



CITY OF BURLINGTON, VERMONT
CITY COUNCIL TRANSPORTATION, ENERGY & UTILITIES COMMITTEE

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Transportation, Energy and Utilities Committee of the City Council

Thursday, August 22, 2019 5:00 PM

**Burlington Department of Public Works – Front Conference Room
645 Pine Street – Burlington, VT**

–AGENDA–

1. Agenda
2. Minutes of 07/25/2019
3. Public Forum
4. Rail Planning Initiative
 - a. Charles Baker, CCRPC presenting
 - b. 20-minute duration
 - c. No action requested, informational only.
5. Climate Change Resolution
 - a. Committee discussion
 - b. 15-minute duration
 - c. No action requested, informational only.
6. Set Future TEUC Meeting date
7. Councilor Updates
8. Adjourn

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ATTACHMENTS

1. Project Information Sheet
2. Letters of Support

PROJECT FAST FACTS

Project Name:	Vermont Rail Renaissance
Project Type:	Community Passenger Rail Planning
Project Location:	Northwest Vermont, Vermont - Congressional District 001
Project Classification:	Rural
Geospatial Information:	Centered at the Burlington Railyard: 44° 28" 18.26" N 73° 14' 14.51" W
Opportunity Zones:	Burlington, Winooski, St. Albans
Project Summary:	Study the feasibility of restoring and expanding community passenger rail from Burlington to Middlebury, St. Albans, and Montpelier to connect economically disadvantaged rural residents to employment and services. Investigate relocation of the Burlington railyard to access 13.9 developable acres of prime waterfront property and create an innovative revenue stream to maintain and operate community passenger rail.
BUILD Funds Requested:	\$ 1,710,000 (90%)
Matching Funds:	\$ 190,000 (10%)
Total Project Cost:	\$ 1,900,000
Priority and Preference:	Opportunity Zones in Burlington, Winooski, St. Albans

I. PROJECT DESCRIPTION

I.A Description of the Project

Thirty-six years before Thomas Edison invented the light bulb, the Rutland & Burlington Railroad and the Vermont Central Railroad were chartered in Vermont. The **Vermont Rail Renaissance** project will draw from Vermont's 176 years of freight and passenger rail service, over \$100 million in public investment, and over 20 years of Federal, State, regional and municipal rail planning and research initiatives to bring community passenger rail to Vermont.

To build upon this foundation, **Vermont Rail Renaissance** will determine the feasibility of community passenger rail in Northwest Vermont, undertake an enhanced scoping study to investigate the possibility of relocating the Burlington railyard using the Federal Highway Administration's (FHWA) Planning and Environment Linkages (PEL) approach, and explore the legal framework for a public-private partnership to implement community passenger rail. If indeed

Figure 1: 2019 Aerial View of Existing Burlington, VT Railyard



passenger rail is feasible, the relocation of the Burlington railyard is integral to generating the innovative revenue stream to maintain and operate new passenger rail service. This relocation will unlock 13.9 acres of prime Burlington lakefront property for redevelopment while a new intermodal freight facility will enable freight to be exchanged more efficiently and provide a site for overnight storage and service of Amtrak trains.

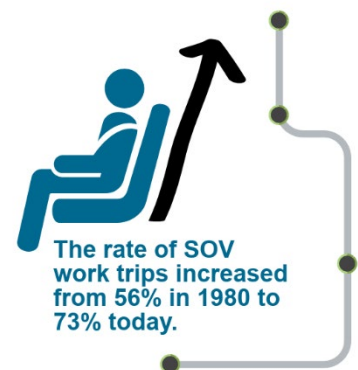
Our state is small, but visionary. In 1964, the State of Vermont was the first state in the nation to purchase a privately-owned railroad. The purchase of the Rutland Railroad and subsequent public investment underscores the critical role railroads play in the state's economy. The [Chittenden County Regional Planning Commission](#) (CCRPC) proposes to further this vision, through this BUILD grant application, to fund the **Vermont Rail Renaissance** project, to ultimately provide a passenger rail service that uses the excess capacity of existing rail to serve multiple rural communities.

The applicant, the CCRPC, is a political subdivision of the State created in 1966 by the municipalities in Chittenden County for the development of policies, plans, and programs to address regional issues and opportunities in Chittenden County. The CCRPC serves as the region's federally designated metropolitan planning organization (MPO) and aims to provide accessible, safe, efficient, interconnected, secure, equitable, and sustainable transportation mobility choices for our region's businesses, residents, and visitors.



I.B Transportation Challenges to be Met

As a rural state, Vermont has a high percentage of people driving in single-occupancy vehicles (SOVs) for work and other trips. In Chittenden County, the rate of SOV work trips has increased from 56 percent in 1980 to 73 percent today (American Community Survey). Even though vehicle miles traveled (VMT) per person was on a downward trend between 2007 and 2014, that trend was reversed in 2014 likely due to significantly lower fuel prices. Expected continued growth in VMT increases congestion and traffic delays in the more densely populated areas of the county and have negative impacts on economic development, the environment, and human health. Lack of access to safe and reliable transportation options such as transit (bus and rail), reduces employment, as well as constricts social, economic, and recreation opportunities for Vermonters.



I.C Addressing Transportation Challenges

It is imperative that Vermont continues to support efforts to reduce per capita VMT as well as SOV travel. More robust investment in transit (bus and rail), walking, biking, carsharing, ridesharing, and other transportation demand management (TDM) can reduce VMT, traffic

delays, and congestion; reduce single-occupancy vehicle use; enhance the economic well-being of our residents, businesses, and visitors; reduce social isolation; and improve public health. The lack of safe and convenient alternatives to automobile travel disproportionately affects vulnerable populations, something that public transit aims to alleviate. Providing convenient and efficient transportation choices to residents and visitors will balance the existing system, reduce the number of Vermonters driving alone to work, and provide transportation options to some population segments (youth, the elderly, low-income, minorities and new Americans) who often lack access to a private vehicle. The **Vermont Rail Renaissance** seeks to develop a safe and efficient transportation option for Vermonters.

I.D Project History and Previously Completed Project Components

The **Vermont Rail Renaissance** is the culmination of decades of studies, state priorities, and previously completed projects. Listed below are several efforts that we are building upon.

Passenger Rail

In 1964, to ensure the continued safe and affordable movement of freight, the state purchased the track from Rutland to Burlington. Beginning in 1972, efforts were made to return intercity passenger trains, resulting in Amtrak's Ethan Allen Express from New York City to Rutland. Since then, track upgrades funded by federal funds, including \$22.5 million in TIGER grants, made the service extension to Burlington possible. The Burlington to New York City Amtrak service will begin in 2022.

The [1993 Vermont Rail Feasibility Study](#) concluded that commuter rail service would be feasible from Burlington in three directions: to Middlebury, Saint Albans, and Montpelier. As a result, track improvements were recommended to support a trial passenger rail service along a 12.9-mile segment of the Vermont Railway corridor between Burlington and Charlotte.

