Capitol Region

Complete Streets Plan

Prepared in cooperation with the U.S. Department of Transportation (including its participating agencies) and the Connecticut Department of Transportation. The opinions, findings, and conclusions expressed in this publication are those of the Capitol Region Council of Governments and do not necessarily reflect the official views or policies of the Connecticut Department of Transportation and/or the U.S. Department of Transportation.

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ABOUT

This plan was developed by the Capitol Region Council of Governments, using a grant from the Connecticut Office of Policy Management. Along the way we had help from dozens, if not hundreds of people. The following is a non-exhaustive list of individuals and organizations who helped us develop this plan:

ADVISORY COMMITTEE

To oversee the study CRCOG created an Advisory Committee. It was comprised of municpal representatives, state organizations, and various other stakeholders. It included:

Bill Hawkins, AICP, Town Planner, Town of Suffield

Bruce Donald, Regional Coordinator, East Coast Greenway

Susan Smith, Executive Director, Bike Walk Connecticut

Chris Canna, Sr. Real Estate Developer, CIL

Robert L. Miller, MPH, RS, Director of Health, Eastern Highlands Health District

Michele Lipe, AICP, Director of Planning, Town of South Windsor

Alicia Leite, Transportation Planner, Connecticut Department of Transportation

Al Sylvestre, Chairman, Bureau of Education and Services for the Blind Advisory Board

Todd Andrews, Vice President for Economic & Strategic Development, Goodwin College

Mark Moriarty , Director of Public Works, City of New Britain

Craig Babowitz, Transportation Engineer, Connecticut Department of Transportation

Sandy Fry, Senior Planner/Bicycle Pedestrian Coordinator, City of Hartford

Chris Edge, Director of Economic Development, Town of Berlin

Lieutenant Gabriel Laureano , Traffic Division, Commander , Hartford Police Department

TECHNICAL ADVISORY COMMITTEE

Each municipality was asked to hae a representative of the town attend a series of Technical Advisory Committee meetings. During the course of the study, those individuals changed. We would like to thank the 38 municipalities of the CRCOG region for their support in this project.

OTHER ORGANIZATIONS AND STAKEHOLDERS

The following organizations and individuals were instrumentl in getting the word out about this study, or with facilitating it.

Watch for Me CT!

Center for Latino Progress

reSET

YWCA of New Britain

Real Art Ways

South Downtown Neighborhood Revitalization Zone

Department of Aging and Disability Services Deaf-Blind Advisory Committee

The Town of Coventry

The Town of Simsbury

The City of Hartford

The City of New Britain

Bike/Walk CT

Alison Dewey, Leage of American Cyclists

Fitzgerald and Halliday

Toole Design Group

Street Plans

TranSystems

INTRODUCTION

More than anything, a street should be a place. The Capitol Region's streets are public space, and they should be more than just where we travel—they should be where we gather, play, socialize, celebrate, and buy and sell goods. For a long time, streets had these many purposes. But, starting about one hundred years ago, we stopped prioritizing this variety of purposes in favor of something more singular: the fast and uninterrupted movement of automobiles.

This plan provides recommendations for reversing that trend through an emphasis on complete streets. "Complete streets" is a term that refers to streets which accommodate all users regardless of mode, age, or ability. More specifically, it provides facilities for cyclists, sidewalks or paths for pedestrians, space and amenities for buses and bus riders, sidewalks and ramps that accommodate people with disabilities, and, of course, people in automobiles.

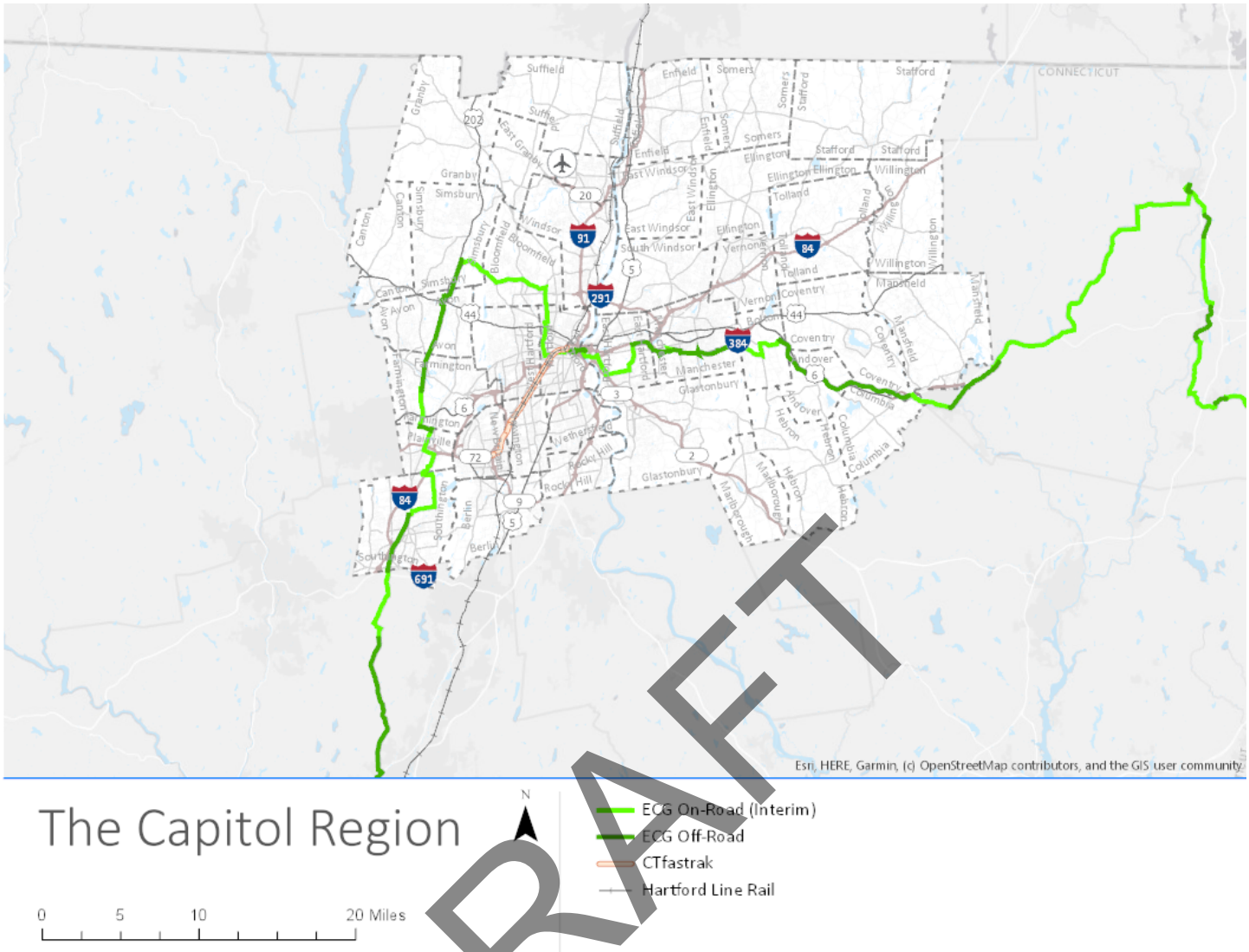
As a companion to this plan, the Capitol Region Council of Governments (CRCOG) has developed a regional complete streets policy. This policy makes complete streets a requirement of funding programs administered by CRCOG. It also recognizes that the trend over the past 100 years has been to prioritize the automobile, to the detriment of other users, this

Through this policy, the region's decision-making process will strive to protect those most vulnerable to harm, while accommodating a wide range of modes, by incorporating the modal hierarchy below.

The modal hierarchy recognizes that many people living in the CRCOG region lack regular or convenient access to an automobile. It also recognizes that many people who do have auto access would prefer to walk, bike, or take transit.

The following modal hierarchy shall apply to all urban, town center, and village center place types and to all streets and roads where development ordinances or land use plans call for walkable or multimodal corridors.

1. *People walking, in wheelchairs, or using other assistive devices*
2. *People taking transit*
3. *People biking*
4. *People moving goods for local delivery*
5. *People in personal automobiles accessing local destinations*



plan seeks to reverse that trend. A quote from the policy, included on the previous page, describes this prioritization.

THE BROADER PLANNING CONTEXT

This plan is a companion to several other plans developed by CRCOG. First and foremost, it provides the underpinnings of the bicycle and pedestrian recommendations in CRCOG's Metropolitan Transportation Plan, which provides a long-range guide for the region's transportation system (to 2045). It also responds to the region's Plan of Conservation and Development (POCD), which provides a long-range vision for land use in the region. Finally, it supports the 2014 One Region, One Future Action Agenda, which fed into the POCD. Complete streets respond to many of the themes in the One Region, One Future plan:

Vision: The Capitol Region will be Connected

Why this is important: Investments in big infrastructure – highways, train corridors, and airports – have created better connections between the Capitol Region and economic markets in Boston and New York. However, the roadway network within and between the cities and towns of the Capitol Region is rooted in automobile dependence, lacks affordable options, and is inequitable when it comes to access to opportunity.

How complete streets help: Through this plan, CRCOG will help the economy thrive by funding projects that make streets safer, more convenient,

and well-connected for people accessing economic opportunity, whether by foot, wheelchair, bike, train, bus, car, or truck. CRCOG will also facilitate multi-jurisdictional coordination, recognizing that a region of complete streets can only happen through cooperation between member cities and towns, as well as the State of Connecticut.

Vision: The Capitol Region will be Competitive

Why this is important: The Capitol Region's transportation system helps to attract and retain a highly educated and mobile workforce.

How complete streets help: Complete streets will provide the bones of a competitive region, one that connects residents to educational opportunities, attracts anchor institutions and employers, encourages smart and sustainable development patterns, and leads to the creation of strong, resilient, and diverse neighborhoods. The Capitol Region will build competitiveness from within by proactively investing in communities experiencing poverty, racial inequities, language barriers, and disproportionate environmental and health risks and costs.

Vision: The Capitol Region will be Vibrant

Why this is important: All Capitol Region residents deserve the opportunity to have a high quality of life. Vibrant communities encourage this by offering a variety of cultural activities, active and passive recreational opportunities, plenty of access to natural areas, and interesting places and streets.

How complete streets help: Streets that are safe and favorable for social interaction allow people of all ages, abilities, and backgrounds to live, work, and play in their communities without fear of harm or personal injury. Through a transportation network that equitably accommodates all modes, our region will reap the benefits of livability, public health, safety, affordability, and overall vibrancy.

Vision: The Capitol Region will be Green

Why this is important: Complete streets encourage sustainable transportation modes, decreasing dependence on automobiles and contributing to reductions in harmful pollutants.

How complete streets help: Complete streets will allow the region to maximize sustainability of both

Figure 1-2 A graphic showing the elements of the *One Region, One Future* plan.

Figure 1-3 A concept drawing of a portion of the Plainville section of the FCHT.

the built and natural areas by encouraging smart, compact development and shifting away from automobile dependence.

TRENDS

Demographic trends in the region also reinforce the need for complete streets. As is described in more detail later, about 10% of households in the region have no access to an automobile. For them, complete streets are an absolute necessity for mobility. In Hartford, the figure rises to 17% citywide and much higher in many neighborhoods. Relatedly, the region is getting older. In 2010, 34% of the region was either over 65 or approaching 65. As people get older mobility becomes a greater concern. While people are living longer, they are not necessarily able to (or want to) keep driving. High quality infrastructure is essential to continue to provide mobility for these populations.

This is an even greater concern for people with disabilities. Over 109,000 people in the region have a disability according to the 2018 American Community Survey. While not all people with a disability have ambulatory difficulties (roughly 50% do), vision, hearing, and cognitive disabilities can also affect mobility. Having safe, high quality complete streets infrastructure can greatly expand mobility.

PROGRESS

Trails

CRCOG's last bicycle and pedestrian plan was completed in 2008, with a minor update in 2015. While the 2008 plan did address complete streets, a major focus was the regional trail system. Since then, most of the gaps in the major regional trails have been filled. The Farmington Canal Heritage Trail (FCHT) is nearly complete, stretching from New

Figure 1-4 This bike/ped bridge in Bolton was completed in 2019.

Haven to Massachusetts. Within the CRCOG region, a 4 mile gap in Plainville still exists. In 2018, CRCOG and the Town of Plainville adopted a plan to address that gap. The route is currently in design at CTDOT. A small section in Southington is also incomplete, though that has been designed and should be constructed soon.

The FCHT is part of the larger East Coast Greenway, a trail that will eventually go from Florida to Maine. In the CRCOG region, major progress has been made in completing it. In addition to the Plainville portion of the FCHT, work has begun on sections in Simsbury and Bloomfield. All sections in those towns are either under construction, in design, or planned. The City of Hartford has a conceptual plan for the trail though it has not yet been designed. A spur is being constructed as the Connecticut River Trail which will extend to Windsor.

East of the Connecticut River, the Charter Oak Greenway is complete, except for a section in East Hartford. A corridor study along Silver Lane has proposed a side path along Silver Lane to complete that gap. The study is complete and was be approved by CRCOG in February 2020. The CTDOT recently completed an extension from Manchester to Bolton, where the trail connects with the Hop River Trail. Most future work exists outside of the CRCOG region.

Education

Another focus of the 2008 plan was education and encouragement. Bike/Walk CT now offers bicycle education curriculum for schools. South Windsor, Berlin, and Simsbury have all offered bike education to school children in some form. Interest continues to grow. Various advocacy groups have also sponsored adult bike education. The Center for Latino Progress and Bike/Walk CT have both hosted American League of Bicyclists courses to the general public.

Many towns in the region have become “Bike Friendly Communities”. Nine of the ten bike friendly communities in Connecticut are in this region. The Town of Simsbury also graduated from being a “bronze” level community to being a “silver” level community. Seven companies have become bike friendly companies. In addition, the City of Hartford, became the first “Walk Friendly Community” in the

state.

Policies

On the legislative front, greater protections are now afforded to vulnerable users. The state now has a complete streets policy that mandates consideration of all users in all projects using state funding. The DOT is also required to spend at least 1% of its capital funding on complete streets infrastructure. A three foot passing law was also adopted.

Many municipalities have also begun adopting their own complete streets policies. West Hartford, for example, adopted a plan in 2015 and in 2016 it was named the second best policy in the country by Smart Growth America. The City of Hartford also has a policy and has adopted a new form-based zoning code that goes beyond buildings and specifies what streets in various contexts should look like. It also specifies spacing of streets and trees, establishes parking maximums (instead of minimums), and requires certain developments to pay into a complete streets fund. The city also has a Bicycle Master Plan that lays out a series of bike lanes and bicycle boulevards.

While these developments are certainly positive, much work is still to be done. This plan seeks to move the needle even further over the next five years.

Bike Share

Bike share, now one of multiple forms of micromobility options all based on a similar concept, is a service in which bicycles are made available for shared use to individuals on a short-term basis for a fee.

The Capitol Region Council of Governments (CRCOG) first became interested in regional bike share in 2014. At that time, CRCOG along with the Greater Hartford Transit District and other partners hired a consultant to evaluate the feasibility of implementing bike share in the Hartford region. The resulting report, "Metro Hartford Region Bike Share Plan" laid out a three-phased approach to gradually ramp up the size of the bike share system. Several challenges were also identified and included the lack of a strong existing bike infrastructure network, a market low in tourists and college students, and multiple town centers across the region requiring a system that would be spread across a wide geographic area.

Based on existing bike share technology and operations at the time, the study anticipated capital costs that would grow over time as the system expanded. With capital costs being too high and

Bike Friendly Communities in the Region

Community	Level
Canton	*Bronze*
Farmington	*Bronze*
Glastonbury	*Bronze*
Hartford	*Bronze*
Mansfield	*Bronze*
New Britain	*Bronze*
Simsbury	*Silver*
South Windsor	*Bronze*
West Hartford	*Bronze*

lacking an identified agency to take on the many responsibilities required to administer the service (day-to-day operations, maintenance of bikes, rebalancing the system), the idea of regional bike share was put on hold. (The full report can be found online).

Much has changed since 2014, perhaps most notably smart bike technology such as it exists today, making a regional network more feasible. With enthusiasm for bike share indicated by ridership numbers seen with the dockless bikeshare pilot in the City of Hartford with LimeBike (now, Lime) in 2018, it seemed that the region might be ready for bike share.

With the Lime experience to help inform the system vision and some other regional and system examples of RFPs to pull from, CRCOG invited all interested communities in the Capitol Region to discuss the potential for regional bike share. Twenty of CRCOG's 38 communities expressed interest and in the end 19 were involved in the process. It was important to CRCOG to accurately reflect the desires of the communities in order to result in a successful and more sustainable regional system, therefore all were invited to read and make suggestions to multiple iterations of the RFP. The challenges identified in the 2014 report still exist, particularly the large geographic size of the region and the variety in population density of the communities, so CROCG acknowledged that only a Vendor could make the determination about which communities could be served and still provide a no-cost, sustainable system.

CRCOG released the Regional No-Cost Bikeshare RFP in June of 2019 and selected Zagster as the provider by vote of CRCOG's Policy Board in October. Zagster is working on agreements with the six selected communities – New Britain, Newington, West Hartford, Hartford, East Hartford, and Manchester – with a goal to roll out the system starting in Spring or Summer 2020.

CRCOG is hopeful that this system will be a success, and that it will be able to expand in the future to additional communities as a sustainable option to address first and last-mile challenges, provide affordable means of transportation for those in low income communities (Zagster offers substantially discounted pricing for qualifying users), improve health and increase active transportation, increase bicycling in communities with links to economic benefits, reduce vehicle congestion, activate streets, and provide user data to support and prioritize improved bicycle infrastructure and policies.

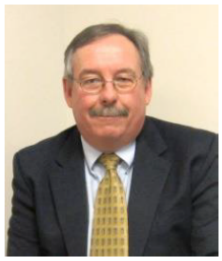
Walkability Action Institute

In 2016 CRCOG led a team of regional stakeholders at the *Step It Up! Walkability Action Institute*, which was put on by the Centers for Disease Control. The institute featured talks by national experts on complete streets and engaged the teams in a short planning process. CRCOG's team developed a brief 5-goal plan to improve walkability in the region. The action plan was, in some ways, a precursor to this plan.

