City Council - Transportation, Energy and Utilities Committee

Tuesday, March 25, 2025, 5:30 PM,

Join in Person: Front Conference Room, 645 Pine St. Burlington, VT 05401

Join via Zoom: https://zoom.us/j/84603122855
To call into the meeting, including to speak during public comment:
Phone: 312-626-6799, Webinar ID: 846 0312 2855

1. Agenda

1.1. Motion to adopt/amend

2. Adopt Minutes

2.1. Minutes of 2/24/25

3. Public Forum

4. Deliberative Agenda

4.1. Transportation Demand Management Study - 30 min

4.2. 505 Riverside HGMP Application & Proactive Grant Acceptance - 15 min

4.3. McNeil RFP Awards - 20 min

4.4. Burlington Segways 2025 Plans - 15 min

5. Director's Report

6. Councilor Items

7. Next Meeting

7.1. Next meeting: 4/22/25 at 5:30PM (tentative)

8. Agenda

9. Adjournment

CITY OF BURLINGTON, VERMONT

CITY COUNCIL TRANSPORTATION, ENERGY & UTILITIES COMMITTEE

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Councilor Mark Barlow, **Chair,** *North District*
Councilor Gene Bergman, *Ward 2*
Councilor Evan Litwin, *Ward 7*
Councilor Marek Broderick, *Ward 8*

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Transportation, Energy and Utilities Committee of the City Council
Monday February 24, 2025 – 7:00PM
--DRAFT MINUTES—

Councilors absent: None

Chair Barlow calls meeting to order at 7:00 PM

1. Agenda
Move item 4.4 Institute Road Sidewalk discussion to the front of the meeting as 4.05
Councilor Broderick moves to adopt the agenda as amended.
Councilor Bergman seconds.
All in favor, Unanimous approval.

2. Minutes of 1/28/25
Councilor Broderick moves to adopt the minutes.
Councilor Bergman seconds.
All in favor. Unanimous approval.

3. Public Forum
Sharon Bushor (online) – Comments about TDM. Define Mobility Hub. Was involved a little bit in Winooski Ave pilot project. Feels pedestrians do not have equal footing in these conversations and TDM falls short on that. Walking is least expensive, the most environmental friendly and can be done at any age. Parking benefit districts. Concerned about movement going toward more increased cost for parking. Residential parking came into existence to alleviate parking being taken up by nonresidents. Concerned about increased permit cost. AARP needs to be aware of need for pedestrian access and people with disabilities. Parking spaces elimination – you aren't allowing for guests or visitors. Reading about spaces around institutions possibly being available to be sold to business for employees to park. Doesn't seem logical. Ward one constituents concerned about employees getting to have paid spaces on residential streets.
Barbara (online) – Concerned about draft TDM document. Many proposed metrics and actions that are counterproductive to the TDM goal of reducing SOV use and pollution. Like to see the decision makers evaluate each metric against and each action against if it's going to increase or decrease pollution. If it increases pollution please take it out of the TDM report. Focus on where pollution is created and how to reduce it. No to vehicles miles traveled metric. Yes to SSTA.

4. Deliberative Agenda

4.05 Institute Road Sidewalk

Erik Ramakrishnan, Assistant City Attorney spoke about the sidewalks along North Ave & Institute Rd in places don't fall exactly within the City right of way. Once the sidewalks are built and meet City standards Schools will dedicate them to the city on behalf of the public so they can be used like any other sidewalk in the city. Looking for recommending approval of the acceptance of resolution to City Council.
Chapin Spencer, DPW Director wants to make clear that this is only the sidewalk paralleling North Ave & Institute Rd.

Councilor Broderick made the motion to approve and recommend that the City Council waive the reading and adopt the proposed resolution accepting the schools dedication of sidewalks to be located at the high school property along North Ave & Institute Rd.
Councilor Bergman seconds.
All in favor, Unanimous approval

4.1 Transportation Demand Management Action Plan

Charles Dillard AICP, Director looking for input and direction for the plan. One step is to hire a fulltime TDM coordinator. The goals are to evaluate the City's TDM program and transportation needs, identify opportunities to expand beyond new development and explore models for neighborhood-based TDM.

Councilors are not ready to make a decision but need to get updates to look at details and ordinance. Want most effective and efficient TDM on books. Nervous about advancing quickly. How will you engage advisory committee in updating the TDM? Explore Micro transit with the Airport.

.4.2 Battery Street Preferred Alternative Approval

Public Works Engineer Julia Ursaki - based on direction from the TUEC at the January 28, 2025 meeting, the Battery Street Scoping Study project team revised the Alternative 2 graphic to show parking on both sides of the street between King Street and Main Street, retaining the existing pull-off area in front of the Marriott Hotel, Left turn pockets for turning into the hotels between College and Cherry Street, Updated the report to include more narrative around the engagement with April Cornell and subsequent changes to the design, reached out to April Cornell describing the design changes made to Alternative 2 to accommodate their concerns, Met with Jak Tiano to discuss his comments from the January meeting about protected bike lanes and the planning process in general.

Councilors asked about Curb cut issue? Adjust redline to include pedestrian safety and safety at the intersection. Feel proposed amendment makes sense. Footnote about continuing review for safety. Three lanes will slow traffic down now.

Director Spencer – City's approach is to build relationships.

Councilor Broderick moves that the TEUC approves and recommends the City Council approves the Battery Street Scoping Study Project Advisory Committee's selection of revised Alternative 2 as the preferred alternative for this study and further recommends that the Department of Public Works reviews the curb cuts along the entire corridor to further enhance bicycle and pedestrian safety during future phases of this project.
Councilor Litwin seconds.
All in favor, Unanimous approval.

4.3 Courthouse Plaza Parking Agreement Modifications

Director Chapin Spencer – Staff is proposing that we restart negotiations to lease half of the 85 spaces. IT would lower the City's costs and still serve the public. Looking to get an agreement extension through October but cheaper.

Councilors asked when the Main & Winooski intersection is being reopened. How much further east is the construction going? Reducing is advisable. Helpful to have usage reports.

4.5 Future TEUC Agenda Setting Work Session

Chair Barlow – Council Ability List, DPW List, 2024 Committee list and 2025 committee list. Need to organize. Listed as Council Action, certain things need to happen and they haven't. Update due dates.
Chair Litwin – Agrees it's a good plan, Public safety missing, Beltline 127 Safety, how do you chart out McNeil Updates?
Chair Bergman – Need to figure out sequencing. Make sure we are dealing with the bigger priorities of councilors. McNeil Stuff, Solar review, TDM, Safety of Beltline.
Chair Broderick - Ensure bus stop accessibility to everyone in snow issues.

5. Director's Report

Director Chapin Spencer – DPW Commission approved the City's Unified Planning Work Program application. New major initiative is a New Transportation Plan. Solar updates – DPW met with encore last week. Each site has challenges. Reservoir needs a new roof- waiting for town meeting. Manhattan Drive Landfill – need to know how to assess methane gas collection system. Need to make sure system is in good shape. Budgeted in 2026 for repairs.

6. Councilor Items

Chair Barlow – GMT is underfunded and is short again this year. Draft resolution with 3 options on how to proceed on this. Schedule a short zoom meeting. Approve something as a committee for March 4th or Work as councilors for a GMT funding resolution on 3-10-25 council agenda. Changes or amendments bring to him.
Councilor Litwin – not worth an extra meeting.
Councilor Bergman – February 27th or March 3rd only days to do a special meeting. Circulate to everyone, get co-sponsors and proceed.
Councilor Broderick – doesn't feel special meeting is required.

7. Next Meeting

March 25, 2025 at 645 Pine St at 5:30 pm

8. Adjournment

Chair Barlow adjourns meeting at 8:57 pm.

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www.burlingtonvt.gov/plan

TO: City Council Transportation, Energy and Utilities Committee
FROM: Charles Dillard, AICP, Director, Office of City Planning
DATE: March 25, 2025
RE: Transportation Demand Management Action Plan

Background

The Transportation Demand Management (TDM) Action Plan is the outcome of the Citywide Transportation Options Study (CTOS), completed in summer 2024. The purpose of the study was to assess existing and previous TDM programs in the city and recommend approaches the City make take to build on those efforts. The CTOS itself was the product of a 2021City Council resolution. The goals of the CTOS were to evaluate the City's TDM program and transportation needs, identify opportunities to expand TDM beyond new development, and explore models for neighborhood-based TDM.

The TDM Action Plan includes 22 strategies, each of which includes a series of action steps that will guide the Plan's implementation. The strategies are organized into four categories as follows:

- Transportation Options: specific ways of moving that the City should prioritize
- Regulations and Plans: ordinance and policy planning priorities
- TDM Management and Funding: operational and funding priorities
- Neighborhood TDM Strategies: tools that expand the reach and equity of TDM

Given the complexity and depth of the TDM Action Plan, DPW, City Planning and TEUC have established a review process that will occur in the first half of 2025, with a goal of City Council adoption of the Plan in late spring or summer 2025. At the February 24th TEUC meeting, the Committee heard a description of the seven strategies within the Transportation Options Category. These strategies address recommended additions, expansions or modifications to transportation services and programs in Burlington.

The goal of the March 25th TEUC meeting will be to review the Regulations and Plans strategies, which include the following:

- R. 1: Update and expand Burlington's TDM requirements. Adopt a point-based requirement structure that includes additional TDM measures and provides flexibility for developers.
- R.2: Adopt a Commute Trip Reduction (CTR) ordinance that requires larger employers to implement TDM programs.
- R.3: Adopt neighborhood-based TDM plans using the neighborhood TDM framework.
- R.4: Adopt a framework for creating parking benefit districts (PBDs) in Burlington.
- R.5: Update the Residential Parking Permit (RPP) program.
- R.6: Develop and implement a downtown public realm safety plan.

Of the above, Strategies R.1 and R.2 are the highest immediate priority, with R.3 also being implemented actively through ongoing planning work in *planBTV: New North End* and the upcoming update to *planBTV*. Following City Council adoption of the Plan, the Office of City Planning, Permitting and Inspections and DPW staff will coordinate the drafting of an amendment to the City's Comprehensive Development Ordinance that will establish the point-based requirement structure. A Commute Trip Reduction ordinance may be included in the amendment.

Ultimately, implementation of the entire TDM Action Plan will take several years, but the core components can be established in the near term, within the next year.

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Transportation Demand Management Action Plan

BURLINGTON OFFICE OF CITY PLANNING

CHARLES DILLARD, AICP, DIRECTOR

Citywide Transportation Options Study Overview

The Citywide Transportation Options Study was a project led by the City of Burlington's Planning Department in close coordination with other city departments to **assess existing and previous TDM programs** in the city and **recommend approaches the City may take** to build on those efforts.

The study is the product of a 2021 City Council resolution.

The goals of the TOS are to:

1. Evaluate the City's TDM program and transportation needs
2. Identify opportunities to expand TDM beyond new development
3. Explore models for neighborhood-based TDM

The TDM Action Plan is the culmination of the CTOS

TDM Action Plan Overview

Plan components:

1. Analysis of Previous and Current Plans and Studies
2. Best Practices Analysis
3. Public Engagement Summary
4. Strategies Toolkit

Strategies Toolkit

Toolkit components:

1. **Transportation Options** – specific ways of moving that the City should prioritize
2. **Regulations and Plans** – ordinance and policy planning priorities
3. **TDM Management and Funding** – operational and funding priorities
4. **Neighborhood TDM Strategies** – tools that expand the reach and equity of TDM

Strategies Toolkit

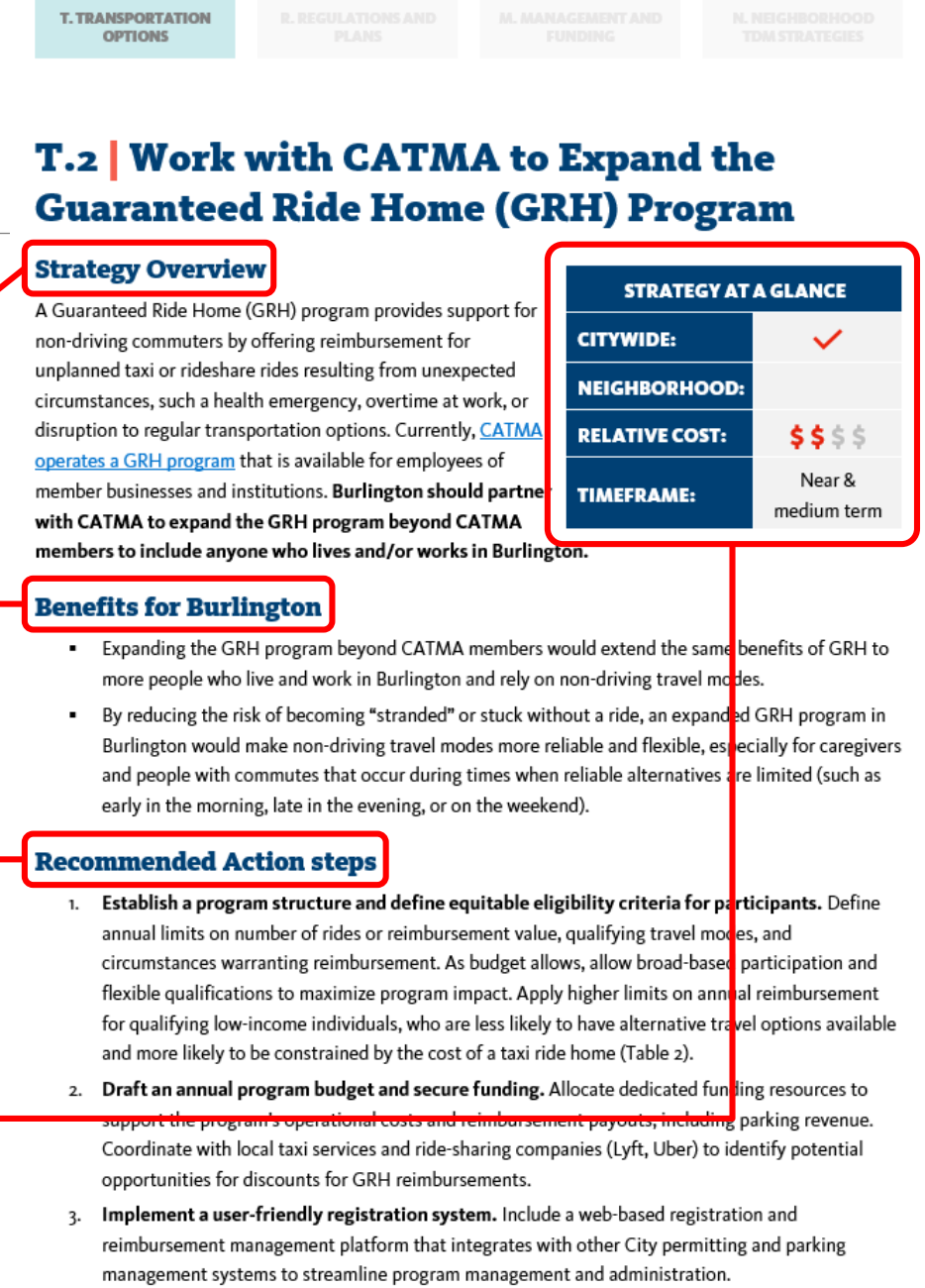
Toolkit format:

ID	Strategy Recommendation	Citywide	Neighborhood	Relative Cost	Timeframe
T	**Transportation Options**				
T.1	Work with Carshare Vermont to expand carshare services and supporting programs.	✓	✓	$$$$	Near term
T.2	Work with CATMA to expand the Guaranteed Ride Home (GRH) program.	✓		$$$$	Near & medium term
T.3	Work with Go! Vermont to expand the ride matching/carpool program.	✓	✓	$$$$	Near term
T.4	Work with Green Mountain Transit to expand transit service, including piloting on-demand microtransit services in parts of Burlington that are not well-served by fixed route transit.	✓	✓	$$$$	Near, medium, & long term
T.5	Create shared stop guidelines and a unified shuttle program that combines and coordinates services offered by hill institutions, Green Mountain Transit, and others.	✓		$$$$	Medium & long term
T.6	Update the City of Burlington employee parking benefits program to incentivize sustainable commuting options.	✓		$$$$	Near term
T.7	Implement a sustainable travel choice information, education, and marketing program.	✓	✓	$$$$	Near & medium term

Strategies Toolkit

Toolkit format:

1. **Strategy Overview** – describes tool, assesses current application in Burlington, if applicable, and makes general recommendation
2. **Benefit for Burlington** – provides the rationale for why the recommendation is made and what the tool can do for our communities
3. **Recommended Action Steps** – details specific steps the City should take in implementing the recommendation; includes identification of any necessary partners
4. **Strategies At a Glance** – profiles whether the strategy is a citywide or neighborhood strategy, its relative cost, and a realistic implementation timeline



T. TRANSPORTATION OPTIONS | R. REGULATIONS AND PLANS | M. MANAGEMENT AND FUNDING | N. NEIGHBORHOOD TDM STRATEGIES

T.2 | Work with CATMA to Expand the Guaranteed Ride Home (GRH) Program

Strategy Overview

A Guaranteed Ride Home (GRH) program provides support for non-driving commuters by offering reimbursement for unplanned taxi or rideshare rides resulting from unexpected circumstances, such a health emergency, overtime at work, or disruption to regular transportation options. Currently, CATMA operates a GRH program that is available for employees of member businesses and institutions. **Burlington should partner with CATMA to expand the GRH program beyond CATMA members to include anyone who lives and/or works in Burlington.**

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Benefits for Burlington

- Expanding the GRH program beyond CATMA members would extend the same benefits of GRH to more people who live and work in Burlington and rely on non-driving travel modes.
- By reducing the risk of becoming "stranded" or stuck without a ride, an expanded GRH program in Burlington would make non-driving travel modes more reliable and flexible, especially for caregivers and people with commutes that occur during times when reliable alternatives are limited (such as early in the morning, late in the evening, or on the weekend).

Recommended Action steps

1. **Establish a program structure and define equitable eligibility criteria for participants.** Define annual limits on number of rides or reimbursement value, qualifying travel modes, and circumstances warranting reimbursement. As budget allows, allow broad-based participation and flexible qualifications to maximize program impact. Apply higher limits on annual reimbursement for qualifying low-income individuals, who are less likely to have alternative travel options available and more likely to be constrained by the cost of a taxi ride home (Table 2).
2. **Draft an annual program budget and secure funding.** Allocate dedicated funding resources to support the program's operational costs and reimbursement payouts, including parking revenue. Coordinate with local taxi services and ride-sharing companies (Lyft, Uber) to identify potential opportunities for discounts for GRH reimbursements.
3. **Implement a user-friendly registration system.** Include a web-based registration and reimbursement management platform that integrates with other City permitting and parking management systems to streamline program management and administration.

Transportation Options Strategies

T.1: Work with CarShare Vermont to expand carshare services and supporting programs

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Recommended Action Steps:

1. Work with CarShare Vermont to identify specific areas and demographic groups where there is unmet demand or opportunities for car sharing.
2. Streamline the permitting processes for allocating carshare spaces.
3. Integrate carshare space planning into all neighborhood planning processes.
4. Update the City's development code to include requirements for shared spaces that can be used for carshare.
5. As funding becomes available, provide additional operating funds for CarShare Vermont.

Transportation Options Strategies

T.2: Work with CATMA to Expand the Guaranteed Ride Home (GRH) Program

Recommended Action Steps:

1. Establish a program structure and define equitable eligibility criteria for Draft an annual program budget and secure
2. Implement a user-friendly registration system.
3. Develop and distribute marketing and education materials.
4. Develop and distribute marketing and education materials.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Transportation Options Strategies

T.3: Work with Go! Vermont to Expand the Ride Matching/Carpool Program

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Recommended Action Steps:

1. Coordinate with Go! Vermont to evaluate gaps in participation.
2. Meet with local employers, schools, and community-based organizations to increase awareness of the program, recruit participants, and create more opportunities for commute matches.

Transportation Options Strategies

T.4: Work with GMT to Expand Transit Service and Pilot Microtransit Service

Recommended Action Steps:

1. Develop and adopt bus stop design standards for Burlington. (Near Term)
2. In partnership with GMT, launch a marketing and information campaign to support transit. (Near Term)
3. If microtransit service is identified as a priority service, implement a microtransit pilot program. (Med - Long Term)
4. As funding allows, allocate additional local funding to support expanded GMT service. (Med - Long Term)

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near, medium, & long term

Transportation Options Strategies

T.5: Create Shared Stop Guidelines and a Unified Shuttle Program

Recommended Action Steps:

1. Develop and adopt a shared stop policy. (Med. Term)
2. Create public access to privately-operated shuttles. (Long Term)
3. Develop a unified branding identity for shuttle service. (Long Term)

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Transportation Options Strategies

T.6: Update the City of Burlington Employee Parking Benefits Program to Incentivize Sustainable Commuting Options

Recommended Action Steps:

1. Review current City employee transportation benefits and parking policies,
2. Update benefits to provide balanced options for employees.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Transportation Options Strategies

T.7: Implement a Sustainable Travel Choice Information, Education, and Marketing Program

Recommended Action Steps:

1. Begin coordinating with CATMA, GMT, Go! Vermont, and other local and regional partners to develop a unified brand for TDM programs in Burlington. (Near Term)
2. Launch a branded TDM website for Burlington. (Near Term)
3. Develop and distribute marketing materials that include trip planning information. (Med. Term)
4. Coordinate marketing and educational materials distribution with neighborhood Community Mobility Rituals programs. (Med. Term)

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Regulations and Plans Strategies

R.1: Update and Expand Burlington's TDM Requirements

Recommended Action Steps:

1. Begin drafting a points-based TDM ordinance.
2. After finalizing the ordinance structure, begin developing TDM program guidelines to support successful implementation.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Regulations and Plans Strategies

R.2: Adopt a Commute Trip Reduction (CTR) Ordinance

Recommended Action Steps:

1. Begin developing a CTR framework.
2. Draft and adopt the CTR ordinance.
3. Develop TDM program guidelines to support successful implementation.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Regulations and Plans Strategies

R.3: Adopt Neighborhood-Based TDM Plans Using the Neighborhood TDM Framework

Recommended Action Steps:

1. Building on lessons learned through the Old North End neighborhood TDM planning effort, begin implementing the TDM framework process through City-led planning efforts.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Regulations and Plans Strategies

R.4: Adopt a Framework for Creating Parking Benefit Districts (PBDs)

Recommended Action Steps:

1. Develop and adopt a PBD ordinance.
2. If and when priced parking expands to new parts of the city, collaborate with local stakeholders to implement PBDs.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Regulations and Plans Strategies

R.5: Update the Residential Parking Permit (RPP) Program

Recommended Action Steps:

1. Review the residential permit pricing structure and program management/operating costs.
2. Tie RPP permits to Transportation Demand Management (TDM) programs.
3. As space allows, incorporate an employee permit option.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Regulations and Plans Strategies

R.6: Develop and Implement a Downtown Public Realm Safety Plan

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Recommended Action Steps:

1. Conduct a safety audit for downtown to assess current conditions and identify areas for improvement.
2. In partnership with the Police Department, Parking Services, Public Safety Committee, and Downtown Burlington, develop and implement safety improvements.
    - Improved lighting and streetscape/landscape treatments near public parking facilities, including the Downtown Garage and the Marketplace garage.
    - An ambassador program that deploys staff in the downtown area to monitor and respond to safety issues at priority locations and times of day, or offers to escort people to or from their vehicle upon request.As space allows, incorporate an employee permit option.

