Streetlights on Complete Streets

Breaking Through Barriers for Non-Motorized Transportation Users

Connecticut Department of Transportation
Volume 02 December 2014

Streetlights on Complete Streets **is a webletter created and posted periodically by the Connecticut Department of Transportation. This is your source for highlights on agency efforts relating to Complete Streets strategies and initiatives.**

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Prepared In-House
by Staff of the State of Connecticut
Department of Transportation
2800 Berlin Turnpike
P.O. Box 317546
Newington, CT 06131-7546

In Cooperation with the
U.S. Department of Transportation's
Federal Highway Administration
and the
Federal Transit Administration
as well as the
University of Connecticut's Technology Transfer Center

Web Site Address
www.ct.gov/dot/completestreets

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Latest Word on the Street

Complete Streets Policy Issued

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On October 23, 2014, Commissioner James Redeker of the Connecticut Department of Transportation signed the agency's first Complete Streets policy (Policy Number Ex.O.-31).

This policy is the result of a coordinated effort with the Connecticut Bicycle and Pedestrian Advisory Board as well as the collaboration of agency staff from financial, planning, and engineering disciplines.

To view and print the policy in its official form, go to Complete Streets Central on our agency web page: www.ct.gov/dot/completestreets.

Complete Streets Central

To view Complete Streets related materials including the report, webletters, policy, and any other relevant information, visit our dedicated webpage to Complete Streets at www.ct.gov/dot/completestreets.

Roadway Safety Audit/Assessment (RSA) Training

A two-day roadway safety audit/assessment (RSA) training course was offered by the University of Connecticut's Technology Transfer (T2) Center at two locations, Mansfield and New Britain, in November.

The course was attended by representatives of a variety of disciplines and organizations from throughout Connecticut:

Federal Highway Administration
University of Connecticut
Connecticut Department of Transportation
City of Stamford
Town of Durham
Town of East Hampton
Town of Mansfield
Town of New Britain
Town of Simsbury
Town of South Windsor
Milone & MacBroom, Inc.
VN Engineers, Inc.

The course (FHWA-NHI-380069) is part of the available curriculum of the National Highway Institute list.

The instructors had the class engaged straight through two days, with great examples of national and local road safety concerns. The field visit provided a valuable opportunity to practice and experience the course teachings.

Over our careers, many of us have attended courses where the lessons could never be reasonably implemented for any number of reasons. However, this is one course that could truly help public and private agencies design safer transportation systems.

A number of this year's participants have identified the course as some of the best training of their career. The teachings are practical, applicable, and repeatable.

The concept of RSAs builds on our quest to achieve safer road designs within limited resources, including time, funds and support, while also being inclusive through early coordination with stakeholders.

Multi-disciplinary in its approach, an RSA exchanges knowledge for achieving cost-effective, comprehensive, consistent and prioritized results. RSAs offer potential for helping transportation engineers address the concerns of vulnerable users, law enforcement personnel, and public works/maintenance crews through achievable and affordable roadway designs as well as improvements to existing systems. Through the RSA process, short, mid and long-term solutions, including low cost options, can be identified.

Thanks so much to Ms. Donna Shea and Ms. Lisa Knight at the UCONN T2 Center for arranging for this course. Special thanks are also given to Mr. Craig Allred from the FHWA Resource Center and Mr. Anthony Lorenzetti, Safety Circuit Rider, from the T2 Center who taught the course.

Consider hosting this course for your agency and partners! Go to www.nhi.fhwa.dot.gov for a course description. Local agencies in Connecticut who are interested in undertaking an RSA process, can contact Anthony Lorenzetti (lorenzetti@engr.uconn.edu) at UCONN to arrange for a one-day version of this course.

Crossing Beacons as Countermeasures for Unique Conditions

For unique conditions, there are some alternative countermeasures that can be installed to address pedestrian crossings.

