



R | S | G INC.
RESOURCE SYSTEMS GROUP, INC.

NE ITE District Meeting

A Complete Street Pilot Test
in Burlington Vermont:

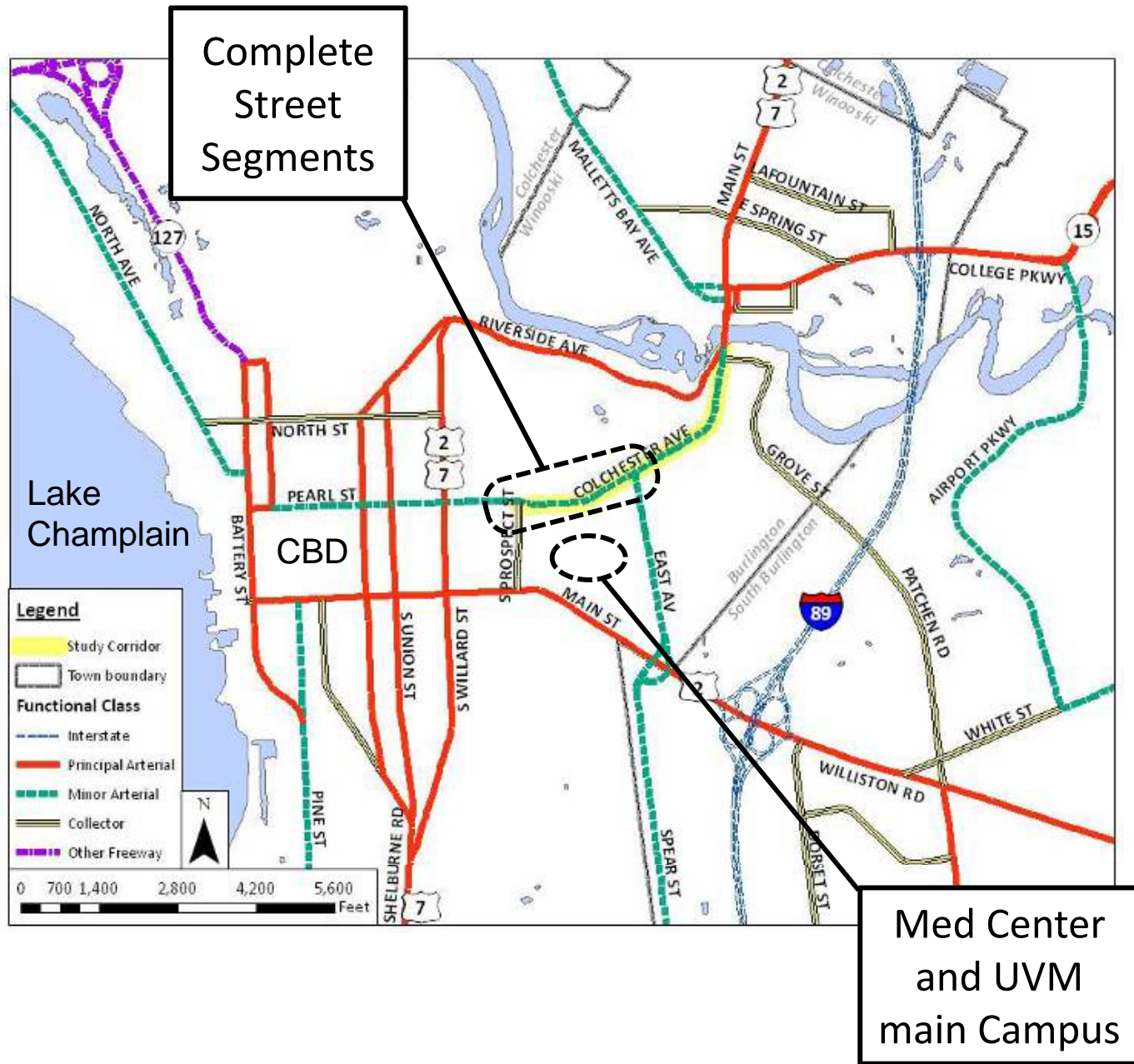
COLCHESTER AVENUE

May 26, 2011

Presentation Overview

- **Project Area & Background**
- **Complete Street Plan Overview**
- **Potential Benefits**
- **Potential Traffic Issues**
- **Management and Operations Issues**
 - CCTA, CATMA, Police, Fire, DPW, Local Motion
- **Implementation (Pilot Study) Results**

