



2016

# SNHPC Complete Streets Toolkit

## Section V: Pilot Projects

In mid-2016, SNHPC staff reached out to every Planning Board within the region, providing them with a brief presentation on Complete Streets and the benefits of a pilot program aimed at implementing elements of Complete Streets into their communities. The pilot program was intended to provide three communities in the SNHPC region with an opportunity to develop a Complete Streets policy, design standards with elements of Complete Streets, education and outreach, or pursue a pop-up planning demonstration in their community.

Although each community and its projects had distinguishing features, there were many commonalities among the projects requested. There was a basic need for recognition that there are multiple users on most road systems. These project areas exhibited a lack of fog lines, center lines, and cross walks. Each situation called for a need for traffic calming and improved safety.

While there were vastly different reactions to the pilots among the three towns, the program was enlightening for all involved. It is our intention to implement more pilot projects for other SNHPC towns in the near future.



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## SECTION 5: PILOT PROJECTS

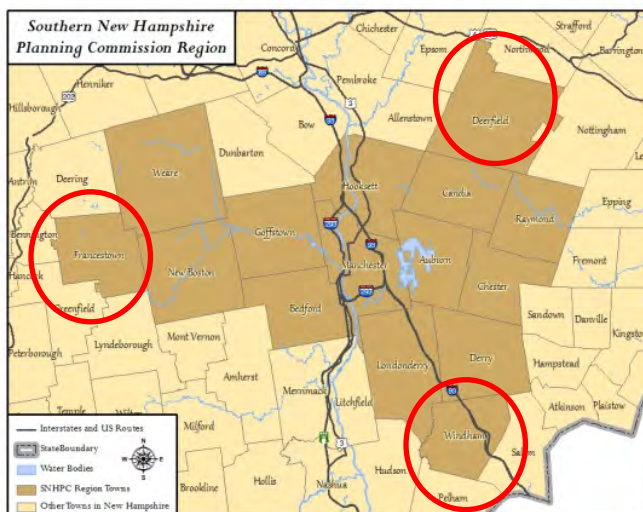
Originally, the project was designed to assist three communities, one urban, one suburban, and one rural community with developing and implementing a Complete Streets policy. However, the stakeholders group wanted a more robust pilot program. At their first meeting the Stakeholders requested more flexibility in the selection of project types. As a result, the Commission developed a Community Application Form that included a description of possible projects types: a Complete Streets policy, assistance with revising roadway standards or site and subdivision regulations to reflect Complete Streets principles, or a pop-up planning or demonstration project such as designing and implementing temporarily bike lanes.

### A. BEFORE WE BEGIN

Over the course of two months, staff reached out to all participating communities in the SNHPC region, scheduling a short presentation on Complete Streets, project details, and the pilot program. Presentations were made to each community's Planning Board and attending staff (note, each community was different ranging from no staff to several staff from Planning and Public Works Departments). During the presentation, examples were shown of projects within New Hampshire and outside the state in a variety of settings. Discussion often ensued about potential projects with many questions including:

- what was feasible for a pilot program,
- would there be any cost to the community,
- what could be done for their community,
- how would NHDOT be involved if the roads were state maintained
- what was the cost of painting fog lines along roadways
- could there be rural and suburban applications for Complete Streets including Complete Streets policies

### B. WHO WILL IT BE?



Three communities submitted applications: the rural communities of Fracestown and Deerfield, and the suburban community of Windham.

Although the communities and their projects all had distinguishing features, there were many commonalities among the projects requested. First and foremost it was noted that there was a basic need for the communities to recognize that there are multiple users for most road systems.

For all projects there was a lack of fog lines, center lines, and crosswalks. Each situation called for a need for traffic calming and improved safety. Another common feature was the need for wayfinding signage.

