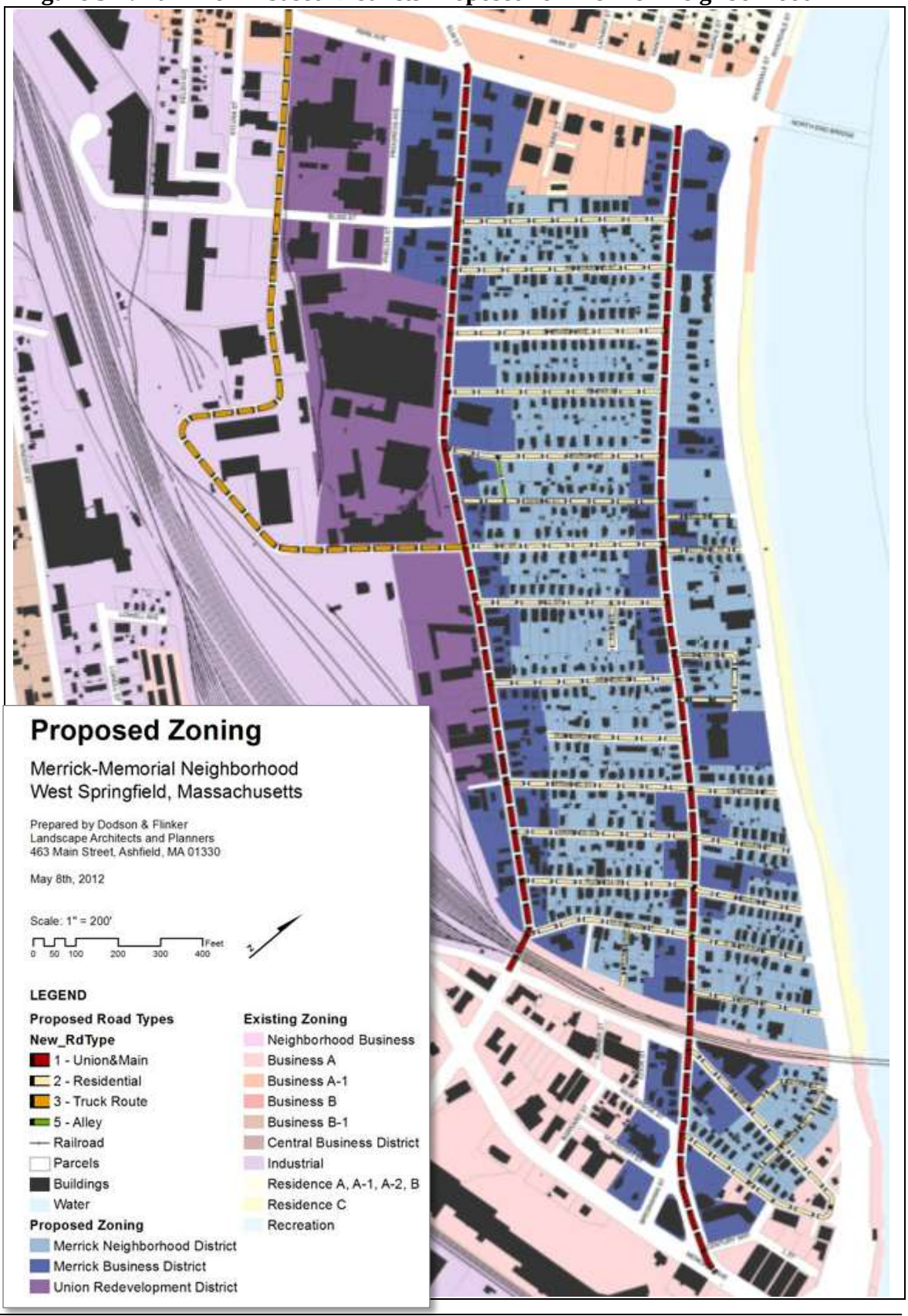
Subdistrict 2 – Merrick Neighborhood Business Zone (MNBZ)

Subdistrict 3 – Mixed Use and Employment Zone (MUEZ)

Subdistrict 4 – Merrick Natural and Civic Zone (MNCZ)

The plan recommended that these subdistricts be applied with the geographic boundaries shown in the following figure.

Figure 3-1: 2012 Form-based Districts Proposed for Merrick Neighborhood



The City has continued to advance this hybrid FBC concept for the Merrick Neighborhood by developing a new section of the City Zoning Ordinance for adoption. Setbacks, street types, parking and other associated standards are displayed using intuitive illustrations to complement the text. In the most recent version of the draft FBC (January 2014), the original subdistricts retain most of the previously envisioned standards but have been renamed to be more descriptive in terms of building types and frontage requirements:

- 7.03.1 Traditional Residential Frontage
- 7.03.2 Neighborhood Center Frontage
- 7.03.3 Mixed-Use Redevelopment Frontage
- 7.05.6 Open Space Standards

The draft zoning code now includes revised user-friendly graphics that show build-to lines, setbacks, parking and other elements of a complete streetscape. Brief excerpts are reproduced below.

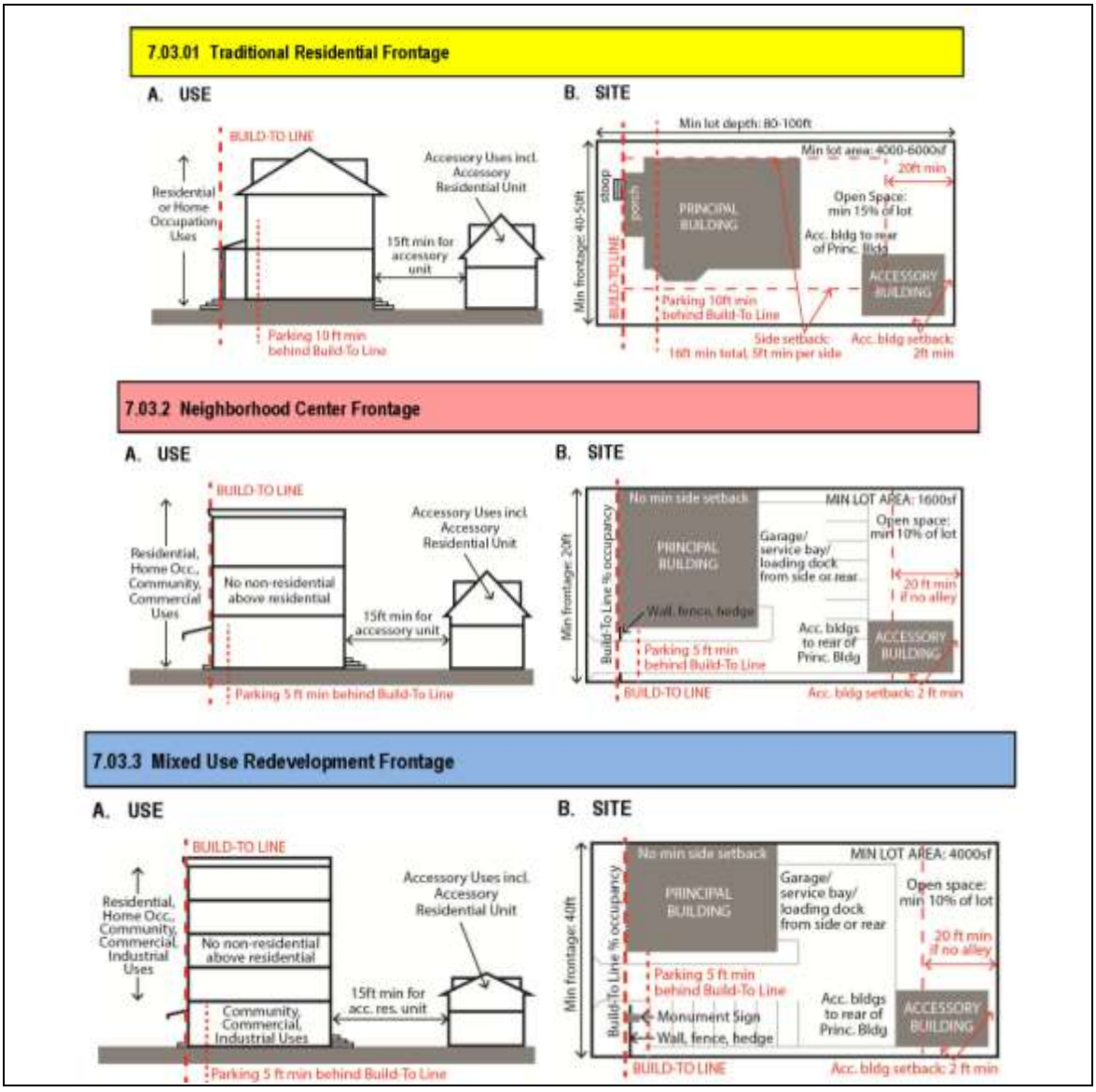
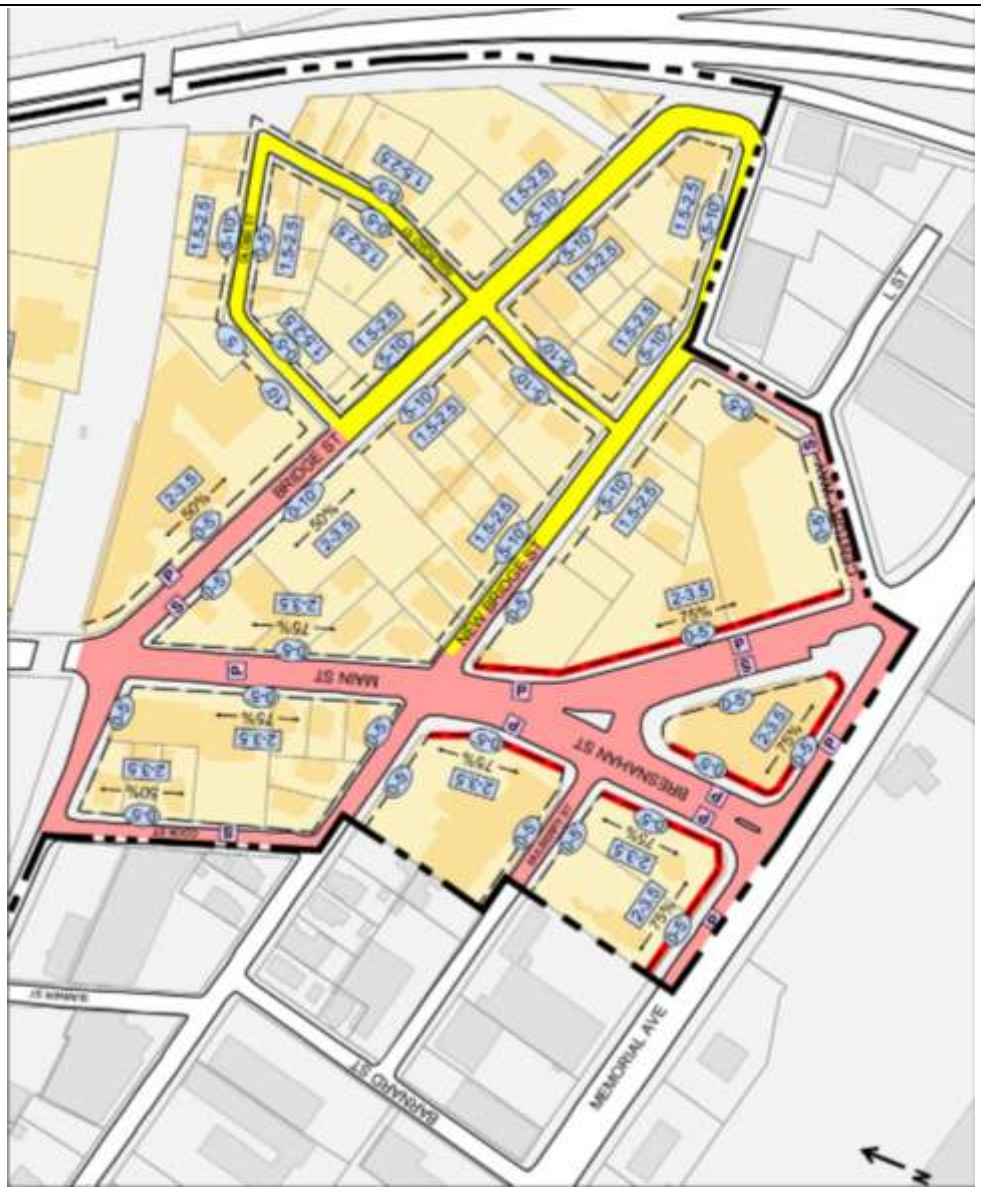


Figure 3-2: Example Regulating Plan from Revised Form-based Code Proposal
(Tile 6: Main Street at Memorial Avenue)



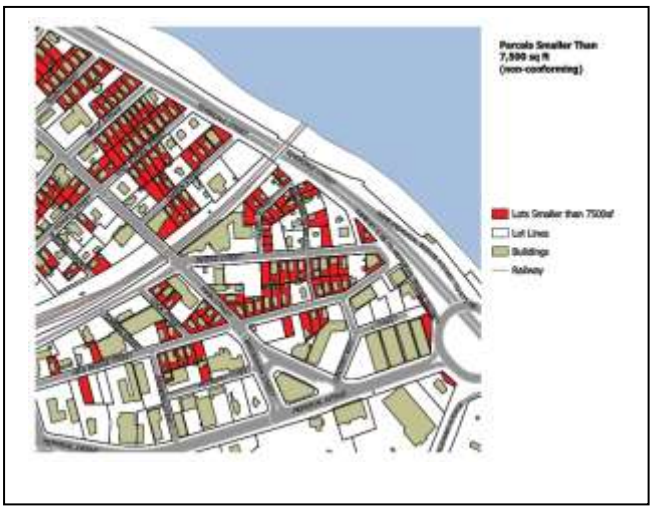
C. MAIN STREET AND MEMORIAL AVENUE NEIGHBORHOOD GATEWAY

Located at the intersection of Main Street and Memorial Avenue and proceeding northerly to the railroad underpass, this neighborhood has shared a similar zoning history with the Memorial Neighborhood and the Agawam Bridge intersection. Like the others, this area was originally zoned Industrial until sometime prior to 1963 when it was rezoned to Business A. While it has a much higher concentration of commercial uses than the Memorial Neighborhood, this area still has a significant, although somewhat hidden, residential presence.

1. Single and Two-Family Uses

Similar to the BB-1 district, the BA zoning of this neighborhood no longer permits new single and two-family dwellings. While there a many single and two-family dwellings, they are all now considered to be pre-existing nonconforming uses. In addition, many of the parcels in this neighborhood have a lot size of less than the required 7,500 square foot minimum currently required under zoning, thus categorizing them as "pre-existing nonconforming lots". The two maps below show that most of the pre-existing nonconforming lots are occupied by pre-existing nonconforming single-family and two-family uses. Because state law only permits the "grandfathering" of pre-existing nonconforming lots for single and two-family uses, the use of these parcels for commercial/industrial uses can only be achieved through the combining of these lots with other lots to increase the lot size, or through the granting of a Variance (which has strict criteria).

Similar to Memorial Neighborhood, this neighborhood also has a high number of pre-existing nonconforming lots, most of which are also occupied by pre-existing nonconforming uses (residential).



The residential properties situated westerly of Main St. have a high probability of being subject to change as the surrounding existing commercial uses have a greater impact on quality of life issues. However, the residential properties east of Main Street, especially in the Bridge Street, New Bridge Street, Globe Street and Railroad Street are in a well

established residential neighborhood which is somewhat insulated from the commercial development in the area and efforts should be made to stabilize and retain it.

Recommendation: *The city should consider adopting the proposed Form Based Code Bylaw which would address and maintain the residential neighborhood easterly of Main Street. Another alternative would be to rezone it to the Bylaws existing RC District which permits single, two and multi-family dwellings and more accurately represents the character of this neighborhood.*

2. Commercial Redevelopment

This neighborhood is already heavily developed with a mixture of retail, service, office and light manufacturing uses. The most prominent confining element restricting further economic development in the area is the lack of on-site parking. While additional commercial square footage could be created by building additional stories on the many one story buildings in the neighborhood, like in the Memorial Neighborhood, most of the lots lack adequate acreage to accommodate additional parking .

Recommendation: *The city should consider adopting more flexible parking requirements giving the Planning Board the authority to reduce the number of spaces, provide dual uses of spaces, provide for shared parking, provide for shared curb-cuts, provide spaces off-site and consider other alternatives to on-site parking presented by the developer. While the city should consider extending the more flexible parking requirements now being considered under the proposed Merrick Neighborhood Form Based Code to other Zoning districts, we have also attached in the Appendix a model parking bylaw that allows the Planning Board to use its good judgment and discretion on being flexible with parking requirements.*

Like the Memorial Avenue/River Street/Agawam Bridge intersection, this intersection is also a "Gateway" to West Springfield and provides a visual presentation of the community to visitors. Promoting the development of attractive and eye appealing commercial site design at one of the primary entrances to the city contributes towards the development of community pride and further stimulates additional growth and development. While the city does have additional site design standards for commercial development, it does not currently apply to use in the BA District.

Recommendation: *The city should consider expanding Zoning Bylaw Sections 9.6 - Environmental Performance Standards, 9.7 - Landscaping and 9.8 - Development Standards for commercial and industrial uses, to also include the BA Districts. This could result in more attractive commercial development in the neighborhood resulting in expanded development opportunities creating more jobs and increasing the tax base.*

Located at the intersection of River Street, Memorial Avenue these properties provide one of the "Gateways" into West Springfield providing travelers over the Memorial Bridge with their initial impression of West Springfield.

Like the rest of the Memorial Avenue, these properties were originally zoned Industrial, but were rezoned to Business A prior to 1963. While there are apartment buildings as you proceed up Bridge Street (currently zoned BB-1), the commercial uses at this intersection include a motel, used car lot, a convenience store and additional retail uses,

all permitted uses in the BA district. Although the properties have been developed for commercial uses over the years, two of the key parcels under the same ownership (1672 and 1718 Memorial Avenue) remain vacant and/or unused today.

The current BA zoning is appropriate for this area, but the current commercial properties provide a somewhat underwhelming entrance into the city. The redevelopment of these properties to viable commercial/mixed uses would revitalize this key intersection and entrance to the city.

While many of the recommendations made for the Memorial Neighborhood also apply here:

Site Development and Performance Standards - Recommendation: *The city should consider expanding Zoning Bylaw Sections 9.6 - Environmental Performance Standards, 9.7 - Landscaping and 9.8 - Development Standards for commercial and industrial uses, to also include the BA Districts. This could result in more attractive commercial development in the neighborhood resulting in expanded development opportunities creating more jobs and increasing the tax base.*

Parking - Recommendation: *The city should consider adopting more flexible parking requirements giving the Planning Board the authority to reduce the number of spaces, provide dual uses of spaces, provide for shared parking, provide spaces off-site and consider other alternatives to on-site parking presented by the developer. While the city should consider extending the more flexible parking requirements now being considered under the proposed Merrick Neighborhood Form Based Code to other Zoning districts, we have also attached in the Appendix a model parking bylaw that allows the Planning Board to use its good judgment and discretion on being flexible with parking requirements.*

There are some important Zoning Map revisions in this neighborhood that the city should also consider. A number of the lots are split into two zoning districts because the zoning lines do not follow the property lines and instead bisect the parcels. This can cause problems relative to the use of the lots as portions of the parcel in one district may not permit uses that are permitted in the district on the other side of the parcel. Different dimensional and density requirements could also apply to different portions of the lot. While in certain unique situations (such as where a particularly large lot may provide a transition between two zoning districts) this may be appropriate, that does not seem to be the situation here.