Project Area



Background

■ 2007-2009: Burlington Transportation Plan

- Recommends a “Complete Street” Design for Colchester Avenue

■ Colchester Ave Corridor Study

- Traffic Analysis & Complete Future Assessment
- Technical Committee Input

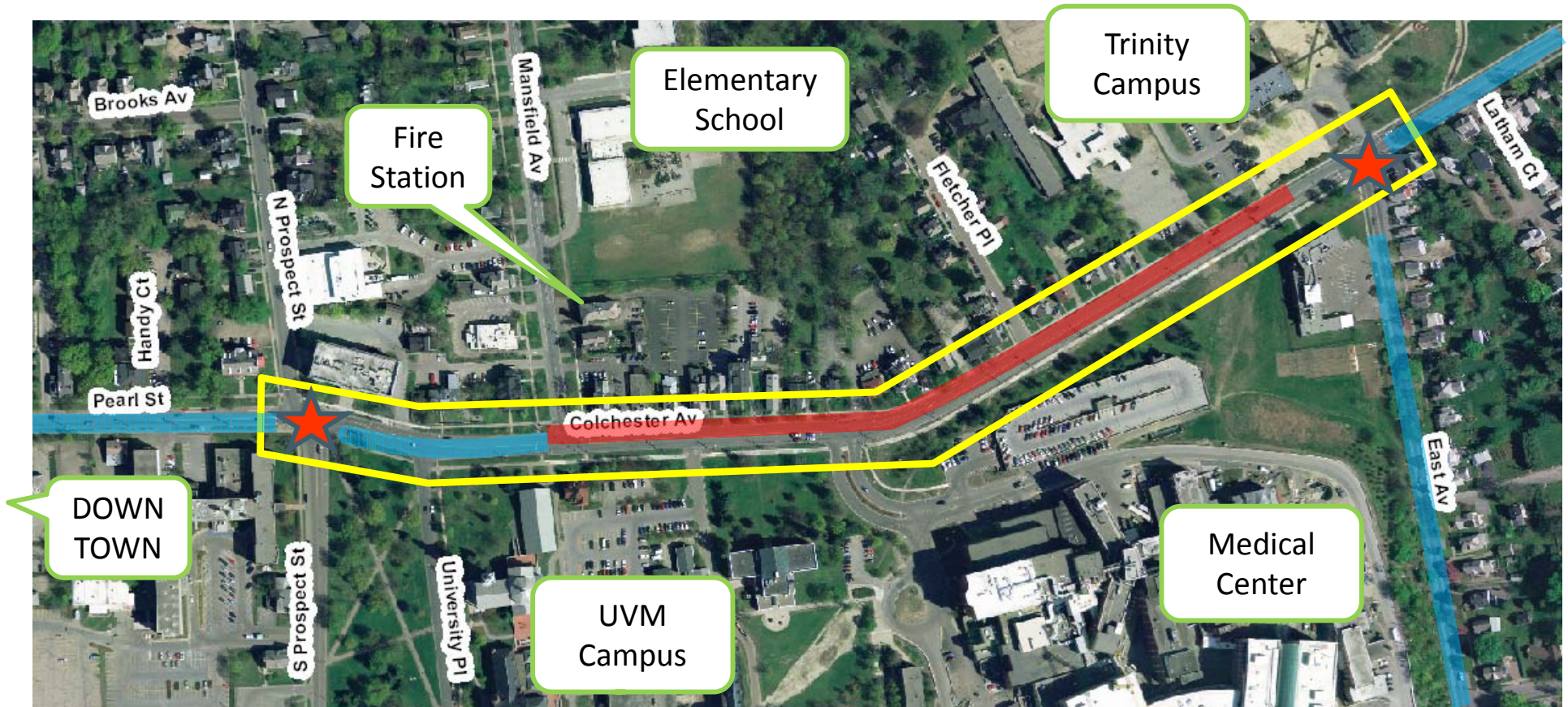
■ Colchester Avenue Resurfacing in August 2010

- Opportunity to test concept between first and second course of pavement.



