

METRO HARTFORD

COMPREHENSIVE TRANSIT

SERVICE ANALYSIS

EXECUTIVE SUMMARY



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OVERVIEW

The aim of this study was to inventory the transit needs and transit potential within the Capitol Region and to assess the effectiveness and efficiency of existing transit services. The Comprehensive Transit Service Analysis (CSA) began in September 2014 and is scheduled to be completed by early 2017.

The Comprehensive Transit Service Analysis (CSA) consisted of several large tasks, including a review of existing conditions, an assessment of the demand for transit service in the study area, outreach to stakeholders and members of the public, a detailed evaluation of existing fixed-route services, and the development of service improvement recommendations. These recommendations were developed as part of an open and transparent process, with numerous opportunities for stakeholder and public input.

THESE RECOMMENDATIONS WERE MEANT TO ACCOMPLISH THE FOLLOWING:

- **Improve transit service** for the majority of current and prospective transit riders in the Capitol Region
- **Complement recent and planned transit investments** including CT**fastrak** and the CT**rail** Hartford Line
- Ensure that **CTtransit operates as efficiently** as possible by addressing under-performing routes and service redundancy

KEY FINDINGS

The CSA began with a market analysis and an analysis of existing service. Key findings from these technical analyses include the following:



The current service “footprint” appears to be about right. Almost every part of the study area that has the minimum level of population and employment density to support fixed-route service (5 people and/or jobs per acre) does currently have some level of service coverage (see Figure 1).



Certain population groups, such as low-income, elderly, and zero-car households, have a higher propensity to use transit services.

The communities with the greatest concentrations of these population groups are Hartford and East Hartford. These communities have high transit need and relatively extensive transit coverage.



Manchester and South Windsor have pockets of high transit need, concentrated in areas with large apartment complexes.



Bloomfield shows high transit need, primarily due to a relatively high percentage of older adults.



Travel flow data produced by the CROCOG Regional Travel Demand Model validates the radial design

of the CT *transit* network serving the Capitol Region. Hartford is clearly the strongest regional hub, attracting heavy travel flows from neighboring communities such as East Hartford, West Hartford, and Wethersfield, as well as non-bordering towns such as Manchester and New Britain.



The regional travel model also shows some relatively strong connections

that are not well served by the existing CT *transit* network, including trips between Newington and Wethersfield and between Manchester and South Windsor.



An analysis of stop-by-stop ridership activity reveals several very strong transit corridors

including Franklin Avenue, Park Avenue, Farmington Avenue, Albany Avenue, and Main Street in Hartford, and to a lesser extent, Burnside Avenue in East Hartford (see Figure 2).

STAKEHOLDER INPUT

CSA recommendations were also informed by the input of various stakeholders, including members of the public and representatives of service area communities. Conversations with stakeholders focused on a wide range of issues, but several recurring themes emerged from these discussions:



Access to jobs is essential.

Numerous stakeholders stated their belief that the transit network should be oriented towards providing access to employment as much as possible.



Provide better customer information.

Both regular riders and representatives of social service providers expressed a strong and consistent need to make route and schedule information easier to find and understand.



Demand has shifted away from the historic radial transit network.

While there is consensus that downtown Hartford will continue to be the center of the region, stakeholders also talked about a desire for more and better regional connections and more crosstown service, or direct connections between suburban destinations.



Need for more service, especially increased frequency.

There is a desire for increased service frequency throughout the system, but especially in areas with existing high demand or corridors where future growth is desired and anticipated.



Maintain on-time performance.

Although many stakeholders agreed that CT *transit* service runs reliably today, others stressed that maintaining this on-time performance should continue to be a top priority.



Improved airport service.

The Bradley Flyer service was called out by many as a route that has the potential to be improved and to attract more riders. Suggestions include: better branding and marketing, user-friendly schedules and improved signage at the airport.



CT*transit* should capitalize on regional investments in transit infrastructure.

Area stakeholders and residents are optimistic that the region is changing in positive ways and see transit playing an important role in supporting continued economic growth (with CT *fastrak* as an example).