Approximately \$18 million in capital improvements from state and federal funds were obligated for the Champlain Flyer commuter rail demonstration service that ran from 2000 through 2003. The track improvements made as part of this project also supported freight operations as well as a future connection between Vermont's western rail corridor and the national Amtrak intercity rail network. The Champlain Flyer did not meet ridership projections primarily because a concurrent parallel highway reconstruction, expected to significantly disrupt traffic, was stalled. Since that time, additional large employers such as Dealer.com and the Vermont Energy Investment Corporation have located along the rail line and these businesses have expressed support of the return of rail.

In 2017, VTrans funded a feasibility study for commuter service between Montpelier and St. Albans. This study's conclusions did not support commuter rail. Unfortunately, it compared service in rural Vermont to large metropolitan areas and did not consider use of less expensive diesel multiple units (DMUs). In 2018, Champ P3's white paper, [Regional Rail Service: The Vermont Way](#), demonstrated how the service could be cost effective by using DMUs rather than traditional locomotives to save \$185 million.

The Railyard Enterprise Project

The [Railyard Enterprise Project](#) (REP) aims to create a network of multimodal transportation infrastructure improvements in Burlington's waterfront south area, adjacent to the Burlington railyard. The purpose of REP is to support economic development, improve livability of the surrounding neighborhoods, enhance multimodal connectivity, and improve intermodal connections to the Burlington railyard. REP was designated an FHWA Every Day Counts (EDC) initiative and followed the Planning and Environmental Linkages (PEL) process. This project has determined that it would be advantageous to build a street adjacent to the railyard and encourage redevelopment in that area.

EPA Area Wide Planning Grant and Brownfield Economic Revitalization Alliance

In 2013, the US Environmental Protection Agency (EPA) awarded an Area Wide Planning Grant (AWPG) to the City of Burlington. The resulting [report](#) outlines strategies for near-and long-term cleanup, reuse, and redevelopment of brownfield sites within the vicinity of the Burlington Railyard. In addition to the EPA grant, the area was selected as a pilot project area for the [Brownfield Economic Revitalization Alliance](#) (BERA) process in Vermont. The BERA is a joint effort between Vermont's Agencies of Commerce and Community Development, Natural Resources, and Transportation to help expedite redevelopment of brownfields sites. Selected BERA sites receive funding priority and increased coordination between the federal, state, regional, and municipal government representatives and private sector developers to simplify and fast-track brownfield revitalization projects. Following the AWPG efforts and the BERA process, the City of Burlington is better prepared to take advantage of redevelopment opportunities around the railyard.

Freight Rail

Upgrading the Vermont rail network to 286,000-pound capacity has been the state's leading freight rail priority for at least two decades. Almost all of the state's rail network has been upgraded, with the exception of the 7.8-mile Burlington to Essex Junction segment. In 2012, the bridges on the portion of the network that was upgraded were certified for the heavier weight.

Relocation of the Burlington railyard was studied in VTrans' *Burlington & Rutland Railyard Feasibility Study* (2000). Political and environmental challenges stymied that effort. In 2015, the *Burlington South End Market Study* suggested a new vision to reuse the prime waterfront railyard property.

A full list of completed studies is available [here](#).

I.E. Relation to Other Transportation Infrastructure Investments Being Pursued

Construction

Middlebury Bridge & Rail Project

[The Middlebury Bridge & Rail Project](#) is a \$71 million federally- and state-funded VTrans project in collaboration with the Town of Middlebury. Two nearly 100-year-old rail bridges in the center of Middlebury will be replaced with a 360-foot-long tunnel.

The Champlain Parkway

The \$29.5 million investment in the [Champlain Parkway](#) will provide access between Interstate 189 and Burlington's downtown. The Champlain Parkway will improve traffic circulation, alleviate capacity issues, improve safety on local streets, and enhance connectivity between Burlington's South End and downtown. The completion (estimated FY2022) will provide new opportunities to increase economic development and accommodate Smart Growth principles within the Burlington railyard redevelopment area.

Interstate 89 2050 Scoping Study

According to CCRPC's [2018 ECOS Metropolitan Transportation Plan \(MTP\)](#), there is an increase in the proportion of Chittenden County employees who live outside the county. Since Interstate 89 is the major commuter corridor, congestion on the Interstate and its interchanges is increasing. Unless this trend is reversed and there is a substantial shift from SOV to other modes of transportation, a major capacity improvement (an added third lane) may be necessary. The **Vermont Rail Renaissance** will inform the recently initiated [Chittenden County Interstate 89 2050 Study](#) by providing data on the feasibility of community passenger rail that may alleviate the need for an Interstate widening. The study will be completed in 2021.

Figure 2: Interstate 89



I.F. Benefits of the Project to Rural Communities

Vermont, with 82 percent of its population living in rural areas or small towns, is one of America's most rural states. Like other rural states, it is experiencing a significant aging of its population; Vermont has the third oldest population in the US. An aging population is a significant economic development issue, so much so that Governor Scott initiated the [Vermont Remote Worker Grant Program](#) incentive of up to \$10,000 for those who move to Vermont to and work remotely. This effort actively recruits millennials who are markedly different from their predecessors in that they often prefer public transit options over car ownership.

The **Vermont Rail Renaissance** will support economic growth along the rail line, expand transportation connections, and support the vitality of Vermont's small downtowns and village centers. New passenger rail service will connect rural communities to Chittenden County, Vermont's economic activity hub. Vermont's rural nature presents communities with significant

challenges for transportation and economic growth. Limited public transportation services limits workforce participation (only 0.8 percent of the population uses public transportation compared to the national average of 4.8 percent). The high cost of vehicle ownership limits employment opportunities for rural residents, especially for those with low-wage jobs. The **Vermont Rail Renaissance** will support communities by establishing a network of commuter access to employment centers from outlying towns and residential communities. Moreover, freight rail enhancements will reduce heavy truck traffic through rural villages - a key concern for Vermonters according to the Vermont Transportation Board's [2016 Report](#).