## C. FRANCESTOWN

### 1. BACKGROUND

In mid-2016, SNHPC staff reached out to every Planning Board within the 15-community region, providing them with a brief presentation on Complete Streets and the benefits of a pilot program aimed at implementing elements of Complete Streets into their communities. The pilot program was intended to provide three communities in the SNHPC region with an opportunity to develop a Complete Streets policy, develop design standards with elements of Complete Streets, education and outreach, or pursue a pop-up planning demonstration in their community.

Francestown submitted an application requesting a pop-up planning demonstration in their town center in an effort to give residents an opportunity to see and evaluate public realm improvements during the planning process and showcases temporary installations of possible improvements for Francestown's central roadway intersection. The following highlights the results of the planning demonstration.

### 2. PLANNING DEMONSTRATION LOCATION

Francestown applied to have a planning demonstration in a 5-legged intersection, including the following roads:

- Heading north from the intersection towards Bennington, is route 47.
- Heading south from the intersection is the town road, the 2nd New Hampshire Turnpike South.
- Crossing through town, east to west, is route 136 coming in on the west from Greenfield and the east from New Boston.
- The fifth road is a town road, Poor Farm Road, that heads Northeast between 136E and 47N.



### 3. COMMUNITY OUTREACH

On August 17th, the Southern NH Planning Commission (SNHPC) organized a "brain storming"



session in Frankestown to look at options to make our five-way intersection safer for pedestrians, bikers and traffic. There was a wide range of people in attendance: Police Chief Douglas, Road Agent Gary Paige, Selectman Henry Kunhardt, DOT representatives, Fire Chief Kullgren, as well as members of the Heritage Commission, Planning Board, Old Meeting House, FHIS, landscape artists and interested town residents.



**Community Meeting August 17, 2016**

A second meeting with town officials and NH DOT was organized on August 31<sup>st</sup> to follow up on the discussion from the first meeting and to create a list of temporary improvements to be installed for the planning demonstration.



**Northbound on NH 136**

As a result of the meeting, the group decided that the following temporary improvements would be implemented in Frankestown center's intersection:



#### Demonstration Project Temporary Improvements:

- A. Fix stop bar – perpendicular to the road, stencil "STOP", cover extended yellow line
- B. Create crosswalk
- C. Add fog lines, keeping lane width at 10 ½ feet as exists in Village Center
- D. Reduce radius around right hand turn on route 136 and SW corner 2<sup>nd</sup> NH Turnpike (consider utilizing cones)
- E. Better define travel lanes vs. non-travel area (consider utilizing traffic cones)

#### 4. MEASURING RESULTS PRIOR TO DEMONSTRATION

As a part of the demonstration, SNHPC, NH DOT, and community members decided to measure driver behavior before and during the demonstration. Community volunteers recorded vehicles at the stop sign at the intersection of NH 43 and NH 136, as local residents were concerned that

drivers were reluctant to stop at the stop bar. The following table reflects the vehicle behavior at the mentioned stop sign.

**Vehicle Movements at Stop Sign at Intersection NH43/NH136: September 21, 2016**

Time	7-8 AM	8-9 AM	3-4 PM	4-5 PM	5-6 PM	
Vehicle Movement						<b>Total</b>
Full Stop	46	35	35	32	32	180
Rolling Stop	31	24	20	15	7	97
Slight Pause	10	0	6	3	0	19
Double Stop	1	0	1	1	2	5

While the majority of vehicles came to a full stop, a total of 97 vehicles rolled through the stop sign.

Additionally, community volunteers measured vehicle reaction to pedestrians attempting to cross NH 136. The following table reflects the vehicle behavior during attempted pedestrian crossings.

**Vehicle Behavior at Crosswalk on NH 136: September 21, 2016**

Time	7-8 AM	8-9 AM	3-4 PM	4-5 PM	5-6 PM	<b>Total</b>
Vehicle yielded to pedestrians	13	14	27	29	35	118
Vehicle did not yield to pedestrians	31	14	42	43	90	220

The data collected by community volunteers shows that more vehicles did not yield to pedestrians. This was an expected result as no crosswalk exists in the intersection.