Check out the discussions here on Pedestrian Hybrid Beacons (PHBs) /High-intensity Activated crossWalKs (HAWKs) as well as Rectangular Rapid Flashing Beacons (RRFBs). PHBs are sometimes also referred to as HAWK signals.

The Department will carefully consider the use of such beacons on a case by case scenario as they are not appropriate for all crossings.

Conditions, including but not limited to roadway geometry, sight line, vehicle volume/speed, driveway access points, nearby traffic controls, and typical pedestrian traffic patterns will influence the selection of any countermeasure.

Pedestrian Hybrid Beacon (PHB) /High-intensity Activated crossWalK (HAWK) Signal

PHBs/HAWKs are designed for crossings that do not otherwise warrant a traffic signal but may have occasional pedestrian crossings on a relatively higher volume/speed roadway, potentially with multiple lanes.

PHBs/HAWKs are being installed in select locations in the State, including two in Stamford (State Project DOT01350327). The purpose of the Stamford project is to enhance pedestrian access between the east and west sides of State Route 137. An existing crosswalk and median located just south of Bell Street will be reconfigured so that pedestrians will have a direct view of oncoming traffic. A new mid-block crosswalk will be installed on Route 137 between Main Street and Broad Street. Additionally, the project will include curb bump-outs and median barrier with plantings, swag chains, and bollards.

For an animated view of a HAWK signal and highlights of how traffic and pedestrians should traverse these crossings, go to the information for DOT01350327 at www.ct.gov/dot/highwaydesignprojects.

Another HAWK is planned for Cheshire (State Project DOT00250135). Read additional detail on this project in the Special Look at Alternative Systems section of this issue of *Streetlights*.

Rectangular Rapid Flash Beacon (RRFB)

A Rectangular Rapid Flash Beacon (RRFB) works in unison with typical cautionary pedestrian crossing signs in areas of school zones or general pedestrian crossings. With RRFBs, however, a LED light is also provided that blinks at an rapid pace making for improved driver warning in low light situations.

A RRFB was installed on New Britain Avenue in West Hartford (State Project DOT01550162) during a combined streetscape and safety improvement project. The RRFB was chosen, in this case, to address an area where there was a (1) high volume of pedestrian traffic crossing midblock between a parking area and a local business; and (2) the distance to the nearest signalized intersection was such that pedestrians could not be easily encouraged to walk the additional distance.

Two yellow and black pedestrian crossing signs were installed with arrows below them at the crosswalk. Directly between the diamond shape signs and the arrow signs, there are beacons that are activated to flash when a pedestrian presses the ped button. This aids oncoming traffic by providing advance notice that a pedestrian is in the crosswalk. Opposing traffic has the same signs and flashing beacons.

School Zone Warning Sign Upgrade

In conformance with the Manual on Uniform Traffic Control Devices (MUTCD), school zone signage throughout the State has been updated to current standards.

This manual is used throughout the country to ensure uniformity of traffic control devices.

This initiative provided school signs throughout the State that meet the latest federal guidelines for school warning signs.

In many areas, an advisory speed plate, typically indicating 25 miles per hour, was sub-mounted to school warning signs. These signs were not citing a regulatory limit and, therefore, the speed noted on these signs was not enforceable by police. The new signage avoids this confusion for the motorist and focuses on advance warning of the upcoming school zone.

Under the project, non-conforming signs were replaced with the appropriate school warning sign and the advisory speed plates were replaced with an “AHEAD” sub-plate.

Warning or advisory signs are yellow and are meant to provide advance warning to road users of an unexpected condition. Per the MUTCD, the yellow that is now used on these signs is a fluorescent yellow-green tone, different than the signs you may have grown up seeing.

Whereas, regulatory signs are normally black and white with the exception of STOP, YIELD, and DO NOT ENTER signs.

For local public agencies wishing to pursue regulatory school zone signage, options exist but such changes must be approved through the Office of the State Traffic Administration (OSTA).