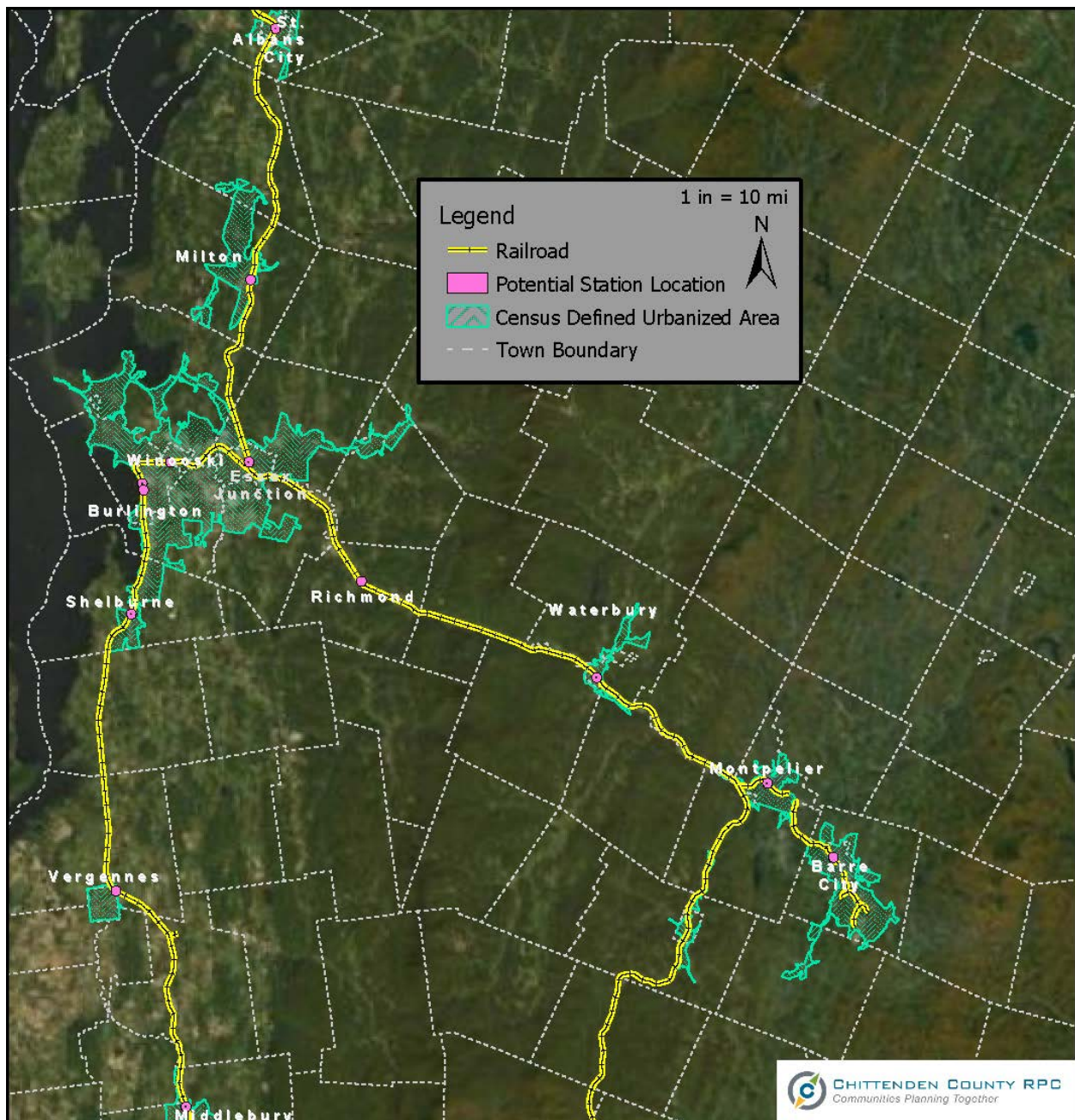
The **Vermont Rail Renaissance** planning effort aims to address the often-forgotten transit needs of rural areas. Pre-development costs are the most difficult to obtain, even for large marquee projects. In most cases, pre-development is funded by large state budgets or from private equity. Most rural areas have access to neither. Developing a plan through the **Vermont Rail Renaissance** will serve as a pilot planning project to help other rural communities. BUILD planning grant funds will be used to study critical issues that help to level the playing field for rural communities: innovative finance techniques, public and private investment, economic and environmental impacts, coordination among small town governments, and cooperation among multiple rail providers.

II. PROJECT LOCATION

II.A Project Location & Geographical Description

This project will examine the feasibility of community passenger rail service in Northwest Vermont. Below is a map showing the rail lines from St. Albans in the north to Middlebury in the South and from Burlington in the west to Montpelier/Barre in the east including the junction of those rail lines in Essex Junction. The Burlington/South Burlington urbanized area is shown on the map as well as potential locations with quarter mile radius circles noting the possible transit-oriented development zones around the stations.

Figure 3: Project Location Map with Potential Station Locations



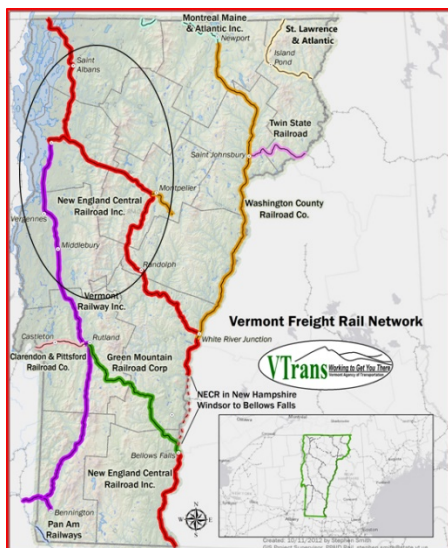
II.B Project Map & Geospatial Data

Centered at the Burlington Raillyard: 44° 28' 18.26" N 73° 14' 14.51" W

Figure 4: Current Burlington, VT Raillyard with Longitude and Latitude



Figure 5: Vermont State Rail Map with Proposed Study Area Circled



III. GRANT FUNDS, SOURCES AND USES OF ALL PROJECT FUNDING

III.A Project Costs

The **Vermont Rail Renaissance** is requesting \$1,710,000 in federal BUILD funds to undertake a major planning effort with three significant tasks: 1) a Community Passenger Rail Feasibility Study to determine the financial and political feasibility of passenger rail from Burlington to Middlebury, Burlington to Saint Albans, and Burlington to Montpelier/Barre, using DMUs; 2) a Railyard Relocation Scoping/PEL Study to consider alternate locations for the relocation of the Burlington Railyard; and 3) assuming support for Task 1 outcomes, an organizational task to develop governance and legal documents to create a public-private development corporation to acquire and develop land adjacent to the rail stations and use revenue from that development to pay for the operating costs of community passenger rail.

III.B Funding Sources & Amounts

Project Budget Summary

Source	Amount	% of Project	Type
CCRPC's FHWA PL Funds	\$152,000	10%	80% Federal
	\$19,000		10% State
	\$19,000		10% Local
DOT BUILD Funds	\$1,710,000	90%	100% Federal
TOTAL	\$1,900,000	100%	

III.C Non-Federal Funding Commitments

CCRPC's federal FHWA PL Funds require a 20 percent match (10 percent state funds, \$19,000, and 10 percent local funds, \$19,000), for a non-federal commitment of \$38,000.

III.D Federal Funding Commitments

The CCRPC is pledging a total of \$190,000 in FHWA PL funds (including state and local match) for staff time to manage the **Vermont Rail Renaissance** and complete all necessary grant and financial reporting. This effort will be included in the CCRPC's annual Unified Planning Work Program (UPWP).