Management and Funding Strategies

M.1: Hire or Designate a TDM Program Manager/Coordinator

Recommended Action Steps:

1. Designate a TDM coordinator at the City of Burlington. (Near Term)
2. As funding allows, hire a full-time TDM coordinator at the City. (Med. Term)

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Management and Funding Strategies

M.2: Expand Funding Sources for TDM

Recommended Action Steps:

1. Review existing local revenue sources, including parking revenue and impact fees, to confirm eligibility and feasibility for funding TDM programs. (Near-Med. Term)
2. Establish an annual TDM program budget and allocate funding from existing revenue sources. (Near-Med. Term)
3. After designating a TDM program manager, pursue state and federal TDM grant opportunities to fund TDM pilots and programs. (Long Term)

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near, medium & long term

Management and Funding Strategies

M.3: Formalize and Expand Burlington's Partnership with CATMA

Recommended Action Steps:

1. Form a working group and hold monthly coordination meetings with City of Burlington and CATMA staff.
2. Identify and formalize goals, roles, and responsibilities, and memorialize in a Memorandum of Understanding.
3. Periodically evaluate the impact of partnership by collectively reviewing the success of TDM initiatives and adjust strategies as needed.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Management and Funding Strategies

M.4: Expand Public Advisory Roles for Non-Driving Transportation Issues and Needs

Recommended Action Steps:

1. Review scope and responsibilities for the Walk | Bike council.
2. Ensure that a new or expanded council includes diverse representation of the community.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Neighborhood TDM Strategies

N.1: Establish a Public Bicycle/Electric Bicycle Lending Library

Recommended Action Steps:

1. Identify partners and develop an operating plan.
2. Identify a central location for the library.
3. Promote the bike library. Integrate information about the library in citywide marketing materials and with community partners.

STRATEGY AT A GLANCE	
CITYWIDE:	
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Neighborhood TDM Strategies

N.2: Establish Community-Based Mobility Hubs and Delivery Hubs

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium term

Recommended Action Steps:

1. Pilot the community-based hub concept in the Old North End neighborhood.
2. Coordinate with community organizations in the Old North End to increase awareness about the hub and identify programming opportunities for the space, such as special events and service/resource distribution.
3. After 1 year, evaluate the impact of the hub and modify the approach as needed for application in other neighborhoods throughout Burlington.

Neighborhood TDM Strategies

N.3: Expand Burlington's "Walk to Shop" Shopping Trolley Program

Recommended Action Steps:

1. Include funding for shopping trolley distribution as part of neighborhood TDM implementation.
2. Explore the establishment of shared, neighborhood trolley libraries to facilitate convenient transportation of groceries and goods.

STRATEGY AT A GLANCE	
CITYWIDE:	
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Neighborhood TDM Strategies

N.4: Implement a "Bus Buddies" Transit Rider Education Program

STRATEGY AT A GLANCE	
CITYWIDE:	
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Recommended Action Steps:

1. Form a "Bus Buddies" working group that includes GMT and community-based organizations who work with populations that may benefit from the program.
2. Develop and implement a training course for bus buddy volunteers to help them effectively support program participants.
3. Begin operating the program. Regularly gather input and feedback from bus buddy volunteers and from program participants to identify gaps in the program. Augment training as needed.

Neighborhood TDM Strategies

N.5: Pilot a Neighborhood Transportation Wallet Program

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Long term

Recommended Action Steps:

1. Identify funding and develop a budget for the transportation wallet pilot program.
2. Identify eligibility criteria and a pilot area to test the mobility wallet.
3. Coordinate with local community-based organizations and residents within the study area to identify mobility needs and desired benefits to include in the wallet.
4. Develop a price structure that includes “base” and “affordable” options.
5. Evaluate preferred format and technology options for distributing and managing the wallet.
6. Define equity-driven pilot evaluation criteria.
7. Based on pilot evaluation, consider opportunities to refine or expand the program.

Strategies Prioritization

Based on the recommended timeframes, budget realities and community priorities, the following strategies are recommended for a first phase of implementation, to be completed in 2025:

1. **Update and expand Burlington's TDM requirements.** Adopt a point-based requirement structure that includes additional TDM measures and provides flexibility for developers.
2. **Adopt a Commute Trip Reduction (CTR) Ordinance**, including amendments to Institutional Parking Plan requirements.
3. **Adopt neighborhood-based TDM plans** using the neighborhood TDM framework (New North End).

Next Steps

planBTV: New North End

- Neighborhood TDM Frameworks for 3-4 sub-areas
- Neighborhood Mobility Hub Conceptual Planning

Mobility and Transportation Innovations (MTI) Grant

- Funding for Mobility Hub Guidebook
- Funding for conceptual design and implementation of a pilot Mobility Hub in Burlington's Old North End neighborhood

SECORD (South End Coordinated Redevelopment)

- Goal to create one or two Mobility Hubs that can facilitate the City's and its partners' goal of creating a car-light urban district in Burlington's South End

THANKS!

Charles Dillard

Principal Planner/Interim Director

City of Burlington Office of City Planning

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Transportation Demand Management Action Plan

Strategies to Improve Transportation Options in Burlington

City of Burlington | August 2024

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Introduction

What is TDM?

Transportation Demand Management (TDM) refers to policies, programs, and services that reduce single-occupancy vehicle use by supporting and encouraging alternatives to driving alone. It is a broad category of tools and tactics that can include financial incentives, marketing efforts, educational programs, pricing mechanisms, regulatory tools, mobility services, and parking policies—all of which contribute to a more balanced, accessible, and equitable transportation system. Benefits of TDM include:

- Easing roadway congestion and reducing greenhouse gas (GHG) emissions by reducing rates of vehicle travel
- Providing more transportation options by making non-driving modes easier to use, more convenient, and more reliable
- Supporting affordability by reducing regional parking demand and reliance on automobiles, which in turn reduces housing construction costs

What is the Transportation Options Study?

Beginning in 2020, the City of Burlington adopted a series of policy reforms to right-size vehicle parking requirements for new developments and reduce reliance on single-occupancy vehicle use. These reforms have included eliminating minimum parking requirements (first in certain neighborhoods, and then citywide in 2023), adopting new parking maximums, and expanding Transportation Demand Management (TDM) requirements for new developments. Together, these policies are designed to help achieve the City's mobility, sustainability, and housing affordability goals.

In 2023, the City initiated a year-long planning effort called the Transportation Options Study (TOS), which was led the Office of City Planning (OCP) and included collaboration and support from City staff, community members, and many local and regional partners. The goals of the TOS were to:

1. **Evaluate the City's TDM program and transportation needs.** Based on this evaluation, the TOS would formulate actionable recommendations to enhance and expand current TDM strategies and requirements to better support the City's near-term and long-term goals.
2. **Identify opportunities to expand TDM beyond new development.** Today, TDM requirements in Burlington only apply to new developments. While those requirements are essential for creating more affordable and sustainable transportation options in parts of Burlington where new development is occurring, they provide limited benefit for people who live, work, or go to school in other parts of the City. By identifying opportunities to expand the City's TDM program beyond new development, the TOS would help extend the benefits of TDM and sustainable transportation options to more people across the City and region.

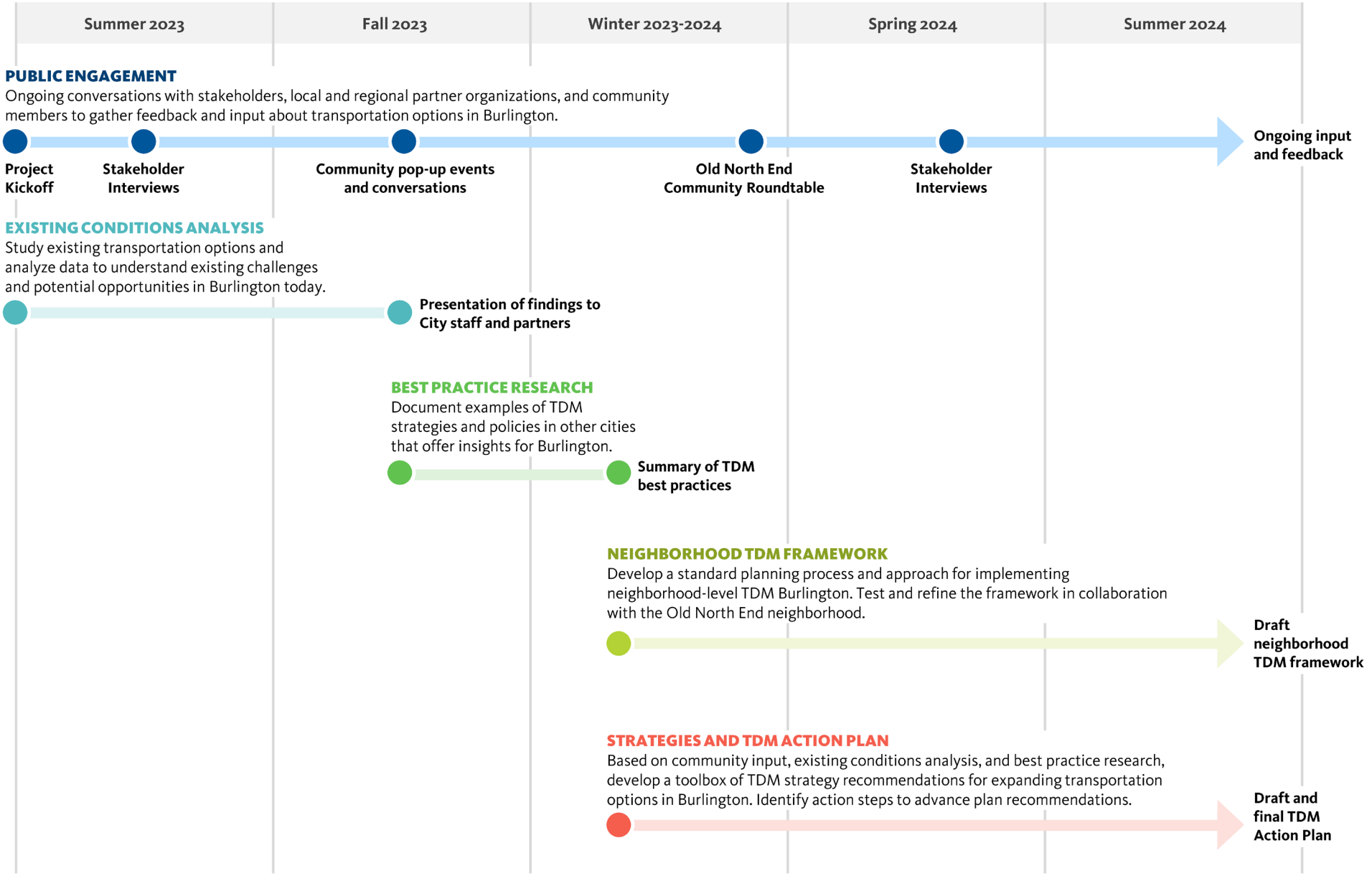
3. **Explore models for neighborhood based TDM.** The TOS would create a framework and strategies for implementing TDM at the neighborhood level, which would help address the unique and diverse range of transportation and mobility needs facing different communities throughout the City.

What is the TDM Action Plan?

This **Transportation Demand Management Action Plan** is the culmination of the TOS study. It features a comprehensive set of strategies and recommendations for improving transportation options in Burlington, as well as a set of action steps for advancing and implementing each of those strategies. The plan includes:

- **Chapter 1: Existing Conditions.** A review and summary of Burlington's current transportation policies, services, options, and management tools.
- **Chapter 2: Engagement Summary.** Lessons learned through community input, public events, and stakeholder conversations.
- **Chapter 3: TDM Strategy Recommendations.** A series of strategy recommendation "cut sheets," including action steps for implementation.
- **Chapter 4: Neighborhood TDM Framework.** A recommended process and toolbox of tactics for implementing TDM at the neighborhood level.

Project Timeline



Chapter 1: Existing Conditions

People who live in, work in, study in, and visit Burlington have a range of options to choose from to get around the City and meet daily travel needs. While existing transportation options work well for some, others face mobility barriers, have limited transportation options, or encounter gaps in the transportation network. This chapter summarizes the existing transportation options and travel patterns in Burlington today, as well as the policies, regulations, management frameworks, implementation strategies, and funding mechanisms that support transportation demand management. For additional information about existing conditions related to transportation options and TDM, see Appendix A.

Existing Conditions Themes, Challenges, and Opportunities

Communication and coordination: For people who live in, work in, study in, and visit Burlington, daily travel needs and patterns frequently extend beyond the boundaries of the City. Key partners in TDM, including the Chittenden Area Transportation Management Association (CATMA) and Green Mountain Transit (GMT), are regional organizations whose programs and services are not confined to Burlington alone. To successfully expand transportation options in Burlington and extend TDM beyond the development code, Burlington should increase efforts to communicate and coordinate with local and regional partners. The City is well-positioned to convene conversations and make connections between neighborhood, city-wide, and regional partners who are working to implement TDM.

Environmental sustainability: Stakeholders note that supporting sustainability and investing in programs that make the City more resilient to the effects climate change is a key priority for the community. TDM is a powerful tool that can help achieve climate goals and reduce regional greenhouse gas emissions associated with greenhouse gas emissions.

Driving and parking: While rates of biking, walking, and transit use in Burlington are high compared with regional and state averages, driving alone remains the most popular travel mode for commuters. Recent parking reforms are a key step towards a more balanced transportation system, but the widespread availability of cheap and/or free parking continues to be an obstacle for TDM.

Funding and resources: Both GMT and CATMA are key regional partners in implementing TDM and expanding transportation options, and both face staff capacity and funding constraints. There are opportunities for the City to build stronger relationships with these organizations, identify new funding sources for TDM efforts and mobility services they provide, and supply additional staff capacity to help manage TDM programs and services.

Challenges with development-focused TDM: Developers expressed interest and support for TDM strategies, but often lack experience, resources, and partnerships needed for achieving meaningful results. Furthermore, many community travel needs are not equitably addressed through the current development-focused TDM approach, such as shift and service workers, low-income populations, and new immigrant communities.

Existing Plans and Policies

A range of plans, studies, policies, and regulations continue to shape how TDM is implemented and how parking is managed in Burlington today. A brief description of these documents and their relevance for the Transportation Options Study is summarized in Table 1.

Table 1 Plans and Policies Reviewed

Plan	Overview	Relevance for TOS
Downtown Parking Study (2023)	Evaluation of existing parking supply in the Downtown area, including supply, utilization, and potential to absorb the loss of on-street parking on Main Street that is anticipated as part of Burlington's Great Streets project.	TDM/TOS can help achieve goal of using existing parking supply in the downtown area more effectively and efficiently. TDM/TOS strategies can help to address safety concerns, user-experience challenges, and public perception issues related to downtown parking garages.
Joint Institutional Parking Management Plan (2023)	Agreement that addresses Hill Institution parking needs and management strategies, including parking shuttles.	The latest update to the JIPMP emphasizes the role of TDM in achieving parking management goals and overall mobility vision. The TOS can help identify specific opportunities to achieve these goals and implement TDM.
Old Spokes Home One Mobility Audit (2021)	Findings from Old North End mobility audits, which included surveys, focus groups, and other research and engagement methods.	TDM can help advance recommendations including traffic calming measures, enhanced bus stops, improved pavement and sidewalks, installation of protected bike lanes, wheelchair-accessible crosswalks, and more timely maintenance of roads and sidewalks
North Winooski Ave Corridor Project (2020)	Plan for enhancing safety and multimodal mobility along Winooski Avenue in alignment with the City of Burlington's Complete Streets initiative and PlanBTV comprehensive plan.	TDM can help achieve plan goals of improving safety, convenience, and modal accessibility while supporting community needs and economic development.
CATMA Strategic Plan Overview (2020)	CATMA plays a central role in managing and implementing TDM in Chittenden County. The strategic plan summarizes CATMAs organization priorities and potential gaps.	The TOS is a critical opportunity for the City to coordinate with CATMA on TDM implementation and mobility management. The TOS can also help address some of CATMAs strategic plan focus areas, including partnerships, performance monitoring, resources, and inter-organizational communication.

Plan	Overview	Relevance for TOS
NetZero Energy Roadmap (2019)	Plan that outlines strategic methods, milestones, and recommendations for reducing and eventually eliminate fossil fuel use in heating and ground transportation sectors by 2030.	TOS recommendations can build on NetZero Energy Roadmap recommendations and help regional transportation-related GHG emissions.
PlanBTV: Walk/Bike (2017)	Citywide plan for supporting walking and biking in Burlington. Goals include creating safer streets, promoting vibrant neighborhood centers, and integrating cycling with public transit.	TDM strategies can help advance Walk/Bike recommendations including enhancing neighborhood amenities, utilizing pilot projects to improve mobility, and addressing safety goals through the Vision Zero framework.
VTrans Transportation Demand Management Guidance (2017)	State-level guidance on estimating vehicle trip reductions from TDM measures in new developments and adjusting impact or mitigation fees. Identifies steps for developers to obtain trip reduction credits, recommended TDM trip reduction measures, and monitoring/compliance guidelines.	TDM recommendations in the TOS should incorporate relevant elements from the state-level framework, and should be compatible with monitoring/compliance guidelines.
Downtown Parking Management Plan (2015)	Downtown area plan that recommends a "smart use" approach to parking management that emphasizes TDM, shared parking, and multimodal access.	The TOS builds on the approach and philosophy outlined in the plan. Strategies in the TOS should reflect the essential interdependence of parking management and TDM implementation.
City Employee Transportation Demand Management Action Plan (2015)	Plan for incentivizing City employees to choose sustainable transportation options for work commutes. Identifies a menu of short- and long-term strategies that include providing universal transit passes, flextime/telework policies, and charging for parking.	The TOS should build on the successes of the City employee TDM action plan and help can fill gaps where those recommendations have not yet been implemented.
City of Burlington Comprehensive Development Ordinance (2014 - 2024)	Key code sections include Article 8.1.16, which identifies TDM requirements for new developments including outreach and education, a TDM Coordinator role, carshare memberships, transit passes, parking studies, and priority parking allocation for shared modes.	A key objective of the TOS is to expand TDM beyond the development code and identify strategies for addressing barriers to TDM implementation, including technical assistance for ongoing TDM operations and impacts of TDM requirements on development affordability.

Existing Transportation Options

Bus and Shuttle Services

Green Mountain Transit (GMT) operates 16 bus routes in Burlington and across the region. Fares are $2.00 for a single ride with fare caps by day ($4.00) and month ($50.00). Discounted fares are available for youth, elders, Medicare cardholders, and persons with disabilities. Bus stop amenities vary, with some locations including only a sign pole while others include shelters, seating, and lighting.

The COVID-19 pandemic has had a significant impact on GMT operations. From March 2020 until May 2024, GMT paused fare collection on all services, which significantly reduced the agency's operating income. Evolving commute patterns and increased hybrid work arrangements have led to reduced ridership on some routes compared with 2019 levels, though others have rebounded or exceeded 2019 levels. Combined, these changes have created financial and operational impacts that present challenges for the agency. Nonetheless, GMT continues to test new strategies for meeting regional mobility needs efficiently and effectively, including an on-demand microtransit service pilot project in Montpelier.

Shuttle Services

A variety of shuttle services operate in Burlington, including the UVM On Campus Bus (CATS Bus), the Champlain College Shuttle Bus, hotel shuttles, and medical center shuttles that provide connections to designated park-and-ride locations. Shuttle services are operated through contracts with third-party service providers and are generally not open to the public.

Figure 1 GMT Bus Route 8 on North Street at N. Winooski Ave

Figure 2 Examples of GMT bus stops in Burlington

Some stops in Burlington include shelters and seating. In the downtown area, some stops also include bollards (right) that protect people waiting at the stops from moving vehicles.

Biking, Walking, and Rolling

Biking, walking, and rolling can both be healthy, inexpensive, and flexible ways to get around. However, these travel options can be unappealing or infeasible for some people depending on age, physical ability, weather, distance, trip purpose, and condition of walking and biking infrastructure. In some areas, Burlington's sidewalk and bicycle facilities are in good condition and are designed to accommodate people of all ages and abilities. In other parts of the city, network gaps and condition may make it challenging, unappealing, or unsafe for some people to walk or bike (Figure 5 and Figure 6).

As of 2021, rates of biking (6%) and walking (19%) for work commutes were higher than state and regional averages (Figure 1). Rates of biking were higher for men (8%) than they were for women (4%), while rates of walking were higher for women (22%) than for men (17%) (Figure 4). TDM strategies can help increase overall rates of walking and biking by providing education and training, prioritizing network improvements, and expanding incentives for sustainable travel modes.

Figure 3 Commute Mode by Geography (2021)

Source: American Community Survey 5-year Estimates

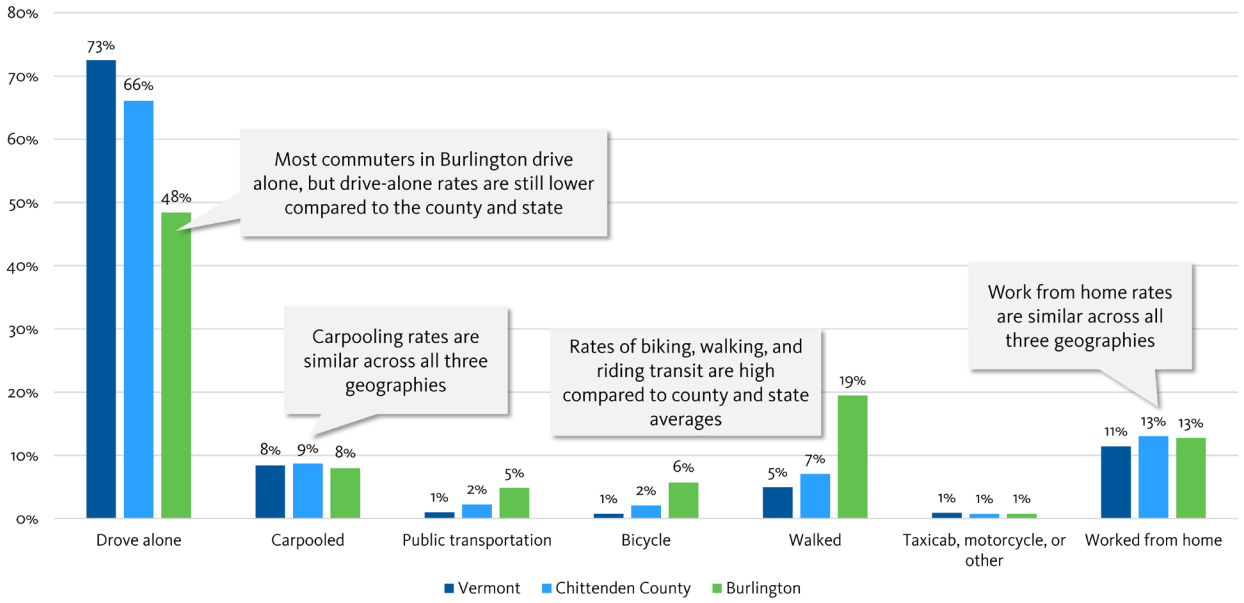
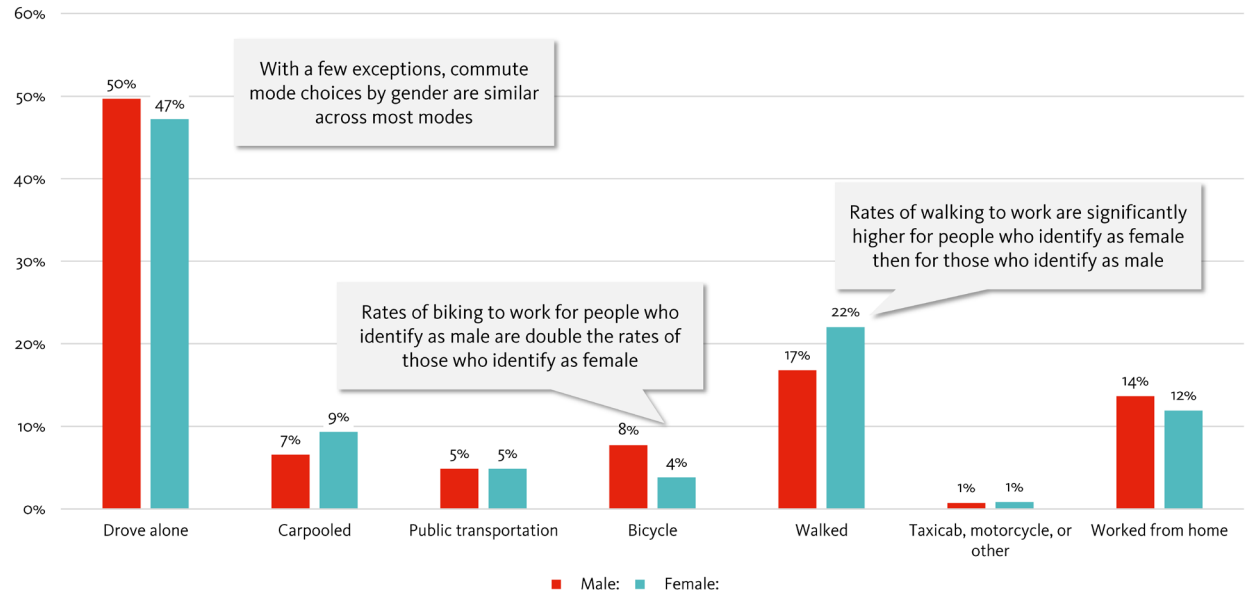


Figure 4 Commute Mode by Gender (2021)

Source: American Community Survey 5-year Estimates



In 2023, the company Bird launched a dockless electric bike share service in Burlington, which offers point-to-point rides via a fleet of 120 electric bicycles. Riders pay a fee of $1 to unlock, and then $0.49 per minute to ride. During the first year of operation, the service saw 5,200 unique users who took over 27,000 trips. On average, trips were 1.25 miles in length and lasted for 10.3 minutes.