**Burlington Transportation Plan:
COMPLETE STREET CONCEPT**

Project Area Overview

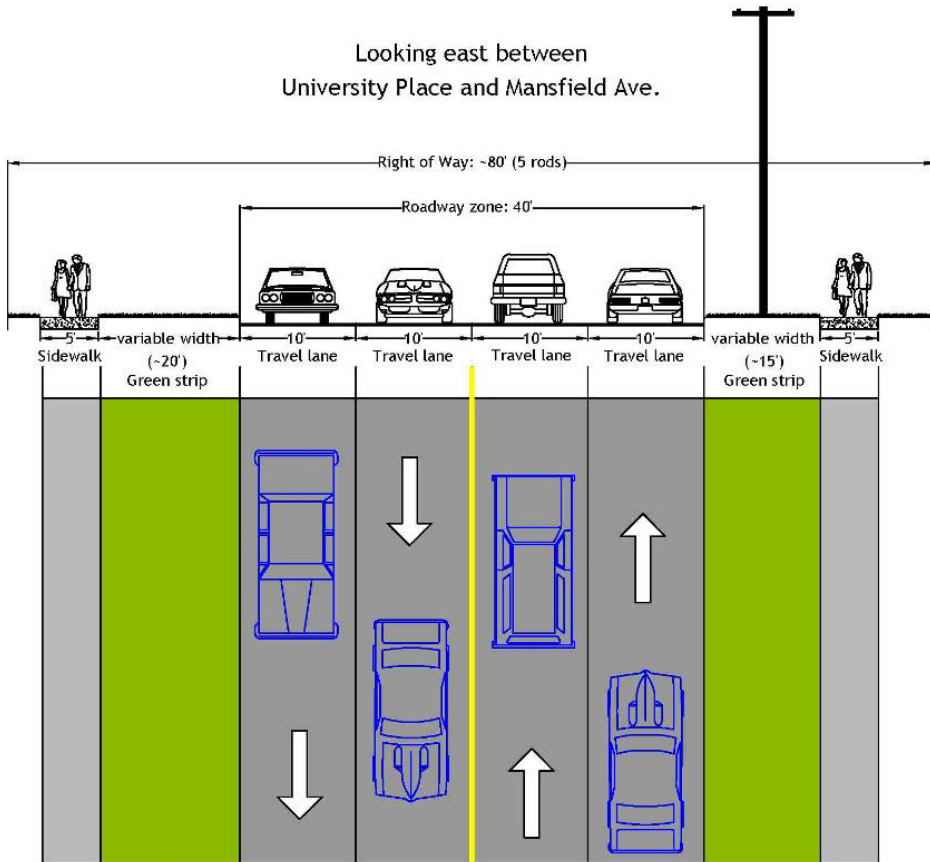


Arterial 

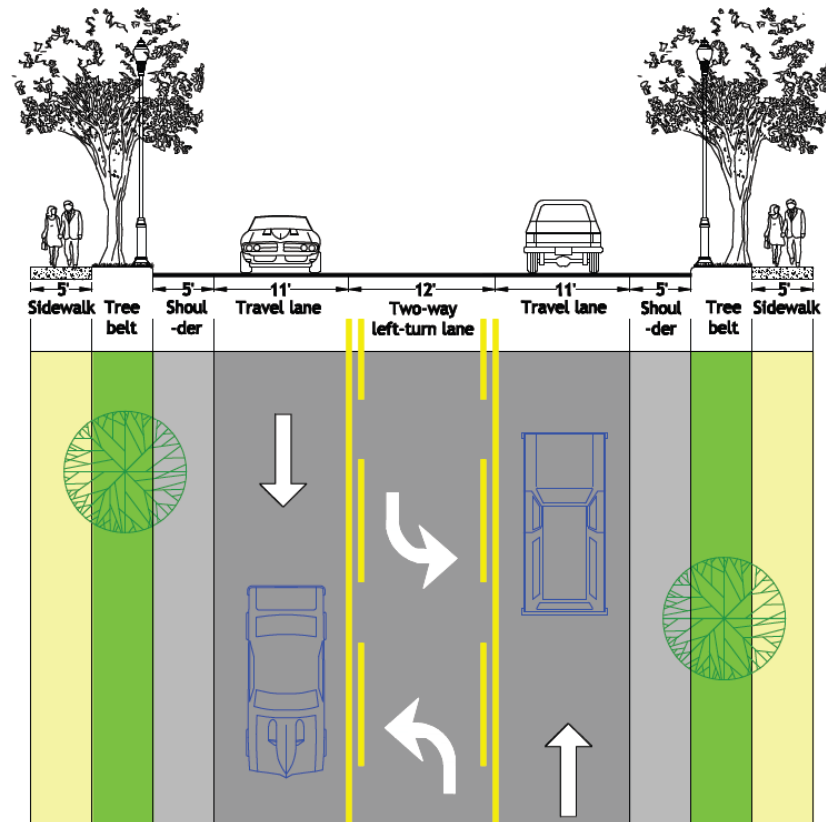
High Crash Locations  

intersection:	<u>Propsect</u>	<u>Mansfield</u>	<u>FAHC</u>	<u>East</u>
overall delay/LOS	34/C	14/B	16/B	37/D
Vol/Capacity	0.92	0.53	0.59	0.85
delay/LOS (worst appr)	47/D (NB)	38/D (SB)	36/D (NB)	76/E (SB)

Existing Design Compared to Complete Street



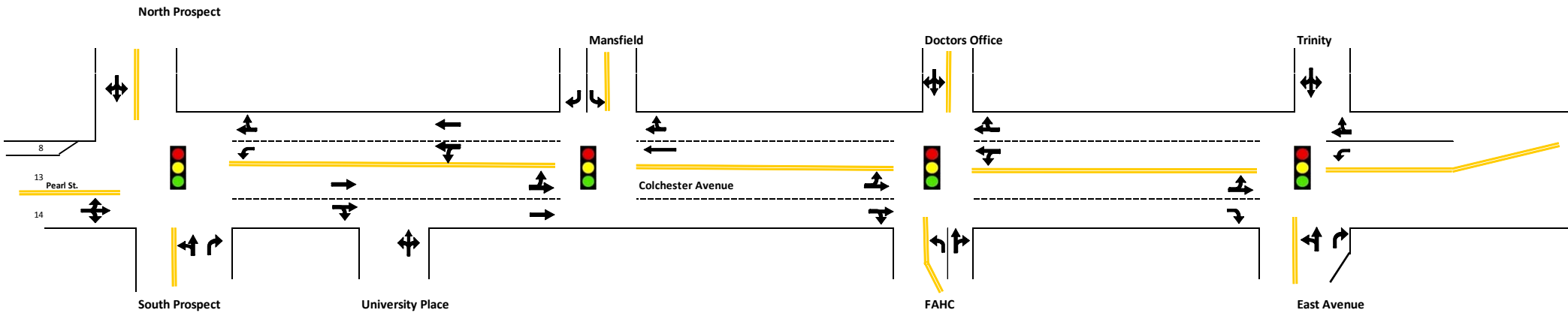
TYPICAL COLCHESTER AVE STREET DESIGN



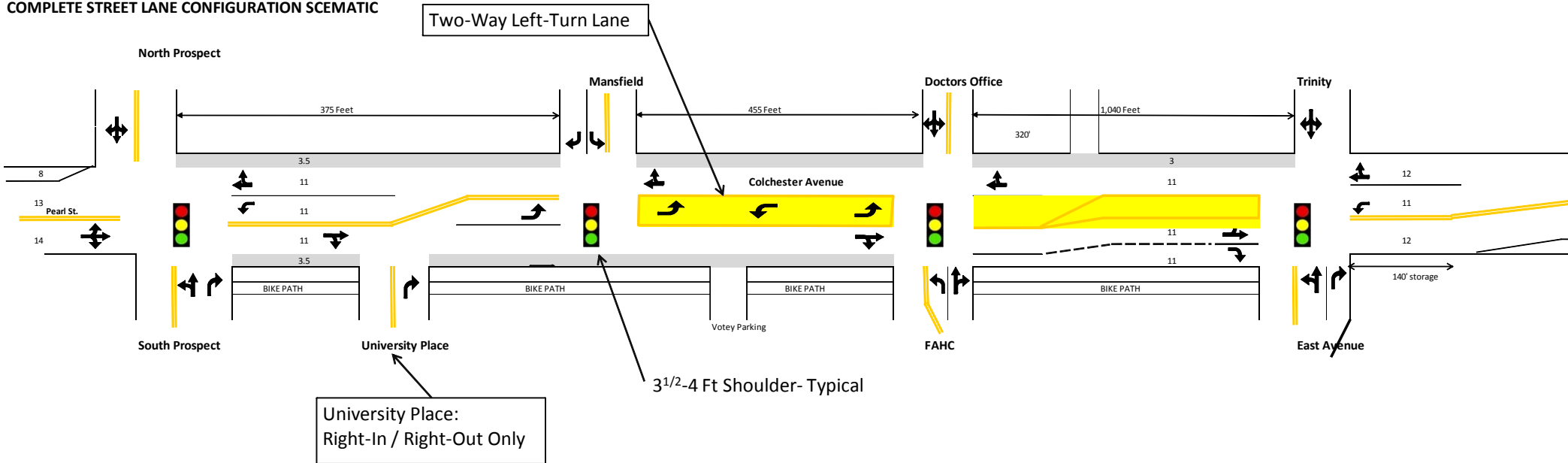
EXAMPLE of TYPICAL COMPLETE STREET DESIGN