III.E Budget

Task Description	BUILD Funds	CCRPC Funds*	Total Project Funds
1. Community Passenger Rail Feasibility Study			
a. Track Improvement Needs • Inspection of track, tunnel, bridges, grade crossings to identify needed upgrades • Determine cost estimate for necessary upgrades • Communicate with NECR / G&W / Brookfield / VTrans regarding rail upgrades • Final report with recommendations	\$100,000		\$100,000
b. Station Location Scoping • Identify potential commuter rail station / platform locations • Undertake municipal, property owners, public, stakeholder engagement • Evaluate and rank preferred sites • Develop conceptual plans for access, track, and station improvements • Identify permitting requirements • Final report with recommendations	\$450,000		\$450,000
c. Transit-Oriented Development (TOD) and Opportunity Zone Opportunities • Project ridership • Estimate operating costs • Undertake environmental assessment • Analyze station land development market demand • Develop conceptual development plans • Identify development revenue model • Undertake municipal, state, public, stakeholder engagement • Final report with recommendations	\$500,000		\$500,000
d. Economic Impact Analysis	\$60,000		\$60,000
2. Burlington Railyard Relocation Scoping/PEL Study • Identify railyard operational and space needs • Identify potential railyard locations • Evaluate and select preferred location • Identify permitting requirements • Develop conceptual plans and cost estimates • Undertake municipal, state, public, stakeholder engagement • Final report with recommendations	\$500,000		\$500,000

<i>Assuming support at the end of Task 1:</i>			
3. Develop Public-Private Development Corporation - Undertake municipal, state, public, stakeholder engagement - Create governance documents - Develop agreements with transit operator and rail operators	\$100,000		\$100,000
4. Project Administration and Management Procurement, financial oversight of subgrantees and subcontractors, project management, reporting		\$190,000	\$190,000
Total Project Cost	\$1,710,000	\$190,000	\$1,900,000

*CCRPC funds include 80% federal funding, 10% state funding, and 10% local funding.

Budget Narrative: Vermont Rail Renaissance

In the section that follows, we describe spending and revenues associated with each category of the budget. The budget summary at the end of this narrative provides a summary of this information.

Category 1: Personnel & Fringe Benefits

The CCRPC will contribute FHWA PL funds for parts of four staff positions (Executive Director, Transportation Program Manager, Transportation Planner, and Senior Business Manager) to manage and administer this grant over the projected two-year schedule. This contribution of \$190,000 represents 10 percent of the total **Vermont Rail Renaissance** budget.

Category 2: Consultants

This category includes using yet-to-be procured consultants for the following tasks: 1) Community Passenger Rail Feasibility Study (Subtasks a, b, and d); and 2) Railyard Relocation Scoping/PEL Study. If the first study, Community Passenger Rail Feasibility, does not show that this service is feasible, Task 3 will not be undertaken. The Consultant budget of \$1,110,000 for these tasks will be paid with BUILD funds for transportation planning consultant teams.

CHAMP P3 will be a consultant partner responsible for Subtasks 1.c Transit-Oriented Development (TOD) and Opportunity Zone Opportunities and Task 3 Develop Public-Private Development Corporation. This nonprofit organization has completed some property appraisals at potential station locations, some legal work around rail operator agreements, and has been the driving force behind this concept. CHAMP P3 will lead the work in analyzing the development potential around the stations and the revenue models. Depending on outcomes of Tasks 1 and 2, they will be developing the public-private development corporation in Task 3. These two Subtasks total \$600,000 will be paid with BUILD funds. CCRPC will work with CHAMP P3 to make sure that all applicable federal, state and CCRPC procurement requirements are met and will assume whatever role is necessary to ensure this outcome.

Category 3: Sub-Grantee

There are no sub-grantees.

Vermont Rail Renaissance - Summary of Budget

The total BUILD grant request of **\$1,710,000** coupled with **\$190,000** in applicant match will allow us to complete a series of feasibility and scoping studies to determine if community passenger rail can be a reality in Northwest Vermont and if so, how best to implement the service in our rural state.

Budget Category		BUILD Grant	Other Funding	Total Project Cost
1	Personnel, Fringe Benefits, Indirect Costs (CCRPC)		\$190,000	\$190,000
2	Consultants - Community Passenger Rail Feasibility Study (Subtasks 1.a, b & d) - Railyard Relocation Scoping / PEL Study (Task 2)	\$1,110,000		\$1,110,000
	CHAMP P3 Consultant Partner - Community Passenger Rail Feasibility Study (Subtask 1.c.) - Develop Public-Private Development Corporation (Task 3)	\$600,000		\$600,000
Total:		\$1,710,000	\$190,000	\$1,900,000
Percent of Funding Source:		90%	10%	100%

IV. SELECTION CRITERIA

IV(1) Primary Selection Criteria

IV(1)(a) Safety

Vermont Rail Renaissance planning will investigate new community passenger rail service that will provide transportation options to Vermonters and visitors, reduce SOV travel, and maximize safety. According to CCRPC's [2018 ECOS MTP](#), performance measures for safety include the number of fatalities, rate of fatalities per 100 million Vehicle Miles Traveled (VMT), number of serious injuries, rate of serious injuries per 100 million VMT, and the number of non-motorized fatalities and non-motorized serious injuries. By implementing a community passenger rail service, safety will improve as residents and visitors lessen their dependence on driving; the new rail service is expected to reduce peak hour car use in the three corridors. Since rail is 10 times safer than driving, overall public safety is expected to improve considerably.

IV(1)(b) State of Good Repair

Vermont Rail Renaissance partners are committed to improving the rails as necessary to implement community passenger rail in the future.

IV(1)(c) Economic Competitiveness

The Economic Competitiveness criterion will be addressed in the **Vermont Rail Renaissance** planning effort. We propose the following tasks: (1) undertake targeted research and analysis of the connection between rail development and economic development; (2) undertake targeted research and analysis to estimate the economic impact/contribution of enhanced passenger and freight rail operations; and (3) evaluate alternative financing proposals to aid in the facilitation of the development of supporting commercial infrastructure. The alternative financing analysis will include options such as discussed in NCHRP #873, Land Value Return and Recycling. This information will assist with the review, presentation, and negotiation to obtain necessary public support, possible permitting changes, and necessary public approvals for financing and developing passenger rail operations and associated development.

Additionally, more convenient and faster access to job centers offered by rail attracts a younger demographic to rural communities. In turn, this increases tax revenue from land development, thereby increasing a community's tax base.

IV(1)(d) Environmental Sustainability

In 2011, Vermont embarked on an ambitious energy goal of achieving 90 percent of the state's total energy needs from renewable sources by 2050. While Vermont has seen an increase in the adoption of electric vehicles, the transportation sector is still the biggest hurdle to achieving the state's energy goal. To secure a more energy-efficient transportation system, there must be continued support for freight and passenger rail initiatives. Since 2006, intercity passenger rail trips have increased by over 88 percent to more than 107,000 per year. However, by 2030, [Vermont's Comprehensive Energy Plan](#) calls for a nearly quadrupling of Vermont-based passenger rail trips to 400,000 trips annually, while also doubling rail freight tonnage. To realize these goals, both passenger and freight rail service needs to be expanded. The latter can only be accomplished through relocation of the Burlington railyard to a less constrained and more efficient site.