**View of NH 136 Looking East**



## 5. PLANNING DEMONSTRATION

On September 28<sup>th</sup>, SNHPC staff assisted town officials and community volunteers in the implementation of the temporary roadway markings using temporary chalk-paint and a hand-held marking wand. The following day, community volunteers used traffic cones, reflective white duct tape and a pedestrian crossing sign to mark a crosswalk on NH 136. Similarly, black roadway paint was applied on top of the yellow centerlines on the NH 47 SB approach so that the center line would stop at the stop bar. Prior to the temporary markings, the centerlines extended past the stop bar.



Jamie Pike, Franconia Town Administrator Applying Shoulder Markings



Temporary Pedestrian Crossing on NH 136



## 6. PLANNING DEMONSTRATION RESULTS

Community volunteers measured the same vehicle behavior during the planning demonstration to see if the temporary road markings influenced driving behavior.

**Vehicle Movements at Stop Sign at Intersection NH43/NH136: September 29, 2016**

Time	7-8 AM	8-9 AM	3-4 PM	4-5 PM	5-6 PM	
Vehicle Movement						Total
Full Stop	45	24	45	30	32	176
Rolling Stop	39	28	11	15	18	111
Slight Pause	4	1	2	3	12	22
Double Stop	0	0	0	2	2	4

As illustrated in the table above, vehicle behavior did not change as a result of covering the extended centerlines of the Southbound NH 47 approach's stop bar. Community members felt that future improvements could include a stenciled "STOP" marking on the road as well as a larger stop sign.

**Vehicle Behavior at Crosswalk on NH 136: September 29, 2016**

Time	7-8 AM	8-9 AM	3-4 PM	4-5 PM	5-6 PM	Total
Vehicle yielded to pedestrians	31	15	60	58	53	217
Vehicle did not yield to pedestrians	4	1	23	29	15	72

As illustrated in the table above, the temporary pedestrian crossing markings and signage was effective in increasing the number of vehicles that yielded to pedestrians as well as decrease the number of vehicles that did not yield to pedestrians. While these results do show that roadway markings can have an impact on pedestrian safety, there are limitations to the demonstration and the intersection as a whole. For instance, there is a sight distance problem on NH 136 heading west towards the intersection. Without more signage warning vehicles of an approaching pedestrian marking, vehicles would need to come to a more abrupt stop when a pedestrian is using the cross-walk.

The results show that roadway markings can have an impact on vehicle behavior. SNHPC recommends that further discussion should be held between town officials, SNHPC and NH DOT to develop strategic roadway solutions for Frankestown's town center.

## D. WINDHAM

### 1. BACKGROUND

Windham submitted an application requesting a pop-up planning demonstration on Squire Armour Road in an effort to give residents an opportunity to see and evaluate public realm improvements during the planning process. Specifically, it was hypothesized that a four-foot bike/ped shoulder carved out of the 28' existing road width would calm traffic and allow local residents a safer space to exercise and gain better access to nearby Griffin Park (pictured, top right).



### 2. PLANNING DEMONSTRATION LOCATION

Windham applied to have a planning demonstration on the westernmost 1,000' of Squire Armour Road, a subdivision road off of NH 111A/Range Road.

### 3. COMMUNITY OUTREACH

On August 31, the SNHPC organized a "brainstorming" session/site visit to summarize the Complete Streets movement and its potential application on Squire Armour Road. There was a wide range of stakeholders in attendance: Town Administrator, Police and Fire Department reps, Community Development Director, NH DOT, as well as members of the Planning Board, Board of Selectmen, and interested town residents.

### 3. TIMELINE

- 8/31: Initial meeting and site visit with town officials/interested parties
- 9/26: Presentation to Board of Selectmen re: Complete Streets background and pilot project
- 10/11: Pilot project begins with staff applying temporary chalk lines
- 11/4: Survey ends, results tabulated

### 4. PLANNING DEMONSTRATION

On October 7 and 11, SNHPC staff, assisted by Windham Highway Department, painted dual 4' bike-ped lanes on the first 1000' of Squire Armour Road with temporary chalk-paint and a hand-held marking wand.



