

Getting there faster: A framework for accelerating the creation of safe and walkable communities

Lauren Marchetti, Nancy Pullen, Charles Zegeer and Craig Raborn
University of North Carolina, USA

Abstract

This paper describes a framework for rapidly moving communities and state governments to take action to increase safe walking and bicycling. The Safe Routes to School (SR2S) National Course offers an application of the framework and a way to explore its potential effects. While developed specifically for creating safe routes to school, the concept is adaptable for accelerating community and political interest in creating conditions that support walking for all segments of the population.

The course brings together health, safety and transportation professionals and other stakeholders. It provides participants with the knowledge and skills to develop sound SR2S programs based on community needs and conditions, best practices and responsible use of resources. It concludes with participants developing an action plan. The course is intended to lead to new policies, improvements to the built environment, education and enforcement campaigns and encouragement programs.

Initial outcomes from communities have been favorable. Participants in the SR2S National Course have reported that the course motivated them to take action. One site reported that the course resulted in significant actual changes to the built pedestrian environment near an elementary school in twenty-five percent of the time that is usually required for such capital infrastructure changes.

The development of this framework is particularly timely. In August, 2005 new federal transportation legislation was passed that provides direct funding to states to support local SR2S programs. This framework was developed in anticipation of this legislation to address the training needs that this funding would create.

Contact author

Lauren Marchetti
Deputy Director, Pedestrian and Bicycle Information Center
University of North Carolina Highway Safety Research Center
730 Martin Luther King Jr Blvd, CB 3430
Chapel Hill, North Carolina 27599-3430 USA
Telephone: 1 919 962-7412
Fax: 1 919 962-8710
Email: lauren_marchetti@unc.edu

Lauren Marchetti

Lauren Marchetti is the Deputy Director of the Pedestrian and Bicycle Information Center (PBIC) at the Highway Safety Research Center (HSRC) at the University of North Carolina. She is a Safe Routes to School (SR2S) project director. A founding member of the Partnership for a Walkable America, she helped initiate Walk to School Day in the USA and helped launch International Walk to School Day.

Nancy Pullen

Nancy Pullen is a Program Manager at the PBIC at HSRC. The main focus of her work is to provide national support for communities to encourage children to walk and bicycle to school with the broader goal of creating healthier, walkable communities for all. She has a Master of Public Health in Public Health Leadership. She serves as project manager for the SR2S course.

Charles Zegeer

Charles Zegeer is the Director of the PBIC, Associate Director for HSRC, a Professional Engineer and a SR2S project director. He led a \$5.7 million Comprehensive Pedestrian and Bicyclist Research program study for the Federal Highway Administration and was principal author of a report to Congress (in 1994) entitled, "The National Bicycling and Walking Study: Transportation Choices for a Changing Society."

Craig Raborn

Craig Raborn is a Program Manager at the PBIC and a Certified Professional Planner. He manages the technical assistance program for the PBIC and is the author of the "National Bicycling and Walking Study, Ten-Year Status Report" for the US Department of Transportation.

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Introduction

Two important goals for walking and bicycling are shared by the public health, safety and transportation communities in the United States: to create safe environments for walking and bicycling and to encourage more people to walk or bike more often. Encouraging people to incorporate routine walking and bicycling into their daily lives is seen as a potential piece of the solution to the obesity epidemic. Current data indicates that more than 30% of adults (20 years of age and older) and approximately 16% of children (6 to 19 years of age) are obese or overweight (CDC, n.d.). A major contributor to obesity is a lack of physical activity (US DHHS, n.d.). Increasing the proportion of trips made by walking and bicycling is a goal set by the US Department of Health and Human Services as stated in Healthy People 2010 (US DHHS, 2000). Doubling the percent of total trips made by bicycling and walking and reducing by ten percent the number of bicyclists and pedestrians killed or injured in traffic crashes are goals established by US Department of Transportation in its National Walking and Bicycling Study (US DOT, 2004)

The health and transportation interest in this topic is reflected in local programs as well. A 2004 survey of approximately 450 coordinators of International Walk to School events in the USA found that physical activity/obesity prevention for the first time surpassed pedestrian safety as the most common motivator for conducting an event (Pedestrian and Bicycle Information Center, 2005). Bringing together transportation, safety and public health interests at the community, state and national levels to share knowledge and develop solutions may offer the most promise for increasing safe walking and bicycling.

