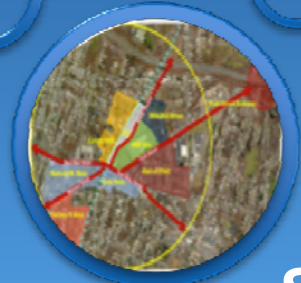


Traffic Improvements for Meriden Transit Oriented Development (TOD) District



Stakeholders Meeting

April 11, 2013



Purpose of Meeting

- * Review proposed changes to roadway network in the City Center/Transit Oriented Development District
- * Review roadway design concepts
- * Review pedestrian & bicycle design concepts
- * Review wayfinding opportunities
- * Discussion

Participants

- * City of Meriden

- City Manager
- Department of Development and Enforcement
- Office of Economic Development
- Department of Public Works

- * TOD Pilot Traffic Consultants

- CDM Smith
- GM2

- * ConnDOT (Transit Oriented Development Pilot Grant)

- * Meriden Transit District

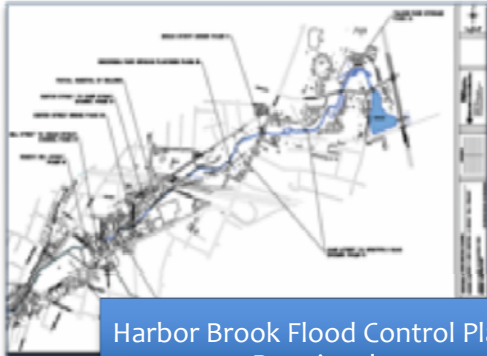
- * Greater Meriden Chamber of Commerce

- * Meriden Senior Center

- * Downtown Merchants

- * Local Stakeholders

City Center Projects



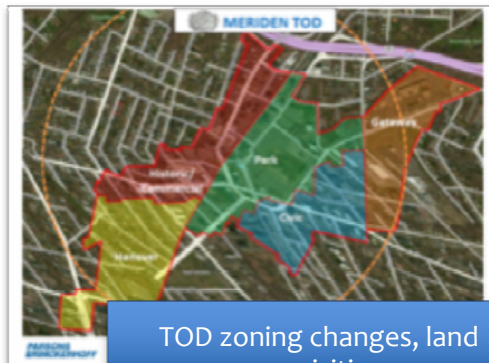
Harbor Brook Flood Control Plan Permitted



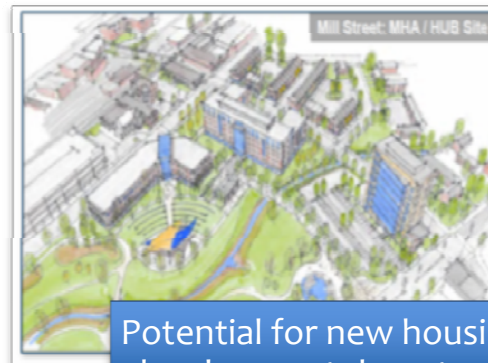
HUB Flood Control and Park Construction Planned for 2013-2014



NNHS Rail service and new transit facilities to be constructed 2014-2016



TOD zoning changes, land acquisition



Potential for new housing development downtown

TOD Traffic Study

Objectives:

- *Advance the TOD concept plans to 35% design
- *Ensure design is consistent with fed/state req'ts
- *Improve position for future transportation funding
- *Ensure all modes of travel are integrated
- *Follow principles of sustainability and best management practices

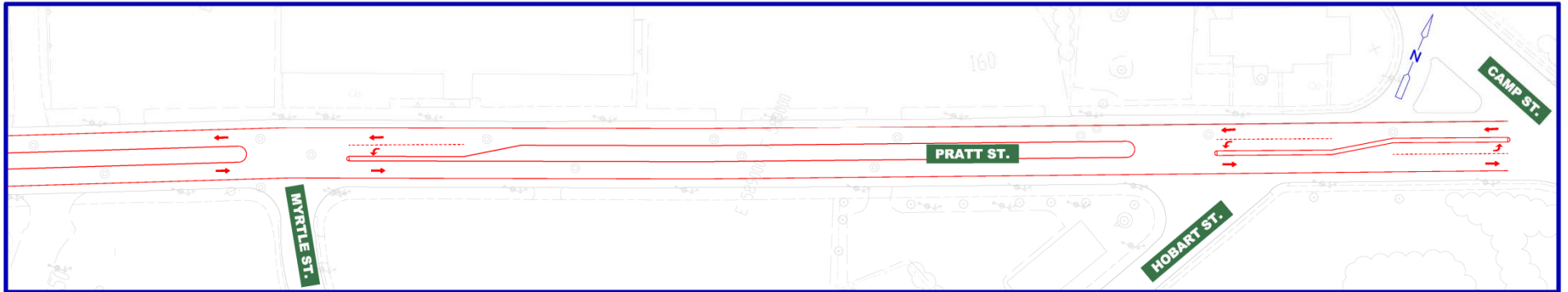
TOD Traffic Study Components

- * Vehicle accessibility
 - Traffic Flow
 - Traffic signals
 - Bumpout removal
 - On-street parking and loading
- * Pedestrian & Bicycle accessibility
- * Wayfinding

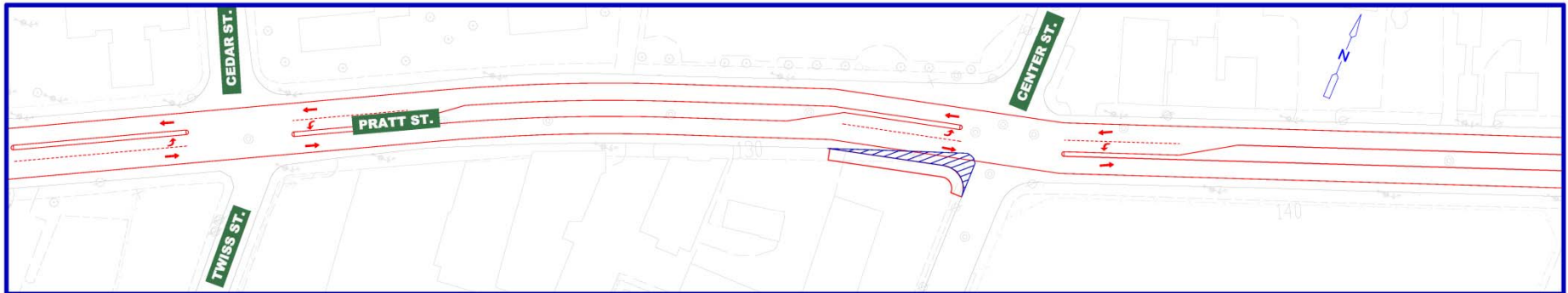
Vehicle access

- * **Sharat K. Kalluri, PE, PTOE, Project Manager, CDM Smith**
- * Review traffic flow, bumpouts, parking and signals by intersection
 - Pratt Street
 - East Main Street
 - Cook Ave.
 - Hanover
 - Perkins
 - State Street & State Street Extension
 - Colony Street