Recommendation: *The city should consider amending its Zoning Map in the following manner:*

- Rezone the portion of the condominiums on Colony Rd. along memorial Ave. to RC (currently split between BA and BB-1)
- Rezone all of property at 20 River Street (Bunk Bed World) to BA (currently split lot between BA and BB-1)
- Rezone all of 1434 memorial Avenue to BA (currently slit between BA and BB-1)

D. PARKING IN THE STUDY AREA

Because of the relatively small lot sizes in the Memorial and neighborhood many of the existing commercial and industrial (and even residential) uses cannot provide the minimum on-site parking required resulting in the loss of landscaped buffers and parking on the street. The small size of these lots also make it difficult for potential new commercial uses to comply with existing parking requirements discouraging the redevelopment of properties.

While the current Bylaw does allow for shared parking, it doesn't permit providing it off-site. While the Planning Board can issue a Special Permit reducing the number of parking spaces physically provided, the owner must still set aside an area adequate to accommodate the full amount. Sometimes this is not physically possible. Which raises a few questions, should a good project be discouraged just because it cannot meet the parking requirements? Under certain circumstances does the need or desire to approve a good project sometimes outweigh the need to provide all of the parking required? Can the Parking be accommodated in some other way?

Recommendation: *The city should consider adopting more flexible parking requirements giving the Planning Board the authority to reduce the number of spaces, provide dual uses of spaces, provide for shared parking, provide for shared curb-cuts, provide spaces off-site and consider other alternatives to on-site parking presented by the developer. While the city should consider extending the more flexible parking requirements now being considered under the proposed Merrick Neighborhood Form Based Code to other Zoning districts, we have also attached in the Appendix a model parking bylaw that allows the Planning Board to use its good judgment and discretion on being flexible with parking requirements.*

E. CATALYTIC REDEVELOPMENT OPPORTUNITY SITES

This section describes four sites in the study area where opportunities for redevelopment consistent with TCSP program goals and criteria were identified and envisioned.

The PVPC planning team met regularly with the West Springfield Redevelopment Authority and Mayor's Office in 2012 and 2013 to identify sites in the TCSP study area where targeted transportation improvements and redevelopment efforts would likely have the greatest potential to spur catalytic redevelopment. The following six initial sites were reviewed with respect to their potential to meet this goal:

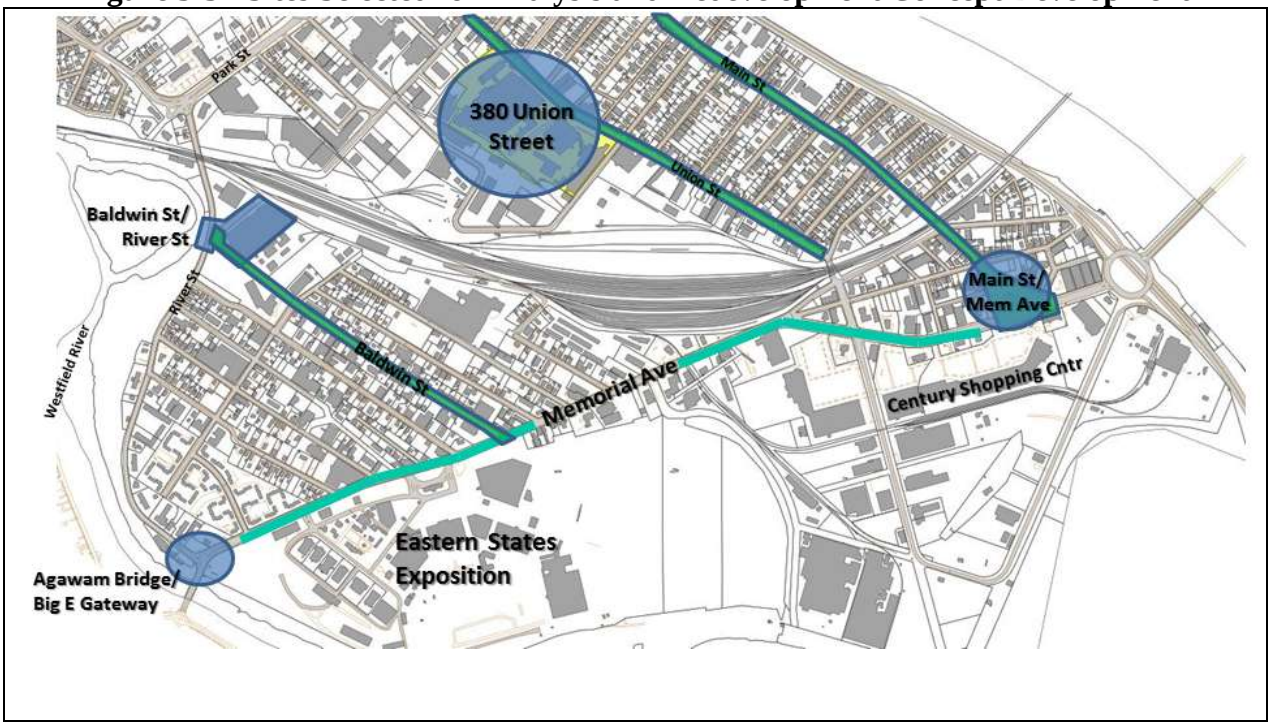
- Main Street at Memorial Avenue
- River Street at Memorial Avenue (Agawam Bridge)
- River Street at Baldwin Street and Sears Way
- 380 Union Street (Industrial Park)
- Union Street Extension and Agawam Avenue (behind Century Shopping Center)
- Union/Bridge/New Bridge Streets Intersection

Upon guidance from the Redevelopment Authority, these four sites were selected for analysis and concept development:

- Main Street at Memorial Avenue
- River Street at Memorial Avenue (Agawam Bridge)
- River Street at Baldwin Street and Sears Way
- 380 Union Street (Industrial Park)

These sites are shown (blue shaded areas) on the study area map below, as well as the corridors recommended for Complete Streets improvements (green shaded corridors) described in Chapter 4.

Figure 3-3 - Sites Selected for Analysis and Redevelopment Concept Development



1. Focus Area: Main Street at Memorial Avenue Gateway

The commercial area at the intersection of Memorial Avenue, Main Street and Bresnahan Street is one of the busiest commercial areas in the eastern section of the City. It is opposite the Century Shopping Center, a major commercial destination that generates regional demand. This focus area is also close to downtown Springfield (via the Memorial Avenue Bridge) and the site of the proposed MGM casino project. This area was also one of the most heavily damaged by the June 1, 2011 tornado, and several properties in the area require additional remediation and clean up.

a) Preliminary Site Assessment

Total Acreage: 8.62 ac (375,678 sf)	**Total number of Parcels:** 28
Current Zoning: Business A *Note: The areas along Bresnahan and Main Streets and Memorial Avenue would be subject to rezoning to Mixed-Use Redevelopment Frontage type that is being developed as a hybrid version of form-based code (FBC) by the City as recommended by the 2012 Merrick Neighborhood tornado recovery revitalization plan. The residential areas along New Bridge Street, Bridge Street and Railroad Street would be subject to the proposed Residential Frontage type included in the current rezoning proposal.*	
Area Description: This site may be considered the principal southern gateway to the Merrick Neighborhood. It is opposite the busy Century Shopping Center development on south side of Memorial Avenue. Main Street functions as the principal north/south arterial into this area, connecting to the Merrick Neighborhood to the north under the CSX railroad bridge. The area's proximity to the Memorial Avenue Bridge and South End Rotary offer excellent access to/from downtown Springfield. This area is West Springfield's closest business district to the proposed MGM casino development in downtown Springfield.	
Current Land Uses: Retail, Eating/Drinking Establishments, Discount Stores, Undeveloped ("Undevelopable"?) Commercial Land, Auto Repair Facilities, Single-family Residential, 2-family Residences, 3-family Residences, Parking Lots, abandoned buildings	
Area Accessibility: There is good auto access via Memorial Ave. Truck delivery access is considered good to fair, due to undefined curbing, lack of loading areas, and poorly marked lanes.	**Building Types**: 1-level commercial on Memorial Ave; 1- and 2-level commercial and residential on Main St toward New Bridge St
Access to Local Amenities: Shopping, fast food, restaurant, clothing stores, grocery (at Century Shopping Center).	**Number of vacant / underutilized properties**: 974 Main Street. 28 New Bridge Street. Possibly 1050 Main Street.
Adjacent Land Uses: Freight railroad, Shopping Center (Century Plaza), warehouse, gas stations, bank, restaurants, auto repair, discount stores, small retail, 1-, 2- and 3-family residential	

Brownfields: 974 Main St (Standard Plating Co.) site investigation in spring 2014 by owner revealed contamination requiring a Level 2 site investigation. In addition, potential contamination at 1050 Main Street (former West Side Auto Body) was noted by City staff, and remediation work for possible underground storage tanks was noted by PVPC staff during field observations.	
Traffic: High volumes of traffic are present, especially along Memorial Avenue, during peak hours. Speeding vehicles were noted on all streets, and uncontrolled and illegal movements occurred frequently (every few minutes).	**Public Transit Available**: 2 PVTA routes with services every 30 60 min in each direction. 1 shelter (inbound) at Century Shopping Cntr

Area Constraints and Opportunities for Property Redevelopment:

- Lack of pedestrian crosswalks
- No bike lanes or marked shared bike routes
- Lack of parking availability for businesses fronting Memorial Ave.
- One-way routings on Main and Bresnahan are confusing
- Many unmarked travel lanes
- Large areas of unmarked parking
- Incomplete sidewalks along Bresnahan from New Bridge to Memorial.
- Missing crosswalks at Memorial, New Bridge, Mulberry.
- Inadequate curbs/landscaping to define parking and traffic flow.
- Numerous safety conflicts on Main Street.
- Insufficient parking for existing businesses (218 Memorial).
- Brownfield at 974 Main St. (Standard Plating Co).
- Prominent locations (CSX bridge) lack identifying icons and graphics for way-finding.
- Lack of bus shelters; poorly located stops.

Figure 3-4 - Tornado-damaged Buildings

Tornado Damaged buildings 5-2-14

25 Railroad—House is severely damaged from storm, the property is vacant and unlivable. —new roof was installed last year updated (2-14-14).

31 Railroad—House is severely damaged and unlivable

19 Merrick street—building is vacant, secured.

79 Bridge street—building is vacant, boarded up. Bank had a new roof put on in April 2014. building may have interior damages caused by roof being open for extended period of time.

54-56 New Bridge—building was occupied tenants order to vacate crack in chimney and carrying beam is split. Owner is cleaning out building and the owner will call for housing inspection when compliant. Owner lives at 50 New Bridge Street.

50 New Bridge—windows blown out, other issues.

69 New Bridge—roof had a branch sticking through the roof, roof was patched. Roof is still tarped as of 5-2-14.

Vacant Lots –Buildings destroyed or taken down

57-59 Bridge Street—Torn down –(vacant lot) 7-17-12
667 Union Street—Destroyed during tornado (vacant lot)—7-17-12
84 Hill Street—Destroyed during tornado (vacant lot) 7-17-12
29 West School Street—torn down —vacant lot 6-8-12

Source: West Springfield Economic Development

Figure 3-5 - Focus Area Existing Street Level Perspectives

b) Redevelopment Concepts and Strategies Considered

A range of potential initial redevelopment concepts and strategies were generated for initial consideration, based on multiple site visits, identification of major site concerns, review of existing municipal plans, interviews with City staff and other sources. Following is the initial list of concepts and strategies for redevelopment.

- Complete sidewalks, especially on Bresnahan Street between New Bridge Street and Memorial Avenue.
- Install crosswalks across Memorial Avenue, New Bridge Street, and Mulberry Street.
- Install curbing and landscaping to better define parking areas and vehicle flow.
- Close Main Street at Memorial Ave to create parking for 218 Memorial Avenue.
- Realign Century Way and make one-way inbound to improve intersection safety and geometry, improve operations on Memorial Avenue.
- Revise head-in parking on west side of 218 Memorial to be on-street to allow two-way operation on Bresnahan Street; add replacement parking on Main Street side of building.
- Enlarge 218 Main Street building foot print to increase development square footage.
- Acquire and demolish 974 Main St. (Standard Plating Co.) and create public parking lot, depending on activity use limitations that may be imposed.

- Install public art treatments at CSX bridge, such as a "Welcome to Merrick" sign or painting, and improve the "Welcome to West Springfield" sign and island at the intersection of Main/Memorial.
- Install high quality bus shelters at Main/Memorial (nearside westbound) and replace existing Memorial inbound midblock shelter with high-quality structure.
- Optimize bus stop location for pedestrian safety, proximity to cross walks and stop lights.
- Study structured public parking facility to support multi-story buildings consistent with new Mixed-Use Frontage Type.
- Encourage redevelopment of 218 Memorial Avenue consistent with Mixed Use Frontage Type (up to 4 stories with first floor retail).
- Extend proposed "Traditional Neighborhood Frontage Type" to residential parcels on north side of New Bridge Street east of Main.
- Acquire and assemble parcels at 1097 Main, 1105 Main (Haufbrau House), 89 New Bridge Street to create developable frontage at corner of Main and New Bridge consistent with Mixed-Use Redevelopment Frontage Type.
- Seek opportunities to divest city-owned land to improve tax base.

PVPC prepared two concepts for this focus area to help promote community discussion and understanding about how some of the strategies listed above might be implemented. These concepts are for discussion purposes only.

Figure 3-6 - Main at Memorial Concept 1: Two-way Traffic on Main Street and Open Space

Concept Highlights:

- Improved intersection geometry and safety at Bresnahan and Main Streets; creates new parcel for potential open space on block between Mulberry Street and New Bridge Street.
- Two-way traffic on Bresnahan Street with dedicated left turn lanes from both directions of Memorial Avenue; on-street parking on both sides of Bresnahan Street.
- Two-way traffic on Main Street between Memorial Avenue and Bresnahan Street.
- Center median on Memorial Avenue near Main Street entrance to prohibit left turns into and out of Main Street (redirects drivers to use safer new two-way Bresnahan street and intersection).
- Continuous sidewalk from New Bridge to Memorial Avenue with crosswalk connections to Century Shopping Center
- Head-in parking on west side of 218 Memorial Ave (Work Gear Bldg) relocated to Main Street side of building.

Figure 3-7 - Main at Memorial Concept 2: Narrow Main Street for On-Street Parking and New Parcel at Main/Bresnahan

Concept Highlights:

- Improved intersection geometry and safety at Bresnahan and Main Streets; creates new parcel for potential development on block between Mulberry Street and New Bridge Street for mixed uses complementary to existing restaurant.
- Two-way traffic on Bresnahan Street with dedicated left turn lanes from both directions of Memorial Avenue; on-street parking on both sides of Bresnahan Street.
- One-way traffic on Main Street between Memorial Avenue and Bresnahan Street with well-marked on-street parking on both sides. Narrower right of way encourages slow traffic speeds; includes sidewalk and bike lane(s).
- Larger building footprint possible for redevelopment of 218 Memorial Avenue building; other excess public rights of way could be given or sold to abutting private owner, which could enhance property value and tax revenue.
- Addition parking for commercial tenants could be possible with shared parking/lease arrangements with private owners adjacent to parking lot behind proposal new mixed use building(s).

c) Recommended Redevelopment Concepts and Strategies

The initial concepts and strategies were reviewed with the Redevelopment Authority, City staff, stakeholders and residents at Public Meeting #1 to produce a set of recommended redevelopment concepts and strategies. These are displayed on the following figure with descriptions below it.

1. Complete sidewalks between New Bridge Street and Memorial Avenue.
2. Establish two-way traffic on Bresnahan Street.
3. Create better on-street parking on Bresnahan and Main Streets to support businesses.
4. Realign intersection of Main Street and Bresnahan Street for improved geometry and to create new open space and/or future mixed-use parcel with adjacent parking with possible shared use arrangement.
5. Optimize PVTA bus stop locations.
6. Demolish 974 Main St. (Standard Plating Co.) and complete necessary remediation to create parking and future redevelopment opportunity.
7. Redevelop 218 Memorial as multi-story structure consistent with proposed FBC zoning to increase square footage and tax revenue potential.
8. Adopt "Traditional Neighborhood Frontage Type" zoning for homes north of New Bridge St and east of Main St (as proposed in current version of FBC) to protect existing character and housing.
9. Install public art at prominent neighborhood locations: CSX bridge underpass, Main Street / Memorial Avenue "Welcome to West Springfield" island.