Neil Pade
Transportation
(State Bike Ped Advisory Board)

Wildaliz Bermudez
Elected Official
(Hartford)

Otis Pitts
Public Health
(Hartford)



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Emily Hultquist
Planner/MPO Representative

Figure 1-5CRCOG's Step it Up! team

Goal 1: By June 2018, the Step It Up! Action team recommends CRCOG shift its current Bike Ped Committee to an Active Living/Active Transportation/Complete Streets (name to be determined) Committee.

Action Steps	Responsible Party	Status
June 2016-June 2018 Work to Establish the Active Living/Active Transportation/ Complete Streets Committee • Establish a working group • Determine committee membership • Revise mission statement and purpose	CRCOG Bike/Ped Committee	*In progress. An adivsory committee was formed for the plan update.*
June – September 2018 - Once committee is established, seek a representative, perhaps a public health official, to sit on the CRCOG transportation committee It is understood that they would be a voting member – the language may be softer if we left it off but understand we'll have to revisit with TC, modify our bylaws and get MPO endorsement.	CRCOG CRCOG Transportation Committee	*A representative from the CT Department of Public Health now attends Bike/Ped Committee meetings.*

Goal 2: The Step It Up! Action team recommends educating the public and decision makers at the local, regional and state level on the link between public health outcomes and transportation decisions.

Action Steps	Responsible Party	Status
In 2016, coordinate with CRCOG towns to identify active living champions representing each of the CRCOG community types – urban suburban, rural.	CRCOG Bike/Ped Committee	*Initial steps were taken during regional policy discussions.*
By June 2017, arrange a notable speaker, such as Ian Lockwood, to present on this topic within the region and/or to the CRCOG Transportation Committee	CRCOG	*In 2016 Dan Burden gave a presentation; in 2018 Ian Lockwood gave a presentation.*
By July 2016 create a section on the CRCOG website devoted to educational materials and resources for municipalities on active living and complete streets	CRCOG	*In progress*

Goal 3: Step It Up! Action team recommends working with a representative sample of CRCOG municipalities (Urban (Hartford) Suburban and Rural to implement pilot projects.

Action Steps	Responsible Party	Status
Engage the Anchor Institutions (including Health Insurance Institutions) in Hartford and surrounding communities to start an initiative to increase walking and walkability within 5-10 minutes of their campuses • Look to have them sponsor projects that stimulate mobility as a means to decreasing health costs	CRCOG - City of Hartford - Other CRCOG municipalities	*No progress*
Support Capitol Region Communities in applying for grant opportunities such as the Aetna Healthiest Cities Challenge	CRCOG in partnership with its municipalities	***Supported the City of Hartford's grant application.***
Identify existing large-scale investments that see internal and external benefit to increasing area active transportation options	CRCOG in partnership with its municipalities	***Projects with benefits to biking and walking are identified on a regular basis.***

Goal 4: The Step It Up! Action team recommends CRCOG update the Bicycle and Pedestrian Plan to become a Complete Streets/Active Transportation/Active Living (name to be determined) Plan for the Capitol Region

Action Steps	Responsible Party	Status
Summer 2016 – research best practices and examples from across the country on Regional Complete Streets plans, policies and programs as well as Active Living programs	CRCOG	***Completed as part of this planning process.***
In 2017 Coordinate a focus group (one of several related to the Regional Transportation Plan Update) to examine active transportation and public health outcomes as they relate to the region's transportation system.	- CRCOG with municipal and other partners	***Completed as part of this planning process.***

Goal 4: The Step It Up! Action team recommends CRCOG update the Bicycle and Pedestrian Plan to become a Complete Streets/Active Transportation/Active Living (name to be determined) Plan for the Capitol Region

Action Steps	Responsible Party	Status
During the next Local Transportation Capital Improvement Program (LOTCIP) solicitation, evaluate guidelines on how/ whether public health outcomes are included in the rating criteria	CRCOG in partnership with the LOTCIP review committee	*Completed.*
In 2018 Encourage the development of Community Health Action Plans through cooperative effort with Local Health Departments and Town Planning and Engineering (focus on Active Living). Work to include action plan framework (regional context) into the update of the Complete Street / Active Transportation / Active Living Plan.	CRCOG in partnership with municipal Public Health, Planning and Engineering partners	*CRCOG staff gave a presentation on the topic to health department officials in the region.*

Goal 5: The Step It Up! Action team recommends CRCOG involve Public Health Representatives in Transportation Decisions

Action Steps	Responsible Party	Status
Survey Local Health Directors on their interest in participating in regional transportation decision making and on such matters as: • Interest in promoting routine activity Interest in increasing walkability • Interest in helping develop local walkability plans • Interest in participating on a Regional Transportation Committee and/or Complete Streets Committee • Interest in playing a role in local transportation decisions	CRCOG in partnership with the West Hartford Bloomfield Health District	*No progress.*

Goal 5: The Step It Up! Action team recommends CRCOG involve Public Health Representatives in Transportation Decisions		
Action Steps	Responsible Party	Status
June – August 2016, develop a distribution plan to deliver the existing Healthy Communities Toolbox to municipal town planners and engineers educating them on the relationship between Transportation/Active Transportation and Health.	CRCOG in partnership with: All member jurisdictions, CTDOT, CRCOG Bike Ped Committee	*No progress.*
In 2017, hold a multi-disciplinary walk audit/scavenger hunt with planners/ engineers/public health officials at CTfastrak station areas.	CRCOG in partnership with, All member jurisdictions - Other partners such as the Hartford Young Professionals & Entrepreneurs (HYPE)	*Not started.*
By 2018, integrate public health officials into the transportation policy and decision making process at the regional level (see also Action Item 1.2).	- CRCOG - CRCOG Transportation Committee	*Not started.*

ACTION PLAN

While the region has made a lot of progress, there is still much work to be done. This time around, CRCOG has many partners it can rely on. More municipalities are actively adopting policies and plans to make complete streets an integral part of their capital programs. The state has also incorporated complete streets into their operations to a much greater degree than in 2008. With stronger partners, CRCOG can take a more focused approach and work on the aspects of complete streets that best fit with the agency's mission and resources.

The following actions are recommended:

1. ENACT POLICIES, PLANS, AND GUIDELINES THAT PROMOTE THE IMPLEMENTATION OF COMPLETE STREETS.

Key to ensuring that complete streets becomes the norm is to enshrine its philosophy in policies, plans, guidelines, and laws.

1.a. Develop and Adopt a Regional Complete Streets Policy

As the Metropolitan Planning Organization (MPO) for the Hartford Metropolitan area, CRCOG has a unique role in transportation planning. Federal transportation funds that are spent in the region must be approved by CRCOG's Policy Board. State law also gives CRCOG authority over allocating certain state funding sources, such as the Local Transportation Capital Improvement Program (LOTCIP). CRCOG should develop and adopt a complete streets policy that requires that any project receiving funding through CRCOG must provide accommodations for all users unless an exception is granted. A draft of this policy has been developed for this plan and has subsequently been adopted by the Policy Board. The full policy can be found in the appendix.

The policy requires that all projects receiving funding through CRCOG include accommodations for all users. There is an exceptions process with the following elements:

- Projects where certain users are legally excluded, like controlled-access highways or pedestrian-only streets. Partial exceptions may apply to ensure projects consider all users that are not legally excluded.
- Projects for which there is already a parallel off-road facility, such as a multi-use path. This exception should not lead to an unreasonable detour for users to access destinations along the corridor with the project.
- Projects where no transit routes exist or are

planned may be exempt from including transit accommodations.

- Projects where there is no existing or potential/ expected demand for a particular user group
- Cost-prohibitive projects. Where a proponent is seeking an exception based on cost, a breakdown of the project cost with and without complete streets facilities is required.
- Where extreme topographical or natural resource constraints, or the need for excessive right-of-way acquisition, lead to disproportionate costs for including complete streets elements, or when there is a compelling reason that a complete streets element of a project must terminate prior to making a logical connection to the existing network for a particular mode.
- Projects where complete streets elements are not consistent with local plans, visions, and/or standards.

The policy also recognizes that different solutions will be necessary in different contexts. Infrastructure appropriate to an urban context may not be appropriate in rural areas. Communities are encouraged to consider how best to accommodate all users in their specific context.

1.b. Assist member municipalities with developing and adopting local complete streets plans

Part of this planning process included a focus on assisting municipalities. The regional complete streets policy included a guide to best practices that will be available on CRCOG's website. Staff also invited national experts to conduct workshops with municipalities to help them develop local complete streets plans. CRCOG will continue to assist municipalities with drafting local policies as requested.

1.c. Continue to include complete streets considerations in all plans and studies

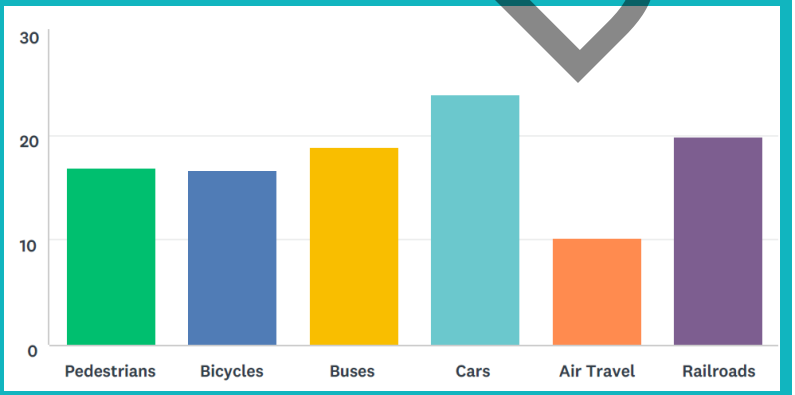
The regional complete streets policy requires that projects include consideration of all users in every phase, including planning. As has been CRCOG's practice, staff will continue to include consideration of all users in planning studies conducted by the agency. This includes corridor studies (small area studies) as well as region-wide studies.

A common theme throughout the public outreach phase for the development of this plan was that complete streets should be an integral part of planning. A common suggestion was that more off-road paths and more sidewalks were needed.

During focus groups, many respondents also commented on projects that had failed to include complete streets, but should have, as well as the need to include complete streets in every stage of the process.

Respondents to one of the online surveys were asked whether or not they supported various complete streets elements, even if they do not use them. Overwhelmingly (roughly 90%) respondents said they would support funding such improvements.

Respondents to one of the online surveys were asked to prioritize funding among various modes. While "cars" recieved the greatest share, the split was not reflective of the current funding situation. Automobiles, on average, were given 24% of funding. Bikes and pedestrians were each given 17% while rail and buses were around 20%. This suggests a much more equal funding split is desired.



1.d. Work with CTDOT to develop a process for ensuring that complete streets infrastructure is included in state-controlled projects

While CRCOG is legally required to be consulted for all federal-aid projects initiated in the region, projects that are funded entirely with state funds do not need to go before CRCOG's Policy Board. Existing state laws require CTDOT to consider all users in all projects (barring an exception). CRCOG, however, is interested in developing a process to provide greater opportunity for the region to be involved in developing, selecting, and implementing state-controlled projects. An example would include an annual, or semi-annual, consultation process between CTDOT and the regions.

1.e. Evaluate current funding scoring criteria on a regular basis

CRCOG's current funding scoring criteria for programs like LOTCIP include points awarded to projects that include complete streets elements. The vast majority of projects funded by or through CRCOG are awarded at least some points in this category and projects with strong complete streets elements tend to score well in solicitations. At the start of each solicitation CRCOG asks its Transportation Committee to review the scoring criteria to ensure they still represent the region's priorities. Staff should also review these criteria to ensure that they are resulting in the best projects rising to the top. This may involve adjusting the way points are given for complete streets infrastructure. An example would be to revise the scoring criteria in an attempt to differentiate between various qualities of infrastructure. This would have to be done carefully to avoid unfairly punishing projects in locations where high intensity complete streets infrastructure does not contextually make sense.

1.f. Assist municipalities with identifying appropriate guidelines for complete streets infrastructure and ADA accessibility

Traditional design guidelines for highways and local roads (such as AASHTO) do not always include the most up-to-date treatments for bicycle and pedestrian infrastructure. Guidelines like the NACTO Urban Street Design Guide provide a greater menu of

options specifically targeted at accommodating all users of the roadway. Often times they include more innovative infrastructure treatments that can result in safer and more comfortable travel for cyclists, pedestrians, and other vulnerable users. CRCOG will continue to provide information to member municipalities about the availability and applicability of such design guidelines, which are also accepted by CTDOT.

Resources will be added to the CRCOG Complete Streets Website.

Accessibility

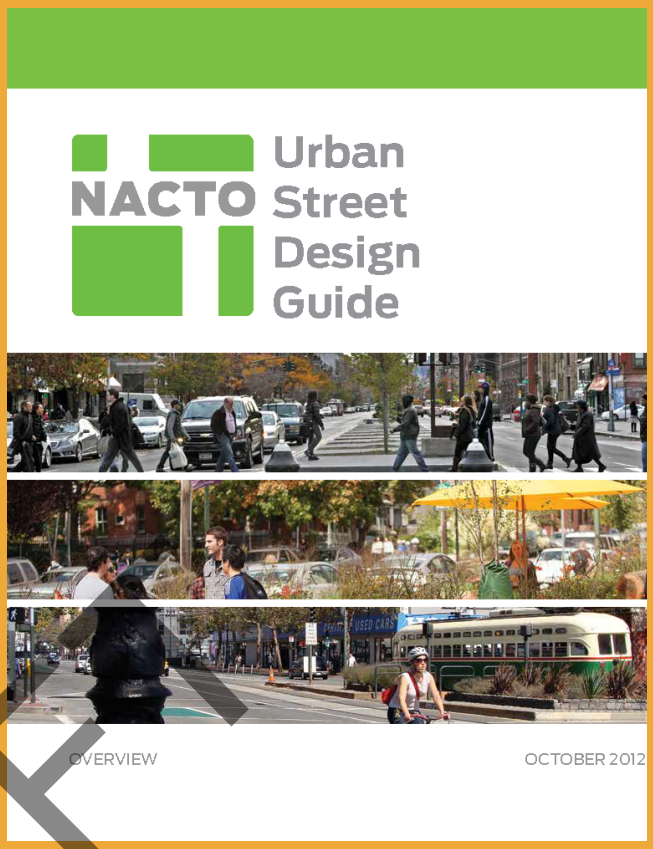
Throughout the process of developing this plan, and developing the Metropolitan Transportation Plan, the team heard concerns regarding American's with Disabilities Act implementation. At one of the MTP meetings, a member of the public using a wheelchair detailed the difficulties he has with using public transit options. For example, ADA requirements had not been fully implemented on the Hartford Line service, and booking trips on Paratransit is cumbersome.

These concerns were echoed in the "Seniors and People with Disabilities" focus group. One participant noted that "there is a difference between ADA requirements and usability". They noted that in many cases, a facility might comply with ADA, but still be inaccessible. For example, some types of doors do not have to be automated.

CRCOG needs to work with member municipalities and the state to identify best practices, not just in complying with ADA, but in making transportation truly accessible.

1.g. Work with other local, regional, and statewide stakeholders to monitor and promote effective legislation

CRCOG's Legislative Committee develops a legislative agenda for the agency every year. This agenda includes a wide variety of topics, but almost always includes topics related to transportation. Through these efforts, the agency also monitors legislation as it is considered by the General Assembly. For important pieces of legislation, CRCOG will provide testimony in support. Staff will work with the Legislative Committee, and regional partners, to identify legislation that would result in safer streets with greater levels of accommodations for all users.



The National Association of City Transportation Officials publishes a number of guides providing best practices for complete streets design.

One resident we spoke to noted that many sidewalks in the region are not ADA compliant. They are either too narrow, blocked by fixed objects, or have inadequate crosswalk ramps.

Respondents to the Metropolitan Transportation Plan survey were asked about which methods of raising revenue for transportation projects they would support. The most popular options were various forms of user fees, such as tolls, state gas tax, and motor vehicle taxes. In general, people were opposed to more local options such as municipal sales taxes.

In addition to calls for sidewalks, trails, and bike lanes, members of the public were enthusiastic about connecting more destinations. In the online survey, 41% of people felt it takes too long to get where they are going.

50% of online survey respondents said they don't ride a bike due to safety concerns.

When members of the public were asked for ideas on how to improve biking or walking conditions, one of the top 10 responses was "slower traffic." People also wanted more protected infrastructure, safer streets, and separate facilities.

Traffic Volume (ADT)	0-4,000	4-6,000	6-10,000	10-15,000	15-20,000	20,000+
Speed (MPH)	0-24	25-29	30-34	35-39	40-44	45+
Bicycle Boulevard	Design to achieve 85th percentile speed of 20 mph or less					
Shared Roadway			Acceptable			
			Acceptable	Provisional*		
Striped Bike Lane				Acceptable		
				Acceptable	Provisional*	
Buffered Bike Lane					Acceptable	
					Acceptable	Provisional*
Separated Bike Lane				Acceptable		
Sidepath			Acceptable			

*Provisional speed ranges are allowed for the selection of facilities providing improvements associated with the installation of bike facilities are expected to bring traffic speeds within the acceptable range.

Where appropriate, CRCOG will provide testimony to support individual pieces of legislation.

2. DEVELOP A ROBUST COMPLETE STREETS NETWORK LINKING IMPORTANT NODES OF ACTIVITY THROUGHOUT THE REGION.

2.a. Implement a regional complete streets network

One of the pillars of this plan is the development and prioritization of a regional complete streets network. While in an ideal world, all streets would accommodate all users, that is unlikely to happen given current funding constraints. Rather than chip away at the road network indiscriminately, the region is prioritizing a network of complete streets that provide connectivity between important job, retail, and housing centers.

The process of defining the network started with a prioritization exercise that asked people which elements of a complete streets network were most important. The top elements were equity (that the network serve those most in need), safety (that it provide safe travel for vulnerable users), and connectivity (that it increase mobility and access).

A series of maps with key indicators for these elements was created to define the nodes needed to be connected (see pages 24-27). A final composite score was also generated using a weighting formula based on public feedback. CRCOG also used an interactive web map to get input from the general public as well as municipal officials. That process led to a first draft of the network map (page 28). The map was then refined through additional municipal input to adjust routes based on local knowledge, and finally through public input.

Safety

Paramount among priorities is the safety of vulnerable users. As noted in the "Data Analysis" on page 43 of this report, while overall traffic fatality rates have been

declining, fatality rates involving vulnerable users have actually increased in the last five years. While CRCOG does not generally control design elements related to infrastructure projects, it does have a role to play in educating municipalities and selecting projects that implement best practices.