Initial Site Visit – August 31, 2016

As a result of the meeting, the group decided that the following temporary improvements would be implemented:

**Proposed Temporary Demonstration Project (Squire Armour Road) – October 2016**



**Demonstration Project Temporary Improvements:**

- A. Add fog lines 4 ft. from edge of pavement (in keeping with AASHTO recommendations, leaving a total vehicle lane width of 20 feet)
- B. Consider bicycle/pedestrian stencil on shoulder to show designation of bike/ped lane







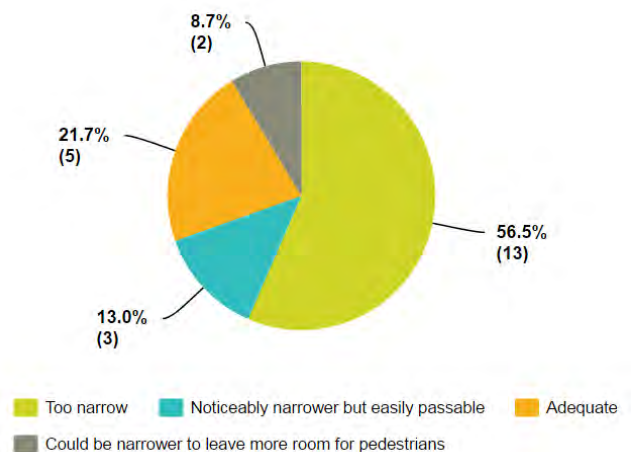
Measuring for Shoulder Markings – October 7, 2016



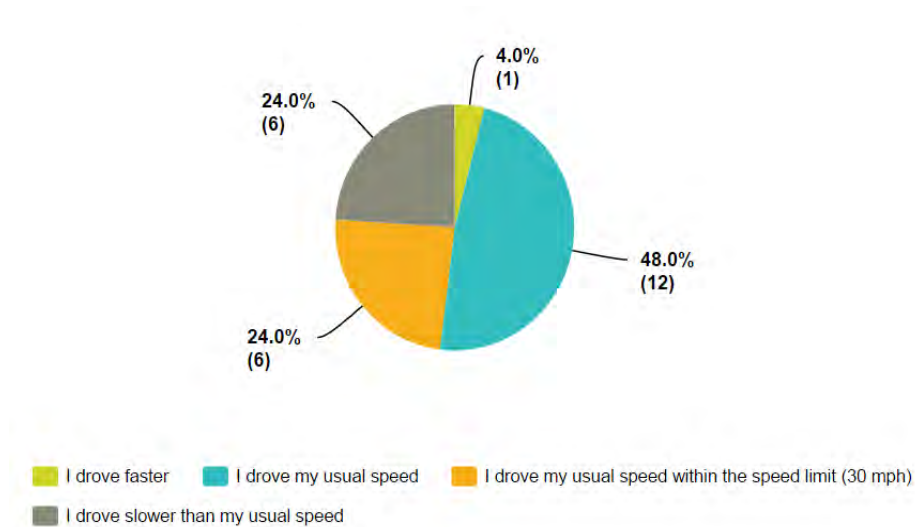
A Pedestrian in the Lane – October 11, 2016

