

CCTA Transit Center (TC) Alternatives Analysis

Evaluation Methodology and Criteria

The objectives of the Chittenden County Transit Authority (CCTA) Transit Center (TC) project are to:

1. Replace the inadequate Cherry Street transit station with a modern passenger facility that provides an improved customer experience;
2. Meet both the short and long-term operational requirements of CCTA; and
3. Accomplish these objectives within a timeframe that address the immediate facility needs.

The process by which potential alternative sites will be evaluated and reviewed is detailed in the following sections. Two documents helped to inform this evaluation process: the Purpose and Need, which describes in detail why the TC is needed; and, the Program, which describes the attributes of such a facility. Both of these documents are an integral part of the Federal Transit Administration (FTA) Project Development Process.

Evaluation Methodology

The methodology used to identify and screen the proposed site alternatives is proposed as a two-phased approach, consistent with FTA guidance. The process will begin with a broad range of potential sites that have the potential to respond to the Purpose and Need for the project. These sites will be identified in consultation with members of the public, the project Advisory Committee, members of the project team and from previous studies.

Once the site alternatives are identified, an initial screening of the preliminary alternatives will be performed to evaluate the ability of each alternative to meet the broad transportation and program objectives established for the project. From this screening process, a number of site alternatives will be selected to be carried forward and further developed to provide a basis for more detailed evaluation and comparison.

For those alternatives that move into the secondary screening process, rough conceptual designs, operating plans, and order-of-magnitude budgets will be developed. Each site will be re-screened using essentially the same criteria as utilized during the initial screening, but with the more detailed information available and in a more quantitative manner.

Criteria to be used in the evaluation and screening of alternatives has been developed with the objective of incorporating all the key indicators appropriate for a project of this type at this stage of project development. These evaluation criteria are described in greater detail in the following sections.

Evaluation Criteria

Noted below are seven evaluation criteria that will be utilized in the screening of the Phase 1 alternatives. Those alternatives that are found to best meet the screening criteria, will be advanced to the next stage of project review for further analysis and a secondary screening process.

The seven criteria to be considered during the Screening process include:

- #1: Meets Purpose and Need
- #2: Meets CCTA's Program & Operational Requirements
- #3: Compatible with Existing Transportation Network
- #4: Situated Conveniently to the Origins and Destinations of Bus Riders
- #5: Affordable Capital and Operating Costs
- #6: Impact on Social, Cultural & Environmental Resources
- #7: Implementable Schedule

The following sections describe in detail each of the criterion to be used as part of the evaluation and screening process.

Criterion #1: Meets Purpose and Need

The purpose of the CCTA Transit Center (TC) is to replace the inadequate Cherry Street transit station with a modern passenger facility that:

- Supports the needs of the traveling public that are best met with public transit;
- Supports the current levels of service and ridership;
- Provides convenient transit connections to existing services;
- Provides amenities for transit patrons and bus drivers;
- Encourages new ridership;
- Improves efficiency of service;

- Allows for growth in service and ridership; and
- Enhances safety and security by design.

Other important benefits of such a facility include improving the economic vitality, environment, and quality of life of the Burlington area.

The Need for the CCTA Transit Center is driven by several factors, including:

- Inadequacy of the existing facility to support current ridership and service;
- Inability to accommodate ridership and service growth;
- Negative impacts due to the numerous bus crossings of the Church Street Marketplace; and
- Opportunity to improve streetscape and foster private investment to ensure continued vibrancy of downtown.

The TC's Purpose and Need is included in Attachment A.

Evaluation Guidance – Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Specific evaluation measures for this category include:

- ✓ Is this site in a location that supports the needs of the traveling public that are best met with public transit?
- ✓ Will the site have a positive or negative impact on current ridership?
- ✓ Does this alternative provide the potential for contiguous, convenient and accessible connections between buses (transfers) for customers?
- ✓ Does the site have the potential to contain amenities for transit patrons and bus drivers?
- ✓ Will the site encourage new ridership?
- ✓ Does this alternative minimize crossings of the Church Street Marketplace?
- ✓ Is the site in a location that enhances safety and security for passengers?
- ✓ How does this site alternative meet the longer term goals of the City of Burlington and other entities as stated in the plans referenced in the Purpose and Need?
- ✓ Does this site alternative support economic development as noted in the Purpose and Need?

Criterion #2: Meets CCTA's Program & Operational Requirements

CCTA currently operates seven local routes (Essex Junction, North Avenue, Pine Street, City Loop, Riverside/Winooski, Shelburne Road, and Williston)

on the pulse, three special local routes (a Neighborhood Special, Lakeside Commuter, and the South Burlington Circulator), and five commuter routes (three LINK routes to Montpelier, Middlebury and St. Albans, plus Milton and Williston). One spare berth is required for a “breakdown” bus and five additions berths for future expansion. Local routes generally provide service every half-hour throughout the day with three routes operating every fifteen minutes during the peaks. The LINK regional services operate two to four trips during each peak period, with two providing mid-day service and one providing evening service. Because these routes operate on a pulse schedule, a separate berth is needed for each route.