One best practice is to use a data-driven approach to selecting bike/ped facilities. Modeled on the approach used in the Netherlands, the City of Hartford has adopted a Bicycle Facility Selection Matrix in their Bicycle Master Plan. As shown in the table on page 22 (which is included in the Bicycle Master Plan), as traffic volumes and speeds increase, higher levels of separation and protection are recommended. For example, shared roadways (offering no separation between bicycles and cars) are acceptable on low-volume roads with speeds under 25 MPH. On roads with high volumes (more than 20,000 vehicles per day) and high speeds (above 45 MPH) separated bike lanes and side-paths are preferred.

This approach is not a one-size fits all guideline. The volumes, speeds, and treatments would need to be customized for each jurisdiction. It does, however, provide a quantitative and easy to follow approach to selecting appropriate facilities that prioritize safety.

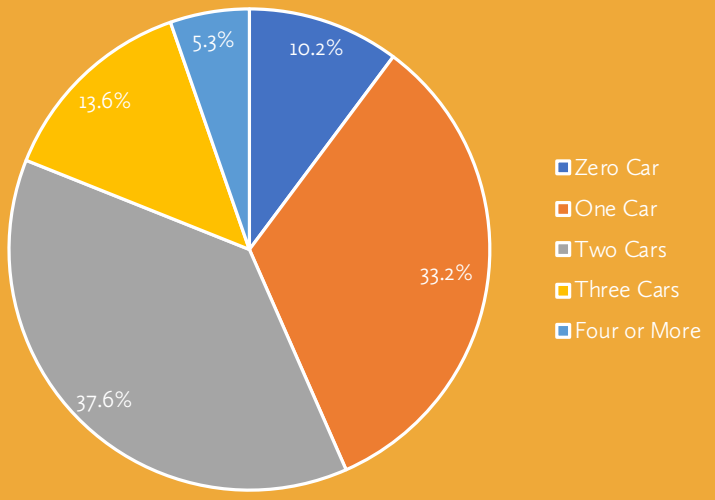
Equity

While single-occupancy vehicles remain the dominant form of transportation for the region, access to personal automobiles is far from uniform or universal. Overall, about 10% of households in the region do not have access to a personal automobile . In urban areas of the region, that rate can climb to as high as 56% of households. The rate of zero car households strongly correlates to other factors such as poverty, high concentrations of people with limited-English proficiency, and high concentrations of minorities.

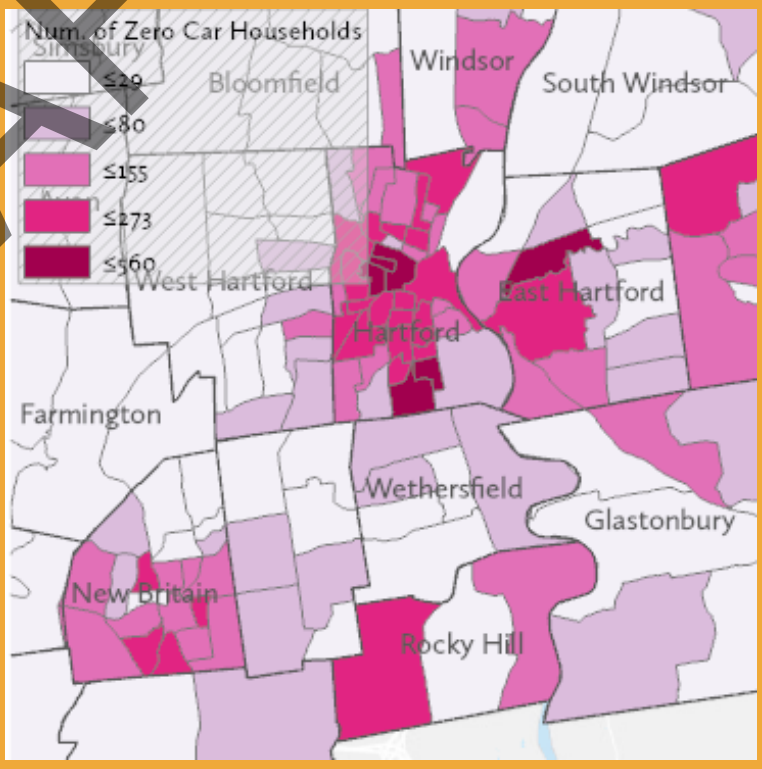
Furthermore, there is a disconnect between where people live in the region and where they work. According to data from the U.S. Census Bureau, just 12.5% of the jobs in Hartford are held by Hartford residents. Only 30% of Hartford residents are employed in the city of Hartford. Which means, 70% of residents have to commute outside of the city for work.

Given the high concentration of zero car households, it is essential that high quality walking, biking, and

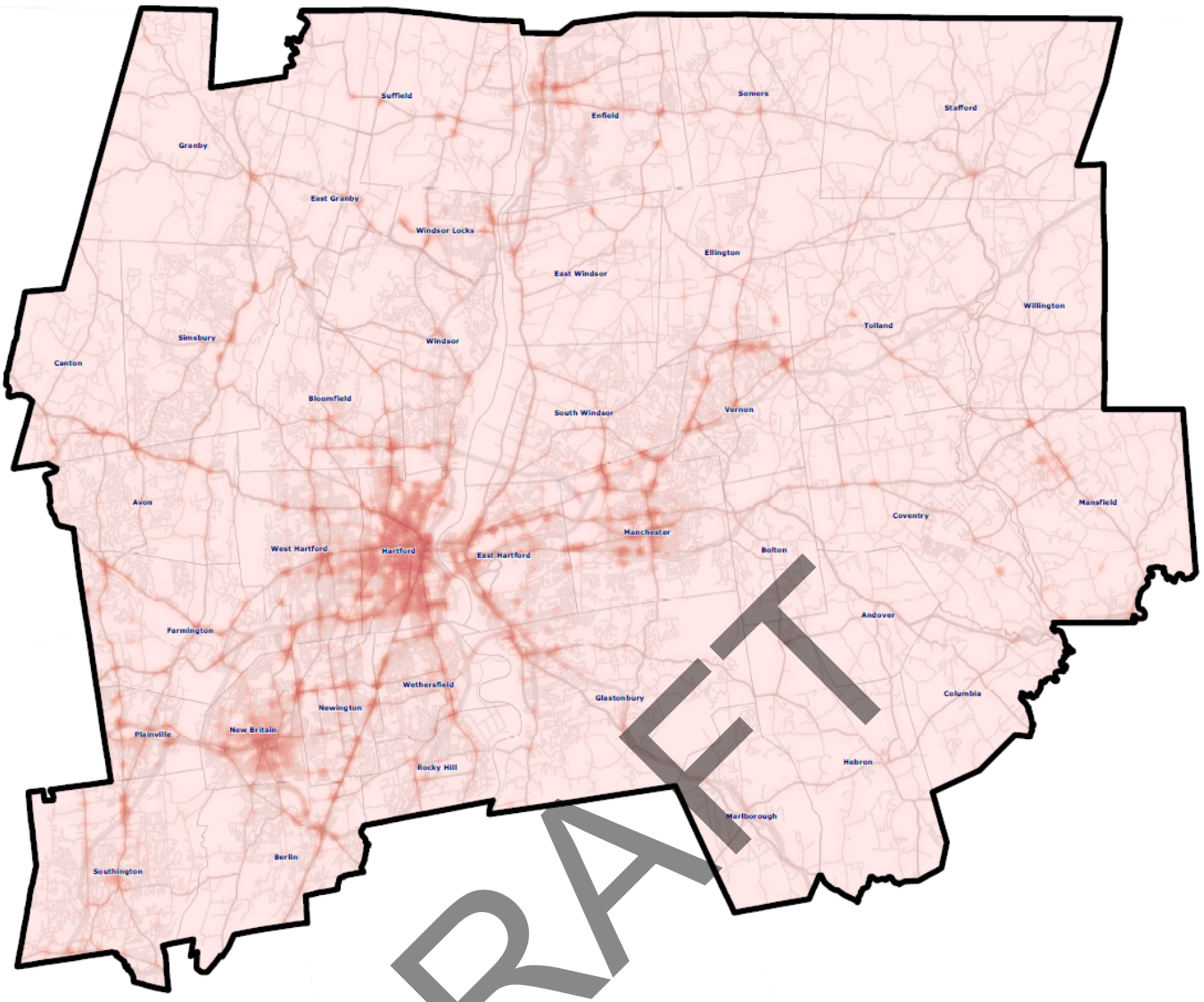
(Continued on page 30)



Acording to the 2018 American Community Survey, 10% of households have no access to a vehicle.



While only 10% of households in the region have no access to a vehicle, the number of people without access is concentrated in a few areas such as Hartford.

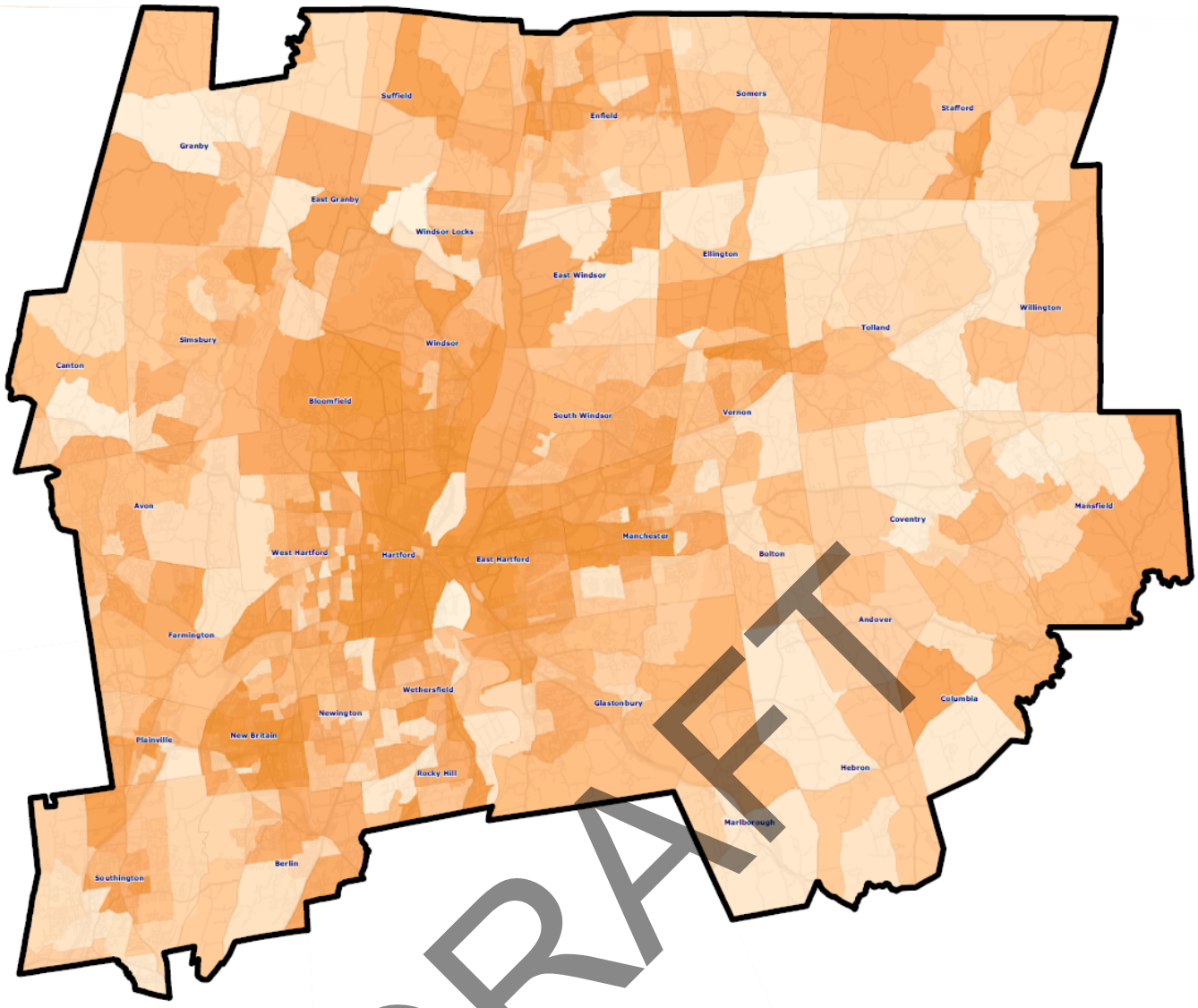


SAFETY

The primary source of data for the safety analysis was the UConn-hosted Connecticut Crash Data Repository. This is an online tool that collects crash data from throughout the state. The tool allows people to view a plethora of information about crashes in different geographic locations, involving different kinds of vehicles, and involving different modes of travel.

Primarily, we looked at non-motorist fatalities and serious injuries. As is to be expected, crashes involving this group were concentrated in the urban core around Hartford and New Britain. Another cluster, in Enfield, also exists, primarily clustered around the mall.

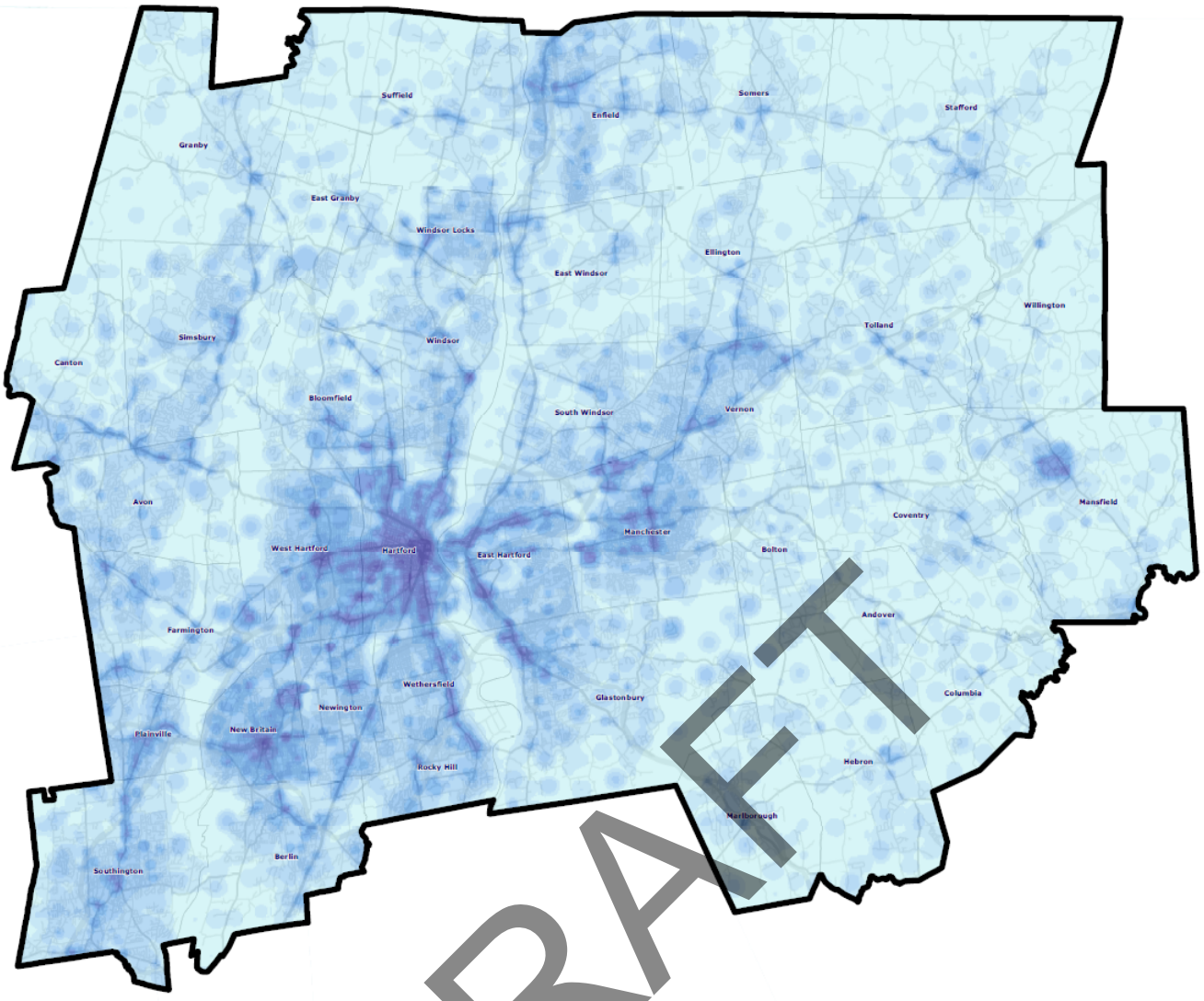
Crashes not involving pedestrians and bicyclists were also looked at. This was used to identify areas with safety issues that may be avoided by non-motorists.