## 5. SURVEY RESULTS

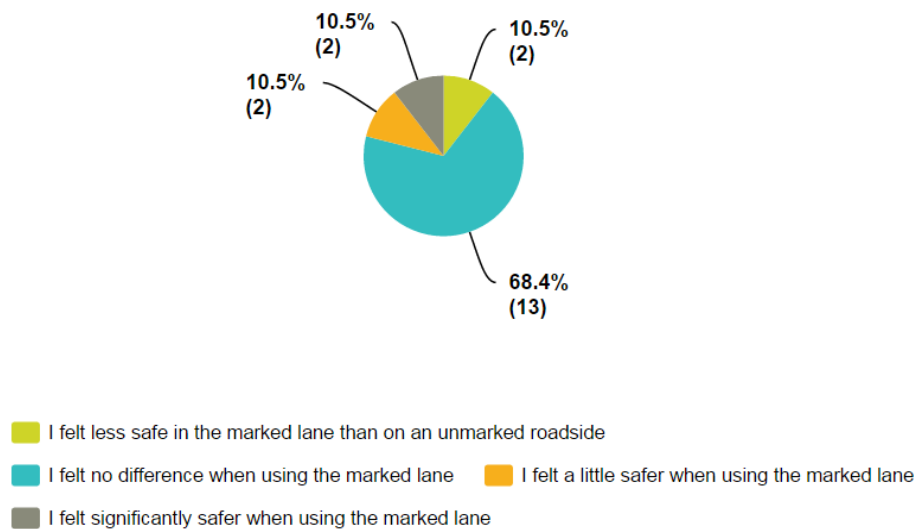
Community residents took part in an online survey via Survey Monkey; after nearly a month's window to participate, there were 25 responses. A few samples of the survey results are below:



- **57% (13 of 23) motorists found the lanes too narrow; 22% (5) found them adequate**
- **72% (18 of 25) motorists drove their usual speed through the project area; 6 drove slower than usual; 1 drove faster than usual**



- **68% (13 of 19) felt no difference in safety while using the marked lane; 4 felt safer or significantly safer; 2 felt less safe**



There were generally very negative attitudes toward the painted lines, with those surveyed claiming they were unnecessary and a poor use of resources. Anecdotally, they did not change driver behavior either.

## E. DEERFIELD

### 1. BACKGROUND

Deerfield submitted an application requesting a pop-up planning demonstration on Church Street in an effort to give residents an opportunity to see and evaluate public realm improvements during the planning process. Specifically, the town applied to lay temporary striping on Church Street in order to narrow the traffic way and provide space for bicycling and walking on the road in Deerfield Center.



### 2. PLANNING DEMONSTRATION LOCATION

Deerfield applied to have a planning demonstration on the first 1,000' of Church Street, a 26' to 30' wide, town-owned road, intersecting with NH 107/NH 43 and Candia Road. The 2015 annual average daily traffic (AADT) volume on Church Street is 590 vehicles, a relatively low traffic volume compared to the AADT of 5700 vehicles on NH 107/NH 43.

### 3. COMMUNITY OUTREACH

On August 25, the SNHPC organized a "brainstorming" session/site visit to summarize the Complete Streets movement and its potential application on Church Street. There was a wide range of stakeholders in attendance: Town Administrator, Police and Fire Department reps, Town Planner, NH DOT, as well as members of the Planning Board, Board of Selectmen, Welfare reps, and interested town residents. Additionally, SNHPC distributed a press release to The Forum, a local newspaper which covers the towns of Deerfield, Candia, Northwood, and Nottingham in order to gather feedback through an online survey.

### 4. 2016 TIMELINE

- 8/25: Initial meeting and site visit with town officials/interested parties
- 9/26: Presentation to Board of Selectmen re: Complete Streets background and pilot project
- 10/26: Pilot project begins with staff applying temporary chalk lines on Church Street