This paper describes a framework for rapidly moving communities and state governments to take action to increase safe walking and bicycling recently developed in the United States by the Pedestrian and Bicycle Information Center (PBIC) of the University of North Carolina Highway Safety Research Center. The Safe Routes to School (SR2S) National Course, developed by the PBIC through a partnership of funding from the Federal Highway Administration, the National Highway Traffic Safety Administration, the Centers for Disease Control and Prevention and the Environmental Protection Agency, offers an application of the framework and a way to explore its potential effects. While developed specifically for creating safe routes to school, the concept is adaptable for accelerating community and political interest in creating conditions that support walking for all segments of the population.

The course brings together health, safety and transportation professionals and other stakeholders. It provides participants with the knowledge and skills to develop sound SR2S programs based on community needs and conditions, best practices and responsible use of resources. It concludes with participants developing an action plan. The course is intended to lead to new policies, improvements to the built environment, education and enforcement campaigns and encouragement programs.

The development of this framework is particularly timely. In August, 2005 new federal transportation legislation was passed that provides direct funding to states to support local SR2S programs. This framework was developed in anticipation of this legislation to address the training needs this funding would create.

Background

Safe Routes to School Programs started to gain popularity in the United States in the late 1990's. While these differ across communities, they all share the common aim to improve the health of children and the community by making walking and bicycling to school safer, easier and more enjoyable. A typical program uses a comprehensive approach that includes engineering, encouragement, enforcement and education strategies. These programs involve parents, community members, school staff, traffic engineers, city planners, law enforcement officers, community leaders and many others. They work to assess the safety of school travel routes; make changes such as building sidewalks or adding crossing guards; educate students and drivers about safe travel and encourage walking and biking to school. The focus often expands to enable safe walking and bicycling throughout the community.

In 1998, Congress funded two pilot SR2S programs through the National Highway Traffic Safety Administration in Marin County, California and Arlington, Massachusetts. Within a year after the launch of the pilot programs, many other grassroots SR2S efforts were started throughout the United States. Interest in including a larger SR2S program in federal legislation began in 2002. At the same time, a number of states were developing their own SR2S programs, continuing to build momentum for the movement.

In July 2005, Congress passed federal legislation that established a national SR2S program and it was signed into law in August 2005. The program will dedicate a total of \$612 million in funding over six years for SR2S-related programs and projects, including training with a minimum of 70 percent of the funds dedicated for infrastructure improvements.

As the process of developing a national SR2S program began in 2002, the PBIC – which is the United States Department of Transportation's clearinghouse for pedestrian and bicycle issues – began to consider the implications of providing significant funding resources to unprepared communities. PBIC identified two important areas of need regarding the growth of SR2S programs and the potential federal funding:

1. Build local capacity

A critical need exists for communities to have quality information to develop sound programs, use resources wisely and to understand that safety must be a central component of these programs.

Local partners need the skills to identify issues and select appropriate solutions. The possibility exists that without proper training or technical assistance, well-intentioned selection of inappropriate countermeasures could lead to decreased safety.

Communities also need information on how the location of a school impacts walking and bicycling. With the projected growth in student enrollment and the school building boom in the United States (US EPA, 2003), communities will have the opportunity to influence whether children can walk or bike to school by where the new schools are located. What is built and where it is built will determine opportunities for students to walk or bike to school for decades.

2. Increase state receptivity

In order for community-level change to occur, there must be support at both the state and local levels. States can provide resources and establish policies to facilitate local change. Change can occur faster if state and local organizations have the same set of information from which to base decisions.

While many states are building SR2S programs, some states may not understand the importance of these programs and the types of initiatives to fund. It is important that communities in all states have the advantage of informed and engaged leadership at the state-level. The ideal scenario is when both local and state leaders are equally prepared so that proposals are based on need and sound principles and state leadership is ready to respond.

The framework

With these two basic needs identified, the PBIC proposed a SR2S National Course, and then set out to develop a framework for facilitating the development of safe routes. The framework consists of the following six actions:

1. Establishing multi-disciplinary local and state partnerships that draw from different sets of expertise and interests.
2. Informing the partnership about issue importance. Some stakeholders will attend the training before they have an understanding of the SR2S concept.
3. Compressing the 'learn-evaluate-decide' process into one day. The process of educating participants about an issue, presenting alternatives, allowing discussion and evaluation of the alternatives, and encouraging decisions to select desired alternatives may take months or years.
4. Studying the issue and potential solutions and alternatives. Evaluation of numerous alternatives provides more opportunities to identify issues, potential obstacles, and overall appropriateness of each potential action.
5. Developing an initial action plan. To establish immediate goals, as well as show early successes, the stakeholders need to develop a plan, with attainable outcomes that stakeholders could help pursue.
6. Building social capital allowing sustained activity by the partnership. The SR2S movement is based on sustained activities rather than one-day or single-outcome events.