The CCRPC's [2018 ECOS Regional Plan](#) has goals and actions to transform the region's energy system to meet Vermont's energy and greenhouse gas reduction goals while balancing economic vitality and affordability. ECOS supports improvements to rail infrastructure throughout the county for both passenger and freight transportation to help meet these goals.

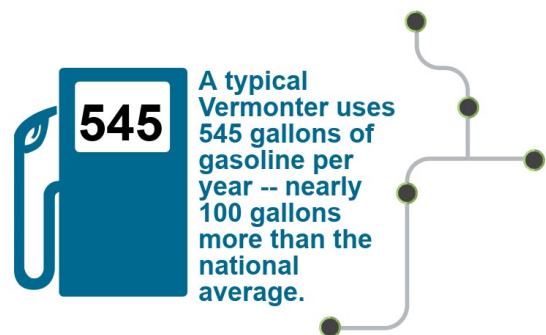
If the Burlington railyard relocates, the existing site will be cleaned of contaminated soils before any redevelopment occurs. As a result of the work conducted under the [EPA's Area Wide Planning Grant](#), all brownfields/contaminated areas are mapped, a reuse plan is in place, and the land is ready to be remediated. Moreover, as outlined within Burlington's [planBTV South End](#), the city recognizes the need to address environmental concerns in order to revitalize this area.

IV(1)(e) Quality of Life

According to the [Partnership for Sustainable Communities](#), there are a series of core livability principles adopted by federal agencies. These principles dovetail with Vermont's [2020 Comprehensive Economic Development Strategy](#) (CEDS) to improve the economic well-being and quality of life for Vermonters while maintaining the state's natural resources and community values.

1. Guiding Principle: Provide More Transportation Choices

The **Vermont Rail Renaissance** will study the expansion of community passenger rail to improve transportation options for residents and visitors, reduce single-occupant vehicle use, and enhance the viability of freight rail. Because of its rural character, Vermont has one of the highest automobile dependency rates in the country. A typical Vermonter uses 545 gallons of gasoline per year -- nearly a hundred gallons more than the national average. The **Vermont Rail Renaissance** will provide an alternative form of energy-efficient transportation that also dovetails with other northeast and Canadian rail initiatives.



Development around rail stations, along with redevelopment at the Burlington railyard site, will create a pattern of growth that reduces transportation energy consumption. Homes are in closer proximity to jobs and other services, making trips shorter and making travel by walking, biking, transit, and carshare more feasible. The 2018 implementation of [Greenride Bikeshare](#) in Burlington and Winooski fits well with the **Vermont Rail Renaissance** initiative by addressing the “last mile” issue.



2. Guiding Principle: Promote Equitable, Affordable Housing

One of the barriers to a high quality of life in Vermont is access to equitable and affordable housing. Since housing scarcity and affordability issues are well-documented, the **Vermont Rail Renaissance** partner, CHAMP P3, has made a commitment to designate 25 percent of housing they develop as affordable.



As the demand for and cost of housing rises, the proportion of Chittenden County employees who live outside the county continues to increase. To sustain the economic growth in Chittenden County, it is imperative to increase investment in denser, mixed-use growth areas that will improve economic opportunities, housing options, transportation choices, and community health. The relocation of the Burlington railyard will create a tremendous opportunity to focus new growth in the heart of Burlington, using existing infrastructure and increasing the supply of affordable housing. (See attached support letter from Housing Vermont, a nonprofit housing syndication and development company.)

3. Guiding Principle: Increase Economic Competitiveness and Support Existing Communities

Area employers have consistently expressed concern that access to housing is one the main barriers to economic development in the region. Focusing new growth within the vicinity of the Burlington railyard and transit-oriented development (TOD) at other rail stations will provide housing and promote a lifestyle that is attractive to young professionals. Between 1990 and 2010, Vermont's population of 20- to 39-year-olds shrunk by 20 percent while the state's overall population grew by 11 percent. Studies have shown that young professionals prefer to live in dense and vibrant communities that are within walking distance to goods and services. It is vital to Vermont's economic well-being to support initiatives that reverse the troubling trend of young people fleeing the state. Vermont also has the distinction of being the third oldest state in the country and Governor Scott is actively recruiting millennials who work remotely to move to Vermont. Transit attracts talent and millennials. (See attached support letters from the Lake Champlain Regional Chamber of Commerce and the Franklin County Industrial Development Corporation.)

4. Guiding Principle: Value Communities and Neighborhoods

The CCRPC's [2018 ECOS MTP](#) clearly outlines an overarching goal to provide accessible, safe, efficient, interconnected, secure, equitable and sustainable mobility choices for the region's businesses, residents and visitors. While no community passenger rail service currently operates within Vermont, the **Vermont Rail Renaissance** aims to establish a community passenger rail network to reduce commuter vehicle traffic and encourage transit-oriented development.

Chittenden County has a land use goal, articulated in the 2018 [ECOS Regional Plan](#), that 80 percent of all new development should go in "areas planned for growth" which are our downtowns, villages, and other growth centers. The 2018 [ECOS MTP](#) plan envisions an even denser development pattern with 90 percent of new development in areas planned for growth.

This goal allows for the creation and preservation of livable communities and neighborhoods that are walkable, bikeable, and serviced by transit, which help reduce vehicle congestion in the neighborhoods and increase safety.

Numerous [Vermont Transportation Board](#) reports highlight a broad range of statewide public support for rail travel and alternatives to the automobile. Chittenden County communities are advocating for increased investment in rail and public transit in general. In the CCRPC's [2018 Transportation Survey](#), a majority of survey respondents indicated that it is very important or essential to expand public transit within the county. Moreover, the City of Winooski's [2017 Transportation Master Plan](#) highlights a need to promote Chittenden County commuter rail service based on support from members of the public and local stakeholders. It is clear that the **Vermont Rail Renaissance** will support the community values and vision of small communities with vibrant neighborhoods served by community passenger rail service.

IV(2) Secondary Selection Criteria

IV(2)(a) Innovation

IV(2)(a)(i) Innovative Technologies

Two new, innovative technologies are incorporated into the **Vermont Rail Renaissance**: RailSwitchNet and The Moose.

Vermont Rail Renaissance is committed to making sure our rails are as safe as possible.

As we examine rail safety, we will explore the benefits of [RailSwitchNet](#), an innovative safety technology that incorporates both cellular technology and the Cloud. Switch monitors automatically update wayside indicator aspects through wireless connections and updates are made every time the switch position changes (and on a set schedule). The software allows rail personnel to remotely monitor both switches and indicators in real time. The system was developed by Vermont Rail Systems (VRS) and used successfully in a pilot Amtrak project in Vermont.