Public input was also provided online. 1,080 people participated in an online survey designed to gauge area residents' attitudes and opinions related to transit service. The survey revealed broad agreement among riders and non-riders on some issues, and disagreement on others:

FIGURE 1 SURVEY TRADE-OFF QUESTIONS

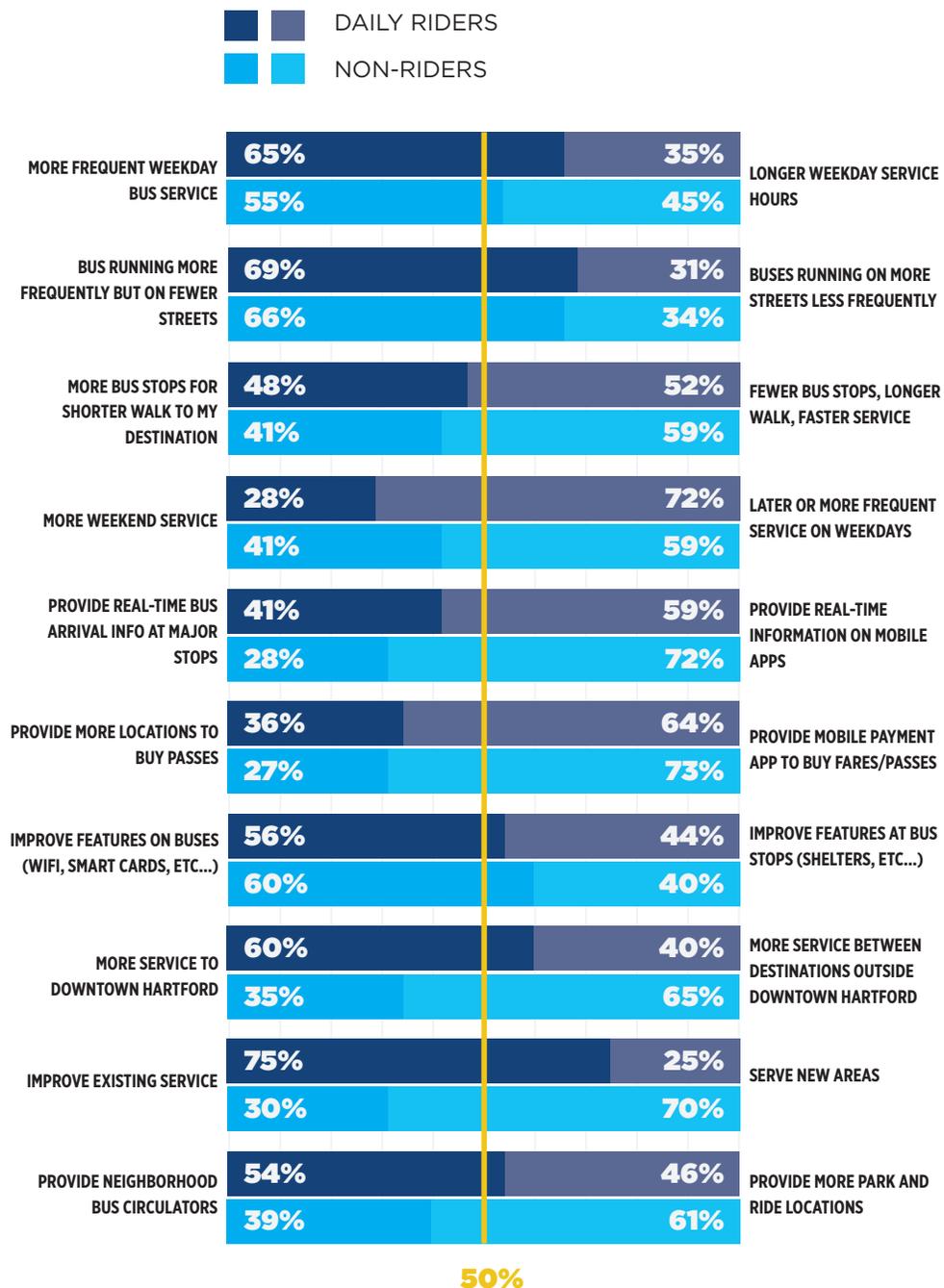
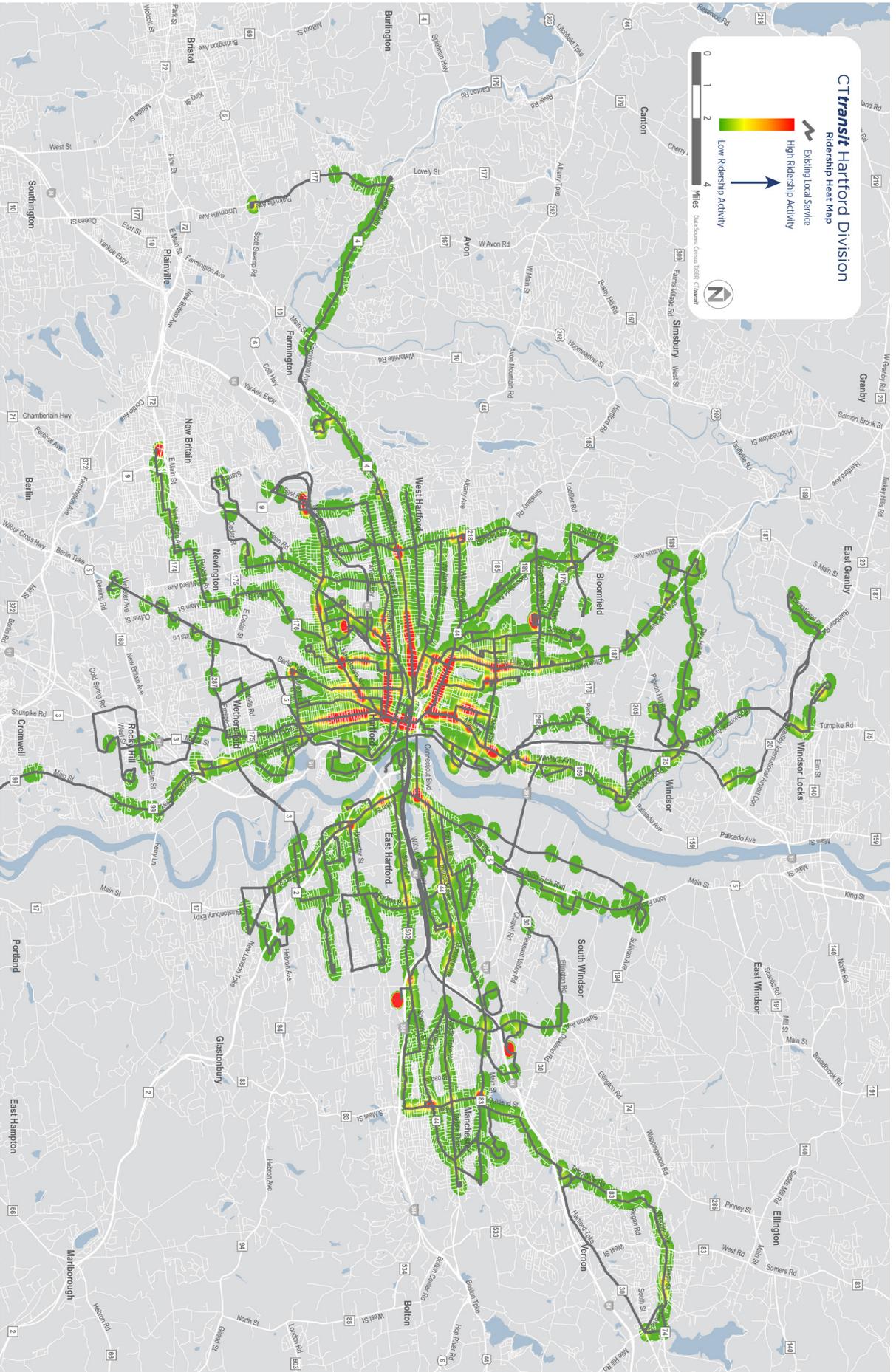


