Evaluating the pedestrian, bicycle, and vehicular access for selected sites in Franklin County.

Franklin County Complete Streets Project

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Franklin Regional Council of Governments
September 2012
2011-2012
Unified Planning Work Program

Task 3.1
Franklin County Complete Streets Project

September 30, 2012

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Franklin County Complete Streets Project

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Franklin County Complete Streets Project

Project Background

The objective of Task 3.1 of the 2011-2012 Unified Planning Work Program is to conduct a complete streets analysis for particular areas in Franklin County. The intention of the task is to select specific areas with concentrations of existing pedestrian and bicycle activities, and undertake a complete streets analysis. The concept of the “complete street” is that the roadway has safe access for all users including pedestrians, bicyclists, motorists and transit riders. This analysis is intended to be the next step to previously completed mode specific planning activities which have included the development of the Franklin County Bikeway Plan Update (2009) and the Franklin County Pedestrian Plan (2010). It is an opportunity to identify and/or design improvements that will create a street that is “complete” and safe for all users.

According to the project description in the Franklin Regional 2011-2012 Unified Planning Work Program, the following procedures were to be completed:

- Identify regional locations that would benefit from a complete streets analysis;
- Examine past recommendations for the selected sites from previously completed plans;
- Conduct a complete streets assessment for the selected locations;
- Prepare a summary of recommended improvements for all modes; and
- Assist the Town in preparing a Project Need Form if improvements could be eligible for Federal Aid.

“Complete Streets” Explained

“Complete Streets” and “Complete Streets” Policies

Complete Streets are defined as streets for everyone. Complete Streets are designed and operated to enable safe access for all users including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. All users must be able to safely move along and across a complete street. Complete Streets are easy to cross, walk to shops, and bicycle to work. Complete streets allow buses to run on-time, and are safe for people to walk to and from their destinations.

By adopting a Complete Streets policy, communities direct their transportation planners and engineers to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability, or mode of transportation. This means that every transportation project will make the street network better and safer for drivers, transit users, pedestrians, and bicyclists (information from the National Complete Streets Coalition).

What does a “Complete Street” look like?

There is no singular design prescription for Complete Streets; each one is unique and responds to its community context. A complete street may include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and
safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more. A complete street is designed to balance safety and convenience for everyone using the road.

Incomplete streets are designed with only cars in mind. Transportation choices are limited by making walking, bicycling, and taking public transportation inconvenient, unattractive, and, too often, dangerous. By including the needs of people on foot, public transportation, and bicycles means that walking, riding bikes, and riding buses and trains will be safer and easier. People of all ages and abilities will have more options when traveling to work, to school, to the grocery store, and to visit family. Making these travel choices more convenient, attractive, and safe means people do not need to rely solely on automobiles.

**What are the benefits of a “Complete Street”?**

*Complete Streets are safer.* A Federal Highways Administration safety review found that streets designed with sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for disabled travelers improve pedestrian safety. Some features, such as medians, improve safety for all users: they enable pedestrians to cross busy roads in two stages, reduce left-turning motorist crashes to zero, and improve bicycle safety.

*Complete Streets encourage walking and bicycling for a healthier lifestyle.* The Centers for Disease Control and Prevention recently named adoption of Complete Streets policies as a recommended strategy to prevent obesity.

*Complete Streets lower the cost of transportation.* Walking, bicycling and taking transit provide additional lower cost transportation options for people. Taking public transportation, for example, can save individuals $9,581 each year.

**Franklin County Locations for Evaluation**

Initially eight locations were identified as potential sites for a complete streets analysis. These locations were chosen because they were known for having multiple types of transportation users. The locations also have accessibility issues for pedestrians and/or bicycles. The following is a list of the locations that were initially chosen and site visits were completed to all of these locations in order to determine if they were good areas for more detailed complete streets analyses:

- In Bernardston – the area on Route 5/10 near the Kringle Candle Store;
- In Colrain Center - the town center area and particularly the intersection of Main Road, Greenfield Road and Jacksonville Road;
- In Greenfield - the intersection of Route 2A, River Street and Shelburne Road in Greenfield (at the Dunkin Donuts);
- In Greenfield - the intersection of Federal and Pleasant Streets;
- In Greenfield - the intersection of Deerfield Street (Route 5/10) and Cheapside Streets in Greenfield;
- In Greenfield - the area near the John W. Olver Transit Center (the intersections of Bank Row and Olive Street, and Hope Street and Olive Street);
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- In South Deerfield - the Route 5/10 corridor from the intersection of Route 116 (Sunderland Road) and Route 5/10 (Greenfield Road) to just north of the intersection of Route 5/10 (Greenfield Road) and Route 116 (Conway Road); and
- In Deerfield - South Deerfield Center.

After a site visit to each of the eight locations, it was determined that the intersection of Federal and Pleasant Streets in Greenfield and the area on Route 5/10 in Bernardston near the Kringle Candle Store did not need further evaluation. These locations were already well adapted to accommodate multiple roadway users and additional improvements were not warranted at this time.

The intersection of Federal and Pleasant Street was in need of curb-cut and crosswalk improvements across Pleasant Street on the west side of Federal Street. There is not a designated crossing of Federal Street at this intersection. The designated crossing on Federal Street is to the south of this intersection. Therefore, other than curbcut improvements at the crossing of Pleasant Street at Federal Street, no other pedestrian infrastructure is needed at this location.

On Route 5/10 in Bernardston near the Kringle Candle Store a pedestrian activated beacon light was already installed as part of the sidewalk and roadway improvement completed for the Kringle Candle Store construction. Therefore, this crossing location is very well equipped to accommodate pedestrians.

In addition, South Deerfield center was considered for a complete streets analysis, but the Town is already working to facilitate a more detailed streetscape and pedestrian facility analysis as part of the U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant. This work will result in a Complete Streets and Downtown Livability Plan, and will seek to better connect the residential neighborhoods of South Deerfield with the downtown commercial district, surrounding schools, and the former Oxford Food Site. As part of this plan, an evaluation of vehicular, pedestrian, and bicycle circulation will be conducted in addition to a parking analysis and the development of streetscape improvement recommendations.

After the initial site visits and analysis it was determined that the other five locations are in need of improvements to make these locations better for all users. The following are detailed descriptions of the locations, the issues that were observed, the proposed improvements, and the next steps.

**Colrain Center: Main Road, Jacksonville Road and Greenfield Road**

*Background*

Colrain center is located at the intersection of Main Road (Route 112), Jacksonville Road (Route 112) and Greenfield Road. These three roads intersect at a three-legged intersection in the center of town. There are residences, civic uses such as the library, post office (all residents receive their mail at the post office), and a local pizza restaurant (closed during the project timeframe but the Town hopes that a new one will open at this location that has historically housed restaurants) near this main intersection. The Colrain Central School is located to the north on Jacksonville Road within walking distance of the main intersection at the center of town.

The study area for the complete street analysis includes the main intersection at the center of town in Colrain and the three intersecting roads leading up to the intersection. Initially, the study area included the section of Main Road (Route 112) from the main intersection west to the post office, but it was extended at the request of the Selectboard to include the section of Main Road extending to the Town
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Hall (located approximately one mile west of the main intersection). Residences, multi-unit housing, a church, and the location of a commercial site (previously a pizza restaurant) within the project area. Additionally, the Town has discussed developing a senior center in the village center area at the main intersection.

Looking to the west at Main Road from the intersection of Main Road, Jacksonville Road and Greenfield Road in the center of Colrain.

The intersection of Greenfield Road, Route 112 (Jacksonville Road), and Route 112 (Main Road) has the highest traffic volumes in Colrain. Route 112 is a frequently travelled regional route. The high traffic volumes and speeds on Route 112 create safety concerns in the village center.

The intersection of Greenfield Road/Main Road/Jacksonville Road in Colrain had one reported crash between 2007 and 2009. The crash was a head-on collision involving two vehicles (one travelling south on Jacksonville Road and one travelling north on Greenfield Road). The crash occurred at 3:30 am under snowy, slushy winter weather and road conditions. There was property damage only and no injuries involved.