Figure 5 Examples of bicycle facilities in Burlington

Bicycle facilities in Burlington include a variety of types and designs. Some, like dedicated bike lanes with painted markings at intersections (left), support a wider range of ages and abilities. Others, like "sharrow" indicators (right), offer little to no safety protection or priority for people who bike.

Figure 6 Pedestrian crossing near Roosevelt Park

Marked crossings with flashing beacons to alert drivers can help support pedestrian safety, especially near busy destinations such as parks, schools, commercial areas, and medical facilities.

CATMA operates the Walk/Bike Rewards program to incentivize walking and biking to work. Participants in the program use an app to log walking or biking commutes and receive a $15 gift card after recording 48 one-way trips within a 60-day period.

Several community-based organizations offer services and programs that also support bike use in Burlington. Old Spokes Home offers bicycle sales and repair services and operate a range of community programs, including the Everybody Bikes program. Though the program, people who qualify based on income can receive steep discounts on bicycle purchases, accessories, and services. Local Motion is a state-wide organization that provides bicycle rental services and advocates for policies and programs that support walking, biking, and rolling.

Shared Mobility Services

Car share service

CarShare Vermont, a nonprofit based in Burlington, offers short-term car rental services to the community, providing convenient driving options and reducing the need for owning a vehicle. This resource aligns with local TDM programs, often partnering with CarShare Vermont to offer discounted rates and promote sustainable transportation alternatives.

Figure 7 CarShare Vermont vehicle and parking space

CarShare Vermont operates a fleet of shared vehicles throughout the Burlington area.

Carpool and Vanpool

CATMA and the Hill Institutions in Burlington offer incentives and support for carpooling and vanpooling, aiming to reduce SOV trips and alleviate congestion. Programs like Go!Vermont provide subsidies for vanpool costs, making shared transportation more accessible and affordable for residents. There is considerable interest in expanding vanpool services to enhance the transit network and reduce emissions from SOVs.

Transportation Network Companies (TNCs)

TNCs like Lyft and Uber have been operating in Burlington since 2015 and 2018, respectively. These services offer alternatives to traditional taxi services and/or private vehicle ownership, contributing to efforts to reduce car dependency and encouraging transportation alternatives.

Parking and Curb Management

Burlington's parking system—including the on-street and off-street parking supply, parking regulations, and the City's parking management practices—has a major impact on how people choose to travel into, out, of, and within the City. When parking is cheap and plentiful, it can be difficult to incentivize people to choose other driving modes. Pricing parking so that it accurately reflects demand and recoups parking operations and management costs is a critical step towards balancing transportation choices. Parking revenue from on-street meters, off-street priced parking, and permit programs can be an important funding mechanism for TDM programs and citywide transportation options.

On- and Off-Street Parking Supply

Burlington's public parking supply includes a range of on- and off-street spaces that are managed and regulated using a variety of tools such as time limits, hourly pricing, and permits. Priced parking in both on- and off-street spaces is implemented using a combination of physical "smart" meters as well as app-based payment systems through the ParkMobile smartphone application.

Parking rates are set in the Municipal Code and vary by location and time of year, with hourly rates in most on-street spaces and surface lots starting at $1.00 per hour. In publicly owned downtown garages, hourly rates increase for longer stays up to a daily maximum of $12.00 - $14.00. Monthly permits are available for $84 - $120 per month. Parking revenue supports parking operations and capital costs.

In recent years, downtown stakeholders and members of the public have highlighted concerns about public safety at or near downtown parking garages, including the Downtown Garage and the Marketplace Garage. As a result, City staff and stakeholders have observed increase demand for on-street parking.

Downtown Parking Study (2023)

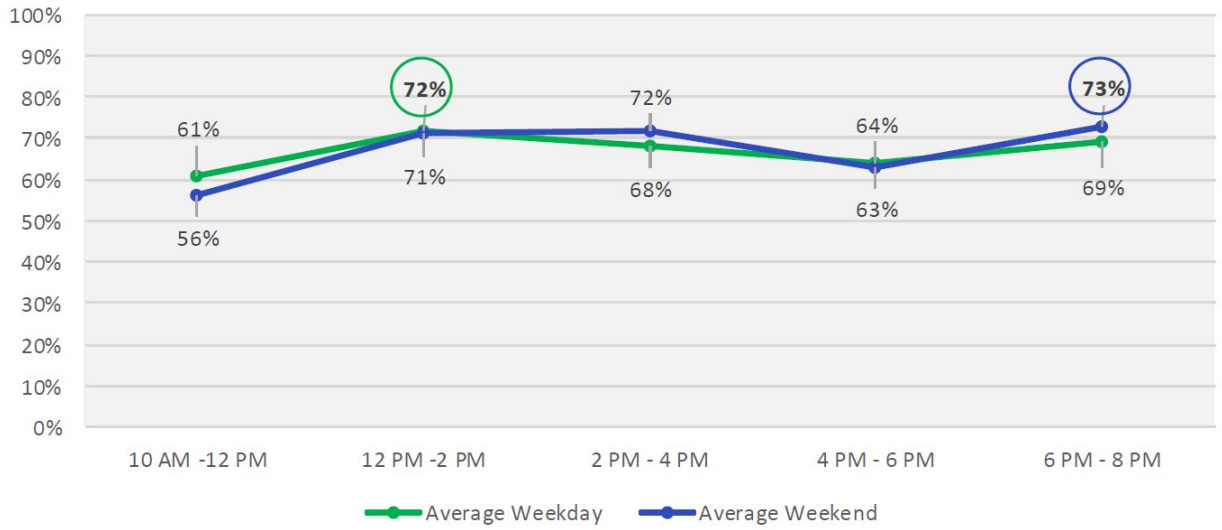
In 2023, the City completed a parking study focusing on the core downtown area. As part of the study, the City collected data including parking supply inventory, parking occupancy at different times of the day and days of the week, and parking turnover/duration of stay in several high-demand locations. The study found

that even at peak times, there are hundreds of empty spaces in the downtown area. Recommendations from the study included:

- Continuing to advance shared parking policies and programs
- Invest in management strategies and technology to use existing parking supply more effectively
- Expanding TDM programs to maintain a balanced transportation system

Figure 8 Downtown Study Area Parking Utilization, Weekday vs. Weekend

Source: 2023 Downtown Parking Study



Hill Institution Parking Management

Champlain College, the University of Vermont, and the University of Vermont Medical Center are required by Burlington's development ordinance to participate in a cooperative agreement for managing parking and transportation needs. This agreement, known as the Joint Institutional Parking Management Plan (JIPMP), is prepared and submitted every five years with updates submitted annually. The JIPMP documents the parking supply, projected parking demand, and planned parking management approach for the three Hill institutions. CATMA typically provides support to prepare each iteration of the JIPMP and annual updates.

In addition to parking management strategies, the latest iteration of the JIPMP, approved for 2023 – 2028, highlights the important role that TDM plays in addressing and managing parking demand for the Hill institutions, including:

- Bike Share discounts
- Bike/Walk rewards programs
- Carpool and vanpool services
- CarShare Vermont campus programs
- The "Commuter Champion" rewards program
- Education and marketing efforts

- The Guaranteed Ride Home program
- Off-site parking, served by institutional parking shuttles
- Transit discount programs

Figure 9 Estimated Hill Institution Parking Supply and Demand, 2028

Source: 2023-2028 Joint Institutional Parking Management Plan

	Champlain College	UVM	UVM Medical Center
Future Conditions			
Potential Users	2,990	17,820	9,427
Total Peak Parking Demand	992	4,988	2,145
Total Parking Supply	642	5,693	2,500
Net Spaces Peak Demand	-350	705	355

TDM Regulations, Implementation, and Funding

Burlington Comprehensive Development Ordinance

The City of Burlington Comprehensive Development Ordinance (CDO) serves as the primary framework for TDM regulations within the City. The TDM requirements in the ordinance, defined in Chapter 8.1.16, apply exclusively to new developments and projects, and vary based on project size and affordability (Figure 10). Depending on the project type, TDM programs must include a combination of:

1. Outreach and Education, including the designation of a TDM coordinator
2. At least two out of five TDM programs:
   - Membership in a TMA
   - Provide GMT transit passes at a 50% discount
   - Provide free car share membership
   - Provide free bike share membership
   - Provide shuttle service, implement a guaranteed ride home, or otherwise provide rides to a nearby transit center
3. TDM-supportive parking management strategies
4. A signed letter of TDM commitment

Figure 10 Burlington TDM Requirements by Project Type

Source: City of Burlington Comprehensive Development Ordinance, Chapter 8.1

Table 8.1.16-1 Transportation Demand Management Program Required			
	Applicable Projects	**Affordable Projects**	**Small Projects**
Project Type	• Creation of 10 or more dwelling units • A non-residential or Mixed Use development with a building footprint of eight thousand (8,000) sq.ft. or more; or the creation of fifteen thousand (15,000) sq.ft. or more of gross floor area	Projects involving one or more "Applicable Projects" and that also contain at least 75% of dwelling units meeting or exceeding the affordability criteria of Article 9, Inclusionary & Replacement Housing, or housing rented to tenants receiving federal or state rental assistance	Creation of five (5) to nine (9) dwelling units
Applicable TDM Sections	All provisions of Sec. 8.1.16 (c)	Sec. 8.1.16 (c) 1. and Sec. 8.1.16 (c) 4. only	Sec. 8.1.16 (c) 3. b. only

State and Regional Regulations

Although there are no state or regional TDM requirements in place, the Vermont Transportation Authority (VTrans) maintains guidance for implementing local TDM programs. In addition to identifying recommended measures and policy frameworks, the guidance document includes a detailed table of recommend trip reduction allowances that may be granted as part of local transportation impact analyses as well as recommended approaches for monitoring and enforcing TDM programs.

Chittenden Area Transportation Management Association (CATMA)

CATMA is a membership-based 501(c)(3) non-profit organization focused on implementing TDM programs throughout Chittenden County. Services and functions implemented by CATMA include:

- Managing and submitting regular updates to the JIPMP
- Managing contracts with mobility service providers, including Bird bike share
- Conducting periodic TDM and transportation-related surveys and data collection efforts
- Implementing TDM programs including the Guaranteed Ride Home program (GRH), the Go Green rewards program, the Bike Walk rewards program, carpool ride matching services, and a variety of multimodal discount programs for CATMA members

Local, Regional, and State Funding for TDM

Today, dedicated funding sources for TDM programs in Burlington are limited. Local sources include general fund allocations and certain parking revenues. Regional sources include CATMA member dues and CCRPC funding, which can support TDM and transportation planning but cannot be used to fund TDM programs or capital investments. Beyond funding support for GMT and for general statewide transportation infrastructure, state-level TDM funding is limited to vanpool incentives provided through Go!Vermont.

Figure 11 State, Regional, and Local Funding Sources for TDM

State Sources	Regional Sources	Local Sources
Go!Vermont (VTrans) ▪ State provides funding ($700 per month) toward vanpooling ▪ No other TDM funding currently available	**CCRPC** ▪ MPO provides competitive funding/grants for planning, education, marketing ▪ Cannot fund programs ▪ Provide grant application assistance **CATMA** ▪ Membership dues	**Parking Revenue** ▪ Garages/lots, meters, tickets, RPP permit fees ▪ 70% of parking fees collected through Parkmobile ▪ Revenue used for capital costs/debt servicing, management, and enforcement **Other** ▪ General fund contributions

Chapter 2: Engagement

The Burlington City Council has declared that a climate emergency exists which threatens Burlington's community and human health and safety, biodiversity, and common environment. Emissions in Vermont have risen since 1990, with the largest increases coming from the transportation sector, which also accounts for the largest share of greenhouse gas emissions in both the City and State. This climate emergency declaration calls for the reduction of vehicle miles traveled (VMT) through transportation demand management (TDM). The City additionally recognizes that TDM programs improve equity for the Burlington workforce by providing financial and other benefits for Burlington residents and workers who do not own automobiles – a population that is disproportionately low-income, Black, Indigenous, and people of color.

Background

In 2020, the City revised minimum on-site parking standards in its zoning ordinance to implement a number of policy best practices to support housing creation and transportation options. These zoning changes created the Multimodal Mixed Use Parking district, requiring no minimum on-site parking and establishing lower maximum parking thresholds than other parking districts in the city. Additionally, the zoning changes established new TDM requirements for developments within this parking district and over a certain size; these strategies built on the city's existing requirements for on-site bike parking and for parking management plans by the major academic and medical institutions.

In 2022, the Burlington City Council is considering expanding upon these policies by eliminating minimum on-site parking requirements citywide, relying instead on its maximum parking limits, and expanding TDM requirements to new developments of a certain size in all parking districts. Separately, the City is currently working with the Chittenden County Regional Planning Commission to complete a transportation impact fee study to update the city's existing impact fee system, including exploring the possibility of a multi-modal impact fee. The parking standard amendment to the Comprehensive Development Ordinance will be reviewed and adopted or rejected by late October, 2023.

Some of the largest institutions and employers in Burlington, such as the University of Vermont, have extensive TDM programs that include charging for parking and offering incentives to support other modes of transportation to and from those institutions. The Chittenden Area Transportation Management Association (CATMA) was created in 1992 to assist these agencies to share resources and jointly plan, develop and manage transportation systems and programs. CATMA has since evolved to serve as a non-profit, member-based transportation management association serving Chittenden County, VT. In 2014, the City commissioned a consultant with CATMA to study and propose a City Employee TDM Action Plan. This plan was released in October 2015 to reduce congestion, emissions, downtown parking demand, and encourage healthy choices by City staff through recommendations covering the short term (3 years or less) and long term (4 years or more), as well as ongoing capital and administrative improvements. Many strategies identified in this 2015 plan have not yet been implemented.

Through a collaboration between the City and the Burlington Business Association, further research and analysis was completed in 2017 to inform a pilot and intended implementation plan for a suite of TDM services for other downtown Burlington employers and employees. Many employers in Burlington have no TDM policies or strategies in place, and by implementing such policies and strategies, those employers could facilitate the use of more sustainable modes of transportation among those travelling to and from their physical location. This collaboration anticipated that a primary mechanism for developing and funding a downtown TDM program would have been through the creation of a Downtown Improvement District. The creation of a DID, however, was rejected by the Burlington voters in 2019.

Engagement Goals + Strategies

Goals:

1. Engagement should build strong relationships between the City, Nelson\Nygaard, and the broadest possible cohort of stakeholders.
2. Engagement should be conducted using accessible, equitable and appropriate language and tools, according to each task's specific audience
3. Engagement should uncover and identify what matters most to Burlington's people and businesses.

This public input summary documents feedback gathered through the following approaches:

Engagement Strategy 1: Visual Preference Boards

Visual preference boards were used to provide education and gauge preferences related to TDM tools and strategies. Between June and August of 2023, City of Burlington staff tabled at five established community events across the city's neighborhoods, engaging with approximately 105 households.

- Juneteenth
- Farmers Market (2)
- Beach Bites
- VPOP World Car Free Day

Figure 12 Event-Based Engagement Materials for the Transportation Options Study

Engagement Strategy 2: Surveying

CATMA performs a yearly Transportation Survey each fall to 16 organizations, typically receiving over 2,000 responses each year. The purpose of this survey is to better understand employee travel behavior and evaluate trends and improvements to sustain transportation options, services, and resources from CATMA members. Additionally, the City of Burlington released a survey that was open to City of Burlington residents as well as CATMA members who are not otherwise surveyed annually by CATMA. This survey asked questions similar to those in the CATMA survey, and was intended to supplement the responses from CATMA organizations.

Engagement Strategy 3: Stakeholder Interviews

City staff and Nelson\Nygaard conducted small group stakeholder interviews to collect feedback on current parking and TDM requirements, perspectives on parking and TDM more generally, and the broader mobility needs of residents and commuters.

From August to October 2023, City Staff conducted 24 interviews representing the following stakeholder group types:

Stakeholder Group	Organization or Agency
Underserved Community Advocates + Representatives	▪ Green Mountain Transit ▪ City of Burlington Aging Council ▪ AARP ▪ AALV ▪ Walk to Shop
Local Mobility Providers + Departments	▪ BTV Public Works Traffic Team ▪ BTV Public Works Leadership Team ▪ CCRPC Staff ▪ CarShare Vermont ▪ Green Mountain Transit (GMT)
Housing Developers	▪ Farrell Properties ▪ Champlain Housing Trust ▪ Cathedral Square
Employers	▪ University of Vermont UVM Medical Campus ▪ Champlain College ▪ Rhino Foods
Cyclist & Pedestrian Advocacy	▪ Vermonters for People Oriented Places ▪ Local Motion ▪ Burlington Walk\Bike Council

Engagement Strategy 4: Working Group

The working group is made up of key members of Burlington's existing TDM Ecosystem. In addition to providing feedback through the stakeholder interview process, members worked with city staff to coordinate additional interviews with partners.

The working group consists of the following members:

- Ann Bourdon, CarShare Vermont
- Will Clavelle, City of Burlington Business and Workforce Development
- Chris Damiani, Green Mountain Transit
- Bryan Davis, CCRPC

- Jen Green, Burlington Electric Department
- Scott Gustin, City of Burlington Department of Permitting and Inspections
- Katie Martin, CATMA
- Jonathon Weber, Local Motion

Key Findings

Survey Data: Travel Behavior

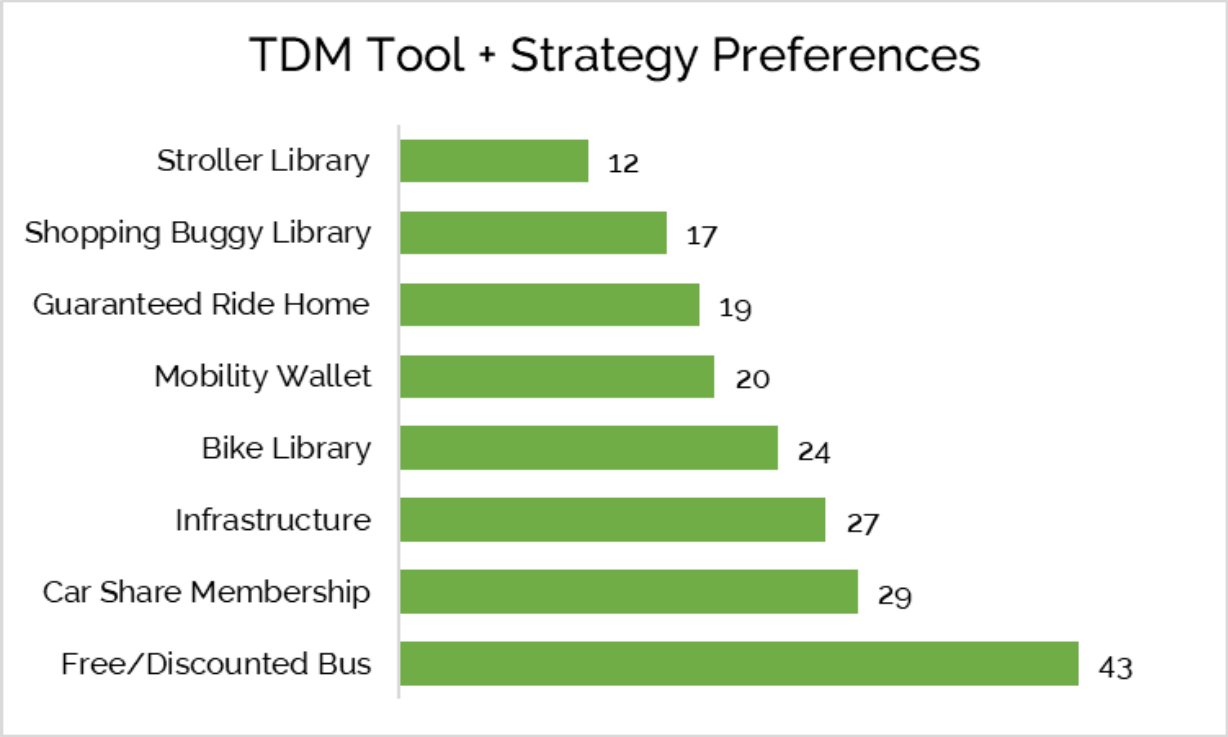
Commuting to work: When asked about the primary mode of commuting to work, the majority of respondents in both surveys indicated that they drive alone in a car, truck, van, or SUV. Other popular modes of transportation included walking, taking public transportation, or cycling. When asked what modes they would be likely to use to travel to work if driving was not an option, respondents indicated that they would prefer to either get dropped off by a friend or family member, carpool or vanpool, or utilize the public bus. When asked what factors were most important when choosing how they got to work, the top responses were travel time, convenience, environmental impact, cost, and ease of use (19%).

Other travel needs: When asked how respondents travel to shops like grocery stores and pharmacies, the 45% of respondents indicated that they drive alone, followed by walking (23%). Factors for deciding transportation modes unrelated to commuting into work were travel time, environmental impacts, and convenience. When asked what modes they would take if they could not drive alone, respondents indicated that they would walk, utilize the public bus, or bicycle.

Preferred TDM Strategies: City of Burlington staff used both the supplemental survey as well as visual preference boards to provide education about what Transportation Demand Management was as well as what strategies can be utilized. Out of eight TDM options, the most popular strategy that respondents wanted to see were free or discounted bike passes, Car Share memberships, and improved infrastructure around the city.

Figure 13 Community Support for TDM Tools and Strategies

Number of community responses indicating support for various TDM tools and strategies (City survey, 2023)



Stakeholder Interview Themes

Following each stakeholder interview, Office of City Planning staff used qualitative data analysis methods to derive common themes. Sixteen themes were found and can be viewed in the attached table, with descriptions of the nine most commonly occurring themes below.