The available options include:

1) A "School Zone Ahead Fines Doubled" zone

2) A "School Speed Limit XX mph When Flashing" zone

3) A combination "School Zone Ahead Fines Doubled" and a "School Speed Limit XX mph When Flashing" zone

As indicated, all of these options require OSTA review and approval.

Also, the second and third options utilize a "School Speed Limit When Flashing" sign which requires that the municipality pay for installation of flashers and the electricity to power the flashers.

New Statewide Pedestrian Initiative - Crosswalks and Advance Yield/Stop Lines

The standard for crosswalk markings has been revised - reference the CT DOT Standard Sheet for Special Details and Markings for Two-Way Highways (TR-1210_03).

The dimensions for all crosswalks will be 8 feet wide with 16-inch wide bars and 24-inch wide spaces. Additionally, the Department will begin using yield lines and yield signing for mid-block crosswalks to enhance pedestrian safety.

Four projects are being undertaken statewide to provide for new advance yield pavement markings and related signage: DOT01710396, DOT01720438, DOT01730453, DOT01740394).

Existing crosswalk markings will not be altered as part of these projects to avoid damage to the pavement in the eradication process. Instead, crosswalk markings will be upgraded the next time that the road is identified for a paving overlay or reconstruction.

Check out the Advance Yield/Stop Lines countermeasure in the Pedestrian Safety Guide and Countermeasure Selection System at www.pedbikesafe.org/PEDSAFE for more information.

Year-Round Maintenance

It is winter time again and a good reminder that designing Complete Streets requires consideration of year-round maintenance needs. In addition to useful life expectancies for normal wear and tear, our New England weather creates added complications for roadway and pedestrian component designs. Also, as the snow flies, remember to clear sidewalks. Pedestrians, bicyclists and persons with disabilities rely on these networks for mobility.

Middletown Route 9/Waterfront Roadway Access

For those familiar with Route 9 in Middletown, you may have encountered a stop controlled ramp with no acceleration lane when entering onto Route 9 from Route 17.

The Department, under State Project DOT00820309, is currently reviewing this ramp which is situated just south of Harbor Park and the Mattabesett Canoe Club Restaurant.

Additionally, the Department is reviewing the nearby northbound on-ramp from Harbor Drive and the intersection below the bridge in that area of Route 9.

At this time, the proposed concept includes the following elements:

- widen the existing bridge to accommodate a full length acceleration lane and remove the stop-control condition at the northbound on-ramp from Route 17 to Route 9;
- relocate an intersection (Union Street, Harbor Drive and River Road) currently located under a Route 9 bridge immediately north of the Route 17 on ramp and realign the intersection further east across Sumner Brook;
- remove the northbound on-ramp from Harbor Drive and change Harbor Drive into a pedestrian and bicycle friendly local access cul-de-sac with pedestrian amenities and on-street parking.

The combination of these improvements will increase safety for vehicles and pedestrians as well as transform the character of the riverfront access. Closing the ramp will greatly reduce the volume and speed of vehicles now utilizing Harbor Drive.

The concept addresses an accident prone area as well as provides for improved bicycle/pedestrian passage way beneath Route 9 from downtown to the park along the river.

This proposal aligns well with City redevelopment plans for the waterfront area.

A public meeting has been held in the City to review the concept and there is general support from both the community and the City. If funding can be secured, design can potentially begin in the spring of next year.

Hartford Bike Lanes on Broad Street

Bicycle lanes have been constructed (DOT00630671) along Broad Street between Capital Avenue and Farmington Avenue in Hartford.

Broad Street is a prime location for creating bicycle-friendly access ways.

Broad Street is one of just a few north-south city streets that cross the I-84 corridor and connect the Frog Hollow neighborhood to the south with Asylum Hill neighborhood to the north.

Broad Street also carries significant traffic flow to the eastbound I-84 on-ramp.

The bike lanes were completed in November 2014 as part of a coordinated contract for two construction projects: the first, related to CT*fastrak* which included a bridge reconstruction over the Amtrak/ CT*fastrak* corridor and, the second, a City of Hartford project to improve the streetscape and operations of Broad Street.