Two traffic counts were completed on Route 112 (Jacksonville Road) 3/10 mile north of River Street (just north of the elementary school). The average daily traffic count was 1,500 vehicles per day in 2003 and 1,600 vehicles per day in 2007.
Colrain Center was reviewed as part of the Franklin County Regional Pedestrian Plan. As part of the development of the Pedestrian Plan a detailed walkability assessment was completed. The following recommendations for Colrain Center were developed as part of the Pedestrian Plan:

- Create a unified and connected network of sidewalks, ramps and crosswalks within the village center which safely link popular destinations for pedestrians of various abilities and which is ADA compliant. Include curbing in any new sidewalk construction.
- Install crosswalks at locations to improve access and safety for pedestrian throughout the focus area.
- Remove non-compliant signs and replace faded or worn signage with highly reflective (MUTCD compliant) signs.
- Explore the possibility of adding way-finding signs to direct visitor to points of interest.
- Consider rural character when developing streetscape improvements and the installation of additional directional sign/way-finding signs.
- Enforce speed limits through the village center and compliance with the stop sign at the Route 112 and Main Road intersection. Investigate options for replacing the stop sign at this intersection for a more reflective stop sign.
- Repair pavement that is cracked and fix the sharp drops at the edge of the pavement.
- Sweep the roadway and clear the shoulder of debris.
- Install highly reflective pavement markings.
- Investigate ways to improve the sight distance at the primary intersection such as tapering or adjustments to speed limits.
- Consider ways to delineate driveways from the roadways and sidewalk areas.
- Consider adding streetscaping, landscaping, and pedestrian elements to enhance the pedestrian experience and encourage walking.
- Recommend Colrain Central School enrolls in the Safe Routes to School Program.

On February 14, 2012, a site visit was completed and a meeting was held with Joan Rockwell, Colrain Planning Board member, to get input on the transportation accessibility issues in Colrain Center. Ms.
Rockwell provided input on the town’s traffic related concerns. She noted that traffic passes through the center (traveling on Jacksonville Road and Greenfield Road) en-route to and from Mount Snow, a popular ski area in Vermont. Because of the steep grades of these roads through the main intersection at the center of town, the vehicles travel at fast speeds. Additionally, it was noted that there is limited infrastructure for pedestrians and limited areas with sidewalks. She also expressed concern about access to a commercial business that is located on Main Road near the intersection of Main Road, Jacksonville Road and Greenfield Road. At that time this location was being as a restaurant, but it has since closed. There is limited parking on the site and the patrons used the parking lot that is next to the former church building on the other side of Jacksonville Road and Greenfield Road. Although the restaurant is now closed there is interest by the town in this location being operated as a restaurant in the future and having a place for patrons to park is important. Overall, providing safe access for pedestrians through the town center is a priority.

**Observations**

In general, the layout of the center is conducive to walking but the area reviewed is not pedestrian friendly. There are very limited sidewalks and crosswalks. The traffic that is approaching the center of town from Greenfield Road travels at a fast speed because of the very steep downward grade. Because of this steep grade it was difficult to determine the best location for a crosswalk across Greenfield Road.

There is a notably absent crosswalk across Jacksonville Road/Greenfield Road to Main Road. Accommodating Americans with Disabilities Act (ADA) requirements for a crosswalk at this location poses a particular challenge because of the steep grade of Greenfield Road. Locating a crosswalk is also a challenge because of the curve of Jacksonville Road (Route 112) as it heads north and the resulting very short sight distance. Overall, the sight distance is very poor for pedestrians crossing from the east side of the road to the west at the center.
Additionally, there is a slip lane at the intersection of Route 112 (Jacksonville and Main Roads) and Greenfield Road that causes safety concerns for traffic conflicts. There is a memorial located in the middle of the intersection. The area that is inside of the green space in the center of the intersection is owned by the Town. This roadway configuration takes up a lot of space and does not have any sidewalks or crosswalks. There is a large multiple dwelling unit residence on the north side of the slip lane. These residences appear to use some of the area in the slip lane and right in front of the building for parking.

On Main Road there is no designated on-street parking for the commercial establishment (former pizza restaurant). A problem was noted because patrons park in the road and then run into the pizza restaurant to pick up take out orders. There was a concern that with a lack of designated space for on-street parking, someone may be hit by a passing car. The alternative area used for parking is the lot next to the former church, and then patrons cross Greenfield Road to the restaurant. This parking lot is also frequented by snowmobilers during the winter, because there is a hiking trail that is often used by people riding snowmobiles that connects to the parking area next to the former church. While still in business the pizza restaurant that was located on Main Road west of the intersection was frequented by snowmobilers.
A view of Jacksonville Road looking towards the intersection at the center of Colrain (encroaching vegetation is visible on the left).

The bridge (with no sidewalks) on Jacksonville Road to the south of the Colrain Central School.
The town considered converting the church building in the center of town to a Senior Center, but that proposal has since been dropped. Additionally, there are several buildings in the center of town that are proposed to be razed due to neglect issues. These buildings will dramatically change the streetscape in Colrain Center, and may open up some new options for addressing the pedestrian concerns. The “Tin Shop” located on Route 112 (Jacksonville Road) to the northwest of the intersection at the center of town, and the “Truck Stop” to the north of the “Tin Shop” are planned to be torn down.

Route 112 is part of the Franklin County Bikeway. It is part of a frequently used 11.3 mile route, “The Shelburne – Vermont Connector”, that is classified as an intermediate level route on the Western Franklin County Bikeway Routes Map. The route connects western Franklin County to bike routes in Vermont using Route 112 beginning in the Town of Shelburne, traveling through Colrain and continuing to the Vermont border.

A meeting was held with MassDOT District I on July 11, 2012, to discuss issues, concerns and ideas for this area. The MassDOT District I engineers and planners agreed with the assessment and the need to develop pedestrian accommodations for this area. The ideas/solutions discussed at the meeting with MassDOT District I are incorporated into the following list of proposed solutions. MassDOT also suggested filling out a project need form in order to commence a project to design pedestrian oriented improvements.

**Possible Solutions**

- Install advance warning signals for vehicles traveling north on Greenfield Road (Route 112) to alert the vehicles that they are entering the village center and slow the traffic down.
- Consider installing some on-street parallel (not diagonal) parking in the center of town on Main Road (this section of Route 112 in the center of Colrain is not State Highway). There is a need for some on-street parking in front of the restaurant location on the south side Main Road. There is only room for a few spaces.
- Construct sidewalks on the road in the center of town where there are none, or reconstruct sidewalks that are in poor condition. There are currently extremely limited sidewalks (two very small sections) throughout the project area. There is a need for sidewalks throughout the project area. Sidewalks and other pedestrian oriented streetscape features would be aesthetically in keeping with the atmosphere and character of the village center. The area that is being examined is within the Colrain Center Historic District, a National Historic District. It is not anticipated that sidewalk improvements would adversely impact the historic district, but it is important to consider that a Section 106 review would be required.
- Construct a sidewalk on the south side of Main Road and on the school side of Jacksonville Road.
- Consider a possible solution to the ADA crossing/grade issue by closing off the slip lane and using that space for the ADA sidewalk through the area that is currently part of the median and the slip lane. The monument that is currently in the median would be relocated to an agreed upon location to the side of the road in the center of town. Further design work would consider the relocation of the monument, addition of a bench and the creation of a more accessible park area. Close off the slip lane to traffic, but create a driveway and space for the residences located to the north of the slip lane road to park. There are also utility poles that would need to be relocated.
Consider reconfiguring the River Street intersection located at the southern end of the bridge on Jacksonville Road to better accommodate a sidewalk and to shorten the crossing distance for pedestrians.

Construct a sidewalk on one side or both sides of the bridge on Jacksonville Road (Route 112) just south of the Colrain Central School. There is currently no sidewalk on either side of the bridge. The bridge is classified as “structurally deficient” by MassDOT, and is scheduled to be reconstructed in the future. However, the reconstruction project will not be completed for 5 or 6 years. Maintenance work is scheduled to be completed in 2 or 3 years. When work is completed to reconstruct this bridge it is recommended that a sidewalk be added to one side, or if possible both sides, of the bridge. At the site visit FRCOG staff and MassDOT District 1 staff discussed which side of the bridge would be better for the sidewalk in the event that it is not possible to add a sidewalk to both sides of the bridge. It was determined that the side that the school is on (west side) would be the preferred location so that the children walking to school can easily access the school property. The school is right next to the bridge on the northwest side.