1. Stakeholders indicated that **TDM should focus on inclusivity and serving underrepresented populations,** while also acknowledging that the same populations have the highest need for cars. Specific affordable housing developments are home to residents that struggle to adapt to the car-free or car-lite requirements in place and are reluctant to let go of the vehicles that once provided security and temporary housing. Additionally, some historically underserved communities view owning a car as a milestone achievement or success indicator.

   Burlington's housing crisis remains an underlying theme across nearly every stakeholder interview, with some of the **biggest concerns for underrepresented groups being access to affordable grocery stores, jobs, medical care, and other important services.** As housing costs closest to Burlington's downtown and transportation hubs continue to rise, affordable housing is increasingly far away from jobs and essential services, resulting in a reliance on cars as a primary mode of transportation.

   Burlington's **existing public transportation network struggles to meet the needs of the city's aging population.** The limited resources for older adults to age in their own community results in

many Vermonters living in long term care facilities. Older adults in these situations without a vehicle often solely depend on services like SSTA or want to travel to destinations that are not on a bus route. Long-term care facilities, as well as other or organizations providing older adults essential services, must rely heavily on internal volunteerism from staff and residents. The mobility limitations faced by older adults exacerbate existing frustrations with one's own health, and can lead to social isolation. Stakeholders hope that TDM could help the city's aging population move beyond viewing a car as the key to independence.

2. **There is a negative perception of alternative transportation.** Advocates and residents shared that services and infrastructure related to alternative transportation modes (such as sidewalks, busses, and bike lanes) see less investment that car-centered amenities. Stakeholders expressed that they felt like they were "second class users" when sharing roadways with cars or waiting for the bus. This perception of status, in addition to other user experience frustrations, will cause people to turn away from or not consider using public transportation.
3. Stakeholders call for an **improved multi-modal network** that expands micro-transit options, improves walkability, and incorporates considerations for infrastructure maintenance. While Burlington's neighborhoods and commercial districts typically include sidewalks, lack of maintenance is a primary concern. Regarding bicycle infrastructure, separated facilities and an interest in incorporating e-bikes into a first/last-mile network are highlighted. While transit riders fairly consistently remark on their satisfaction with the service, a large portion of those surveyed do not use transit, suggesting a need for increased transit funding and planning, both within Burlington and the surrounding Chittenden County and state networks.
   - E-Bike challenges
   - GMT's current limitations
   - Regulatory Challenges
4. **Safety is a major concern** across all stakeholder interviews, and is a major reason as to why Burlington residents choose to drive. These concerns related to safety are echoed by AARP's 2022 Livability Survey, which found that the perception of lack of safety in the city to be a top concern of residents. However, GMT stated that that though there are common safety issues, the busses are not less safe. Employers across the city express that their employees feel unsafe or uncomfortable biking or walking to a destination, citing speeding vehicles and the lack of police presence along their routes as causes for concern.
5. Successful TDM emphasizes the **need for bike infrastructure, maintenance, and education.** Secure and sheltered bike parking, mobile repair units, protected bike lanes and facilities are all frequently cited by stakeholders and the public. Bike theft, a subset of a growing perception that public safety in Burlington is inadequate, has gotten worse in the last two years; it is clear that secure bicycle parking facilities, particularly for residents of multi-family residences and those who commute and/or travel by bicycle to non-work destinations are needed.

6. There are **concerns related to the return of GMT's bus fares.** GMT is faced with cutting back service or bringing back fare revenue, noting that the fare-free system is not currently sustainable. The new GMT fare structure will provide discounts to residents [6-16, over 60 and with disabilities and/or medicare]. The proposed fare will reduce the LINK (?) fare but will increase all other fares by $0.50 with monthly fares capped at $50 and daily fares capped at $4. Many organizations and residents advocated for GMT to remain fare-free, citing that many downtown residents or staff in downtown areas don't have cars and rely on the bus.
7. Outside of GMT, Burlington's **public transportation/mobility network is costly for users.** When GMT service is not available, non-driving, vulnerable residents turn to Special Services Transportation Agency (SSTA) and ride-sharing services like Uber and Lyft. SSTAis a vital link, if inadequate, and ridesharing is an expensive service that capitalizes on underfunding of public mobility infrastructure and services, ultimately leading to the high cost of moving around for many in Burlington. Looking forward, stakeholders and the public recognize the need for a more sustainable funding model for all mobility modes.
8. **There is a need for regional connectivity.** Burlington is the most populous city in Vermont's primary metropolitan region. Daily, there are significant movements of Burlington residents to points outside the city for work and play. The reverse is true as well, with Burlington as the region's and state's most important employment, commercial and tourism center. However, aside from limited inter-city public and private bus service, regional connectivity is a story of driving in low-occupancy vehicles. Stakeholders and the public alike cite regional connectivity as a major topic and impediment to managing transportation demand in Burlington.
9. **Employees and employers face transportation-related challenges.** From large, well-endowed institutions like UVM, UVMMC and Champlain College to white-collar and blue-collar employers, getting to work is often a story of massive parking demand; long, inconvenient commutes, and wasted time. Continued work to refine the institutional Joint Institutional Parking Management Plan to focus more holistically on TDM is an area to explore. For low-wage workers, micro-transit, public safety and improved infrastructure would be positive, life-changing developments.

Chapter 3: Recommendations and TDM Strategy Toolkit

Expanding transportation options in Burlington cannot be achieved by any single solution alone—it will require a coordinated and holistic package of near- and long-term TDM strategies. The TDM action plan includes a comprehensive toolkit of 22 TDM recommendations that are intended to be complementary and mutually-supportive. The strategies are organized into four general categories:

Transportation Options

Strategies to add, modify, or expand transportation services and programs

Regulations and Plans

New or updated regulations and plans to better support TDM

TDM Management and Funding

Strategies to expand TDM funding and management capacity

Neighborhood TDM Strategies

Neighborhood-level TDM programs, tactics, and services

How to use the strategy toolkit

The strategy Toolkit summarizes each strategy recommendation and identifies key action steps for implementation. Each strategy "cut sheet" includes:

- A brief description of the strategy
- The strategy applicability (citywide or neighborhood)
- A planning-level indication of relative strategy cost (based on a scale from $ to $$$$)
- A summary of key benefits for Burlington that the strategy would help achieve
- Recommended action steps for implementing each strategy, including near-term and long-term actions (where applicable) and key partnerships/collaborators
- For some strategies, best practice spotlights that demonstrate how similar strategies have been successfully implemented elsewhere and what might be learned from those examples

Summary of Toolkit Recommendations

Table 2 Summary of TDM Strategy Recommendations

= *key strategy*

ID	Strategy Recommendation	Citywide	Neighborhood	Relative Cost	Timeframe
T	**Transportation Options**				
T.1	Work with CarShare Vermont to expand carshare services and supporting programs.	✓	✓	$$$$	Near term
T.2	Work with CATMA to expand the Guaranteed Ride Home (GRH) program.	✓		$$$$	Near & medium term
T.3	Work with Go! Vermont to expand the ride matching/carpool program.	✓	✓	$$$$	Near term
T.4	Work with Green Mountain Transit to expand transit service, including piloting on-demand microtransit services in parts of Burlington that are not well-served by fixed route transit.	✓	✓	$$$$	Near, medium, & long term
T.5	Create shared stop guidelines and a unified shuttle program that combines and coordinates services offered by hill institutions, Green Mountain Transit, and others.	✓		$$$$	Medium & long term
T.6	Update the City of Burlington employee parking benefits program to incentivize sustainable commuting options.	✓		$$$$	Near term
T.7	Implement a sustainable travel choice information, education, and marketing program.	✓	✓	$$$$	Near & medium term
R	**Regulations and Plans**				
R.1	Update and expand Burlington's TDM requirements. Adopt a point-based requirement structure that includes additional TDM measures and provides flexibility for developers.	✓		$$$$	Near & medium term
R.2	Adopt a Commute Trip Reduction (CTR) ordinance that requires larger employers to implement TDM programs.	✓		$$$$	Near & medium term
R.3	Adopt neighborhood-based TDM plans using the neighborhood TDM framework.	✓	✓	$$$$	Near & medium term
R.4	Adopt a framework for creating parking benefit districts (PBDs) in Burlington.	✓	✓	$$$$	Medium & long term
R.5	Update the Residential Parking Permit (RPP) program.	✓		$$$$	Medium term

ID	Strategy Recommendation	Citywide	Neighborhood	Relative Cost	Timeframe
R.6	Develop and implement a downtown public realm safety plan.	✓	✓	$$$$	Medium & long term
M	TDM Management and Funding				
M.1	Hire or designate a TDM Program Manager/Coordinator.	✓		$$$$	Near & medium term
M.2	Expand funding sources for TDM programming, including parking revenue, transportation impact fees, and state/federal grant opportunities.	✓		$$$$	Near, medium & long term
M.3	Formalize and expand Burlington's partnership with CATMA to strengthen coordination and create opportunities for sharing resources.	✓		$$$$	Near & medium term
M.4	Expand public advisory roles for non-driving transportation issues, needs, and priorities by expanding the Walk|Bike Council or establishing a transit riders council.	✓		$$$$	Near term
N	Neighborhood TDM Strategies				
N.1	Establish a public bicycle/electric bicycle lending library.		✓	$$$$	Near & medium term
N.2	Establish community mobility hubs that combine mobility information and services in centralized locations. Partner with community organizations to create a neighborhood delivery program.		✓	$$$$	Medium term
N.3	Expand "walk-to-shop" programs that provide shopping trolleys and wagons, and create neighborhood trolley libraries.		✓	$$$$	Near term
N.4	Implement a "bus buddies" program that matches newly-arrived Burlingtonians with volunteers who accompany them on trips to/from work and appointments and teach them how to get around.		✓	$$$$	Near term
N.5	Pilot a neighborhood transportation wallet program that offers a flexible package of transportation discounts and credits.		✓	$$$$	Long term

T.1 | Work with CarShare Vermont to Expand Carshare Services and Supporting Programs

Strategy Overview

CarShare Vermont operates an extensive network of shared vehicles in Burlington, South Burlington, and Winooski. **Burlington should work with CarShare Vermont to expand the service** by adding more vehicles and carshare parking spaces, which would help broaden the impact of the service and address a wider range of mobility needs. Additional marketing and education efforts (see strategy T.11) would help more residents participate in the program.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Streamlining the permitting process for creating designated carshare parking spaces and adding requirements for shared vehicle spaces in new developments would help ensure that carshare spaces can be located close to key destinations and trip generators.

Benefits for Burlington

- Carshare helps meet transportation needs for households who have limited or no vehicle access. Currently, CarShare Vermont estimates that 90% of users are zero-car households.
- Carshare helps reduce the amount of parking needed throughout the City. Studies suggest that each carshare vehicle added can result in up to 15 fewer cars on the road.[1]
- Adding more vehicles and locations would expand access and would address a wider range of trip types and destinations for people who already have access to the service.

Recommended Action Steps

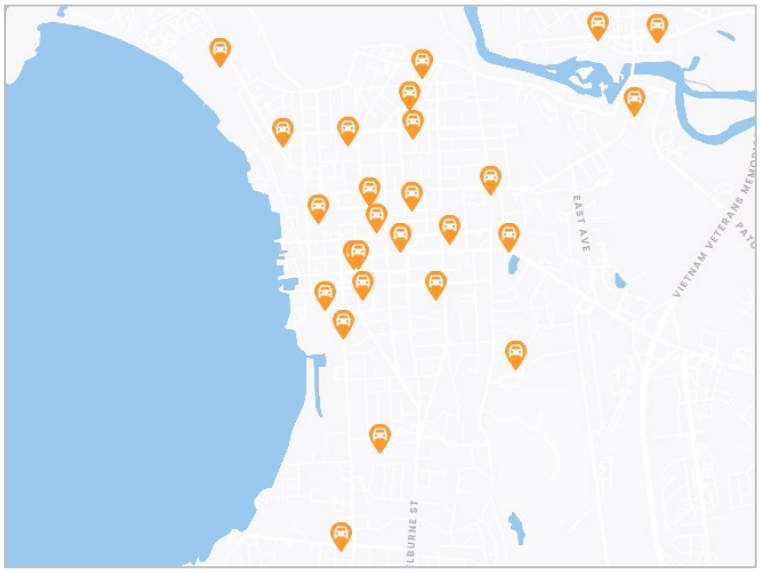
1. **Work with CarShare Vermont to identify specific areas and demographic groups where there is unmet demand or opportunities for car sharing.** Design and implement targeted outreach and education efforts that teach community members how to use carshare. Include translated materials into multiple languages. Partner with community-based organizations to distribute materials.
2. **Streamline the permitting processes for allocating carshare spaces.** Review current processes and procedures and, if feasible, grant the Department of Public Works director authority to designate carshare spaces as needed.

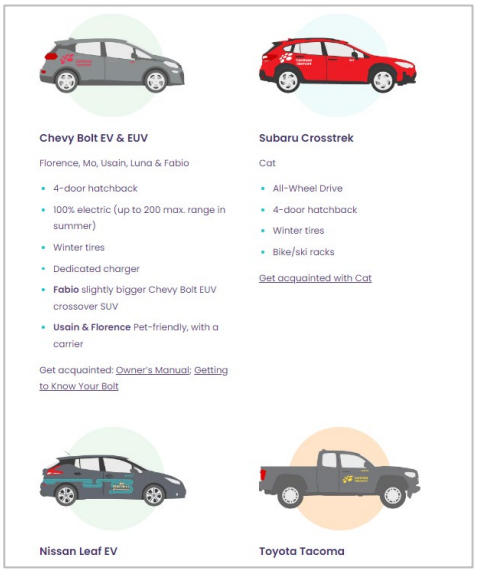
[1] NYC DOT Begins Major Expansion of On-Street Carshare After Successful Pilot

3. **Integrate carshare space planning into all neighborhood planning processes.** Consider demand, community support, location opportunities, and CarShare Vermont operational capacity.
4. **Update the City's development code to include requirements for shared spaces that can be used for carshare.** For each project that provides 20 or more off-street parking spaces, require that at least 1 out of every 20 spaces (rounded up) is reserved for carshare vehicles or carpool users. Allow developers to contribute funding to implement an equal number of off-site carshare spaces in the project vicinity (within ¼ mile) as an alternative to reserving on-site carshare parking.
5. **As funding becomes available, provide additional operating funds for CarShare Vermont.** Identify and allocate local funding sources that can support expanded operations and fleet growth.

Figure 14 CarShare Vermont service area and vehicles

CarShare Vermont operates a diverse fleet of shared vehicles in and around Burlington.





T.2 | Work with CATMA to Expand the Guaranteed Ride Home (GRH) Program

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

A Guaranteed Ride Home (GRH) program provides support for non-driving commuters by offering reimbursement for unplanned taxi or rideshare rides resulting from unexpected circumstances, such a health emergency, overtime at work, or disruption to regular transportation options. Currently, CATMA operates a GRH program that is available for employees of member businesses and institutions. **Burlington should partner with CATMA to expand the GRH program beyond CATMA members to include anyone who lives and/or works in Burlington.**

Benefits for Burlington

- Expanding the GRH program beyond CATMA members would extend the same benefits of GRH to more people who live and work in Burlington and rely on non-driving travel modes.
- By reducing the risk of becoming "stranded" or stuck without a ride, an expanded GRH program in Burlington would make non-driving travel modes more reliable and flexible, especially for caregivers and people with commutes that occur during times when reliable alternatives are limited (such as early in the morning, late in the evening, or on the weekend).

Recommended Action steps

1. **Establish a program structure and define equitable eligibility criteria for participants.** Define annual limits on number of rides or reimbursement value, qualifying travel modes, and circumstances warranting reimbursement. As budget allows, allow broad-based participation and flexible qualifications to maximize program impact. Apply higher limits on annual reimbursement for qualifying low-income individuals, who are less likely to have alternative travel options available and more likely to be constrained by the cost of a taxi ride home (Table 3).
2. **Draft an annual program budget and secure funding.** Allocate dedicated funding resources to support the program's operational costs and reimbursement payouts, including parking revenue. Coordinate with local taxi services and ride-sharing companies (Lyft, Uber) to identify potential opportunities for discounts for GRH reimbursements.
3. **Implement a user-friendly registration system.** Include a web-based registration and reimbursement management platform that integrates with other City permitting and parking management systems to streamline program management and administration.

4. **Develop and distribute marketing and education materials.** Partner with CATMA and local community-based organizations to raise awareness and encourage participation. Coordinate with major employers to register participants. Include program information in citywide education, information, and marketing materials (see Strategy T.7).

Table 3 Conceptual recommendations for an expanded GRH program

GRH Program Component	Recommendations
Qualifying participants	To qualify for program participation, applicants must: ▪ Use a non-driving commute mode at least twice per week (transit, carpool/vanpool, walking, biking) ▪ Live and/or work in Burlington
Annual reimbursement limit	▪ Standard limit: Reimbursement for up to 3 rides per year ▪ Affordable limit: Reimbursement for up to 6 rides per year for participants who qualify as low-income ▪ No dollar value cap
Qualifying circumstances	As currently defined by CATMA, allow reimbursement for the following circumstances: ▪ Unplanned overtime at work ▪ Medical care (personal or family member) ▪ Transit service disruption ▪ Carpool unavailable ▪ Extreme weather event (rain, snow)
Qualifying travel mode for ride home	▪ Taxi services ▪ Ride-sharing services (Lyft, Uber)
Program hours/span of service	▪ Do not limit reimbursable trips by time of day, to maximize benefit for shift workers and people who do not work 9-5 weekday jobs.

T.3 | Work with Go! Vermont to Expand the Ride Matching/Carpool Program

Strategy Overview

A carpool or ride matching program helps connect people to share rides who have similar commutes to work or school. Some ride matching programs use a web- or app-based service that allows participants to find compatible commute partners based on trip origin/destination and schedule. Some programs also provide mileage-based reimbursement or other subsidies to incentivize program participation.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Currently, Vermont residents have access to a carpool and ride matching program for work and school trips through Go! Vermont's trip planner. **Burlington should expand participation in Go! Vermont's ride matching program** by identifying participation gaps, implementing targeted marketing and education efforts, and contributing funding for additional rewards and incentives.

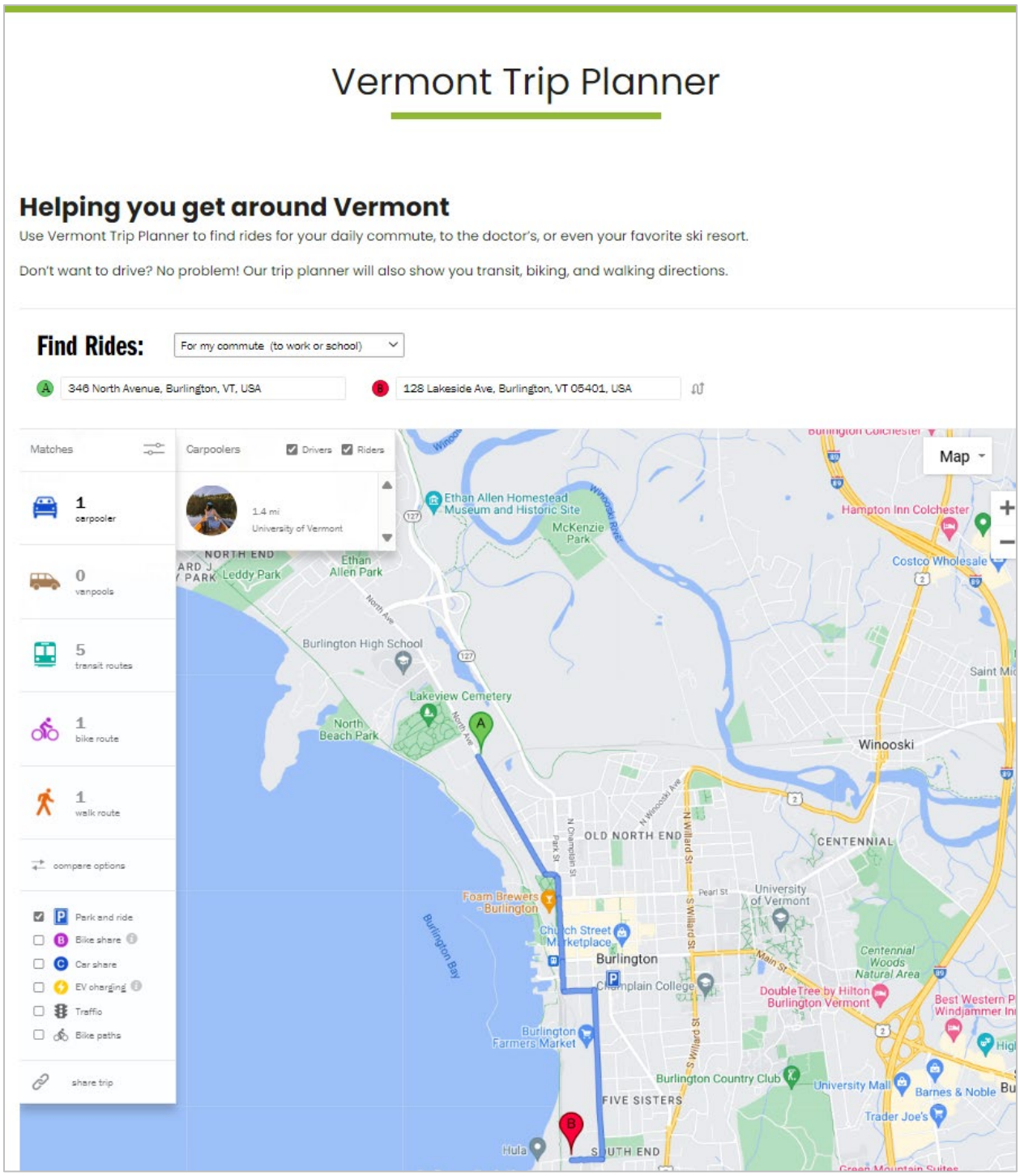
Benefits for Burlington

- Carpooling and ride sharing expands transportation options for people who live or work in places that are not served by transit or who have commute schedules outside the typical service hours, such as people who work late night shifts at Burlington's medical centers or shift workers at large manufacturing facilities in Burlington and neighboring communities.
- Carpooling and ride sharing also creates opportunities to strengthen community connections, especially for new residents to the region who do not yet have extensive networks of support.

Recommended Action steps

1. **Coordinate with Go! Vermont to evaluate gaps in participation.** Develop targeted messaging/awareness strategies, including educational resources and tools or materials that address language barriers for non-English speaking participants.
2. **Meet with local employers, schools, and community-based organizations** to increase awareness of the program, recruit participants, and create more opportunities for commute matches.

Figure 15 Go! Vermont's Ride Matching and Carpooling Platform



T.4 | Work with GMT to Expand Transit Service and Pilot Microtransit Service

Strategy Overview

Transit service can provide one of the most reliable, accessible, and affordable alternatives to driving alone, and there are many ways for TDM strategies to support and incentivize transit. Marketing and promotional campaigns, educational and trip planning initiatives, fare subsidies, and bus stop amenities can all make it easier for potential riders to choose transit. However, the benefits of transit-supportive TDM are limited in places where transit service itself is unavailable or the routes and schedule don't align with the needs of potential riders.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near, medium, & long term

In the near term, Burlington should collaborate with GMT to identify opportunities for the City to help address marketing, promotional, and communication needs while GMT remains focused on maintaining core service levels and addressing projected funding shortfalls.

In the medium and long term, work with GMT to assess gaps in local transit options and identify opportunities to add or modify fixed-route bus service to better serve local demand. In parts of Burlington where fixed route service is not viable, implement a microtransit service pilot to test the potential for on-demand service to help fill gaps. Alongside new investments in transit service, Burlington should continue to implement and expand transit-supportive TDM initiatives.