The TC must also provide room for future service expansion. CCTA ridership has grown by 63 percent over the past ten years. To ensure that the facility meets current and future needs, the facility should attempt to accommodate 21 bus berths, with the following breakdown: 15 active berths to accommodate current services [ten (10) local routes and five (5) regional routes]; five (5) berths for future expansion of services; and one (1) berth for an emergency back-up bus.

There are two basic approaches for developing the TC. The first would locate all bus berthing areas (locations where the bus loads and unloads passengers) on public streets with a small TC facility located nearby. The second approach would provide an off-street location whereby bus berthing and TC facilities would be co-located out of the public right of way.

The following design features are desired to provide for safety and efficiency at the facility:

- All berths must be long enough to accommodate a 40-foot bus with a bike rack deployed;
- The path of travel between berths (excluding the emergency backup berth) and the waiting area must be efficient and safe for pedestrians (transfers among local routes should not require crossing the street if possible); the ten berths for local routes should be close for easy transfers; pedestrians and bus conflicts should be minimized;
- The path of travel and location of buses should be safe and efficient (bus backing should be avoided, buses should have enough room to pull out if another bus is waiting on a transfer, berths should be located so that drivers have clear lines of sight of traffic and pedestrians); and
- Conflicts between buses and private automobiles should be reduced through design and location.

The proposed Transit Center should include climate-controlled space for passenger amenities such as a passenger waiting area with seating, ticket and

information counter, passenger restrooms, and space for information kiosk panels and nearby bicycle facilities. If feasible, those amenities might also include space for a coffee vendor, newsstand, and snack vending machines. Additionally, facilities and amenities for CCTA employees should include space for an operations manager's office, work areas for employees separate from public areas, drivers' break room with a small kitchenette, security desk with closed-circuit TV monitors, restroom facilities for male and female employees, mechanical room, electrical/telephone/data closet, custodial closet, and general storage. The proposed Transit Center should also include Intelligent Transportation Systems (ITS), such as CCTV system with digital recorders, real-time dynamic monitors displaying bus schedules and status, and Wi-Fi service. The estimated gross area likely required to accommodate this program is approximately 4,000 gross square feet.

In addition to indoor space outlined in the previous paragraph, a generic off-street alternative has been developed that would be sufficient to house bus berthing, bus circulation and employee vehicle operations. Space would need to be provided to accommodate 21 bus berths, islands and curbing areas, as well as four employee parking spaces for a facility service van, two driver relief vehicles and one supervisor vehicle. This generic footprint for an entirely off street location would consume roughly 60,000 SF (1.4 Acres). Depending on site specific configuration of ingress and egress, the off-street alternative may require more than 60,000 SF.

The full Program for the CCTA Transit Center is provided in Attachment B.

Evaluation Guidance – Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Specific evaluation measures for this category include:

- ✓ Does this alternative have the ability to meet the program either fully off-street, fully on-street or in a combination off-street and on-street bus berthing scenarios?
- ✓ Is this alternative safe and efficient as described above, related to considerations such as: paths of travel between berths and waiting areas as well as transfers; conflicts between pedestrians and buses, and pedestrians and passenger vehicles; and conflicts between buses and private automobiles?

Criterion #3: Compatible with Existing Transportation Network

Traffic congestion adversely impacts the movement of people and goods. Congestion is a measure of traffic volume and its impact on the road or

intersections' ability to handle that volume. It is calculated in terms of volume to capacity (v/c) ratio and travel delay, and is normally expressed as level of service (LOS). Traffic congestion is both an existing measurable condition and a projected future condition. Intersections are generally handled through a detailed capacity analysis that determines the level of service (LOS) and delay for the intersection as a whole or by specific turning movements. Generally a LOS of D or worse is considered to have a congestion problem.

Changes in traffic controls must be determined by a detailed analysis of the overall characteristics of the intersection. An appropriate signal warrants analysis, as defined by the Federal Highway Administration's (FHWA's) *Manual on Uniform Traffic Control Devices*, is an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics performed to determine whether installation of a traffic control signal is justified at a particular location. Warrants address a variety of intersection conditions such as vehicular volume, pedestrian volume, crashes, progression, and delay.

The impact that siting a new TC would have on the existing transportation network in Burlington is an important criterion. It is critical that the facility be sited in a location that works operationally for CCTA and its customers, but also does not adversely impact or further exacerbate existing conditions on local roadways. Relocating the facility to a new site could even result in opportunities for improved traffic conditions in other more critical areas within the City.

Evaluation Guidance – Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Specific evaluation measures for this category may include:

- ✓ Does the proposed site have existing traffic issues?
- ✓ Is it anticipated that the siting of the alternative would further exacerbate an existing condition or create an even worse one?
- ✓ What is the current LOS at the nearest two signalized intersections?
- ✓ Does the siting of the alternative have the potential to improve the existing area transportation network?
- ✓ What are the likely mitigated impacts?