Consider bicycle use during the design stage for any and all pedestrian improvements. In particular, bicycle accommodation should also be considered as part of the design work to accommodate pedestrian use on the bridge on Jacksonville Road.

Consider bicycles using the road in any planned sidewalk construction and whether it is possible to also construct a shoulder for bicycles while adding a sidewalk to the roadway layout.

Trim the vegetation along Greenfield and Jacksonville Roads to improve the sight distances. In particular, the site line on Jacksonville Road from the east side looking south towards the center intersection is obscured by vegetation that is on private property and encroaching into the right of way. The encroaching vegetation is obscuring the view of vehicles traveling north on Greenfield and Jacksonville Roads.

Explore the future use of the parking area that is located next to the former church in light of the fact that this location is difficult to access on foot. The crossing from the parking area to Main
Road has poor visibility. If additional parking is needed, explore the use of the land where the buildings on Jacksonville Road are located that are proposed to be removed.

A meeting was held with the Colrain Selectboard on August 6th, 2012, and the proposed ideas outlined in this section were discussed. The Selectboard agreed with the preliminary proposed ideas, and endorsed the preparation and submission of a “Project Need Form” to MassDOT District 1. The Board also expressed an interest in extending the project area and sidewalk to the town hall (previously sidewalk construction was only specified to the post office).

**Next Steps**

A Project Initiation Form (PIF) and a Project Need Form were completed and are attached to this report as Appendix A.

**Greenfield: Deerfield Street (Route 5/10) and Cheapside Street**

A view of Route 5/10 (Deerfield Street) from Cheapside Street.

**Background**

The intersection of Deerfield and Cheapside Streets in Greenfield is a triangular intersection with the southbound incoming and outgoing traffic coming to a t-intersection, and the northbound incoming and outgoing traffic using a slip lane. This intersection was the focus of a road safety audit that was completed by Stantec Consulting Services for MassDOT in November 2011. The recommendations of the road safety audit included the study of the reconfiguration /consolidation of the Cheapside Street intersection with Route 5/10 in order to eliminate the slip lane and create a T-intersection with a left turn lane on Route 5/10. This would eliminate the split and discontinue the “long” side of the triangle (Cheapside Street) as a through way.

The draft road safety audit report commented that a follow-up design study also consider a roundabout as a possible reconfiguration option for this intersection in order to reduce the overall number of conflicting movements. At this time, MassDOT is moving forward with a study to redesign this intersection. It is included in the Fiscal Year 2015 element of the Franklin Regional Transportation Improvement Program (TIP).
The road safety audit also identified a number of other possible intersection/roadway changes that should be further considered. These possible adjustments for further consideration include:

- Install a STOP in place of YIELD or All-Way STOP control at the Cheapside Street /connector road intersection;
- Extend the gore of the triangle island pavement markings where Cheapside Street intersects Route 5/10 to reduce the distance between the point of the southbound left turn and the perceived entry to Cheapside Street;
- Consider moving the stop-line on Cheapside Street closer to Route 5/10 in conjunction with the extended gore;
- Evaluate the sight distance from the Cheapside Street Stop-line with respect to the welcome sign on the island which reduces the sight distance looking south from the existing stop-line location;
- Add bicycle symbols to the marked bicycle lane to clarify the meaning of the dotted white lines;
- Replace speed limit signs that have reduced reflectivity;
- Trim overgrown vegetation blocking the Greenfield gateway sign;
- Reduce the clutter of signs within the Right of Way along the eastside of Route 5/10 that are unrelated to highway operation; and
- Consolidate the driveways along Cheapside Street to better manage access and reduce the number of conflict points.

**Observations**

A site visit to this intersection was completed on June 12, 2012. It was observed that the traffic that was using the slip lane to turn into Cheapside Street (southbound) traveled at fast speeds. Crossing Cheapside Street on foot was very uncomfortable because of the limited sidewalk infrastructure, and the fast speeds at which the entering and exiting traffic came through the intersections on the two separate roads. There was a feeling that turning cars could drive at you from many different directions. Also, there are a number of businesses located near the intersection that could potentially be easily accessible by foot; however, the pedestrian infrastructure is either in poor condition or absent. Additionally, more people would possibly walk if the environment were more comfortable for walking. There are gaps and
limited sidewalks. The crossing distance is very wide and the traffic travels very fast. It was documented that the travel lanes through the t-intersections are 12 feet wide. There are shoulders varying in width between 1 foot and 4½ feet wide. The intersection of Deerfield Street and Cheepside Street is excessively wide.

A view of Route 5/10 (Deerfield Street) looking to the south. One leg of the intersection is on the left in the picture.

Within the study area, Deerfield Street (Route 5/10) is part of the Franklin County Bikeway. It is signed as part of the bikeway and there is a painted bike lane which is denoted with a stenciled bicycle icon. It is part of the “Greenfield-Montague Loop” which connects the Canalside Trail Bike Path and the Riverside Greenway Bike Path.

A view of the bike lane on Route 5/10 (Deerfield Street) and the wide slip lane at the intersection with Cheapside Street.
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**Possible Solutions**

These recommendations are based on the possibility of the intersection being reconfigured to a t-intersection. In the event that the intersection is not redesigned into a t-intersection, the recommendations still apply and should be considered to make the intersection more pedestrian and bicycle friendly. Overall, we concur that this intersection should be seriously considered for reconfiguration into a t-intersection. By reconstructing the intersection into a t-intersection the crossing distances could be shortened, space could be designated for pedestrians and the traffic flow would be better defined.

- Narrow the roadway at the intersections and create sidewalks so that pedestrians will not have to walk in the road.
- Consider bump-outs in order to limit the pedestrian crossing distance.
- Construct a sidewalk Cheapside Street, under the rail bridge, in order to make the connection to the existing sidewalk that is further east on Cheapside Street and connects to Montague City Road.
- Reconstruct the sidewalks on Cheapside Street and/or Route 5/10 (Deerfield Street) that are in poor condition or discontinuous.
- Consider installing a crosswalk that is a different material or color than the roadway in order to make motorists more aware of the pedestrians.
- Provide a better defined area for pedestrians to walk so that the parked vehicles do not encroach on the sidewalk area. The business on the east side of Route 5/10 Deerfield Street near the intersections has a parking area that is not delineated and encroaches into the sidewalk area.
- Repaint the pavement markings to better delineate the existing bike lane on Deerfield Street. Explore other options to make these marking more prominent.
- Narrow the intersection for vehicles headed north on Route 5/10 and turning into Cheapside Street and shorten the crossing distance with a bump-out or a wider sidewalk.
- Create marked crosswalks (there are none).
- Install ADA compliant curbcuts. There are no cross-walks in the intersection area and there are no curbcuts.
- Explore whether a pedestrian activated light is warranted.
- Consider designating a bike lane on Cheapside Street or an area for bicycles within the existing shoulder and “Share the Road” signs.
- Install signs to alert the cars of the bike lane that is on Deerfield Street.
- Install complete streetscape pedestrian amenities, beautification, and/or gateway treatment with the extra land gained from the reconfiguration of the intersection.
- Trim the vegetation on the sides of the road that is encroaching in some locations under the bridge.

**Next Steps**

Forward the recommendations to better accommodate bicycles and pedestrians to MassDOT District 2 so that they can incorporate them into the upcoming intersection redesign.
Greenfield: Main Street (Route 2A), River Street and Shelburne Road

Background
The intersection of Main Street (Route 2A), River Street and Shelburne Road was examined for potential bicycle and pedestrian oriented improvements. This intersection is a busy intersection en-route from Interstate 91 to downtown Greenfield. There are a number of high traffic volume car-oriented businesses located at the intersection including a Dunkin Donuts and an Enterprise Rental Car.

Currently, the Franklin County Bikeway travels through this intersection via River Street and Shelburne Road. This route is marked as part of the bikeway with Franklin County Bikeway logo signs directing bicyclists along the route. It is part of the Greenfield-Montague Loop, which connects the Canalside Trail Bikepath and the Riverside Greenway.

There are sidewalks, crosswalks and curbcuts at and near the intersection, but in some cases this pedestrian oriented infrastructure is in need of improvements. It is a busy intersection with traffic that is traveling from Interstate 91 to downtown Greenfield. The Newton Street School (Greenfield Public School) for Kindergarten through 3rd grade is located at the northwest corner of the intersection.