Opportunities to improve transit in Burlington include:

- **Improving transit information and wayfinding.** While GMT provides real-time bus routes and locations on the agency's website, they do not maintain a system map that simultaneously shows all bus routes available in Burlington. On-street wayfinding, including signs at and near bus stops, are limited. Community members report that navigating the transit system can be challenging for people who do not speak English. Burlington should help address these challenges with marketing, educational, and informational support. See related strategies T.7 (travel choice information, education, and marketing campaign) and N.5 ("Bus Buddies" program).
- **Providing subsidies for riding transit.** During the COVID-19 pandemic, GMT suspended fare collection on all services. The agency is in the process of re-launching fare collection with an updated fare structure and improved collection technology. After fare collection resumes, Burlington should continue to encourage/require new TDM plans to include transit fare discounts and subsidies as a priority strategy.
- **Improving bus stop amenities.** While some GMT bus stops in Burlington have a variety of useful amenities including bus shelters, seating, and information, others are very "bare bones" with

nothing more than a small sign indicating the stop location. Burlington should adopt bus stop design standards that set the minimum level of amenities that should be provided at all stops within the City. Improvements should be implemented as funding allows, and may be implemented as part of neighborhood-level planning processes.

Benefits for Burlington

- Improved transit service that is supported with complementary TDM strategies can provide a reliable, accessible travel option that is available year-round.
- Transit-supportive TDM strategies can make using transit easier, safer, and more comfortable, both for people who already use transit and for potential new riders.

Recommended Action steps

In the near term:

1. **Develop and adopt bus stop design standards for Burlington.**
   - In collaboration with community members and GMT, identify critical amenities that should be provided bus stops in Burlington.
   - Draft and adopt a policy document that identifies (a) minimum priority amenities to be provided at all stops, and (b) optional amenities to be provided depending on local conditions and available curbside space.
   - Conduct an inventory of existing stops to identify which locations do not meet minimum standards. Begin prioritizing investments in stop improvements at locations based on community goals, which may include: stops with highest ridership, stops where current design/configuration creates safety concerns, stops with a high number of transfers.
2. **In partnership with GMT, launch a marketing and information campaign to support transit.** Work with GMT to develop and distribute a system map that shows all transit routes and services available in Burlington. Ensure that the map and other key service information materials are available in all languages spoken in Burlington. Coordinate with Strategy T.7 (sustainable travel choice information, education, and marketing campaign) and Strategy N.5 ("Bus Buddies" program).

In the medium and long term:

3. If microtransit service is identified as a priority service, **implement a microtransit pilot program** that builds on lessons learned through the implementation of GMTs MyRide microtransit service in Montpelier. With community input, identify performance metrics to evaluate the pilot.
4. As funding allows, **allocate additional local funding to support expanded GMT service**.[2]

[2] In FY-2024, Burlington contributed $1.8 million from the City's general fund to support GMT services.

T.5 | Create Shared Stop Guidelines and a Unified Shuttle Program

Strategy Overview

Today, there are a variety of shuttle services operating in Burlington that connect institutional campuses with off-site parking locations and other destinations. These services are not available to the general public.

In the near term, **Burlington should formalize a framework for private shuttles to share transit stops and curbside loading space for transit.** In the long term, **Burlington should partner with institutions and shuttle operators to unify these shuttle programs** under a shared brand with a coordinated service plan.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Benefits for Burlington

- A shared stop policy would ensure that private shuttle operations are coordinated seamlessly with Green Mountain Transit services.
- A unified shuttle program that allows access for the general public would make it easier for more people who live, work, and visit Burlington to get to multiple destinations in and around central Burlington without driving and re-parking.

Recommended Action steps

In the medium term:

1. **Develop and adopt a shared stop policy.**
   - In partnership with GMT and private shuttle operators, draft operational guidelines that ensure shared stop use does not negatively impact service delivery for GMT buses or shuttles.
   - Identify goals and performance metrics for evaluating ongoing operations and stop sharing.

In the long term:

2. **Create public access to privately-operated shuttles.** Working with UVM, the UVM medical center, Champlain College, and other institutions who provide shuttle services to enable access for members of the general public.
3. **Develop a unified branding identity for shuttle service,** including the vehicles themselves as well as marketing and informational materials for the services.

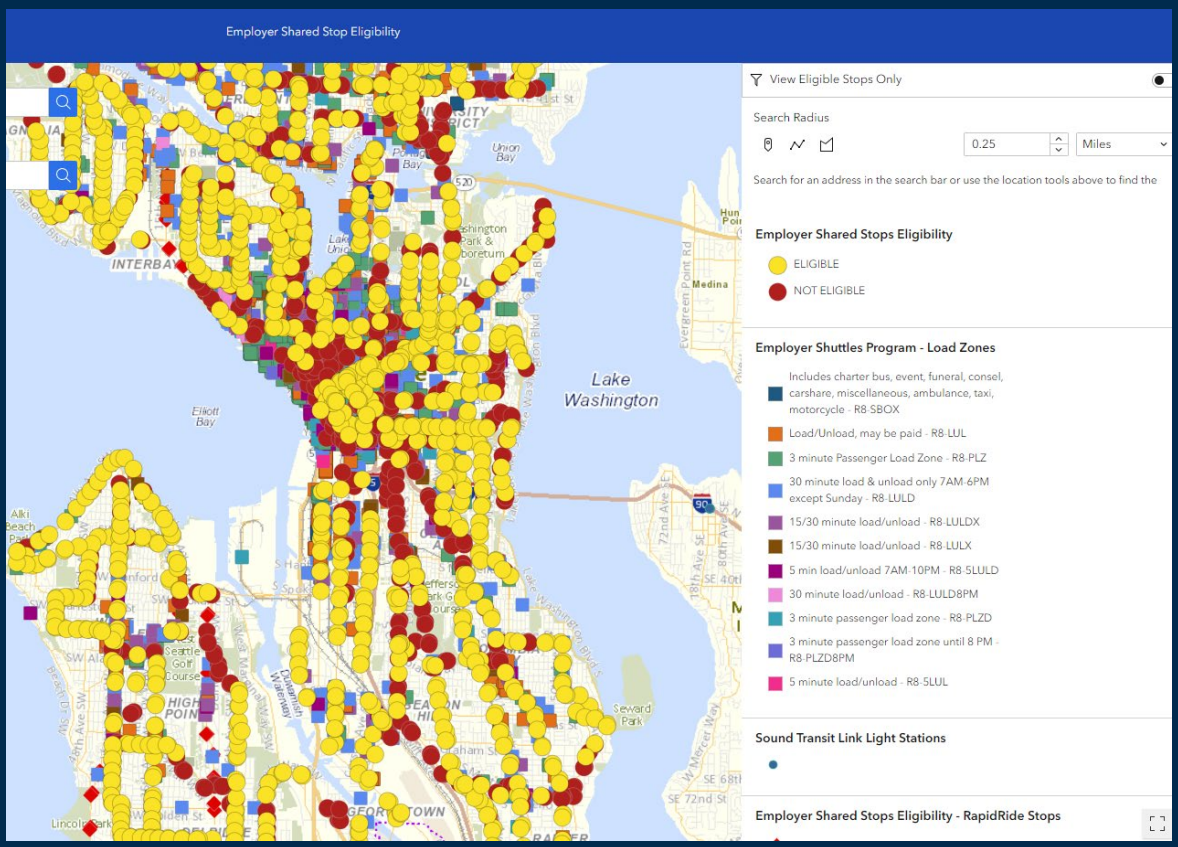
BEST PRACTICE SPOTLIGHT: SEATTLE, WA

In 2017, the City of Seattle began a pilot program to evaluate the potential for shared use of 10 transit stops throughout Seattle. The stops were shared by buses operated by King County Metro buses and privately-operated employer shuttles serving Microsoft and Seattle Children's Hospital. The pilot identify three goals for the program: Increasing safety for all road users, maximizing ridership on transit and shuttles, and limiting the amount of curbside space needed to serve transit and shuttle operations.

After completing the pilot in 2018, the City used the findings to develop and launch a citywide employer shuttle program in May 2024. The program includes operational guidelines for private shuttles, data sharing requirements, and a shuttle permitting structure that charges shuttle operators an annual fee of $632 for shared use of transit stops.

Figure 16 Map of Eligible Transit Stops for Shared Use

Source: Seattle Department of Transportation



T.6 | Update the City of Burlington Employee Parking Benefits Program to Incentivize Sustainable Commuting Options

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

The City of Burlington itself is one of the largest employers in the central part of the City. As the City continues to strive for a more balanced, TDM-supported transportation system across the City, the commuting benefits offered to City employes should reflect the same priorities. Continuing to build on recommendations from the 2015 TDM action plan, **Burlington should assess current employee parking and transportation benefits and update policies to incentivize sustainable commuting options.**

Benefits for Burlington

- Implementing an employee parking and benefit program that reflects the City's transportation goals and priorities for the community is a key opportunity for the City to lead by example.
- As one of Burlington's largest employers, shifting employee commute choices towards sustainable commuting options—including transit, carpooling, biking, and walking—will help address overall parking demand in the City.

Recommended Action steps

1. **Review current City employee transportation benefits and parking policies,** including the price charged for parking permits. Compare the monthly transportation cost for people who drive alone vs. people who carpool or use other sustainable travel modes.
2. **Update benefits to provide balanced options for employees.** If needed, consider increasing employee parking permit prices. At a minimum, ensure that transportation benefits offered to people who do not drive alone have equal monetary value to those who use other modes. If not already available, potential new sustainable travel benefits could include:
   - Expanded bicycle benefits, including reimbursement for bicycle maintenance or purchase, up to a certain dollar value each year.
   - Carpool rewards and incentives, including per-mile or per-trip cash rewards. Expand efforts to encourage and facilitate shared rides (see Strategy T.3).

T.7 | Implement a Sustainable Travel Choice Information, Education, and Marketing Program

Strategy Overview

Sustainable travel choice information, education, and marketing programs help people learn about travel options and understand how to use them. These programs are essential for maximizing the reach and impact of investments in transportation options and other TDM programs. Some also help create a unified "brand" for a range of available TDM programs and initiatives, which helps centralize useful information for users.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Benefits for Burlington

- A comprehensive information, education, and marketing program helps improve awareness of available transportation options and TDM benefits, which helps more people connect with resources that help meet their travel needs.

Recommended Action steps

In the near term:

1. Begin coordinating with CATMA, GMT, Go! Vermont, and other local and regional partners to develop a unified brand for TDM programs in Burlington.
   - Inventory existing marketing programs currently implemented by partners. Identify which programs would benefit from incorporation into a unified brand.
2. Launch a branded TDM website for Burlington. The website may be integrated into the City's existing website, or may be stand-alone. Centralize information about existing programs on the website, including links to partners.

In the medium term:

3. As part of neighborhood TDM planning processes, develop and distribute marketing materials that include trip planning information. Ensure materials are available in all languages spoken with target neighborhoods.
4. Coordinate marketing and educational materials distribution with neighborhood Community Mobility Rituals programs (Strategy N.4).

BEST PRACTICE SPOTLIGHT: AUSTIN, TX

The City of Austin's TDM program is unified under the Get There ATX brand. The Get There ATX website provides a centralized location for trip planning information and TDM programs. Marketing materials include trip planning resources and branded goods that help raise awareness and visibility for the program.

Figure 17 Get There ATX TDM program branading

Get There ATX branding includes digital and printed marketing materials, as well as in-person event-based promotion efforts (Image credit: Get There ATX)

R.1 | Update and Expand Burlington's TDM Requirements

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

In 2020, Burlington adopted TDM requirements for new developments. They include four core required elements: outreach and educational efforts, TDM program strategies (including subsidized transit passes), parking management requirements, and a TDM agreement that documents a commitment to implementing TDM requirements. While the TDM requirements have helped the City make progress towards a successful TDM environment, there are opportunities to modify and expand the requirements to better serve the City's goals. Some of the challenges with the City's current TDM requirements for new developments include:

- **Requirements apply only to new developments.** As a result, the TDM requirements have produced limited benefit in parts of the City where little or no development is occurring.
- **There is a limited number of TDM strategies reflected in the ordinance.** In addition to current requirements for transit subsidies, marketing/outreach efforts, and parking management strategies, a comprehensive TDM program should address other sustainable travel modes. Examples may include: carpool incentives, carshare memberships and subsidies, shared mobility incentives, family-supportive TDM programs, and shuttle programs.
- **There is limited flexibility.** In recent years, many cities have opted for TDM requirements that use a points-based structure. These structures typically include some "baseline" TDM strategies that are required for all projects as well as a list of "optional" strategies from which developers can select a certain number of additional TDM measures that align with their project context and vision. The flexibility provided by points-based structures makes it easier for projects of different sizes and in different locations to fulfill TDM requirements with meaningful and effective strategies.
- **There is limited guidance available to help developers fulfill requirements.** Developers, who may have limited experience implementing TDM, report challenges in fulfilling TDM requirements without clear guidance and/or best practice information available. While CATMA has been a key resource to help some developers implement TDM, managing TDM implementation for all developments in Burlington is beyond CATMA's mission and current staff capacity.

Building on successes achieved through the current TDM framework, **Burlington should adopt an expanded TDM framework and ordinance that uses a points-based system.** New requirements should be supported by public-facing user-friendly program guidelines that describe how to implement each strategy. Updated TDM requirements should be coordinated with a Commute Trip Reduction (CTR) ordinance (Strategy R.2).

Benefits for Burlington

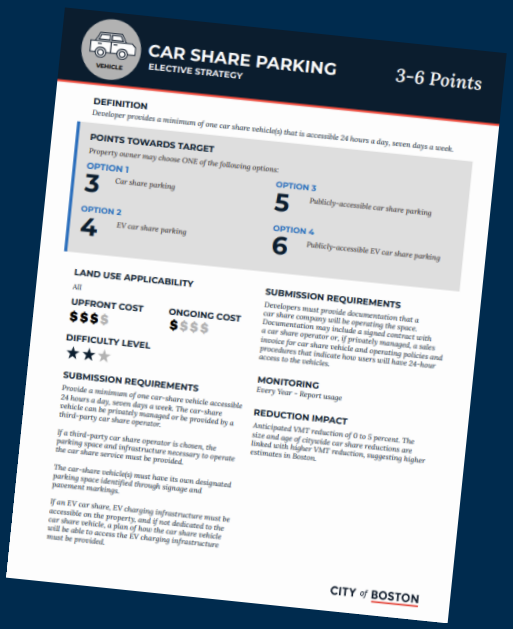
- An updated TDM ordinance that provides more flexibility for developers to customize TDM programs for local context will ensure that TDM benefits resonate with local transportation needs and conditions.
- An updated ordinance that includes an expanded list of TDM strategies will help incentivize more alternatives to driving alone, including carpooling, biking, and walking.
- A clear, user-friendly set of TDM program guidelines will help developers and other stakeholders understand how to implement TDM strategies successfully and in alignment with best practices.

Recommended Action steps

1. **Begin drafting a points-based TDM ordinance.** Incorporate feedback and lessons learned to date from developers and stakeholders, including CATMA. Identify an expanded "menu" of TDM measures to be included in the expanded ordinance.
2. After finalizing the ordinance structure, **begin developing TDM program guidelines to support successful implementation.** Guidelines should include diagrams, infographics, and other visual aids that help communicate requirements and best practices.

BEST PRACTICE SPOTLIGHT: BOSTON, MA

The City of Boston uses a points-based system for applying TDM requirements. Each development that is subject to the requirements must achieve a TDM point target that varies based on project size, type, and location. Developers can select from a long list of TDM strategies to achieve the required target. The City maintains a spreadsheet-based tool for developers to calculate point target requirements, as well as a set public-facing set of TDM "fact sheets" that provide additional information for fulfilling the requirements for each TDM strategy.



R.2 | Adopt a Commute Trip Reduction (CTR) Ordinance

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

A Commute Trip Reduction (CTR) program establishes requirements for employers to implement TDM programs that support sustainable travel modes for employees. Often, these programs apply only to employers larger than a certain minimum size (for example, 50 employees or more). CTR programs help engage employers in TDM implementation and provide a mechanism for applying TDM requirements to existing businesses. **Burlington should draft and adopt a CTR ordinance to complement TDM requirements in the development code.**

Benefits for Burlington

- A CTR ordinance extends TDM benefits beyond new developments by applying to existing employers. The TDM benefits achieved through a CTR ordinance would make it easier and cheaper for more people who work in Burlington to get to and from work without driving alone.
- Employers are uniquely well-positioned to help implement TDM effectively. They typically have detailed knowledge about the commuting patterns and home locations of employees, which allows them to tailor TDM programs to the specific needs of their employees. A CTR ordinance in Burlington would bring employers into the TDM process.
- Many CTR programs include a mechanism for collecting and sharing data about TDM program performance between employers and TDM program managers (for example, through employee surveys or monitoring efforts). This information helps the City and mobility service operators manage and fine-tune citywide TDM programs and transportation options.

Recommended Action steps

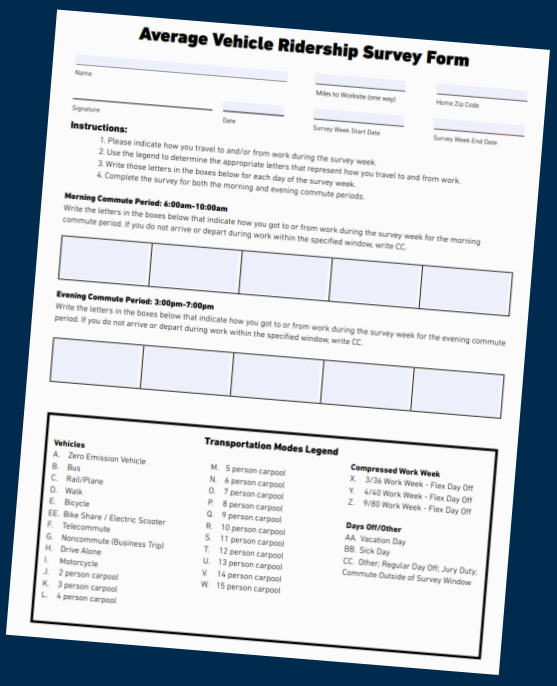
1. **Begin developing a CTR framework .** Define applicability thresholds for employers based on number of employees. Set performance targets and/or required TDM programs. Establish an annual monitoring and reporting program. Consider the role of a fee structure to help fund program costs. See Table 4 for initial CTR framework recommendations.
2. **Draft and adopt the CTR ordinance.** Coordinate the adoption of the program with an updated and expanded TDM ordinance (Strategy R.1) and expanded coordination with CATMA (Strategy M.3).
3. **Develop TDM program guidelines to support successful implementation.** Guidelines should include diagrams, infographics, and other visual aids that help communicate requirements and best practices.

Table 4 Conceptual recommendations for a CTR ordinance

CTR Ordinance Component	Recommendations
Threshold for Applicability	▪ Employers in Burlington with 20 or more full-time employees – Small employers: 20-49 full time employees – Large employers: 50+ full-time employees
Requirements and/or Performance Targets	Minimum required strategies (small and large employers): ▪ Employee parking cash-out program ▪ Preferential carpool parking ▪ Ride matching support Additional strategies (large employers only): ▪ Select at least 4 other strategies included in the expanded TDM ordinance
Monitoring and Reporting	▪ Small and large employers: submit an annual employee trip reduction report that documents which TDM programs are implemented to satisfy program requirements ▪ Large employers only: conduct an annual employee mode share survey and include results in annual trip reduction report
Program Fees	▪ Large employers only: annual fee of $20 per employee to support program management – Fee is waived for employers who achieve 65%+ non-drive-alone mode share

BEST PRACTICE SPOTLIGHT: SANTA MONICA, CA

The City of Santa Monica requires employers with 50 or more full-time employees to comply with commute trip reduction requirements under the Emission Reduction Program (ERP). Under the program, employers must implement TDM strategies, conduct annual travel surveys, and, depending on employer size, designate an on-site transportation coordinator. The City evaluates employer TDM performance based on the percentage of employees who drive to work, and annual per-employee transportation fees are reduced or waived for employers who meet or exceed performance targets. GoSaMo, Santa Monica's Transportation Management Association (TMA), the City maintains a program handbook that help employers understand and fulfill ERP requirements.


Average Vehicle Ridership Survey Form

Name

Signature

Date

Miles to Worksite (one way)

Survey Week Start Date

Home Zip Code

Survey Week End Date

Instructions:

1. Please indicate how you travel to and/or from work during the survey week.
2. Use the legend to determine the appropriate letters that represent how you travel to and from work.
3. Write those letters in the boxes below for each day of the survey week.
4. Complete the survey for both the morning and evening commute periods.

Morning Commute Period: 6:00am-10:00am

Write the letters in the boxes below that indicate how you got to or from work during the survey week for the morning commute period. If you do not arrive or depart during work within the specified window, write CC.

Evening Commute Period: 3:00pm-7:00pm

Write the letters in the boxes below that indicate how you got to or from work during the survey week for the evening commute period. If you do not arrive or depart during work within the specified window, write CC.

Vehicles

A. Zero Emission Vehicle
B. Bus
C. Rail/Plane
D. Walk
E. Bicycle
EE. Bike Share / Electric Scooter
F. Telecommute
G. Noncommute (Business Trip)
H. Drive Alone
I. Motorcycle
J. 2 person carpool
K. 3 person carpool
L. 4 person carpool

Transportation Modes Legend

M. 5 person carpool
N. 6 person carpool
O. 7 person carpool
P. 8 person carpool
Q. 9 person carpool
R. 10 person carpool
S. 11 person carpool
T. 12 person carpool
U. 13 person carpool
V. 14 person carpool
W. 15 person carpool

Compressed Work Week

X. 3/36 Work Week - Flex Day Off
Y. 4/40 Work Week - Flex Day Off
Z. 9/80 Work Week - Flex Day Off

Days Off/Other

AA. Vacation Day
BB. Sick Day
CC. Other; Regular Day Off; Jury Duty; Commute Outside of Survey Window

R.3 | Adopt Neighborhood-Based TDM Plans Using the Neighborhood TDM Framework

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Neighborhood-based TDM plans are local efforts led by the City that engage residents, businesses, and community-based organizations to develop, formalize, and implement tailored TDM strategies. **Burlington should implement the neighborhood TDM framework** as outlined in Chapter 4). Each neighborhood TDM plan should include:

- Development of a mapped inventory of neighborhood transportation elements, including transit stop locations, bicycle facilities, and sidewalk networks and conditions.
- Community engagement efforts to gather input about mobility needs, concerns, and priorities.
- Coordination and cooperation with community-based organizations within the community to learn about current programs and efforts that support mobility and identify opportunities for new or expanded efforts and partnerships.
- A finalized neighborhood TDM plan document, which summarizes input and feedback gathered from the community and identifies priorities for supporting TDM within the neighborhood.

Benefits for Burlington

- Neighborhood TDM plans will provide resources for community members, resources for decision-makers, and coordination opportunities for local organizations and stakeholders to better address mobility needs.
- The neighborhood TDM framework is designed to empower local residents to set priorities for TDM investments and foster a sense of community ownership of plan outcomes.

Recommended Action Steps

1. Building on lessons learned through the Old North End neighborhood TDM planning effort, **begin implementing the TDM framework process through City-led planning efforts.** As needed, modify the process to address lessons learned through initial neighborhood TDM planning efforts in the Old North End and the New North End. For additional information, see Chapter 4.