These actions were determined by examining two existing training and planning workshop approaches: community traffic safety partnerships and planning and architecture charrettes. The framework combines some of the characteristics of the traditional community partnership process with the dynamic planning process of a charrette. Community traffic safety partnerships (CTSP), in which stakeholders come together to identify traffic safety issues and develop injury prevention strategies, have been used successfully to increase child safety seat or seat belt use (Marchetti et al. 1992) or decrease drinking and driving (Hunter et al., 1993), (Marchetti et al., 1995). These partnerships and action plans usually are developed over a series of meetings over many months. The charrette process, which brings together a multidisciplinary group that participates in a dynamic planning process to reach consensus, is typically used to accomplish a predetermined task for which there is already commitment (National Charrette Institute, 2005). The SR2S course framework attempts to accelerate

the process of the community partnership for identifying issues and solutions while using elements of the charrette process for getting stakeholders to common action.

To implement PBIC's six-point framework, the SR2S National Course employs the following techniques:

- Convene stakeholders to partner around issues and work as one.
Course participants become grounded in the same information and work together to design a plan of action.
- Create common vision and capitalize on opportunities.
Each community is motivated by different local conditions. Motivators include having conditions that are not safe for walking; having safe conditions but few people walking; health concerns such as poor air quality or lack of physical activity; or the availability of funds to support programs. The course is customized to address motivators specifically identified by each community.
- Create a common knowledge base of the multiple disciplines (engineering, encouragement, enforcement and education).
- Identify local issues.
Provide opportunities to see a real school and its environment and collectively develop potential countermeasures. Focusing on local conditions also helps get stakeholders engaged during the course.
- Align local and state priorities.
Prepare communities to apply for grants for projects and prepare states to be receptive to applications for good projects. Decrease opportunity for inappropriate decisions that could compromise safety.
- Begin development of an action plan owned by all.
The course assists participants in applying knowledge learned to their specific circumstances and in developing an action plan appropriate for their community.

SR2S course

General description

The SR2S National Course was developed by the PBIC in conjunction with experts from around the country who have experience with developing SR2S programs at the state and local levels. The course combines information related to safety, health and transportation issues. The course is taught by a team of two instructors with complementary skills regarding the built environment (engineering, planning) and behavior issues (encouragement, education, health) and the ability to motivate participants.

The course is designed for 20 to 40 participants, although it can be adjusted for larger or smaller audiences. The one-day or two-day format is customized for the audience's needs and interests. The course is delivered at any of four levels: community level for local schools; regional level for multiple schools; state level for transportation and health officials; and national level as a component of conferences and meetings.

A typical course at a local school includes the following elements:

- Visioning Exercise
Participants are asked to briefly describe their visions for their school in 10 years. Responses often include: having fewer cars at the school entrance, more active

children or safe walkways. This focuses the group on the positive — what they would like to have, rather than what is wrong.

- Setting the context: Safety, health and transportation
This provides a concise description of the SR2S movement. It is designed to be able to stand alone and be used as a sales tool to sell SR2S to elected officials and others in the community or state.
- Process for developing and implementing a SR2S program
- Knowledge building on SR2S strategies: engineering, enforcement, education and encouragement

A major segment of the course is the delivery of information on the four main strategies for SR2S programs—engineering, education, enforcement, and encouragement. This serves the purpose of giving everyone the same baseline knowledge on all the topics. This enables participants to better understand the different disciplines and lead to better communications. This also provides opportunity for the professionals to learn more about how their own expertise areas pertain to SR2S. Participants are asked to describe “how things work” within the community.