Pratt Street Concept



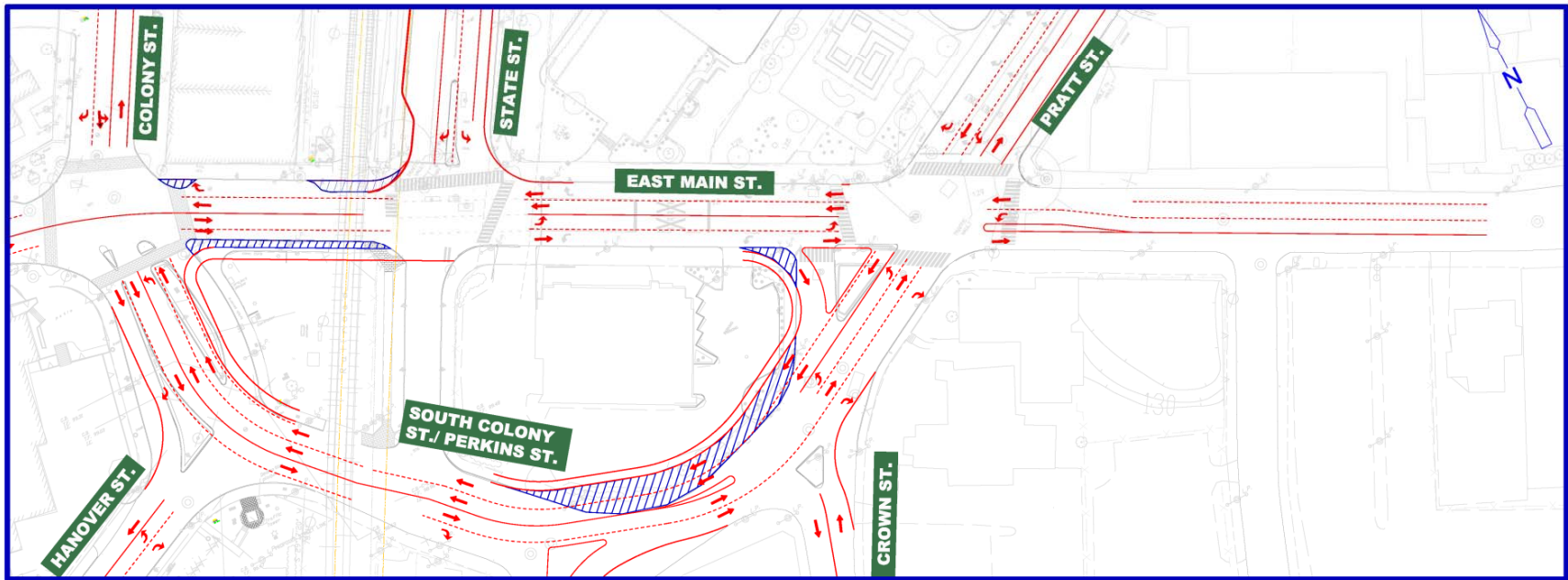
Pratt Street Concept



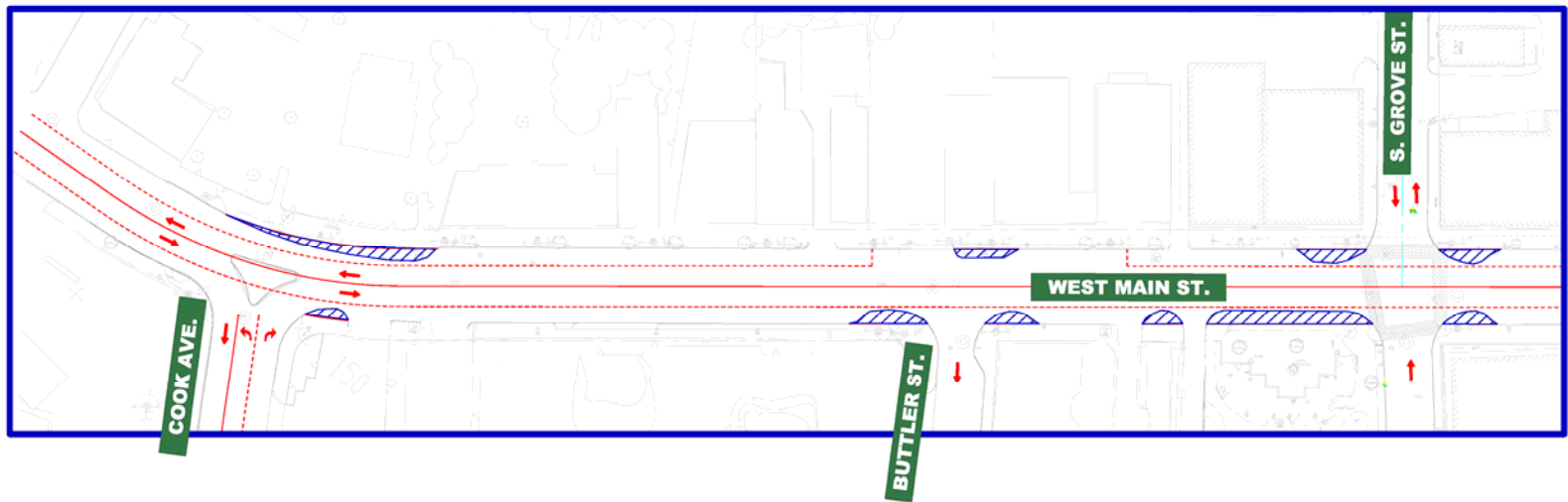
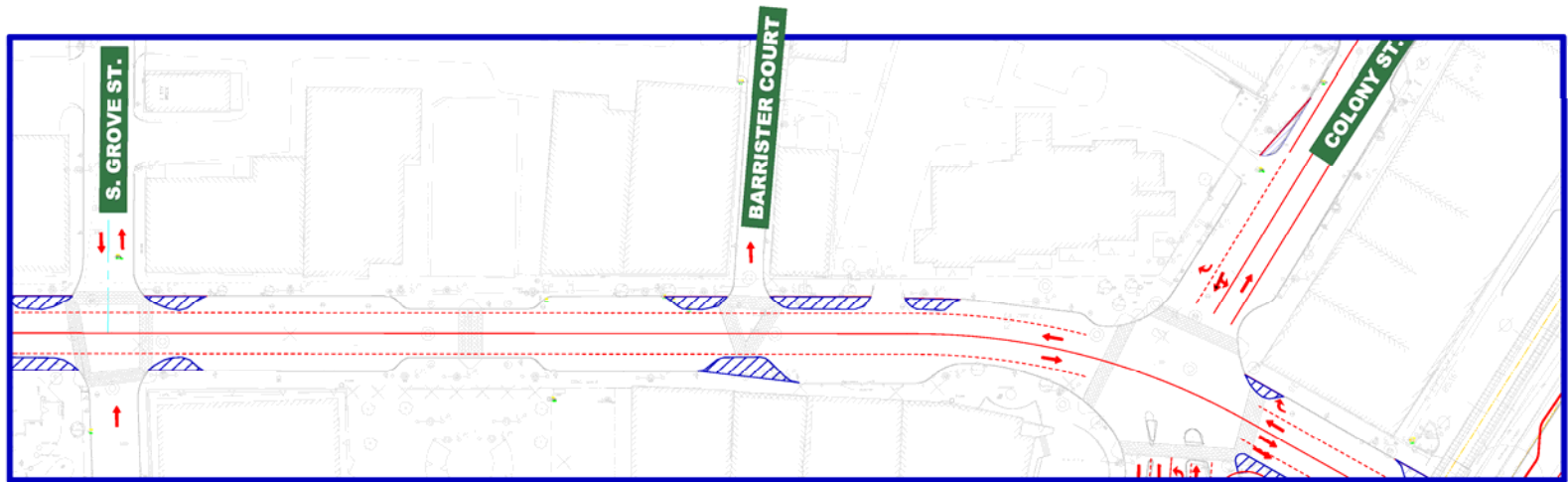
Pratt Street Concept