2. Focus Area: River Street at Memorial Avenue (Agawam Bridge) Gateway

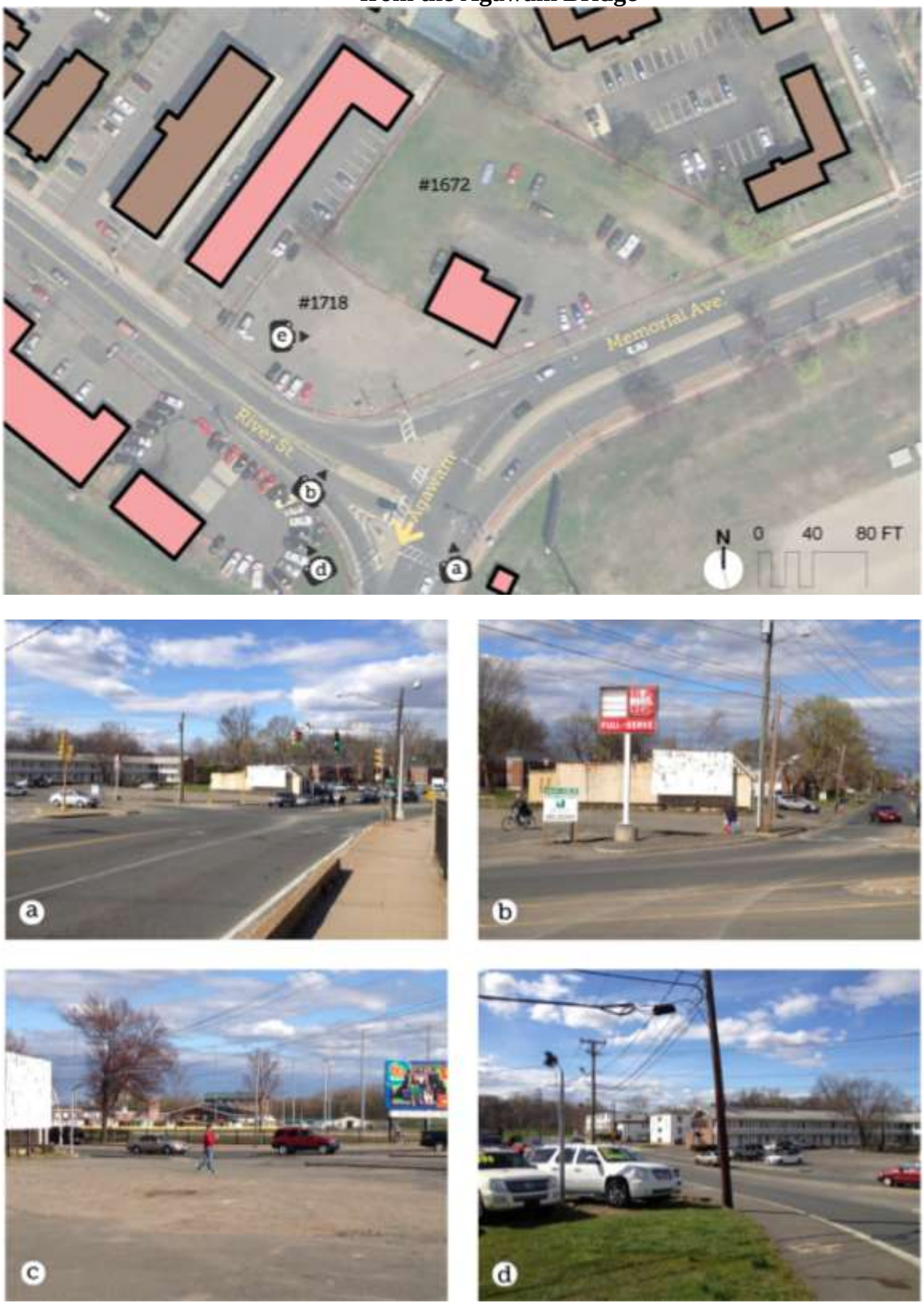
This area is an important gateway to the southwestern area of West Springfield and the City's largest land owner and regional attraction, the Eastern States Exposition ("The Big E"). This area is connected to the Town of Agawam via a three-lane bridge for which the Massachusetts Department of Transportation is now designing a replacement structure that could be built within the next five to ten years. The upcoming bridge replacement, as well as the commitment of The Big E to maintaining and improving their regional facility, mean that redevelopment efforts here would be likely complement existing planned investments.

a) Preliminary Site Assessment

Figure 3-8 - Street level view of Memorial Avenue and River Street Focus Area from the Agawam Bridge

Total Acreage: 2.3 ac	**Total number of Parcels:** 5
Current Zoning: Business A (1672 and 1718 Memorial Ave, and 20 River St); Business BA (6 River St)	
Area Description: • 1672 and 1718 Memorial Avenue establish a first impression of West Springfield for people entering the City via the Agawam Bridge; one parcel is vacant, one has an auto service garage. • Numerous curb cuts and poor-quality sidewalks contribute to an unfriendly environment for walkers. • Channelized right turn lanes, lack of bike lanes may be unsafe for bicyclists traveling toward Agawam. • Street trees and landscaping are absent on north side of Memorial Avenue and for first several parcels along River Street. • There is a significant contiguous concentration of well-kept multi-family homes and apartments (Colony Condominiums). • During Big E events, there is significant traffic congestion on Memorial Avenue queuing to enter Gate 1. • Lots at 1718 and 1672 Memorial Ave. appear vacant or used sporadically. • The Medallion Motel fills important low-income housing need and should be enhanced. • There are numerous uncontrolled curb cuts on both sides of street, creating safety concerns for all users of the roadway – motorists, pedestrians and cyclists. • The dead end on Cold Spring Avenue could be a potential bike or pedestrian connection to River Street	
Current Land Uses: 2 vacant/underutilized parcels (1672 and 1718 Memorial Ave.), 1 used car dealer, 1 retail furniture sales, 1 convenience store.	
Area Accessibility: Access is by all modes. Pedestrians and cyclists were observed in the area, competing in many cases with lane space and safety with heavy traffic conditions, especially during peak travel times.	**Building Types**: Commercial mid-century structures.
Access to Local Amenities: Access to the Big E Gate 1 is a critical regional need.	**Number of vacant/underutilized properties**: 4 parcels at this location are underused and susceptible to change: a former gas station (1718 Memorial Ave); a former gas station/auto repair (1672 Memorial Ave); a used car dealership (6 River Street); and a structure housing discount furniture sales and a convenience store (20 River St).
Adjacent Land Uses: motel, condo residences, 1-level retail, used car dealer, convenience store, Big E exposition and fair, parking	
Area Constraints: Overhead high-tension power lines through site, pump station,	
Brownfields: 2 DEP release sites (both reported closed; follow up recommended)	
Traffic: Traffic is congested at this intersection during peak hours. Multiple curb cuts and lack of curbs create pedestrian and cyclist safety concerns.	**Public Transit Available**: R14 hourly service to downtown Springfield (eastbound) and Feeding Hills (westbound) from 6:30AM to 6:10PM only.

Figure 3-9 - Street level perspectives of Memorial Avenue and River Street Focus Area from the Agawam Bridge



b) Redevelopment Concepts and Strategies Considered

A range of potential initial redevelopment concepts and strategies were generated for initial consideration, based on multiple site visits, identification of major site concerns, review of existing municipal plans, interviews with City staff and other sources. Following is the initial list of concepts and strategies for redevelopment.

- Add turning lane on Memorial Ave eastbound coming off bridge for Big E Gate 1 queuing.
- Assemble 1718/1672 Memorial for multi-story mixed-use building built to sidewalk with parking in rear.
- Acquire and assemble 6 and 20 River Street for open space, passive recreation and riverwalk access, or small-scale retail.
- Rezone south of York/Roanoke from BB-1 and BA to Residential C (with 1st floor retail/commercial uses by SPR).
- Study pedestrian/bike access easement along former Cold Spring Avenue ROW to connect through to River St.
- Sidewalk improvements.
- Pedestrian crosswalks, island, activated signals, signage.
- Access to possible future riverwalk along Westfield River dike.
- Landscaping, screening, other amenities to enhance Medallion Motel.

Figure 3-10 - Memorial Street at River Street Redevelopment Concept: Mixed Use Multi-story Building

- 1672 and 1718 Memorial Ave. could be redeveloped as a mixed-use building.
- Retail on the first floor serves residents of neighboring multi-family buildings.
- Apartments on the second floor fill a need for multi-family housing in West Springfield.
- Extensive parking complies with current zoning. Likely more than is really needed. Extra parking can be used during Big E.
- Alternatively, City could consider reducing parking requirements for mixed-use buildings.
- Reduction to two curb cuts improves pedestrian and bike safety, clarifies internal circulation of the lot, and provides entry to the parcels at the safest and most convenient points.
- Continuous sidewalk along Memorial Ave and River St. improves pedestrian environment
- Sidewalks from street to front door of building, and from parking to building welcome residents and visitors.
- Street trees and landscaping improve first impression of West Springfield and provide attractive green space for residents and customers.

Figure 3-11 - Example Structures for Memorial Avenue at River Street Redevelopment Concept

	
This building (from Chicago) shows an example of how parking could be accommodated to the side and rear of a future building at this site.	A mixed use building at this site could include first floor retail with residential and offices uses on the upper floors, as seen in this example on Strong Ave. in Northampton.

c) Recommended Redevelopment Concepts and Strategies

The initial concepts and strategies were reviewed with the Redevelopment Authority, City staff, stakeholders and residents at Public Meeting #1 to produce a set of recommended redevelopment concepts and strategies. These are displayed on the following figure with descriptions below it.

1. Add right turn lane on Memorial Ave eastbound for Big E Gate 1 queuing.
2. Assemble 1718 and 1672 Memorial Ave for multi-story mixed-use building.
3. Landscaping, screening, other amenities to enhance Medallion Motel.
4. Study bike/pedestrian connection from Cold Spring Ave to River St.
5. Study access to future river walk on dike (access at 166 River Street and/or from bridge to Agawam).

3. Focus Area: River Street at Baldwin Street and Sears Way (Memorial Elementary School) Gateway

a) Preliminary Site Assessment


BLISS STREET
SEARS WAY
3.77 ac
NORMAN STREET
ALLSTON AVENUE
WINDSOR STREET
BOSWORTH STREET

Total Acreage: 15	**Total number of Parcels:** 5
Current Zoning: Business 1 (south of Baldwin); Industrial (north of Baldwin)	
Area Description: Memorial Elementary School at 201 Norman Street is a focus of neighborhood, with park area that is well-used for active recreation. Former FiberMark building on Sears Way is for sale. Site abuts Westfield River, with a flood wall separating the roadway from the river embankment. Awkward intersection geometry causes vehicular and pedestrian uncertainty. A significant number of students enrolled in the elementary school arrive on foot via the sidewalk along River St that passes beneath the CSX railroad bridge to the north of the site. CSX waste hauling trucks and other large delivery vehicles access the industrial area via Sears Way.	
Current Land Uses: School, residential, industrial, small business, recreation (ball field).	
Area Accessibility: Auto and truck access. Lively pedestrian activity noted on streets during site visits.	**Building Types**: Civic (elementary school); industrial (warehouse/distribution facility, lumber yard); offices; residential. Buildings
Access to Local Amenities: The elementary school is the primary local amenity, serving as the community center.	**Number of vacant / underutilized properties**: 26 Sears Way still for sale; lack of parking cited as impediment to new use(s). Lumber yard appears underutilized; appears to be contractor-based clientele (little general consumer traffic/sales noted).
Adjacent Land Uses: Residential and small businesses	
Area Constraints: • Poor intersection geometry at Baldwin/River/Sears is confusing to motorists, creates safety concerns for pedestrians, especially children who may be walking or biking on River Street to/from areas north of the CSX rail underpass. • 26 Sears Way is vacant/underused due to insufficient parking, poor loading dock geometry, lack of good traffic flow on site. Additional exit to east of site could mitigate this problem. • There is a significant parking shortage for games and other public recreation at the ball field adjacent to Memorial Elementary School. Cars were reported to park at unsafe locations on River Street, Baldwin Street and on private properties along Sears Way. • Baldwin Street is a frequently used auto and truck cut-through from River Street to Memorial Avenue; many vehicles speed, creating safety concerns for local businesses, pedestrians, residents. • Memorial Elementary School is anchor institution in the neighborhood, and residents want it to remain in active use. • The queuing area(s) for parent/student drop-off/pickups are not well-defined, and can be unsafe. On Norman Street, in particular, crosswalks lead to into private driveways or onto front yards with no sidewalks.	
Brownfields: 1 known DEP release site (now closed) at lumber yard (253 Baldwin St).	
Traffic: Traffic is heavy along River Street, with frequent speeding noted. Traffic on Baldwin and Norman is less congested, but does fill up during school arrival and dismissal times.	**Public Transit Available**: None

b) Potential Redevelopment Concepts and Strategies Considered

A range of potential initial redevelopment concepts and strategies were generated for initial consideration, based on multiple site visits, identification of major site concerns, review of existing municipal plans, interviews with City staff and other sources. Following is the initial list of concepts and strategies for redevelopment.

- Intersection geometry improvements at Baldwin/River/Sears (concept).
- Crosswalk striping, ped-activated signs, additional signage.
- Bike lanes or "share-rows" on Baldwin.
- Decorative lighting.
- Risers, solid fencing, landscaping to improve safety for spectators and players at ballfield.
- Shared parking with 26 Sears Way and/or 333 River St for games at ballfield.
- Study options for pedestrian access to possible future Westfield River walk/bikepath.
- Enhance community use of Memorial Elementary School (LSSE classes, additional Park and Rec programming, Senior Center outreach, other).
- Study queuing area(s) for student drop-off/pickup by car.
- Safe Routes to Schools grant program eligibility information, application information.
- Create sufficient employee parking for 26 Sears Way: demo/remodel rear portion of building or acquire part of 253/222-230 Baldwin.
- Study re-uses of 26 Sears Way that are less truck-intensive, such as indoor agriculture/ aquaculture, light manufacturing, improved rail access.
- Assemble and clear 253/222-230/266 Baldwin and determine appropriate market for reuse.

Figure 3-12 – Potential Intersection Improvements at River Street and Baldwin Street

c) Recommended Redevelopment Concepts and Strategies

The initial concepts and strategies were reviewed with the Redevelopment Authority, City staff, stakeholders and residents at Public Meeting #1 to produce a set of recommended redevelopment concepts and strategies. These are displayed on the following figure with descriptions below it.

1. Intersection geometry improvements at Baldwin/River/Sears.
2. Create sufficient employee parking for 26 Sears Way w/ shared parking arrangements for ballfield.
3. Bike lanes on Baldwin.
4. Safe Routes to Schools grant program eligibility
5. Improve traffic/ped circulation for Memorial School.
6. Study options for access to future river walk/bike path.

4. Focus Area: 380 Union Street Public Park Concept

In April 2013, the West Springfield Redevelopment Authority and Mayor asked PVPC to produce a redevelopment concept for a public park and supporting redevelopment strategies for an 18-acre parcel at 380 Union Street that could potentially be eligible future urban renewal plan.

The development of new parks and civic spaces in the neighborhood, as well as new locations for business development and job creation, were key recommendations of the 2012 Merrick Neighborhood Revitalization Plan. The plan identified the midsection of Union Street as an area of the Merrick Neighborhood with sufficient open space to create a large public park.

PVPC performed a preliminary assessment of the 380 Union Street site, which is summarized in Section a) below. PVPC identified Activity Use Limitations and other brownfield-related issues with the potential to restrict recreational use and redevelopment of the site. The City subsequently engaged a licensed site professional to perform a Level 1 review of the site. A Level 2 review of the site will be necessary to ascertain the extent of existing hazardous materials, if any, and the mitigation measures that would be required for redevelopment, depending on intended use(s). Therefore, the concepts presented in this section are intended only for purposes of discussion and should not be considered planning recommendations.

a) Preliminary Site Assessment

Area	~18 acres (1,230' x 625'), 5 major structures; 7 acres for park concept
Assessed Value	$4.3 million (estimated $140,000/yr in property tax revenue)
Ownership	• Konover Commercial Corp. West Hartford CT (present owner) • SYG (1966 to ~2009) • Gilbert & Barker (Gilbarco) 1910 to 1966 (acquired additional Boston & Maine parcels at southeast corner in 1947 and 1960)
Uses	Currently office, warehouse, light industry. Formerly a major petroleum dispensing product (gas pumps) manufacturing facility and railroad-related supporting uses.
Historic	• Pre-development: Agricultural, formerly part of "Cold Spring Bottom." • 1841: Railroad completion in 1841 changed uses and character. • 1910: Industrial manufacturing use. • Complex could be eligible for Historic Register listing.
Environmental	• Petroleum, solvents, metals releases on subject and abutting properties. • At least two DEP-supervised clean-ups since 1994. • Multiple Activity Use Limitations (AUL) currently restrict some uses on some parts of the property.
Other Issues	• Status of Cold Spring Ave as public or private way. • LSP investigation of AULs and related issues; up to 200 USTs estimated to have been on site (6 known); numerous releases on abutting parcels. • Principal CSX yard entrance at Day St at southeast corner of parcel.
Zoning	Industrial (proposed change to Merrick-Union Employment Zone).
Planning	2004 Neighborhood redevelopment plan recommended "flex space" development and "pedestrian enhancements and streetscape improvements along Union Street and Park Street" and "Increase the amount of open space in the neighborhood through the development of pocket parks…"
Recent	Site heavily damaged by June 1, 2011 tornado. Some structures have not been used since. Tornado Revitalization Plan and public process recommended large neighborhood park at 380 Union Street between Day and Bliss Streets.

Figure 3-13 - 380 Union Street: Site Photos (April 2013)

Entrance at Union Street and Cold Spring Ave


View of Elm Industries from Union Street


Day Street view to northeast toward Union St


View of site interior along southern property line

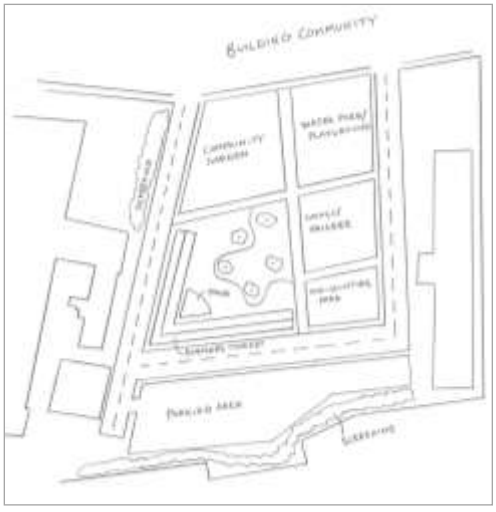

Pedestrians on Union St sidewalk

Cold Spring Ave view to southwest

b) Site Redevelopment Concepts and Strategies Considered

PVPC developed three initial conceptual approaches to the 380 Union Street site redevelopment. City staff asked that the concepts meet criteria to be eligible for submission as part of an urban renewal plan. These concepts were presented to the Redevelopment Authority and Mayor in May and June 2013 for feedback. The first concept, "Walk and Play," included a regulation baseball field and playground for children. The second concept, "Jobs on the Park," emphasized amenities for anticipated future live/work residents of this area in units that are possible under the proposed FBC zoning. The third concept was conceived as "Building Community" and featured a farmer's market, community garden and sculpture park with playful installations to attract children.

These concepts were created for the purpose of discussion only. Soils analysis and survey work are required to determine the feasibility of the ideas expressed, as well as the future development potential of the site. Redevelopment of this site for recreational use is not currently allowed under current Activity Use Limitations. Any change in use(s) requires the opinion of a licensed site professional in accordance with 310 CMR 40.1080 et seq.



c) Preferred Concept Description

Preferred elements of the three initial concepts were identified by the Redevelopment Authority and Mayor and incorporated by PVPC into a final municipally preferred concept. This concept was created for the purpose of discussion only. Soils analysis and survey work are required to determine the feasibility of the ideas expressed, as well as the future development potential of the site. Redevelopment of this site for recreational use is not currently allowed under current Activity Use Limitations. Any change in use(s) requires the opinion of a licensed site professional in accordance with 310 CMR 40.1080 et seq.

It is a neighborhood park concept that features passive recreation amenities geared to neighborhood use, as well as formal features that can be enjoyed by neighborhood residents, nearby workers, and residents throughout the City. This nearly 7-acre park (including streets and parking) provides an expansive central open space that can be used for multiple purposes, including pick-up soccer or football games and frisbee. Large wooded areas at the periphery host picnic tables and grills. A plaza and fountain draw people from the street and provide a more formal urban park feature that also serves nearby workers. An alternative could be a splash fountain that creates a space for active water play. The covered structure at the southeast corner of the park (30' x 200') shelters picnic tables and can also be used for large gatherings and a farmers' market. The park area is maximized and the parking is minimized through use of parallel parking along the street.

The park's two-way perimeter street accommodates 153 parking spaces, and additional spaces may be available on Union Street. Alternatively, the park's perimeter street could be one-way with angled parking, allowing for more parking spaces and a larger open space area. A perimeter sidewalk around the park could also be included.