R.4 | Adopt a Framework for Creating Parking Benefit Districts (PBDs)

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Parking Benefit Districts (PBDs) create a mechanism by which a portion of locally-collected parking revenue is spent on not only local and citywide parking operations, but also TDM programs, mobility services, and neighborhood improvements with the meter district. PBDs are often similar in structure to a business improvement district, with an oversight board that includes both city staff as well as district residents, employees, business owners, and other stakeholders. **Burlington should develop and adopt an ordinance that allows for the creation of PBDs in the City.**

Benefits for Burlington

- PBDs help ensure that the cost of introducing parking meters in new parts of the City comes with valuable local benefit and provides a collaborative platform for identifying and prioritizing community investments.
- PBDs can provide a platform for coordination and cooperation that aligns neighborhood-level transportation needs and priorities with citywide parking policies.

Recommended Action steps

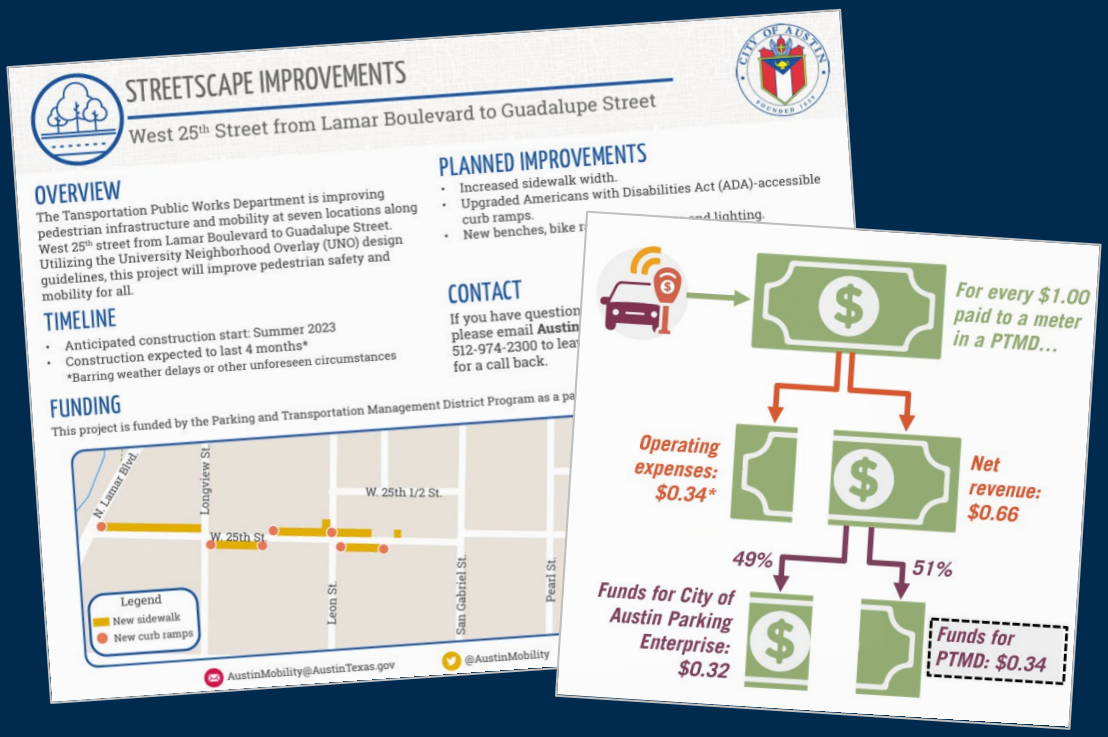
1. **Develop and adopt a PBD ordinance.** Ensure that the ordinance allows for a broad use of PBD funds. Eligible expenditures should not only include parking operations and infrastructure (such as enforcement, meter installation, signage, and administrative costs), but also local mobility improvements (such as bicycle parking, transit amenities, and TDM benefits).
2. If and when priced parking expands to new parts of the city, **collaborate with local stakeholders to implement PBDs.** PBDs should be structured to include local stakeholders on an oversight board. The board should maintain a prioritized list of local investments and should collaborate with City staff to implement those investments as revenue becomes available.

BEST PRACTICE SPOTLIGHT: AUSTIN, TX

The City of Austin has implemented one PBD and four Parking and Transportation Management Districts (PTMDs) throughout the city. After covering operating expenses, net parking meter revenue is shared between the district (51% of net revenue) and the Austin Parking Enterprise (49% of net revenue), which manages citywide parking programs. Net revenue can be used for a range of mobility improvements, including streetscape improvements and multimodal infrastructure.

To form a PTMD, applications must be submitted to the division director by a representative from a neighborhood organization. The application may be done collaboratively with City staff, and involves a series of required steps including:

- Convening a community meeting to gather input and share information
- Communicating the justification for the creation of a PTMD
- Identifying specific proposed locations for priced on-street parking
- Developing a prioritized list of improvement projects to be funded by parking revenue
- Identifying any additional supporting parking management tools to be used in conjunction with priced parking



R.5 | Update the Residential Parking Permit (RPP) Program

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Burlington's Resident Parking Permit (RPP) program helps manage spillover parking demand in residential areas that are close to busy destinations, such as educational/medical campuses and retail/dining districts.

While the program plays an important role in managing on street parking, permit prices and the overall program structure are not as supportive of Burlington's multimodal goals as they could be. **Burlington should update and modernize the resident parking permit program and increase annual permit costs.** Any net revenue remaining after covering program operating costs should be used to fund citywide TDM programs. The RPP program should be coordinated with a neighborhood mobility wallet program to reward residents who opt for one or zero RPP permits with additional multimodal benefits.

Benefits for Burlington

- Modernizing the RPP program will help balance demand for on street parking with other multimodal uses, including biking and carshare.
- Currently, each RPP permit costs $10 per year. Increasing permit prices to fully cover program costs will help the City maintain a financially sustainable parking and TDM program. Investing any net revenue in TDM programs will provide local mobility benefits.

Recommended Action steps

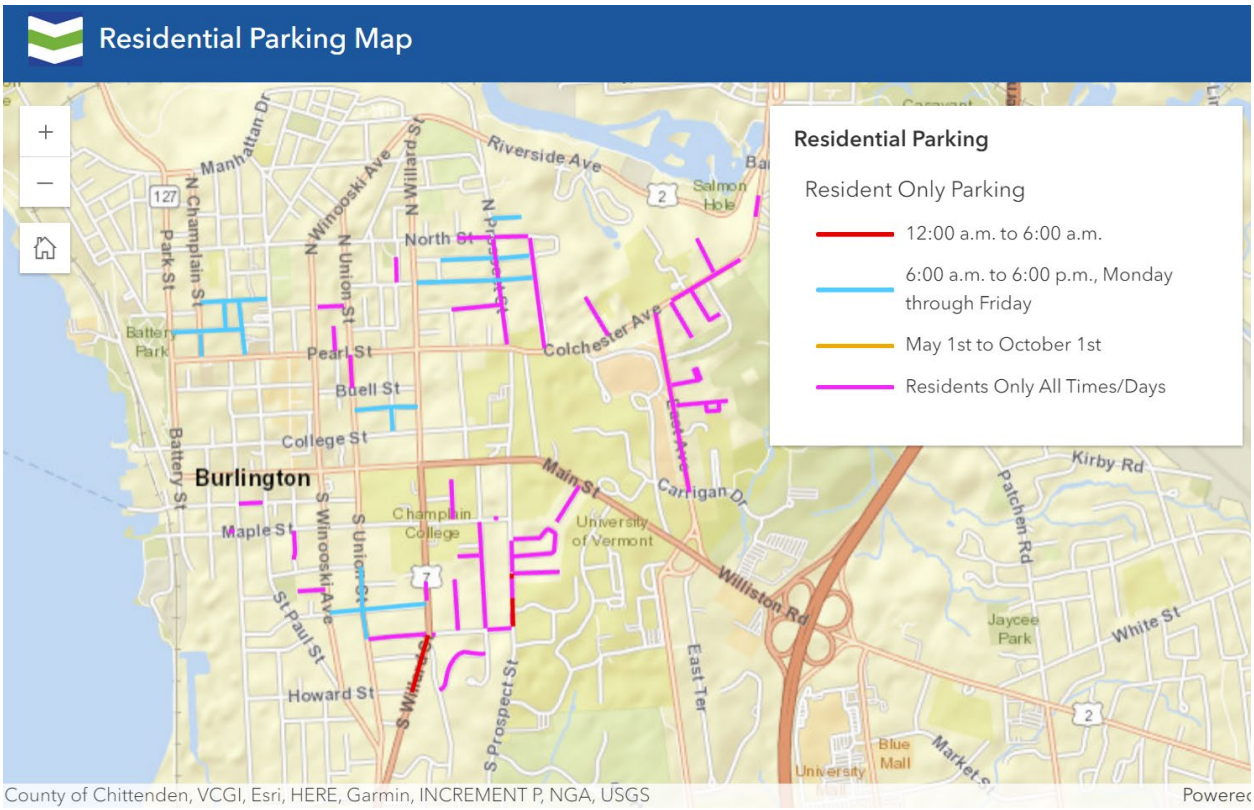
1. **Review the residential permit pricing structure and program management/operating costs.** Establish a new tiered pricing structure in which the per-permit price increases for each additional permit per household. Include an affordable option for qualifying low-income households. An initial conceptual price structure is shown in Table 5.
2. **Tie RPP permits to Transportation Demand Management (TDM) programs.** TDM includes a variety of benefits and incentives for non-driving modes, such as subsidized transit passes. Households that give up one or more of their RPP permits, or forgo them altogether, should be eligible for additional TDM incentives and programs. See strategy N.6 (Mobility Wallet Program).
3. **As space allows, incorporate an employee permit option.** Where resident-only parking areas are consistently less than 75% full at peak times, make a limited number of RPP permits available for people who work at nearby businesses. Pricing for employee permits should be calibrated so that non-driving travel options are still competitive with driving.

Table 5 Conceptual recommendation for an updated RPP price structure

Permits per Household	Annual Price (Baseline)	Annual Price (Low-Income Residents)	Multimodal Incentives Offered
0 permits	--	--	●●●
1ST permit	$25	$10	●○○
2nd permit	$50	$20	○○○
3rd permit	$75	$30	○○○
4th permit	$100	$40	○○○
5+ permits	(prohibited)		

Figure 18 Residential Parking Permit (RPP) Map

RPP restrictions are concentrated in the central parts of the city near commercial districts and university campuses.



R.6 | Develop and Implement a Downtown Public Realm Safety Plan

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium & long term

Shared parking arrangements and "park once" strategies (which encourage people to park in centrally-located parking space and walk to multiple destinations without driving and re-parking) can be difficult to implement if people do not feel safe walking to or from their vehicle. A Downtown Public Realm Safety Plan would address safety concerns and challenges faced by people walking to and from public and shared parking facilities in the downtown area. A safety plan would identify priority locations where safety challenges occur, as well as strategies to address them.

Mechanisms to improve safety may include enhanced lighting, additional security personnel, placemaking and activation in key locations or priority times of day, or the integration of security technology. The plan will address safety concerns identified through a comprehensive safety audit and community engagement efforts, focusing on priority areas and times of day.

Benefits for Burlington Summary

- Addressing safety challenges and perceptions in the downtown area will make it easier and more appealing for people who drive to/from downtown to use centrally-located public parking garages, which will help the City meet downtown parking demand without over-building parking.

Recommended Action steps

1. **Conduct a safety audit for downtown to assess current conditions and identify areas for improvement.** Identify main safety concerns, locations, times of day/week, and potential strategies to improve conditions.
2. In partnership with the Police Department, Parking Services, Public Safety Committee, and Downtown Burlington, develop and implement safety improvements. Solutions may include:
   - Improved lighting and streetscape/landscape treatments near public parking facilities, including the Downtown Garage and the Marketplace garage.
   - An ambassador program that deploys staff in the downtown area to monitor and respond to safety issues at priority locations and times of day, or offers to escort people to or from their vehicle upon request.

M.1 | Hire or Designate a TDM Program Manager/Coordinator

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Implementing new TDM strategies in Burlington will require considerable time and effort. Without dedicated staff resources to support the program, progress will be slow. **Burlington should hire or designate a TDM program manager** who can work with other City staff, regional partners, and community stakeholders to advance the City's TDM goals and begin implementing many of the key recommendations in this plan. A TDM program manager will also expand the City's capacity to pursue grant and funding opportunities that can support TDM programs and transportation investments.

Benefits for Burlington

- A TDM program manager would be a critical resource for leading the implementation of all of Burlington's TDM objectives, including the recommendations included in this plan.
- A TDM program manager would also provide a point of contact for TDM and mobility issues in the community and a resource for developers and other partners who are working to implement and manage TDM programs throughout the City.

Recommended Action Steps

In the near term:

1. **Designate a TDM coordinator at the City of Burlington.**
   - Identify existing staff with available capacity to lead ongoing TDM efforts. Initially, allocate 25-50% of time for managing the City's TDM program. Draft a job description that defines roles and responsibilities of the TDM Program Manager position.

In the medium term:

2. **As funding allows, hire a full-time TDM coordinator at the City.**
   - Expand the job description, roles, and responsibilities of the TDM program manager to include full-time responsibilities.
   - Coordinate with regional partners including CATMA and GMT to ensure the position can effectively support inter-agency coordination and programs.

M.2 | Expand Funding Sources for TDM

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near, medium & long term

While some of the recommendations in this plan can be implemented with existing resources, many will require additional funding sources. **Burlington should invest expand funding sources for TDM by reallocating existing revenues and securing new funding sources.**

There is no single funding solution that can meet all of Burlington's TDM needs—success will require pursuing a range of resources that are likely to include:

- Allocating a portion of existing parking revenue, including parking meters and permits, for TDM programs and related investments
- Pursuing regional, state, and federal grant opportunities
- Allocating new local revenue sources to support TDM, such as impact fees or utility charges
- Leveraging development opportunities to fund or directly implement components of neighborhood or citywide TDM initiatives

Benefits for Burlington

- Dedicated revenue for TDM will support ongoing implementation of the City's TDM vision, which seeks to create a more accessible, sustainable, affordable, and equitable transportation network.

Recommended Action Steps

In the near and medium term:

1. **Review existing local revenue sources, including parking revenue and impact fees, to confirm eligibility and feasibility for funding TDM programs.** If needed, modify City code to enable TDM programs and an eligible use of funds.
2. **Establish an annual TDM program budget and allocate funding from existing revenue sources.** High priority strategies for funding include: Hiring or designating a TDM program manager (Strategy M.1), Expanding GMT transit services (Strategy T.4), and Expanding Burlington's partnership with CATMA (Strategy M.3)

In the long term:

3. After designating a TDM program manager, pursue state and federal TDM grant opportunities to fund TDM pilots and programs, including the Congestion Mitigation and Air Quality Program and the Carbon Reduction Program.

M.3 | Formalize and Expand Burlington's Partnership with CATMA

Strategy Overview

The Chittenden Area Transportation Management Association (CATMA) plays a central role in managing and implementing TDM services and programs in the greater Burlington area. CATMA has a membership-based structure in which employers, developers, and institutions pay annual dues based on the number of employees in return for a variety of TDM planning services and mobility programs. CATMA also supports Burlington's Hill Institutions to manage and implement the Joint Institutional Parking Management Plan process.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Today, collaboration between the City of Burlington and CATMA to implement local and regional TDM implementation is limited. **Burlington should work with CATMA to establish a formal partnership** that includes additional funding for CATMA and an expanded role for CATMA in local TDM implementation.

Benefits for Burlington

- TMA's can help implement TDM programs more effectively by acting as a central coordinating entity that works directly with local and regional stakeholders, mobility service providers, and governments.
- TMA staff can provide specialized technical knowledge and experience with TDM programs and services that developers and employers may not otherwise have access to.
- For many people who live or work in Burlington, day-to-day travel patterns regularly cross municipal boundaries. TMAs like CATMA can help address these regional travel needs and challenges.

Recommended Action Steps

1. **Form a working group and hold monthly coordination meetings** with City of Burlington and CATMA staff. Review strategic plan and vision, and identify opportunities for closer collaboration. Identify needs and opportunities to contribute additional funding and resources for CATMA.
2. **Identify and formalize goals, roles, and responsibilities,** and memorialize in a Memorandum of Understanding.
3. **Periodically evaluate the impact of partnership** by collectively reviewing the success of TDM initiatives and adjust strategies as needed

M.4 | Expand Public Advisory Roles for Non-Driving Transportation Issues and Needs

Strategy Overview

Advisory councils like the Walk | Bike council help public decision-makers develop and prioritize plans, projects, and services by providing input and feedback on behalf of the broader community. Burlington should expand public advisory roles for people who use transit and other non-driving modes by expanding the Walk Bike council or by establishing a new advisory body dedicated to advocating for and improving public transit options in the City.

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Benefits for Burlington

- Expanding public advisory roles for non-driving transportation issues will help the City identify, understand, and prioritize solutions that address the needs and challenges facing people who rely on transit or other non-driving modes.

Recommended Action Steps

1. Review scope and responsibilities for the Walk | Bike council.
   - If feasible, expand council's focus to include all non-driving car modes. If needed, expand council size to include at least two members who can advise the City on challenges and perspectives facing people who regularly use transit.
   - If expanding the scope of the Walk | Bike council is not feasible, establish a new council dedicated to transit advocacy.
2. Ensure that a new or expanded council includes diverse representation of the community.

N.1 | Establish a Public Bicycle/Electric Bicycle Lending Library

Strategy Overview

A bicycle lending library is a publicly available service that allows anyone to borrow a conventional or electric bicycles, free of charge. The length of rentals can vary depending on the operating model and fleet size, but may be short term (1-7 days), medium-term (up to a month), or longer (6-12 months). Some bicycle libraries offer a range of bicycle types, including conventional bicycles, electric bicycles, cargo bicycles, and adaptive/accessible bicycles. **Burlington should establish a bicycle lending library in the City.**

STRATEGY AT A GLANCE	
CITYWIDE:	
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near & medium term

Benefits for Burlington

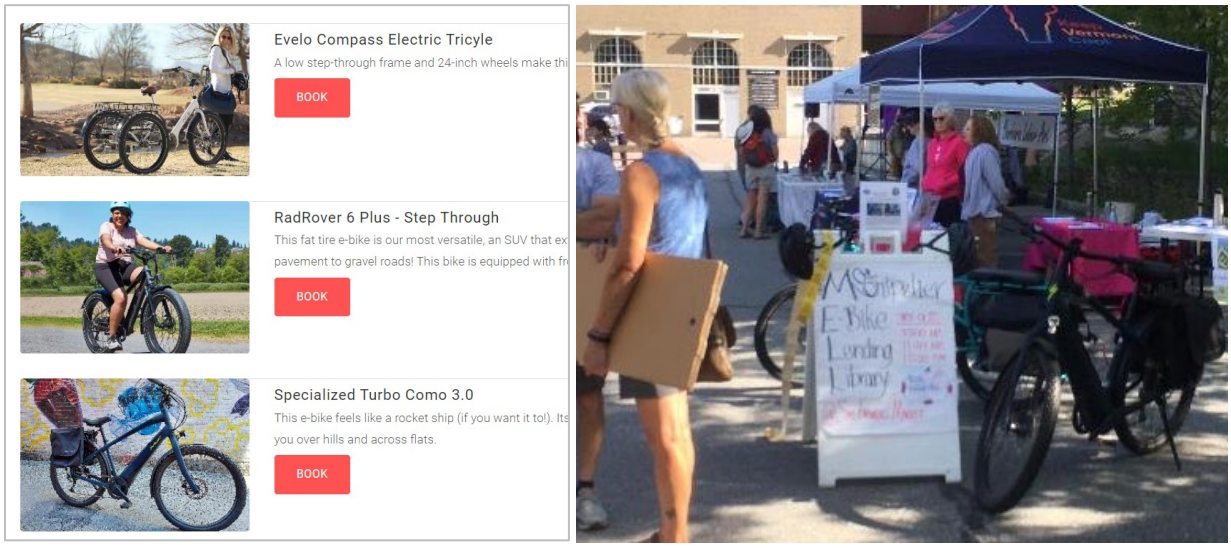
- A bicycle lending library in Burlington would expand public access to bicycles. It would create a new option that complements and fills gaps in existing bicycle programs and services available in the community, including:
  - Old Spokes Home currently operates the Everybody Bikes program, which provides steeply discounted bicycles for low-income residents. Establishing a bicycle lending library would create opportunities for people to try different types of bicycles (including electric bicycles) and gain experience before purchasing their own bicycle.
  - Local Motion currently offers short-term e-bike and conventional bike rentals near downtown. Rates for a conventional bicycle range from $27 for 3 hours to $40 per day, and can be rented for multiple days. A bicycle lending library would create a free service that could help meet demand for longer rentals (weekly or monthly).
  - Bird Bikeshare currently operates a fleet of 200 electric bicycles in Burlington, South Burlington, and Winooski. This smartphone app-based service allows customers to make point-to-point trips within the service area for a fee of $1 plus $0.49 per minute. A bicycle library would provide a free alternative that would complement privately-operated services by offering a wider array of vehicle types and longer-term borrowing options.
- A bicycle library in Burlington would provide access to specific types of bicycles that people may not need all the time—for example, a cargo bicycle to transport equipment or goods for work.
- Bicycle libraries can create valuable touchpoints with community members that provide opportunities to offer trainings and services that help people of all ages and levels of bicycle comfort learn to ride, maintain, and repair bicycles. Partnering with Old Spokes Home and/or Local Motion could create opportunities to amplify existing programs offered by these organizations.

Recommended Action Steps

1. **Identify partners and develop an operating plan.** The operating plan should include:
   - Resources available for funding day-to-day operations. In the near term, consider identifying opportunities to purchase operating services from community-based organizations. In the long term, assess the need for part- or full-time staff.
   - Hours of operation. As much as possible, hours should align with community need and should include some day, evening, and weekend hours to provide sufficient flexibility for people who are constrained by a variety of work, school, or care schedules.
   - Fleet size and types. At a minimum, an initial fleet should include 2 electric bikes, 2 adaptive/accessible bikes, 1 cargo bike, and a selection of conventional bicycles with a range of sizes. Over time, increase fleet size based on demand, funding availability, and maintenance capacity.
   - A lending management system. Consider opportunities to leverage the existing library lending system to manage bicycle rentals (example: Madison, WI)
2. **Identify a central location for the library.** The location could be a City-owned property, or could be leased through an agreement with a community partner. It should be close to a safe bicycle route and should be easy to access for people of all ages and biking abilities.
3. **Promote the bike library.** Integrate information about the library in citywide marketing materials and with community partners.

Figure 19 Bicycle Lending Library in Montpelier operated by Local Motion

Image credit: Local Motion



N.2 | Establish Community-Based Mobility Hubs and Delivery Hubs

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Medium term

A community-based mobility hub is a public space that provides a centralized location for accessing transportation options and information. Mobility hubs support non-driving travel modes by making it easier, more convenient, and safer to wait for or transfer between different transportation options. As centrally-located public spaces, community-based hub scan also be opportune places to locate other amenities and services such as parcel delivery lockers, food and beverage options, or events. **Burlington should implement a mobility hub pilot project** in the Old North End neighborhood and, if successful, expand the program to other neighborhoods throughout the City.

As part of the mobility hub. pilot, **Burlington should pilot a first/last-mile delivery hub**. These delivery hubs reduce provide a centralized location where packages are consolidated before being delivered to their final destinations via an e-bike delivery service. They may also include parcel pick-up lockers where recipients can pick up packages on their way to or from other destinations.

Benefits for Burlington

- Mobility hubs reduce vehicle trips by making non-driving options more convenient, enjoyable, and appealing. Centralized parcel delivery locations also reduce freight traffic.
- Community-based mobility hubs would provide public spaces that increase the visibility of locally-available transportation options and create opportunities for touchpoints between community members and other services beyond transportation.
- Delivery hubs help reduce freight traffic and associated vehicle emissions in nearby neighborhoods.