Originally, neither of the two Broad Street project designs included bicycle lanes, as the CT*fastrak* design team and the City had originally concluded that the street was too tight to fit in exclusive lanes.

However, during construction, a local bicycle advocate urged the Department to reconsider the decision, especially in light of the closure of the nearby Flower Street at-grade railroad crossing.

Through reviews of several design alternatives and coordination and approval from the City, the Department made adjustments during construction to the street's design by narrowing travel lanes and modifying curb locations - enough to fit in five-foot wide exclusive bicycle lanes.

The Department then advocated for the inclusion of two important design features: green colored pavement and bike boxes. The City embraced these features, which many other agencies across the country have used successfully.

The Department secured "Interim Approval" from Federal Highway Administration for the optional use of green colored pavement in the marked bicycle lanes.

The green color was added in two different methods. In the majority of areas, the green color was added as a surface paint.

However, in the areas where motor vehicles can cross the bike lanes, the color was applied as a hot resin-based compound, ¾-inch thick, to reduce the need to repaint traffic-worn areas.

Technical and Safety Briefs UCONN Technology Transfer Center

Find Briefs and Safety Technical Briefs on a variety of topics under Resources on the UCONN Technology Transfer (T2) Center website: www.t2center.uconn.edu. These are great resources! Check them out. Here is a list of available topics. The latest, of which, is a technical brief on Share the Road.

Technical Briefs:

2010-1 Winter Operations Survival Lessons
2010-2 Part One - Traffic Safety Primer for Local Elected Officials
2010-3 Part Two - What is a Traffic Impact Study and When is One Needed
2011-4 Winter Operations Communication Plans
2011-5 Guidelines for Hiring Tree Contractors
2011-6 The Many Benefits of Warm Mix Asphalt
2012-7 Countdown to the Narrowbanding Deadline
2013-8 ADA Curb Ramp Compliance
2014-1 Road Centerline and Edge Line Pavement Markings
2014-2 T2 Center Tech Brief 2014-2 - Connecticut Local Roads Safety Plans
2014-3 The When, Where and How of Mid-Block Crosswalks
2014-4 Proper Posting of Speed Limits (Final)
2014-5 Sharing the Road for Motorists, Pedestrians and Cyclists

Safety Briefs:

2010-1 Noise Induced Hearing Loss Safety Brief
2010-2 Work Zone Safety
2010-3 Protecting Workers from Effects of Heat
2010-4 Hard Hat Use
2010-5 Safe Motor Grader Operations
2010-6 Operational Safety for Public Works Responders
2010-7 Protective Equipment for Workers in Hurricane Flood Response
2010-8 Chainsaw Safety - Who Should Wear Personal Protective Equipment?
2011-9 Skid Steer Loader Safety Tips
2011-10 New Connecticut Legislation - Fines Doubled in Municipal Work Zones
2012-11 Fire Safety at the Shop
2012-12 Lifting Safety: Tips to Help Prevent Back Injuries
2012-13 Mowing Safety Tips
2013-14 Using Portable Generators Safely

New Retro-Reflective Pavement Paint and Retrofitted Truck

The Department recently followed the State of Mississippi's example in introducing the VISILOK® pavement marking system to Connecticut via a pilot in District 2.

Doing so required retrofitting one of the maintenance paint trucks as was done in Mississippi.

Some of the locations painted to date are listed below:

Route 12 Killingly Sr-608 to Route 101 centerline only;
Route 12 Putnam, Thompson Heritage Rd. to Route 131 centerline and shoulder;
Route 12 Plainfield, Griswold Millbrook Rd. to Route 201 centerline only;
Route 85 Salem Route 82 to Shady Brook Rest Area centerline and shoulder;
Route 165 Voluntown, Griswold Rhode Island State Line to Route 201 centerline only;
Route 149 E. Haddam Colchester Town Line to Sr-609 centerline only;
Route 151 E. Haddam, Haddam, E. Hampton Sr-609 to Route 66 centerline only;
Route 44 Putnam I-395 to Rhode Island S.L. centerline only;
Sr-623, 624 N. London, Waterford right, left edge and skips;
Sr-437, 636 N. London centerline, shoulder and skips.