Criterion #4: Situated Conveniently to Serve the Origins and Destinations of Bus Riders

Numerous surveys and passenger counts of CCTA riders have established that downtown Burlington is the primary destination within the CCTA service area. One-third of all boardings on CCTA buses take place within

downtown Burlington (the area bounded by Pearl Street, Battery Street, Main Street, and S. Winooski Avenue), and of reported destinations on passenger surveys, some 41% of destinations within the city of Burlington are located within the downtown area. Boardings within downtown (exclusive of transfers) dwarf the numbers at other important locations, being four to seven times greater than the number at Champlain Mill, FAHC, UVM, or the University Mall.

Beyond downtown's importance to current riders, it is just as important to the overall travel market. The downtown area contains 24% of all jobs in Burlington and 55% of its retail floor space. The density of jobs in downtown Burlington – at over 71,000 jobs per square mile – is 26 times greater than the job density in the rest of the city. Density is critical to public transportation, because almost all bus riders become pedestrians at the end of their trip and walk to their final destination. For transit to be competitive with driving, the walk trip from the bus to this destination needs to be short, and with high density, a bus route is able to reach many jobs within a short walk.

Transit is most competitive with driving when it can bring passengers as close as possible to their destinations with a one-seat ride. Thus, the best location for the hub of CCTA operations is within the downtown area so that CCTA can serve the largest travel markets in an effective and efficient way. A location outside of the downtown area, requiring passengers to walk long distances or transfer to a shuttle, would substantially reduce ridership and make the system much less attractive to riders who have other travel options.

Evaluation Guidance – Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Specific evaluation measures for this category may include:

- ✓ Is the site located where customers want to be?
- ✓ Would the site potentially result in a loss of ridership due to its proximity away from the where riders want to be?
- ✓ Is the site within reasonable walking distance to passenger origins and destinations?
- ✓ Is the location of the site alternative convenient and accessible for the general public and for passengers with disabilities?

Criterion #5: Affordable Capital and Operating Costs

The TC project is being funded by the Federal Transit Administration (FTA) with earmarks from the Transit Capital Investment Program (49 U.S.C. 5309) for Bus and Bus-Related Facilities. The FTA has identified a \$6 million earmark for CCTA toward the development of the TC. In addition to the earmark, a matching state/local contribution of 20% is required by the FTA.

Therefore, the project budget is roughly \$7.2 million for capital and real estate expenditures and contingencies associated with the project.

Affordable capital costs are those that fit within the project budget and represent the highest and best use of available funds.

The FTA does not contribute to operating costs under this program. Therefore, it is critical that the project not result in significant increases in operating and maintenance costs, above and beyond what CCTA can accommodate.

Evaluation Guidance – Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Evaluation measures for this category include:

- ✓ Are the estimated order of magnitude acquisition, relocation, construction and contingency costs within the available budget?
- ✓ Would the capital costs include elements such as major structures and/or joint development that may be beyond the project budget?
- ✓ What are the implications of each site with respect to long-term operation and maintenance costs?
- ✓ Does the site increase bus service operating costs in order to maintain the same level of service as is currently provided?

Criterion #6: Impact on Social, Cultural & Environmental Resources

The FTA's environmental review process has two primary objectives: (1) to fully disclose the probable environmental impacts resulting from a proposed project; and, (2) to develop measures that will avoid, minimize, or mitigate adverse environmental effects. Before the FTA may approve a Capital Investment Program grant, the environmental review process must be complete. That review, which takes place in the context of the National Environmental Policy Act (NEPA) process, will also involve compliance with a number of other laws, regulations, and Executive Orders.

Many projects and activities that receive assistance from Bus Program funds do not involve significant environmental impacts. The joint Federal Highway Administration (FHWA)/FTA environmental impact regulations (23 CFR Part 771) use the term "categorical exclusion" (CE) to describe a class of projects that do not involve significant environmental impacts and, therefore, do not require preparation of either an environmental assessment (EA) or an environmental impact statement (EIS). CEs fall into two categories: those that are listed specifically in the regulation (23 CFR 771.117(c)) and need no

further analysis, and those that require additional documentation under 23 CFR 771.117(d) in order to assure their suitability for CE.

Projects that involve significant construction have greater potential for on-site and off-site environmental impacts and are, therefore, subject to additional analysis. Experience has shown, however, that many construction projects can be built and operated without causing significant impacts if they are carefully sited in areas with compatible land use where the primary access roads are adequate to handle the additional bus traffic.

The preferred alternative for the TC will be required to undergo a robust environmental analysis including review of significant negative impacts of the following: air quality, endangered species, environmental justice, floodplains, hazardous materials & Brownfields, historic, archeological and cultural resources, navigable waterways and coastal zones, noise and vibration, parklands, social & economic impacts, transportation impacts, water quality, and wetlands.

However, for the initial level of screening a qualitative assessment of potential "significant impact" environmental or public concerns related to a specific and likely "significant impact" will be identified. Considerations include: noise/vibration; historic/archeological resources; hazardous materials; compatibility with land use; and safety and security.