The critical work of the **Vermont Rail Renaissance** is to investigate the feasibility of rural community passenger rail. In order to make the service as attractive as possible to the largest number of people, passenger convenience is of utmost importance. We will examine how an innovative web and mobile app traveler information tool could enhance rural ridership.

The Moose is a prototype web and mobile app that deploys innovative traveler information to optimize ridership. Developed by Green Mountain System Works, The Moose web and mobile app will provide schedules, ticketing, and real-time train location and arrival times. The app also links riders with connecting transportation options like ride hailing services, buses, cabs, and bike/scooter rentals.

The app has the potential to link the train with the communities they serve: merchants, restaurants, arts venues, craft vendors, and more. Station or railcar advertising can promote local businesses and provide an additional revenue stream for operations. An option to redeem local merchant offers via the app will provide additional incentives to ride and support the local community.

Location services on the app will allow riders to customize their travel via the app, as well as provide metadata on ridership trends for both the train other transportation modes. By tracking rider movements, it will also be possible to analyze the positive impacts to the surrounding communities – in essence, calculating the effect train service has on local purchasing and use of public spaces such as parks. This technology does not require any extraordinary permitting, approvals, exemptions, waivers, or procedural actions.

IV(2)(a)(ii) Innovative Project Delivery

The **Vermont Rail Renaissance** will investigate and formulate an innovative project delivery process. The type of project delivery model used for the **Vermont Rail Renaissance** can have a significant effect on the ability to adapt new technologies, the cost of construction financing, the requirements of operations and management, and the economics and demographics of the area.

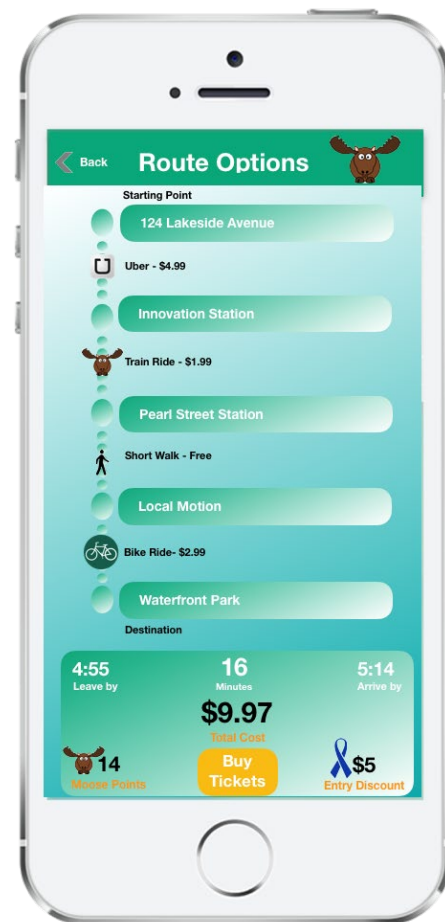
These tasks are particularly burdensome for rural areas with low density, multiple stakeholders with small transportation budgets, and few financial and personnel resources available for comprehensive planning. The BUILD planning grant funds will result in an innovative program delivery model for

Vermont Rail Renaissance that will involve four major elements: (1) ownership; (2) financing; (3) construction; and (4) operations and maintenance. The program delivery model will address the present and future transportation needs in the corridor and include commitments from a coalition of stakeholders.

Vermont Rail Renaissance will evaluate existing and developing public project delivery methods for infrastructure projects focusing on those which are able to enhance and encourage safety, innovation, economic development, and lessen environmental impacts. The project delivery model will be a useful pilot for how multiple rural entities can create a coalition to finance, operate, and maintain an otherwise unachievable transportation goal in order to meet the cross-boundary transportation needs of a rural area.

For example, freight rail carriers generally do not have staff available to manage and administer delivery and operations agreements for passenger rail. Local governments typically utilize traditional delivery processes, because they have administrative staffs that perform many project delivery aspects. **Vermont Rail Renaissance** will cover multiple political jurisdictions thereby needing a new management structure to administer the project. We will create a new partnering structure in the form of a long-term commitment between multiple organizations to establish community passenger rail by maximizing the effectiveness of each participant's resources.

Figure 6: The Moose Prototype Mobile App



Currently, we anticipate using a design-build-finance (DBF) P3 structure with an availability payment from the public sponsor. Availability payments allow the public sponsor to use the P3 for design, construction, and financing without transferring responsibility for fare rates, service frequency, and other policy decisions related to operations over to the private sector. By retaining these operations responsibilities, the public sponsor also retains the risk for ridership and repayment of borrowed money through a revenue source unrelated to ridership. This structure works well for transit projects, which typically do not generate enough revenue to pay for construction and operating costs. Operations and maintenance would be provided through one or a series of management contracts. However, the key will be to analyze and discover which delivery method provides the best value for each particular portion of the project; BUILD funds will help to discern which method will provide not only the optimal end result, but financially better value in the long-term for each project partner.

IV(2)(a)(iii) Innovative Financing

The demand for public transportation services is at its highest point in 50 years. In addition to the environmental concerns of increasing VMT, public transit is an obvious choice for an increasingly urbanized population, the growing numbers of seniors, and the preferences of the millennial generation. These factors contribute to soaring ridership on existing transit routes as more communities seek funds to build and operate rail and bus lines than ever before.

One of the most important benefits of transit is its ability to serve as a focal point for future development, and in the process raise property values and generate new tax revenue to support local transit services. A passenger rail station engenders a higher concentration of economic activity than would be possible through other modes. This activity benefits both well-established communities and growing rural regions. In more-developed areas like Burlington, a transit system can help accommodate substantial growth and improve mobility (even when only a limited number of parcels remain, like on the waterfront). Focusing development around transit stations can help preserve existing neighborhoods and greenspace, while reducing the cost of extending roads, water, sewer, and other infrastructure far and wide to support growth. Transit Oriented Development (TOD), creating walkable neighborhoods within easy access of rail and bus lines, is essential to maximizing the return of new transit investments.

Since revenues from passenger fares will not cover the full maintenance and operating costs of the system, we propose the following innovative financing strategies to meet our financial needs:

Creative Financing Through Real Estate.

As there are many demands on the Vermont State budget, the **Vermont Rail Renaissance** will explore other funding sources for passenger rail operations. A viable source of ongoing support is to take underperforming state assets, particularly real estate, and use them to generate cash flow and wealth for this public purpose. The options evaluated will include those examined the NCHRP Report #873:

Figure 7: 2019 Aerial View of Existing Burlington, VT Railway



Guidebook to Funding Transportation Through Land Value Return and Recycling (2018). There are also numerous examples of how this public private partnership strategy worked successfully in redeveloping decommissioned military bases in the US.