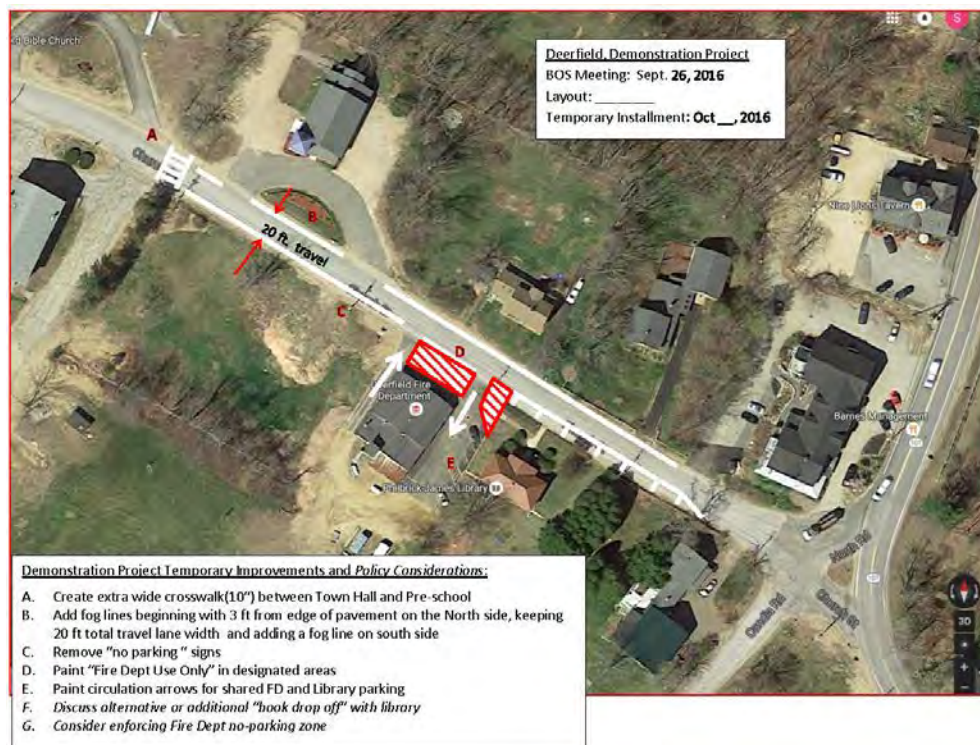


- SNHPC staff developed a survey for town residents, and requested for residents to take the survey through The Forum, a local newspaper. The Survey was administered through an online survey platform.
- 11/10: Survey ends, results tabulated



Initial Site Visit – August 28, 2016

As a result of the meeting, the group decided that the following temporary improvements would be implemented:



## 5. PLANNING DEMONSTRATION

On October 26, SNHPC staff, assisted by Deerfield Highway Department, painted dual 4' bike-ped lanes on the first 1000' of Church Street with temporary chalk-paint and a hand-held

marking wand. Additionally, with insight and help from the Philbrick-James Library, staff painted four parking spaces for library visitors. SNHPC staff and the Highway Department also painted a cross-walk at the end of the demonstration area, where students from the local preschool cross the street to the playground behind the Deerfield Town Hall.

Marking Shoulders – October 26, 2016



Pedestrian Crossing – October 26, 2016



## 6. SURVEY RESULTS

Community residents took part in an online survey via Survey Monkey; after nearly a month's window to participate, there were 13



responses. The majority of survey respondents felt that the newly narrowed lanes were adequate and that the narrowing slowed down traffic. Sixty-six percent of respondents stated that they would support the installment of wider shoulders and/or bike-ped lanes on Deerfield's streets to be added during future roadway improvements.