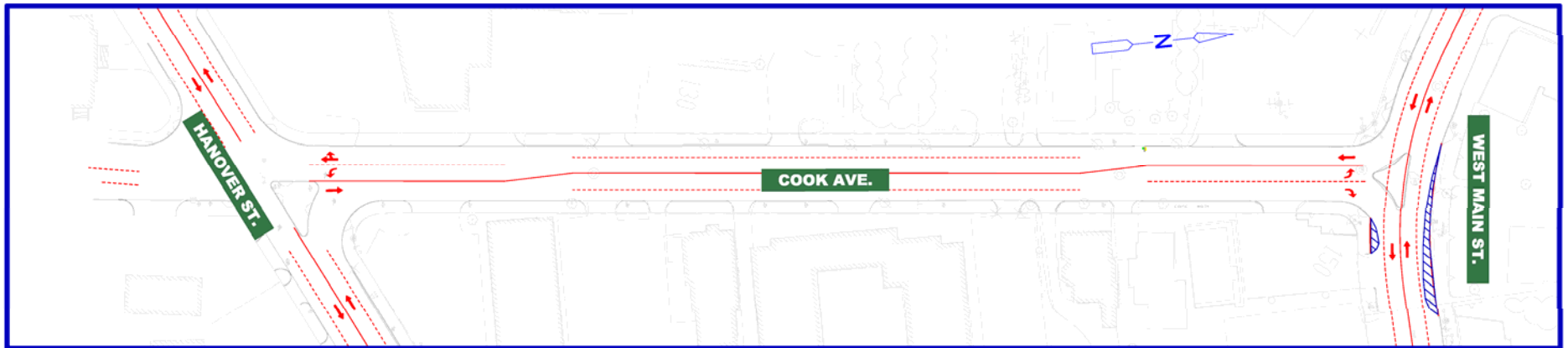
East Main Street/S. Colony Street Concept



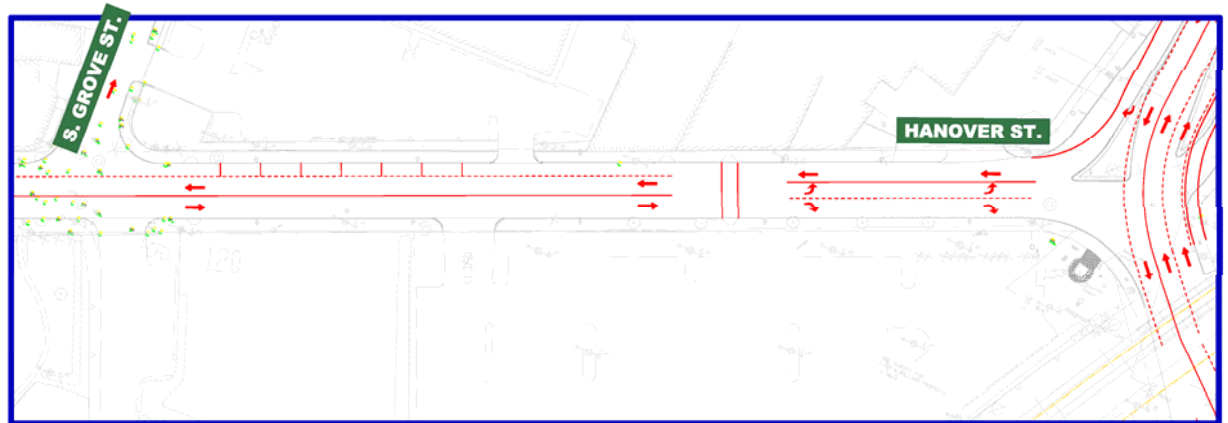
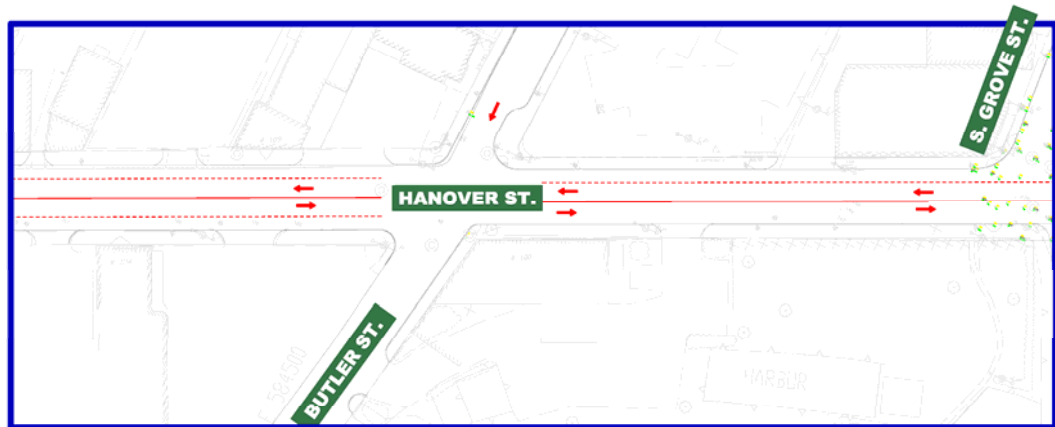
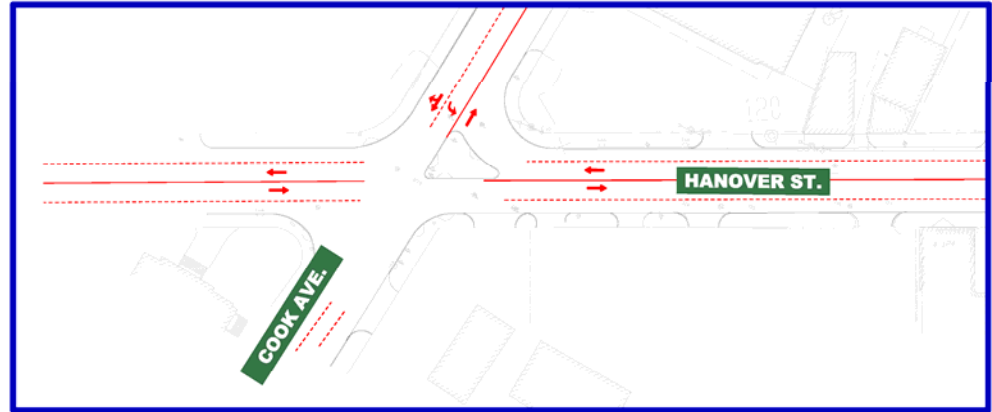
West Main Street Concept