Figure 3-14 – Merrick Neighborhood Park Concept

F. SUSCEPTIBILITY TO CHANGE ANALYSIS

1. Overview

A Susceptibility to Change Analysis was used to broadly indicate the likelihood of a parcel's change in the near future. Change can include new development on previously undeveloped land, redevelopment, change of use, or intensification of use.

a) Methods & Process

PVPC analyzed seven key factors to create this chart.

- land status (West Springfield Assessor's database)
- occupancy status (PVPC field work)
- zoning and overlay districts (West Springfield Zoning Bylaw)
- transit corridors (PVPC field work)
- road access (PVPC field work)
- year built/building condition (PVPC field work)
- market conditions (PVPC field work)

Parcels with a *High Susceptibility to Change* had one or more of the following characteristics:

- Undeveloped vacant land.
- Obsolete building structure
- Heavy damage from 2011 tornado coupled with unknown redevelopment plans.
- Large lot with acreage and frontage that would allow for future subdivision of property.

The type of change to be expected from parcels in this category are noted in the following table, but could generally be described as a *Use* change, *Physical* Change, or *Subdivision* change.

Parcels with a *Medium Susceptibility to Change* had one or more of the following characteristics:

- Non conforming use (land use is not allowed by underlying zoning).
- Building vacancy
- Underdeveloped or underutilized
- Vacant, landlocked parcels.
- Heavy damage from 2011 tornado coupled with unknown redevelopment plans coupled with a small lot and character of area as residential.

The type of change to be expected from parcels in this category are noted in the following table, but could generally be described as a *Use* change which could also likely required a *Physical* change of the structure or property and/or a Subdivision the parcel into two or more lots.

2. Focus Area: Agawam Bridge Gateway

High Susceptibility to Change

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
1672 MEMORIAL AVE	124-009-007	.83 AC	Vacant	BA	Use / Physical / Subdivision	If combined (abutting lots under same ownership) the 1.16 acre parcel could be redeveloped for a park, neighborhood parking or for mixed use and/or commercial development. Being sites of former auto repair/service station uses there could be possible "Brownfield" issues.
1718 MEMORIAL AVE	124-009-006	.33 AC	Vacant	BA	Use/ Physical/ Subdivision	

Medium Susceptibility to Change

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
13 RIVER ST	124-009-005	.39 AC	Motel	BA	Use / Physical / Subdivision	50 year-old motel parcel could be combined with above abutting vacant lots and site redeveloped for larger mixed use project.
6 RIVER ST	124-012-001	.27 AC	Used Auto Sales	BA	Use / Physical	Used car lots are a transient use (can easily be located elsewhere). This prime visibility parcel is located at a "Gateway" to West Springfield.
20 RIVER ST	124-012-002	.46 AC	Retail	BB1 and BA	Use / Physical / Subdivision	70 year-old single-story retail building had a portion demolished in 2011 due to tornado damage.

3. Focus Area: River Dr./Baldwin St. Intersection

Medium Susceptibility to Change

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
26 SEARS WAY	116-002-002	3.77 AC	Commercial Warehouse	BB-1	Use / Physical / Subdivision	60 year-old warehouse encompasses almost the entire parcel. Re-use of building is challenged by limited parking for employees and maneuvering space for trucks. Space could be created by removing portion of structure, or acquiring additional land from abutting lumber yard.
253 BALDWIN ST	116-002-003	2.8 AC	Lumber Yard	I	Use / Physical / Subdivision	Oldest commercial building in the neighborhood. Combined with abutting outdoor storage lot next door (same owner) 5.7 acres is one of the largest in the area.
BALDWIN ST	116-002-004	2.9 AC	Lumber Yard (outdoor storage)	I	Use / Physical / Subdivision	

4. Focus Area: Memorial Neighborhood

Medium Susceptibility to Change

Address	Land Use	Zoning	Type of Change	Comments
Located throughout the neighborhood	Vacant lots	BB-1	Use / Physical / Subdivision	Vacant lots will be converted to commercial and light industrial uses. Vacant lots may have to be combined with abutting lots to meet required minimum lot sizes.
Located throughout the neighborhood	Single and two-family dwellings	BB-1	Use / Physical / Subdivision	Since prior to 1971 single & two family dwellings are no longer permitted uses in the BB-1 District. As the neighborhood develops with more commercial/light industrial uses, the desirability of living in the neighborhood could diminish resulting in redevelopment of residential properties to additional commercial/light industrial uses. Many of the parcels are also pre-existing nonconforming as they lack adequate lot size and may have to be combined with abutting lots to meet required minimum lot size for commercial uses.

5. Focus Area: Main St./Memorial Ave. Intersection

Medium Susceptibility to Change

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
20 COOK ST	118-020-009	.11 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure surrounded by commercial/ industrial uses. Pre-existing nonconforming lot has only 4,900 sf.
30 COOK ST	118-020-007	.11 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 120 year-old structure surrounded by commercial/industrial uses. Pre-existing nonconforming lot has only 4,650 sf.
69 NEW BRIDGE ST	119-004-002	.1 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 120 year-old structure abutted on two sides by commercial uses. Pre-existing nonconforming lot has only 4,225 sf.
75 NEW BRIDGE ST	119-004-003	.13 AC	Single family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a newly reconstructed structure following tornado damage, parcel's rear yard abuts commercial use but, as goes the abutting parcels on either side, so will go this parcel. Pre-existing nonconforming lot has only 5,475 sf.
81 NEW BRIDGE ST	119-004-004	.15 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutted on two sides by commercial uses. Pre-existing nonconforming lot has only 6,725 sf.
89 NEW BRIDGE ST	118-009-001	.11 AC	Undeveloped/ parking	BA	Use / Physical / Subdivision	Currently used as part of the Hofbrauhaus restaurant parking lot. Pre-existing nonconforming lot has only 5,000 sf.

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
97 BRIDGE ST	118-008-012	.64 AC	Parking Lot	BA	Use / Physical / Subdivision	Currently used as parking lot for commercial use across the street.
106 NEW BRIDGE ST	124-012-002	.1 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 4,390 sf.
110 NEW BRIDGE ST	118-008-001	.11 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 4,720 sf.
134 NEW BRIDGE ST	118-020-002	.13 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 5,500 sf.
140 NEW BRIDGE ST	118-020-001	.09 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 4,000 sf.
141 NEW BRIDGE ST.	118-023-004	.11 AC	Undeveloped land	BA	Use / Physical	Pre-existing nonconforming lot has only 5,000 sf.
280 MEMORIAL AVE	118-024-005	.37 AC	Restaurant (White Hut)	BA	Use / Physical / Subdivision	70 year-old building has only a 900sf footprint, on a 16,204 sf. lot.
974 MAIN ST	118-020-006	.61 AC	Factory	BA	Use / Physical / Subdivision	Site of Standard plating Co. Re-use/redevelopment of site is impacted as Parcel has brownfield issues and structure is in need of repair. 26,659 sf lot could be subdivided.
1000 MAIN ST	118-020-005	.09 AC	Two family dwelling	BA	Use/ Physical	Zoned for commercial, a pre-existing nonconforming use in 130 year-old structure. Pre-existing nonconforming lot has only 4,000 sf.

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
1010 MAIN ST	118-020-004	.09 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure. Pre-existing nonconforming lot has only 4,000 sf.
1013 MAIN ST	118-008-015	. 14 AC	Three family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 110 year-old structure. Pre-existing nonconforming lot has only 6,000 sf.
1022 MAIN ST	118-020-003	.09 AC	Four family dwelling	BA	Use/ Physical	Zoned for commercial, a pre-existing nonconforming use in a 115 year-old structure. Pre-existing nonconforming lot has only 3,752 sf.
1023 MAIN ST	118-008-016	.1 AC	Single family dwelling	BA	Use/ Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure. Pre-existing nonconforming lot has only 4,400 sf.
1105 MAIN ST **1097 MAIN ST**	118-009-003 118-009-002	.56 AC .34 AC	Hofbrauhaus restaurant Parking Lot (Hofbrauhaus restaurant)	BA BA	Use/ Physical/ Subdivision Use/ Physical/ Subdivision	Abutting parcels under same ownership, combined parcel of nearly 40,000 sf. makes this one of the largest parcels in this commercial neighborhood.
89 NEW BRIDGE ST	118-009-001	.11 AC	Undeveloped/ parking	BA	Use/ Physical/ Subdivision	Currently used as part of the Hofbrauhaus restaurant parking lot. Pre-existing nonconforming lot has only 5,000 sf.
97 BRIDGE ST	118-008-012	.64 AC	Parking Lot	BA	Use / Physical / Subdivision	Currently used as parking lot for commercial use across the street.
106 NEW BRIDGE ST	124-012-002	.1 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 4,390 sf.
110 NEW BRIDGE ST	118-008-001	.11 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 4,720 sf.

Address	Parcel ID	Parcel Size	Land Use	Zoning	Type of Change	Comments
134 NEW BRIDGE ST	118-020-002	.13 AC	Two family dwelling	BA	Use / Physical	Zoned for commercial, a pre-existing nonconforming use in a 130 year-old structure abutting commercial parking lot to the rear. Pre-existing nonconforming lot has only 5,500 sf.
Located throughout the neighborhood	Vacant lots		BA	Use / Physical / Subdivision	Vacant lots will be converted to commercial uses. Vacant lots may have to be combined with abutting lots to meet required minimum lot sizes.	
Located throughout the neighborhood (especially New Bridge/ Railroad/Globe St. area)	Other Single and two-family and multi-family dwellings		BA	Use / Physical / Subdivision	Since prior to 1977 single, two family and multi-family dwellings are no longer permitted uses in the BA District. As the neighborhood develops with more commercial, the desirability of living in the neighborhood could diminish resulting in redevelopment of residential properties to additional commercial/light industrial uses. Many of the parcels are also pre-existing nonconforming as they lack adequate lot size and may have to be combined with abutting lots to meet required minimum lot size for commercial uses.	

CHAPTER 4

COMPLETE STREETS

A. OVERVIEW

"Complete Streets" is an approach to configuring local roadways that better balances the needs of all people who use a street — motor vehicle drivers, public transit riders, pedestrians, bicyclists, people with disabilities, shoppers, school children, and others. A "Complete Street" enhances the livability of the community in which it is located by improving public safety, increasing the amount of usable public space, and making it easier for people to share the street — as opposed to conventional street configurations that are typically designed primarily to accommodate motor vehicles. This balanced approach to more fully utilizing the public right-of-way helps enhance the quality of life of residents, workers and children. It also creates a more welcoming environment for local businesses.

Complete Streets should ideally be designed to reflect the needs and unique characteristics of the area and users they serve. While a complete street may share certain elements with other streets, they may be utilized in different ways. Some typical elements that are characteristic of a "Complete Street" include:

- Marked travel lanes
- Sidewalks
- Enhanced pedestrian crossings
- Raised Medians
- Landscaping
- Street Lighting, Furniture and other amenities
- Transit Shelters
- Traffic Calming measures
- Bicycle Lanes

In the study area, PVPC identified Main Street, Union Street, Baldwin Street and a section of Memorial Avenue as good candidate locations for a complete street assessment. All four roadways provide a continuous connection to major arterial streets and serve a variety of land uses. The following factors were considered as part of this assessment:

- The existing traffic volume, breakdown of traffic and travel speed
- The existing land uses served by the street
- The existing pavement width
- Utilization of existing on street parking
- Suitability for bicycling
- Pedestrian infrastructure, sidewalk width and condition
- Existing street lighting, landscaping, and other amenities

B. MAIN STREET

Main Street in West Springfield is a two-way thoroughfare that runs southeasterly from Park Street approximately 1.1 mile to Memorial Avenue. Main Street is the transportation backbone of the Merrick Neighborhood, with a diversity of land uses that include single- and multi-family homes, storefront businesses, civic institutions, a school and a cemetery. It is parallel to Union Street, which has more industrial land uses and closer proximity to the CSX intermodal terminal and the West Springfield Industrial Park.

Main Street functions as a collector roadway that serves this mix of residential and small business uses. Sidewalks are provided along both sides of Main Street for the majority of its length. On-street parking is permitted along both sides of Main Street. Most parking spaces are not marked. Speed limits are not posted, but the street is a thickly settled area and therefore is subject to a 30 mph speed limit required by Massachusetts State Law.

Main Street averages 7,000 to 8,000 vehicles per day on an average weekday (in both directions). It is served by PVTA Route R10, with buses every 30 to 60 minutes to downtown Springfield and Westfield State University, depending on time of day.

The curb to curb pavement width along Main Street varies from 35 to 50 feet. Most locations have in excess of 40 feet of available pavement width as shown in Figure 2-1 below. This allows for a wide travel lane in both directions that encourages higher travel speeds. The wide street width also is prohibitive to pedestrians attempting to cross Main Street.

Figure 4-1 - Main Street Pavement Widths (in feet)

Source: PVPC field observation and measurement 2013

The 2012 Revitalization Plan for the Merrick neighborhood had specific recommendations for Main Street that related to Complete Streets :

- On-street parking with better pavement markings to improve pedestrian safety near crosswalks.
- Curb extensions and bump-outs (see Figure 4-3) to calm traffic and improve the ability of pedestrians to cross the street by narrowing street widths at intersections.
- Streetscape improvements, including new trees, pedestrian-scale lighting, benches, decorative pavement and other aesthetic improvements to enhance street appearance.
- Creation of a Southern Gateway at the intersection of Main Street and Memorial Avenue, including the elimination of unnecessary pavement and streetscape improvements to encourage walking.
- A cross section configuration for Main Street (see Figure 4-2) that is consistent with a Complete Streets approach.

Figure 4-2 - Sample Main Street Roadway Cross Section

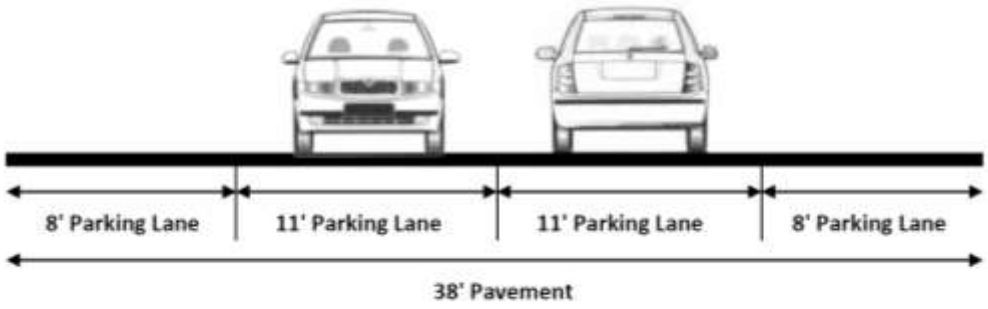
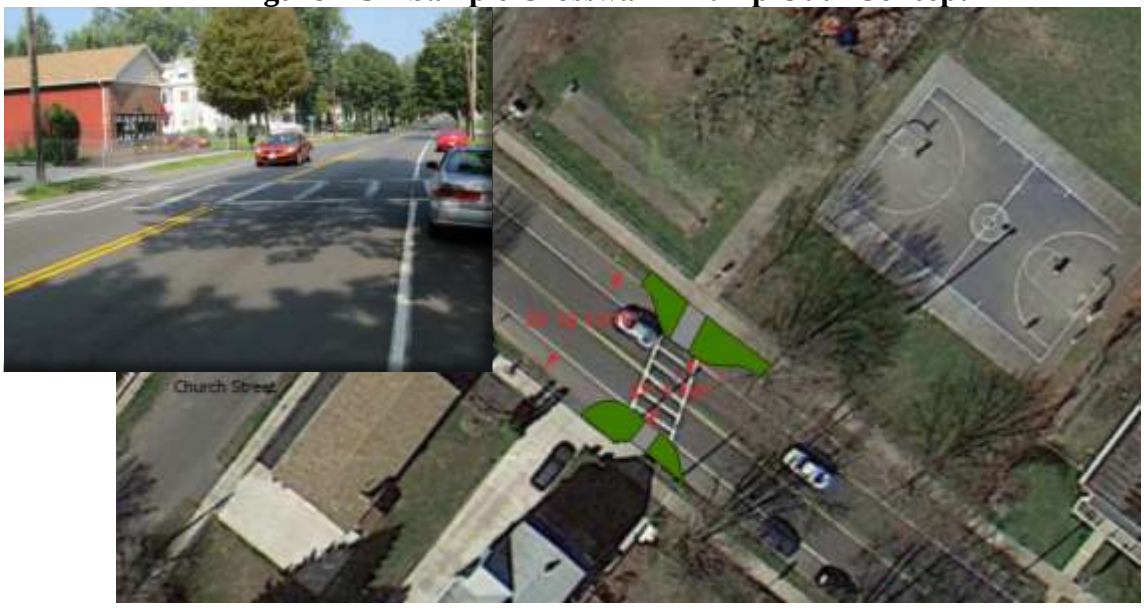
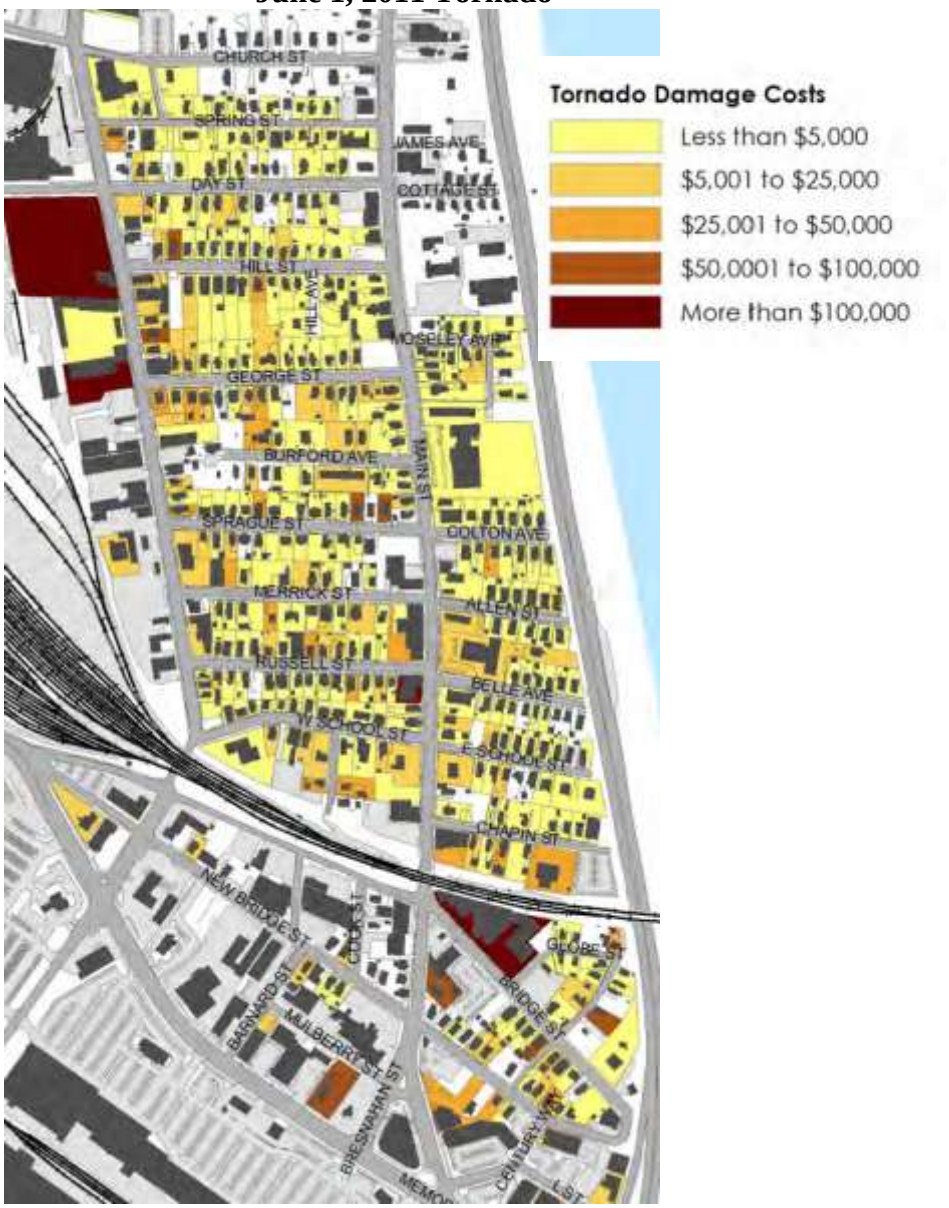


Figure 4-3 – Sample Crosswalk "Bump Out" Concept



Tornado Recovery in this area has been slow and requires additional support. While progress has been made toward restoring and repairing the Merrick neighborhood during the last two years, the area has not fully recovered.