Evaluation Guidance - Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Specific evaluation measures for this category will include:

- ✓ Is the site's zoning consistent with the proposed use?
- ✓ Is the proposed project "included" in the current adopted MPO plan, either explicitly or in a grouping of projects or activities?
- ✓ Is Chittenden County currently in attainment (conformance) with the National Air Quality Standards established in the Clean Air Act?
- ✓ Will there be likely significant traffic impacts? Is it likely the existing roadways have adequate capacity to handle increased bus and other vehicular traffic?
- ✓ Are there significant traffic impacts at major intersections? Is the area in "attainment" as described above for CO? If not, is it likely that CO hot spots will result?
- ✓ Would there be significant adverse impacts to above-ground historic and/or architectural resources?
- ✓ Would the alternative likely result in adverse noise impacts to sensitive receptors beyond those acceptable under the FTA's 2006 *Transit Noise and Vibration Impact Assessment* guidelines?

- ✓ Does the site likely require a property acquisition and or a residential or business relocation, and can that acquisition and or relocation be done in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970?
- ✓ Is contaminated material located at the site that requires special handling, treatment, or removal to the extent it makes the site unsuitable or unaffordable?
- ✓ Is the project likely to have a significant adverse impact on a minority or economically disadvantaged community?
- ✓ Will the project likely have a significant adverse impact on publicly-owned parklands or recreation areas?
- ✓ Will the project likely have a significant negative impact on wetlands?
- ✓ Will the project likely have a significant negative impact on floodplains?
- ✓ Will the project likely have a significant negative impact on water quality, navigable waterways or coastal areas?
- ✓ Will the project likely have a significant negative impact on ecologically sensitive areas or endangered species?
- ✓ Are there likely to be significant negative impacts caused by construction including: construction noise; utility disruption; debris and spoil disposal; safety and security; air and water quality; and disruptions of traffic and access to property?

Criterion #7: Implementable Schedule

The need for the TC is immediate. As such, CCTA has established an appropriate goal for the design, construction and implementation of the TC within a timeframe that is reasonable. Having an implementable timeframe, that meets the immediate needs, is an important criterion for this project. The following chart shows the proposed milestones for the project.

TC Timeline

	2011			2012				2013				2014				2015			
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Site Selection & Alternatives Analysis	█	█	█	█	█														
Conceptual Design & Environmental Analysis					█	█													
Preliminary Engineering							█	█											
Final Design									█	█	█	█							
Land Acquisition/ Relocations Completed									█	█	█	█							
Construction Procurement Commences													█						
Construction Contractor NTP														█	█	█	█	█	
Construction Complete/ Facility Opens																			█

* Timelines for all subsequent phases are dependent on the site selection and all prior phases.

Evaluation Guidance - Alternatives will be evaluated against this criterion to ensure that the objectives of the project are being met. Specific evaluation measures for this category may include:

- ✓ Can the project be constructed in a timeframe that is consistent with the established goal?
- ✓ Are there any potential hurdles associated with the site that could present significant impacts to the project schedule?

Attachment A - Purpose and Need

TC Purpose and Need

Background

The City of Burlington, located on the eastern shore of Lake Champlain, is the largest municipality in the state of Vermont. Chittenden County, which includes Burlington, is home to approximately 153,000 people (in 2008), which is approximately 25% of the state's population of 622,000 people. Studies by the Chittenden County Regional Planning Commission (CCRPC) and the Chittenden County Metropolitan Planning Organization (CCMPO) have concluded that employment and population will continue to grow.

The Chittenden County Transportation Authority (CCTA) is the public transit service provider in Chittenden, Washington, Franklin, Grand Isle, and Lamoille counties. Outside of Chittenden County CCTA operates as the Green Mountain Transit Agency (GMTA). CCTA operates regular fixed-route bus service in the communities of Burlington, Essex, South Burlington, Shelburne, Williston, Winooski, and a portion of Colchester. LINK Express routes operate on corridors between Burlington and Montpelier, Middlebury, and St. Albans, and a commuter route connects Milton and Burlington.

CCTA is considered a municipal corporation and is the first and only transit authority in the State of Vermont. CCTA is governed by a thirteen member Board of Commissioners with representation from each of the following communities: Burlington (2), Essex, Hinesburg, Shelburne, South Burlington, Milton, Williston and Winooski, Washington County, Franklin County, Lamoille County, and Grand Isle County.

CCTA's service operates on a "pulse" system. Pulse transit systems are common in smaller communities and typically operate out of a central area with vehicles meeting at fixed intervals. Routes are located and designed so that the cycle time for each route (the amount of time it takes to travel from the beginning of the route to the end and back, including any layover time) is the same or equal to some multiple of the pulse interval. Pulse transit minimizes transfer time between routes.

CCTA's pulse operation at the Cherry Street transit station currently comprises seven local routes (Essex Junction, North Avenue, Pine Street, City Loop, Riverside/Winooski, Shelburne Road, and Williston), five commuter routes (three LINK routes to Montpelier, Middlebury and St. Albans, plus Milton and Williston), and limited trips on three other routes (Neighborhood Specials, Lakeside Commuter, and the South Burlington Circulator).