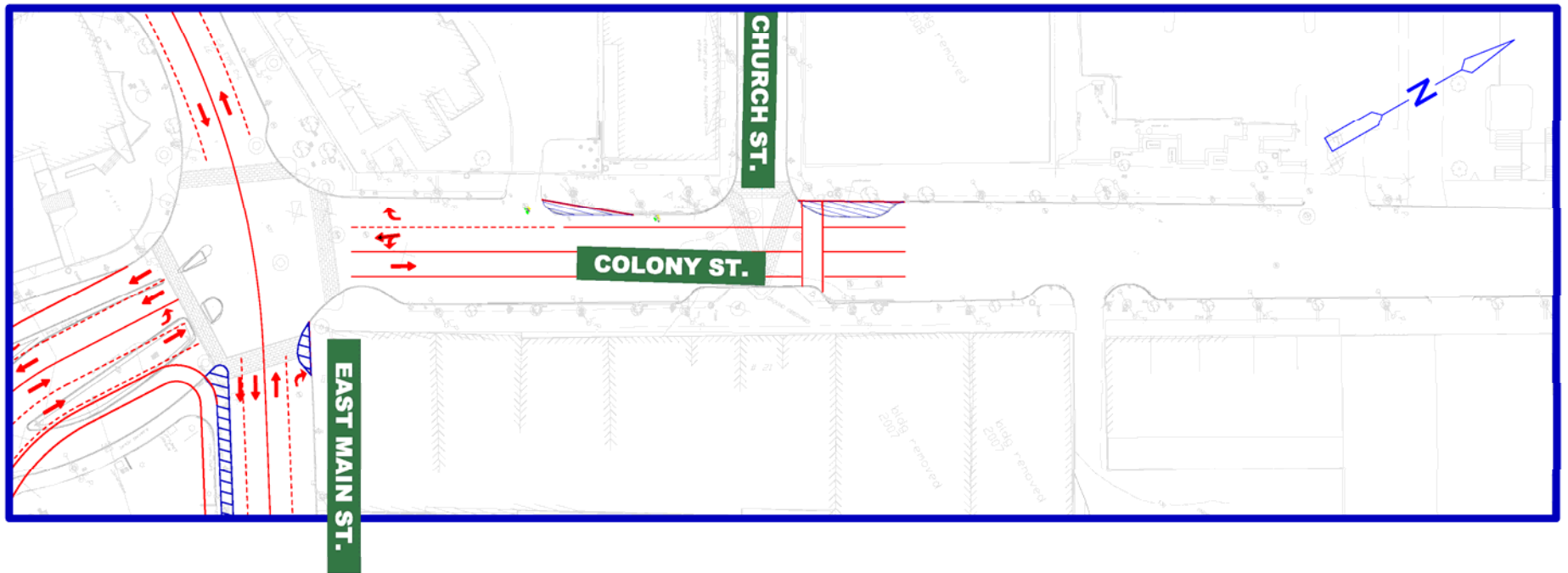
Cook Avenue Concept



Hanover Street Concept



Colony Street Concept



State Street Concept



Pedestrian and Bicycle Access

- * David V. Sousa, ASLA, AICP Senior Planner/Landscape Architect
CDM Smith
- * Review pedestrian and bicycle accessibility
- * Complete Streets Toolkit
 - * Pedestrian safety
 - * Traffic Control
 - * Bicycle Safety

Complete Streets Tool Box

Pedestrian and Bicycle Best Practices Guide

Contents

Pedestrian Safety

- P-1 High Visibility Crosswalks
- P-2 Mid-Block Crosswalks
- P-3 Pedestrian & Bicycle Crossing Signals
- P-4 Pedestrian Refuge Islands
- P-5 Tight Intersection Radii

Traffic Control

- T-1 Narrow Traffic Lanes
- T-2 On-Street Parking
- T-3 Raised Medians
- T-4 Channelizing Island
- T-5 Changing One-Way Street to Two-Way
- T-6 Visual Treatments

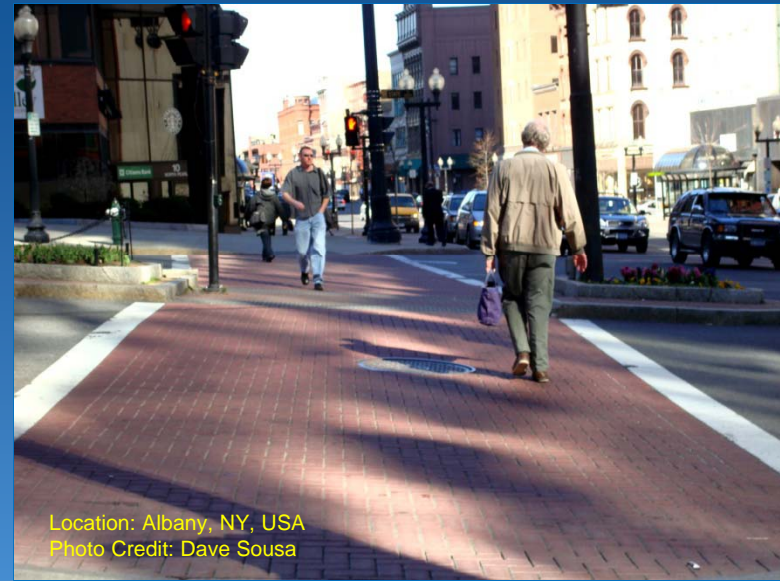
Bicycle Safety

- B-1 Shared Lane Markings or Sharrows
- B-2 Shared Use Trails
- B-3 Bicycle Parking



P-1 High Visibility Crosswalks

Wider, better-designed and more articulated crosswalks greatly improve pedestrian safety. Where possible, extend crosswalks through the tips of medians to provide a pedestrian safety zone. Examples of safe crosswalks in arterial streets include highly illuminated crosswalks, raised crosswalks, raised intersections, and crosswalks with pedestrian count-down signals.