Design Change Schematic

EXISTING LANE CONFIGURATION SCHEMATIC



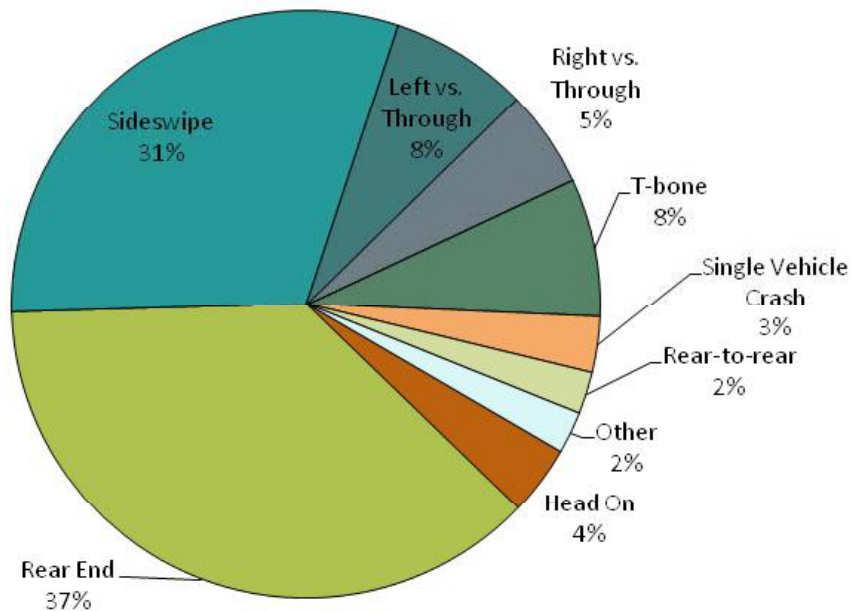
COMPLETE STREET LANE CONFIGURATION SCHEMATIC



Potential Benefits of Complete Street

Colchester Avenue is a High Crash Location

Mansfield to VT Health Dept. section



■ Traffic Safety

- Eliminates weaving between lanes
- Reduces potential for sideswipes
- Eliminates blocking of through vehicles by left-turning vehicles
- Encourages slower speeds
- Less lanes to cross for left-turning vehicles from driveways

■ Bicycle and Pedestrian Mobility and Safety

- Reduced crossing distance
- Creates room for on-road biking facility
- Slower traffic speeds

■ Traffic Operations

- Creates opportunity for protected left-turn phases

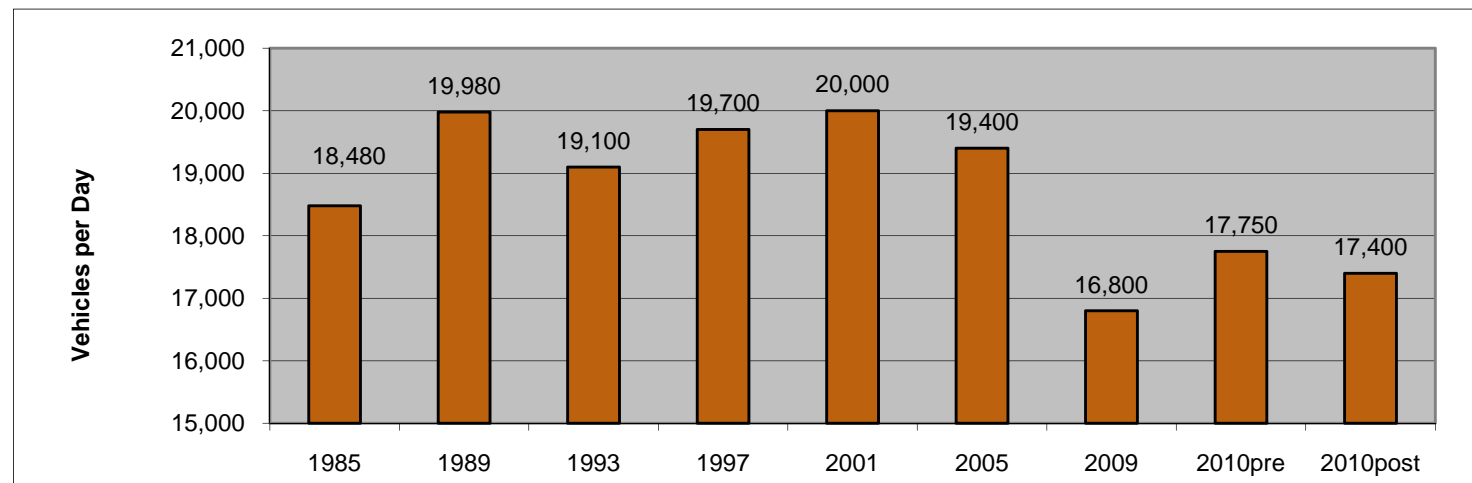
■ Aesthetics/Community Character

Potential Traffic Operational Issues (Rule of Thumb)