Figure 4-4 - Locations and Costs of Damage to Property in Merrick Neighborhood from June 1, 2011 Tornado



Source: City of West Springfield

One of the most visible aspects of the slow recovery is the fact that the recently planted replacement trees do not yet provide any canopy, and it will likely be 10 or more years before they do so. The lack of tree canopy results in increased roadway noise, and a less attractive streetscape to attract new residents and businesses. It also accentuates the straightness of the Main Street, which studies have shown can lead to increased motor vehicle speeds.

Traffic volumes along Main Street are also less than in previous years. This results in less demand for service oriented business that support the neighborhood.

Table 4-1 - Daily Traffic Volumes on Main Street (Number of Vehicles)

	2003	2007	2009	2012
Main Street south of Park Avenue	8,719	8,121	7,819	7,829
Main Street South of Bridge Street	6,649		8,389	7,441

Source: PVPC and MassDOT Traffic Counts

Public safety remains a concern on Main Street, primarily because of motor vehicle speeding and poor sight lines at crosswalks. While a large percentage of vehicles were observed traveling at or below the 30 mph speed limit, more than 30% of all traffic violates the speed limit. These higher travel speeds reduce safety on a roadway that has a high level of pedestrian activity.

Table 4-2 - Vehicle Travel Speeds (mph) on Main Street South of Bridge Street

	1-15	16-20	21-25	26-30	31-35	36-40	41-45	>45
Total Vehicles	2,599	514	1,895	4,321	3,640	1,071	172	35
Percent	18.2%	3.6%	13.3%	30.3%	25.5%	7.5%	1.2%	0.2%

Source: PVPC field observation July 2013

PVPC windshield observations found that during peak hours, many pedestrians, including children, crowd sidewalk and boulevard areas while waiting for school buses or rides. The neighborhood is still mindful of the accident on July 12, 2013 when a six-year old boy was killed by a moving car as he ran across Main Street near 184 Main Street.

A proposed Complete Streets program would reconfigure and mark on-street parking spaces to increase sight lines at crosswalks. The recommended curb bump-outs at crosswalks would narrow the street and physically prevent parking in pedestrian sight-line areas. Both these measures will help reduce traffic speeds to the legal limit and give pedestrians greater visibility and sense of safety when they cross the road.

The public process for the 2012 Revitalization Plan identified a strong community desire for more public space, as well as accessibility to it. Complete Streets could help address this priority by increasing green strips along sidewalks, including curb bump-outs and installing street furniture, such as benches and signage.

Complete Streets could also improve walking, bicycling and vehicular connections to the major civic and community buildings along Main Street. These include:

- Playground at Main and Church Street
- Open space at 474 Main Street
- Lutheran Social Services at 593 Main Street
- West Springfield Boys and Girls Club at 615 Main Street
- Institution at 751 Main Street
- City Office of Community Development at 774 Main Street

Main Street has a greater residential density than Union Street, which has principally industrial land uses on its west side. Therefore, a Complete Streets program on Main Street would bring the benefits of improved public infrastructure in closer proximity to a greater number of neighborhood residents. It would also improve the quality of small-scale but frequently used public spaces and amenities while connecting residential uses with commercial/retail establishments.

1. Recommended Elements of the Complete Streets Program for Main Street

PVPC's assessment of existing conditions on Main Street has included pavement widths, locations of crosswalks, sidewalk condition, location of traffic controls, traffic volumes, traffic speeds and other factors. Based on these existing conditions, PVPC has developed a recommended Complete Streets program that is tailored to Main Street and includes the following elements.

Table 4-3 - Recommended Complete Streets Program for Main Street

Element	Description	Benefit
Lane re-striping	Pavement markings to narrow travel lanes to approximately 11-ft width.	Discourage speeding and provide more room for cyclists and on-street parking.
Mark on-street parking spaces	Pavement markings to outline curbside on-street parking spaces measuring ~18 ft long and 8 ft wide.	Encourages more efficient use of on-street parking and improves sight lines at crosswalks.
Bicycle "Sharrow" pavement markings	MCTUD-compliant "share the lane" pavement symbols every 300 ft to show area where bicycles are welcome to travel (not a formal bike lane).	Creates area and awareness for bicycle travelers, improves safety for riders and motor vehicle drivers, addresses street width constraints of Main Street.
Bus shelters	High quality bus shelters at PVTA bus stops that are most heavily used on the street.	Creates a more attractive street environment, encourages bus use, provides amenity for transit customers.
Crosswalk curb extensions/ bump-outs, "refuge" islands	Curb extensions 6 to 8 ft from each side of the street to narrow the road and distance pedestrians must cross; create physical barrier to parking in front of cross walks.	Creates "safe" territory for pedestrians, lowers traffic speeds, improves sight lines, adds more green space and potential stormwater infiltration areas.
Decorative street lighting	Individual pole-mounted decorative LED lighting to replace existing utility-pole mounted high-pressure sodium fixtures.	Adds charm, general appeal to enhance commercial and residential desirability. Reduces energy use up to 50%.
In-ground plantings	In-ground planter boxes measuring 3 to 4 feet wide and 8 to 12 feet long containing grasses, flowering native perennials and other low-maintenance vegetation.	Increases aesthetic appeal. Creates buffer between sidewalk and street. Increases stormwater infiltration area.
Above-ground planters	Decorative planters placed in bump-outs and refuge islands to help buffer the sidewalk from the street.	Increases aesthetic appeal in areas where in-ground planters are not feasible. Helps identify intersections and crosswalks.
Modernize traffic control signage	Traffic control signs that meeting reflectivity standards to show speed limits, pedestrian crosswalks, and other common elements	Improves safety and speed limit compliance.
Neighborhood gateway sign	Distinctive large-scale sign or art installation at gateway areas.	Provides neighborhood identity.
Street furniture	Benches, shelters, public art, and other items to enhance the quality of the public right-of-way.	Provides amenities for non-motor vehicle uses. Encourages greater use of public space for non-motorized vehicle use and storage.

C. UNION STREET

Union Street in West Springfield is a two-way thoroughfare that runs parallel to Main Street, southeasterly from Park Street approximately 1 mile to Memorial Avenue. Union Street is the most heavily used street in the Merrick Neighborhood, with a diversity of land uses that include single- and multi-family homes, storefront businesses, a church and a lot of industrial land uses. It is in close proximity to the CSX intermodal terminal and the West Springfield Industrial Park which results in a high volume of heavy vehicle using the street.

Union Street functions as a collector roadway that serves this mix of residential, small business and industrial land uses. Sidewalks are provided along both sides of Union Street for the majority of its length. On-street parking is permitted along both sides of Union Street for most of its length. Parking spaces are not marked. Speed limits are not posted, but the street is a thickly settled area and therefore is subject to a 30 mph speed limit under Massachusetts State Law.

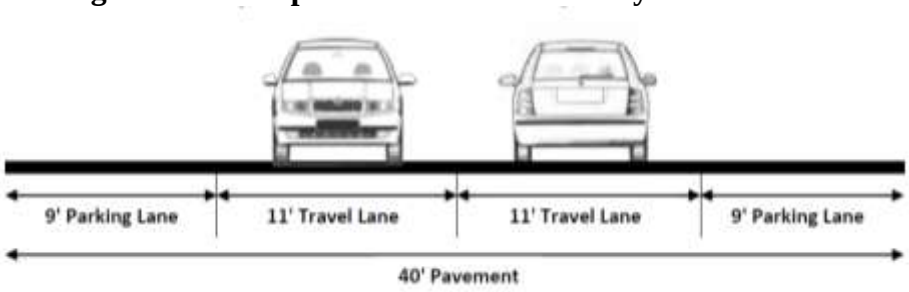
Union Street averages 9,000 to 10,000 vehicles per day on an average weekday (in both directions) and is characterized in some areas by a large number of curb cuts over a relatively short distance. The curb to curb pavement width along Union Street is 40 feet north of West School Street. This road width allows for a wide travel lane in both directions that encourages higher travel speeds.

Figure 4-5 - Union Street Pavement Widths (in feet)

Source: PVPC field observation and measurement 2013

Union Street could benefit from the implementation of a complete streets approach to assist in defining vehicle travel lanes and on-street parking areas. The use of an eleven foot wide travel lane with a nine foot parking lane could help regulate vehicle travel speeds along Union Street. Reconfiguration to mark on-street parking spaces would improve the efficiency of on-street parking and increase sight lines at crosswalks. A sample cross section for Union Street is shown in Figure 4-6.

Figure 4-6 - Sample Union Street Roadway Cross Section



A comparison of historic traffic volumes along Union Street shows that traffic volumes have decreased. Public safety, however, remains a concern on Union Street, primarily because of motor vehicle speeds and a high volume of heavy vehicle traffic.

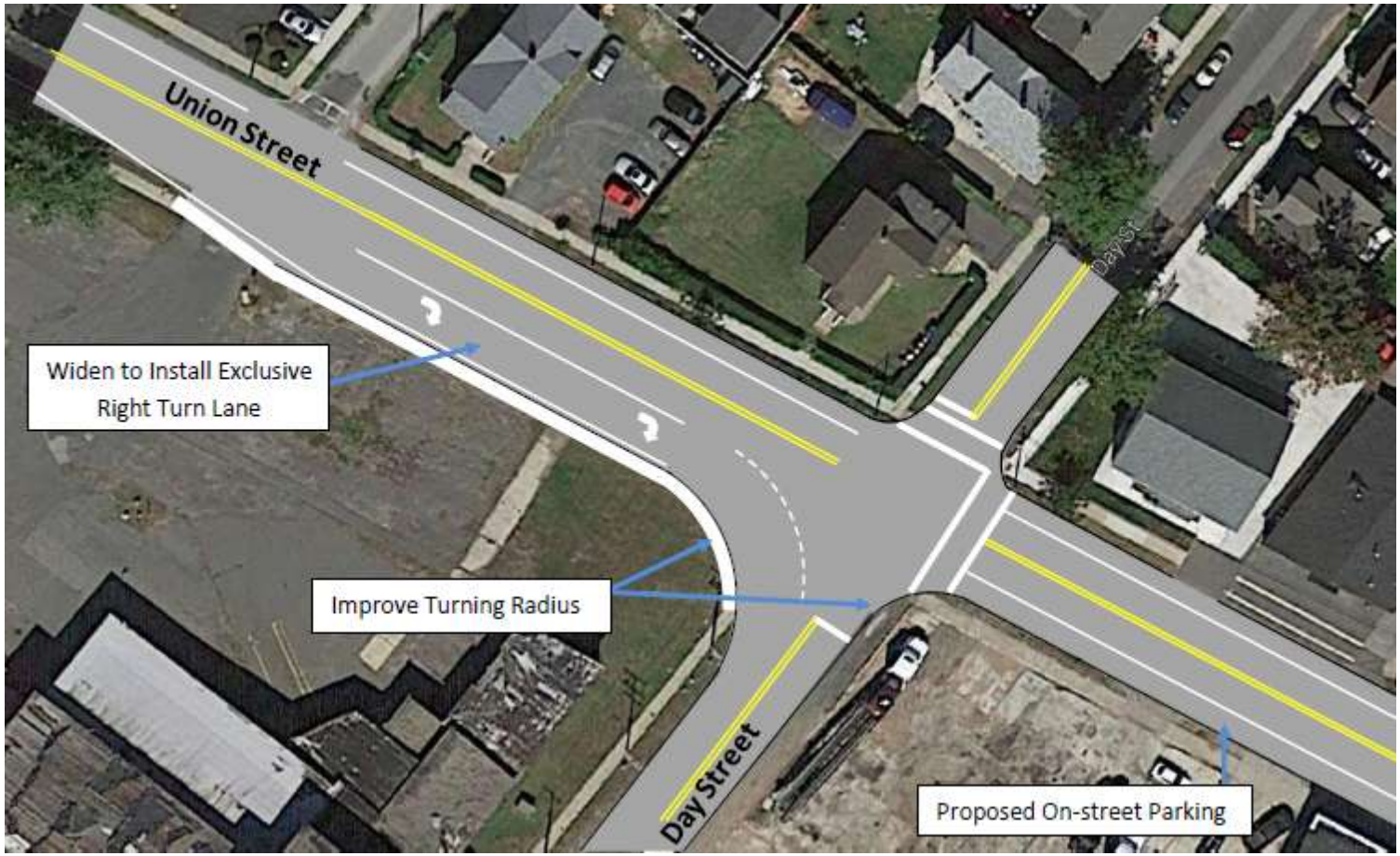
Table 4-4 - Daily Traffic Volumes on Union Street (Number of Vehicles)

	2003	2007	2009	2012
Union Street north of Bliss Street		11,607	10,901	9,828
Union Street north of Bridge Street	8,663		9,650	8,429

Source: PVPC Traffic Counts

Trucks have difficulty turning at intersections along Union Street due to the lack of proper turning radii. Right turns are particularly problematic as trucks must cross over the centerline into the opposing travel lane to complete this maneuver. This results in congestion and confusion as trucks wait on Union Street for the opportunity to make a right turn. The intersection of Union Street with Day Street is most impacted by this as it experiences the highest volume of truck traffic. A concept was developed to improve the turning radius at this intersection and is shown on Figure 4-7. As can be seen from the figure, the construction of an exclusive right turn lane on Union Street would improve truck access/egress and improve traffic flow and visibility on Union Street. This may require the acquisition of private property.

Figure 4-7 – Proposed Conceptual Improvements for Union Street at Day Street Intersection



Union Street would also benefit from streetscape improvements, including new trees, pedestrian-scale lighting, benches, decorative pavement and other aesthetic improvements to enhance street appearance. A Complete Streets approach would improve walking, bicycling and vehicular connections to the major civic and community buildings along Union Street. These include:

- Salon and stores at 753 Union St,
- Victory International Store at 553 Union St
- Victory Temple Church at 521 Union St
- Crepes Tea House Restaurant at 261 Union St
- Charlie's Diner at 218 Union St

1. Recommended Elements of the Complete Streets Program for Union Street

Existing wide travel lanes, unmarked parking and improper turning radii contribute to congestion and safety problems along Union Street. Based on these existing conditions, PVPC has developed a recommended Complete Streets program that is tailored to Union Street and includes the following elements.

Table 4-5 - Recommended Complete Streets Program for Union Street

Element	Description	Benefit
Lane re-striping	Pavement markings to narrow travel lanes to approximately 11-ft width.	Discourage speeding and provide more lane width for cyclists and on-street parking.
Mark on-street parking spaces	Pavement markings to outline curbside on-street parking spaces measuring ~18 ft long and 9 ft wide.	Encourages more efficient use of on-street parking and improves sight lines at crosswalks.
Decorative street lighting	Individual pole-mounted decorative LED lighting to replace existing utility-pole mounted high-pressure sodium fixtures.	Adds charm, general appeal to enhance commercial and residential desirability. Reduces energy use up to 50%.
Modernize traffic control signage	Traffic control signs that meeting reflectivity standards to show speed limits, pedestrian crosswalks, and other common elements	Improves safety and sign visibility.
Access Management	Many sight driveways are closely spaces and do not align properly with driveways on the opposite side of the street.	Realign and consolidation of sight driveways reduces the opportunity for conflict along the roadway.
Intersection geometry improvements	The narrow street widths and sub-standard turning radii make right turns difficult for larger vehicles.	Upgraded intersection geometry will improve traffic flow and safety by providing turning lanes and proper turning radii.
Street furniture	Benches, shelters, public art, and other items to enhance the quality of the public right-of-way.	Provides amenities for non-motor vehicle uses. Encourages social interaction. Encourages greater use of public space for non-motorized vehicle use and storage.

D. BALDWIN STREET

Baldwin Street is a two-way thoroughfare that runs southeasterly from River Street approximately 3000 feet to Memorial Avenue. Baldwin Street has a diversity of land uses that include single- and multi-family homes, a mixture of businesses, an athletic field, and the Memorial Elementary School. Sidewalks are provided along both sides of Baldwin Street. On-street parking is permitted along both sides of Baldwin Street for most of its length. Parking spaces are not marked. The posted speed limit is 30 mph with a posted School Zone speed limit of 20 mph.

Baldwin Street averages 4,300 vehicles per day on an average weekday (in both directions). The percentage of heavy vehicle traffic ranges from 2-3%. The curb to curb pavement width along Baldwin Street is 35-36 feet. Single white edge lines mark narrow shoulders of varying width along the length of the street. This road width allows for a wide travel lane in both directions that encourages high travel speeds. The wide street width also is prohibitive to pedestrians attempting to cross Baldwin Street. Baldwin Street intersects with Cold Spring Avenue in the vicinity of the Memorial School to form a four way intersection. Cold Spring Avenue operates as the minor street under stop sign control.

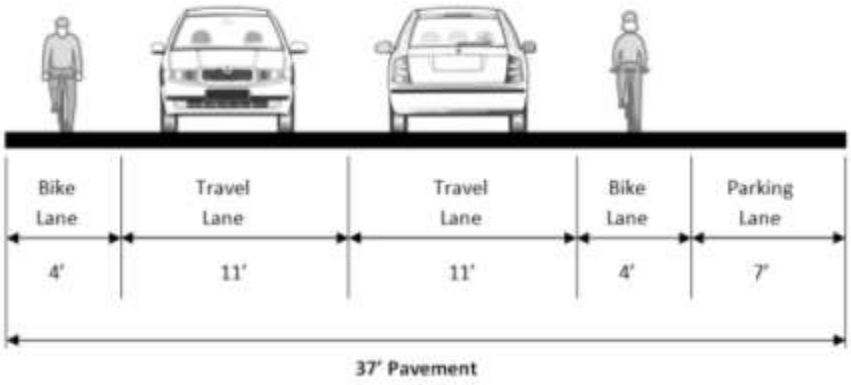
There are many wide, open driveways for land uses along Baldwin Street. Utility poles are located in the sidewalk on the southern side of the road and can restrict pedestrian access in some areas.