## Survey Highlights

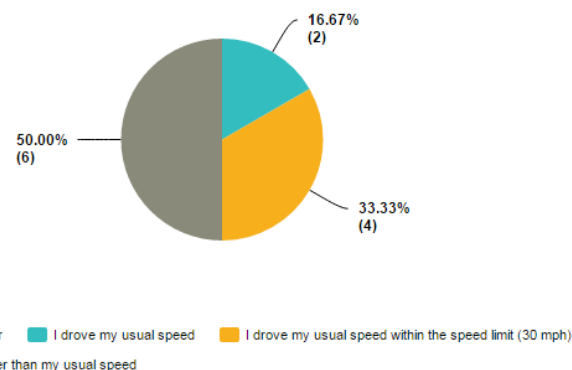
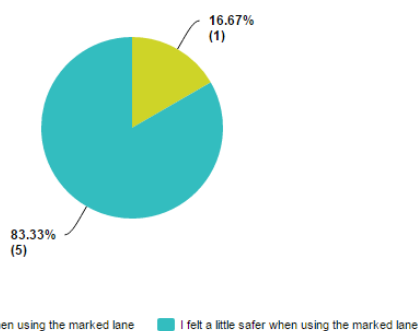
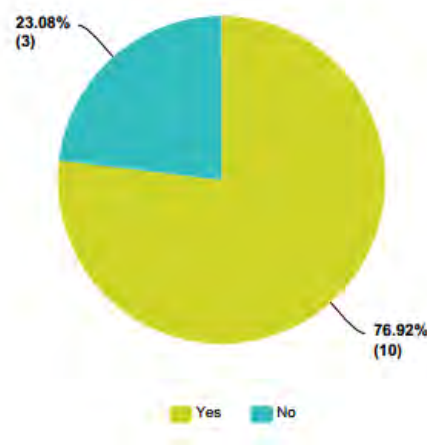
**88.89% (8 of 9) motorists found the lanes to be adequate; 11.11% (1) found them noticeably narrower but easily passable.**

**50% (6 of 12) motorists drove slower than their usual speed within the demonstration area; 33.33% (4) drove their usual speed within the speed limit (30mph); and 16.67% drove their usual speed.**

**83.33% (5 of 6) of pedestrians felt a little safer using the marked shoulder when a vehicle passed; and 16.67% (1) felt no difference.**

**76.92% (10 of 13) felt that the temporary crosswalk was in a good location; and 23.08% (3) felt that it was not in a good location.**

*Note: One respondent who chose "No" stated that while they liked the location of the temporary crosswalk, they would like to have another crosswalk on Church Street. Another respondent who chose "No" wished the crosswalk existed when their children used to cross the road at that location in the past.*



## D. DEMONSTRATION PROJECT LIMITATIONS/REFLECTIONS



While the primary focus of this temporary planning demonstration was to educate the town, town residents on the benefits of Complete Streets, there were limitations to this demonstration. Due to the limited time-window of the temporary demonstration, the volume of feedback was ultimately lower than if the demonstration had been implemented for a longer period of time. Similarly, poor weather conditions shortened the demonstration due to rain washing away the temporary chalk-paint. Additionally, the demonstration materials were not MUTCD compliant which may have impacted the feedback from Deerfield residents. For example, shoulder widths should be 4" wide, when the lines applied for the demonstration were only 2" wide. The chalk-paint was also non-reflective, making the paint almost invisible for vehicles traveling into the sun's location. Lastly, because the demonstration took place in late fall instead of summer, it is likely that more bicycle and pedestrian users of Church Street did not use the extended shoulders at all and thus missed an opportunity to provide feedback on the demonstration.

At a minimum, the demonstration projects were educational. They inspired the communities to talk about the concept of Complete Streets, to share concerns about their community's traffic concerns and road safety, and brought the community together to test out ideas.

### **Materials:**

Demo projects were carried off with a minimal use of materials: specifically, industrial choice temporary chalk paint and a rolling applicator wand that allowed participants to apply paint in a fairly straight, uniform manner. The cost of 12 cans of paint was approximately \$42. Manchester DPW loaned SNHPC an applicator wand, which ordinarily would have cost approximately \$23.



## *Overall limitations of demo projects:*

Materials – 2 inch width line vs. 4 inch standard, spray chalk to ensure non-permanence but susceptible to weather conditions, spray chalk is non-reflective whereas standard road paint is reflective

No signage – We were unable to obtain "STOP" or bicycle stencils that would have enhanced the demonstrations

Weather – Unfortunately, rain came directly after application of both Deerfield's and Windham's demonstrations

Seasonal Uses – As all the pilot programs were installed in the fall, fewer bicyclists and walkers were able to "test" the demonstration sites than might have if applied in the summer.