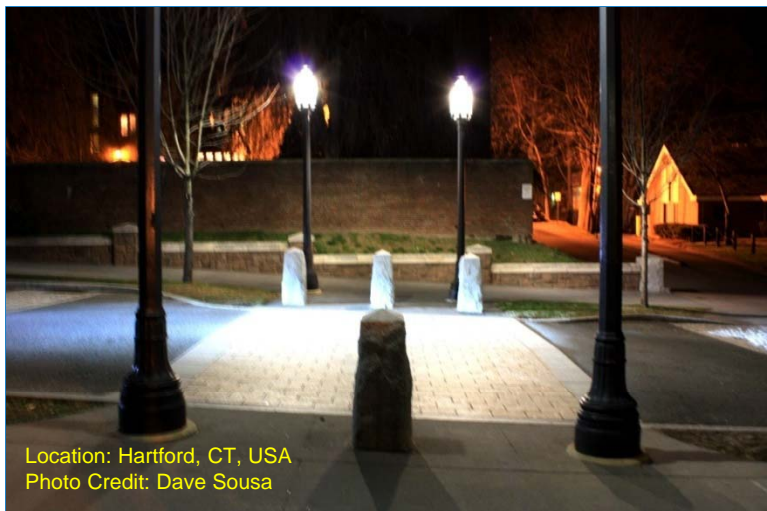


P-2 Mid-Block Crosswalks

Mid-block crosswalks are ped or bike crossings at locations that are not coincident with intersecting streets. They require particular care in design since motorists tend to travel higher speeds between intersections and are not expecting to encounter pedestrians. Safety improvements include area lighting, signage, and varying degrees of flashing warning lights or traffic signals (depending on traffic volumes and speeds). Other particularly effective traffic calming devices at mid-block X-ings include bump-outs, speed tables and raised crosswalks.



Location: Williamstown, MA, USA
Photo Credit: Dave Sousa



Location: Hartford, CT, USA
Photo Credit: Dave Sousa



Location: Vassar St., Cambridge MA
Photo Credit: Dave Sousa

P-3

Pedestrian & Bicycle Crossing Signals

Active warning beacons are user-actuated flashing lights that supplement warning signs at un-signalized intersections or mid-block crosswalks. Rectangular Rapid Flash Beacons (RRFBs), a type of active warning beacon, use an irregular flash pattern similar to emergency flashers on police vehicles. These devices should be used to alert drivers to yield where bicyclists and pedestrians have the right-of-way crossing a road.

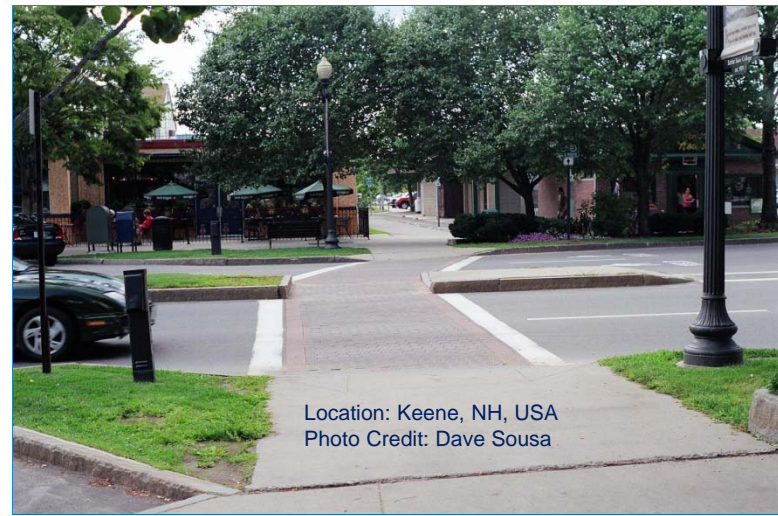
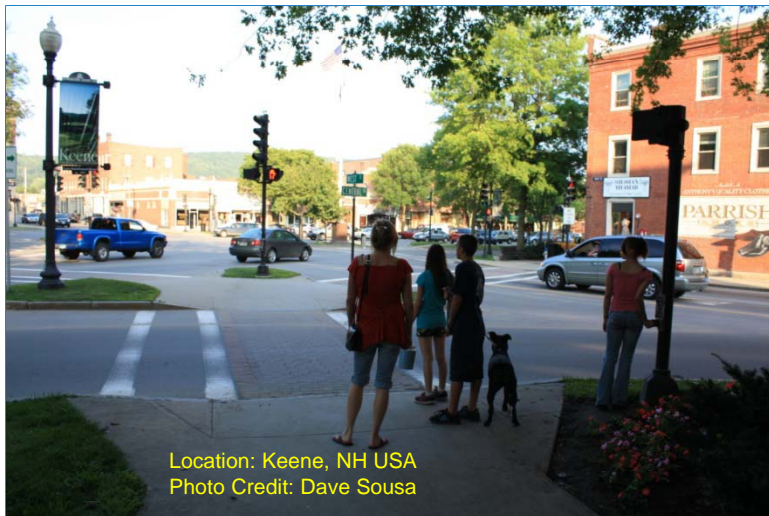
Rectangular Rapid Flashing Beacon
Photo Credit:
www.spotdevices.com



P-4 Pedestrian Refuge Islands

Pedestrian or median refuge islands are protected spaces placed in the center of the street to protect bicyclists and pedestrians at designated crossings. The islands also serve to calm traffic on the street by physically narrowing the roadway and/or reducing the perceived operating width of the roadway.

For streets with high traffic volumes, where the speed limit is often exceeded or on multi-lane streets, special treatments are necessary such as bicycle/pedestrian crossing signals or active warning beacons.

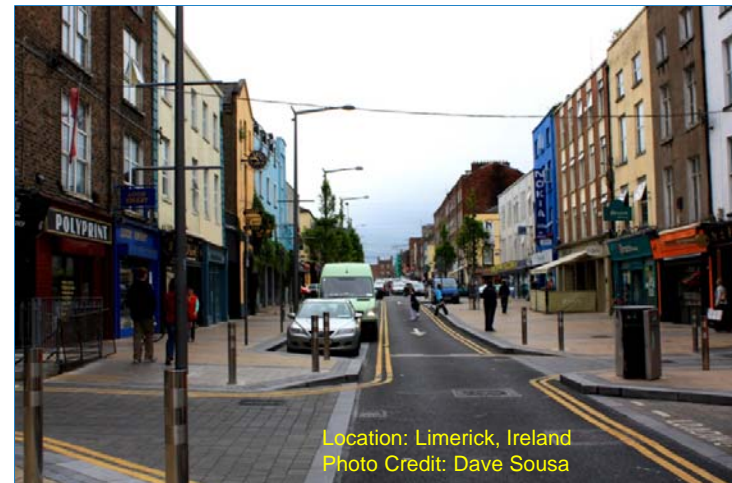


P-5 Tight Intersection Radii

The larger the radius of an intersection curb-line, the faster a vehicle can move around that corner. Tight intersection turning radii, or curb radius reduction should be provided in high pedestrian areas to improve pedestrian safety.