FIGURE 3 RIDERSHIP HEAT MAP



RECOMMENDATIONS

Based on the technical analysis and stakeholder input, the study team initially developed two distinct scenarios for redesigning transit service in the Capitol Region. After presenting both scenarios at a series of ten public outreach events throughout the Region, the study team developed a final recommended service scenario (see Figure 5), incorporating elements of both previous scenarios and reflecting the feedback received from stakeholders and members of the public. An implementation timeline of short-, mid-, and long-term recommendations is presented on page 11.

Scenario I focused on relatively minor improvements to individual routes. These improvements were meant to directly address the issues and opportunities identified over the course of the existing service analysis.

Scenario II presented a fundamentally different vision of transit service in the Capitol Region, based on the concept of a core Bus Rapid Transit (BRT) network including the original CT **fastrak** guideway service and new arterial BRT service along the key transit corridors identified in the market and service analyses. Under this scenario, most local routes would serve as feeders for the core BRT service but would not necessarily travel to downtown Hartford themselves.

The Recommended Scenario features **five service categories** (not counting commuter express service):



Radial Service: Local routes operating to and from downtown Hartford.



Crosstown Service: Local routes linking key corridors and key regional destinations without forcing passengers to travel through downtown Hartford.



Connector Routes: Local routes providing “first mile / last mile” connections to and from regional transit hubs.