- Walk audit of school campus and surrounding area
Probably the most insightful part of the course is when the instructors lead the participants in a walk to the school. Participants observe the physical environment for walking and bicycling both on the school campus and in the surrounding area; and the behaviors of pedestrians, bicyclists and motorists.
- Identification of problems and solutions
Much of the discussion during the walkabout is continued when participants are divided into groups for problem-solving and development of countermeasures. Participants record their engineering recommendations on maps and make lists of education, enforcement and encouragement recommendations. Each group presents their collective recommendations to the larger group.
- Development of an action plan and commitments to next steps
The final session ends with each participant answering this question: *“What are you going to do tomorrow (or next week) to help make conditions better and safer for children to walk or bike to school?”*

By the end of the course, most participants take real ownership in identifying specific actions that they can take to solve at least one part of the problem. Examples of such actions (and potential volunteers) include:

- Identifying improvements for sidewalk repairs or additions, re-timing pedestrian signals, installing/improving signing (traffic engineers)
- Volunteering to teach pedestrian/bike safety to children in the classroom (classroom or physical education teachers)
- Agreeing to monitor motorist speeds, yielding behavior at crosswalks, and/or proper actions when picking up or dropping off children (police officers)
- Committing to organize a group of parents to trim branches and remove debris from sidewalks on school routes (parents)
- Leading a “walking school bus” in the neighborhood (parents)

This interaction of a diverse group of participants sets the stage for these commitments. The walkabout is often mentioned as a valuable experience, providing first-hand

understanding of the problems and possible needs on the school routes. Furthermore, the solutions that are generated by the participants are geared to meeting their own visions for their school, which gives them ownership to solve their own community problems plus the knowledge on how to best accomplish it successfully.

The course is flexible in order to address the particular needs of the host community. For example, some schools in suburban areas may have a good built physical environment of sidewalks and walkways, street crossings, and neighborhood connectors, but with few children actually walking or bicycling. Another neighborhood may be in a more compact downtown environment with many children walking and bicycling to school, but with unsafe conditions for doing so, and perhaps a toll of crashes involving child pedestrians. A SR2S course in the first example may be focused primarily on programs to encourage more children to walk or bike to school. In the second example, the focus may be on engineering solutions to address roadway safety concerns. Each course has core content around engineering, education, enforcement and encouragement that must be part of any curriculum taught. All courses include the walk audit of a school.

Pilot test, instructor training and course delivery

During the fall of 2004 and winter of 2005, the course was piloted in Falls Church, Virginia; Baltimore and Rockville, Maryland; and Tucson, Arizona. Course content was amended based on data from participant evaluations. Fifty professionals, with expertise in engineering, planning, public health, SR2S programs and pedestrian/bicycle education, were trained to be instructors.

During spring and summer 2005 the course was delivered at all four levels: local, regional, state and national. Newly trained instructors partnered with experienced instructors, five more courses were taught through the PBIC. At the same time, all instructor training participants were encouraged to market and teach the course independent of the PBIC. A state-level course was held in Virginia and national version was taught at the Bike Summit in Washington DC and at the State Pedestrian and Bicycle Coordinators Meeting in Cambridge, Massachusetts.

Preliminary evaluation

Written participant evaluations provided an opportunity to better understand participants' views on the course and their future plans. The evaluations revealed that the training provided a valuable opportunity to establish connections between community members including different professional disciplines. One participant appreciated, "the ability to look at a situation through the eyes of other professions." Another stated, "I liked the mix of educators, engineers, parents..." In addition, the course led some participants to see the importance of developing partnerships with other entities. One participant planned to focus on collaboration with the city as a result of the course while another was going to, "target schools as partners."

Participants also described their intentions to take action based on the course experience. The actions varied, from changes to how they get work done, to specific planned actions. One intended, "to look at raised crosswalks in our parking lots. "Bus Evacuation Day" to become "Transportation Safety Day." While another planned to "paint crosswalks, [post] new signs." "Implementation of bike safety lessons in physical education" was part of the action plan of a different participant.

Two locations were selected for informal telephone interviews with local coordinators for deliveries of the SR2S National Course. Local coordinators usually work for the organization that requests the course and hold the responsibility for establishing the

course location, inviting participants and other logistics. Often, they will take the lead in moving forward with SR2S efforts.

One course occurred in April in North Carolina and the other in May in Arizona. The phone interviews took place four months and three months post-course, respectively. When asked about the primary perceived benefit, both described the value of interactions between professionals and parents and some of the rapid results.