EQUITY

Along with safety, equity concerns ranked highest among the members of the project stakeholder group. To determine where equity concerns may be greatest, the following factors were looked at:

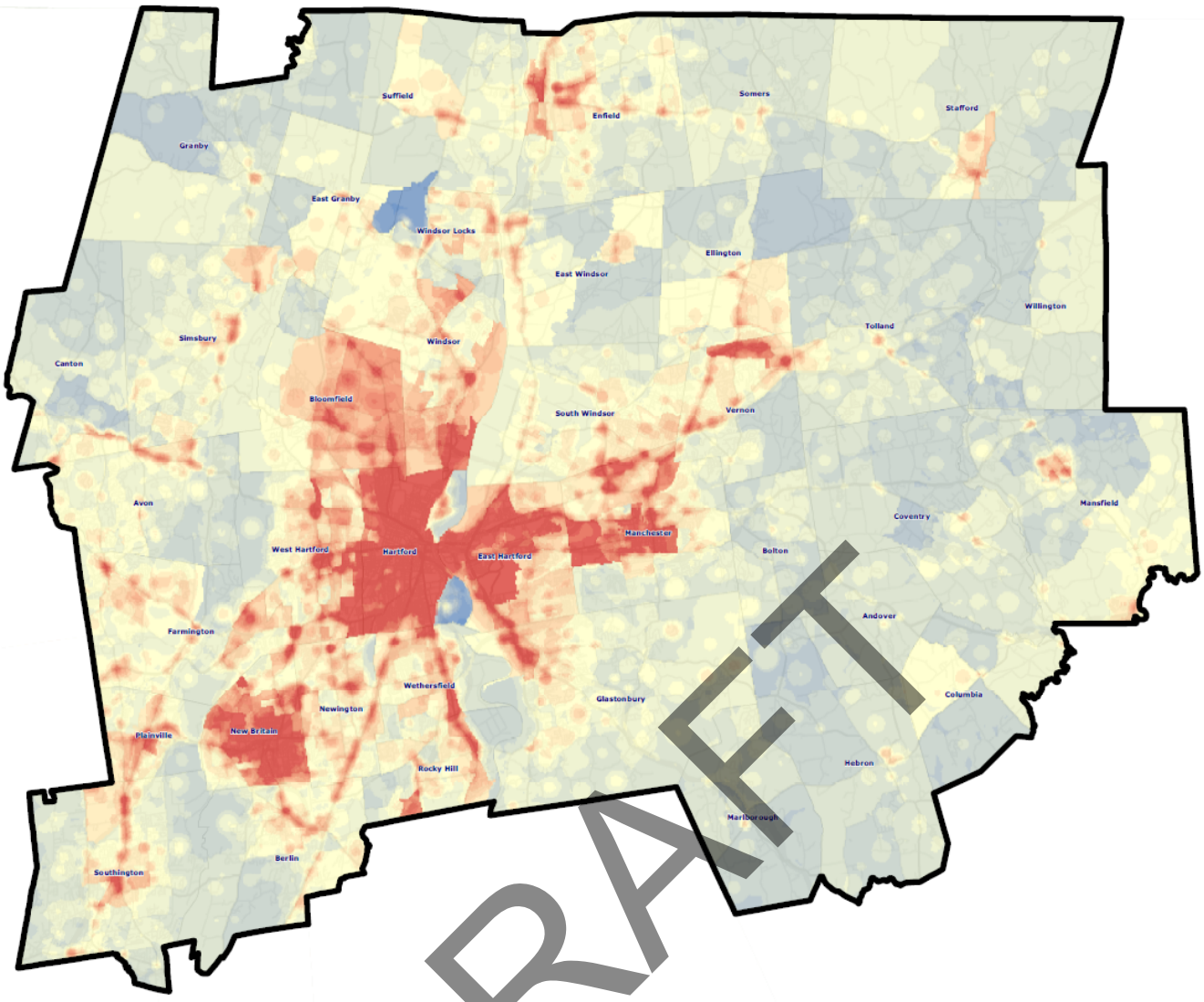
- % of people with disabilities
- % of the population over age 64
- % of the population under age 18
- % of households with zero vehicles available
- % of households under the poverty line
- % of people identify as a racial or ethnic minority
- % of people with limited English-proficiency



DEMAND

Since there is little data on actual bike, pedestrian, and transit travel patterns, the team used a number of proxy variables to determine potential demand. This resulted in a map of areas that are likely to generate non-single occupancy vehicle trips. Factors included:

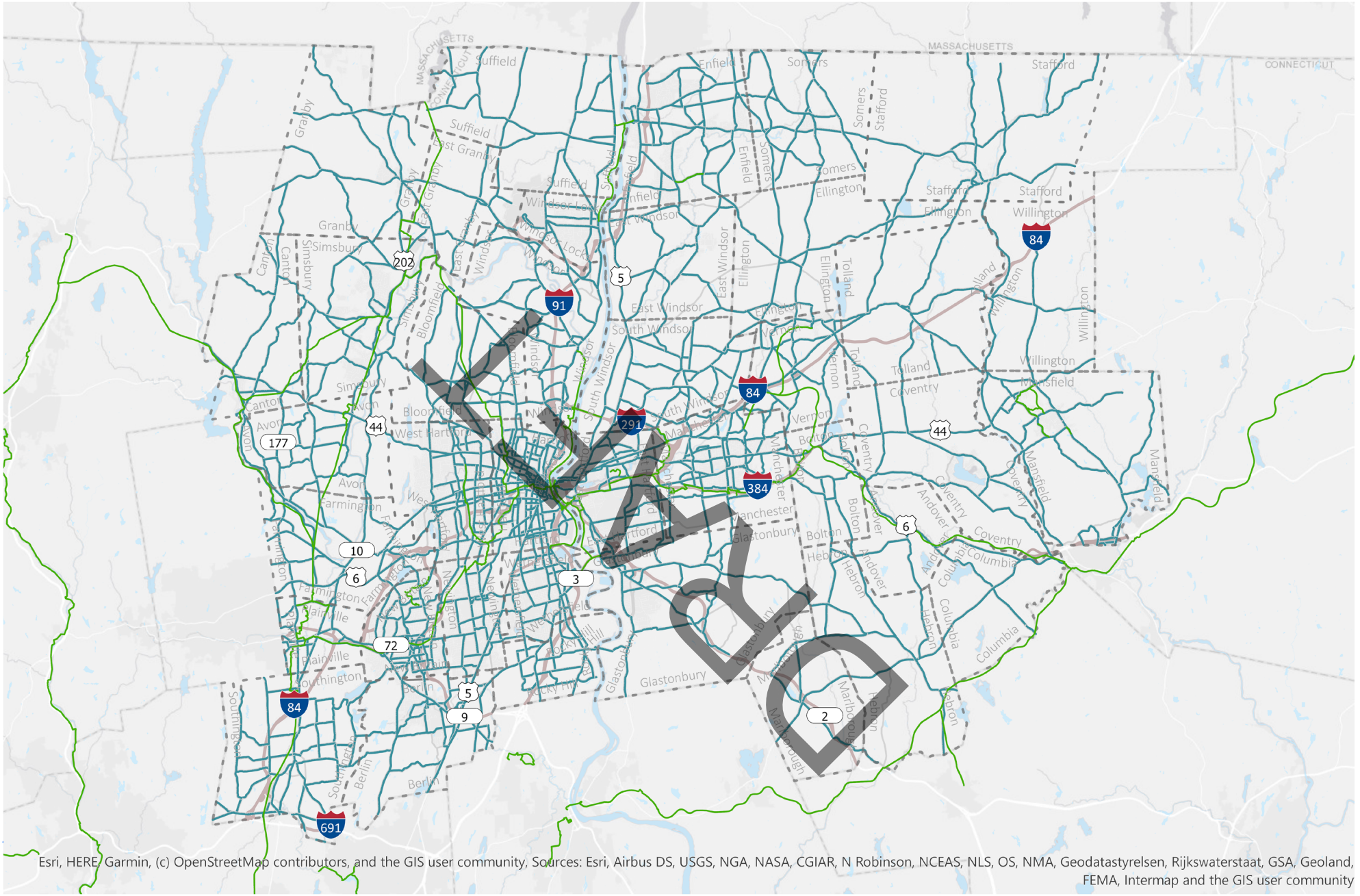
- Population density
- Employment density
- Ridership at bus stops
- Bike trip origin/destination data from the Strava app
- Proximity to CTfastrak and CTrail
- Proximity to educational institutions
- Proximity to other amenities



COMPOSITE SCORE

The three primary factors were combined into a signle map help identify priority areas. The team considered different weighting factors (giving one factor more importance than another). Ultimately, the above map was developed. The final weighting factors were:

- Equity: 37%
- Safety: 33%
- Demand: 30%



CRCOG Complete Streets Network

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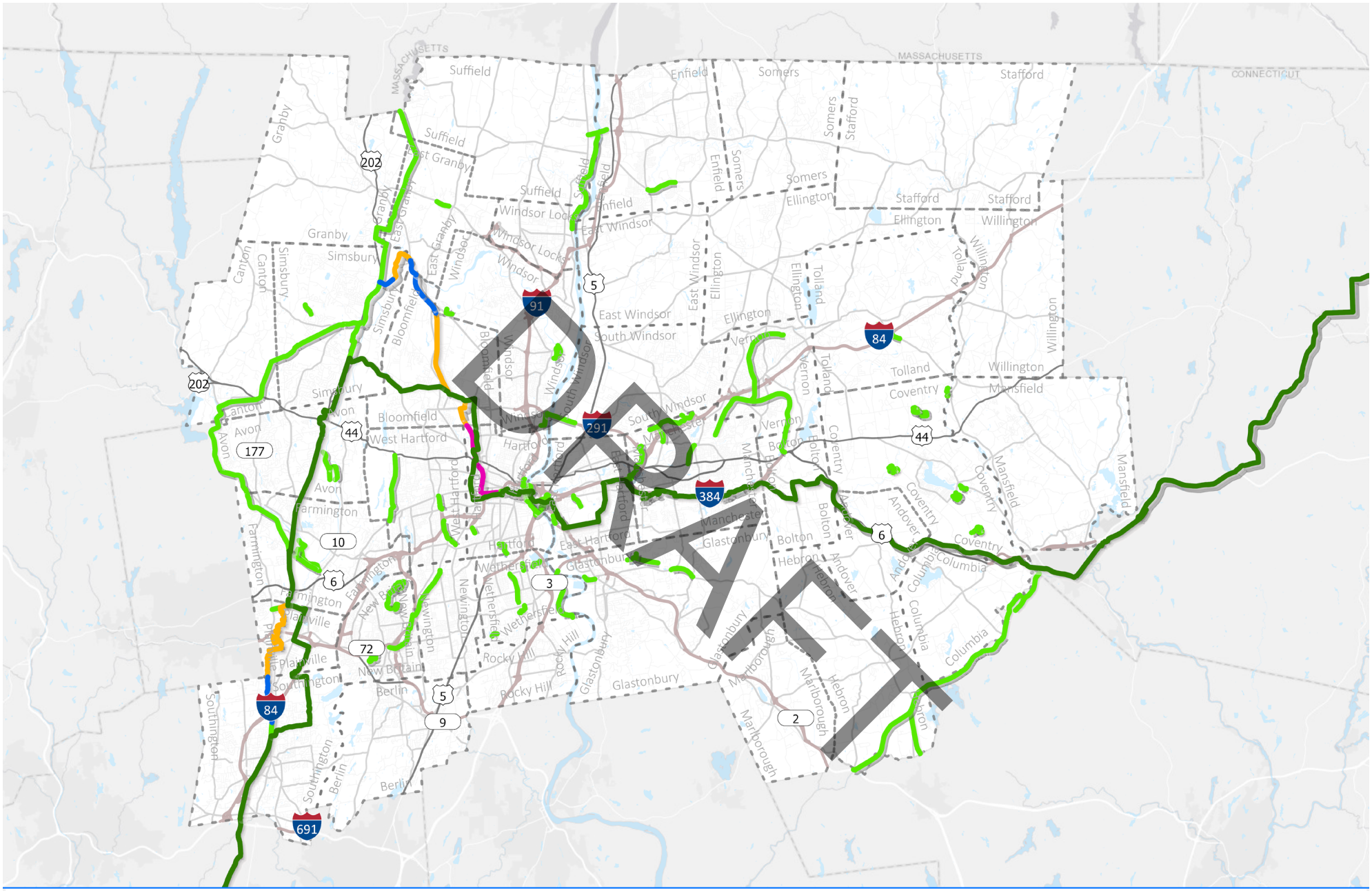
N

Complete Streets Network

Recreational Trails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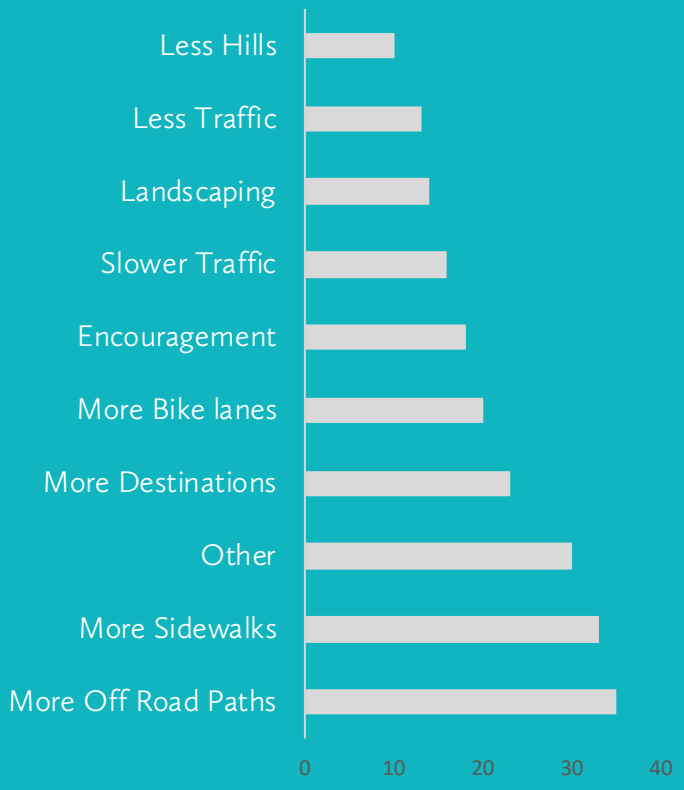


The most popular response to the question "What would help you bike or walk more", which was asked during public outreach events, was "More Off Road Paths".

During public outreach events, a common complaint was the lack of benches and bus shelters at transit stops. People also wanted more amenities like bike racks and connections to local bike infrastructure. Bus shelters are particularly important for those with mobility challenges.

transit infrastructure is available. People living in inner city areas are less likely to have access to a car, more likely to be low income, and are very likely leaving the city for work. A lack of complete streets infrastructure places a disproportionate burden on these communities, which is a significant equity concern. The region needs to work with state and local officials to prioritize these populations for complete streets infrastructure investments. Regional leaders also need to identify work destinations frequented by people living in vulnerable communities, so that last-mile connections can be provided.

Demand

Finally, prioritization of complete streets infrastructure should be based in part on demand. As noted above, the significant amount of cross commuting that occurs in the region indicates that there is a need at both starting points and at destination points. Complete streets infrastructure is needed in inner city communities in Hartford, but it is also needed in Windsor where over 2,000 Hartford residents commute every day. Suburban and small town centers can also be hubs of active transportation, helping to reduce non-commuting trips via automobile.

Elements

An important aspect of complete streets is to ensure that the right elements are present. CRCOG used an online mapping tool to allow members of the public to report problems at locations throughout the region. This data will be provided to municipalities to aide them in selecting locations for projects. One finding of note is that the most common issue cited was that a location lacked a sidewalk or a bike lane/shoulder. This indicates that many areas of the region still need to work on the basics. Other frequently cited issues were the lack of a crosswalk, vehicles not yielding, and roads being too wide to safely cross for a pedestrian.

2.b. Expand the region's multi-use trail system

The region's multi-use trail system, having mostly been built on abandoned rail rights of way, weaves through towns and cities. As such, these trails can provide a backbone for the broader network of complete streets. The Farmington Canal Heritage Trail, for example, provides a parallel route to Route

10 that travels through numerous Farmington Valley towns, extending all the way to New Haven. The trails provide a level of safety and comfort (from automobiles) that is difficult to provide on regular streets, especially over long distances. The Farmington Canal Heritage Trail (FCHT) is nearly complete (one gap remains in Plainville, though a plan has been adopted) as is the Charter Oak Greenway to the east. Significant trail gaps include:

- East Coast Greenway through Bloomfield and Hartford: currently, there is no east/west trail on the west side of the river.
- Plainville FCHT: this gap closure has been planned but is not yet under construction.
- East Hartford Charter Oak Greenway: this was originally planned to go through Renchsler Field but a new plan puts it on Silver Lane.

2.c. Provide bus and bus rider amenities

Around 4.5% of households in the region rely on public transit. This figure climbs to 15% in the City of Hartford. Amenities for bus riders are unevenly provided. Downtown Hartford has new, well cared for shelters that were installed as part of a larger grant project. Many of the neighborhoods, however, either have no shelters at all, or have shelters that are in disrepair. The same is true of surrounding towns where shelters are few and far between.

CRCOG ran a regional bus shelter program that installed approximately 25 shelters through the region. This program has not received additional funding. A sustainable source of funding for bus shelters needs to be identified. Other areas of the country have entered into agreements with advertising companies to support construction and maintenance of shelters. A similar approach has been tried in the region, but was unsuccessful due to a market conditions. Other options should be explored.

Upgraded bus infrastructure should also be pursued by the region. Potential improvements could include: bus loading platforms; transit signal priority on bus corridors; increased service frequency; and vehicle electrification.

2.d. Work with municipalities to ensure infrastructure is properly maintained

Once infrastructure is built, it must be properly

Lack of snow removal has rendered this curb ramp inaccessible to wheelchair users.

Many shelters are not properly maintained and eventually fall into disrepair.

A demonstration project installed in October of 2018 took over parking spaces to provide outdoor seating for a local restaurant in Manchester.

Mayor Stewart helps paint a beehive mural on Jubilee Street in New Britain. The street was temporarily closed and turned into an outdoor plaza.

maintained. Not only does this mean patching potholes, repainting lines, and resurfacing roadways, but it also means clearing snow and leaves. More than just an inconvenience, lack of snow removal can lead to serious safety issues. For example, in the photo on page 31, the sidewalk has been cleared for most of the way but stops short of the corner where pedestrians must cross. To avoid this blockage, pedestrians and wheelchair users are forced out into the travel lane. Leaves left on the sidewalk, following a rain storm, can become slippery and dangerous, especially for the elderly.

As better infrastructure is built throughout the region, the problem could get worst, unless proactive measures are taken. Policies in most communities regulate snow clearing on sidewalks but multi-use trails and side-paths are often a gray area or exempted. Bike lanes that are separated from traffic by a physical barrier provide an extra layer of protection. In the winter, however, they require new methods and equipment for snow removal. Plows cannot be used for separated bike lanes (unless physical barriers are first removed). Specialized machinery is available but is an additional cost that is generally not factored into project costs. Not only do municipal officials have to be educated about the need for such equipment, but they should also be encouraged to purchase it and train public works employees.

This is primarily an education issue. Municipalities need guidance on the need for maintenance, the methods of maintaining infrastructure, and the tools that are available to assist with maintenance. CRCOG can also help municipalities by exploring cooperative purchase options for the specialized machinery needed to maintain trails and separated bike lanes.

Bus shelters also must be maintained. This is currently the responsibility of the municipality, though other parts of the country have transit districts who take care of this.

2.e. Work with the state and municipalities to develop a wayfinding system for the region

An aspect of complete streets that is often forgotten is comprehensible wayfinding signage. Signs directing people to and from multi-use trails, transit stops, and local destinations are necessary to create an inviting

environment. Some good examples of signage exist in the region. The iQuilt project in Hartford has installed walking focused signs on the backs of pedestrian signals, showing the walk time to various locations. The CTfastrak stations also have consistent aesthetics that make them easy to identify.