Local routes generally provide service every half-hour throughout the day with three routes operating every fifteen minutes during the peaks. The LINK regional services operate two to four trips during each peak period, with two providing mid-day service and one providing evening service.

In addition to the space needed at the downtown hub for these operations, one spare berth is required for a “breakdown” bus. Expansion plans for the future indicate a need for five additional berths compared to present service.

CCTA ridership has grown by 63 percent over the ten year period from 1999 to 2009 and continues to grow. LINK regional ridership saw an average growth of 40% per year between 2004 and 2009. Based on 2011 survey data, over 2,500 boardings occur at the Cherry Street station on an average weekday, about one quarter of all boardings system-wide. Some 43% of passengers boarding there are transferring from another route (over 1,000 per weekday). A recent transfer analysis shows that transfers occur among all of the routes serving the station, not just a few pairs of routes.

Importance of Public Transit

Nationally, public transportation ridership grew 34% from 1995 through 2009, more than twice the growth rate of the U.S. population (15%) and substantially more than the growth for vehicle miles of travel (VMT) on our nation’s streets and highways (23%) over the same period.¹ Transit ridership is continuing to grow and federal and state agencies are continuing to invest in its future, allowing regions to offer higher quality services.

At the local level, American communities are beginning to recognize the importance of public transportation and understand how transit can be a contributing force in achieving greater livability in communities². Public transit provides many benefits, including:

- Connecting people to jobs, education, health care, cultural and recreational opportunities.
- Relieving congestion in the region by removing auto trips from the highway system.
- Stimulating economic development and helping to maintain the vitality of cities’ central business districts, by keeping downtown areas thriving as centers of finance, commerce, retail and culture.
- Reducing energy consumption and improving air quality.

¹ *2011 Public Transportation Fact Book*, 62nd Edition, April 2011, American Public Transportation Association

² *The Role of Transit in Creating Livable Metropolitan Communities*, TCRP Report 22, Transit Cooperative Research Program

Research indicates that public transit improvements and more transit-oriented development can also provide large but often overlooked health benefits³. People who live or work in communities with high quality public transportation tend to drive significantly less and rely more on alternative modes (walking, cycling and public transit) than they would in more automobile-oriented areas. This translates into positive results such as reducing traffic crashes and pollution emissions, increasing physical fitness and mental health, and providing access to medical care and healthy food. Providing high quality public transit can be one of the most cost effective ways to achieve public health objectives.

Vermont has long understood the importance of public transportation in the Burlington region. Locally, there have been a number of municipal plans prepared in recent years, each one emphasizing how vital transit options are in and to Burlington. Excerpts from several of these plans include:

- **Moving Forward Together**, Transportation Plan for City of Burlington, City of Burlington and CEDO, Draft March 23, 2010 (page 3) – *“Transit availability is critical, especially for the young, the old, those without cars, and those who otherwise are dependent on transit. It also is becoming increasingly important that transit be attractive to those who do not rely solely on public transportation, some of whom must shift to transit if the City is to increase the number of travelers in and out of the core.”*
- **2011 Municipal Development Plan**, City of Burlington, March 28, 2010 (page V-12) – *“Public transportation is perhaps the single most important component in a future transportation system that will serve the city and region. While public transit will not likely dominate automobile use, it does offer the greatest opportunity for improved efficiency and mobility.”*
- **2011 Municipal Development Plan**, City of Burlington, March 28, 2010 (pages V-12 & 13) – *“The advantage of public transportation is that more people can be served for fewer dollars. This means less traffic, fewer highways, cleaner air, safer travel, less space devoted to parking and greater opportunities for lower income residents and those who choose not to drive.”*
- **2011 Municipal Development Plan**, City of Burlington, March 28, 2010 (page V-13) – *“Burlington’s climate offers another deterrent to greater use of public transit, as most bus stops are unsheltered from cold winds, provide few amenities and offer little information ... If we are to capture a greater percentage of trips with public transit, the comfort and convenience of the user must be a guiding principle.”*
- **Legacy Project Action Plan**, City of Burlington, June 2000 (page 8) – *“Well-trained workers will earn high wages while living and working right here in Burlington, commuting easily to their jobs using an affordable, accessible, and seamless public transportation system and bicycle – and pedestrian – friendly roads and sidewalks.”*

³ *Evaluating Public Transportation Health Benefits* APTA and the Victoria Transport Policy Institute, June 14, 2010

- **Burlington Climate Action Plan**, City of Burlington, 2000 (page 4, Transportation Chapter) – *“Priority transportation demand management (TDM) strategies now being evaluated by regional and local planners in Burlington and Chittenden County include: Expanding and further developing park-and-ride lots to encourage ride-sharing and shuttle services; Expanding public transit system routes, increasing frequency of service, and providing free shuttles for large events...”*

The mission of CCTA is to operate safe, convenient, accessible, innovative and sustainable public transportation services in the northwest and central Vermont region that reduce congestion and pollution, encourage transit-oriented development and enhance the quality of life for all⁴. By providing these services, the people of Burlington and the region benefit tremendously by having affordable transportation options. CCTA strengthens the economic fabric of the region by linking people with jobs, provides environmental and health benefits related to reduced vehicle emissions, reduces the number of single occupant autos on Burlington roadways, and lessens the demand on the already constrained parking system in Burlington.