A new and innovative method which is being implemented in Europe is called a “Privately Financed Managing Agent Contractor” (PFMAC), which introduces private financing into the maintenance process. There are greater risks transferred, a longer-term contract of 15-30 years, and mechanisms similar to the Design-Build-Finance-Operate-Maintain model used in the US for capital projects. This model is being used successfully using income generated from real estate investment for transit operations and maintenance expenses and will explore the feasibility of this model for **Vermont Rail Renaissance**.

With BUILD grant funds, we propose to analyze the feasibility of creating one or a series of publicly owned, privately run corporations with the explicit goal of redeveloping around the existing stations and railyard, maximizing the value of this underutilized public land, and using the revenues generated by smart zoning and asset management to finance the operations of the **Vermont Rail Renaissance**. This delivery method is innovative for the US market.

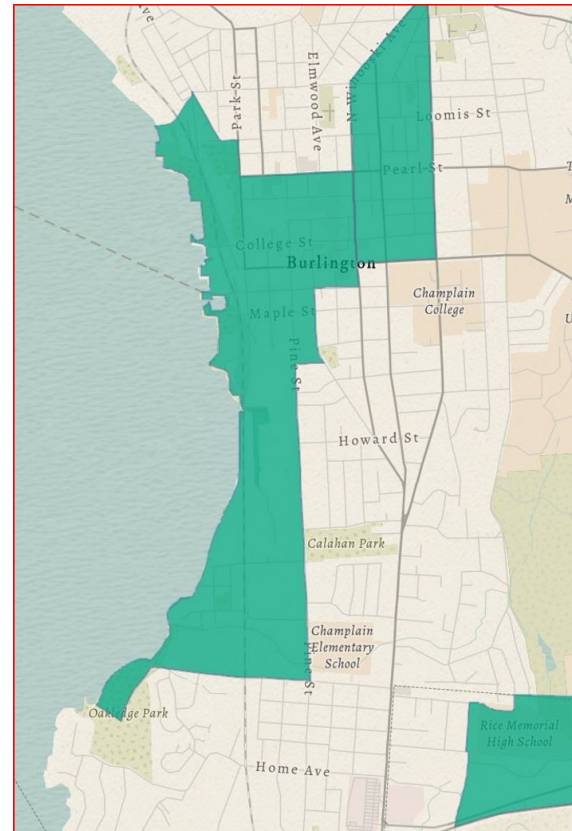
The 13.9-acre developable state-owned Burlington railyard has a market value of \$3.7 million based on current zoning and a recent appraisal. This asset could be transferred to a new public private partnership (P3). Once the tracks are relocated and the zoning is revised, the property will have a market value of between \$25-50 million. Instead of allowing private developers to reap the benefits of this value increase, it could be captured by the P3. In fact, as the example below shows, a ground lease structure can generate an annual income in excess of \$1 million to subsidize the passenger rail system. This model will be studied as part of the Community Passenger Rail Feasibility Study.

Figure 8: Real Estate: Hypothetical Example

Real Estate: Hypothetical Example (\$ thousands)			
Property Type	Land Price	Ground Lease	Notes
200 Residential Units			
75 Affordable Units	\$15,000	\$75	\$20k / unit ground lease 5%
75 Market Rate Rental	\$3,750	\$188	\$50k / unit
50 Condos	\$5,000	\$250	\$100k / unit
Hotel - 150 Rooms	\$11,250	\$563	Total cost \$45 million, \$300k per key
Office / Commercial / Brew Pub	\$5,000	\$250	100,000 square feet / \$20 million cost
TOTAL	\$26,500	\$1,325	

Creative Financing Through Opportunity Zones. A number of the proposed rail stations are in Opportunity Zones. Although the program is new, there has already been a dramatic increase in the value of land in Opportunity Zones around the country. One thing that makes Opportunity Zones attractive to investors is tax deferral on their existing gains. But an even larger incentive is the fact that any gains on their investment in the Opportunity Zone is tax free. For this reason, investors look for zones that are likely to experience asset appreciation. Property on the Burlington waterfront should be very attractive due to its location and walkable access to a train station. As the community passenger rail moves out to St. Albans, Winooski and Barre, where the rail stations are in an Opportunity Zone, the land value will rise significantly. Private capital and investment will allow the **Vermont Rail Renaissance** to capture some of this increase in value.

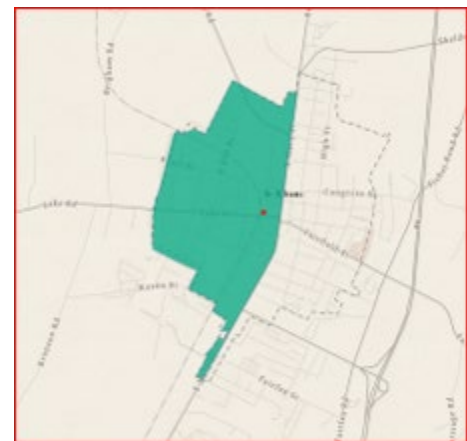
Figure 9: Burlington Opportunity Zone



IV(2)(b) Partnership

The implementation of the **Vermont Rail Renaissance** will strengthen connections among communities within the Champlain Valley, enhance multimodal networks between existing transportation providers, and establish new regional economic partnerships between Chittenden County and the rest of the state. The **Vermont Rail Renaissance** will begin the conversation about how rail can best serve these communities as well as details about possible station locations. A primary partner of the CCRPC is CHAMP P3, a nonprofit organization committed to bringing community passenger rail to Vermont. (See attached letter of support from CHAMP P3.)

Figure 10: St. Albans Opportunity Zone



The CCRPC has considerable experience bringing people and organizations together for successful and long-lasting collaborations. Upon receipt of a \$1 million Partnership for Sustainable Communities grant in 2011 (USHUD, EPA, USDOT), the CCRPC spearheaded the [ECOS Project](#) – a once-in-a-generation opportunity to engage citizens, organizations, and municipalities in a conversation about the future of individual communities and the region as a whole. A key component of ECOS is the collaboration between over 60 nonprofit, institutional, and governmental organizations in planning initiatives to support a sustainable future for the county. This level of regionwide collaboration will continue with the **Vermont Rail Renaissance**. The **Vermont Rail**

Renaissance will enhance the partnership between two bus systems, Green Mountain Transit and Addison County Transit Resources, the Burlington International Airport, Greenride Bikeshare, Lake Champlain Ferries, bike and walking advocates, and VTrans. It will create a truly multimodal transportation system to connect Vermont's rural communities with the economic hub of Chittenden County. Furthermore, enhancing connections between local and regional transportation systems will attract new employers to the region, strengthen connections between residences and employment centers, and provide greater access to Vermont's vast recreation opportunities. (See attached support letters from neighboring Regional Planning Commissions.)

CHAMP P3, Inc. is a nonprofit established in 2016 with a mission to expand the use of rail to move both people and freight. Since inception, CHAMP P3 has worked with stakeholders to identify ways in which movements by rail will spur economic growth and reduce greenhouse gases.