Regional Loop Service: Local route linking key destinations on the periphery of the service area and forming a continuous bi-directional loop around the region.



CTfastrak Service: Bus Rapid Transit service operating exclusively or primarily along a dedicated guideway, HOV lane, or limited-access highway.



The Recommended Scenario proposes to designate some current Flyer routes as CT **fastrak** routes, while re-designating some existing CT **fastrak** routes as other types of service. Several current CT **fastrak** routes do not operate along the CT **fastrak** guideway at all. Labeling these routes as other service types would better reflect their role in the regional transit network. For example, Route 161, which connects St. Francis Hospital and Hartford Hospital to the Sigourney Street CT **fastrak** station, would fit better in the Connector Route category than in the CT **fastrak** category.



Study findings identify opportunities for improving the Bradley Flyer. The recommended vision for the Bradley Flyer is one that develops over time, with short- and mid-term priorities focused on service adjustments and rebranding. Over the long-term, this service could be expanded to leverage CT **fastrak** investments.

Short-Term: Further distinguishing the local (Route 30N) service from the faster, limited-stop service of the Route 30X would allow for enhancements to be made to the latter. It is recommended that the local service be combined with a modified Route 34 to offer local service to the airport. The limited-stop, airport-focused Bradley Flyer would remain as Route 30 and be marketed as a convenient way for travelers to get to and from the airport. Marketing and branding of the service would need be supported by wayfinding and easily identifiable pylon markers at the airport and at other major bus stops. Options for new fleet vehicles that accommodate traveler luggage should also be considered.

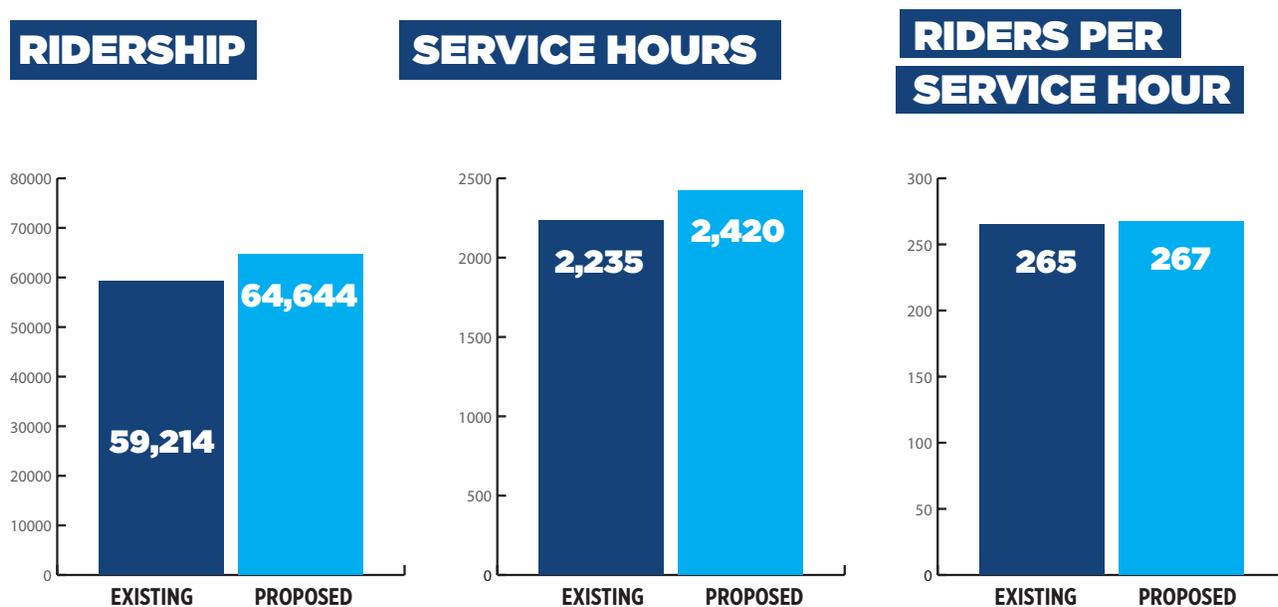
Mid-Term: In addition to continuing marketing and branding efforts for this service, the opportunity to extend the Bradley Flyer from its current terminus at Union Station in Hartford to New Britain via the CT **fastrak** guideway should be evaluated. Understanding that direct airport access from CT **fastrak** stations could impact parking availability at stations, a best practice evaluation and mitigation measures identification would need to be understood prior to implementation (e.g. restricting overnight parking, encouraging long-term airport parking in underutilized parking garages, making capital investments in park-and-ride lots).