To meet the needs of the region, CCTA will continue to serve its current customers by maintaining and enhancing the existing services, and continue to grow and expand in order to meet the needs of future customers.

Purpose and Need

The purpose of the CCTA Transit Center (TC) is to replace the inadequate Cherry Street transit station with a modern passenger facility that:

- Supports the needs of the traveling public that are best met with public transit;
- Supports the current levels of service and ridership;
- Provides convenient transit connections to existing services;
- Provides amenities for transit patrons and bus drivers;
- Encourages new ridership;
- Allows for growth in service and ridership; and
- Enhances safety and security by design.

Other important benefits of such a facility include improving the economic vitality, environment, and quality of life of the Burlington area.

⁴ CCTA *Transit Development Plan*, September 2010

The Need for the TC is driven by several factors, including:

- Inadequacy of the existing facility to support current ridership and service;
- Inability to accommodate ridership and service growth;
- Negative impacts due to the numerous bus crossings of the Church Street Marketplace; and
- Opportunity to improve streetscape and foster private investment to ensure continued vibrancy of downtown.

The following sections describe the need for the project with respect to each of these four areas.

Inadequacy of Existing Facility to Support Current Ridership and Service

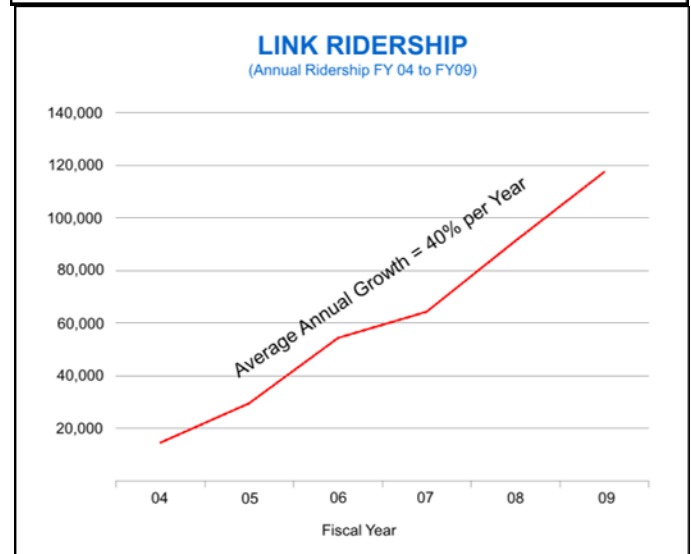
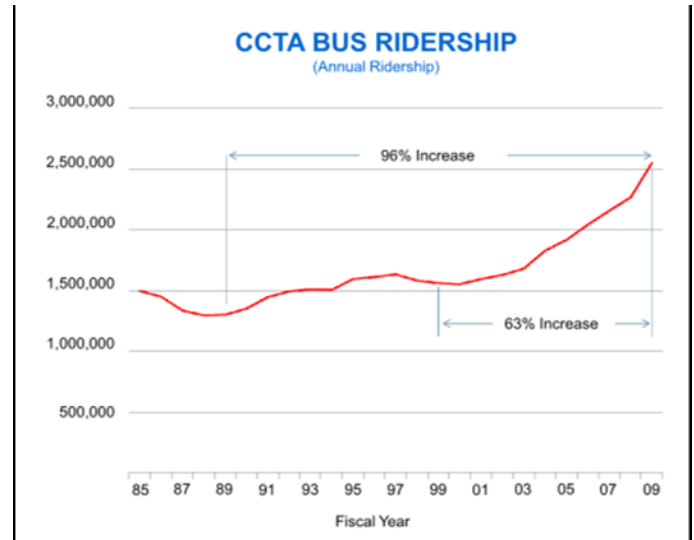
The existing Cherry Street facility, built in 1981, lacks basic amenities and passenger facilities, which will be available in the TC.

- The existing facility on Cherry Street is cramped and provides few amenities for passengers beyond seating and a partial canopy. Adequate shelter from the elements, access to public restrooms, an indoor passenger waiting area with seating, and other services are important factors in a rider's decision to begin or continue to use public transit. The less comfortable and convenient transit is perceived to be; the more difficult it is to retain existing and attract new riders. In a recent passenger survey about the current facility, availability of restrooms, crowding on the platform, and protection from the weather received the lowest ratings among seven attributes.
- The perceived safety of the waiting area is also important in a potential rider's decision to use public transit. The current facility is over-crowded, not attractive and has the potential to make some riders feel less secure. At a minimum, it is unappealing to many people.
- The existing facility has limited information available concerning expected bus departure times. In order to maintain existing ridership and support growth, the facility needs accurate information displayed in a real-time format.
- The existing station on Cherry Street provides limited facilities for employees, such as a driver break room and bathrooms. The TC needs facilities capable of supporting CCTA's staff needs with adequate amenities.