Reducing a corner radius can:

- Inhibit the speed of turning vehicles
- Give pedestrians a better chance to see and be seen by approaching traffic
- Add sidewalk space, thereby shortening the distance to the other side of the street



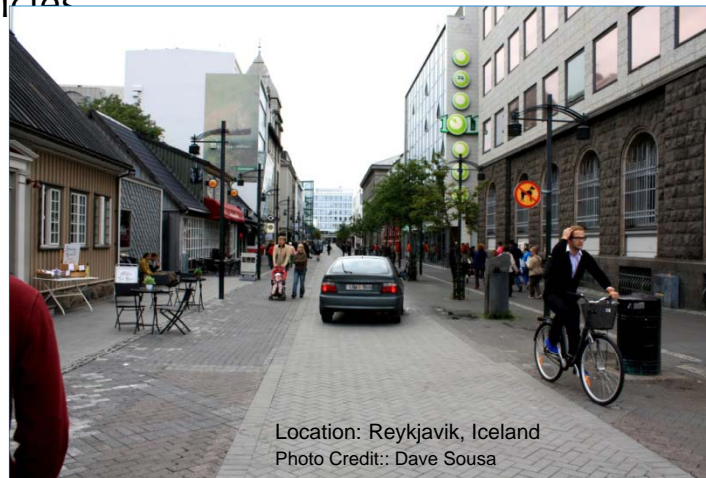
T-1 Narrow Traffic Lanes

Urban streets should be designed for slower travel speeds with narrower travel lanes (10' - 11' vs. 12' - 13') and narrow or no shoulders. Urban streets are often designed for speed in the misguided belief that speed increases capacity.

An urban street can carry more vehicular traffic at 30 mph than it can at 50 mph because the capacity is controlled at signalized intersections. Higher design speeds lead to lower street capacity because higher speed signals require more red clearance time. The increased width requires longer pedestrian cycle times which can reduce green time for vehicles.



Location: Unknown, USA
Photo Credit: www.pedbikeimages.org



Location: Reykjavik, Iceland
Photo Credit: Dave Sousa



Location: Kilkenny, Ireland
Photo Credit: Dave Sousa

T-2

On-Street Parking

The presence and availability of on-street parking serves several critical needs on urban thoroughfares including: to meet parking needs of adjacent uses (especially retail uses); to protect pedestrians from moving traffic; and to increase activity on the street.

On-street parking can provide the following benefits:

- Supports the local commercial economic.
- Increases pedestrian comfort by providing a buffer from moving traffic.
- Slows traffic, making pedestrian crossing safer.
- Facilitates safe and convenient curb-side drop-off of passengers.
- Increases pedestrian activity on the street.
- Provides a cue to motorists that travel speeds are reduced and that they are entering a low speed area.

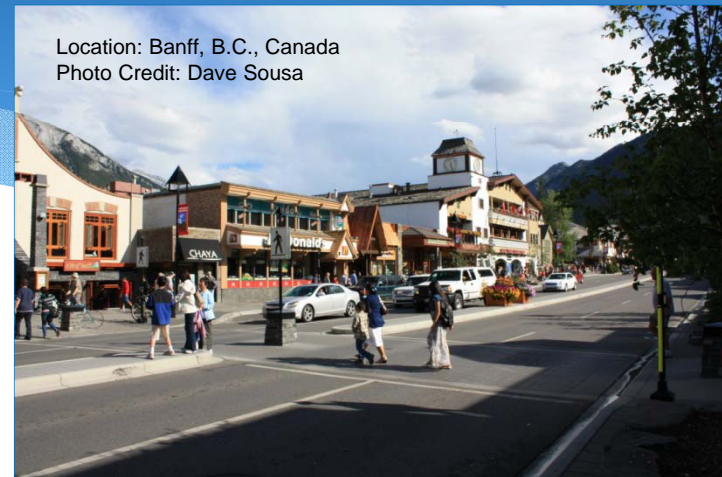
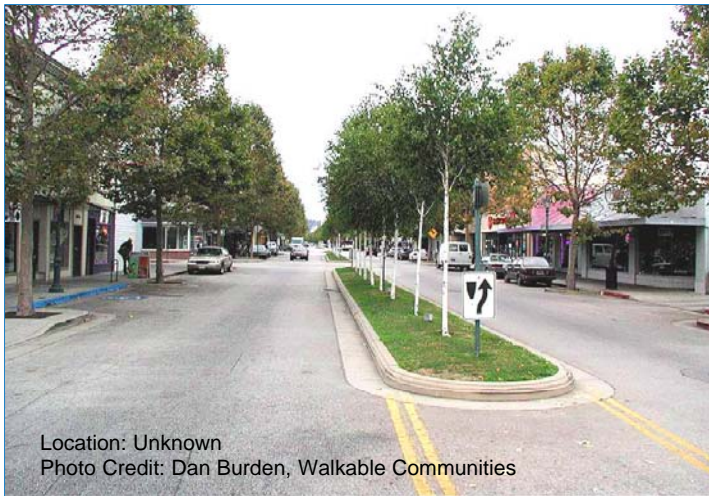


T-3

Raised Medians

Raised islands located along the centerline of a street serve to:

- Visually narrow the travel lanes and reduce traffic speeds;
- Provide a visual amenity when landscaped landscaped or have flower planters or street trees;
- Provide a refuge for pedestrians when they are fitted with a gap at crosswalks.



T-4

Channelizing Island

At many arterial street intersections, pedestrians have difficulty crossing due to right-turn movements and wide crossing distances. Well-designed right turn slip lanes place right-turning vehicles at a 60° angle from through traffic. This angle limits vehicle turning speeds and increases the visibility of pedestrians. Right-turn slip lanes should be accompanied by pedestrian refuge islands within the intersection. Pedestrians can cross the right-turn lane and wait on the island for their walk signal.



Location: Unknown, USA
Photo Credit: www.pedbikeimages.org



Location: Kilkenny, Ireland
Photo Credit: Dave Sousa



Location: Syracuse, NY
Photo Credit: Dave Sousa

T-5

Changing One-Way Streets to Two-Way

Converting downtown streets to two-way travel has many benefits:

- Less driving (less circuitous travel)
- Less confusing streets, more intuitive to travel
- More direct traffic access
- Increases commercial and business traffic
- Decreases traffic speeds
- Increased “natural surveillance of streets = less crime
- Increased visibility of store fronts and business signs, especially at corner businesses

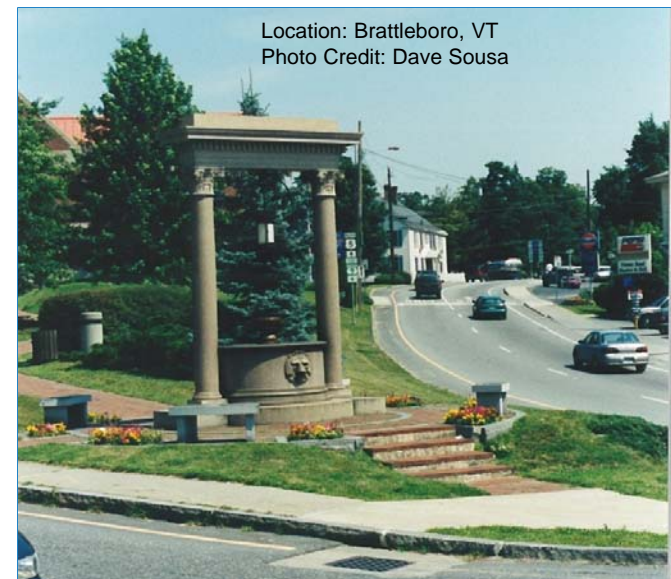


T-6

Visual Treatments

Streetscaping improvements such as street trees, pedestrian-level ornamental street lights, bollards, etc., visually reinforce that the street is in a high pedestrian, slow traffic zone. They also provide vertical elements that enclose the street or reinforce the 'street-wall'.