■ Common wisdom:

- with AADT < 20,000 vpd
 - Minimal affect on roadway capacity
- With AADT > 20,000 vpd
 - Increased delays/congestion
 - Queue spillback blocking upstream intersections
 - Potential diversion of traffic to other roads

AADT in test section:



Management and Operations Issues

■ CCTA (transit operator)

- Stopped busses will stop thru traffic (no pull-outs)
- Many routes – can't divert or reroute

■ CATMA (UVM/Fletcher Allen/Red Cross)

- Supports concept – Needs plenty of advance warning

■ Fire

- Will this create less space to get through traffic?
- Mansfield Station 2nd busiest in City

■ Police

- Effect on safety

■ Local Motion

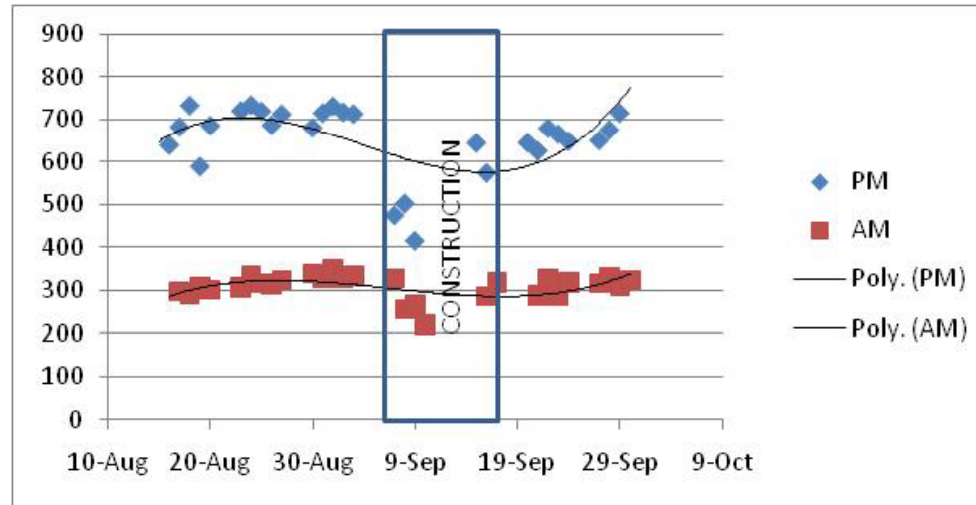
- Supports Concepts

■ How to Measure Success (or failure)

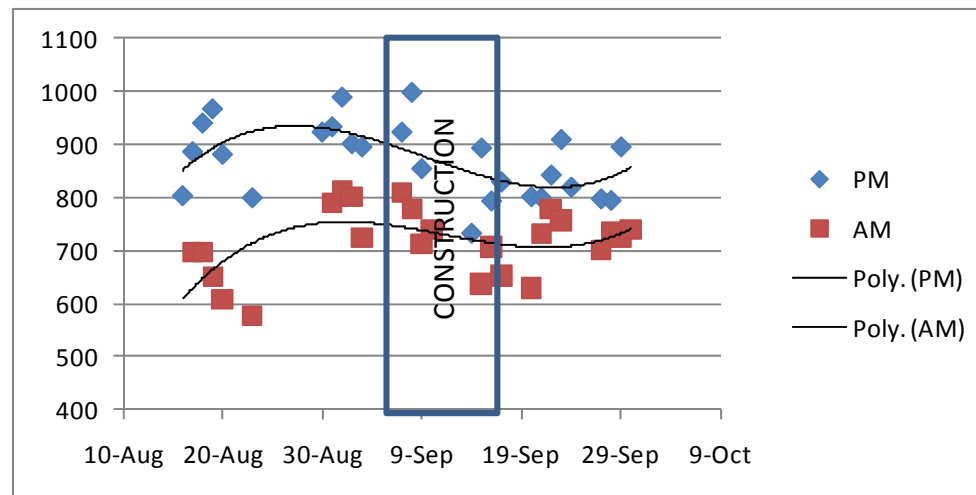
- Data collection and field monitoring
- Compare before and after queues, safety, capacity measures
- Crash Data

Traffic Counts (weekday peak hour)

Colchester Ave. (East of East Ave):

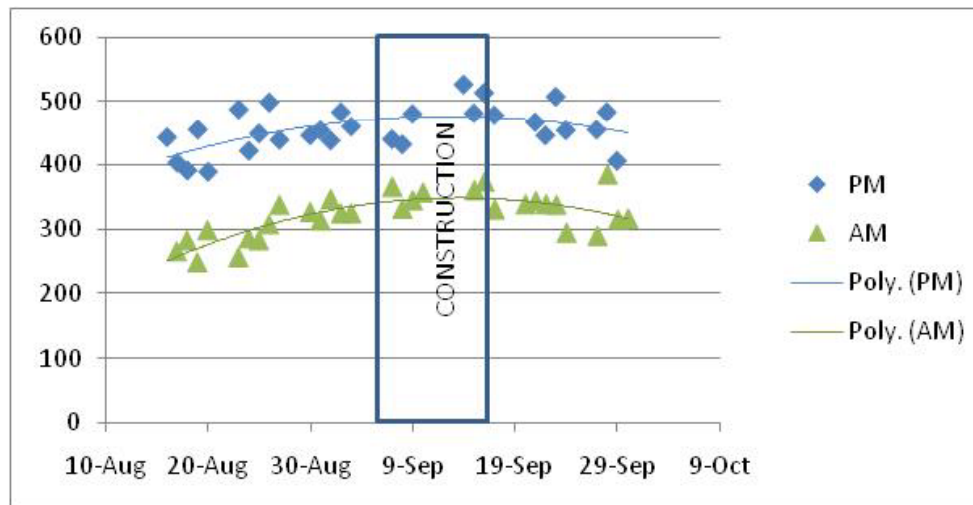


East Avenue:

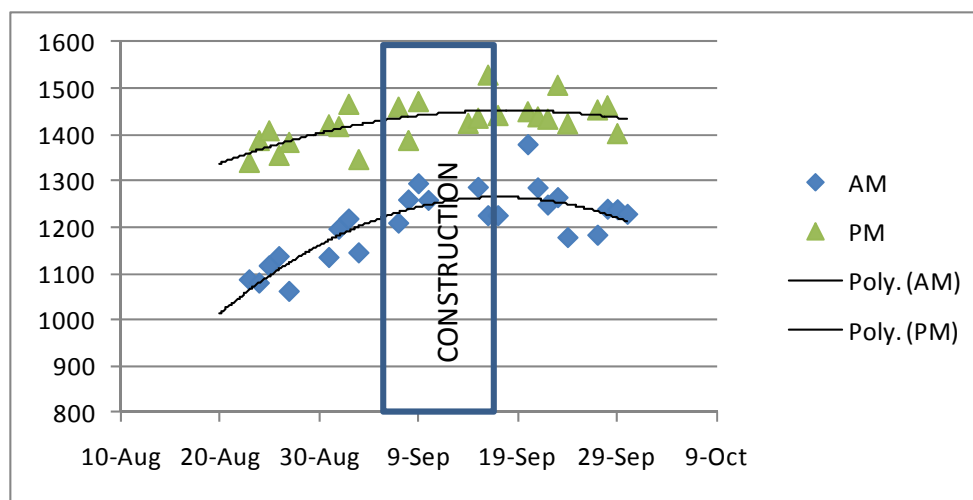


Diversion Routes -Traffic Counts (weekday peak hr)

North Prospect Street:

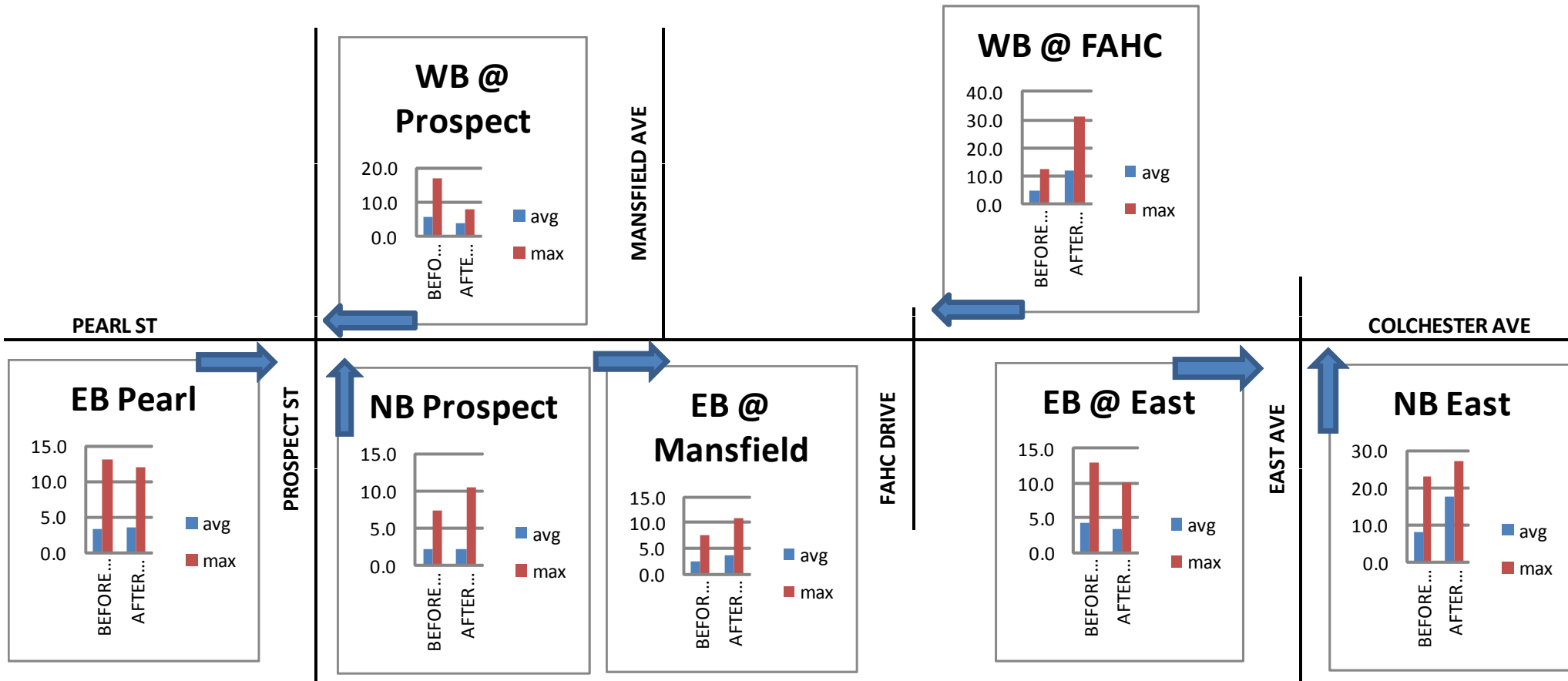


Riverside Avenue:



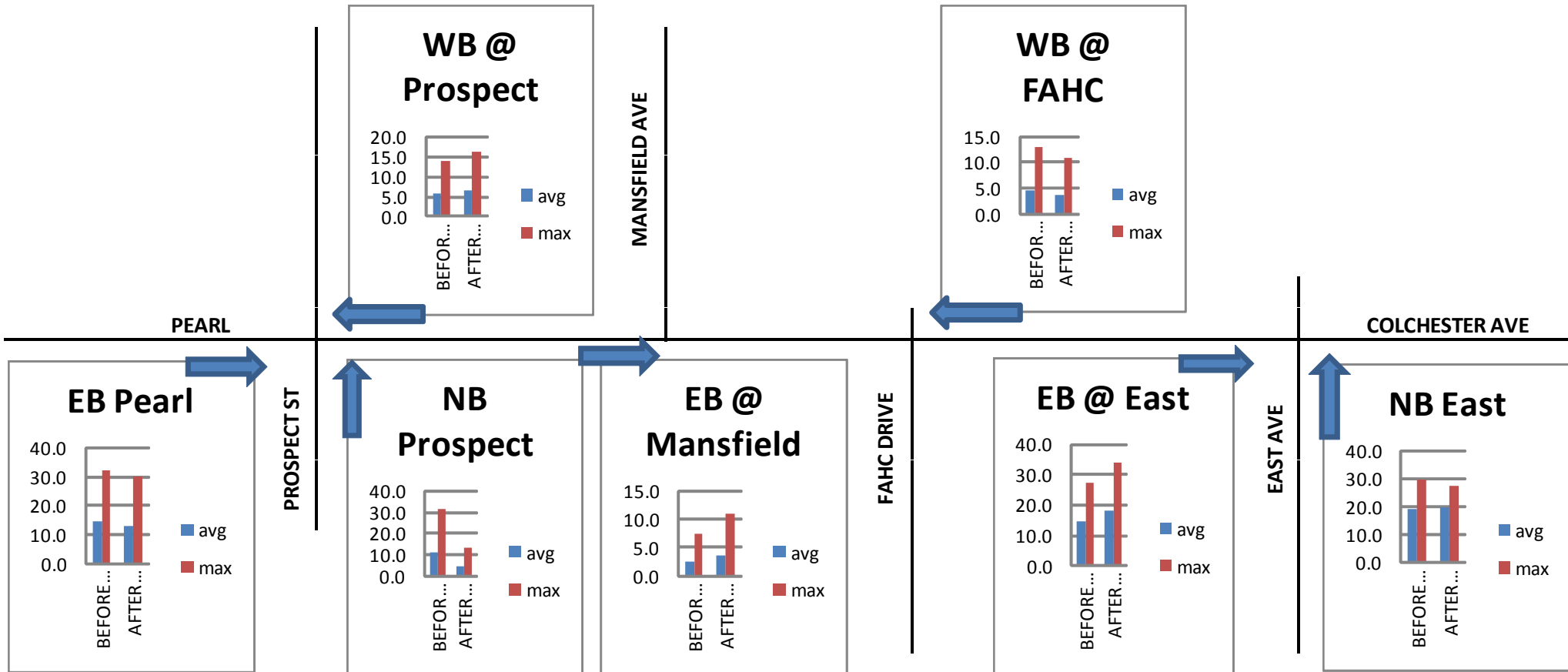
Congestion and Queuing:

Vehicle Queues in the AM Peak Hour:



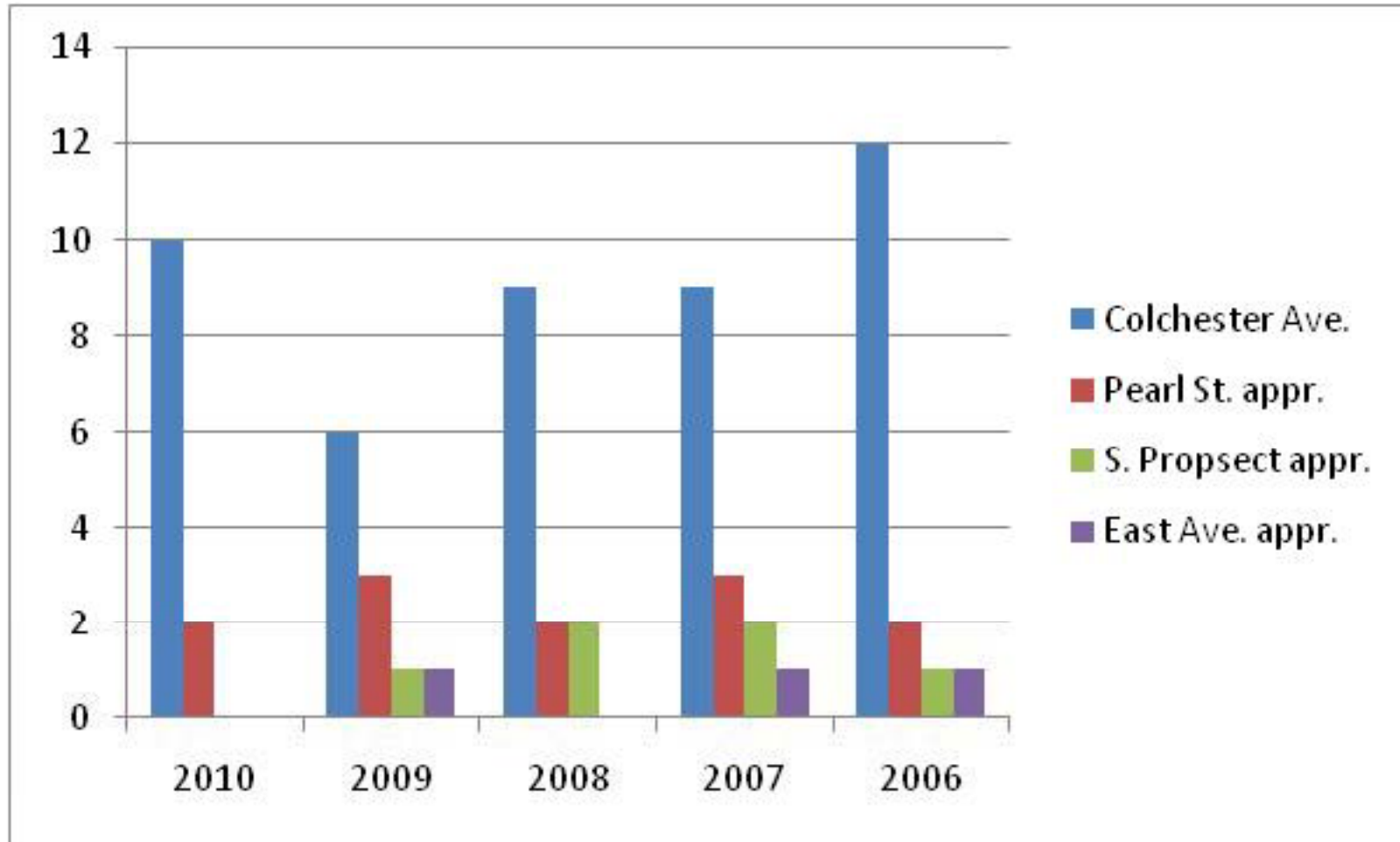
Congestion and Queuing:

Vehicle Queues in the PM Peak Hour:



Crash Data

Crash data for the period Sept 20 to Dec 31 (post retrofit to road diet)

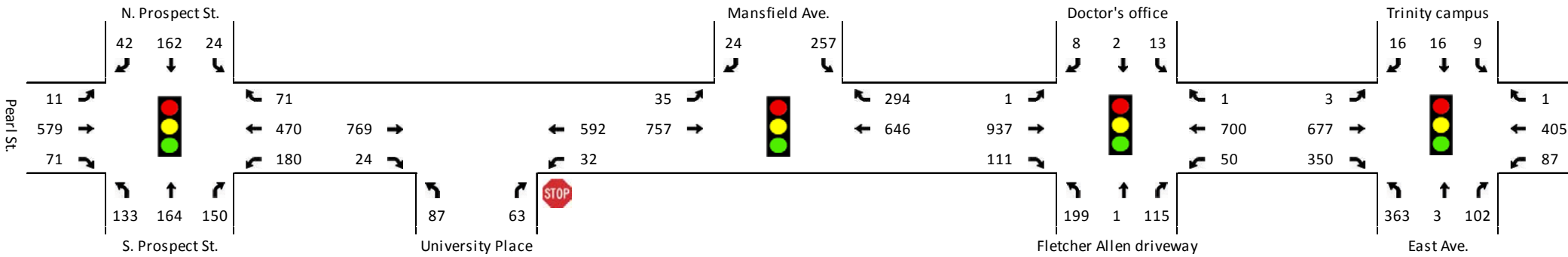


Additional Observations & tentative conclusions:

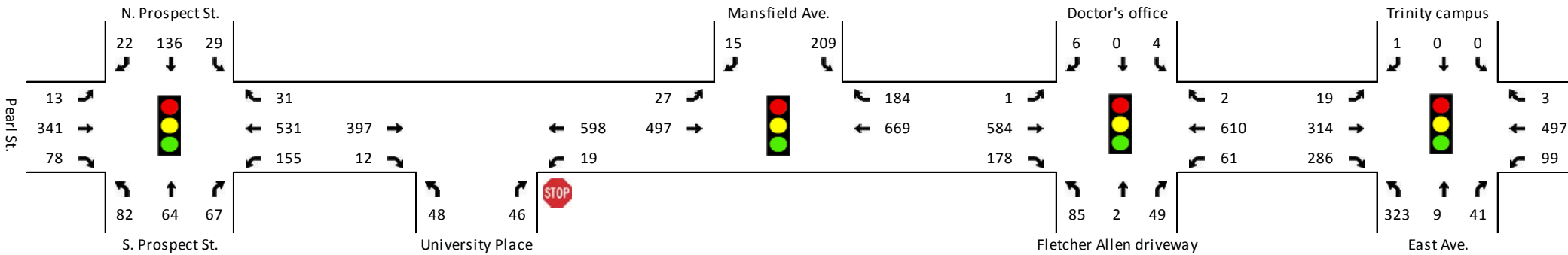
- **Small disturbances (bus stops or right turns) cause more delay than before – when cars could pass**
- **On-road bike traffic is up significantly**
- **Speeds are reduced**
- **Signal timings and coordination are critical**
- **Bottom Line:**
 - More congestion, delay and queues at Peak Times
 - The rest of the time it operates very well and more safely
 - Stakeholders are generally pleased

2010 Traffic Volumes

2010 PM Peak Hour DHV



2010 AM Peak Hour DHV



Traffic volumes are adjusted to the UVM academic year