Inability to Accommodate Ridership and Service Growth

The existing Cherry Street terminal is inadequately sized to accommodate current service demand; it is unable to accommodate expanded ridership and service growth.

- The existing facility was not designed to accommodate the current level of service and ridership. In fact, it was designed to accommodate fewer than half the routes that operated from Cherry Street on its opening day. Recent increases in energy costs and the desire to restrict the expansion of parking in the downtown area, support the need for future expansion of the terminal. Over the past ten years, CCTA ridership has grown by 63 percent. LINK regional bus service has experienced an average 40 percent annual growth in ridership over the last six years. The need for a facility that is capable of accommodating service growth is continually highlighted by the strong ridership gains.



- Recent increases in fuel costs and an expanded public awareness of environmental issues have together developed a need for the CCTA to provide potential choice riders a more efficient and comfortable transportation experience at the central passenger facility. Without providing choice riders with this more efficient and comfortable

transportation experience at a new TC, CCTA will be less effective in attracting and retaining choice riders.

- As in many cities, the City of Burlington would like to decrease auto dependence by encouraging greater use of transit to and within the urban core. The community's desire to do so increases the need for a new TC capable of meeting the riders' needs.
- The current facility is located in the most densely developed section of the central business district (CBD), with a diverse set of attractions. A new facility will need to remain in the core of downtown to address riders' requirements. In addition, many passengers transfer in the downtown to access other parts of the city. The new facility will need to maintain the ease of transfer provided by a centrally-located station and a pulse schedule.

Impact of Transit Operations on the Church Street Marketplace

Transit operations crossing Church Street create congestion problems and conflicts between pedestrians and buses, which together create one of the most important needs for a new TC.

- Currently, many of CCTA's local bus routes stop on the south side of Cherry Street, an east-west street running through Burlington's CBD. CCTA uses a pulse schedule and, as a result, buses serving each route are queued up at the same time on the south side of Cherry Street.
- Many buses must cross the Church Street Marketplace, a pedestrian-only shopping district that runs north-south for several blocks just east of the existing Cherry Street facility. The large volume of buses crossing the flow of pedestrians increases the possibility of a bus-pedestrian incident.
- Proximity to the Church Street Marketplace is very desirable for the new TC, due to the high concentration of trip ends there among current bus riders and the traveling public in general. The Marketplace itself is enhanced by reducing the number of vehicles – both buses and cars – that cross it and interrupt the free flow of pedestrians. An enhanced TC located elsewhere in the downtown area can both reduce the number of buses crossing Church Street, and make transit a more attractive option to reach downtown, thus reducing the number of cars crossing Church Street as well.

Opportunity to Improve Streetscape and Foster Private Investment to Support Continued Vibrancy of Downtown

The current location of the CCTA transit station is no longer in tune with the surrounding land use. The presence of the current transit station has an inhibiting effect on development in the immediate area. Relocating the existing transit station to a new site in downtown Burlington will serve to improve the streetscape in the Cherry Street/Church Street area and will enhance the opportunities for further investment by the private sector.

- The section of Cherry Street that contains the existing CCTA transit station has become much more of a pedestrian gateway into the Church Street Marketplace and is increasingly used as a pedestrian travel route from hotels on Battery Street.

Attachment B – TC Program

TC Program

Program for the TC

Mission Statement: *The goal of the Chittenden County Transportation Authority (CCTA) Transit Center (TC) is to replace the inadequate Cherry Street transit station with a modern passenger facility that provides an improved customer and employee experience, meets both the short and long-term needs of CCTA and accomplishes these goals within budget and a short timeframe in order to address the immediate facility needs.*

CCTA is the public transit service provider in Chittenden, Washington, Franklin, Grand Isle, and Lamoille counties. Outside of Chittenden County, CCTA operates as the Green Mountain Transit Agency (GMTA). CCTA operates regular fixed-route bus service in the communities of Burlington, Essex, South Burlington, Shelburne, Williston, Winooski, and a portion of Colchester. LINK Express routes operate on corridors between Burlington and Montpelier, Middlebury, and St. Albans, and a commuter route connects Milton and Burlington.

CCTA's service operates on a "pulse" system. Pulse transit systems are common in smaller communities and typically operate out of a central area with vehicles meeting at fixed intervals. Routes are located and designed so that the cycle time for each route (the amount of time it takes to travel from the beginning of the route to the end and back, including any layover time) is the same or equal to some multiple of the pulse interval. Pulse transit minimizes transfer time between routes.

CCTA's pulse operation at the Cherry Street transit station currently comprises seven local routes (Essex Junction, North Avenue, Pine Street, City Loop, Riverside/Winooski, Shelburne Road, and Williston), five commuter routes (three LINK routes to Montpelier, Middlebury and St. Albans, plus Milton and Williston), and limited trips on three other routes (Neighborhood Specials, Lakeside Commuter, and the South Burlington Circulator).