Long-Term: Based on mid-term findings, consideration could be given to implementing an extension of the Bradley Flyer service to New Britain. This would require rebranding the service as Route 130 (a 100-series route number designates CT **fastrak** service), and a clearly defined parking framework would need to be in place. Luggage-friendly vehicles should also be procured during this period.

The proposed routes and schedules are designed to improve productivity and increase ridership. Compared to the current service, the Recommended Scenario would require 5% fewer peak vehicles on weekdays, but would result in 8% more weekday revenue hours. The increased revenue hours can be attributed to different things on different routes, including longer spans of service, higher off-peak frequencies, and longer peak periods. However, there may be opportunities to trim revenue hours on some CT **fastrak** routes, which were not analyzed as part of this study. It is recommended that such opportunities be further evaluated.

For a mature transit system the size of Hartford's, Saturday ridership is expected to be about half of weekday ridership. Similarly, Sunday ridership is expected to be about half of Saturday ridership. Currently, Saturday ridership in the Hartford Division is 52% of weekday ridership. However, Sunday ridership is only 33% of Saturday ridership. This lower than-expected Sunday ridership is likely a function of the very limited service available on most routes in the Capitol Region. The proposed service scenario recommends increasing Saturday revenue hours by 18% and Sunday revenue hours by 55% over current service levels. However, some of these increases could possibly be offset if further analysis demonstrates that a decrease in CT **fastrak** service is warranted due to the implementation of other service recommendations.

FIGURE 4 WEEKDAY RIDERSHIP, SERVICE HOURS, AND PRODUCTIVITY



While the Recommended Scenario includes an approximately 8% increase in weekday revenue hours (if implemented in its entirety), it would also result in a projected 9% increase in weekday ridership (see Figure 4).

CAPITAL IMPROVEMENTS

If implemented, the proposed service network would result in very frequent transit service along several key corridors. Over the long-term, these corridors would provide a focus for branding and transit-supportive capital investments. Capital improvements, such as the examples listed below, would complement high-frequency transit service and reinforce the image of each corridor as an enhanced transit corridor.



Transit Priority Treatments.

Transit service is most attractive when it is faster than driving, or when the time differences are reasonable. To make transit faster, it can be given priority over regular traffic using exclusive bus lanes, queue jump lanes, or transit signal prioritization.



Stop Consolidation. The spacing and placement of stops greatly impact transit travel times and reliability, as well as the types of facilities and amenities that can be provided. By consolidating stops, service can run faster and more capital resources can be devoted to each remaining stop.



Passenger Amenities. Waiting for the bus is a significant part of nearly every transit trip. Well-designed bus stops enhance the transit experience, decrease perceived wait times for transit services, and can contribute to increased ridership. Passenger amenities are also a platform for service branding, wayfinding, and the distribution of passenger information.

While the proposed service network would invest additional resources into strong transit corridors, it would also result in the elimination of fixed-route service in some low-density residential areas that have not shown strong demand for transit.

Many of the proposed enhanced transit corridors are anchored by major activity centers such as West Hartford Center, Copaco Center and the Buckland Hill retail area. These activity centers already function as important regional transit hubs and this function will grow under the proposed service network, as well as with the implementation of other regional transit initiatives. For example, the Buckland Hills Park-and-Ride is envisioned as a key component of the potential future eastward expansion of CT **fastrak**.



Several options can be pursued to reach the goal of providing additional express service to the Buckland Hills Park-and-Ride while improving connectivity between express service and proposed local service.

These include low-cost options focused on signage, striping, and bus routing; moderate-cost options involving the reconstruction and relocation of the passenger shelter serving the lot; and high-cost options including direct access ramps linking the park-and-ride directly to the I-84 HOV lanes. Ultimately, the level of investment in this facility will likely depend on the site's development potential. The Town of Manchester is currently considering an amendment to the site's General Business zone to allow for high density housing, in addition to the typical commercial uses that are already permitted.



The availability of modern technology like the smartphone has enabled new solutions to the old problem of first-mile/last-mile connections between bus stops and destinations. Providers across the country have started to develop subsidized service options utilizing existing demand-response transit service, taxis, and transportation network companies (TNCs) to allow for inexpensive, easy, and quick service directly between a bus stop and a rider's home or workplace. Innovative solutions that leverage technology at a reasonable cost and travel time should be further explored within the Capitol Region. The following are model programs that could be further studied for application within the Capitol Region after proper legislation and regulatory frameworks are in place:

- **Tampa, FL** – Hillsborough Area Regional Transit Authority (HART) utilizes ADA-accessible vehicles and a simple smartphone app to provide subsidized door-to-bus service within a three mile radius of key bus stops.