The traffic volumes near and approaching this intersection are about 19,000 on Route 2A (between Minor Street and the rotary), approximately 14,000 on Route 2A (east of Solon Street), 6,500 on River Street (west of Wisdom Way), and 1,100 on Shelburne Road (200 feet north of the Mohawk Trail).

A road safety audit was completed in November 2011 by Stantec Consulting Services for MassDOT for this intersection. The road safety audit noted that there have been twenty crashes at this intersection between 2008 and 2011. It was further noted that many of the crashes that occurred at or near this intersection were related to the driveways of the Dunkin Donuts and the Enterprise Rental Car which are very close to the intersection. The recommendations of the road safety audit included the following:
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- Implement restriction of left turn access into and out of the Dunkin Donuts driveway by installing a raised island on Route 2A along the driveway opening.
- Limit the right turn lane and prohibit travel in the breakdown lane of Route 2A to prevent right hand turn lane access upstream from the intersection on Route 2A.
- Limit access to the right hand turn lane upstream from the intersection on River Street through the use of pavement paint.
- Trim vegetation south of the Enterprise Rental Car to improve visibility near the driveway.
- Require Enterprise Rental Car to park outside of the right of way in order to maintain the sight distance and also to enhance pedestrian accessibility.
- Investigate and revise the signal timing in order to improve efficiency at the traffic light and shorten queue.
- Review sidewalk clearance with respect to ADA standards.
- Replace the existing incandescent traffic signals with LED type signals.
- Install durable pavement markings on the bridge on Route 2A.

At this time, MassDOT is moving forward with a project to design and implement the recommended intersection improvements that were identified in the road safety audit. This project is included in the Fiscal Year 2014 element of the Franklin Regional Transportation Improvement Program (TIP). There is an opportunity for these improvements to take into account and provide for better pedestrian and bicycle access at this intersection.

Additionally, students from the Conway School of Landscape Design completed a Streetscape Enhancement and Ecological Parking Lot Design in the spring of 2012. The project examined the downtown streetscape and two of the municipal parking lots with the goal of developing a more vibrant and welcoming downtown. Although the scope of this study was more focused on the downtown area of Greenfield, creating gateways to downtown was identified as an important component to creating a vibrant downtown. The area to the east of the intersection of Main Street, River Street and Conway Street was identified as one of the potential gateway locations. The plan also proposed planting street trees in order to create a more inviting entrance to downtown Greenfield.

Observations

A site visit was completed on March 22, 2012. It was observed that there is pedestrian infrastructure, but that improvements are needed in order to make this intersection more accessible for bicycles and pedestrians. There are crosswalks, but the pavement marking are faded and hard to see. The pavement markings are not highly reflective. In some instances, the curbcuts are not ADA compliant. There are pedestrian activated walk signals at the intersection. However, some of the crossing movements are a longer distance to walk, and consequently the length of the pedestrian signal is not adjusted to allow enough time for a pedestrian to cross. In addition, at some of the crossing locations, the walk signal activation button is not within reach of the curbcut waiting area.
In some locations, there are obstructions on the sidewalk that are in the way of the pedestrian. There are utility poles and fire hydrants located in the middle of the sidewalk on the southwest side of the intersection. On the east side of River Street, near the Enterprise Rental Car, there is no sidewalk. The area where a sidewalk could be constructed is being used by the Enterprise Rental Car business as a parking lot. The sidewalk on the east side of Shelburne Road is in poor condition.

Looking across the intersection of Main Street, River Street and Shelburne Road at the long pedestrian crossing distance from the northeast corner.

A fire hydrant in the middle of the sidewalk on River Street.
As previously stated, River Street and Shelburne Road are on the Franklin County Bikeway. This intersection is at a crossroads that links this bike route to downtown Greenfield. The bicycle and pedestrian links to downtown (eastern direction from the intersection) are lacking and in need of enhancements to make a better connection for all users. There is no sidewalk on the north side of Main Street headed into town. The existing sidewalk on the south side of Main Street is narrow and in poor condition as it crosses the bridge over the Green River. There is no delineated bicycle lane and the shoulder area is narrow, but the road is wide enough to accommodate a wider shoulder or bike lane to better accommodate bicycles traveling from the Franklin County Bikeway into downtown Greenfield.
Bicyclists waiting to cross Main Street (Route 2A) on River Street which is part of the Franklin County Bikeway.

A view of the section of Main Street (Route 2A) between the intersection of Main, River and Shelburne Streets and downtown. This area has poor sidewalk conditions, narrow shoulders and wide travel lanes.
The curbcut at the northeast corner of the intersection has poor visibility for pedestrians waiting to cross Main Street (Route 2A). This corner is a very wide turn and the turning vehicles cut in close to the corner where waiting pedestrians stand. Additionally, the fence on the north side of the bridge (to the east) blocks the motorists’ view of pedestrians waiting to cross the street. The pedestrian walk cycle of the light also seemed to be too short for the crossing of Main Street on the east side of the intersection, which is a longer distance than the other legs of the intersection. Additionally, the sidewalk on the south side of the Main Street (Route 2A) bridge is only 3½ feet wide. The travel lanes are wide, and widening the sidewalk and/or the shoulder to provide more room for pedestrians and bicycles appears to be feasible.

This study area is located at the natural gateway to the downtown for a majority of the visitors who come to Greenfield from Interstate 91. There is no official gateway treatment for the downtown on this route. The design and construction of a gateway treatment would enhance and draw visitors to the downtown business district. It would also alert vehicles to an upcoming increased pedestrian activity.
Possible Solutions

- Construct sidewalks where the existing sidewalks are in poor condition or non-existent.
- Reconstruct the curb ramps to adjust the location of the push buttons so that they are within reach of the ramps.
- Install ADA curbcut and crossing compliance requirements to all crossings. There are no tactile warning strips at the curb ramps. Some of the push buttons are not within reach of the curb waiting area.

- Widen the sidewalk on the north side of the bridge on Main Street (Route 2A). It is currently only 4 feet wide.
- Reconstruct the northeast corner of the Shelburne Road and Main Street (Route 2A) intersection in order to slow the turning traffic down. The northeast corner of the intersection is very round and the turning vehicles cut the corner very close to where pedestrians stand while waiting to cross the street. By extending the curb out further into the intersection it would force the traffic to turn more slowly and also increase the visibility for pedestrians with a bump out. Extend the curb or decrease turning radius.
- Reconstruct the fence on the north side of the bridge so that it no longer obscures the view of pedestrians waiting to cross at the north east corner of the intersection.
- Extend the shoulder on Main Street (Route 2A) to the intersection. It currently ends at the bridge.
- Create a gateway into the downtown on the east side of the bridge. Narrow the roadway. Add sidewalk on the north side.
- Reassess and adjust the pedestrian walk phases of the traffic light to make sure that adequate time for pedestrians to cross is provided. The cycle is 16 seconds and this may not be adequate for some slower walkers such as children and older people.
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- Repair and improve the sidewalk on the south side of the bridge.
- Examine whether it is possible to reconfigure the shoulders on River Street to better accommodate bicyclists. The River Street shoulder is 3½ feet near the Enterprise Car Rental. There is a limited shoulder on the Dunkin Donuts side of the Road.
- Examine whether it would be possible to shift the lanes over and create a separate bicycle lane, “sharrow” or wide curb lane on Route 2A for better bicycle accommodation. The roadway is wide and it appears that there is room to provide for better bicycle accommodation between the River Street, Main Street and Shelburne Road intersection and the approach to downtown Greenfield.
- Explore whether it would be possible to construct a sidewalk on the eastern side of River Street.

Next Steps
Forward the conclusions/recommendations of this plan to better accommodate bicycles and pedestrians to MassDOT District 2 for consideration during the upcoming intersection redesign. Continue to work with MassDOT District 2 and the City of Greenfield during the design phase.