Chapel Hill, NC

At the April course site, many improvements occurred since the course. Bike to School Week was observed at the middle school (elementary and middle school share campus and shared in course participation). Shrubs that were obstructing drivers' ability to see walkers were trimmed. Existing sidewalks have been repaired, new signage and a three-way stop sign have been put into place, and new sidewalk construction is underway. Other programs will begin this fall, including the initiation of a walking school bus program, reminders about student drop off and pick up procedures sent home to parents and use of a speed trailer that provides driver feedback on speeds. The local coordinator attributed the National Course walk audit and interaction between parents and city engineer who "came together" during the course as what led to the subsequent action. During the walk audit the city engineer "got out there and saw the actual physical layout of what was going on and saw children in action...made immediate recommendations and bumped up [the priority by the town for related improvements]." Once he saw, "broken sidewalk, for example...he said, 'this has to be done immediately.' This was huge." When asked the best outcome of the course, the local coordinator stated, "Bringing people together and getting the right people at the right time...it's all about connecting the dots, all of a sudden you can have effective change." The local coordinator also reported that an additional school now wants to begin a Safe Routes program, in part due to the quick success of this April course school.

It is important to note that in Chapel Hill, North Carolina, the typical capital improvement planning process takes eight months, and then another three months to include projects in the Town budget (Horton, 2002). As mentioned above, within 2-4 months after the course, signs were installed and construction begun on sidewalks. Although other factors may have been at work¹, the SR2S National Course appears to have helped significantly reduce the typical time it takes from problem identification to implementation of new construction from approximately one year to approximately three months. In effect, the course resulted in significant actual changes to the built pedestrian environment near an elementary school in 25 percent of the time that is usually required for such capital infrastructure changes.

Glendale, Arizona

The May course brought together teams from several schools that had not talked together before this course. In this community, each school is required to submit a "designated safe route" walking map to the city but compliance had been low. These maps are intended for distribution to families, police and fire personnel. Now, schools have submitted completed walking maps. In the fall, the local schools will celebrate International Walk to School Day and promote use of the maps. The local coordinator cited the course as helping schools tap into resources available within city government to address safety concerns along the designated route. The participation of schools and local city government in the course "...gave a chance for schools to ask questions, understand the process – they realized they needed to request services, to know who to call. Now schools have points of contact in the city to get the help they need." Schools also gained an understanding as to the rationale behind the maps and committed to,

“share with their staff what they do and why they do [the maps.]” The local coordinator viewed the best outcome of the course as, “the schools...have complete knowledge as to why (the maps are) being asked of them...it’s given them empowerment to work within the city – they have contacts for striping, crosswalk changes. They have an understanding as to how it all works and why it’s advantageous.” The course instructors offered a new voice beyond the city and were seen as adding credibility to the creation of “designated safe route” walking maps.

Discussion

Based on preliminary evaluation results, the SR2S National Course is a promising tool for assisting communities to identify and implement infrastructure changes. Initial outcomes from communities have been favorable:

- Participants in SR2S National Course workshops have reported that the course motivated them to take action, that the one-day format allowed them to understand SR2S-related issues, and that the gathering of multi-disciplinary stakeholders allowed them to hear the issues of each participant that must be understood and overcome for a SR2S program to succeed.
- The few communities that have been surveyed after a presentation of the SR2S National Course have shown progress in establishment of SR2S programs or activities at their schools, rapid development of capital infrastructure improvements, or both.

In Arizona, an important process for designating safe routes was given the priority it had been struggling to win. In North Carolina, course participants were able to initiate environmental improvements, including repaired and new sidewalks and traffic signals as well as strategies to change behaviors such as the use of a speed enforcement trailer, organization of a walking school bus and observation of Bike to School Week. Given that seventy percent of the federal legislation funds for SR2S are dedicated for infrastructure improvements, how quickly infrastructure improvements occurred is particularly noteworthy.

The SR2S National Course process may influence the typical planning and capital infrastructure process in three ways. First, it may help a community identify new priorities that will then be followed by elected officials and staff and leaders in developing a Capital Improvement Plan (CIP). Second, the SR2S National Course may lead to identification of specific projects for inclusion into a CIP. Third, the SR2S National Course may influence prioritization and ranking of specific projects that were previously identified and included in the CIP, but are low-ranked and unlikely to receive funding in the immediate future.