- **Boston, MA** – The Massachusetts Bay Transportation Authority (MBTA) has entered a year-long pilot partnership with private TNCs to provide ADA paratransit across Boston at a significant operational cost savings to traditional service while providing riders with wheelchair-accessible vehicles, reduced fares, and shorter waits.
- **St. Petersburg, FL** – The Pinellas Suncoast Transit Authority (PSTA) launched a pilot program to subsidize half of a TNC or taxi fare within the designated service area to or from a regional bus stop. Passengers have the option of using a TNC smartphone app or calling a local taxi company.

Similar types of programs could also be used in areas that are currently difficult or costly to serve with local bus service, such as the lower-density parts of Glastonbury and Wethersfield. Key components of any program would be ensuring ADA compliance and providing strong feeder service to park-and-ride lots and CT **fastrak** stations.

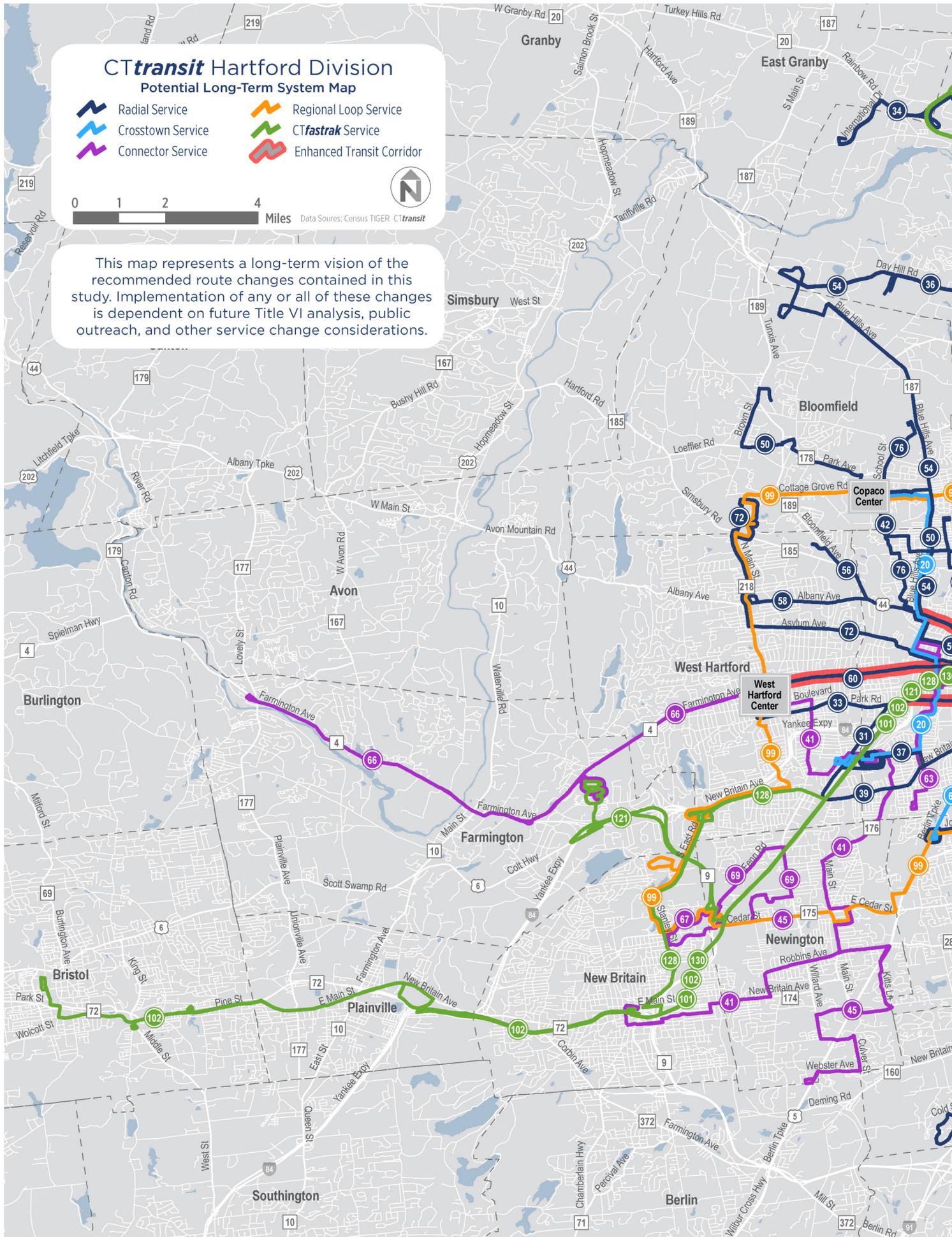
The recommendations of this study represent a potential scenario and are not a final service plan. This study will serve as an example for improved bus transit service in the Capitol Region and provide a potential blueprint for future service. Any changes will need to be approved by the Connecticut Department of Transportation and further subjected to CTtransit's service change process including Title VI analyses, public hearings, and technical assessments. The public meetings conducted over the course of this study were intended to educate and inform the public and the study team, but were not intended to replace CTtransit's public outreach process.