Figure 4-7 - Baldwin Street and Memorial Avenue Pavement Widths (in feet)

Source: PVPC field observation and measurement 2014

A Complete Streets program could be beneficial for Baldwin Street as it provides convenient access between River Street and Memorial Avenue. Providing safe and adequate means for all modes of transportation along Baldwin Street will allow more students to be able to walk or bike to Memorial Elementary School. A sample cross section was developed for Baldwin Street and is shown in Figure 4-8.

Figure 4-8 - Sample Baldwin Street Roadway Cross Section



The addition of a marked parking lane along Baldwin Street would clearly define parking along the roadway and separate parked vehicles from the vehicle travel lane. Consolidate of parking to one side of the street would allow bicycle lanes to be provided along both sides of Baldwin Street. Bicycle lanes could encourage people to opt to ride a bicycle for shorter trips and to access the existing athletic fields and the Eastern States Exposition via Baldwin Street.

1. Recommended Elements of the Complete Streets Program for Baldwin Street

PVPC's assessment of Baldwin Street resulted in specific recommendations to improve traffic flow and increase safety. These recommendations are summarized in Table 4-6. Recommendation specific to the Memorial School appear later in this chapter.

Table 4-6 - Recommended Complete Streets Program for Baldwin Street

Element	Description	Benefit
Lane re-striping	Pavement markings to narrow travel lanes to approximately 11-ft width.	Discourage speeding and provide more lane width for cyclists and on-street parking.
Mark on-street parking spaces	Pavement markings to outline curbside on-street parking spaces measuring ~18 ft long and 7 ft wide.	Encourages more efficient use of on-street parking and improves sight lines at crosswalks.
Marked Bicycle Lanes	MUTCD-compliant "bike lane" with corresponding pavement symbols.	Provides cyclists with a separate lane for travel. Encourages more bicycle trips.
Decorative street lighting	Individual pole-mounted decorative LED lighting to replace existing utility-pole mounted high-pressure sodium fixtures.	Adds charm, general appeal to enhance commercial and residential desirability. Reduces energy use up to 50%.
Access management	Reduce the width of existing curb cuts and define entrances and exits.	Clearly defines entrance and exit points and reduce the opportunity for conflict.
Modernize traffic control signage	Traffic control signs that meeting reflectivity standards to show speed limits, pedestrian crosswalks, and other common elements	Improves safety and speed limit compliance.

E. MEMORIAL AVENUE

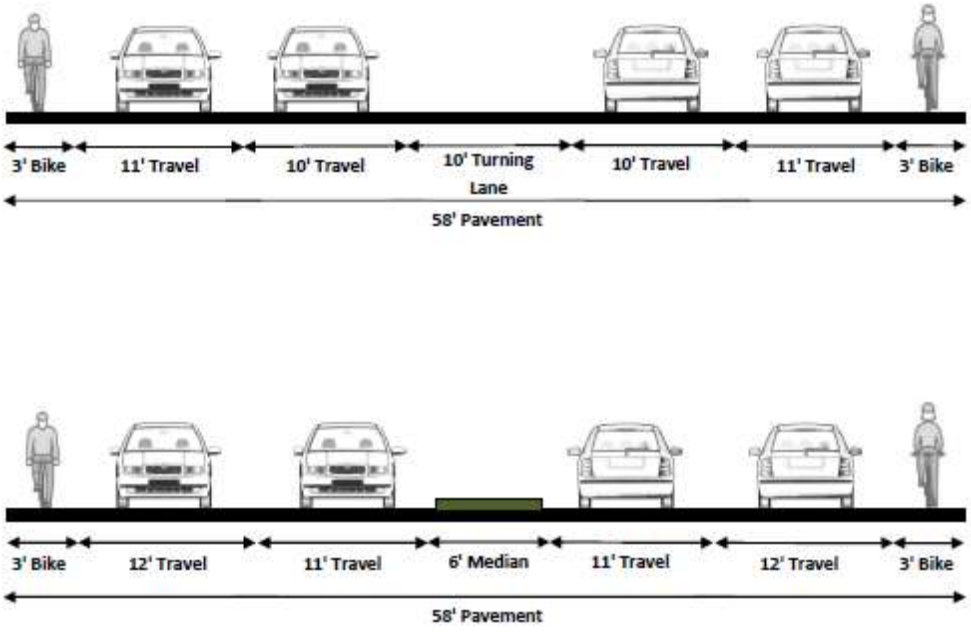
Memorial Avenue in West Springfield is a two-way street providing four travel lanes from the Memorial Bridge in Springfield to the Suffield Street Bridge in Agawam. Memorial Avenue is designated as state route 147 and is one of the main streets in West Springfield. Land uses along Memorial Avenue are almost entirely commercial. Memorial Avenue also provides direct access to the Eastern States Exposition which results in special event traffic along the roadway.

Sidewalks are provided along both sides of Memorial Avenue. On-street parking is prohibited on the south side of Memorial Avenue, east of Union Street and near the Agawam Bridge. Certain sections along Memorial Avenue restrict parking to one or two hours. Parking spaces are not marked and regulatory parking signs are not present.

Memorial Avenue averages approximately 17,300 vehicles per day on an average weekday in the vicinity of the rotary. This volume decreases to approximately 16,000 vehicles per day in the vicinity of Circuit Avenue and then decreases further to approximately 12,600 vehicles per day in the vicinity of York Street. Memorial Avenue is served by PVTA Route R14, with buses every 60 minutes to downtown Springfield and Agawam.

The curb to curb pavement width along Memorial Avenue varies from 57 to 60 feet as shown previously in Figure 4-8. A sample cross section of two proposed Memorial Avenue Complete Streets concepts are shown in Figure 4-9.

Figure 4-9 Memorial Avenue Sample Cross Section



The two concepts shown in Figure 4-9 reflect the need for additional turning lanes along Memorial Avenue. Specifically, left turning vehicles do not have a safe area to queue while they wait to perform this maneuver and can restrict traffic flow in the inside travel lane. The proposed Hard Rock Casino development for West Springfield recommended the

reconfiguration of Memorial Avenue to more of a "boulevard" type roadway with planted center medians and exclusive turn lanes in select areas. The use of center medians in combination with narrower travel lanes could assist in regulating travel speeds along Memorial Avenue. Medians also assist in controlling where turning movements are permitted and reducing the pedestrian crossing distance of the roadway. It should be noted that medians can create difficulty during snow removal and require additional maintenance funding for their upkeep.

During conversations with the Eastern States Exposition the need for an exclusive left turn lane from Memorial Avenue into Circuit Avenue was identified. Circuit Avenue provides access to the parking area for the Eastern States. Left turning vehicles at this intersection can create delays for through traffic on Memorial Avenue during special events. The proposed Hard Rock Casino development proposed the reconstruction of this intersection to provide an exclusive left turn lane on Memorial Avenue. A concept for a proposed left turn lane with an additional proposed two-way left turn lane is shown in Figure 4-10. There are a number of commercial land uses and side streets that intersect with Memorial Avenue West of Circuit Avenue. A two-way left turn lane would provide a safe storage area for left turning vehicles in this area. Figure 4-10 also shows a potential new location for the existing crosswalk at this intersection. The current crosswalk directs pedestrians into an existing driveway and could be relocated to the east of the intersection.

As mentioned previously, on-street parking is restricted to one or two hours along certain sections of Memorial Avenue. While these regulations are identified in the current West Springfield Traffic Rules and Orders, no regulatory parking signs are present on Memorial Avenue. A number of vehicles were observed to park on the northern side of Memorial Avenue between Lowell Street and Colony Road. The existing shoulder in this area is not wide enough to allow vehicles to park on-street without impacting the outside travel lane. It may be possible to widen Memorial Avenue in select areas to improve on-street parking. This could potentially be done without impacting existing utility poles and street trees. Figure 4-11 identifies a number of areas along Memorial Avenue that could be considered to enhance on-street parking.

Figure 4-10 – Proposed Left Turn Lane Concept for Circuit Avenue

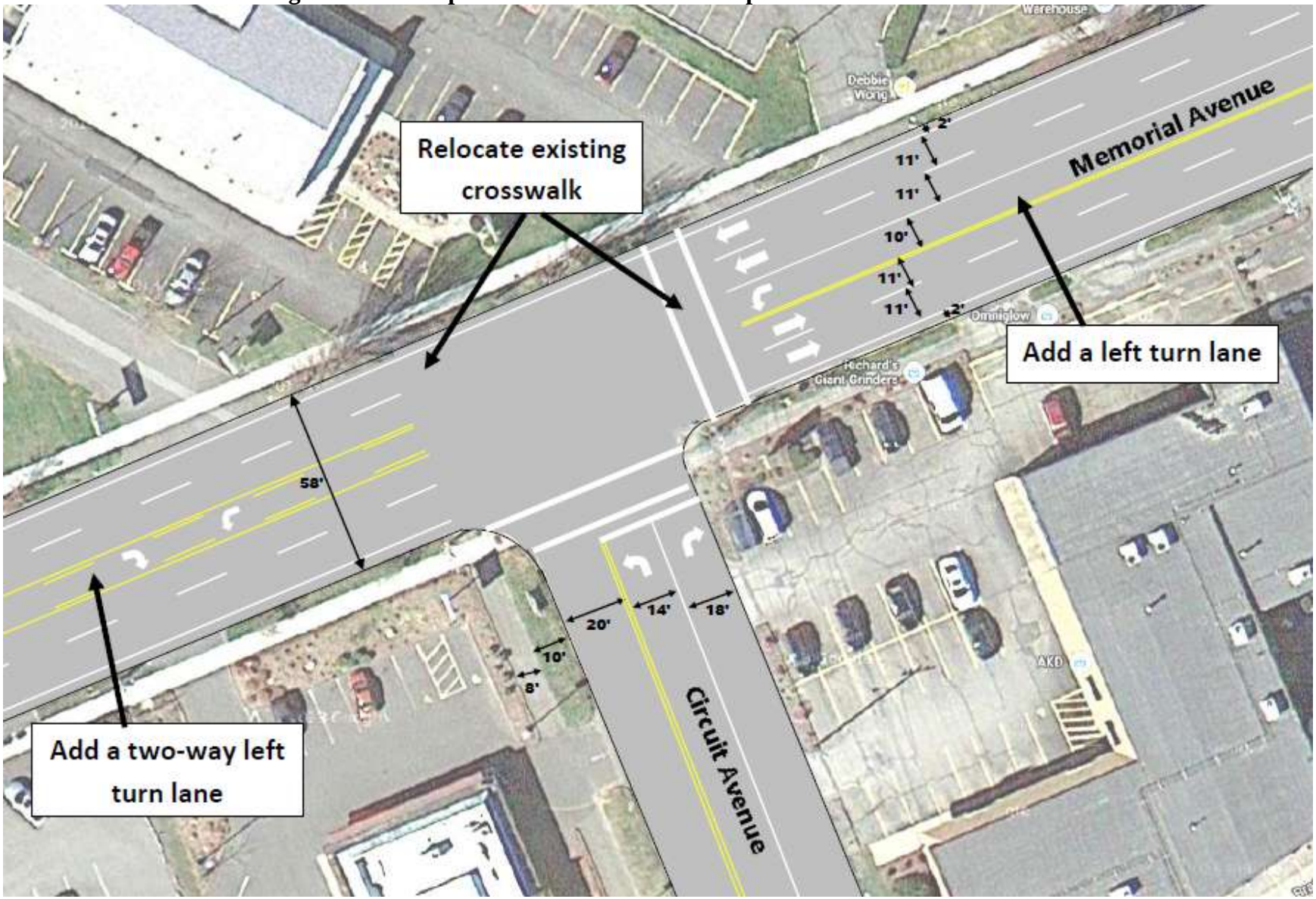


Figure 4-11 – Proposed On-Street Parking Concept for Memorial Avenue

Table 4-7 - Recommended Complete Streets Program for Memorial Avenue

Element	Description	Benefit
Lane re-striping	Pavement markings to narrow travel lanes to approximately 11-ft width.	Discourages speeding, provide a consistent shoulder and opportunities for medians and turn lanes.
Exclusive turn lane for Circuit Avenue	Provide a storage lane for vehicles turning left from Memorial Avenue onto Circuit Avenue.	Improves safety and traffic flow.
Center medians	Provide a landscaped center median at select locations along Memorial Avenue.	Assists in reducing vehicle travel speeds, controlling turning movements and reducing pedestrian crossing distance. Potential to increase landscaping along the corridor.
Two-way left turn lane	A center turning lane for both directions of travel	Provides storage for left turning vehicles in areas with a high density of side streets and access driveways.
Enhance on-street parking	Widens Memorial Avenue to facilitate on-street parking needs.	Increases the width of on-street parking spaces and enhances the efficiency of on-street parking.
Upgraded crosswalks	Upgrades pedestrian crossing areas to meet ADA requirements.	Increase the safety and visibility of pedestrians.

F. TRAFFIC CALMING

In 2009, the City of West Springfield requested that the Pioneer Valley Planning Commission develop a toolkit of traffic calming examples in the Pioneer Valley as a first step toward developing a comprehensive traffic calming program for their city. The following document, "Best Practices in Traffic Calming in the Pioneer Valley," is the result of this effort. This toolkit describes traffic calming strategies, local experiences with these strategies, and how these strategies can be implemented through a comprehensive traffic calming program.

1. What is traffic calming?

Traffic calming establishes roadway features that make drivers slow down. In addition, traffic calming strategies are sometimes intended to reduce traffic volumes when installed on local cut-through streets. Traffic calming reduces dangerous driving behaviors and makes travel easier, safer and more pleasant for pedestrians and bicyclists, which in turn promotes greater use of these environmentally friendly modes of transportation. Traffic calming measures improve neighborhood livability for nearby residents, and traffic calming enhancements can also help make streets more attractive and pleasant when they include sidewalks, trees, street furniture and other aesthetic and functional improvements. Finally, traffic calming measures increase safety for other drivers and reduce the probability and severity of crashes, particularly at roadway intersections and driveway entrances.

A traffic calming program:

- Establishes a comprehensive approach and community-wide policies for implementing traffic calming measures;
- Promotes the use of traffic calming solutions at problem locations;

- Helps the community to prioritize and fund traffic calming projects; and
- Establishes procedures for involving the public and making sound traffic calming decisions.

2. Developing a comprehensive program

A comprehensive traffic calming program can be established by a municipality's Department of Public Works and a committee or commission comprised of staff and volunteer residents. The first step is to develop policies that outline how the program will identify and select traffic calming locations and appropriate traffic calming measures. In addition, procedures must be established to respond to resident requests for traffic calming, and to ensure that new traffic calming installations are supported by the immediate neighborhood. Finally, and critically, a funding source for the traffic calming program must be identified. For example, a general fund budget line item and/or traffic mitigation fees from development projects may be used to pay for traffic calming installations.

Typically, the following process would be followed to identify and select traffic calming locations and appropriate remediation measures:

1. Committee identifies potential traffic calming locations
   - Traffic calming locations may be identified by the Department of Public Works or by residents
   - Locations identified by residents must be accompanied by a neighborhood petition signed by a certain proportion of residents on the affected streets
2. Committee evaluates potential traffic calming locations
   - Use a ranking sheet to help assess the severity of the problem
   - For community-driven projects, prioritize those that already have gained community support through neighborhood networking and meetings
3. Committee selects projects to be assessed by the Department of Public Works
4. Department of Public Works conducts an engineering analysis
   - Collect accident data
   - Conduct traffic counts and record travel speeds
   - Assess signage
   - If traffic calming is necessary, consult map of primary and secondary emergency vehicle routes and speak with appropriate emergency personnel
   - Identify, evaluate and recommend appropriate traffic calming measures
5. Department of Public Works presents engineering assessment to the committee
   - Affected residents are invited to attend
6. Committee ranks the priority of the project and determines funding availability
   - Additional community meetings may be required to ensure neighborhood support for a proposed traffic calming installation
7. Department of Public Works moves forward to install the selected traffic calming strategy

8. Department of Public Works conducts post-installation data collection and assessment to determine the efficacy of the traffic calming installation (return to step five if necessary)
    - If a temporary installation was tested, determine whether a permanent measure is appropriate

In addition to installing traffic calming measures at problem locations, a comprehensive traffic calming program can help make roads safer to begin with by establishing a Complete Streets Policy. A Complete Street is a road that is designed with narrower travel lanes and other measures that promote safe driving, walking and biking. A Complete Streets Policy is a locally adopted policy enforced by the Planning Board, the Department of Public Works and others to ensure that new roads and major road reconstruction projects are carefully designed to balance the needs of automobiles, pedestrians and cyclists.

G. MEMORIAL SCHOOL

1. Background

The Memorial Elementary School is located at 201 Norman Street and is one of 6 elementary schools in the West Springfield, MA School District. This public school serves 201 students in grades 1-5. Approximately 50 percent of students arrive to school by bus, 15 to 20 walk (typically), and the remainder arrive and depart the school by car. PVPC observed school arrival and dismissal times in April of 2014, interviewed its principal, and spoke with two crossing guards to identify how pedestrian and vehicle traffic interacts during school hours.

2. Analysis

Baldwin Street is the main access road to the school. Baldwin Street has relatively new sidewalks on both sides of the street, school zone signs, school zone flashing beacons, marked (painted) crosswalks, and ADA compliant ramps with tactile warning panes. All flashing signals and marked crosswalks were functioning and in good condition at the time of the field inventory. Crossing guards are assigned to the intersection of Baldwin Street with Cold Spring Road and the intersection of Cold Spring Road with Norman Street. Busses and parents drop off students at staggered (staged) times on Norman Street. Many students arrive before the start of the school day for a breakfast program and go directly into the school cafeteria/gymnasium. Non-breakfast students congregate on the playground side of the building while supervised by teachers or wait in the cafeteria for the start of the school day. During times of inclimate weather students wait in the gymnasium/cafeteria.

During dismissal in the afternoon, walkers and pick-up students are dismissed first. After the walkers and pickup students have been released, the students waiting for school busses are lined up in the school hallway. The school busses (3 total) first queue in line

on Cold Spring Road, then turn one at a time onto Norman Street where students are dismissed in groups by teachers, and staff under coordination by the principal.

Many drivers were observed to travel on Baldwin Street in excess of the posted 20 mph school zone speed limit during arrival and dismissal of students from the Memorial School. These vehicles provide little opportunity for the crossing guard to stop traffic for students to safely cross Baldwin Street. This is further complicated by solar glare at certain times of the year during the morning. These observations were confirmed by the Baldwin Street crossing guard.