Studies have shown that vertical enclosure of the street reduces the perceived width of the street and causes drivers to reflexively slow down.



B-1 Shared Use Lanes or Sharrows

A shared-lane marking or sharrow is a street marking installed in a travel lane that is too narrow to allow formal bicycle lanes. Sharrows remind motorists that a bicyclist may also use the lane.

These symbols also serve to assist motorists and bicyclists with maintaining a position in a shared lane in order to encourage safe passing of bicyclists by motorists. The directional nature of chevrons also serve to reduce the incidence of wrong-way bicycling.



B-2 Shared Use Trails

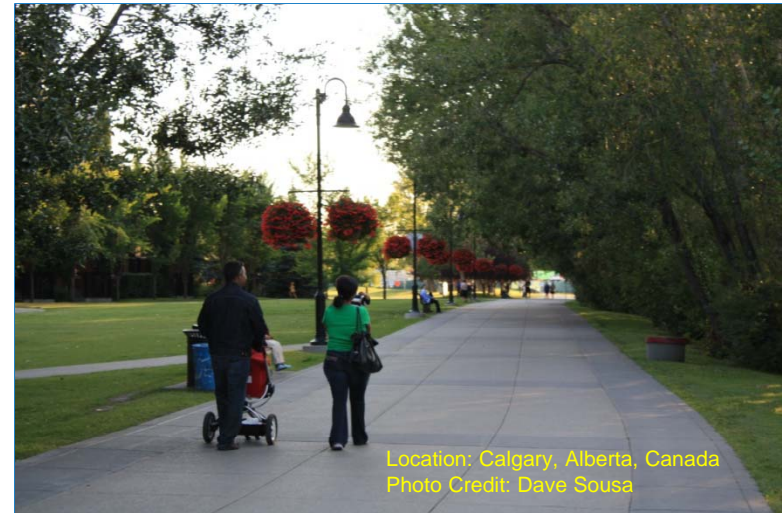
Share use trails (sometimes referred to as multi-use trails or greenways) are off-road pathways intended for use by bicycles, equestrians, and pedestrians. They should also be designed to accommodate wheelchairs and therefore should be paved or have a well-graded stone-dust surface. They are used principally for recreation unless they are built parallel to roadways where they can function like Cycle Tracks.



Location: Florence , Italy
Photo Credit: Dave Sousa



Location: Simsbury, CT
Photo Credit: Dave Sousa



Location: Calgary, Alberta, Canada
Photo Credit: Dave Sousa

B-3 Bike Parking

Bicycle parking needs to be visible, accessible, and conveniently located. Racks should support both wheels and enable the user to lock the frame and wheels of the bike with a cable or U-shaped lock. Long-term parking areas should be covered, well lit, and visible