An integrative and consistent approach will enhance these existing wayfinding systems. This should be done in a thoughtful and deliberate manner, to maximize its effectiveness.

3. PROVIDE MATERIALS, EVENTS, AND PROJECTS THAT EDUCATE OFFICIALS AND THE PUBLIC ABOUT THE BENEFITS OF COMPLETE STREETS, AS WELL AS ENCOURAGE THEM TO USE AND IMPLEMENT THEM.

3.a. Use "tactical urbanism" to test solutions and educate the public about their benefits

There is no better way to educate people about the benefits of complete streets than to let them experience it. Increasingly, cities and regions are turning to "tactical urbanism", "quick build", and other temporary forms of infrastructure as a way of testing out ideas and letting people learn by experience. The basic idea is simple:

- Areas where complete streets interventions are necessary are identified;
- Potential solutions are developed;
- Instead of implementing the solutions with concrete and asphalt, the solution is tried out on a temporary basis with cheap materials, such as paint, cones, and wood;
- Results of the intervention are analyzed and the public is surveyed to determine how effective it is;
- If the intervention is successful, a plan for a permanent installation is developed.

This approach is much lower cost than traditional

Signage for the East Coast Greenway is attractive and unobtrusive.

Educational events like this one in Hartford, teach school children the proper way to operate a bicycle safely in traffic. Not only does it improve safety, but it helps them feel more comfortable with riding in the future.

In CRCOG's online map survey, many respondents cited bad driver behavior as a problem at various locations. Roughly 20% of the notes provided by respondents cited "vehicles don't yield" as an issue for a given location. This was the second most popular issue noted.

approaches and allows for a more informed conversation since people will have been able to experience the project before it is fully implemented.

Due to the relatively recent nature of this approach, CRCOG has developed a guide to quick build projects that is included in this plan. CRCOG believes that this guide will help member municipalities develop policies and procedures to more effectively use quick build techniques in their communities. The hope is that this will lead to projects being developed more quickly, with greater public input, and with greater acceptance by affected communities.

In 2019 CRCOG began work on a CDC-funded project (through the Department of Public Health) to implement demonstration projects throughout the state. Education is also part of the program. Projects have already taken place in Hartford, Easton, Norwich, Stratford, and Goshen. More projects are scheduled for Spring 2020. CRCOG has two years of funding totalling $400,000, with the potential for three additional years.

3.b. Continue to offer educational opportunities to member municipalities and the public

CRCOG acts as both a source of information about educational opportunities, as well as a provider. CRCOG should continue to seek out and disseminate information about educational opportunities regarding complete streets to its member municipalities. Where appropriate, CRCOG should also develop and sponsor educational events for both the public and municipal officials.

3.c. Support educational and awareness programs

In previous plans CRCOG envisioned a more direct role for the region in developing and providing educational materials and programs for the public. CRCOG helped develop elementary school curriculum for bicycle safety and worked with stakeholders to produce pamphlets on safety issues. Local and state advocacy groups have grown since the 2008 plan was developed and they have taken a much stronger role in education. For example, Bike/Walk Connecticut has developed curriculum and offers instruction to both educators and students about bicycle safety. Organizations such as BiCiCo and Bike New

Britain sponsor bicycle safety classes. Many schools throughout the region also provide safety classes for students.

3.d. Provide materials for municipal public safety officials and staff regarding applicable state laws regarding bike and pedestrian safety

At CRCOG's quarterly bike/ped committee meetings, the agenda regularly includes proposals for new or modified laws related to cyclists and pedestrians. CRCOG can partner with Bike/Walk Connecticut to continue this.

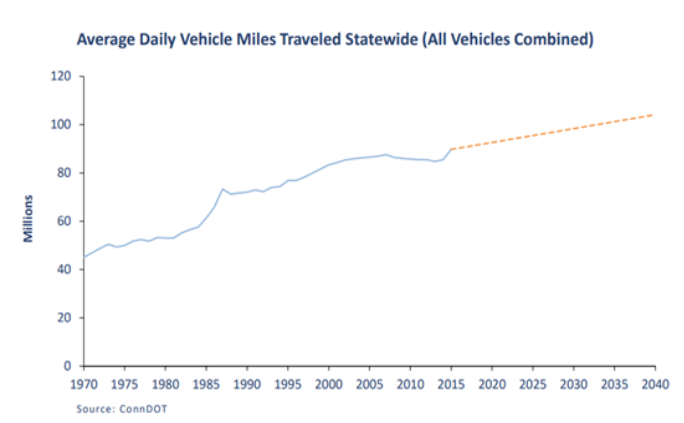
4. MONITOR PROGRESS

4.a. Develop performance targets and measures

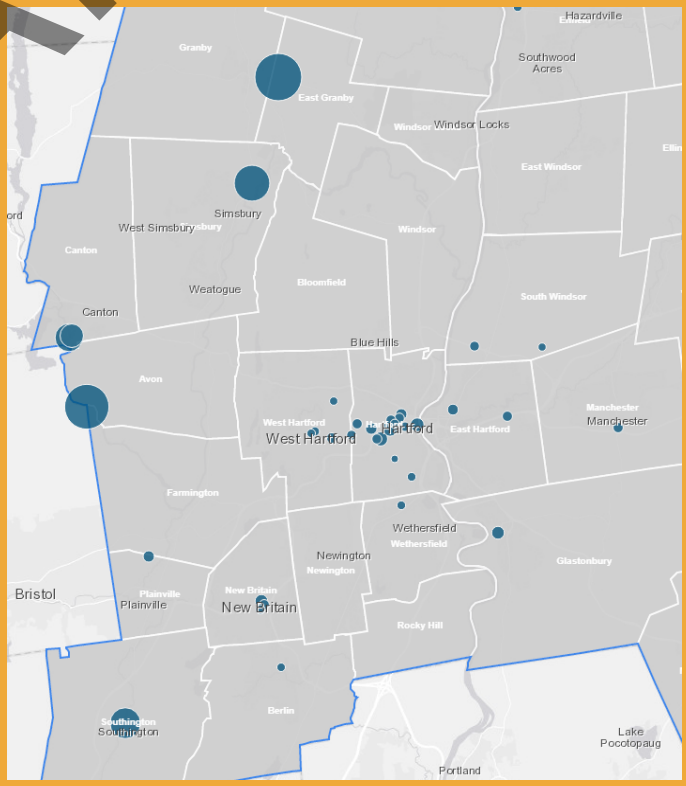
As the Metropolitan Planning Organization (MPO) for the region CRCOG is required by federal law to adopt and track performance measures and targets. Currently, required performance measures are limited to safety, emissions, pavement quality, and transit asset management. CRCOG can adopt its own measures and targets if it so chooses.

One suggestion that was received during public outreach for this plan, as well as for the region's Metropolitan Transportation Plan, is to develop a performance target for reduction in vehicle miles traveled (VMT). While this is not a measure that CRCOG currently tracks (though it does produce estimates of VMT based on its travel demand model) the agency should consider doing so. Reducing VMT is an important way to reduce emissions.

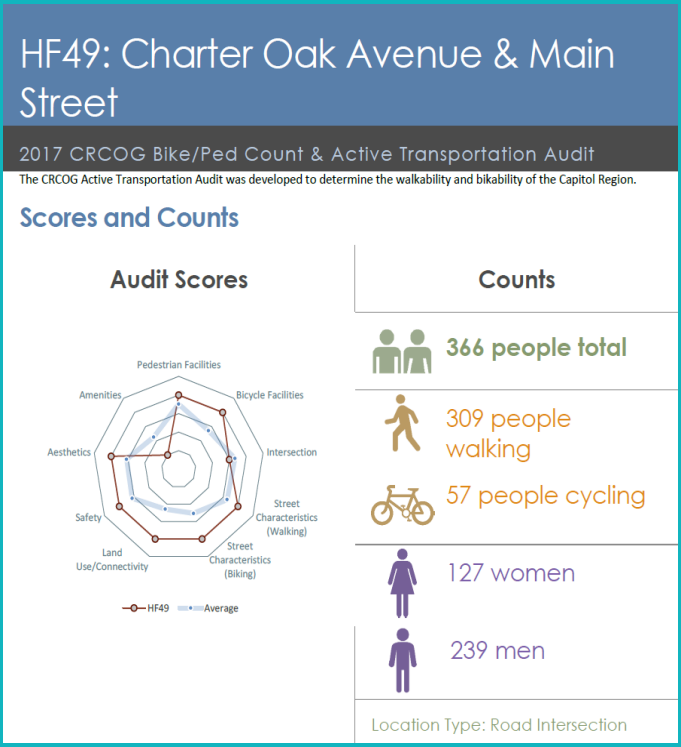
Another measure that could be explored is bicycle ridership. CRCOG has begun doing this through its annual bike/ped count, but there are challenges with methodology. The count is only a sampling of the region and may miss large portions of the region's riders. Census data, while helpful, is limited to work trips and thus does not capture all bicycle activity. New and improved methodology should be developed in support of this activity.



Average vehicle miles traveled has continued to increase in the state and the region. Though there have been some dips following recessions, the state has steadily driven more each year. By 2040, on average, around 100 million VMT will be driven each day.



Dozens of volunteers help CRCOG count pedestrians and cyclists every year at over 40 locations throughout the region.



CRCOG produces infographics for each count location that combine audit information with count information. When CRCOG has enough data, comparisons between years will be possible.

4.b. Continue to conduct the annual regional bike/ped count

CRCOG conducts an annual bike/ped count and has done so since 2009. Starting in 2016, the region began a more formalized methodology. Count locations are now put into three groups that are each counted on a three-year cycle. This reduces the burden each year and keeps the set of locations more consistent. Every three years a set of locations can be compared as a time series, giving a better sense of change.

With the 2019 count, CRCOG has it's first time series data that can be used for comparison. The data was collected in the Fall of 2019 and is currently being entered into a database for analysis. Due to the way the count is conducted, by volunteers using paper forms, the data must be manually entered. Once entered, it is analyzed to reveal any patterns, then added to an online, interactive map.

New technology promises to make the annual count easier, but there are a few significant barriers. The first is scale. The count is done at over 40 locations every year during one or two weeks. Camera based solutions would be expensive to deploy for this purpose as each location would take some setup (the cameras are usually mounted up high) and CRCOG would need enough of them to perform the count in a relatively short period of time. The cameras also need a power source, which can be a battery in some cases, but others need direct power or a solar panel.

The other barrier is the type of information that can be collected with cameras. Generally, they are only good at capturing the raw count. Some are able to differentiate cyclists from pedestrians, but few can reliably identify men versus women. Capturing data on turning movements would be very easy though.

CRCOG is continuing to look into these technologies.

4.c. Continue to perform bike/walk audits at key locations and promote the use of the tool by other organizations

Along with the bike/ped count, CRCOG conducts audits at count locations. These audits look at walking and biking conditions. They look at physical infrastructure (such as bike lanes and sidewalks) as well as driver behavior. A composite score is calculated for each location. As they are done on a three-year cycle along with the counts, the scores

for each location can be compared over a three-year period.

The audit forms can also be used by other organizations or municipalities to conduct their own audits. The forms are straightforward and available on CRCOG's website.

4.d. Periodically analyze crash patterns to identify priority areas for improvements

As noted below, non-motorized traffic fatalities are on the rise. While the cause of this trend is still being debated, it is important to track the data in a way that allows for priority locations to be identified. Using data from UConn's Crash Data Repository, CRCOG will continue to analyze and map this data to better understand crash patterns. This information can be used to prioritize projects, or, in some cases, develop interventions with relevant municipalities.

OUTREACH

TThis plan, including its public outreach efforts, was developed in coordination with the region's 2019 Metropolitan Transportation Plan. The following is a list of the types of events and techniques that were used to engage the public in developing this plan's recommendations. Throughout the recommendations section, specific pieces of input are cited in support of the various recommended actions.

POP-UPS

In the summer and fall of 2017, CRCOG conducted three pop-up events around the region. The three events were held at different times and in different places (one in an urban location, one in a suburban location, and one in a rural location), but were linked by the inclusion of an interactive "sticky note art project". Attendees were given a color-coded sticky note (based on age bracket) and asked to write an idea for how to improve biking or walking conditions

Figure 1-6 Word cloud showing how often various phrases were used for the sticky note exercise.

which was placed on a large board. Once filled in, the board revealed blocky images of a person walking and a person biking. This was a fun and engaging event (especially for children) that drew people to the booths. In all, 330 sticky note comments were collected at the following events:

- Hartford: Team members attended an event called Night Fall was held on October 7 in Bushnell Park. This event was visited by thousands of people from throughout the region. Team members had a booth at the event where they handed out information on the project and solicited input in biking and walking conditions using the interactive sticky map exercise.
- Simsbury: Team members attended the annual Spooktacular Chili Fest on October 28. This event featured a chili cooking competition, live music, and numerous booths. Team members solicited input through the sticky note exercise and a tablet-based survey. This event was held in conjunction with the Town of Simsbury's own bicycle planning efforts. Attendees could also write notes on a large-scale paper map, the results of which were shared with both projects.
- Coventry: Team members attended the Christmas in the Village event on December 3. This outdoor event occurred on Main Street in Coventry. Vendors lined the street and many shops had special events. Input was solicited through the sticky note exercise and the tablet-based survey.

ONLINE SURVEYS

A series of online surveys were used throughout the process to gather input and engage the public. The first included an interactive map where users could place pins and write comments. They were also asked to categorize their comments to make analysis more straightforward. Over 700 pins were placed on the map. The data was used to identify locations where improvements were needed.

Following the release of the draft regional network, a second interactive map was developed. It allowed users to see the proposed network and zoom in on routes. It also allowed them to leave comments on specific routes or locations. This was used to refine the network.

In the Fall of 2018 CRCOG released an online survey for the Metropolitan Transportation Plan. While it covered a broad array of topics, a few questions

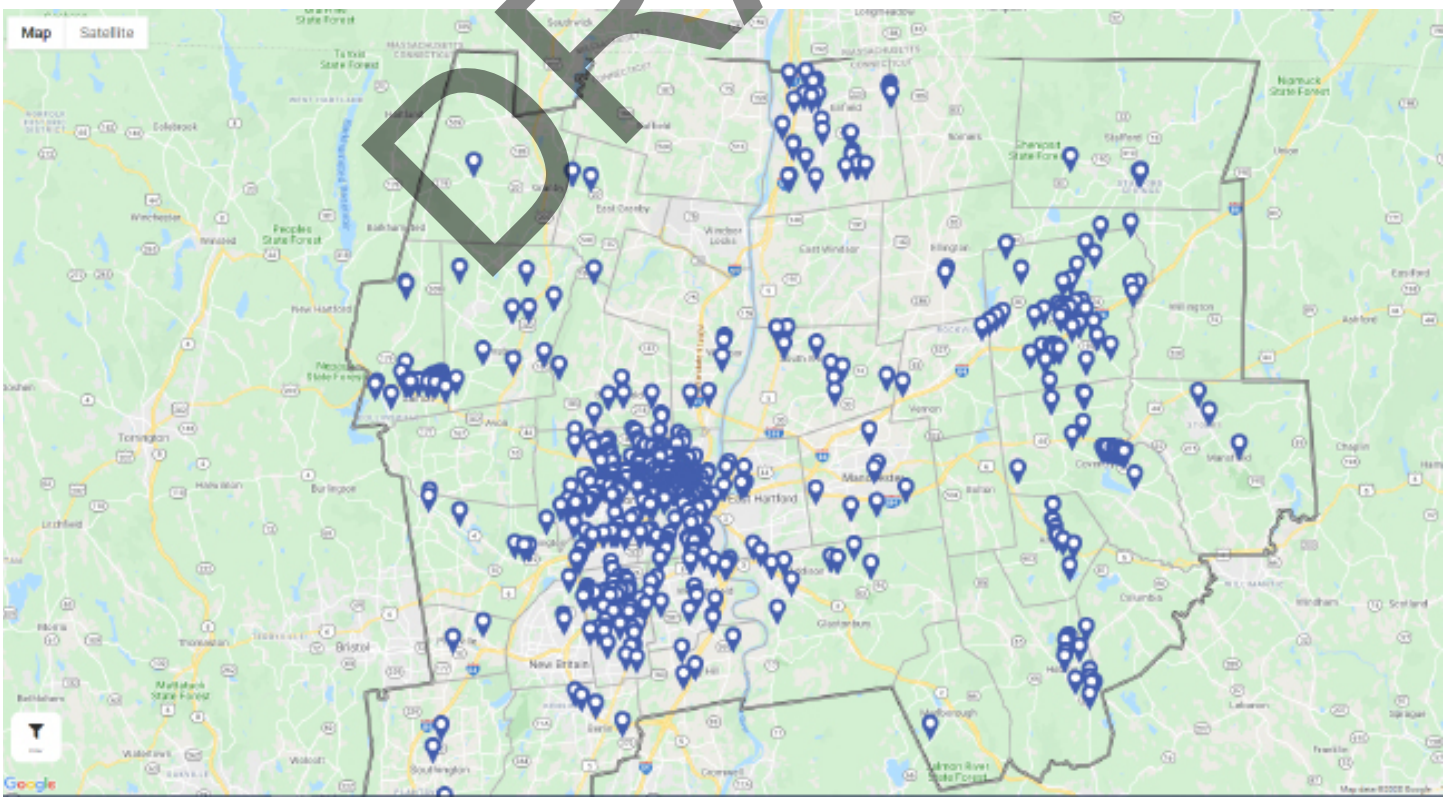


Figure 1-7 A screenshot of the online map used to socilit feedback from the public on biking and walking conditions in the region.

were specific to complete streets. Respondents were asked about how often they use different modes of transportation, what they like about those modes, and what they don't like about them. Over 300 people responded the survey. One interesting finding was that, although the vast majority of respondents were not cyclists, almost 90% supported improvements to cycling infrastructure. A similar percentage supported improvements to walking infrastructure.

WORKSHOPS

Two "Open Planning Studios" were also held during the project period. One was held in May 2018 and the other was in October 2018. During the first event, the public was invited to provide input on where problems areas are and also to provide general input on cycling and walking conditions. Presentations from national experts were also presented. A walking tour focused on developing improvements near Bushnell Park was also open to the public, as was a bike tour of recent complete streets projects in Hartford. The second event was held in New Britain and included a local policy workshop where municipal officials were given an overview of best practices related to complete streets policies. An interactive design exercise was also presented. Finally, both events included a series of focus groups.