Recommendation Action Steps

1. **Pilot the community-based hub concept in the Old North End neighborhood.** Identify a location in the neighborhood that has access to transit service and is publicly accessible to a diverse range of community residents. As needed, make design modifications to the site to accommodate mobility services, including but not limited to:
   - Establishing a designated pick-up/drop-off zone for shared rides
   - Adding secure, weather-protected bicycle parking
   - Parking for Bird bike share and/or other shared micromobility options
   - Allocating space for a CarShare Vermont vehicle

- Enhancing the transit stop to include a shelter, seating, and lighting
- Adding signage, wayfinding, and placemaking elements that make the hub easily identifiable and easy to navigate to/from

2. **Coordinate with community organizations in the Old North End** to increase awareness about the hub and identify programming opportunities for the space, such as special events and service/resource distribution.
3. After 1 year, **evaluate the impact of the hub and modify the approach as needed for application in other neighborhoods throughout Burlington.** Evaluation should include:
   - Use of the hub – who uses the space, and how often? Is it accessible to everyone in the neighborhood? Are there uses which aren't addressed that could be included?
   - Safety and accessibility – were there any reported incidents of safety issues related to site design or use?
   - Community resonance – Does the community feel "ownership" of the space? Does the look and feel of the hub reflect the neighborhood identity and vision?

Figure 20 Mini-hub pilot for last-mile delivery in Toronto, ON

Image credit: Charles Dillard

BEST PRACTICE SPOTLIGHT: BOSTON, MA

In 2021, the City of Boston developed design guidelines for implementing a network of mobility hubs called "GoHubs!" and began a pilot project to test and evaluate the program. Eight GoHubs! were installed throughout East Boston at locations that were identified based on community input, access to transportation infrastructure, and neighborhood context.

The GoHubs! pilot sought to address three core goals: improve access, enhance public spaces, and provide information. One year after the pilot began, the City conducted and published an evaluation that looked at changes in bikeshare ridership, carshare use, transit ridership, and community sentiment (gathered via survey). The City incorporated findings and lessons learned from the pilot into the design guidelines for Citywide implementation.

Figure 21 GoHub! Mobility Hub pilot in Maverick Square, Boston MA

Image credit: Nelson\Nygaard

N.3 | Expand Burlington's "Walk to Shop" Shopping Trolley Program

Strategy Overview

Net Zero Vermont's Walk-to-Shop program is an initiative that distributes two- and four-wheeled shopping trolleys that help people get to and from shopping destinations without the need to drive and park. Trolley prices range from $40 to $65, depending on the size. In 2022, the City of Burlington provided funding to distribute more than 50 trolleys to residents of the Old North End free of charge. Building on the success of this program, **Burlington should expand funding and support to distribute shopping trolleys** as part of neighborhood TDM implementation and create a trolley lending library.

This initiative includes exploring shared, neighborhood trolley libraries to facilitate convenient transportation of groceries and goods. The City will identify areas with high pedestrian traffic and proximity to shops, pilot the program in selected neighborhoods, collaborate with local businesses for support and participation, and eventually implement the program city-wide based on the success of the pilot.

STRATEGY AT A GLANCE	
CITYWIDE:	
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Benefits for Burlington

- Shopping trolleys help people run errands and get to and from shops without the need to drive and park.
- In addition to distributing the trolleys, Net Zero Vermont's walk to shop initiative integrates programs that facilitate community building and food security.

Recommended Action Steps

1. **Include funding for shopping trolley distribution as part of neighborhood TDM implementation.** At a minimum, secure shopping trolleys for low-income residents, free of charge. As funding allows, expand eligibility to all neighborhood residents.
2. **Explore the establishment of shared, neighborhood trolley libraries to facilitate convenient transportation of groceries and goods.** Consider integrating trolley borrowing options with a bicycle lending library (strategy N.1).

N.4 | Implement a "Bus Buddies" Transit Rider Education Program

Strategy Overview

A "Bus Buddies" program matches volunteers with people who are new to the region or who do not have familiarity with the transit system to accompany them on trips to and from work or services. These programs can be effective strategies to overcome language or cultural barriers that may make it difficult for people to navigate an unfamiliar transit system. In partnership with GMT and community-based organizations, Burlington should implement a "Bus Buddies" program.

STRATEGY AT A GLANCE	
CITYWIDE:	
NEIGHBORHOOD:	✓
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Near term

Benefits for Burlington

- "Bus Buddies" programs help build community relationships while helping address mobility needs of people who rely on or wish to use transit but do not know how.
- These programs can be particularly beneficial to people who have arrived in Burlington as part of refugee resettlement programs and people who do not speak English.

Recommended Action Steps

1. Form a "Bus Buddies" working group that includes GMT and community-based organizations who work with populations that may benefit from the program. Begin recruiting volunteers to support the program and program participants who need assistance.
2. Develop and implement a training course for bus buddy volunteers to help them effectively support program participants.
3. Begin operating the program. Regularly gather input and feedback from bus buddy volunteers and from program participants to identify gaps in the program. Augment training as needed.

N.5 | Pilot a Neighborhood Transportation Wallet Program

Strategy Overview

STRATEGY AT A GLANCE	
CITYWIDE:	✓
NEIGHBORHOOD:	
RELATIVE COST:	$ $ $ $
TIMEFRAME:	Long term

A mobility wallet is a package of discounts, passes, and/or funds that can be used for a range of transportation options, such as free or discounted transit passes, credits for shared mobility services (bike share or car share), and credits for ride hailing services (such as Lyft or Uber). Mobility wallets are flexible and user-friendly incentives that can help address a range of different trip types and travel needs. They may include a tiered pricing in which wallet can be purchased for a steep discount for most participants and is available free of charge for qualifying low-income individuals. Some mobility wallet programs only offer the wallet to recipients who decline or opt out of other programs, such as forgoing a residential parking permit (RPP).

Benefits for Burlington

- A mobility wallet provides a user-friendly tool that makes it easier for participants to become aware of and take advantage of available mobility benefits.
- When offered as a trade-off for parking benefits (such as an RPP permit), a mobility wallet rewards residents who choose to live a car-free or car-light lifestyle.

Recommendation Action Steps

1. **Identify funding and develop a budget for the transportation wallet pilot program.** In the long term, dedicated funding should include revenue from parking permits and parking meters. For the pilot, funding may include regional sources such as state/federal grants.
2. **Identify eligibility criteria and a pilot area to test the mobility wallet.** As budget allows, offer the wallet to all residents within the pilot area (no eligibility limits).
3. Coordinate with local community-based organizations and residents within the study area to **identify mobility needs and desired benefits to include in the wallet.** Consider:
   - A Green Mountain Transit Smart Card with $200 pre-loaded
   - $50 in credits for Bird Bikeshare rides and/or store credit to Old Spokes Home
   - $50 in taxi or rideshare credits (Lyft or Uber)
4. **Develop a price structure** that includes “base” and “affordable” options.
5. **Evaluate preferred format and technology options for distributing and managing the wallet.** Options include distributing “debit card” style tools that can be used for eligible services (example:

LA Metro MW Program), digital transportation benefits platforms, or physical credits and coupons distributed by mail (example: Portland, OR)

6. **Define equity-driven pilot evaluation criteria.** Performance evaluation metrics should address: wallet participation and utilization rates by participant characteristics and demographics, including income, primary language, gender, age, and race.
7. Based on pilot evaluation, **consider opportunities to refine or expand the program.**

BEST PRACTICE SPOTLIGHT: PORTLAND, OR

The City of Portland manages a Transportation Wallet program that offers a flexible, deeply discounted package of credits and passes for transit, bike share membership, e-scooter services, and car share services. The wallet is available to anyone who lives or works in the Northwest and the Central Eastside Parking Districts, where on-street parking is limited.

The transportation wallet program is integrated with Portland's zone-based, on-street residential parking permit (RPP) program. Revenue from parking permits provides funding for the transportation wallet program The base price of the wallet is $99, but is available free of charge to district residents who forgo a residential parking permit. The Access for All Wallet option provides a Transportation Wallet free of charge to qualifying low-income residents who live anywhere in the city.

Chapter 4: Neighborhood TDM Framework

The Neighborhood TDM Framework is a strategy developed in conjunction with this study designed to address transportation challenges within communities from the bottom up. This framework aims to enhance mobility options, promote active transportation, and create opportunities for meaningful interactions among residents, seeking to improve the overall quality of life within Burlington's neighborhoods.

At the core of this framework, and a primary responsibility of the City, is the process of neighborhood selection, which involves careful consideration of various factors such as ongoing or planned transportation projects, demographics, and other equity-based criteria. By selecting neighborhoods facing transportation challenges and ensuring equitable distribution of municipal resources, the framework aims to address disparities in access to transportation while encouraging collaboration with local stakeholders and community-based organizations.

The framework then follows a systematic approach, starting with the establishment of a vision, purpose, and goals tailored to the specific needs of the neighborhood, while also maintaining ties to the City's overarching mission for TDM. Through data collection and robust community engagement, key insights are gathered to inform decision-making and prioritize strategies. Implementation involves assigning clear roles and responsibilities to 'champions,' and creating pilot programs to test selected strategies on a small scale. Evaluation and adjustment phases ensure that initiatives are effective and aligned with community needs. Overall, the framework provides a structured approach to address transportation challenges, enhance neighborhood resiliency, and promote community-based solutions.

Neighborhood Selection

Choosing the right neighborhood is critical for both the success of TDM interventions and to ensure equitable solutions throughout the city. Several factors should be considered during this process:

- Existing Transportation Projects: Assess whether the neighborhood is already implementing transportation initiatives or undergoing changes to transportation infrastructure.
- Impact of Transportation Challenges: identify neighborhoods facing transportation challenges, such as limited access to GMT, safety concerns for pedestrians and bicyclists, or other mobility challenges.
- Demographics / Equity Scan: Work with Burlington's Data Analytics team to analyze demographic data to ensure equitable distribution of resources.
    a. Establish equity-based criteria to ensure that transportation interventions prioritize the needs of underserved communities and address disparities in access to transportation resources.

Consider factors including income, race, ethnicity, age, disability status, geographic/neighborhood location.

b. Ensure the neighborhood meets equity-based criteria before intervention.

c. Consider collaborating with and/or solicit input from REIB office, local nonprofits, and other community organizations to gather feedback, identify blind spots, and confirm that racial equity considerations are being properly integrated from the start.

- Identify Stakeholders and Collaborative Potential: Evaluate the readiness of local stakeholders, including city councilors, community-based organizations, and residents to collaborate on TDM initiatives and ensure long-term sustainable solutions.
  a. Pinpoint relevant municipal departments such as the Office of City Planning, Department of Public Works, Burlington Electric Department, etc.
  b. Determine relevant community-based organizations who are active in the neighborhood (Burlington Community Development Corporation, Old Spokes Home, Local Motion, BHA, Neighborhood Associations, etc.).
  c. Identify local residents and neighborhood leaders who may be of interest. The City should set aside and allocate funds to compensate these individuals for their contribution to the process.

Step 1: Vision, Purpose, and Goals

1. **Establish a Vision and Purpose statement tailored to the neighborhood's transportation and mobility goals**
   a. The vision statement should serve as a guiding measure to identify the desired future state of the neighborhood's transportation system and includes the goals and values of the community in the realm of mobility, accessibility, and connectivity.

2. **Goals for Neighborhood TDM**
   a. Improving Community Resiliency and Emotional Connectivity: Create a sense of belonging and connection among residents by enhancing mobility options, promoting active transportation, and creating opportunities for meaningful interaction with other community members with a particular focus on the equity population.
   b. Reducing VMT, Reliance on SOV Ownership, and GHG Emissions: Encourage sustainable travel behaviors, such as walking, bicycling, and using public transit to minimize reliance on SOVs and mitigate the City's environmental impact, while also reducing transportation costs for burdened communities.
   c. Prioritize Safety for Vulnerable Road Users: Implement measures to enhance safety for all road users, with particular emphasis on protecting vulnerable populations such as pedestrians, bicyclists, public transit users, and those with mobility challenges to emphasize equitable solutions in transportation infrastructure and programs.

d. [Goal X, Y, Z]: *Provide opportunities for the community to establish their own Neighborhood TDM goals in addition to those listed above.*

Step 2: Data Collection

Effective TDM efforts begin with understanding the existing conditions and challenges within the target neighborhood. Key insights will be developed from comprehensive data collection to help inform analysis and recommendations.

1. **Gather Background Information + Develop Existing Conditions**
    a. Identify and map existing transportation infrastructure, including roads, bike facilities, sidewalks, public transit, and shared mobility options.
    b. Conduct site visits to understand the condition and location of existing facilities.
    c. Gather demographic information such as population density, age distribution, income levels, languages, and car ownership.
    d. Recognize current transportation challenges including safety concerns, parking issues, access to alternative modes, and congestion. Understand existing resources and organizations that can help foster collaboration and address challenges holistically.
    e. Identify relevant transportation or other types of projects that are near-term that may impact this effort.
2. **Parking Conditions**
    a. Ensure a baseline understanding of parking challenges.
    b. Confirm whether the city has already developed a parking management plan.

Step 3: Community Engagement

Robust community engagement helps establish an inclusive planning process by creating opportunities for residents and stakeholders to connect on matters related to transportation challenges in their communities.

1. **Host Initial Listening Session / Open Forum**
    a. Organize an initial listening session or open forum to gather insights and expertise from local residents and stakeholders regarding neighborhood-specific mobility-related issues.
    b. Invite key stakeholders and publicize the event through local media channels and social networks to maximize participation.
    c. Facilitate mobility-focused questions and discussions during the listening session touching on topics including pedestrian safety, bike infrastructure, public transit accessibility, and commute difficulties. Gain a better understanding of how the neighborhood interacts with each other.
2. **Conduct Additional Outreach and Engagement**
    a. Implement a minimum of two outreach and engagement strategies, which should have language translation. Choose from the following:

i. Community Meetings: Host additional interactive community meetings featuring informational presentations, Q&A sessions, and breakout groups or small group discussions to ensure active participation from all attendees. Accessibility considerations are crucial to ensure an inclusive outcome, such as providing language interpretation and scheduling meetings at different times of day and in hybrid format.

ii. Survey: Conduct a comprehensive neighborhood survey to broaden the reach for collecting feedback. Distribute through various channels including online and in-person.

iii. Focus Groups: Organize focus groups with specific demographics or interest groups within the community to gather targeted insights on particular topics or issues. May include groups such as youth, seniors, immigrants/New Americans, students, etc.

iv. Neighborhood Event: Participate in or host neighborhood events such as farmers' markets, block parties, or other planned community events to engage with residents. Set up informational booths and/or interactive activities to facilitate conversations about transportation and mobility topics.

v. Neighborhood Walk: As a group, take a walk through the neighborhood to visit key locations where challenges, opportunities, or previously implemented solutions are present (i.e. bus stops/shelters, bike rack locations, hotspots for double-parking or other prevalent violations, CarShare Vermont or EV-charging parking spaces, etc.). This helps by providing channels for feedback, fostering relevant dialogue, and educating participants about pressing issues.

Step 4: Needs Assessment, Develop Strategies, and Prioritization

The data analysis process helps inform decision-making and prioritization by examining quantitative and qualitative data to identify patterns and key challenges.

In conjunction with Step 4, the City may consider pursuing a partner policy aimed at ensuring minimum access to essential commercial and community services, which could include a 15-minute walk time guarantee, where all residents have convenient access within a short walking distance to necessary amenities such as grocery stores, healthcare facilities, schools, and public transportation hubs.

1. **Data Analysis**
   a. Analyze data from existing conditions and community engagement to identify key concerns, themes, and priorities.
2. **Identify TDM Strategies**
   a. Review menu of Transportation Demand Management (TDM) offerings provided by the city.
   b. Prioritize strategies based on feedback, data analysis, and feasibility considerations, distinguishing between short-term and long-term interventions.
   c. Prioritize low-cost/high-impact interventions and assist in planning longer-term infrastructure projects.
3. **Iterate and Finalize TDM Strategies**

a. Bring the strategies list back to key stakeholders: those from the initial listening session and/or identified from additional outreach and engagement.

Step 5: Implementation

Implementing solutions includes the identification, testing, and scaling of TDM strategies to address critical challenges in the neighborhood.

1. **Identify Champions and Create Community Advisory Committee**
   a. Identify stakeholders who are influential in their respective communities and can speak to mobility challenges and opportunities. Champions can be individuals or groups who regularly engage with residents and can mobilize support for this initiative.
   b. Establish a Community Advisory Committee with representatives from various stakeholder groups, including local residents, community-based organizations, and municipal departments. Ensure that representation is reflective of the neighborhood. Schedule regular meetings with committee to review progress, provide feedback, help guide decision-making.
2. **Pilot Programs**
   a. Pilot selected programs or strategies on a small scale.
   b. Gather feedback and make necessary adjustments based on participant and stakeholder input.

Step 6: Evaluation and Adjustment

The evaluation phase assesses the effectiveness of implemented TDM initiatives and ensures alignment with community needs. This involves measuring program impact and collecting feedback on changes to travel behavior to understand the success, or need for adjustments, of interventions.

1. **Monitor and Measure Program Impact**
   a. Analyze mode shift changes and community impact by collecting feedback and data on travel behavior.
   b. Utilize surveys, focus groups, traffic counts, ridership data, etc., to assess program impact.
2. **Adjustment**
   a. Based on evaluation findings, make necessary adjustments to programs and strategies to enhance effectiveness and address emerging needs.

Table 6 Neighborhood TDM Goals and Evaluation Methods

Goal	Example Evaluation Method	Example Measure for Success
Improving Community Resiliency and Emotional Connectivity	Community survey before and after implementation	Increase in community satisfaction levels
Reducing VMT and Reliance on SOV Ownership	Conduct mode share surveys before and after implementation to understand change in transportation modes used for daily trips (measure both mode shift + shifts along the behavior change spectrum)	Positive shift in the distribution of transportation modes used by the community for daily trips, with reduction in the use of SOV travel and increase in walking, biking, carpooling, public transit, etc.
Prioritize Safety for Vulnerable Road Users	Review traffic incident reports and conduct pedestrian and bicyclist counts before and after implementation. Community survey on perceived safety before and after.	Reduction in traffic incidents involving vulnerable road users, and an increase in pedestrian and bicyclist safety measures. Increases in perceived safety.
[Other goals established by the community…]	*TBD*	*TBD*

Appendix A: Existing Conditions

Appendix B: Best Practices

Department of Permitting & Inspections
Zoning Division
645 Pine Street
Burlington, VT 05401
Telephone:(802) 865-7188

William Ward, Director
Scott Gustin, AICP, CFM, Principal Planner
Mary O'Neil, AICP, Principal Planner
Garret King, Associate Planner
Joseph Cava, Permit Technician
Steve Cormier, Code Compliance Officer
Ted Boylan, Division Administrator

TO:	Transportation, Energy, & Utilities Committee
FROM:	Scott Gustin, Principal Planner
CC:	Chapin Spencer, DPW Director
	Corey Mims, DPW Technical Services Senior Public Works Engineer
	Mary Bourque, DPW Water Resources Public Works Engineer
DATE:	March 25, 2025
RE:	FEMA Hazard Mitigation Grant Application, 505 Riverside Avenue

Request

Approve, and recommend that the City Council approve, pursuit of a Hazard Mitigation Grant Program (HMGP) application for the property located at 505 Riverside Avenue.

Background

The slope along Riverside Avenue down to the Winooski River has a history of slides, including a moderate slide most recently in 2019. The property at 505 Riverside Avenue contains a significant stretch of slope that is showing signs of instability. The property owners are interested in pursuing a buy-out via the HMGP process that would result in conversion of the property to green space.

The property at 505 Riverside Avenue contains a small commercial building and parking area located atop an unstable, over-steepened slope with significant non-native fill material. Assessments of the site in July and October 2024 by the VT Geological Survey showed slumping and soil creep, a cracked and tilted exterior wall of the building, and deformed and leaning trees on the property. The November 2024 report found that the slope appears to be at imminent risk of failure. Here is the key section of the State's evaluation:

Based on the extensive history of filling and oversteepening of slopes along Riverside Avenue that dates nearly 100 years, the well-documented history of general slope instability and failure associated with these slopes, and evidence of instability specific to the Parcel described above, the Parcel is at imminent risk of failure. Hydrologic events including the heavy precipitation events during the fall of 2019 and summers of 2023 and 2024 are common triggers for slope failure and pose an additional threat to stability at the Parcel. It is also important to note that the landscape position of the Parcel matches sites of past catastrophic failure, albeit the separation by parcel boundaries. Under the current site conditions, stabilizing slope materials presents unique challenges and may not prevent future failure. To prioritize the safety of the current occupants and restrict further development at this hazardous location, we strongly recommend a buyout at 505 Riverside Avenue.

In addition to the 2024 assessments of this property, the City conducted a more extensive assessment of the slope along the length of Riverside Avenue in 2019 and showed evidence of active slope movement along several segments, including the area containing the subject property.

The property was used as a fueling station in the past and has petroleum contamination. Assessment and cleanup is covered under the Petroleum Cleanup Fund up to $1M. The City is eligible to enroll in the State's Brownfields Reuse and Environmental Liability Limitation Program (BRELLA) to mitigate liability associated with soil contaminants beyond petroleum if any are found. City Staff are planning to submit a BRELLA application should this buy-out advance.

If the HMGP grant application is approved, the project will include demolition of the building and parking area, conversion to green space, and acquisition by the city. No City funds are expected to be used in this project. 90% of the HMGP funding is federal, and the 10% match is from the State. The City may need to incur some upfront costs for environmental testing, surveying or other activities, but these costs will be reimbursed through the HMGP funding. The City is in discussions with the Winooski Valley Park District and the Intervale Center to see whether they are interested in maintaining the greenspace as the gateway to the Intervale and as a trailhead for the Salmon Hole Trail. A similar HMGP application was approved at 389 Riverside Avenue, and that project is nearing completion.

Attachments

- Property site map, photo, and geological assessment

Proposed TEUC Motion

1. To approve and recommend that City Council approve the submission of a Hazard Mitigation Grant Program application for the buy-out of 505 Riverside Avenue, and
2. To approve and recommend that the City Council authorize the acceptance of the Hazard Mitigation Grant Program award, if granted, and
3. To recommend that the City Council authorize the Mayor, the Director of Public Works and the Director of Permitting & Inspections to take such further actions and execute such further instruments approved as to form by the City Attorney or designee as may be necessary or convenient to effectuate the grant acceptance and property transactions contemplated hereby.

VERMONT

Department of Environmental Conservation - *Agency of Natural Resources*
Vermont Geological Survey
1 National Life Dr., Davis 4
Montpelier, VT 05620
[phone] 802-461-5235
https://dec.vermont.gov/geological-survey

To: Stephanie Smith – State Hazard Mitigation Officer, Vermont Emergency Management
Cc: Matthew Hand – State Hazard Mitigation Officer, Vermont Emergency Management
Chapin Spencer – Director, Burlington Department of Public Works
Scott Gustin – Principal Planner, Department of Permitting and Inspections, City of Burlington

From: Benjamin DeJong – Vermont State Geologist, Vermont Geological Survey
Emma Myrick – Geologist, Vermont Geological Survey

Subject: Landslide Hazard Evaluation at 505 Riverside Avenue, Burlington, Vermont

Date: 11/26/2024

Dear Ms. Smith,

On July 2, 2024, the Vermont Geological Survey (VGS) first visited 505 Riverside Avenue location in Burlington, Vermont (the Parcel) to address hillslope stability concerns behind the improved structure. We met on the property with the current property owners and individuals from the City of Burlington Department of Public Works (DPW) including the director and a senior engineer. During this visit, the Parcel owner described recent changes to the structural integrity of the structure on the Parcel and the representatives from DPW highlighted areas of concern on the slope behind the structure. The VGS returned to the property on October 17, 2024 to conduct a formal slope evaluation and evaluate the risk of imminent slope failure on the Parcel. In this report, we provide a brief history of landslide hazards in the vicinity of Riverside Avenue and document observations made on July 2 and October 17, 2024. Our observations and recommendations are summarized below.