Our maintenance staff have indicated that the new paint has been very effective as it increases drying time, reflectivity and claims.

In 2014, VISILOK® was applied as part of all paving projects in District 2.
Route 2 W.B. Colchester Route 11 to Route 149;
Route 131 Thompson Massachusetts State Line to Route 197;
Route 148 Lyme Sr-431 to Route 82;
Route 216 N. Stonington Route 49 to Route 184;
Route 49 Voluntown N. Stonington Town Line to Route 49;
Route 1 E. Lyme, Waterford Route 161 to Oswegatchie Fire Department;
Route 1 Westbrook Sr-625 to O. Saybrook Town Line;
Sr-433 Montville Route 32 to State Park entrance;
Sr-608 Bozrah Sr-612 to Norwich Town Line.

Highlights:
VISILOK® is described on the company's website as a glass bead intermix system that improves the dry time of waterborne paint so that drop on glass beads are no longer knocked out by traffic which, among other qualities: enables fast dry time for increased paint thickness; reduces coning and traffic control costs; and improves marking performance in damp, humid or cold climates. (www.pottersbeads.com/hs/NorthAmerica/Products)

Walk to School Day (October 8, 2014)

Thirty-one (31) Connecticut schools signed up to participate in Walk to School Day. This was a 50% increase over last year! Bike to School Day will be celebrated May 6, 2015 - it is never too early to start planning!

Still Shining-Updates & Ongoing

UPDATE: East Hartford "Road Diet"

A "road diet" is being designed as part of improvements for the area extending between U.S. Route 5 (Main Street) and Mary Street under State Project DOT00420315. Refer to the *Complete Streets Report* and Volume 01 of *Streetlights* for greater detail on the project. Advertising of the project is anticipated for January 2015, with construction to commence in the Spring of 2015.

UPDATE: Feasibility Study for a Merritt Parkway Trail (DOT01730410)

The Department has completed the public involvement phase for studying the feasibility of constructing a multi-use trail in the vicinity of the Merritt Parkway.

Detail on this study was provided in the *Complete Streets Report* (www.ct.gov/dot/completestreets) or from the study page (www.ct.gov/dot/merritttrailstudy).

The public involvement phase included many public meetings and workshops that were held in the municipalities along the Parkway.

Each community has been provided with a conceptual layout, showing where boardwalks, bridges and tunnels might be incorporated. The layouts also identified how the trail could potentially connect to local places of interest.

Moving forward, a report will be developed to summarize findings and community interests learned during the public involvement process. This report will likely be completed before the end of the summer.

UPDATE: CTfastrak

Construction of the CT*fastrak* guideway began in May 2012. Open houses are being held throughout central Connecticut.

The CT*fastrak* Bus Rapid Transit system is scheduled to open for passenger service on March 28, 2015.

Greater detail on CT*fastrak* can be found in the *Complete Streets Report* (www.ct.gov/dot/completestreets) and at ctfastrak.com.

UPDATE: Addressing Stratford Sidewalks

The need to address gaps in the sidewalk network along a stretch of U.S. Route 1 (Barnum Avenue Cutoff) in Stratford was identified in the *Complete Streets Report*.

Specifically, the urbanized area between Route 113 (Main Street) and Ferry Boulevard where Route 1 crosses over the Metro North railroad line was under review.

Refer to the *Complete Streets Report* for greater detail on the project.

This year, our State Design and Bridge Design staff worked together to include these much needed new sidewalks in the project to replace the bridge carrying Route 1 over the Metro North line.