FOCUS GROUPS

During the complete streets project and the Metropolitan Transportation Plan, a series of focus groups were held to get specific input from stakeholders. Complete streets focus groups included:

- Emergency services personnel
- Senior citizens and people with disabilities
- South of Downtown (Hartford) Neighborhood Revitalization Zone
- Parks and recreational trails
- Transit connections

For the Metropolitan Transportation Plan, groups included:

- Sustainable transportation systems
- Under-served populations
- Highways, congestion, and freight
- Transit and mobility management
- New and emerging technologies
- Financing options

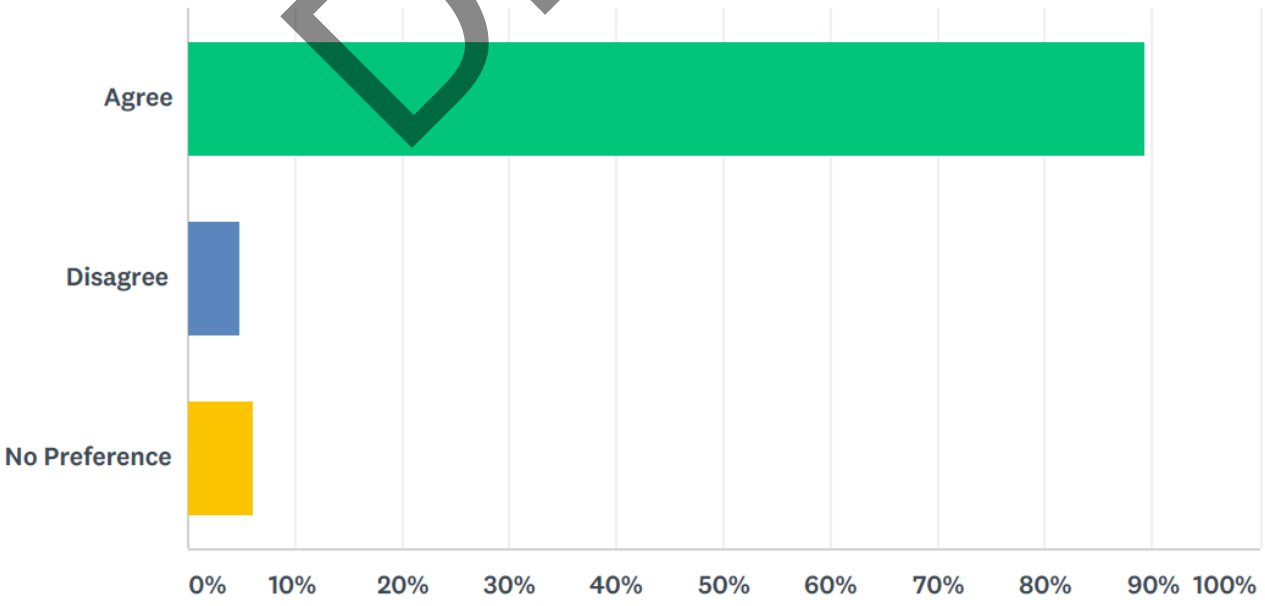


Figure 1-8 a chart showing responses to the question: "Even though I may or may not personally bike, I support bicycle improvements in my community."

DEMONSTRATION PROJECTS

Two demonstration, or tactical urbanism projects were developed to help people experience complete streets elements in person. The first was held in Manchester in May of 2018. For that event three parking spaces on Main Street were taken over and converted into patio seating for a local restaurant. Cheap modular decking, planters, and cones were used to close the area off to cars. The restaurant reported increased traffic and noted that the outdoor seating was very popular. The town later reported that they had received requests from other businesses for similar projects in front of their shops.

The second project was in October in New Britain. A 7,000 square foot area of a triangular intersection at Jubilee Street was closed off to car traffic. A large mural of a beehive pattern (the city had recently adopted the "bee" as a sort of municipal mascot) was painted on the pavement, extending the area of a small park. While some residents were initially resistant to the installation, they eventually saw that traffic was calmed by the road closure without impacting mobility. The city plans to convert the area to a park permanently.

Additional interest was expressed, but there were insufficient funds to complete the projects. CRCOG subsequently partnered with the Connecticut Department of Health and was awarded a grant from the Centers for Disease Control to work with statewide partners on demonstration projects and educational events. That project is underway and will last at least two years.

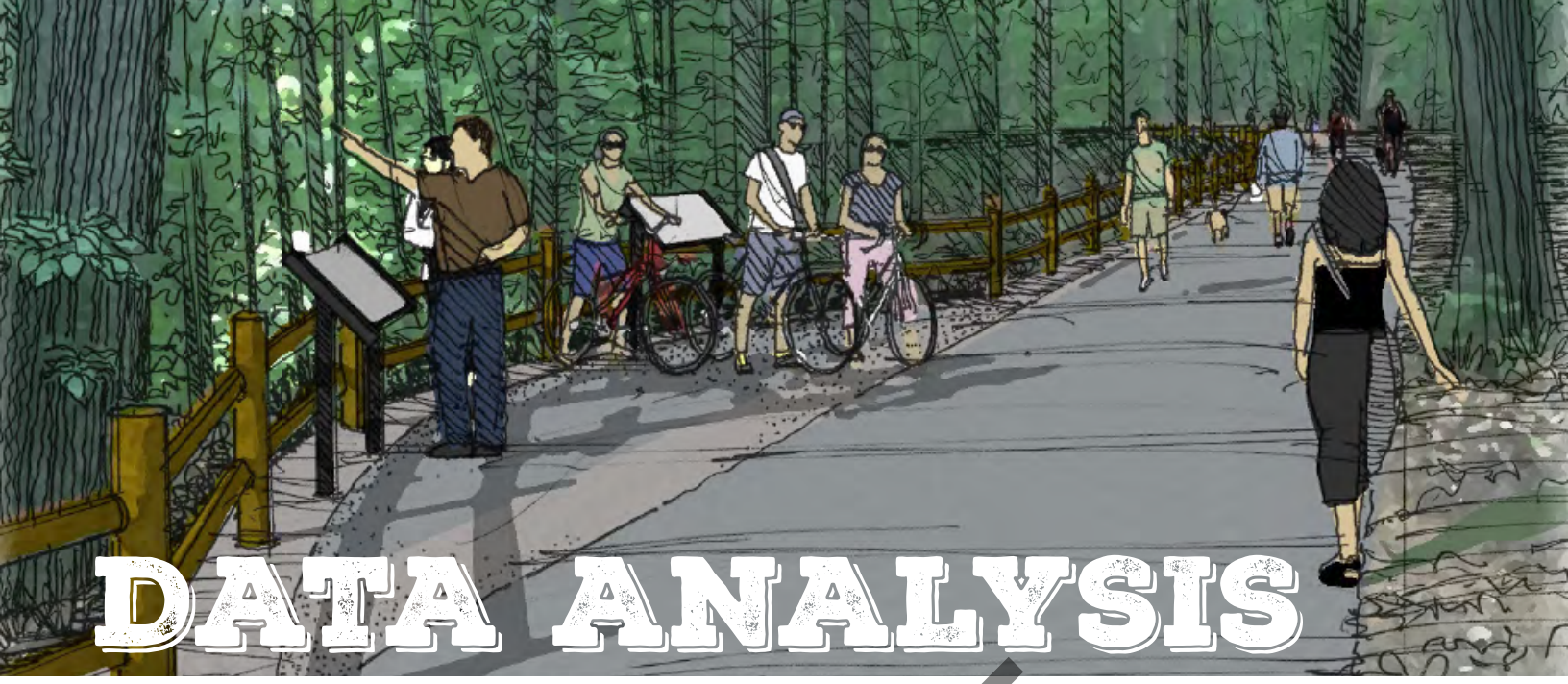
Figure 1-9 This mural was painted by CRCOG and some volunteers. It shortens the crossing distance at the intersection of Main and Charter Oak in Hartford.

TRADITIONAL PUBLIC MEETINGS

For the Metropolitan Transportation Plan, two sets of public meetings were held. The first set included meetings in New Britain (at the YWCA) and in Hartford (at Capital Community College). These meetings were held near the beginning of the process and were used to gather input on what people found important. At the Hartford meeting, for example, a lot of people expressed concerns about road and sidewalk maintenance, as well as greenhouse gas emissions. Both of these topics have been included in this plan.

The second set of meetings were held once the plan was in draft form. Meetings were held in Hartford (at the YMCA) and in Manchester (at the Manchester Community College). The public was invited to offer input on the plan that had been previously released for public input. Comments similar to those expressed at the earlier meeting were offered. Additionally, concerns about how money is prioritized were expressed, as well as concerns about infrastructure that serves Hartford residents versus commuters.

Both sets of public meetings were offered online as well, with the option to submit questions via chat.



DATA ANALYSIS

ABOUT THE REGION

The Capitol Region is comprised of 38 municipalities, the largest of which is Hartford. The region is home to 970,000 people living in 370,000 households. Males represent 49% of the population with women accounting for 51%. The region is less racially diverse than the country, but more diverse than the state. 73% of the region's people identify as white while 13% identify as African American. Ethnically, 16% of people (of any race) identify as Hispanic/Latino.

The region is also home to an aging population. People under 40 made up 60% of the population in 1990 but declined to just 51% in 2010. A small increase in the population over 70 was also seen, with it growing from 18% in 1990 to 20% in 2010. The biggest increase in population was seen in the 50-59 age group, which grew from 9% to 15% during that 20 year period. Based on this, a large number of people are entering retirement age and their transportation needs may be changing.

MODE SHARE

The CT Household Transportation Survey, published in 2016, shows there were approximately 3.2 million individual trips on an average weekday in the CRCOG region. These trips were made by 900,000 persons in 400,000 households. What is surprising is that the number of trips by single occupant vehicles is less than 50% (approx. 48%), with either family or other forms of carpooling making up 34% of daily trips. Public transit accounts for 4.5% of daily trips in the region, while nearly 9% of all trips are by walking or biking.

The largest city in the region and the capitol of Connecticut, Hartford, shows a much different mode split for daily commuters. Of those who work in Hartford, more than 15% commute by transit, a number considerably higher than the regional average. Regionally, more than 10% of households have no vehicle, with the highest percentages of zero car households in New Britain and Hartford (approximately 7% and 17% respectively).

It should be noted that these figures differ significantly from what is reported by the Census. According to the latest American Community Survey, roughly 81% of commuters drive alone. Only 3% of commuters use public transportation. The biggest difference is with walking and biking. In the ACS, just 0.2% of commuters bike to work while 2.4% walk to work. Based on the ACS data, it would appear that walking and biking is an uncommon activity, but the household survey paints a different picture once non-work trips within the region are considered.

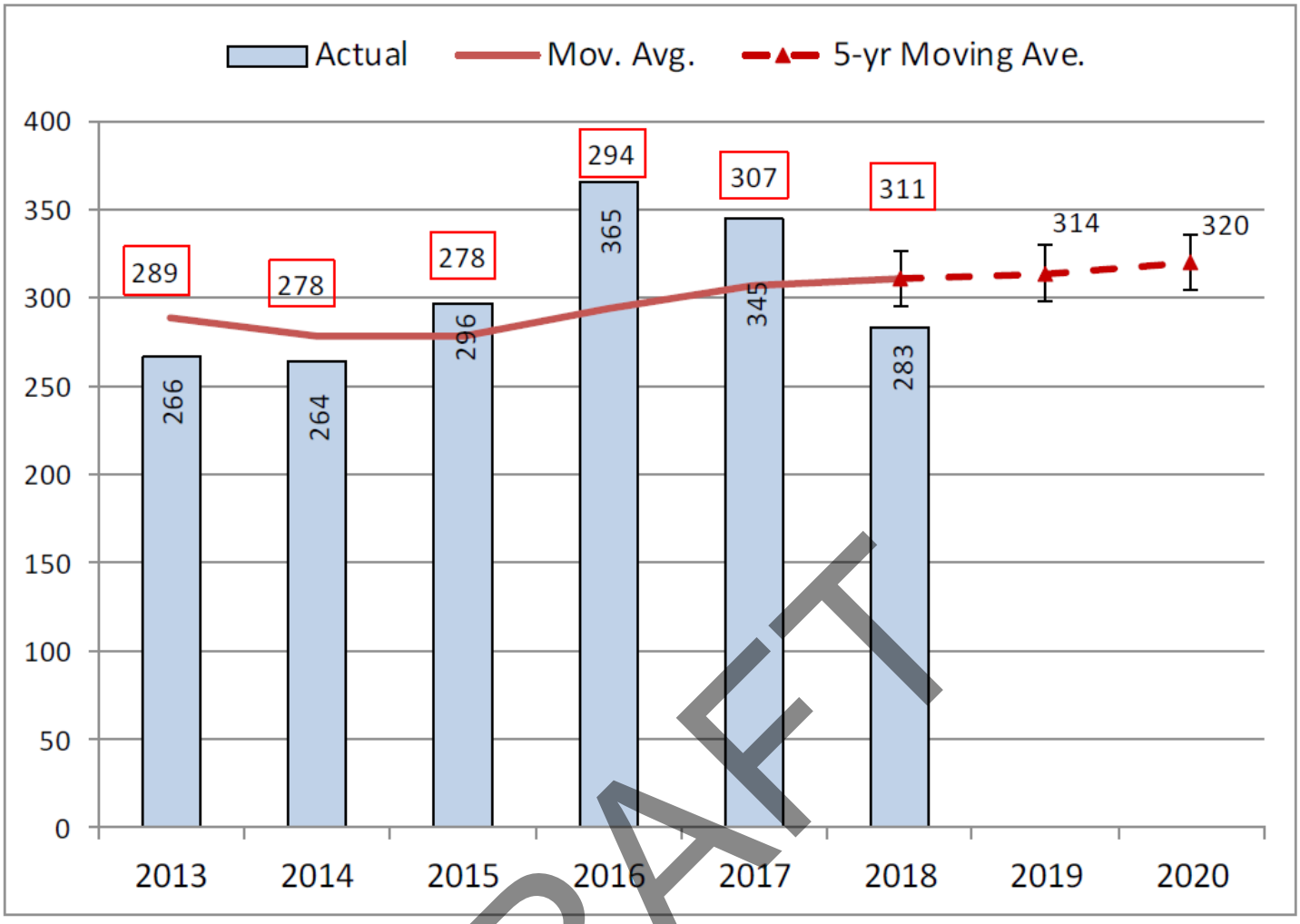


Figure 1-10 Chart showing actual and moving averages of non-motorist fatalities and serious injuries for Connecticut.

SAFETY

People using active modes of transportation are more vulnerable and suffer greater levels of injury in crashes than vehicle occupants. It is, therefore, increasingly important to develop policies and plans to protect these vulnerable users. It is especially important given the increase in the number of people biking, walking, and taking transit, as well as recent troubling crash statistics.

For the past few decades, crash rates and fatality rates have been falling. Recently, however, we have seen up-ticks in both rates in Connecticut and the region. As reported in a staff memo to the CRCOG Transportation Committee (date October 11, 2019) , the overall statewide fatality rate (of all users) has been relatively steady for the past five years, varying between 0.825 fatalities per 100 million vehicle miles traveled (VMT) to 0.885 per 100 million VMT. During this time, total VMTs have increased, meaning that the absolute number of fatalities has still increased.

Serious injuries for all users have an overall negative trend, though it has varied considerably during the five-year period. For example, in 2014 there were 1,356 serious injuries, which increased to 1,689 in 2016. By 2018 serious injuries had declined to 1,269. The region uses a five-year moving average to track these figures, which has fallen from 1,842 in 2013 to 1,497 in 2018.

When just considering non-motorized users, the story is different. In 2013 there were 213 fatalities or serious injuries in the state. This spiked to 365 in 2016, before falling to 283 in 2018. Again, using a five-year moving average, the number of fatalities and serious injuries went from 289 to 311. This trend is not unique to the State of Connecticut. Nationwide, in 2013, 5,718 non-motorist fatalities were recorded. In 2016 it spiked to 7,193 before falling to 6,988 in 2016. While 2016-2017 saw a drop in fatalities, the 2017 number is still the highest it's been since 1990.

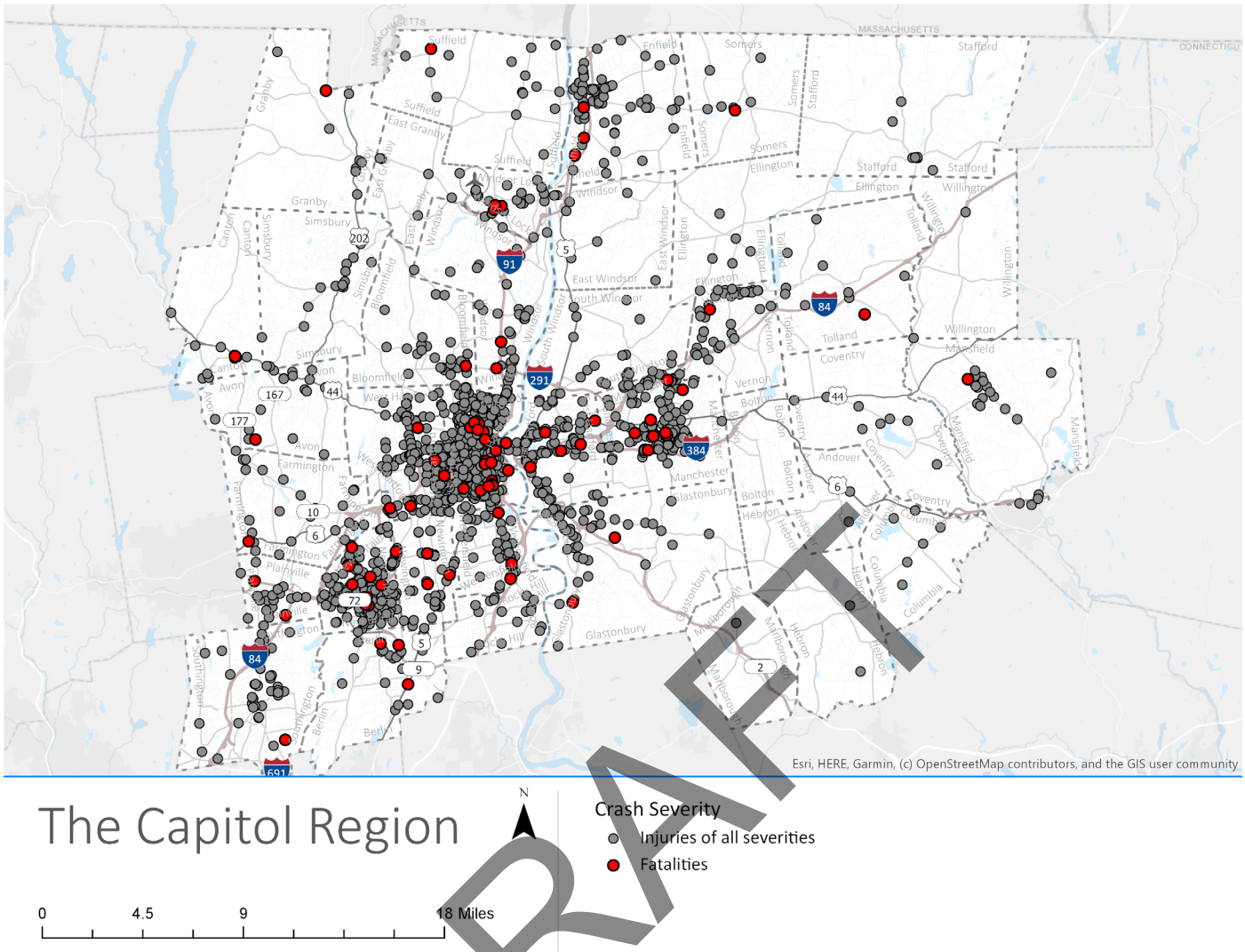


Figure 1-11Map of injuries and fatalities in the capitol region between 2014 and 2018

Just within the CRCOG region, there were 77 non-motorized fatalities between 2014 and 2018. Of those fatal crashes, 19 occured in Hartford, the largest location. This was followed by Manchester with nine fatalities and New Britain with eight. During that same period 2224 fatalities or injuries were reported. The map in Figure 1-11 shows the locations of non-motorized crashes in the region.