Greenfield: Bank Row, Olive Street and Hope Street near the John W. Olver Transit Center

Background
The doors of the John W. Olver Transit Center opened to the public on May 7, 2012, as the intermodal transportation center for Franklin County. Prior to this, Olive Street had not been a regular destination for pedestrians, bicyclists and transit riders. As a result of the opening of the new Transit Center, people are walking and bicycling to this location daily. The future plans for this facility also include use by rail passengers. There are plans to construct a rail platform at the Transit Center in Greenfield as part of the Connecticut River Line track upgrade and restoration of Amtrak’s service to this corridor (between New York City and St. Albans, Vermont). Within the study area, there are also two parking lots that are owned by the City of Greenfield, one on Olive Street and one on Hope Street near the intersection of Hope and Olive Streets. These two parking lots are now more heavily used by employees at the Transit Center and the businesses on Main Street. This increased use contributes to additional foot traffic on Hope and Olive Streets. Because of the increased multi-modal traffic to and within the Hope and Olive Street area, the existing lack of infrastructure and streetscape features has become more problematic. Better infrastructure could improve access to the Transit Center site for bicyclists and pedestrians, and also improve accessibility for pedestrian, bicyclists and transit riders within the entire lower Bank Row, Hope and Olive Street area. Overall, there is an opportunity to improve the accessibility for bicycles and pedestrian around the transit center, create a more pleasant streetscape environment, and create an aesthetically pleasing “gateway” for transit users arriving in Greenfield.
Observations

A site visit was completed on June 12, 2012. Overall, it was observed that the area is not pedestrian friendly. The sidewalk on the north side of Olive Street is in particularly bad condition. There is a new sidewalk near the Transit Center, but the other sidewalks on Olive Street are in poor condition. There are poles obstructing the sidewalk on the north side of the street. There is also a lack of any streetscape features like trees and pedestrian level lighting. Overall the streetscape is not aesthetically appealing.

Observations of the traffic patterns revealed that Olive and Hope Streets serve as a cut-through route for vehicles wishing to by-pass the traffic signal at the Main Street, Bank Row, and Federal Street intersection. Consequently, the motor vehicles that use Olive Street and Hope Street frequently travel at high speeds. When the transit center opened, the on-street parking that had previously existed on both sides of Olive Street was eliminated along the entire length of the street. It was necessary that the on-street parking near the entrance/exit to the Transit Center be eliminated in order to accommodate the turning radius for the entering and exiting buses. The buses do require clear space on the street near the entrance/exit, but the lack of on-street parking on the entire length of the street has created a wide expanse of roadway that allows for very fast moving traffic. Olive Street is 33 feet wide. Pedestrians crossing the street are often walking across the road with cars coming directly at them. Although there is not enough space for parking on both sides of the street, there is space to put some parking back on one side of the street. This would narrow the travel lane and slow the traffic down. There is also space to narrow the travel lane with pavement paint, potentially widen the sidewalk, add streetscape features and create either a bike lane or wider marked shoulder to create a space for bicycles on the street.
The pedestrian crosswalk on Bank Row is located near the Transit Center. There is a crosswalk on Bank Row, but the sidewalk on the west side of Bank Row is in poor condition and there are obstructions (poles and vegetation) encroaching into the sidewalk. The pavement at the crossing is uneven and very rough. Due to the presence of diagonal parking on the west side and parallel parking on the east side of Bank Row, pedestrians must stand half way in the roadway in order to view the oncoming traffic. Bump-outs at these locations would provide them with better visibility and would more effectively alert vehicles to the pedestrians.

There is also a crosswalk near the driveway to the transit center (for the buses) located away from the corner of the intersection. Because of the grade of the hill and tall grasses on the corner, it is difficult for motorists to see the mid-block crossing after they have already turned onto Olive Street and started to accelerate. It is often hard to cross at this location, because the cars turning onto Olive Street pick up speed after making the turn and do not stop for pedestrian waiting to cross or already crossing. In addition, this crosswalk is located at an entrance to the Transit Center near the stairs that lead to the bus bays. The Americans with Disabilities Act (ADA) compliant access point is located directly at the corner of the intersection, where pedestrians would be more visible to turning vehicles.
On Hope Street, the crossing at the intersection of Olive Street is very wide. There are no crosswalks at all at this intersection. There are also no ADA accessible curb cuts. Across from Olive Street, is a heavily used town owned parking lot. On the east side of the street adjoining the parking lot, the sidewalk is at a higher elevation than the roadway with a steep grass berm between the roadway and the sidewalk. This grade difference makes accessing the sidewalk at this location very difficult. One must
either climb the grassy berm or walk in the street to the parking lot entrance. The entrance to the parking lot and the Courthouse/YMCA are right next to each other and create a very wide space for pedestrians to cross. The vehicles on Hope Street also travel at fast speeds because the road is very wide and it is also used as a cut-through street to avoid the traffic and light at the Federal Street, Main Street and Bank Row intersection.

During the site visit on June 12, 2012, the parking in the project area was discussed with one of the City of Greenfield Police Department Parking Officers, who happened to be checking vehicles for parking permits at the time. She was asked about the demand for parking on Hope Street both on-street and in
the municipal parking lot. She stated that both the parking lot on Hope Street and the on-street parking spaces are frequently used. The Parking Officer also noted that much of the demand for on-street parking near the Hope and Olive Street intersection during the day is driven by customers going to the Salvation Army Store (located on Hope Street at the southwest corner near Olive Street). As a result of that conversation, an idea emerged to consider diagonal parking on Hope Street as an option to slow down the traffic and to better accommodate the need for parking. On Hope Street, the roadway is 44 feet wide. The existing parking is 8 feet wide on both sides of Hope Street. There is a 4 foot separation (grass) between the edge of the pavement and the sidewalk on the east side of the street. The sidewalk is 5 feet wide.

Additionally, the location of the loading/unloading bay for the Salvation Army Store near the southwest corner of Hope and Olive Streets obstructs the sight line for bicyclists stopped at the intersection. When the truck is parked at the loading dock, it sticks out into the road which makes it difficult to see cars approaching from the south on Hope Street.

It was not clear during the site visits whether there is adequate pedestrian level lighting in the parking lots. Additionally, it was also observed that bicycles frequently use Olive and Hope Streets as travel routes. There is a need for bicycle accommodation such as a bike lane or a marked shoulder.

**Possible Solutions**

- Repair, reconstruct, improve and install new sidewalks throughout the area (Olive Street, Bank Row and Hope Street).
- Widen the sidewalks on Olive Street, Bank Row and Hope Street. The existing sidewalks are narrow.
- Narrow the crossing distance on Hope Street by creating a bump-out and re-grade the area between the travel lane and the sidewalk to eliminate the grass berm (and difference in grade) between the roadway and the sidewalk. Eliminate the barrier between the roadway and the sidewalk.
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- Evaluate whether it is possible and also advantageous to install a crosswalk that is at the same height as the curbs (the existing crosswalk dips down in the street) at the crossing of Olive Street at the corner of Olive Street and Bank Row.
- Consider whether a textured more visible sidewalk treatment would be a better option at the crossing of Olive Street at the corner of Olive Street and Bank Row.
- Evaluate the safest location for the crosswalk on the lower part of Olive Street to ensure the most visible location for traffic turning from Bank Row onto Olive Street.
- Install 3-5 parallel parking spaces on one side of Olive Street (the south side of the street is recommended).
- Install a designated loading zone parking space near the intersection of Hope and Olive Streets to accommodate deliveries to the businesses.
- Talk to the Salvation Army Store about relocating the truck parking so that it does not block the sight distance for cars, bicycles and pedestrian trying to cross at the Hope and Olive Streets intersection.
- Assess the need for pedestrian level lighting in the City maintained parking lots and also on the streetscape.
- Relocate the utility poles on that are located in the middle of the sidewalk on Olive Street.
- Repair or reconstruct the sidewalk on Olive Street so that the grade is even.
- Analyze whether it would be possible, safe and practical to install diagonal parking on Hope Street.
- Consider the installation of a bump out at the crosswalk on Bank Row.
- Install signs warning vehicles on Bank Row of the pedestrian crossing to Olive Street.
- Evaluate whether to install an in-street pedestrian warning stanchion on Olive Street to warn of the crossing pedestrian near the transit center. The stanchion location should be chosen so that it best accommodates the turning patterns of the buses).
- Install safety lights in the municipally owned parking lots. The lighting fixtures should be motion controlled, energy efficient and a non-light polluting option.
- Trim and/or remove the bushes (weeds) on the west side of Bank Row that are encroaching into the sidewalk.
- Paint a wide shoulder or bike lane on Hope and Olive Street to better accommodate bicycle travel through the area.