NEXT STEPS

This Comprehensive Transit Service Analysis study was commissioned by the Capitol Region Council of Governments and serves as a planning tool for future CT **transit** bus service in the Hartford area.

Implementation Timeline			
Recommendation	Short-Term (1-2 years)	Mid-Term (3-5 years)	Long-Term (6+ years)
Route Adjustments	<ul style="list-style-type: none"> Review recent ridership data to verify consistency with findings Assess operational feasibility of new service concepts (e.g. Route 99 Regional Loop, interlined routes, etc.) Identify recommendations that require additional Title VI and/or ADA assessment Implement changes that do not require additional assessment 	<ul style="list-style-type: none"> Perform Title VI and/or ADA assessments on necessary routes Continue implementing changes as assessments allow Assess routes that may benefit from Origin-Destination analysis (e.g. Route 45, Route 55) 	<ul style="list-style-type: none"> Perform routine evaluations to ensure that service continues to meet demand
Transit Priority Corridors	<ul style="list-style-type: none"> Review recent ridership data to verify correct identification of key corridors Coordinate with on-going planning initiatives, such as the CT fastrak Expansion Study and the Regional Bus Shelter Program, to ensure compatibility with recommended transit priority corridors 	<ul style="list-style-type: none"> Implement a Transit Signal Priority pilot program Consolidate bus stops to offer faster service Improve rider amenities and shelters at key bus stops 	<ul style="list-style-type: none"> Consolidate routes along identified corridors to offer more frequent service Construct capital improvements (bus lanes, transit signal priority, shelters, etc.) to support enhanced service
First Mile/Last Mile Connections	<ul style="list-style-type: none"> Consider alternative service models for lower-density areas and identify potential operational or legislative challenges to implementing such models Conduct a pilot study to review ADA accessibility of TNC vehicles and overcoming obstacles to riders without technology / smartphones 	<ul style="list-style-type: none"> Implement alternative service options for lower-density areas Support legislation to regulate TNCs in Connecticut 	<ul style="list-style-type: none"> Monitor ridership to determine whether lower-density can support fixed-route service
Bradley Flyer Improvements	<ul style="list-style-type: none"> Combine Route 30N service with a modified Route 34 and renumber Route 30X to Route 30 in order to further distinguish local trips from limited-stop service Increase marketing of Route 30 as the Bradley Flyer Improve wayfinding and pylon signs at the airport and major bus stops Explore options for luggage-friendly vehicles 	<ul style="list-style-type: none"> Continue developing branding and visibility of the Bradley Flyer Evaluate the opportunity to extend the Bradley Flyer down the CT fastrak guideway to New Britain Conduct best practice review and mitigation measures identification related to increased parking demand (e.g. overnight restrictions, capital improvements to park-and-ride lots) 	<ul style="list-style-type: none"> Consider extension of Bradley Flyer to New Britain via CT fastrak guideway and develop a clearly define parking framework Procure luggage-friendly vehicles
Buckland Hills Area Improvements	<ul style="list-style-type: none"> Perform market analysis of park-and-ride area to determine its potential for TOD Identify funding for improvements at park-and-ride lot (e.g. passenger amenities, crosswalks, etc.) 	<ul style="list-style-type: none"> Standardize routing to support bidirectional travel through the area Develop park-and-ride lot as a transit hub Create plans for TOD around new transit hub 	<ul style="list-style-type: none"> Support and encourage growth in park-and-ride area Consider capital improvements to create direct bus service to new TOD