What accounts for these trends? Many theories have been put forth, but no definitive explanation has been agreed upon. Some point to the introduction of smartphones around 2008 as a turning point, leading to more distracted driving, as well as distracted walking. Still others point to the increasing weight of vehicles. The proliferation of SUVs and trucks has led to a roughly 50% increase in gross vehicle weight for the typical vehicle on the road. SUVs and trucks have overtaken sedans as the most popular vehicles and their greater mass leads to greater levels of injury for non-motorists (given a constant speed). Other theories include the increasing number of walkers, bikers, and transit users; proliferation of speeding due to over-designed roads; and lack of education for both drivers and cyclists. The answer is probably that all of these trends are factors and play a role in higher fatality levels.

Regardless of the cause, a common solution is to provide better infrastructure for non-motorists. A recent report from the National Transportation Safety Board (NTSB) noted that, while more crashes happen at intersections, the severity of crashes occurring midblock is much greater. This is due to the higher speeds of vehicles. The NTSB notes that installing more bike infrastructure, that provides separation (or protection) between cyclists and motorists could go a long way toward reducing both

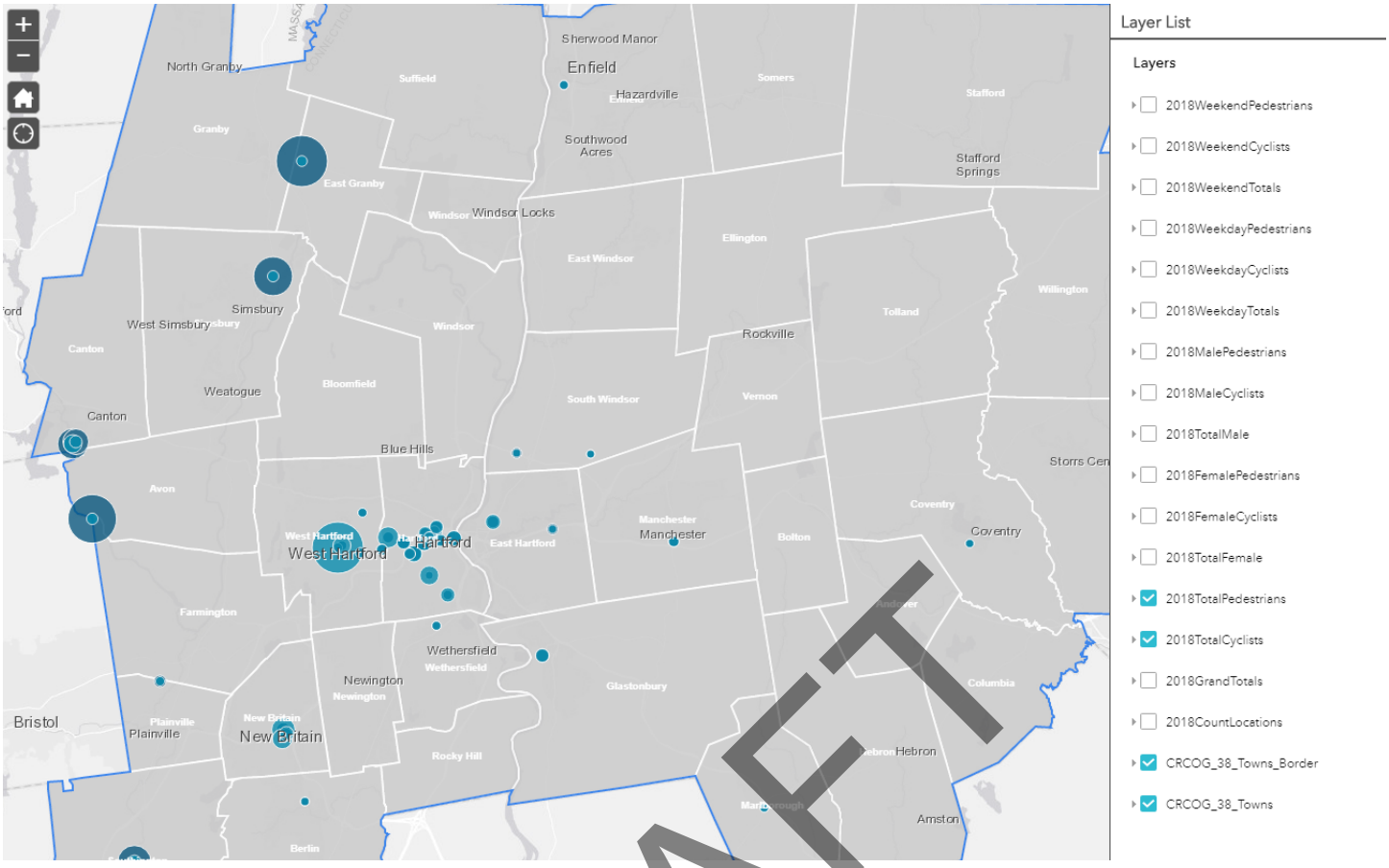


Figure 1-12Map showing bike/ped counts for 2018.

the number and the severity of crashes. Cyclists are given more room away from cars, and, typically, the narrower roadway caused by the installation of such infrastructure results in reduced speed.

Performance targets

In 2012, legislation called Moving Ahead for Progress in the 21st Century (MAP-21) was passed by the U.S. Congress and signed into law by President Obama. This law, which was the latest (at the time) funding bill for transportation, included a provision requiring states and MPOs to adopt performance targets and begin monitoring them. In 2016 the Federal Highway Administration (FHWA) finalized rules regarding safety performance measures. The final set of rules required that non-motorist fatalities and serious injuries be tracked and that states and MPOs establish targets.

It is important to note that for the purposes of this exercise, FHWA requires that performance targets be realistically achievable in the given time frame (CRCOG's current targets are for 2020). Failure to achieve the targets may result in reductions of federal funding.

In Connecticut, the state has taken the lead in establishing targets. CRCOG and the other MPOs have thus far adopted CTDOT's performance targets. MPOs may establish their own in future years.

For 2020, the state target for non-motorist fatalities and serious injuries is to maintain the 5-year average, despite the general trend of rising fatalities. In 2017, the reported figure for this measure was 345 (statewide), resulting in a 5-year average of 307. The target for 2020 is to maintain that 5-year average, which would result in a lower reported figure. Current projections predict that 2020 will see 320 fatalities or serious injuries. While this level is unacceptable, it represents a figure that can realistically be achieved in the given time frame.

Ultimately, the goal of performance-based planning is to use data, in this case safety data, to select projects. The goal is to prioritize projects that will help the state and region achieve their targets. As performance-based planning becomes a more ingrained part of the process, more aggressive targets should be considered. Ultimately, the goal is to have no fatalities or serious injuries.

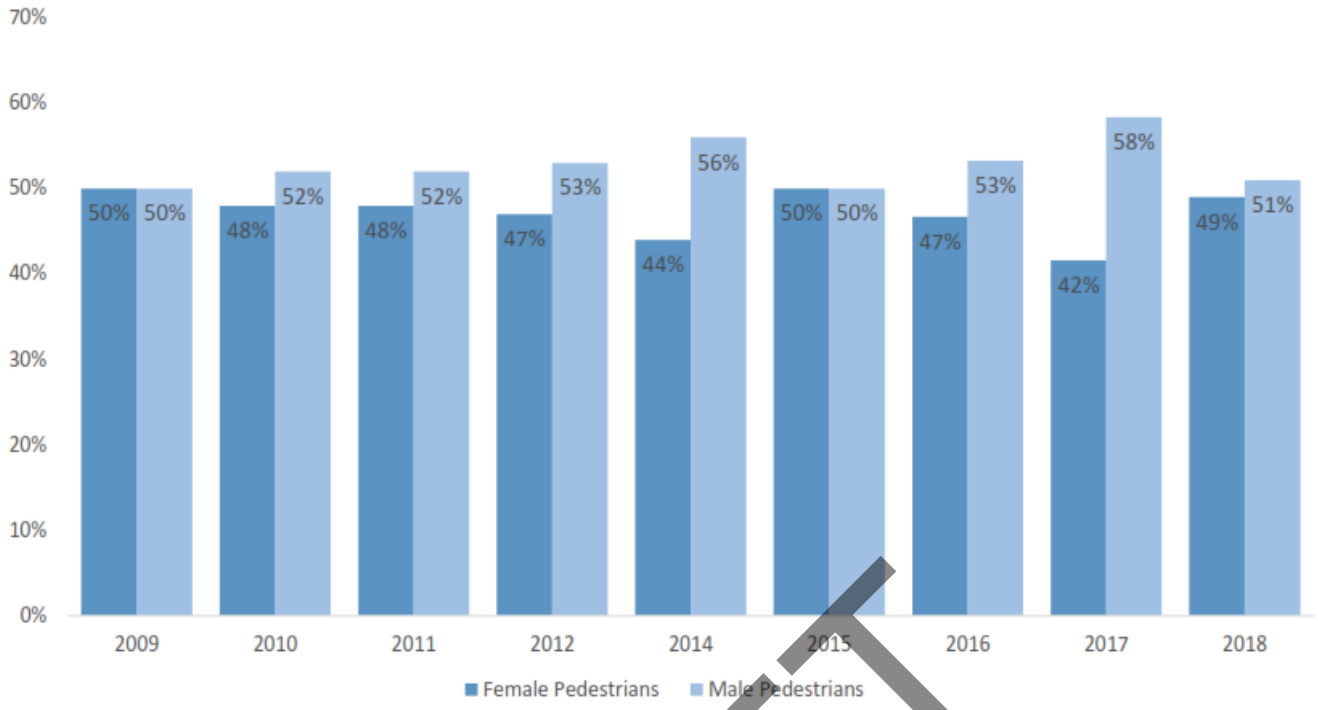


Figure 1-13 Pedestrians counted by gender.

REGIONAL BIKE/PED COUNT AND AUDIT

As previously discussed, every year since 2009 CRCOG has conducted a regional bike/ped count. Until 2016, locations were chosen inconsistently, making comparisons across time difficult. The counts did reveal some interesting information about cyclist and pedestrian behavior that can be used for planning purposes. Also, starting in 2016, a more formalized approach, in which a reduced set of locations is counted on a three-year cycle, was implemented. This will allow better comparisons in the future.

Gender differences

While not scientific, two charts from the count program show differences in how men and women approach active transportation. Consistently, men are much more likely to appear in our count as cyclists than women are. In 2018, 72% of cyclists were men. Pedestrians on the other hand are nearly split nearly equally (51% men and 49% women).

Digging further into the data shows that women appear much more comfortable on trails than on roads. In 2018, 33% of trail riders were women, compared to just 12% of street riders. So, while it is possible that other factors are in play, it would appear to be the case that women have greater concerns regarding safety. More research should be done, such as comparing usage rates for higher quality infrastructure, such as protected bike lanes.

Safety

In the CRCOG count, most riders on the street were observed practicing safe behaviors. For example, around 50% were riding with traffic and just 10% were riding against traffic. The rest were riding on the sidewalk, where conflicts with pedestrians are more likely. This suggests that there is a need for more separated facilities for cyclists.

Despite numerous helmet campaigns, the rate of riders with no helmets remains stubbornly high. Around 40% of the riders in CRCOG's count do not wear helmets. This has been consistent throughout the program, except in 2009 and 2010 where there was likely an issue with how volunteers reported the data. Of note is that 82% of non-helmet users were men, compared to just 18% being women. Given the rates of cycling, men appear to be more likely to forgo wearing a helmet.

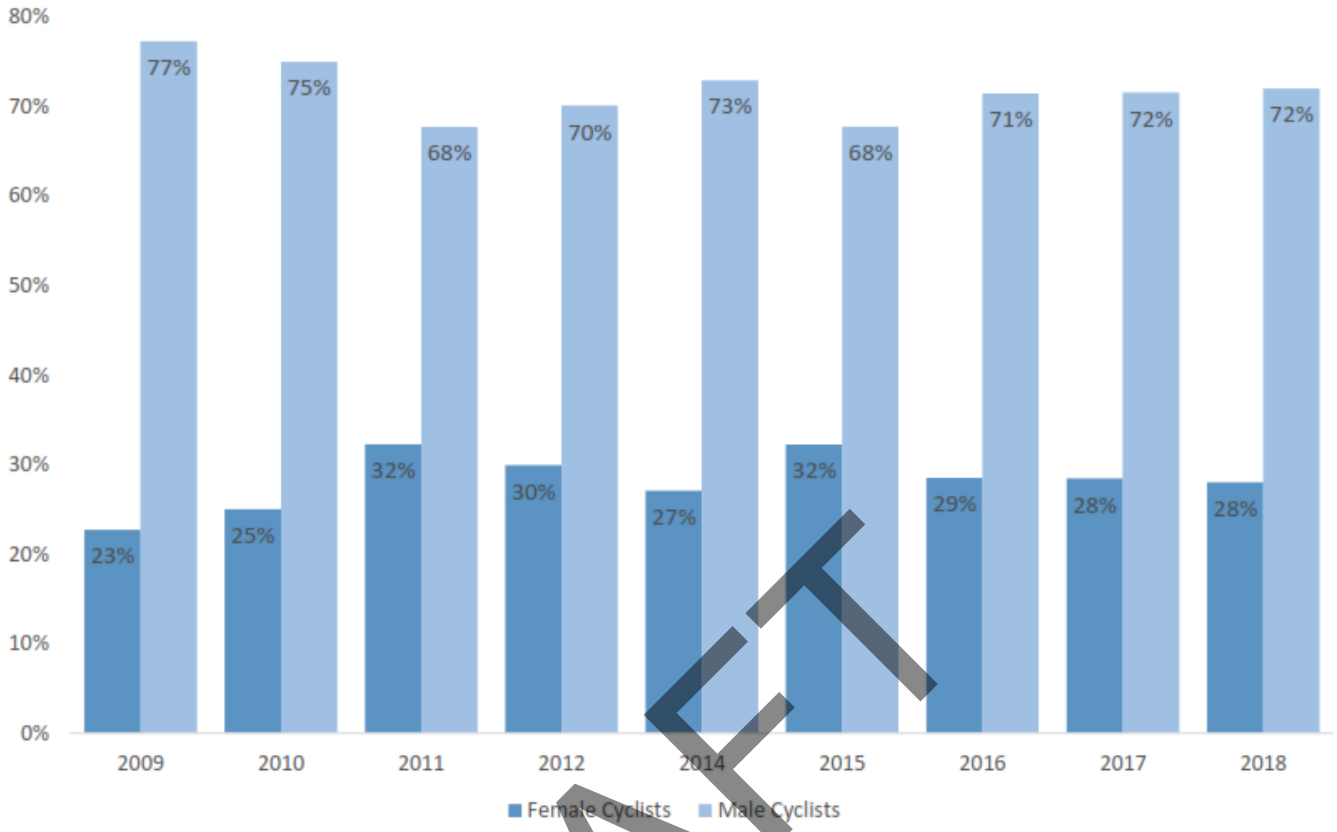


Figure 1-14 Cyclists counted by gender.

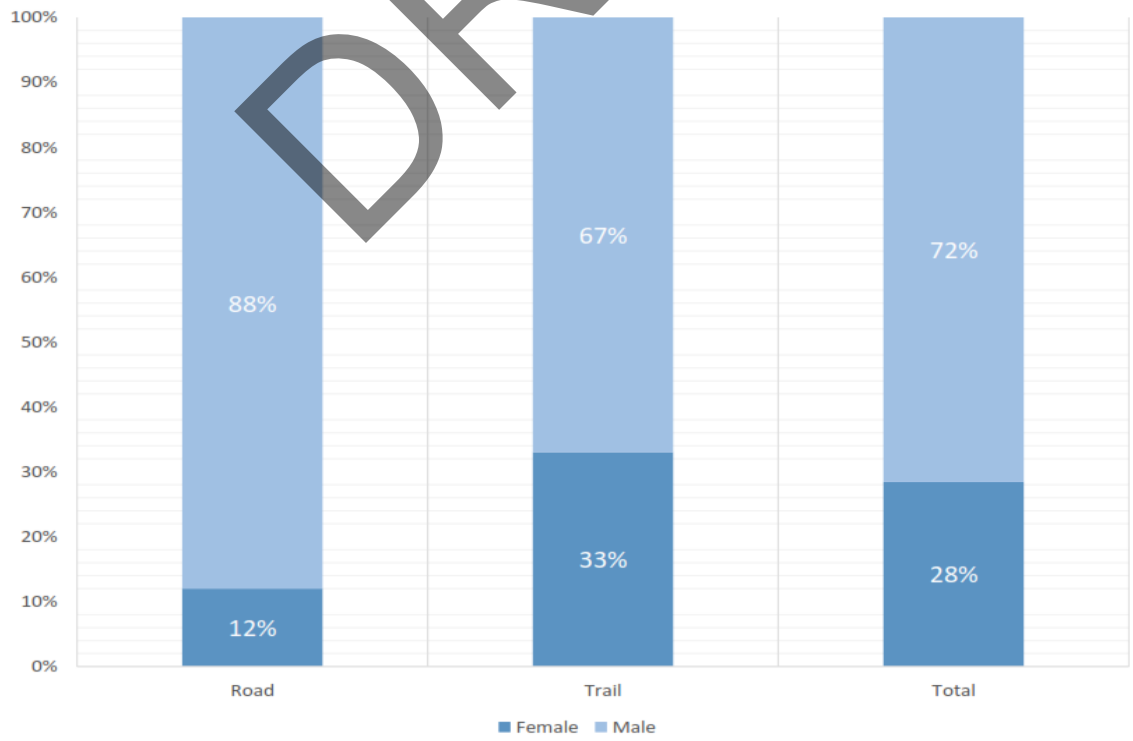


Figure 1-15 Facility use by gender.