**Next Steps**

The City of Greenfield recognizes the need for pedestrian improvements near the transit center, and is exploring options for designing and implementing improvements. These recommendations will be provided to the City of Greenfield to assist in the conceptual design of potential improvements.

Additionally, the Franklin County Courthouse will be undergoing a major renovation project during the next five years. This construction will have short term impacts on the traffic, bicycle and pedestrian circulation on Hope Street although it is not clear at this time what these impacts will be. There may be opportunities to better provide for bicycle and pedestrian access as a result of the changes taking place at the courthouse and any accompanying streetscape and parking lot changes. It is recommended that the future streetscape on Hope Street take into account complete street concepts to provide connections throughout the area for multimodal transportation users.
Whately and South Deerfield: Routes 5/10/116 (Greenfield Road) from Sunderland Road to Conway Road

Background

The section of Route 5/10/116 from the southernmost intersection of Routes 5/10 (Greenfield Road) and Route 116 (Sunderland Road) to the traffic light at the northernmost intersection of Route 5/10 (Greenfield Road) and Route 116 (Conway Road) was examined. This section of Routes 5/10/116 is in Whately and South Deerfield. It is a major regional collector road. There are a number of automobile oriented businesses, and large employers located along this section of Route 5/10/116. Additionally, a multi-modal park and ride lot is under construction (to be opened in mid November 2012) at the intersection of Route 116 and Routes 5/10 in Whately. The new park and ride lot has the potential to increase bicycle and pedestrian traffic along this corridor as people may chose to ride their bicycles or walk to the park and ride lot in order to catch a bus. Plans are for the park and ride lot to be serviced by both Franklin Regional Transit Authority (FRTA) and the Pioneer Valley Transit Authority (PVTA) buses that currently travel through South Deerfield Center. The exact timetables and routes had not been published at the time that this report was compiled.

A view to the north from the intersection of Elm Street and Route 5/10/116.
This section of Route 5/10/116 provides access to Interstate 91 (I-91). Route 5/10/116 in Whately and South Deerfield accommodate the traffic that exits Interstate 91, because there is a split exit which means that vehicles that get off of I-91 southbound at exit 25 must travel on this section of Route 5/10/116 in order to re-enter I-91 at the next on ramp which is Exit 24. The same is true for northbound traffic on I-91. Vehicles that exit I-91 northbound at exit 24 must re-enter the northbound lane of I-91 at the exit 25 on-ramp (located at Conway Road) just north of the project area.

Additionally, Route 116 is merged with Route 5/10 through this section, which contributes to the traffic volumes and the road’s function as a regional collector road. Route 116 provides access about one mile south east of the study area to the Deerfield-Sunderland Bridge. The bridge carries Route 116 over the Connecticut River and is one of a limited number of crossings along the I-91 corridor. There are Connecticut River crossings located in Holyoke (about 16 miles south), Northampton (about 10 miles to the south), Sunderland and Northfield (about 20 miles to the north). This means that much of the Franklin County traffic that is headed to Amherst and Hadley travels on this section of Route 5/10/116 in South Deerfield in order to access the Deerfield-Sunderland Bridge.

This section of Route 5/10/116 was examined during 2002 as part of The Route 5/10/116 Circulation Study that was completed in the Towns of Deerfield, Sunderland and Whately. The Circulation Study stated that the section of Route 5/10/116 between Exit 24 of I-91 and North Main Street was reconstructed during 1995. This reconstruction work included the addition of turning lanes, wider shoulders and the installation of traffic signals at three intersections. During 1996 the section of Route 5/10 from North Main Street to the Greenfield Town Line was widened and resurfaced (beyond the study area for this project).
Additionally, the Connecticut River Crossing Transportation Study was completed in February 2004 which examined the need for transportation improvements, including the potential need and feasibility of providing an additional bridge over the Connecticut River between Holyoke and Sunderland. Two of the recommendations that were made as a result of this study were recently implemented in the Route 5/10/116 study area. One of the recommendations was the development of a park and ride lot in the Whately/Deerfield area. As previously stated, a park and ride lot is under construction at the intersection of Route 5/10 and Route 116 (Sunderland Road). Also, the study recommended improvements and signalization at the Interstate-91 interchange 24 northbound off-ramp at Route 5/10 in Whately. This improvement was also recently completed (during 2012). This interchange location is just south of the project area.

In addition, MassDOT is completing intersection improvements and signalization projects at locations that are outside of the area on Route 5/10/116 that was examined for this report. There are also intersection improvements proposed at the intersection of Route 5/10/116 and Conway Road in Deerfield. These improvements have not been completed yet.

**Observations**

As previously stated, there are many high volume car-oriented businesses along this corridor. There is also a new park and ride lot that is located at the southern end of the project area in Whately (at the intersection of Route 5/10/116 and Sunderland Road). Throughout the study area there are 12 and 13 foot travel lanes. The shoulder varies but it is generally 3 feet or more throughout the study area. The right of way is wide. The posted speed limit in the project area is 40 miles per hour. The posted speed limit to the north of the study area is 50 miles per hour. According to MassDOT there is a high volume of trucks traffic travelling along the corridor. The average daily traffic counts are approximately 13,000 vehicles a day based on traffic counts that were completed by the FRCOG and MassDOT. Based on traffic count data collected by the FRCOG, traffic counts on Route 5/10 Between Route 116 (south) and Elm Street was 13,500 in 2002.

The corridor has bicycle traffic, but there are no bike lanes or designated areas for the bikes. At the time that the Franklin County Bikeway routes were being designed during the early 1990s, the Deerfield Selectboard voted that they did not want Route 5/10 in Deerfield to be included as part of the Bikeway shared roadway route due to safety concerns. For that reason, Route 5/10 was not been included as part of the original 44 mile Franklin County Bikeway network. A 2009 Franklin County Bikeway Plan Update identified River Road (a route that runs parallel to the corridor to the east) as part of the expanded Franklin County Bikeway route that was included in the Central Franklin County Bikeway Routes Map (2009). The River Road route is a good route for bicyclists who are looking to by-pass the commercial area of Deerfield, but the Route 5/10 corridor, although not currently endorsed as a route, functions as a route for bicyclists and pedestrians also.

Additionally, Route 5/10 was recently considered for inclusion as a designated bike route to be signed as part of the Connecticut Valley Route of the Massachusetts Baystate Greenway. Ultimately, Route 5/10 was not included for signing because of concerns expressed over the volume of traffic, lack of consistent shoulder along the entire route (beyond the area looked at in this study) and the high percentage of truck traffic. There is a need for better bicycle access along this important corridor.
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There are limited sidewalks (in most cases there are no sidewalks on Route 5/10/116). There is also limited pedestrian infrastructure such as cross-walks and curb cuts through the study area. This area could be more conducive for walking to the employment and commercial destinations that are located along the corridor if there was better infrastructure for walking. These businesses and employers are served by the FRTA’s route between Greenfield and Northampton.

There is also a limited physical connection between the Yankee Candle Flagship Store on Route 5/10/116 (in the study area) and the South Deerfield Village Center located within walking distance of the study area on Elm Street. The lack of a connection between this high volume commercial destination and South Deerfield center is to be addressed as part of the U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant. That work will seek to better connect the residential neighborhoods of South Deerfield with the downtown commercial district, surrounding schools, and the former Oxford Food Site. Overall, walking on Route 5/10/116 is not pleasant because of the speed and volume of the traffic. A sidewalk or pedestrian path that is separated from the traffic would provide better access.

Elm Street looking towards South Deerfield Center.
A site visit was completed by FRCOG staff on April 5, 2012, and the following observations were made:

- The roadway and lanes are wide and encourage fast moving traffic.
- The shoulder is wide.
- There are no sidewalks along the corridor.
- There is space within the right of way to accommodate better bike and/or pedestrian facilities.
- There are already people who bike and walk despite the lack of facilities.
- There are no existing pedestrian crossing infrastructure at the traffic light at Route 5/10 and 116 (Sunderland Road) in Whately.

There is a pedestrian activated crossing signal at the intersection of Route 5/10 and Elm Street but there is no sidewalk connecting to it on Route 5/10.
At a meeting on April 24, 2012 with planning staff from the MassDOT District 2 office revealed that there are long term plans to reconstruct this section of Route 5/10/116, but there is nothing actively happening at this time. There are immediate plans to complete improvements at some intersections that are just beyond the boundaries of this study (such as at the Exit 24 ramp in Whately).