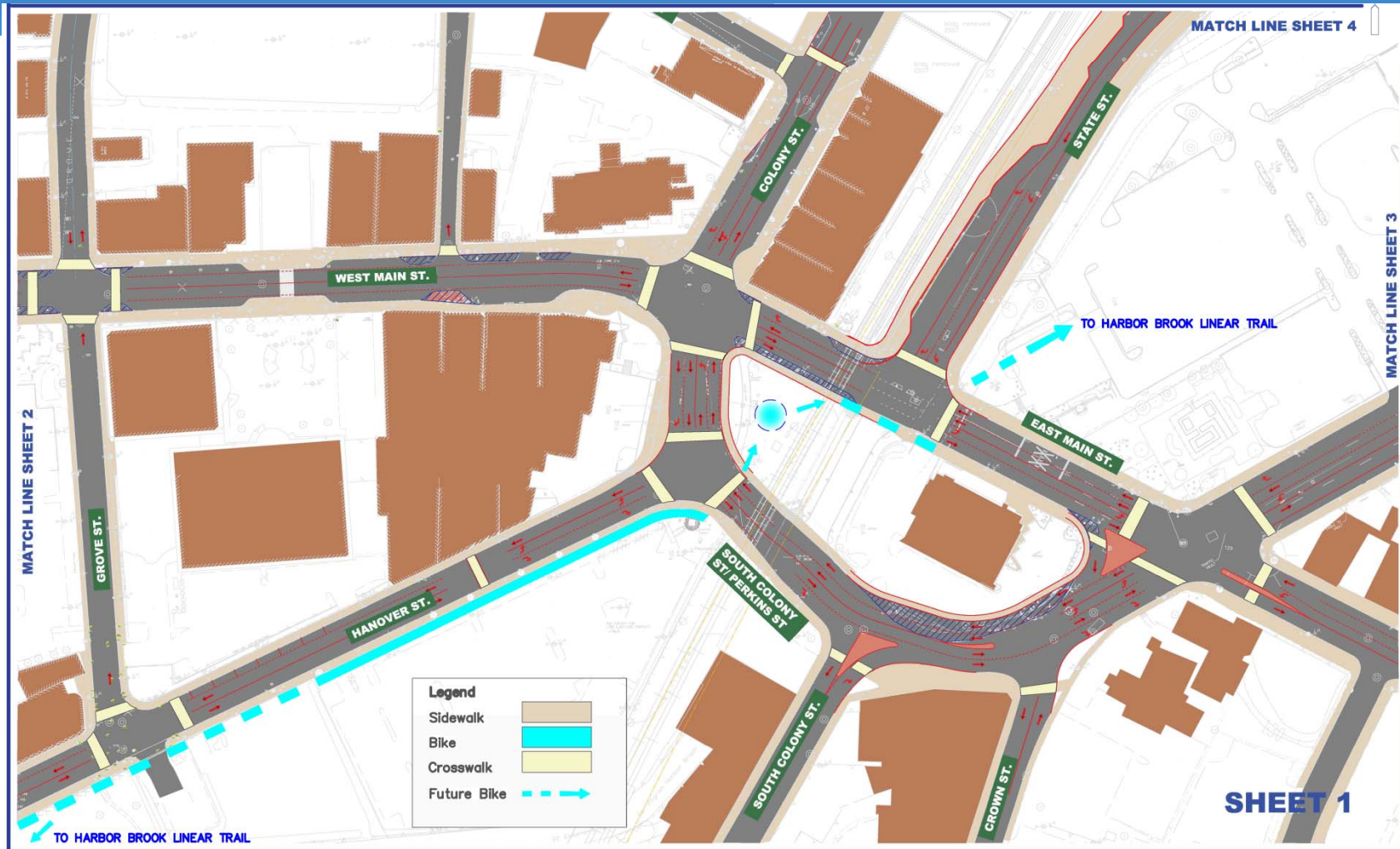


Location: Yale University, New Haven, CT
Photo Credit: Dave Sousa

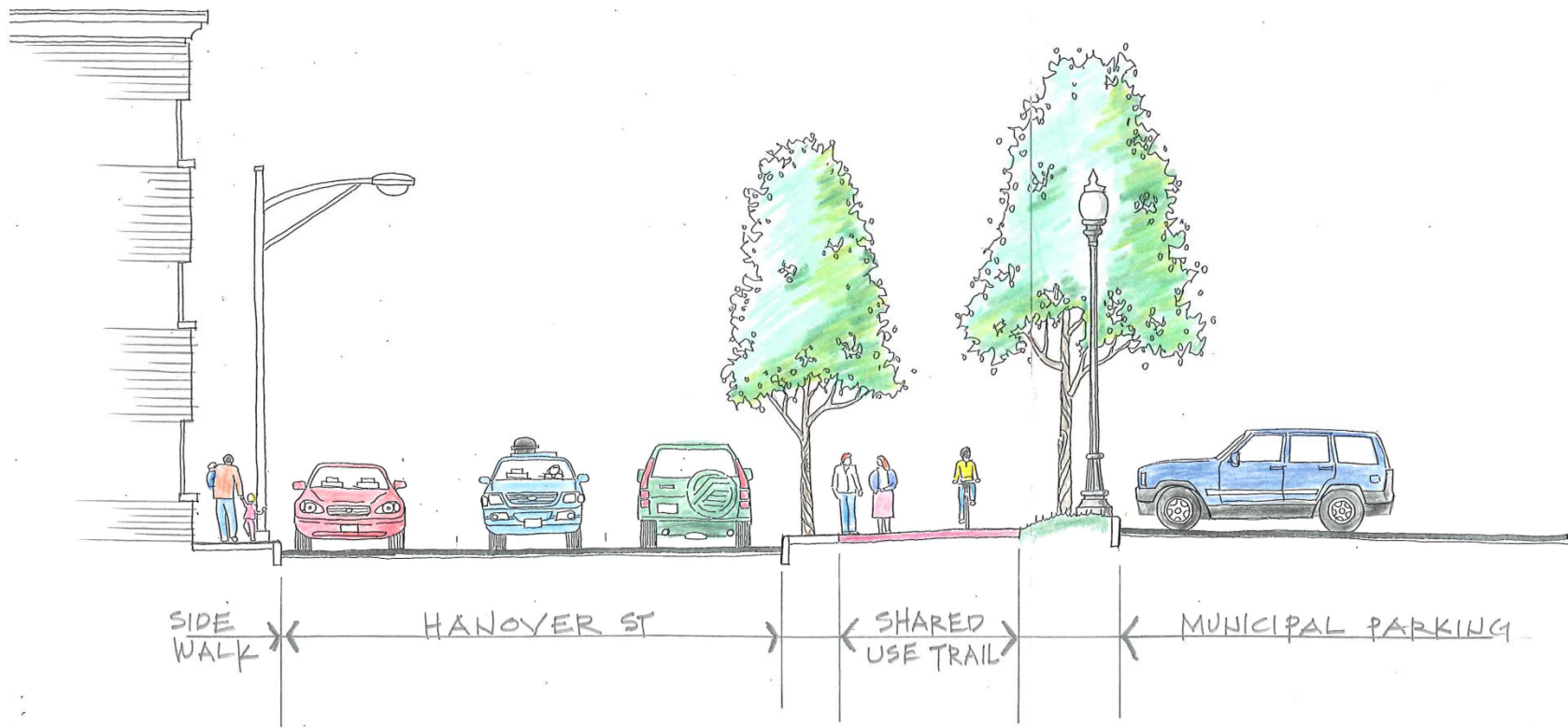


Location: Bridgeport, CT
Photo Credit: Dave Sousa

Pedestrian/Bicycle Concept



Typical Cross Section

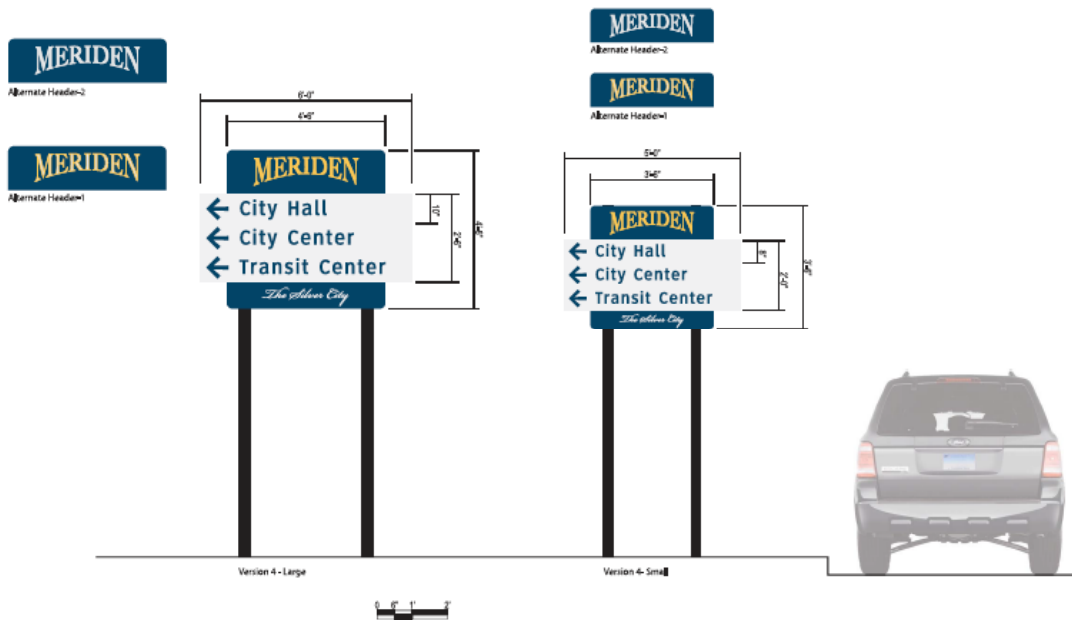


Wayfinding

- * Should identify district or civic institution
 - * City Center / Downtown / Transit Center / Institutions
- * Gateway Signs –
 - * Entrance to City from highways, other towns
- * Intermediate Wayfinding
 - * Along major routes
- * What should the signs look like?
- * What message should they convey?

Wayfinding concepts

Meriden City Center Wayfinding
Gateway Directional Signs





KEY

- Gateway Vehicular Directional Sign
- Vehicular Directional Sign
- Parking Directional
- Single-Faced Sign
- Double-Faced Sign
- Primary Vehicular Routing
- Secondary Vehicular Routing
- One Way Southbound Buses & Taxis Only

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Next Steps

- *Discussion/Stakeholder input
- *Public Information Meeting (Fall 2013)
 - * Review and comment on the proposed design plan
- *Funding application to complete design
- *Pursue grants for construction (2013-2014)
- *Public meetings sponsored by ConnDOT in conjunction with the New Haven Hartford Springfield rail program

THANK YOU!

Online Resources:
www.meridentod.com
www.meridenct.gov