UPDATE: Eleven-Foot Travel Lanes

This year (2014), 216 miles of two-lane secondary roadways were resurfaced. After restriping, 192, or 89 percent, of these two-lane miles now accommodate travel lane widths of eleven-feet.

Special Look at Alternative Systems

Alternative systems, such as multi-use trails, can offer safe, healthy, functional and aesthetically pleasing travel ways for non-motorized transportation users when designed with the community in mind.

As discussed in the *Complete Streets Report*, the Department is pursuing a number of multi-use trail projects to provide more statewide options and connectivity.

Updates on multi-use trail projects will be covered in *Streetlights* to showcase the expanded network available for bicyclists and pedestrians. Take a closer look at some of the initiatives that are underway, in design or recently completed.

Projects identified as UPDATES were highlighted in an earlier edition of *Streetlights* and/or the *Complete Streets Report* - refer to those publications for greater detail on these projects.

www.ct.gov/dot/completestreets

UPDATE: Northeastern CT - Windham/Chaplin/Hampton/Pomfret/Putnam/Thompson (State Project DOT01720421)

In a partnership between the Department and the Connecticut Department of Energy and Environmental Protection (CT DEEP), $669,140 of federal funds were obligated in August 2013 with a matching share of $167,298 in State funds, for a total of $836,493.

Approximately seven miles of the "Airline Trail – North" project have been resurfaced and a preliminary review of the budget indicates that at least seventeen miles of the proposed trail can be resurfaced with the funds.

UPDATE: Trumbull (State Project DOT01440186)

A new ten-foot wide multi-use trail was completed this fall as part of the Pequonnock River Trail system in Trumbull. The project included two sections.

UPDATE: Bridgeport (State Project DOT00150359)

Another section of multi-use trail that will also make up part of the Pequonnock River Trail system was completed this fall in Bridgeport.

UPDATE: New Haven (State Project DOT00920621)

Final design plans are expected to be ready in the winter of 2015.

Windham (State Project DOT01630194)

This project is referred to as the Hop River Trail / Airline Trail Extension and comprises of approximately 1.4-mile pedestrian/bike trail along the Willimantic River in the Town of Windham.

The section will extend both the Hop River Trail and the Airline Trail.

The extension of the Hop River Trail will begin at a point on the northern side of Route 66/Columbia Avenue, just east of the Route 66 Bridge over the Willimantic River and continue east under the Route 66 overpass.

The trail will generally parallel the Willimantic River where it will intersect with the Airline Trail at the abandoned railroad trestle bridge adjacent to the to Connecticut Eastern Railroad Museum before terminating at a proposed parking area approximately 800 feet west of Bridge Street.

The construction cost is approximately $1.8M with construction excepted to start in the spring of 2015.

East Hartford (State Project DOT00420300/DOT00420301)

The first project (DOT00420300) begins at the north side of the Charter Oak Bridge and continues south along Route 2 turning along Willow Street Extension and ending at Main Street.

The second project (DOT00420301) begins at the Simmons Road bridge over I-84 and continues east along I-84 under the Forbes Street bridge and connecting with the existing Charter Oak Greenway.

These two projects are in final design and will help close a gap in the Charter Oak Greenway that is approximately 1.77 miles.

The construction cost is approximately $2.5 million and construction is expected to start in the spring of 2015.

Cheshire (State Project DOT00250135)

The Town proposes to design/permit approximately 8,000 feet of multi-use trail along a CT DEEP owned railroad grade between Route 68 and Route 70 to just north of Jarvis Street in the Town of Cheshire.

In addition to a twelve-foot trail, design elements include a stone dust shoulder, culvert repair/installation, benches, lighting, landscaping, signage, parking lot, prefabricated bridge and crosswalks.

A HAWK (High-intensity Activated crossWalK) signal system will be provided for aiding pedestrians crossing at the West Main Street intersection.

This project, estimated at $3.6M, is funded through multiple federal and local sources. The project has been advertised and construction will commence in 2015.

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