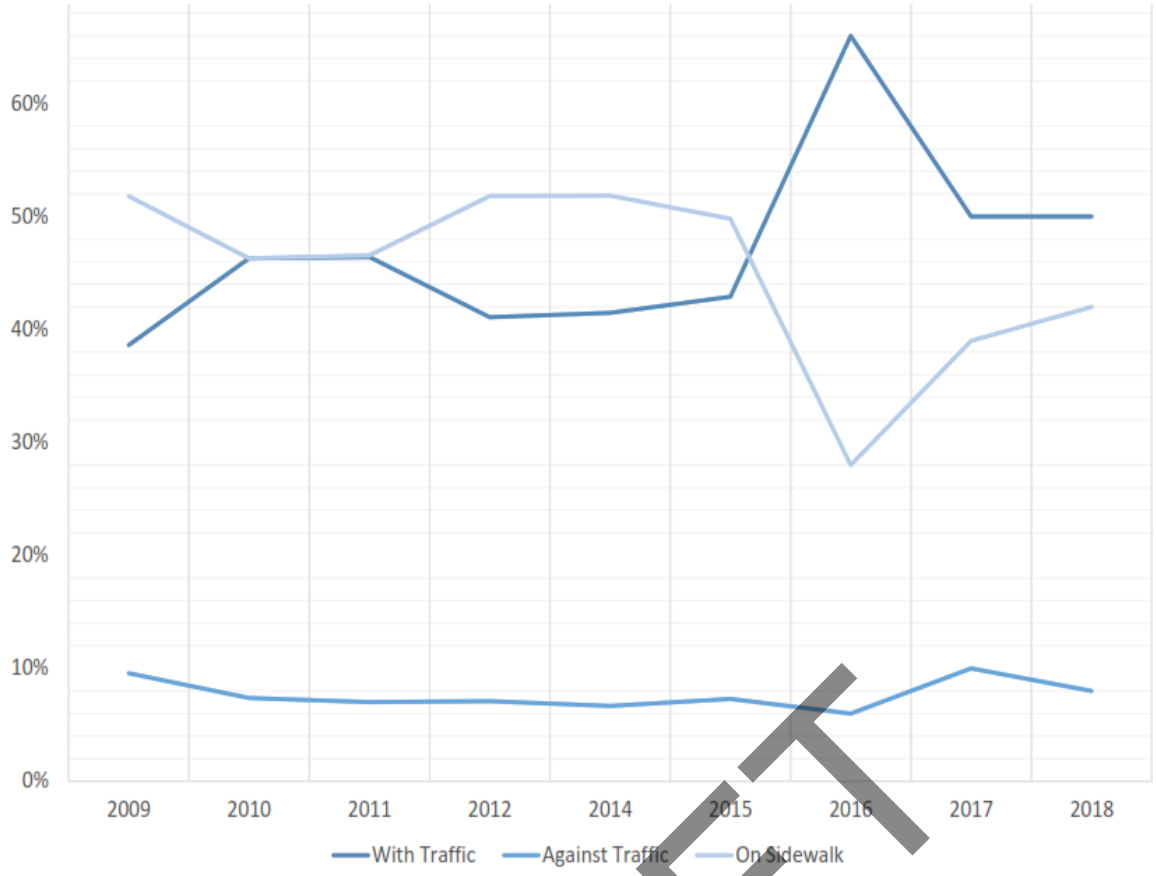
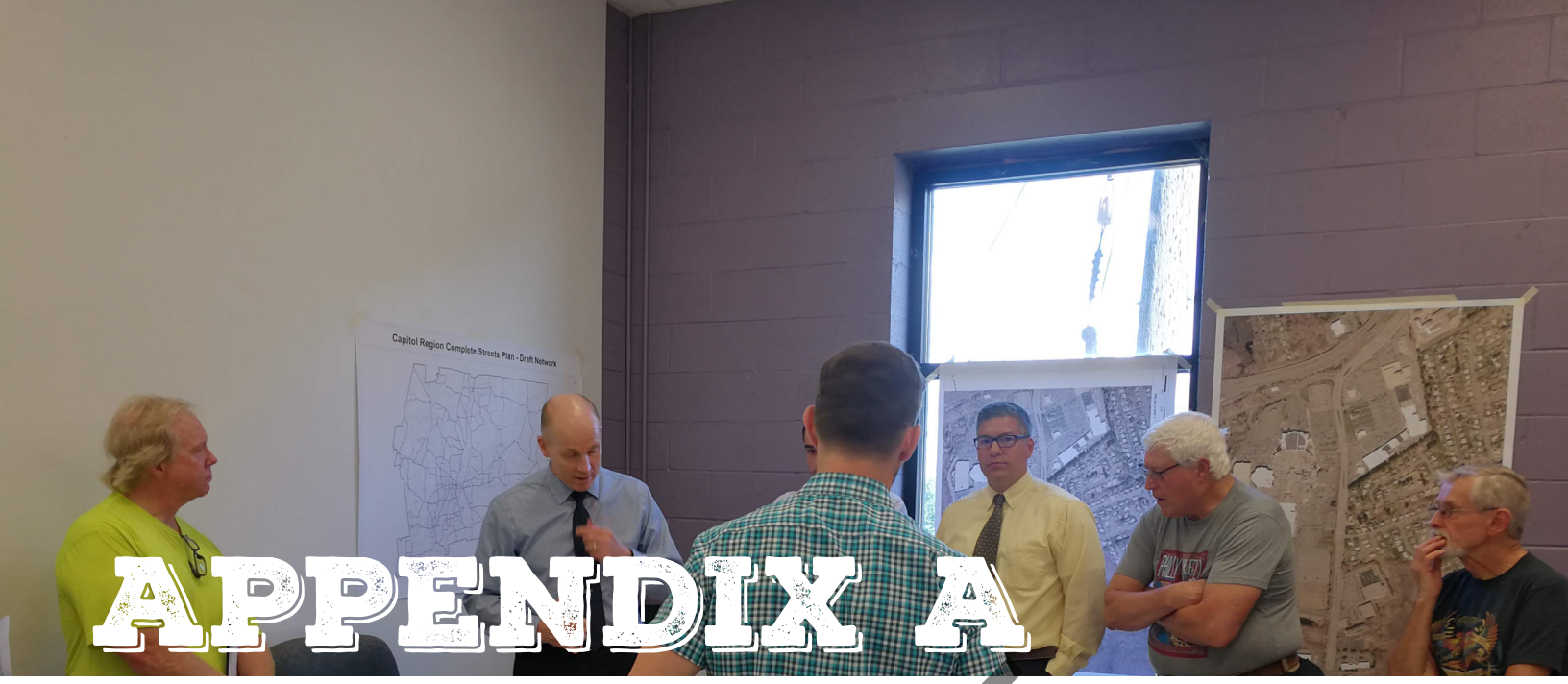


Figure 1-16 Cyclist behavior

Figure 1-17 Helmet use for cyclists.



APPENDIX A

COMPLETE STREETS POLICY

The CRCOG Policy Board adopted the following complete streets policy on January 22, 2020. The text of the policy (as of January 22, 2020) is as follows:

I. Policy Statement

CRCOG will continue to advance and support complete streets in the Capitol Region.

This policy will contribute to the State of Connecticut meeting the complete streets objectives established by state law (Connecticut General Statutes Sec. 13a-153f.) and the Complete Streets Policy of the Connecticut Department of Transportation (CTDOT).

This policy will be a living document, adapting to the Capitol Region's needs as they change over time. While this policy is applicable at the regional level, member municipalities are encouraged to adopt and maintain local complete streets policies.

II. Modal Hierarchy and Accommodation of Diverse Users

Through this policy, the region's decision-making process will strive to protect those most vulnerable to harm, while accommodating a wide range of modes, by incorporating the modal hierarchy below.

The modal hierarchy recognizes that many people living in the CRCOG region lack regular or convenient access to an automobile. It also recognizes that many people who do have auto access would prefer to walk, bike, or take transit.

The following modal hierarchy shall apply to all urban, town center, and village center place types and to all streets and roads where development ordinances or land use plans call for walkable or multimodal corridors.

- People walking, in wheelchairs, or using other assistive devices
- People taking transit
- People biking
- People moving goods for local delivery
- People in personal automobiles accessing local destinations

The modal hierarchy is intended to serve as a general framework for planning and programming, including project application review, to encourage context-specific design solutions on individual corridors, with consideration of land use planning, public input, and relevant data. In other words, what constitutes a complete street in one area may look quite different than a complete street in another. However, regardless of context, this policy seeks to expand transportation options for the most vulnerable users of the system. The Design section of this policy identifies resources to guide the accommodation of various users of the transportation system in

different land use contexts.

III. Commitment in All Projects and Phases

All Projects

All projects receiving funding through CRCOG, or submitted as candidates for State funding, must adhere to this policy. CRCOG will work with CTDOT to develop a process to consider the requirements of this policy when selecting projects for funding through the Transportation Improvement Program (TIP).

All Phases

Except for projects that have received an exception (see Exceptions section), consideration of complete streets and the provision of accommodations for all users will be built into projects from the beginning of project development and will persist through all phases. Project phases include planning, programming, environmental documentation, design, right-of-way acquisition, procurement/ bidding, construction, construction engineering, reconstruction, and operations. Accordingly, vulnerable users, including bicyclists and pedestrians, and transit must be reasonably accommodated during the construction phase of projects.

This policy also applies to all CRCOG planning activities that involve public rights-of-way, including the Metropolitan Transportation Plan.

IV. Exceptions

A. Criteria for Project Exceptions

Exceptions to this policy shall be considered on a project-by-project basis. The following list, which is not necessarily exhaustive, includes criteria and examples of potential exception conditions.

- Projects where certain users are legally excluded, like controlled-access highways or pedestrian-only streets. Partial exceptions may apply to ensure projects consider all users that are not legally excluded.
- Projects for which there is already a parallel off-road facility, such as a multi-use path. This exception should not lead to an unreasonable detour for users to access destinations along the corridor with the project.
- Projects where no transit routes exist or are planned may be exempt from including transit accommodations.
- Projects where there is no existing or potential/ expected demand for a particular user group.
- Cost-prohibitive projects
  - If an applicant is seeking an exception based on cost, a breakdown of the project cost with and without complete streets facilities is required.
- Projects where extreme topographical or natural resource constraints, or the need for excessive right-of-way acquisition, lead to disproportionate costs for including complete streets elements, or when there is a compelling reason that a complete streets element of a project must terminate prior to making a logical connection to the existing network for a particular mode.
- Projects where complete streets elements are not consistent with local plans, visions, and/or standards.

B. Pre-application Information

In advance of soliciting project applications, CRCOG may hold a pre-application workshop to clarify complete streets requirements and potential exceptions.

C. Complete Streets Compliance Form

All project applications shall include a Complete Streets Compliance Form (Appendix D). On this form, applicants will identify either their project's included complete streets elements or the reasoning for why the project qualifies for an exception. Applicants should cite at least one of the above exception criteria or make a comprehensive case for a different type of exception.

D. Bicycle and Pedestrian Travel Needs Assessment Form

All project applications shall include a completed CTDOT Bicycle and Pedestrian Travel Needs Assessment (BPTNA) form.

E. Compliance Process

Upon receiving an application for funding, CRCOG Transportation and Policy/Planning staff will review it for all eligibility factors, including compliance with this policy via the submitted Complete Streets Compliance Form. Staff must consider project context in their review (as described in Appendix C). If staff determines that a project requires an exception that has not been identified or that the

identified exception is not applicable, staff will coordinate with the applicant regarding identified issues and possible solutions. The applicant will then have an opportunity to resubmit the form and application, along with any additional supporting materials, to address these concerns. If the applicant and staff cannot come to agreement regarding the compliance of a project, both parties will present information to the Transportation Committee, which will then determine a project's compliance and funding eligibility.

F. Communication

All exceptions shall be recorded in approved minutes of the Transportation Committee.

V. Appendix A: Coordination

A. Courtesy Review

Municipalities are encouraged to invite representatives from neighboring municipalities to review potential projects that may impact those communities.

B. Interagency Coordination

For all projects, applicants are encouraged to consult with relevant agencies before applying for CRCOG-allocated funds. The agencies to be consulted will vary based on the specifics of each project, but may include the Connecticut Department of Energy and Environmental Protection (CTDEEP), State Historic Preservation Office (SHPO), the Army Corps of Engineers, etc.

C. Land Use Referral and Regulations

Under state law, notifications and opportunities for review and comment must be given to regional councils of governments for updates to municipal POCDs, certain zoning map and text amendments, and proposed subdivisions. These referrals may afford CRCOG and the municipality an opportunity to formally communicate on opportunities to support complete streets policies and the construction of complete streets elements as part of new development.

CRCOG's member municipalities are encouraged to review their zoning and subdivision regulations for opportunities to better integrate complete streets elements. Several resources, including CRCOG's Sustainable Land Use Code project, can assist communities in such a review.

D. Connecticut Department of Transportation (CTDOT) Coordination

CRCOG recognizes that CTDOT is an important partner and that CTDOT has committed to complete streets across the state through its Complete Streets Policy. CTDOT is encouraged to continue incorporating complete streets into all projects and to closely coordinate with municipalities, throughout the project development process, on projects located within or near those respective municipalities' limits. Strong coordination between CTDOT and CRCOG will strengthen the region's ability to deliver complete streets projects. CTDOT is encouraged to hold routine consultations with CRCOG on complete streets opportunities relating to projects using state or federal funding.

VI. Appendix B: Design Considerations

A. Municipal Design Standards

CRCOG encourages member municipalities to evaluate their local design guidelines and engineering standards to align them with complete streets best practices and this policy's modal hierarchy.

B. Education and Training

CRCOG will support complete streets design efforts by providing education and training opportunities for both CRCOG staff and municipal staff.

C. Context-specific Design

Street design will be context-specific. Projects in rural areas should accommodate all users in a way that fits with a rural context. Logical project termini shall be chosen to include connections through challenging design areas, such as overpasses, rail crossings, bridges, or unsafe intersections. Projects shall not terminate before such obstacles unless there is a compelling reason to do so.

D. Design Guidelines

Current adopted or accepted design guidance, as defined by the list provided below, should be followed for all projects. Best practice design guidelines will be revisited by CRCOG and its member communities with each update of the Complete Streets Policy.

Project designs receiving CRCOG-allocated funds shall adhere to FHWA and-or CTDOT requirements, as necessary, but may include treatments that can be piloted through the MUTCD experimentation

process. Innovative design options that provide an additional level of safety and comfort for vulnerable users are encouraged.

Quick-Build and Temporary Complete Streets Projects

For eligible funding sources, CRCOG supports and encourages the use of temporary or quick-build materials to test designs or rapidly install complete streets designs without major reconstruction in the short-term.

Best Practice Design Standards and Guidelines

American Association of State Highway and Transportation Officials (AASHTO)

- Guide for the Planning, Designing, and Operation Pedestrian Facilities
- Guide for the Development of Bicycle Facilities
- Policy on Geometric Design of Highways and Streets (Green Book)

Federal Highway Administration (FHWA)

- Separated Bike Lane Planning and Design Guide
- Achieving Multimodal Networks: Applying Design Flexibility & Reducing Conflicts

National Association of City Transportation Officials (NACTO)

- Urban Street Design Guide
- Transit Street Design Guide
- Urban Bikeway Design Guide

Manual on Uniform Traffic Control Devices (MUTCD)

U.S. Access Board

- USDOT ADA Standards
- Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

Connecticut Department of Transportation (CTDOT)

- Highway Design Manual
- Bridge Design Manual
- Drainage Manual
- Utility Accommodation Manual
- Traffic Control Signal Design Manual

Local Design Guidelines

VII. Appendix C: Land Use and Context Sensitivity

A. Evaluating Needs and Potential of Streets

Each project needs a review of context and the subject area's role within a community and larger regional network. Through evaluation of the existing and expected future conditions around a project area, complete streets alternatives may be developed.

1. Existing Conditions

Existing crash history, land use, zoning, density of residents and uses, modal usage, and space constraints, are to be considered as part of every project to evaluate the needs of all users within a given project area and to determine appropriate design treatments.

2. Future Conditions

Future or potential land use, zoning, density of residents and uses, modal usage, and space constraints, as determined by growth patterns, planning documents, and projections, are to be considered to anticipate future needs and potential of all users within a given project area and to determine appropriate design treatments.

B. Responding to Context

Different design treatments will be appropriate depending on the land use, transportation network needs, and space constraints of a project area. For example:

- On streets with higher motor vehicle speeds and/or volumes:
  - Physical separation between bicycle facilities and general travel lanes is preferred.
  - Pedestrian facilities should be buffered from general travel lanes by context-sensitive elements such as a planting strip.
- Streets that need to accommodate buses or large trucks may need to give more consideration to the effects of lane widths.
- Streets with higher land use density should accommodate higher pedestrian volumes.
- Streets in rural town centers that are designed for slow speed may not need separated bicycle facilities.
- Well-designed streetscape improvements can change the context of a street through placemaking, making it more walkable and human-centered.

BEST PRACTICES

Toole Design Group developed a brief best practices guide for developing complete streets policies. A PDF of the report can be found here.

Complete Streets Policies Best Practices