A number of vehicles were also observed to use the school parking lot to pick up and drop off students or pick up and drop off students from whatever locations is deemed most convenient on the street. Typically these students are late arrivals. This creates confusion and increases the opportunity for conflicts between vehicles and pedestrians. Both the crossing guards and principal also reported problems with the public using the school's parking lot during the Big E. As a result, teachers and staff frequently needed to seek out alternative parking locations.

3. Safe Routes to School Program

Safe Routes to School is a national movement to create safe, convenient, and fun opportunities for children to bicycle and walk to and from schools. The program's goal is to reverse the decline in children walking or biking to schools. Nationally, only 15 percent of schoolchildren walk or bike to school. Nearly 50 percent of school children were reported to walk to school when the Memorial School was first opened in 1952. A vast majority of parents prefer to drop their children off at school using their personal automobile. This causes increased congestion and high emissions around the schools.

Locally, the Brightwood School in Springfield has developed a Walking School Bus program of 130 students. Under this program, students walk to school, led by school staff several mornings a month. The program has reduced absenteeism, tardiness, and improved student outlook.

The Massachusetts Safe Routes to School Program is a central source of Safe Routes services to all interested schools in the state and currently provides services to 43% of public K-8 schools. The program provides safety training, classroom visits, presentations to parents and community members, special events, encouragement programs, free promotional items, infrastructure improvements and summer programs. Additional information on the Massachusetts Safe Routes to School Program is available at www.commute.com or by contacting the program coordinator directly:

Samantha Fonseca-Moreira
SRTS Statewide Coordinator
Massachusetts Department of Transportation
857.368.8639
(Regional coordinator: Nitza Otero: Nitza.Otero@dot.state.ma.us)

4. Crossing Guard Guidance

The Manual on Uniform Traffic Control Devices (MUTCD) recommends that an adult school crossing guard be uniformed so that street users and pedestrians can recognize the guard and respond to the guard's signals. The guard uniform should be distinctively different from those worn by regular law enforcement officers.

The MUTCD only recommends the use of a STOP paddle to assist in stopping vehicles while students cross the street. If a paddle is used, the following standard applies:

"The STOP paddle shall be an octagonal shape. The background of the STOP face shall be red with at least 150 mm (6 in) capital white letters and border. The paddle shall be at least 450 mm (18 in) in size and have the word message STOP on both sides. The paddle shall be retro-reflectorized or illuminated when used during hours of darkness."

Figure 4-12 - Crossing Guard Stop Paddle

5. Short Term Recommendations

The following short term recommendations were developed to facilitate safety of students during the pick-up and drop off times for the Memorial School.

- Improve snow removal from neighborhood sidewalks and crosswalks.
- Implement a snow removal plan for Norman Street that clears snow from the curb to sidewalk (tree belt) area to encourage parent drop off along Norman Street.
- Provide crossing guards at Baldwin Street and Cold Spring Road with handheld stop signs to maximize visibility and improve compliance.
- Consider more police enforcement of the school zone speed limit during school arrival and dismissal times (especially during the Big E).
- Post temporary regulatory signs to restrict public parking in the Memorial School parking lot during major events at the Eastern States Exposition.
- Restrict vehicle turn-around movements on Norman Street.

- Research opportunities to provide a weekly "walking school bus" in the spring and in the fall to encourage walking to school.
- Participate in MassRides Safe Routes to School Program. As a member, the Memorial School will have access to additional resources.
- Restripe the back school parking lot on Baldwin Street to accommodate additional staff parking and facilitate access by service vehicles.
- Longer term, the City of West Springfield may wish to consider installation of a sidewalk on the opposite side of Norman Street from the school as well as modifications to the existing crosswalks across Norman Street to increase the visibility and safety of students.

CHAPTER 5

FUTURE DEVELOPMENT

A. PROPOSED MGM SPRINGFIELD CASINO

The proposed MGM Springfield development is proposal to construct a mixed-use commercial development anchored by a resort-style casino in downtown Springfield, MA. The project is bounded by East Columbus Avenue to the west, State Street to the north, Main Street to the east, and Union Street to the south. The following land uses are proposed to be constructed as part of this development based on information provided in the Draft Environmental Impact Report (DEIR) for the project.

- 501,382 square foot (sf) casino (with 3,821 gaming positions)
- 250 room hotel
- 54 residential apartment units
- 4,000 sf employee daycare facility
- 3,740 stall multi-story parking garage
- 159,397 sf retail and entertainment center known as Armory Square comprised of:
  - multiple retail tenants
  - restaurants
  - an event plaza
  - a multi-screen (12 screens) cinema
  - 15-lane bowling alley

All total, this project is calculated to generate approximately 20,000 vehicle trips on a Friday and 22,000 vehicle trips on a Saturday. The DEIR estimated that 8% of all site generate traffic could utilize the North End and Memorial Bridges to access the proposed development. As part of their draft mitigation proposal included in the DEIR, the project proponent proposed signal timing modifications to the intersection of Memorial Avenue with Union Street as well as the intersection of Park Avenue and Park Street with Union Street and Elm Street.

Given the close proximity of the proposed development to the study area, it will be important to monitor existing transportation conditions in the City of West Springfield in order to determine the true impact of the development on the existing transportation system. An independent review of the proposed development by a private consulting firm has noted to high potential for pedestrian demand to access the proposed site via the Memorial Rotary and Bridge. The seasonal impact of traffic associated with the Big E and the potential for the location of overflow parking in West Springfield were also identified as potential areas of concern.

The City of West Springfield was designated as a "Surrounding Community" by the proposed MGM Casino as part of the Massachusetts Expanded Gaming Act. Recently, the

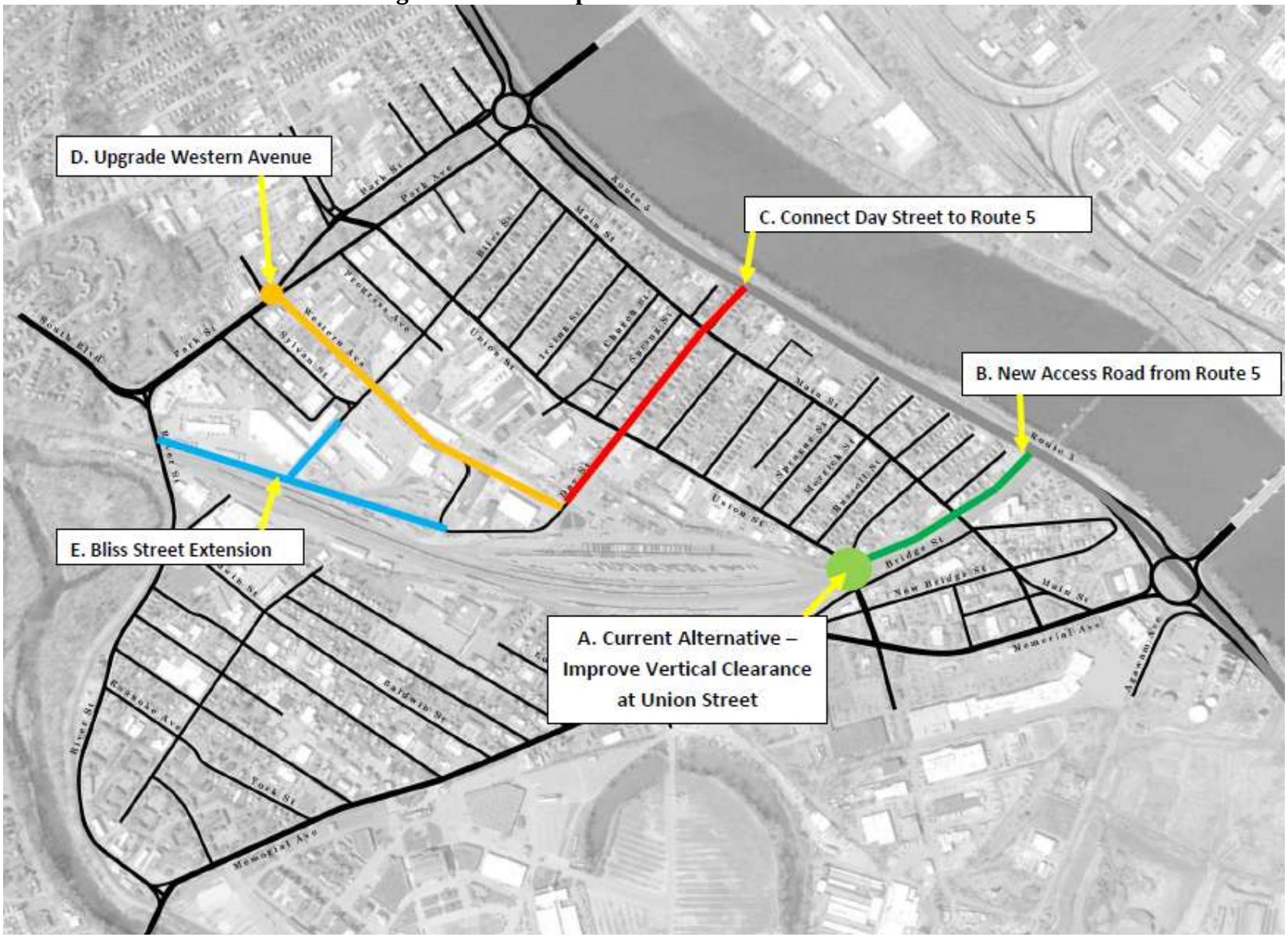
city was successful in their arbitration case for annual mitigation payments and money to offset the reconstruction of Memorial Avenue. While the permit has not yet been issued for this proposed development, it will be important to continue to plan for the future impacts of this development on the Merrick and Memorial neighborhoods.

B. TRUCK ACCESS

A major component of the Phase I study was the development of a preferred alternative to improve truck access to the CSX railyard. At that time, the upgrade of the vertical and horizontal clearance at the Union Street underpass was chosen as the preferred improvement alternative. To date, a number of conceptual improvement alternatives have been developed for the Union Street underpass, however, the project remains in the preliminary design stages. A total of five alternatives to improve truck access were included as part of this Phase II study for discussion purposes. Each alternative is shown in Figure 5-1. Alternatives were evaluated based on a series of categories in order to gage the impact it could have on the study area. A total of 15 evaluation categories were selected and are summarized below.

- Improved traffic flow: How well the alternative improves the flow of truck traffic and minimizes the impact on residential areas.
- Emergency vehicle access: The impact the alternative has on existing emergency vehicle access and service time.
- Enforces travel speeds: How well the alternative is at traffic calming and speed limit enforcement.
- Reduces accidents: How well the alternative promotes safety for all modes of transportation.
- Pedestrian accommodation: The impact of the alternative on walkability and its ability to improve existing pedestrian infrastructure.
- Bicycle accommodation: How well bicycles can be accommodated as a result of the proposed alternative.
- Transit access: The impact the alternative has on existing transit access and its ability to accommodate transit infrastructure.
- Aesthetics: The impact the alternative could have on the appearance, form and identity of the area.
- Livability: The impact the alternative could have on quality of life, noise reduction and existing amenities in the community.
- Parking: The potential impacts on existing on-street and off-street parking facilities.
- Recreation: How the alternative could impact local recreational areas and activities.
- Employment/Jobs: The potential of the alternative create new development and new employment in the area.
- Net impact on city services: How existing city services might be impacted as a result of the alternative. In particular, the potential impact of the alternative on the existing maintenance budget.
- Environmental impacts: The impact of the alternative to the environment including watershed, wetlands, and brownfield areas.
- Construction cost: The estimated cost to construct the proposed alternative.

Figure 5-1 – Conceptual Truck Access Alternatives



1. Alternative A

Alternative A consists of the proposed improvements to the Union Street underpass. This alternative has been discussed previously as part of Chapter 2.

2. Alternative B

Alternative B proposes to construct a new access road from Route 5 to Union Street adjacent to the rail road. This would require constructing a signalized intersection or ramp system from Route 5 to allow trucks exit the roadway. Some of the property adjacent to the rail road would need to be acquired in order to build the proposed roadway. This alternative would allow remove truck traffic to the CSX railyard from Park Street and Park Avenue as well as most of the residential areas on Union Street and Main Street. It would also allow the option of a direct connection into the railyard from Union Street. The alternative received positive scores for its anticipated improvement to traffic flow, safety, livability, and job creation. It received negative scores for its anticipated impact on city services, the environmental and cost to construct. A new roadway would have an adverse impact on property on the southern side of Chapin Street and the existing railroad right of way.

3. Alternative C

Day Street would connect directly to Route 5 via enhancements to Cottage Street and a signalized intersection under Alternative C. This option would likely require the acquisition of private property along both Cottage Street and Day Avenue. Potential benefits would be a more direct truck route for the railyard, however, any benefit is offset by the high cost to construct, increased noise, and negative impact on an existing residential area. This alternative is not recommended for further consideration.

4. Alternative D

Alternative D consists of the upgrade of Western Avenue, including its intersection with Park Street. The intersection geometry would need to be improved to increase the storage length of the exclusive left turn lane in the westbound direction. Western Avenue may also require widening and improvements to the existing turning radii. While not necessary, the enhancement of the connection of Western Avenue to Day Avenue would reduce the total distance of this route. Western Avenue is already used by industrial businesses and truck traffic so this alternative would not have a negative impact on the environment or local residents. This alternative would not, however, assist in removing truck traffic on Park Street and Park Avenue through the town common.

5. Alternative E

The Alternative E concept would extend Bliss Street to River Street providing a connection to Day Street via Western Avenue. This alternative would not reduce truck on Park Street and Park Avenue through the town common, but would reduce truck traffic on Union Street and their impact on the intersection of Park Avenue and Park Street with Union Street and Elm Street. This option would require the acquisition of private property and significant changes to allow for safe access to River Street. This alternative

is not recommended for further study due to the close proximity of the proposed access road to the existing River Street underpass and the intersection of River Street with Park Street.

6. Analysis

Each of the five conceptual truck access alternatives were analyzed with respect to their potential to have a positive, neutral, or negative impact on each of the 15 evaluation criteria. This information is summarized in Table 5-1.

As can be seen from the table, Alternative A – Improved Vertical Clearance at Union Street and Alternative D – Upgrade Western Avenue were determined to have the least negative impacts of all options. It is recommended the City of West Springfield continue to work with MassDOT and CSX to advance the preliminary design of improvements to the Union Street underpass.

Table 5-1 - Truck Access Alternatives

Category	A	B	C	D	E
Improves Traffic Flow	●	●	●	●	●
Emergency Vehicle Access	●	●	●	●	●
Enforces Travel Speed	●	●	●	●	●
Reduces Accidents	●	●	●	●	●
Pedestrian Accommodation	●	●	●	●	●
Bicycle Accommodation	●	●	●	●	●
Transit Access	●	●	●	●	●
Aesthetics	●	●	●	●	●
Livability	●	●	●	●	●
Parking	●	●	●	●	●
Recreation	●	●	●	●	●
Employment/Jobs	●	●	●	●	●
Net Impact on City Services	●	●	●	●	●
Environmental Impacts	●	●	●	●	●
Construction Cost	●	●	●	●	●

Legend: ● = Positive Impact ● = Neutral Impact ● = Negative Impact

Alternative Description:
A=Improve Vertical Clearance at Union Street
B=New Access road from Route 5
C=Connect Day Street to Route 5
D=Upgrade Western Avenue
E=Bliss Street Extension

CHAPTER 6

PUBLIC PARTICIPATION AND COMMUNITY ENGAGEMENT

The public participation and community engagement process for this TCSP study included the following major components:

1. Two major community meetings in 2014.

2. Regular ongoing consultation with the West Springfield Redevelopment Authority at monthly meetings from 2012 through 2014.

3. Meetings with City planning, economic development, community development staff throughout the project throughout the process.

4. Meetings with other key stakeholders.

5. Incorporation of community and stakeholder input from the 2012 Merrick Neighborhood Revitalization Planning process, which included four major public meetings and other stakeholder meetings.

Activities for each of these components of the engagement process are summarized below. In addition, Appendix X "Comments and Responses" is included.

A. COMMUNITY MEETINGS

The City of West Springfield and the Pioneer Valley Planning Commission jointly sponsored two major community meetings for the TCSP Study on Wednesday, April 9, 2014 and Wednesday May 14, 2014. Both meetings were held in the evening at the Memorial Elementary School at 201 Norman Street. Refreshments were provided.

Extensive publicity and outreach was performed prior to both meetings to encourage public attendance. Outreach efforts included:

- Issued a press release for each event. The West Springfield Record picked up the press releases and wrote an article in advance of both meetings (Appendix X)
- Printed an eye-catching flyer—in English, Russian, and Spanish—for each event and posted these flyers at City Hall, the library, the senior center, Memorial Elementary School, and Community Development Department office (Appendix)
- Mailed flyers to over 80 businesses in the Merrick and Memorial neighborhoods
- Emailed meeting "save-the-dates" and then emailed flyers to an email distribution list that included over 50 people.
- Sent flyers home to over 200 children at the Memorial Elementary School the week before the meetings.
- Telephoned interested residents who do not use or have access to email.

1. Community Meeting #1: April 9, 2014

Approximately 30 residents, business owners and stakeholders attended this community meeting. PVPC presented a summary of existing conditions. The meeting presentation and boards are included as Appendix X. PVPC staff then facilitated four small group discussions where attendees were asked three general questions:

a. How well transportation was working in the Merrick and Memorial neighborhoods?

b. What do you like about the homes, businesses and open spaces in the Merrick and Memorial neighborhoods, what types of homes, businesses or public spaces would make these neighborhoods better places to live and work?

c. What would you like the neighborhood to look like in another 20 years?

Responses are summarized below.

a) Pedestrian Safety

- Pedestrian traffic is very difficult, desire for a "walking neighborhood".
- A need for better sidewalks on Union Street.
- New sidewalks and street trees on Memorial Avenue from Baldwin Street easterly (pedestrian fatalities mentioned).
- Some people walk in the road instead of on sidewalk – especially on Main Street.
- A very difficult area to ride a bicycle.
- Pedestrians use a short-cut down the Route 5 southbound exit ramp at the Memorial Bridge rotary and climb a fence to access Bridge Street.
- Many pedestrians walk long distances to access the Eastern States.
- A need for better access to the Memorial School.
- Pedestrian crossing times are too short at several intersections.
- No bus shelters on Memorial Avenue.

b) Parking

- Need on-street parking on Union and Main Streets.
- New nail salon business relocating from another area of city needs flexibility on parking or will not be able to operate.
- Lack of parking in Globe/Railroad/Bridge Street area.
- Management and enforcement of existing regulations needed.
- Existing parking regulations are not business friendly.
- Allow parking on one side of Memorial Avenue.
- The parking lot across from 380 Union Street is used by local residents during snow clean-up.

c) Traffic

- The Main/Memorial intersection is very bad and promotes high travel speeds
- Speeding is a general problem everywhere. No enforcement.
- River/Baldwin Street intersection is too congested, confusing and has poor turning radii.
- Go-kart racing at night in Memorial Neighborhood.
- Truck traffic in areas where it shouldn't be – Baldwin Street.
- Vehicles do not comply with the Memorial School pick up/drop off plan.
- Allow right turn on red from Baldwin Street onto Memorial Avenue.
- Congestion and vehicle backups at study area intersections.
- Poor access management.
- People exiting medical offices at 373 Park Street cause chaos at the intersection of South Boulevard with Park Street and River Street.

d) Aesthetic and Development-related Improvements

- Unattractive gateways into the city – rotaries, Agawam Bridge.
- A need for more parks and playgrounds.
- Public infrastructure investments (sidewalks, trees, lighting, benches, parks).
- Need street tree replacement (from Church Street south).
- Many tornado damaged building are still vacant and have not been repaired.
- Regulatory/enforcement measures imposed on businesses and residences.
- Elimination of illicit and inappropriate activity at existing parks and playgrounds.
- Condemned houses—Bosworth Street as an example.

e) Memorial Neighborhood-Specific Comments

- Bad businesses ruin it for good businesses.
- Transient population in the apartments.
- Would like to see a convenience store.
- Would like to see more homeownership.
- Number of cars per dwelling unit exceeds what is acceptable (or able to be accommodated).
- Would be great to have utilities buried at key focal points in the neighborhood.
- Do not care for the way the Memorial Neighborhood has transitioned to business. Houses go down and businesses go up.
- More landlord control measures needed.
- Would like to see the aesthetic appearance of the neighborhood improved. This would help to instill confidence in the neighborhood.
- Need a traffic light at Gate 9 of Big E.
- Planned way-finding system for when Big E is running.
- Many of the houses in the Memorial neighborhood are generationally owned which has helped to promote stability.