**Possible Solutions**

- Consider better defining the shoulder for use by bicycles or building a separate bike path.
- Construct pedestrian infrastructure at the intersection of Route 5/10 and Sunderland Street near the park and ride lot.
- Construct a sidewalk on Route 5/10 that is separated from the traffic.
- Construct a sidewalk on Elm Street in the locations where there are no sidewalks and/or sidewalks that are in disrepair. Create a gateway at the intersection of Route 5/10 and Elm Street to encourage pedestrian and bicycle access to South Deerfield Village Center.
- Consider constructing a bike trail or walking trail that is separated from the travel lanes on the east side of the road to encourage bike and pedestrian access along this corridor.
- Improve pedestrian crossings at the intersections with pedestrian activated crossing signals (possibly count-down technologies), curb cuts and ADA compliant sidewalk treatments.
- Complete streetscape improvements on Elm Street to enhance the gateway and encourage walking.
- Consider incorporating complete streets initiatives into the redesign/reconstruction of the roadway. Encourage MassDOT to incorporate complete streets into any future reconstruction plan for the corridor.

**Next Steps**

Provide this information to MassDOT for future redesign work on Route 5/10/116. Also, provide this information to the Town of Deerfield for the consultant who will complete the design work on the U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.

**Public Participation/Outreach Completed as Part of this Study**

This report was completed on consultation with the towns where the study areas are located and MassDOT district highway representatives. The following is a list of the meetings and discussions that were held during the process of gathering the information that is contained in this report.

- On February 14, 2012, a meeting was held with Joan Rockwell, the chair of the Colrain Planning Board, in order to get background and initial thoughts on the issues and concerns related to bicycles and pedestrians in Colrain Center.
- On April 24, 2012, a meeting was held with MassDOT District 2 representatives in order to collaborate on concerns and potential ideas for the Route 5/10/116 corridor in South Deerfield, the area in Greenfield around the Transit Center and the intersection of River Street/Shelburne Street and Route 2A. At the collaboration meeting MassDOT representatives suggested adding the intersection of Deerfield Street/Cheapside Street for review also. The MassDOT representatives provided information on relevant upcoming design and/or construction projects.
- On July 11, 2012, a meeting was held with representatives of MassDOT District 1 to discuss the potential improvements and ideas for Colrain Center.
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- On July 24, 2012, a meeting was held with Sara Campbell, the Greenfield Town Engineer, to discuss the three locations that were being examined in Greenfield. The locations and possible solutions were discussed. Input was received on the potential design solutions, and also any work that is being completed by the town at these locations.

- On August 6, 2012, FRCOG staff collaborated with MassBike who completed a bikeability assessment for the study areas. This work is further explained in the next section of this report.

- On August 6, 2012, a meeting was held with the Colrain Selectboard to discuss the project and get input on the potential solutions to the roadway issues and concerns in Colrain.

- On August 31, 2012, a meeting was held with Bernie Kubiak, the Deerfield Town Administrator, in order to discuss the project, related projects that the town is working on and potential improvements to bicycle and pedestrian accessibility for the Route 5/10/116 corridor.

### Bikeability Assessment

In coordination with the completion of this project, MassBike organized an assessment of the “bikeability” of the five complete streets locations. The MassBike assessments were completed as part of a Mass in Motion grant that was awarded through the Massachusetts Department of Public Health. The Mass in Motion grant provided the opportunity to fund technical assistance to assess the conditions for bicycling in Franklin County. Collaborations between MassBike and the Partnership for Youth, a program of the Franklin Regional Council of Governments (a recipient of the Franklin County Mass in Motion grant) led to coordination and the completion of the bikeability analysis for these locations. The intention was for this information to complement and be included with the Complete Streets Analysis that was being completed as part of the FRCOG’s 3C Transportation Planning Unified Planning Work Program.

MassBike, the Partnership for Youth and the FRCOG Planning staff recruited ten local residents who were familiar with bicycling in the region, to help with the assessment. The volunteers were provided with assessment forms and instructed on how to gather data at these five areas. The key findings were:

- Debris is a major issue on many of the roads, pushing bicyclists into travel lanes or forcing them to use sidewalks.
- Shoulders on many of the roads are inconsistent, and totally non-existent in some spots. Having paved shoulders, designated as bike lanes if possible, is especially important in more rural areas where traffic may be traveling at higher speeds.
- There was no bicycle parking recorded anywhere, even near city center of Greenfield.
- There were a range of speed limits, but in general traffic was moving too fast for most people to be comfortable bicycling.
- The intersections are designed to accommodate fast-turning traffic (Y-intersections, e.g.), and these intersections can be a danger for bicyclists and a barrier to biking.

The full Bikeability Assessment is included as Appendix A of this report.

### Conclusion
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The recommendations of this report will be provided to the towns where the assessment sites are located and the applicable MassDOT District offices in order to advance the improvement of these areas for all roadway users. The FRCOG will continue to work to evaluate and advocate for complete streets throughout Franklin County.
Complete Streets Recommendations for Colrain Town Center

Recommendations are intended for planning purposes only and locations are very general.
Complete Streets Recommendations for Colrain Town Center

Scenario: Create a "T-Intersection"

- Close slip lane to traffic
- Relocate memorial to center
- Relocate telephone pole
- Add parking on both sides of Main Road
- Create access drive/parking for residents

Source: Map produced by the Franklin Regional Council of Governments Planning Department. Image from Pictometry. Recommendations are conceptual and are intended for planning purposes only.
Complete Streets Recommendations for Rt.2A & River Street

- Relocate pole and hydrant in the sidewalk to increase clearance.
- Bring all corners & sidewalks up to ADA code.
- Remove green fencing along the sidewalk.
- Decrease turning radius.

Recommendations are intended for planning purposes only and locations are very general.
Complete Streets Recommendations for Rt.5/10 & Cheapside Street

Scenario: Create a "T-Intersection"

- Relocate Welcome sign back away from road and add streetscaping
- Bring all sidewalks up to ADA code
- Restripe the existing bike lane
- Proposed sidewalk
- Proposed crosswalk
- Proposed pedestrian advanced warning signs
- Proposed roadway changes

Source: Map produced by the Franklin Regional Council of Governments Planning Department. Image from Pictometry. Recommendations are intended for planning purposes only and locations are very general.
Complete Streets Recommendations for Olver Transit Center

This aerial photograph is the most recent available. It does not reflect the changes made by the construction of the new John W. Olver Transit Center.

Source: Map produced by the Franklin Regional Council of Governments Planning Department. Image from Pictometry. Recommendations are intended for planning purposes only and locations are very general.
Complete Streets Recommendations for Rt.5/10 in Deerfield

- Proposed sidewalk
- Proposed pedestrian warning signs
- Proposed Gateway streetscaping
- Proposed crosswalk

Source: Map produced by the Franklin Regional Council of Governments Planning Department. Image from Pictometry. Recommendations are intended for planning purposes only and locations are very general.
On Monday, August 6th, a group of local citizens, Franklin Regional Council of Governments (FRCOG) staff, and Massachusetts Bicycle Coalition (MassBike) staff met to undertake an assessment of five priority sites in Franklin County for street improvements. The purpose of the assessment was to collect data on features of the road that support or are a barrier to bicycling. In all, 22 road segments and 29 intersections were assessed in Greenfield, South Deerfield, and Colrain. The priority sites assessed, also shown in Figure 1, are:

1. **Greenfield** – John W. Olver Transit Center and surrounding streets.
2. **Greenfield** – Intersection of Deerfield Street, Greenfield Street, and Cheapside Streets.
3. **Greenfield** – Intersection of Shelburne Road/River Street and Route 2A.
4. **South Deerfield** – Route 5/10/116 from Conway Road to Sunderland Road.
5. **Colrain** – The intersection of Jacksonville Road, Main Road, and Greenfield Road.