The State of Vermont has enabling legislation to establish public private partnerships to pursue innovative financing and project delivery under new and efficient guidelines. CHAMP P3 is pursuing this official designation.

The Chittenden County Regional Planning Commission (CCRPC) supports the Central Vermont Regional Planning Commission's Montpelier to Barre Community Connector grant application. The goals and products of the **Vermont Rail Renaissance** will complement their work by helping to support and inform the direction of rural community passenger rail services in Vermont.

V. Project Readiness

V(a) Technical Feasibility

Not Applicable to our planning grant request.

V(b) Project Schedule

The following page contains the proposed project schedule for the major tasks including the roles of the partners.

Partners

1. Chittenden County Regional Planning Commission (CCRPC)
2. CHAMP P3 (CHAMP)
3. Consultants (to be procured)

Timeline from date the agreement is executed

Year 1: Quarters 1-4

Year 2: Quarters 5-8

Task Description	Timeframe (Quarters)	Partner Roles: Primary/Secondary
1. Community Passenger Rail Feasibility Study	2-5	
a. Track Improvement Needs • Inspection of track, tunnel, bridges, grade crossings to identify needed upgrades • Determine cost estimate for necessary upgrades • Communicate with NECR / G&W / Brookfield / VTrans regarding rail upgrades		Consultants/CCRPC
b. Station Location Scoping • Identify potential commuter rail station / platform locations • Undertake municipal, property owners, public, stakeholder engagement • Evaluate and rank preferred sites • Develop conceptual plans for access, track, and station improvements • Identify permitting requirements		Consultants/CCRPC
c. Transit-Oriented Development and Opportunity Zone Opportunities • Project ridership • Estimate operating costs • Undertake environmental assessment • Analyze station land development market demand Develop conceptual development plans • Identify development revenue model • Undertake municipal, state, public, stakeholder engagement		CHAMP/Consultants, CCRPC
d. Economic Impact Analysis		Consultants/CCRPC
2. Burlington Railyard Relocation Scoping / PEL Study • Identify railyard operational and space needs • Identify potential railyard locations • Evaluate and select preferred location • Identify permitting requirements • Develop conceptual plans and cost estimates • Undertake municipal, state, public, stakeholder engagement	3-6	Consultants/CCRPC
Assuming support at the end of Task 1:		
3. Develop Public-Private Development Corporation • Undertake municipal, state, public, stakeholder engagement • Create governance documents • Develop agreements with transit operator and rail operators	6-8	CHAMP/CCRPC

4. Project Administration and Management Procurement, financial oversight of subgrantees and subcontractors, project management, reporting	1-8	CCRPC
Total Timeline	8 quarters 2 years	

V(c) Required Approvals

V(c)(1) Environmental Permits and Reviews

V(c)(1)(a) NEPA

Not Applicable to our planning grant request.

V(c)(1)(b) Reviews, Approvals, Permits by Other Agencies

Not Applicable to our planning grant request.

V(c)(1)(c) Environmental Studies & Other Documents

Not Applicable to our planning grant request.

V(c)(1)(d) NEPA & Other Federal Environmental Reviews/Approvals

Not Applicable to our planning grant request.

V(c)(1)(e) Public Engagement

Following more than two decades of studies, reports, and plans related to the expansion of passenger rail services in Vermont and the evaluation of the land within the vicinity of the Burlington railyard, the public has consistently been engaged through extensive outreach initiatives. Public and stakeholder outreach has been robust throughout the development of local and regional scoping studies, forums held by the Vermont Transportation Board, Burlington's Railyard Enterprise Project, Burlington's planBTV development process, the Burlington Brownfields Area Wide Plan, Western Corridor Transportation Management Plan, and the Vermont State Rail Plan. Public engagement has been conducted through public surveys, steering and advisory committee meetings, formal public meetings, and presentations to local governing bodies. This outreach has consistently shown public support for rail-related improvements in Vermont.

As we look forward to the **Vermont Rail Renaissance** planning project, the CCRPC will use its [Public Participation Plan](#) (PPP) as a guide for a robust public and stakeholder outreach effort to inform, consult, involve, collaborate, and empower communities and their residents. The PPP's Spectrum of Participation provides a framework for continual improvement in public outreach techniques. The CCRPC is committed to the principles of its PPP, including: promote respect, provide opportunities for participation, be responsive to participants, offer substantive work, provide a predictable planning process, and extensive outreach and communication. We recognize that public participation is a dynamic activity that requires commitment at all levels of the organization and constant vigilance. As such, CCRPC will ensure that public outreach plans are created and implemented for all studies undertaken as part of the BUILD grant.

Figure 11, CCRPC Public Participation Plan's Spectrum of Participation

Spectrum of Participation				
INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
The CCRPC will provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	The CCRPC will obtain public feedback on analysis, alternatives and/or decisions.	The CCRPC will work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered. <i>At the INVOLVE level and above, staff will complete the CCRPC Equity Impact Worksheet.</i>	The CCRPC will partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	The CCRPC will place final decision-making in the hands of the public.

V(c)(2) State & Local Approvals

Not Applicable to our planning grant request.

V(c)(3) Federal Transportation Requirements Affecting State & Local Planning

Not Applicable to our planning grant request.

V(d) Assessment of Project Risks & Mitigation Strategies

As the project applicant, the Chittenden County Regional Planning Commission (CCRPC) is well prepared to manage a BUILD grant from the US Department of Transportation. The CCRPC, serving as the only Metropolitan Planning Organization (MPO) in Vermont, manages an average of \$2.8 million annually in consultant and contract services using consolidated PL funds from the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Environmental Protection Agency (EPA), and Department of Homeland Security (DHS).

In addition, the CCRPC has been awarded and successfully managed direct federal grants including an FHWA Accelerated Innovation Deployment (AID) grant (\$934,000); a Transportation, Community and System Preservation (TCSP) grant (\$408,000) from the USDOT; and a Sustainable Communities Regional Planning grant (\$995,000) from the US Department of Housing and Urban Development.

The CCRPC has a dedicated, professional staff of land use and transportation planners and engineers that manages the annual work program. Staff is familiar with procurement policies and administration of federal grants and over the years have demonstrated their ability to successfully complete work on all federal grants awarded to the CCRPC.

The CCRPC conducts independent audits annually and complies with audit requirements according to the US Office of Management and Budget (OMB) 2 CFR Part 200 Uniform Administrative Requirements Cost Principles and Audit Requirements for Federal Awards. The CCRPC has undergone federal Single Audits each year since 2012 without a Qualified Opinion, Material Weakness, or Significant Deficiency found or noted. The CCRPC has qualified as a low risk auditee every year since 2014.

The **Vermont Rail Renaissance** project audit requirements will be the responsibility of the CCRPC as the grantee. Please note that costs to administer and manage the BUILD Grant is not included in the BUILD budget as these costs will be covered by the CCRPC.

VI. Benefit Cost Analysis

Not Applicable to our planning grant request.