- Speeding is a problem in both neighborhoods.
- Memorial Elementary School playground is being used past posted hours. Neighbors have observed drug activity. Neighbors don't feel that the playground is safe anymore for their children.
- Crosswalk signals at Union and Memorial and Baldwin and Memorial and Bresnahan and Memorial are not long enough.
- There is always a back up on River Street approaching the railroad viaduct.
- There are not any signs on Baldwin or Cold Spring that would alert a driver that there is an elementary school (Memorial).
- Parking should be allowed on just one side of Memorial Ave.
- Trucks supposedly are not allowed on Baldwin, but they frequently use this street.
- 4-way stops during the Big E need to be enforced. Put 4-way stop signs on side streets parallel to Cold Spring.
- The "no-turn-on-red" at Baldwin and Memorial is not enforced. Participants thought turning on red at this intersection should be allowed.
- Businesses should be held to some aesthetic standards and should keep up with their properties, especially for snow removal. Snow piles are excessively high in the winter and sidewalks go unplowed.
- CSX does not plow areas that they should.
- Access to businesses near the North End rotary is difficult. This whole area is a safety hazard for pedestrians and cars.
- No observable traffic calming measures in the North End rotary / Park Square area to slow traffic down. Really needed near the senior center and school.
- Union Street tends to back up approaching Park Street.
- No bus shelters on Memorial Ave down in Memorial neighborhood.
- Speeding on Baldwin Street.
- Would like to see "right turn on red" allowed at Baldwin and Memorial.

2. Community Meeting #2: May 14, 2014

Approximately 25 residents, business owners and stakeholders attended this community meeting. PVPC presented a summary of recommendations for transportation improvements and redevelopment. The meeting presentation and boards are included as Appendix X.

a) General

- Narrow streets: concerns about fire truck access due to parking narrowing streets.
- Medians can make it difficult for snow plows.
- The cost of the maintenance of a raised median should be considered prior to implementation.

b) Merrick Neighborhood

- Support for form-based code provision (Councilor Rushlow).

c) Memorial Neighborhood

- General support for rezoning of area south of Heywood.
- General support for promoting businesses in the area, and general acceptance of rail yard impacts as "a fact of life".

d) Focus Area: Main Street at Memorial Avenue

- Strong consensus for returning Bresnahan to two-way traffic flow at Memorial.
- Support for three story buildings at Work Gear Building.
- Street snow is plowed onto open areas on Main St. and Bresnahan St. Snow storage must be considered as part of any future improvement alternative.
- Consider possibly eliminating the section of Main St. at Memorial Ave.
- Strong support for some kind of action to improve traffic and pedestrian conditions at this location.

e) Focus Area: River Street at Memorial Avenue (Agawam Bridge)

- Interest in feedback on design for bridge to Agawam from Paul Kelley, MassDOT.
- Support for a stacking lane to Big E Gate 1.
- Access to future Dike/Riverwalk would be easy.
- Cold Spring Rd. needs better signage to control speeding cars around school.

f) Focus Area: River Street at Baldwin Street and Sears Way (Memorial Elementary School)

- High turnover of owner-occupied units in Baldwin St. neighborhood due to impacts of non-residential uses.
- Put up a sign on Cold Spring Ave regarding school zone to slow people down. Gary responded by saying structural changes would be more effective. Discussion of how to get funding and merits of speed bumps.
- Allston Avenue from intersection of Cold Spring Ave is literally used as a race track. Cars line up side by side and race down the street regularly (sounds like this happens at morning, midday, and evening--the same cars repeatedly. Police are unresponsive to requests for enforcement.
- Allston Avenue: localized flooding issue at 98 Allston. Floods up to porch. City unresponsive to requests for fix.
- Pat's Auto Body on Norman St. parks vehicles on both sides of the street (could be an enforcement issue as there are "no parking" signs on east side of street, and "no parking" signs stapled to telephone poles on western side, which could be just temporary if pictures were taken during Big E).

g) Complete Streets for Main Street, Union Street, Baldwin Streets

- Shared use sidewalks on streets not wide enough for striped/dedicated bike lanes (Union & Main).
- Trucks use Western Ave, would be better for residents only.
- Trucks rip wires off houses. Truck exclusion routes were explained.
- What about installing cameras to enforce traffic laws.

h) Other

- Need better noise regulations/enforcement buffering residents from commercial (Lattitude Restaurant) uses.

B. West Springfield Redevelopment Authority Consultation 2012 to 2014

The West Springfield Redevelopment Authority was the primary entity within City government with which PVPC consulted throughout the TCSP project. PVPC attended the monthly meetings of the Redevelopment Authority from mid-2012 (following completion of the Merrick Neighborhood Revitalization Plan process) through April 2014. Each meeting included a presentation by the PVPC followed by a group discussion.

C. Meetings with City and School Staff

PVPC met with City staff on an ongoing basis numerous times to obtain information about current and planned projects for the neighborhoods, to develop strategies for improving the neighborhoods and to obtain feedback on proposed redevelopment concepts.

PVPC and the Community Development Director also met with the principal from the Memorial Elementary School to obtain demographic information about the students who live in the Memorial neighborhood, learn of any problems with traffic and or circulation around the school, particularly during school arrival and dismissal, and hear suggestions for improving the quality of life, traffic, land use compatibility around the Memorial School.

During the preparation of project recommendations in 2014, PVPC staff met with City Planning and Economic Development staff on multiple occasions to review work products and obtain feedback. This information and staff recommendations were incorporated into the draft study recommendations presented to the community for comment.

D. Meetings with Other Stakeholders

The Eastern States Exposition (Big E) is the largest land holder and business in the TCSP study area. PVPC, City staff and Mayor Sullivan met with representatives of the Big E on February 26, 2014 to provide an update on the project and to learn of their related concerns and suggestions. Topics discussed included improvements to the Memorial Avenue corridor and Memorial Neighborhood, including transportation, accessibility, adjacent land uses and zoning. This information was incorporated into the recommendations presented in this document.

E. COMMUNITY INPUT FROM 2012 MERRICK NEIGHBORHOOD REVITALIZATION PLAN PROCESS

Community engagement for the 2012 DHCD-funded Merrick Neighborhood Tornado Recovery Planning project focused on a Community Advisory Group that included residents, business owners, City staff, elected officials, and PVPC staff. In addition, four public meetings of a community Working Group were held to encourage broader participation among residents and businesses of the Merrick Neighborhood.

The 2012 Revitalization Plan reflects the community consensus and preferences for future development in the neighborhood. In general, these are:

- Preserve the traditional mix of uses and intensity of development.
- Encourage more neighborhood vibrancy, embracing the ethnic diversity of residents and businesses
- Encourage more job creation and economic growth by maximizing the potential of industrially zoned land.
- Create more public parks and civic places where people can gather. Consider creating a large central park for active recreation.
- Improve access to small businesses on Main and Union Streets.

Challenges identified included: truck and automobile traffic, abandoned industrial buildings, zoning and the numerous environmental impacts of the CSX rail yard.

CHAPTER 7

RECOMMENDATIONS

A summary of all recommendations is presented in Table 7-1. The recommendations are split into a several categories by geographic area. A number identifies a geographic location of each recommendation where possible. These locations are shown on Figure 7-1. The lead party responsible for implementation of each recommendation has been identified as well as an estimate of the priority and cost of the recommendation. The annual maintenance column identifies if the recommendation requires a dedicated annual maintenance program.

- An immediate priority recommendation is one that can be implemented in 6 months to a 1 year.
- A short term recommendation is one that can be implemented within 1 to 3 years.
- Long term recommendations are those that require more than 3 years to implement.

- A low-cost recommendation is one that requires less than $500,000 to implement.
- A medium cost recommendation requires $500,000-$2,000,000 to implement
- A high cost recommendation is one that requires more than $2,000,000 to implement

Table 7-1 - Area Wide Recommendations

	Recommendation	Responsible Party	Priority	Cost	Annual Maintenance
	General Recommendations				
	• Upgrade the existing roadway surface	West Springfield DPW	Short Term	Medium	Yes
	• Upgrade street lighting	City of West Springfield	Long Term	High	No
	• Change regulatory and warning signs from "text" to "symbol" format when practical	West Springfield DPW	Immediate	Low	No
	• Upgrade street signs to meet retro-reflectivity requirements	West Springfield DPW	Short Term	Low	No
	• Provide bicycle racks at key locations in the study area	West Springfield DPW	Short Term	Low	No
	• Routine sidewalk maintenance	West Springfield DPW	Immediate	Medium	Yes
	• Upgrade all wheelchair ramps to meet ADA requirements.	MassDOT/West Springfield DPW	Immediate	Medium	Yes
	Transportation Recommendations				
	• Repaint pavement markings	West Springfield DPW	Immediate	Low	Yes
	• Routine sidewalk maintenance	West Springfield DPW	Immediate	Medium	Yes
1/2	• Implement improvements to Memorial Avenue and North End Bridge rotaries	MassDOT	Short Term	Low	Yes
	• Consider extending Park Avenue parking restriction to 6 pm to maintain three travel lanes	City of West Springfield	Immediate	Low	No
3	• Advance the proposed complete streets project for Park Street/Park Avenue	West Springfield DPW	Immediate	Medium	No
4	• Consider upgrading traffic signal control equipment at the intersection of Park Street, River Street and South Boulevard. Study the feasibility of expanding the exclusive left turn lane on Park Street.	West Springfield DPW	Short Term	Medium	Yes
5	• Study pedestrian/bike access easement along former Cold Spring Ave ROW to connect with River St.	Planning Board	Short-term	TBD	Yes
	Redevelopment Recommendations				
	• Implement recommended zoning	Planning Board, City Council	Immediate	n/a	n/a
	• Add residential area on south side of RR to "Trad. Neighborhood Frontage Type" to recommended rezoning area	Planning Board, City Council	Immediate	n/a	n/a
	• Rezone for RC in proposed district	Planning Board, City Council	Immediate	n/a	n/a
	• Update parking standards	Planning Board, City Council	Immediate	n/a	n/a
	• Other recommendations for noise, environmental impacts	Planning Board, City Council	Immediate	n/a	n/a

Table 7-2 – Main Street Recommendations

	Recommendation	Responsible Party	Priority	Cost	Annual Maintenance
	General Recommendations				
	• Upgrade street lighting	City of West Springfield	Long Term	High	No
	Transportation Recommendations				
6	• Consider intersection and roadway improvements at the intersection of Memorial Avenue with Main Street and Bresnahan Street. This includes traffic signal improvements, new pedestrian amenities and intersection realignment to improve safety and enhance traffic flow.	City of West Springfield	Short Term	Medium	No
7	• Complete Streets Treatment - Mark on-street parking spaces - Repaint pavement markings to provide 11 ft travel lanes - Construct pedestrian bump-outs at pedestrian crosswalks - Paint bicycle "sharrows" - Enhance bus stops	West Springfield DPW	Short Term	Low	Yes
8	• Upgrade traffic control equipment at the intersection of Park Avenue with Main Street	West Springfield DPW	Short Term	Medium	Yes
	• Consider upgrading the geometry of key side street intersections to restrict parking and improve pedestrian visibility and safety	West Springfield DPW	Short Term	Medium	Yes
9	• Transit stops at 218 Memorial (WB nearside) and at Shopping Center entrance driveway (EB nearside)	City, property owner(s)	Immediate	Low	Yes
	Redevelopment Recommendations				
	• Create new parcel opposite Haufbrau House parking lot at existing city-owned roadway triangle	Redevelopment Authority, private developer(s)	Short-term	TBD	Yes
	• Multi-story redevelopment of 218 Memorial consistent with proposed rezoning code.	Redevelopment Authority, private developer(s)	Long-term	TBD	Yes
	• Extend proposed “Trad. Neighborhood Frontage Type” to residential parcels on north side of New Bridge St east of Main St.	Planning Board, City Council	Immediate	n/a	n/a
10	• Public art treatments: CSX bridge, Main/Memorial island.	CSX, Community Development	Long Term	TBD	Yes
	• Demo 974 Main St. (Standard Plating Co) to create additional parking.	Community Development	Immediate	TBD	Yes

Table 7-3 – Union Street Recommendations

	Recommendation	Responsible Party	Priority	Cost	Annual Maintenance
	General Recommendations				
	• Upgrade street lighting	City of West Springfield	Long Term	High	No
	Transportation Recommendations				
11	• Continue to work with CSX and MassDOT to advance reconstruction of the Union Street railroad underpass	West Springfield DPW	Short Term	High	No
12	• Construct and exclusive right turn lane on Union Street at its intersection with Day Street to improve truck access/egress.	West Springfield DPW	Immediate	Medium	No
13	• Study the feasibility of upgrading traffic equipment and signal timings at the intersection of Union Street with Memorial Avenue	West Springfield DPW	Short Term	Medium	Yes
14	• Upgrade signal control equipment and timings at the intersection of Park Street/Park Avenue with Union Street/Elm Street. Consider implementing time of day specific timing plans to reduce congestion. Upgrade pedestrian amenities. Increase visibility and prominence of green left turn lanes (Flashing yellow arrow). Consider conducting a roadway safety audit in cooperation with MassDOT.	West Springfield DPW/MassDOT	Immediate	High	Yes
15	• Consider repainting pavement markings along Union Street to provide 11 foot travel lanes with 9 foot parking lanes where practical.	West Springfield DPW	Immediate	Low	Yes
16	• Work with property owners to improve sight distance and intersection controls along Union Street Extension at its intersection with Big Y and Big Lots driveways.	West Springfield DPW/Property Owners	Immediate	Low	Yes
	• Mark on-street parking spaces	West Springfield DPW	Short Term	Low	Yes
	• Look for opportunities to consolidate site access drives along Union Street	City of West Springfield	Immediate	Low	No

Table 7-4 – Memorial Avenue Recommendations

	Recommendation	Responsible Party	Priority	Cost	Annual Maintenance
	Transportation Recommendations				
	• Continue to work with town of Agawam and MassDOT to advance improvements at the Morgan-Sullivan Bridge and intersection of Memorial Avenue with River Street.	MassDOT/City of West Springfield/Town of Agawam	Short Term	High	No
18	• Work with Eastern States Exposition to analyze the feasibility of constructing an exclusive right turn lane on Memorial Avenue in the vicinity gate 1	City of West Springfield/Eastern States Exposition	Short Term	Medium	No
19	• Perform minor widening on Memorial Avenue to enhance on-street parking in the vicinity of York Street and Norman Street	West Springfield DPW	Short Term	Medium	No
20	• Advance the Memorial Avenue reconstruction project. Consider the installation of "boulevard type" improvements to improve traffic flow, regulate vehicle speeds, increase pedestrian safety and provide accommodations for bicycles.	West Springfield DPW	Short Term	High	Yes
21	• Work with CSX to identify appropriate measures to enhance aesthetics and improve security for the rail yard.	CSX	Immediate	Medium	Yes
22	• Consider redesigning Memorial Avenue to provide a two way left turn lane at the vicinity of Circuit Avenue.	West Springfield DPW	Short Term	Low	Yes
22	• Relocate the crosswalk in the vicinity of Circuit Avenue to the eastern side of the intersection.	West Springfield DPW	Immediate	Low	Yes
23	• Upgrade pedestrian infrastructure and provide ADA accessibility at the intersection of Memorial Avenue and Baldwin Street.	West Springfield DPW	Immediate	Medium	Yes
	Redevelopment Recommendations				
24	• Acquire 1718 and 1672 Memorial Ave and redevelop as city-owned park and parking facility as Phase 1 of site redevelopment.	Redevelopment Authority	Short-term	TBD	YES
24	• Assemble 1718 and 1672 Memorial Ave for multi-story mixed-use building with parking in rear (Phase 2).	Redevelopment Authority	Long-term	TBD	TBD
	• Landscaping, screening, other amenities to enhance Medallion Motel.	Property owner, City/Community Dev.	Short-term	Low	YES
	• Acquire 6 and 20 River St for park/future River Walk access.	City	Long-term	TBD	YES
	• Public art of "gateway" theme to support bridge recon.	City, MassDOT	Long-term	Low	YES

Table 7-5 – Baldwin Street Recommendations

	Recommendation	Responsible Party	Priority	Cost	Annual Maintenance
	General Recommendations				
25	• Memorial School circulation reconfiguration/improvements	City of West Springfield	Immediate	Low	Yes
	Transportation Recommendations				
26	• Improve geometry and alignment at Baldwin/River Street intersection	West Springfield DPW	Immediate	Medium	Yes
27	• Consider restriping Baldwin Street to provide 11 foot travel lanes, 4 foot bicycle lanes and a 7 foot parking lane.	West Springfield DPW	Short Term	Low	Yes
	• Improve pavement markings and signs for the Memorial School zone.	West Springfield DPW	Immediate	Low	Yes
	• Enhance pedestrian sidewalks and amenities in the vicinity of the Memorial School.	West Springfield DPW	Short Term	Medium	Yes
	• Work with MassDOT to relocate existing speed limit signs to enhance visibility.	MassDOT/West Springfield DPW	Immediate	Low	No
28	• Study options for access to future Riverwalk/bike path.	Park and Rec	Short-term	TBD	YES
	Redevelopment Recommendations				
	• Create sufficient employee parking for 26 Sears Way.	Redevelopment Authority	Immediate	TBD	YES
	• Shared parking arrangements for ballfield overflow.	Park and Rec, Schools,	Immediate	TBD	YES
	• Enhance community uses of Memorial Elementary School.	Community Development	Short-term	TBD	YES
	• Safe Routes to Schools grant program eligibility?	PVPC, School District	Immediate	TBD	YES

Figure 7-1 – Summary of Recommendations