Below are specific findings for the five priority sites, listed from “lowest-hanging fruit” at the top to most difficult change at the bottom. Overall, there were 6 key findings:

1. **Debris** – Among the problems noted with the road surface, debris in the area where bicyclists are most likely to travel (to the right or in the shoulder) was recorded on seven road segments. Debris can force bicyclists into the travel lane and can be a crash hazard.
2. **Shoulders/Bike Lanes** (Figure 2) – Participants indicated that all but two of the road segments lacked any designated bicycle lanes. Rural roads in general had paved shoulders, ranging from 1 – 6 feet in width. Three feet is the minimum desirable width, and wider is more desirable.
3. **Bike Parking** – There was no record of bike parking in any of the assessed segments. Lack of bicycle parking is a major barrier to biking, especially for non-recreational trips.
4. **Speed Limit** (Figure 3) – There was a range of speed limits, from 20 – 45 mph. Speeds higher than 20 mph are uncomfortable for bicyclists, and the possibility of serious injury or death is very high at 45 mph and very low at 20 mph.
5. **Road Condition** (Figure 4) – In general, the road conditions were rated as being “good,” with only four segments rated as “fair.”
6. **Fast Turning Traffic** – There were twelve intersections where the design of the intersection facilitates fast automobile turns (in general, 15 mph or greater). These primarily include slip lanes and Y-intersections.

These locations are all excellent candidates for street improvements, and significant progress could be made to the bicycling experience simply through street sweeping and pavement markings. Longer-term improvements could include traffic calming at busy intersections, general road repaving, and selecting some roads for lower speed limits. Below are listed more specific findings for the five priority areas.
**Greenfield, Olver Transit Center**

The area assessed for bikeability around the Olver Transit Center was the most urban set of streets in this study. This could be the most promising area for infrastructure improvements in the present study, since it contains the highest density of origins and destinations. Below are listed specific areas identified in the bikeability assessment for improvement.

- **Bike Lanes** – As mentioned above, there are many potential destinations for trips that could be served by bicycle. However, there were no reported observations of bicycle facilities such as bike lanes or sharrows (with the exception of instructions on requesting a green light at the intersection of Bank Row Rd. and Mill Street, Picture 5). Adding bike facilities connecting Main Street to the Transit Center in particular would provide a critical connection. Continuing bike facilities down Hope Street would provide further connection to housing, businesses and government buildings. On Bank Row Street near the intersection of Main Street, there is a great deal of head-in angle parking and parallel parking (Picture 4). There needs to be a balance between parking needs and bicyclist safety when implementing bike lanes.

- **Railroad overpass (Bank Row St., south of Olive St.)** – The railroad overpass presents a major barrier to a safe and comfortable bicycling experience (Picture 1). Bank Row Street narrows in the approach to the bridge, forcing bicyclists to merge with traffic. The approach is downhill, followed immediately by a traffic signal, which may increase travel speeds (drivers trying to “make the green”). One opportunity might be to remove the bollards on the sidewalk and continue bicycle lanes onto the sidewalk under the bridge (Picture 2). If this is not possible, including sharrows should be considered a minimum bicycle accommodation.

- **Bike Parking** – There were no observed bike racks on any streets, despite the presence of multiple destinations including small businesses, the Salvation Army, and government buildings (Pictures 3, 4). The Olver Transit Center does have bike parking, though bicyclists may not be aware of the parking or willing to use it if they are visiting a different destination. Bike parking should be installed in obvious locations near businesses and other destinations.

**Greenfield, Deerfield/Greenfield/Cheapside Intersection**

The intersection of Greenfield Road (Rts. 5/10), Deerfield Road (Rts. 5/10) and Cheapside Street is a Y-intersection. These roads are primarily rural in character, though lined with residential buildings.

- **Pavement Markings** – Some of Route 5/10 already have wide shoulders (six feet or greater) in the assessed area (Picture 6). Furthermore, Greenfield Road/Deerfield Street heading northbound include dashed lines demarcating what would be a bike lane, except that there is no pavement marking designating the area specifically for bicycles. Pavement markings designating the shoulder as a bike lane should be used to reinforce the intention of the road for bicycle use.
• Overgrown foliage – In the bicycle-accommodating shoulders, there was debris reported in all of the assessed segments, and should be removed. Of particular concern was the overgrown foliage blocking the shoulder, forcing bicyclists out into the travel lane (Pictures 7 and 8).

• Intersection improvements – Posted speed limits were 30-35 mph on the road segments, though the layout of the road and soft turns encourage higher speeds. The Y-intersections of 5/10 and Cheapside and 5/10 and River allow for fast turning traffic. The dashed bicycle lane markings at Cheapside are faded (Picture 9), and could be missed especially in low-visibility conditions. Restriping and coloring the shoulder as a bike lane would improve visibility to turning traffic.

• Franklin County Bikeway Signage – Franklin County Bikeway signs are located at the Y-intersection of Rt 5/10 and Cheapside and the intersection of 5/10 and River Road (Pictures 10 and 11). Adding a sign that indicates the distance and travel time (by bike) to the nearest town center or point of interest would benefit bicyclists.

Greenfield, Shelburne Road/River Street/Rt. 2A

The intersection of Shelburne/River and Route 2A is of particular interest for potential bicycle improvements due to the numerous destinations along Route 2A and the Newton School on Shelburne Road. However, the speed and volume of traffic provides ample motivation to improve bicycle facilities along that corridor.

• Narrow/inconsistent shoulders – The shoulders along Route 2A, where present, are too narrow, at less than three feet wide (Picture 12). However, they are also inconsistent, and may drop to less than one foot wide in some places (Picture 13). There are a number of businesses and other potential destinations to which bicyclists may want to travel. These streets should have consistently wide shoulders (at least 3 feet) designated as bike lanes.

• Travel speed – The traffic on Route 2A on the west side of the bridge travels at a high speed, up to 45 mph (though it is marked at just 35 mph). Reducing traffic speeds would improve bicyclist safety, and also benefit businesses with access points along the road.

• Newton School – The Newton School is an elementary school located on Shelburne Road. The bridge over the Connecticut River may be a major barrier to parents bicycling (or walking) with their children the relatively short distance from housing on one side to the bridge to the school on the other. The sidewalk is only present on the south side of Shelburne Road, and overgrown foliage obstructs the north side (Picture 14). The bridge in particular should have bike lanes, preferably grade-separated.

South Deerfield, Rt. 5/10/116

The section of Route 116 that joins with Routes 10 and 5 is a heavily-used thoroughfare with multiple trip generators located within the corridor. First and foremost among them is the Yankee Candle Company, which not only is a large employer but also attracts shoppers and tourists.
- Pavement Markings – As with the Greenfield/Deerfield/Cheapside intersection, simply designating the already-existing wide shoulders (Picture 15) for bicycle use is low-hanging fruit for encouraging the use of the road for bicyclists.

- Elm Street Intersection – The intersection with Elm Street is complex, and a crucial connection between residential development and locations along the corridor (Picture 16). For those heading northbound toward Elm Street, the shoulder disappears and a left, right, and center through-lane take its place. A striped bike lane (preferred) or sharrows should be used to guide where bicyclists can position themselves to go through the intersection.

- Business Access – Because there are multiple businesses located along the corridor, appropriate business access points is key. The Red Roof Inn, for example, has a soft right turn onto 5/10/116, facilitating fast turning (Picture 17). Striping or curbs should be used to slow traffic.

- Speed limit – The speed limit on the entire stretch of the corridor is 45 mph, meaning a typical travel speed of at least 50 mph. Lowering travel speeds would encourage bicycling from surrounding residential areas to the businesses, and would lower the risk of serious injury or death in the event of a crash.

**Colrain, Jacksonville Road, Main Road, Greenfield Road Intersection**

Colrain town center is located at the intersections of Jacksonville, Main and Greenfield Roads. It is unclear from the assessment what traffic volume and speed are on a typical day, but the roads are of a rural character. Depending on how heavily traveled the roads are, the features below should be implemented.

- Pavement Markings – The town center should include sharrows to indicate that it is somewhat complicated intersection is meant to be a shared space with bicycles. Currently, bicyclists cut through parking lots to avoid the streets (Picture 18).

- Intersection Redesign – The town center should be studied for an intersection redesign. The current configuration includes a great deal of paved surface, especially on Main Road (Picture 19). An expanded center island would add green space, reduce turning speeds, and help with rainwater runoff.

- Speed Limit/Fast Turns – At the intersection of Jacksonville Road and River Street, there is a soft right turn that could be taken at very high speeds (Picture 20). This should be redesigned to slow travel speeds down when taking that turn.

- Pavement Conditions – On Main Road next to the Post Office, there is broken pavement and a grate that could result in a bicycle crash (Picture 21). These should be repaired.