Local routes generally provide service every half-hour throughout the day with three routes operating every fifteen minutes during the peaks. The LINK regional services operate two to four trips during each peak period, with two providing mid-day service and one providing evening service.

Because routes at the Cherry Street transit station operate on a pulse schedule, a separate berth is needed for each route. In addition to the space needed at the downtown hub for these operations, one spare berth is required for a “breakdown” bus. Expansion plans for the future indicate a need for five additional berths compared to present service.

The CCTA Transit Center (TC) must also provide room for future service expansion. CCTA ridership has grown by 63 percent over the ten year period from 1999 to 2009 and continues to grow. To ensure that the facility meets current and future needs, the facility should attempt to accommodate 21 bus berths, with the following breakdown: 15 active berths to accommodate current services [ten (10) local routes and five (5) regional routes]; five (5) berths for future expansion of services; and one (1) berth for an emergency back-up bus.

In order to provide for optimal operations and flexibility at the facility, the following design features are also desired:

- All berths must be long enough to accommodate a 40-foot bus with a bike rack deployed;
- Designated paths of travel between all berths, excluding the emergency backup berth, allowing passengers to access all berths and waiting area using an efficient path of travel; and
- Separating buses and private automobiles to the extent possible and reducing potential for conflicts between buses and other vehicles.

The proposed transit center should include the following amenities and design considerations:

- Passenger amenities:
 - Heating and Air Conditioning
 - Passenger Lounge with appropriate seating options
 - Ticket and information counter
 - Passenger Restrooms (Men’s & Women’s)
 - Coffee/Magazine/Snacks Vendor Kiosk (where possible)
 - Information kiosk panels
 - Nearby bicycle amenities
- Employee amenities and facilities:
 - Operations Manager’s Office (secure limited-access room where cash and tickets can be stored safely)
 - Work areas for employees that are separate and secured from public areas
 - Driver’s break room

- Driver's break room kitchenette
 - Security desk with closed-circuit TV monitors
 - Restroom facilities for male and female employees
 - Mechanical room
 - Electrical/Telephone/Data Closet
 - Custodial closet
 - General Storage
- Intelligent Transportation Systems (ITS):
- CCTV system with digital recorders
 - Real-time dynamic monitors displaying bus schedules and status
 - Wi-Fi service
- Design Considerations:
- Personal security with lighting, visibility, etc.
 - Vandal resistant and heavy-duty materials
 - High-durability industrial grade public restrooms
 - Passenger areas capable of being easily maintained

In addition to these amenities and design considerations, the program requires all future plans and land procurement to be compliant with all applicable local zoning requirements.

The following page details the approximate area needed for each of the amenities and facilities noted above. The estimated gross area likely required to accommodate this program is approximately 4,000 gross square feet.

**CCTA Transit Center
General Space Program**

	Qty.	Area (SF)	Ext. (SF)	Notes:
CUSTOMER/PASSENGER AMENITIES:				
1.01	1	1250	1250	[50 x 25 SF/Passenger]
1.02	1	100	100	Two (2) staff
1.03	2	200	400	[M=2T/2U/2S; W=4T/2S]
1.04	1	225	225	Coffee/Magazine Counter/Kiosk
Subtotal Net Area:			1,975	
	Qty.	Area (SF)	Ext. (SF)	Notes:
CCTA OPERATIONS SUPPORT SPACE:				
2.01	1	120	120	10' x 12' office
2.02	1	100	100	10' x 10' office
2.03	1	350	350	12 person; three (3) tables; 17'-6" x 20'
2.04	1	75	75	Sink, base & upper cabinets, micro.
2.05	1	85	85	One (1) staff and multiple monitors
2.06	2	145	290	[W=2T/2S ; M=1T/1U/2S]
2.07	1	80	80	
2.08	1	40	40	
2.09	1	25	25	
2.10	1	75	75	
Subtotal Net Area:			1,240	
Total Net Areas:			3215	
Grossing Factor:			1.25	Corridors, walls, shafts
Estimated Building Gross Area Program Requirement:			4,020	
Operations Area (Off Street):			60,000	

In addition to indoor space requirements outlined above, a generic off-street operations area has been developed that would suit bus berthing, bus circulation and employee vehicle operations. This generic footprint would consume roughly 60,000 SF (1.4 Acres), if off-street. Although the footprint could be configured in numerous layouts, a generic parallel berthing layout is provided in Figure 1 below. Depending on site specific configuration of ingress and egress, it should be noted that the off-street operational requirements of the site may be greater than 60,000 SF. Conversely, an on-street operations area, with shared right-of-way with vehicular traffic, would likely require less than 60,000 SF.

- Operations Area:
 - Four employee parking spaces for:
 - a facility service van,
 - two driver relief vehicles and
 - one supervisor vehicle
 - Two-way roadway lanes
 - Dynamic parallel berthing (21 spaces)
 - Island areas and curbside

Figure 1: Generic Dynamic Parallel Berthing Layout