FIGURE 5 PROPOSED SYSTEM MAP



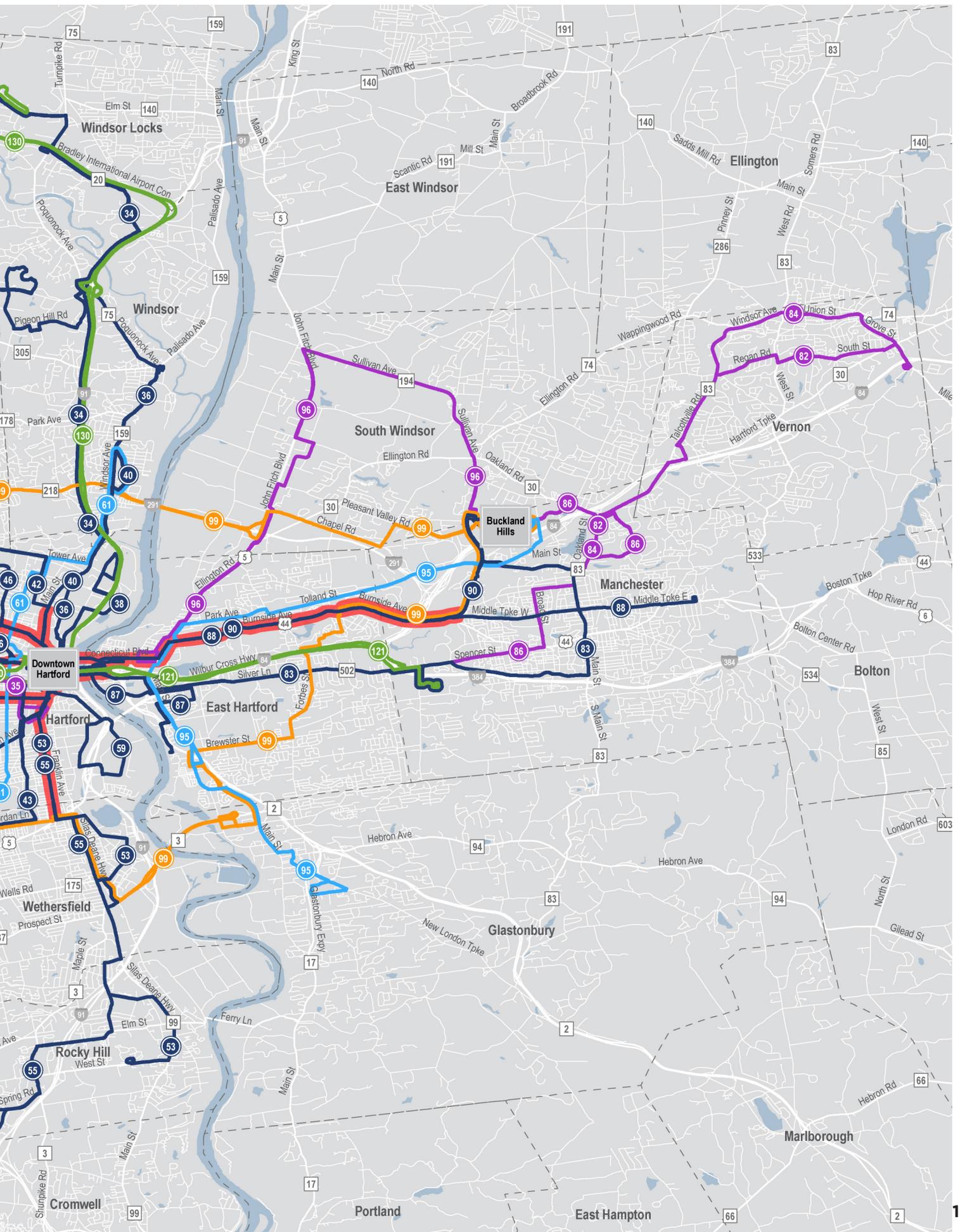
CTtransit Hartford Division
Potential Long-Term System Map

- Radial Service
- Crosstown Service
- Connector Service
- Regional Loop Service
- CTfastrak Service
- Enhanced Transit Corridor

0 1 2 4 Miles

Data Sources: Census TIGER CTtransit

This map represents a long-term vision of the recommended route changes contained in this study. Implementation of any or all of these changes is dependent on future Title VI analysis, public outreach, and other service change considerations.





Prepared by Capitol Region Council of Governments in cooperation with CT *transit* and the Connecticut Department of Transportation.

The opinions, findings, and conclusions expressed in the study do not necessarily reflect the official views or policies of the Connecticut Department of Transportation and/or the U.S. Department of Transportation. For more information, contact CRCOG at (860) 522-2217, or go to CRCOG's website at www.crcog.org.