Each of these three potential approaches to influencing the CIP process for a community empowers the stakeholders who participate in the SR2S National Course beyond how they could influence the process as individuals. More importantly, the SR2S Course develops this social capital in one day, rather than months or years, as is more frequently the case when forming interest groups to influence community policy. One potential reason for the accelerated development of social capital is the broad stakeholder participation, with the group usually including members of the community governing body and professional staff that regularly work on CIP issues. Another reason that the SR2S National Course likely accelerates infrastructure changes is that it effectively narrows the scope of the standard CIP process; instead of looking at all potential CIP topics² during a series of meetings over a one-year period, the Course allows participants to look at just one narrow issue during a brief one-day period.

Future Needs

The framework used in the SR2S National Course is a promising tool for assisting communities as they grapple with development of priorities and plans and apply for funds from their state SR2S programs. The course can help gather necessary stakeholders to discuss issues and identify programs and projects that have worked in other locations and are likely to work in their community.

More evaluation of the SR2S National Course is needed, however, to fully understand the potential it offers, and determine how best to make improvements to the relatively new course. It was developed in anticipation of high demand for SR2S-related information, and the course – along with its companion resource guide – provides extensive informational resources.

These are promising results, but also raise many additional questions worthy of research. For example, how do other training methods compare? Are training workshops the most effective approach for jump-starting SR2S programs?

Before effective and consistent evaluation of SR2S activities can be conducted, however, effective measures need to be developed, and methods for standardized data collection established. The PBIC has a contract with NHTSA to convene an expert panel to discuss, propose and evaluate potential measures. SR2S has two primary areas of potential evaluation:

- Safety – are there fewer injuries and fatalities to children walking or bicycling to and from school?
- Increased usage – are more children walking and bicycling to school?

Evaluation methods will be needed for the local level, but with significant new federal funding resources, national-level evaluation of SR2S programs will be needed. In addition to safety and increased usage evaluation, the national SR2S legislation suggests other desired outcomes that might be evaluated include air quality and fuel savings, obesity and physical activity, and congestion relief.

Conclusions

While the course applies the framework to travel to school, the elements it puts in place (multi-disciplinary partnerships, state and local capacity and emphasis on action) can act as a springboard to larger walkability issues. In addition, the broader community is able to sample the benefits of a walkable area, thus building support for further changes to the community.

The six-point framework for inspiring immediate and ongoing community action used in the PBIC-developed SR2S National Course may also apply to other issue areas. The framework might be well-suited to address issues that incorporate a broad range of topics; those that require extensive or complex processes to fully address; and those that rely on advanced expertise to effectively address.

For example, as the population in the United States continues to age, interest in “Safe Routes for Seniors” is expected to grow and build on the SR2S movement. This concept involves nearly all the types of topics, processes, and expertise as SR2S, but the details will be different. Seniors will want and need to walk safely to a wider range of destinations. With the expected challenges of addressing this coming movement, a framework such as that used by the PBIC for the SR2S National Course may provide a way to help accelerate those programs as well.

The SR2S movement is poised to undergo rapid expansion in the United States. Although at least 18 states already have SR2S programs in some form, the recent establishment of a national SR2S program by the U.S. Congress will result in programs in all 50 states and the District of Columbia. The new national program will provide \$612 million to states for SR2S programs and projects. As these funds start flowing to states and communities, SR2S activities are certain to dramatically increase. One key challenge of this rapid growth will be avoiding poor, wasteful, or dangerous decisions in a rush to establish a program and get access to the funds.

With the development of the framework described in this paper, the Pedestrian and Bicycle Information Center has provided an approach to supporting community change that has immediate implications for the newly-established national SR2S program. The SR2S National Course, which implements the PBIC's six-point framework, will be a primary tool for communities to prepare for using those funds. In addition, as the framework and course is applied in more venues, additional data can be collected to evaluate the course and optimize its continued application for SR2S-related issues, as well as translate the framework to emerging fields and movements.

¹ These changes may have been under consideration by the Chapel Hill Bicycle and Pedestrian Advisory Board (BPAB) since as early as 2002. However, until the SR2S National Course, they had not been prioritized for actual construction. During the workshop day, these improvements were discussed, but without knowledge by participants that BPAB had earlier considered them. BPAB's actions had not yet resulted in new construction, and there are no indications from Chapel Hill planning documents that a decision to commence the projects was made prior to the SR2S workshop. The course may have simply encouraged the final decision to construct these improvements, rather than also identify the improvements to Town decision-makers.

²The CIP process involves more than just sidewalks and bike facilities. In most communities it covers all public facilities, including roads, public buildings, water and wastewater systems, transit systems, police and fire stations, etc.

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