Site History and Previous Work:

Several parcels on the north side of Riverside Avenue are situated at the top of steep slopes with an extensive history of slope instability and landslide hazard mitigation – **See Figure 1.** Previous work investigating slope stability along Riverside Avenue highlights risk factors including over-steepened slopes, poorly maintained stormwater outfall, and thick sequences of non-native fill materials at the slope surface. Historical photographs provided by the University of Vermont's Silver Special Collections Library document and

previous slope stability assessments corroborate the continued placement of fill materials on the slopes bordering Riverside Avenue. Based on a photograph of Riverside Avenue taken in 1931 that shows the location of 505 Riverside Avenue – **see Figure 2** – the margin of land between the road and the slope exists because of man-made cribbing and back-filling that has been extended since then. A formal slope stability analysis conducted by Knight Consulting Engineers, Inc. in 1984 reported multiple "major washouts and slides" dating back to the fall of 1955 **(e.g. Photograph 1)**, and recent work published by Bennett and Bierman (2024) provides a comprehensive timeline of twenty landslide events dating back to 1952.

More recently, a storm in October 2019 triggered slope failure along Riverside Avenue to the east of the Parcel (between 389 and 365 Riverside Avenue). Landslide hazard mitigation and analysis engagement increased following this event and is ongoing. Observations made on November 5, 2019 by the VGS indicated that the landslide occurred in artificial fill material. Additional slope inspections were conducted by Hoyle, Tanner & Associates in December, 2019 and Terracon, Inc. in August, 2020. The findings of these inspections reiterated a need for slope stability mitigation at multiple locations along Riverside Avenue, including the Parcel.

The VGS and its partners were contacted again in 2022 to assess landslide hazards located at 356, 389 and 411 Riverside Avenue. The evaluations conducted by the VGS indicated that the slope behind the residence at 389 Riverside Avenue was at imminent risk of failure; a buyout application was prepared and approved. While the VGS and our partners did not observe evidence of imminent risk of slope failure associated with the parcels located at 356 and 411 Riverside Avenue, we recommended further monitoring of these slopes and strict enforcement of a ban on further emplacement of debris on the slopes along Riverside Avenue.

505 Riverside Avenue: Kismayo Kitchen

The Parcel consists of a 2.6-acre lot improved with a commercial structure built in 1945 that is situated at the top of a slope that extends approximately 250 feet to the Winooski River – **See Figure 3**. The structure is less than two meters (~ 6.5 feet) from the crest of the steep slope with angles ranging from 44° and 47°. Prior to engagement by the VGS on the Parcel, the City of Burlington contracted GEODesign Inc. to conduct subsurface explorations and a slope evaluation in 2018. GEODesign, Inc. indicated layers of artificial fill material up to 20 feet thick comprised of sandy and silty soils intermixed with debris such as concrete, automotive components, wood and other waste materials – **See Photograph 2**. This artificial fill material was placed over unconsolidated glaciolacustrine sand and silt with variable thicknesses; bedrock was not observed and is below the level of the Winooski River in the area of the Parcel. During a 40-day monitoring period associated with the 2018 geotechnical evaluation, slope movement was not detected; however, slope inspections conducted by Hoyle, Tanner & Associates and Terracon, Inc. following the storm event in 2019 cited active slope movement at The Parcel and advised immediate remedial action to stabilize the slope and limit erosion.

During our July and October site visits, we observed compounding risk factors at the Parcel that contribute to the threat of slope failure including **1)** slope over-

steepening, **2)** municipal stormwater diversion onto the slope, and **3)** the presence of non-engineered fill material overlying native glacial lake sediments. We observed several signs of slumping and soil creep on Parcel. For example, the external wall of the commercial structure is cracked and tilted, suggesting the foundation of the structure is already compromised by active slope movement – **See Photograph 3**. The VGS also observed displaced and compromised wooden fencing (**Photograph 4**) and deformed, leaning trees on the Parcel (**Photograph 5**). Soils directly behind the structure are actively sloughing downslope. The current position of the mature vegetation on the slope (**Photograph 5)** suggests their root systems are being undermined by the displacement of the slope's surficial materials.

Slopes behind the Parcel are also compromised by an active gully on the slope that receives water in part from a 24-inch stormwater outfall that conveys stormwater from Riverside Avenue. The gully feature is approximately 6 meters (~ 20 feet) deep and 12 meters (~ 39 feet) wide at it's greatest extent and contains a wide array of rip-rap and waste materials along the base toward the Winooski River. While the gully may have existed prior to emplacement of the stormwater outfall, the additional discharge conveyed to the gully from the stormwater outfall pipe exacerbates erosion and further de-stabilizes the slopes behind the Parcel.

Based on the extensive history of filling and oversteepening of slopes along Riverside Avenue that dates nearly 100 years, the well-documented history of general slope instability and failure associated with these slopes, and evidence of instability specific to the Parcel described above, the Parcel is at imminent risk of failure. Hydrologic events including the heavy precipitation events during the fall of 2019 and summers of 2023 and 2024 are common triggers for slope failure and pose an additional threat to stability at the Parcel. It is also important to note that the landscape position of the Parcel matches sites of past catastrophic failure, albeit the separation by parcel boundaries. Under the current site conditions, stabilizing slope materials presents unique challenges and may not prevent future failure. To prioritize the safety of the current occupants and restrict further development at this hazardous location, we strongly recommend a buyout at 505 Riverside Avenue.

FIGURES

Map prepared: November 25, 2024

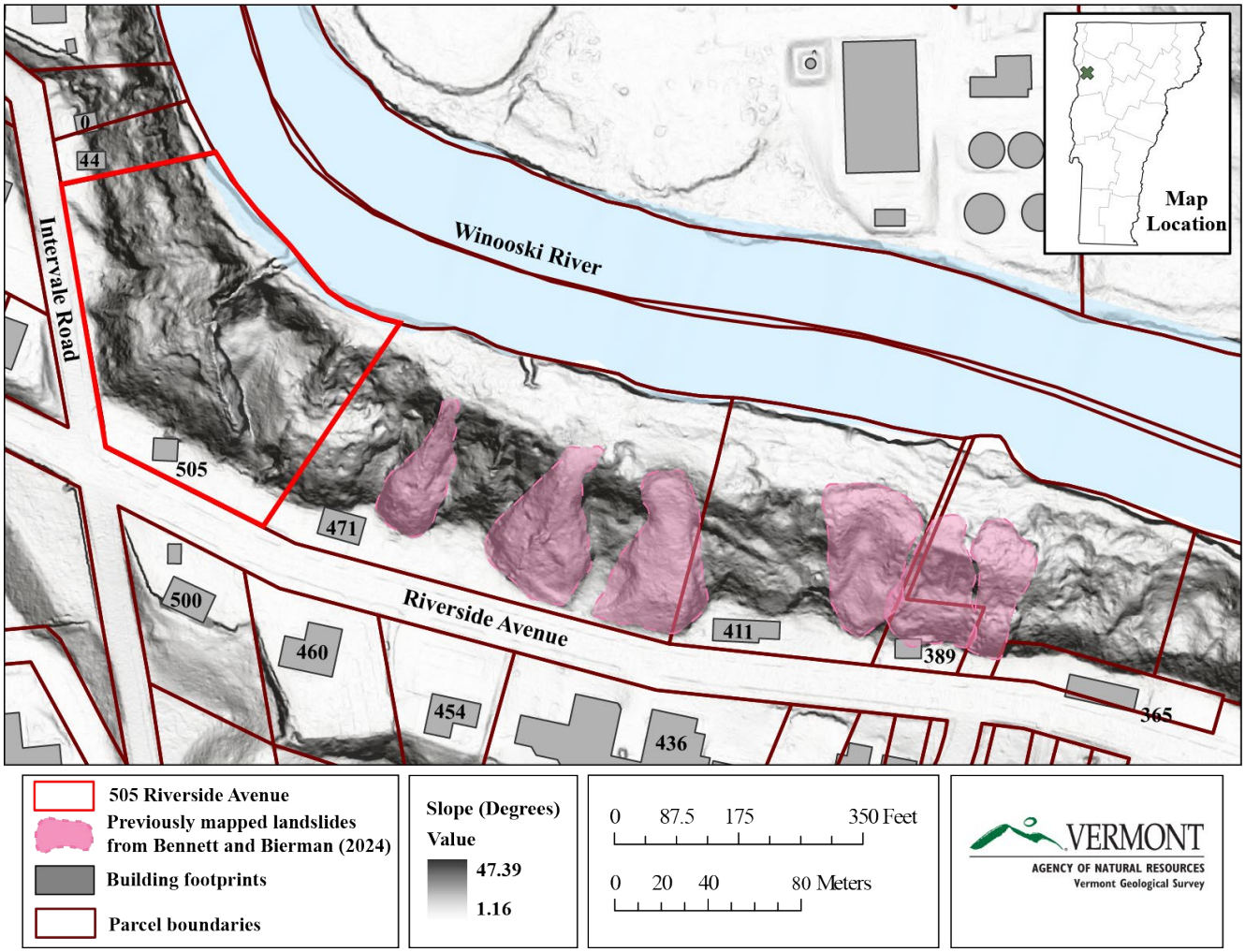


Figure 1: 505 Riverside Avenue and the surrounding area is shown over a slope map derived from Light Detection and Ranging (LiDAR) collected in 2023 by the State of Vermont. The approximate borders of previously interpreted landslide boundaries from Bennett and Bierman (2024) are represented by pink polygons.

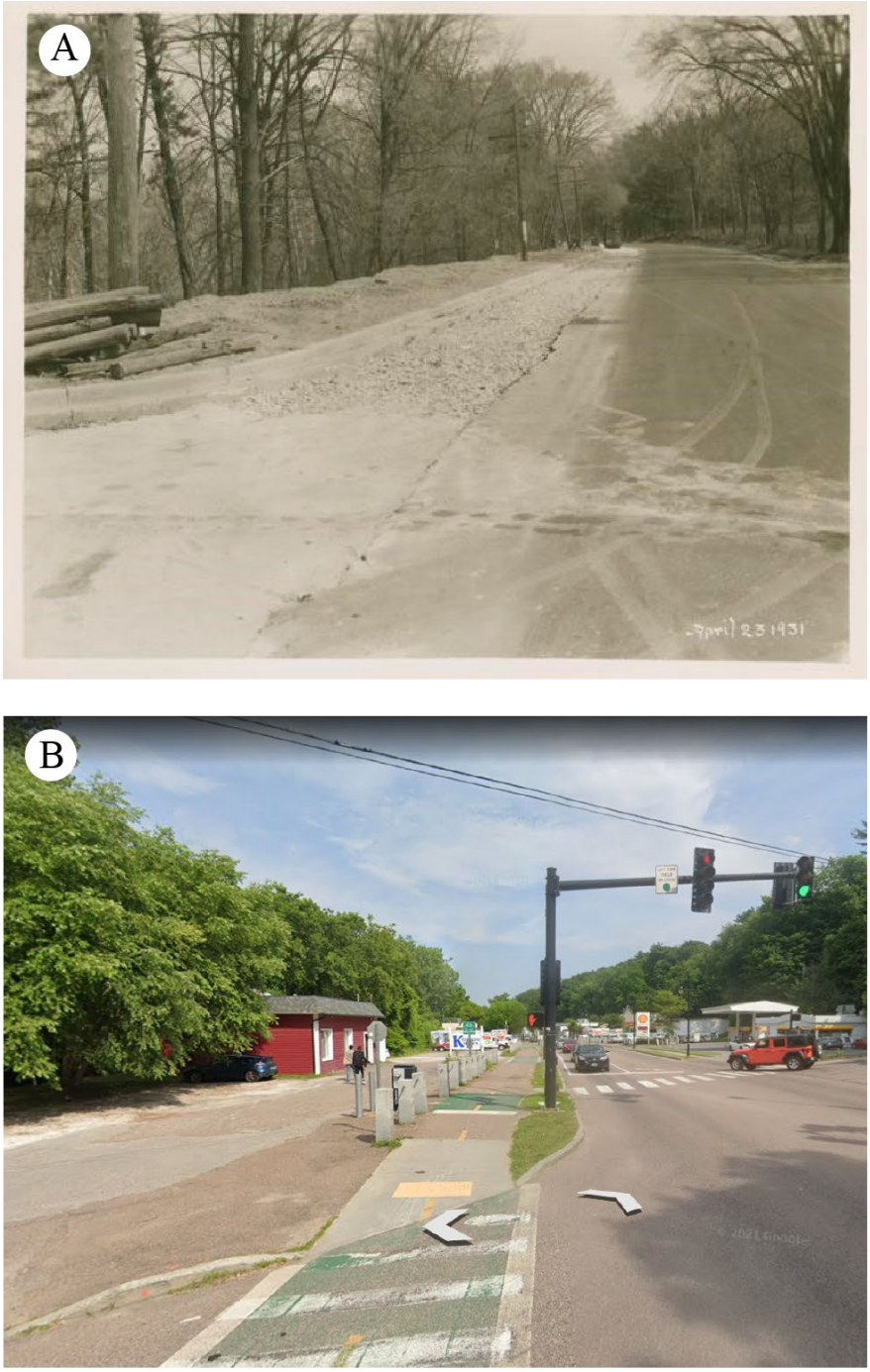


Figure 2: View facing east showing the Parcel from the intersection of Intervale Road and Riverside Avenue in 1931 **(A)** and 2024 **(B)**. Note the limited extent of land at the top of the slope in the earlier photograph, during construction of Riverside Avenue, versus the present-day margin of land in the 2024 Google StreetView image. Historical photograph (A) was provided by the Silver Special Collections Library at the University of Vermont.

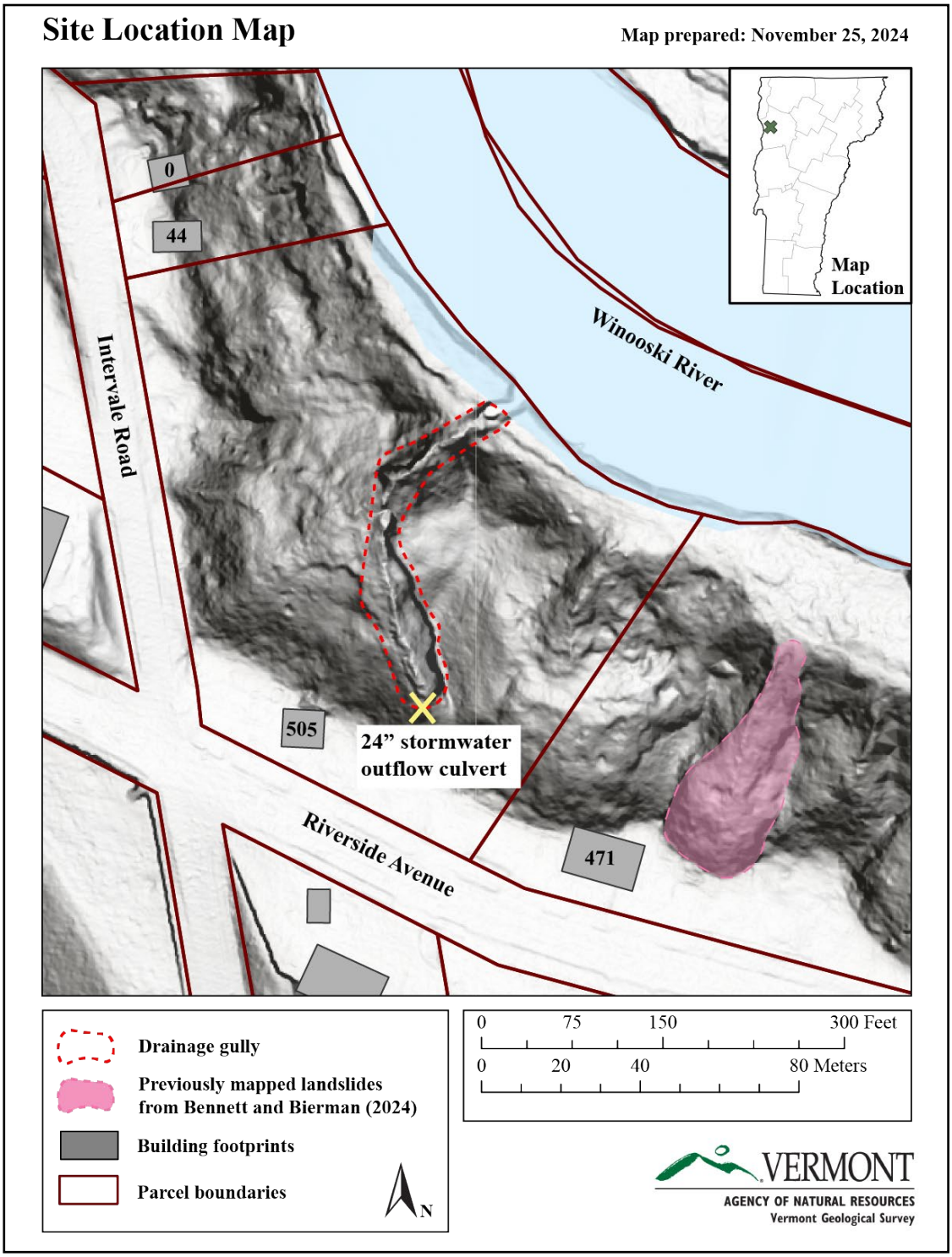


Figure 3: 505 Riverside Avenue is shown using a LiDAR-derived hillshade basemap. The location of the stormwater culvert is marked with the approximate boundaries of the active gully feature that extends from approximately the top of the slope to the Winooski River.

PHOTOGRAPH LOG

Photograph 1: View looking at the slope failure in November, 1955 which displaced large volumes of non-native fill material. Knight Consulting Engineers, Inc. in 1984 and Bennett and Bierman in 2024 cited the potential cause for this slide as excavation for a stormwater culvert installation. Photograph courtesy of the University of Vermont's Silver Special Collections Library.

Photograph 2: View facing southeast and upslope toward the structure on the Parcel of artificial fill material exposed by gully erosion caused by stormwater diversion onto the slope. Note the location of the stormwater discharge pipe in the upper left portion of the photograph.

Photograph 3: Separation of the exterior wall of the structure on the Parcel. The slope is to the right of this view; note the relative horizontality of bricks at the top of the wall (intact), while bricks lower down on the wall are cracked and progressively slanted into the slope as the soils below the foundation are compromised.

Photograph 4: View facing to the east showing the compromised wooden fence behind the structure on the Parcel. The tree trunks to the left of fence also show deformation and curvature.

Photograph 5: View facing east showing tree trunks leaning downslope on the Parcel. The geologist in the frame provides a reference for vertical orientation.

505 Riverside Ave: Topographic Map

Burlington Electric Department
585 Pine St #4864
Burlington, VT 05401

October 30, 2024 – *Revised January 29, 2025*To whom it concerns,

Please accept this letter proposal in response to your Request for Proposal RFP# 013-25 Emissions Assessment and Reduction Analysis for McNeil.

1 Situation, Background and Understanding

The McNeil Plant plays an important role in the city of Burlington with respect to providing reliable, clean, cost effective to the city of Burlington, providing power to the joint owners as well as providing capacity and frequency regulation services to Vermont and ISO-NE. Additionally, the plant provides important economic benefits to the local and regional economy supporting the forestry industry and supporting sustainable forestry practices in New York and Vermont. The plant also is classified as a renewable energy generator, producing Renewable Energy Credits.

The City of Burlington built the plant in 1984, and is operated under joint ownership with BED (50%), Green Mountain Power (31%) and Vermont Public Power Authority (19%). In earlier decades, the plant operated at a much lower capacity factor in 30% to 40%. In more recent years, the plant operates at a higher utilization factor, estimating a 52% capacity factor in 2022. The plant is dispatched by BED on an economic basis, considering the marginal operating cost and marginal revenues including wholesale energy and renewable energy credit value.

In 2008, the joint owners invested $12 million to install a Regenerative Selective Catalytic Reduction system to reduce NOx emissions. This investment contributed to the plant qualifying as a renewable energy generator for the purposes of selling Renewable Energy Credits, including Connecticut's Class 1 RECs.

In 2023, the Burlington City Council approved advancing the development of a $42 million district energy system, providing thermal energy to the University of Vermont Medical Center, incorporating a heat recovery system, construction of a thermal loop, and an electric boiler. The system is estimated to provide 125,000 MMBtu per year to UVMMC.

Wood chips are generally sourced within 60 miles of the plant from New York and Vermont. The wood chips typically cost between $22 and $33 per ton delivered by truck. Delivery by rail adds about $7 per ton in cost. At full load, the plant consumes approximately 76 wet tons pf wood per hour. According to one calculation for 2021, the McNeil plant emitted 453,563 tons of CO2 at the stack (i.e without accounting for specific fuel types or any carbon benefit from the biomass cycle) as well as emitting additional materials including methane, nitrous oxides, carbon monoxide, Benzene, Formaldehyde and ultra-fine toxic particles.

The city of Burlington prepared a strategic plan in 2019 that sets a net zero energy target for the city including thermal energy and ground transportation energy, with the objective to eliminate fossil fuel use and greenhouse gas emissions. Within this context, BED operates the McNeil plant with energy production from local and regional wood chips, recognizing that the calculation of carbon cycle

associated with wood fired power plants is complex with several different approaches to calculating carbon impacts.

In recent years, biomass power plants have faced economic and environmental challenges. States such as New Hampshire have historically provided subsidies to wood fired power plants, to support the favorable characteristics including renewable resources, supporting the regional forestry industry and a local energy source. The advent of low-cost wind and solar power have provided states a lower cost renewable option, resulting in many state legislatures reducing their financial subsidies for wood fired power plants.

Issues have also been raised by environmental groups with respect to how carbon emissions are calculated and considered. The use of biomass with sustainable forestry practices provides a basis for a closed loop carbon cycle. However, the issue of timing of carbon absorption and carbon release has been raised. In addition, there are other pollutants emitted as a function of operating a wood fired thermal power plant. These issues have come before the Burlington City Council, with the result being an interest on the part of BED in investigating potential pathways to reduce stack carbon emissions at the McNeil power plant.

The purpose in issuing the RFP is to provide BED with approaches and their associated impacts and implications to potentially reduce the environmental footprint of the McNeil station while retaining the energy production benefits of the plant.

2 Goals, Objectives and Outcome

2.1 Goals and Objectives

November 20, 2023 City Council Resolution	Scope of Work
• Authority for BED to sell steam to UVMC; • Improve McNeil Plant efficiency by 10%; • Limit wood consumption to peak year in the past fifteen years; • Not increase wood consumption associated with district energy; • Investigate viability of the installation of a wood chip drying system to improve McNeil Plant efficiency; • Study timeframes to transition away from the need for conventional wood chip combustion; • Generate and implement a plant to reduce McNeil Plant stack GHG emissions by at least 25% in the next five years and 50% in the next ten years; • Identify opportunities to utilize the McNeil Plant for additional energy needs; • Analyze the impacts of the current wood chip operation at the McNeil Plant; Analyze potential means to reduce or eliminate emissions of stack carbon dioxide and other GHGs and other emissions into the atmosphere;	• Analyzing the impacts, both negative and positive, of the current wood chip based energy production at McNeil; • Analyzing opportunities to reduce stack-related carbon dioxide emissions and other greenhouse gas emissions from McNeil; • Analyze the opportunity to repower McNeil, including with different fuels that would significantly reduce greenhouse gas emissions at the stack as bridge measure until truly low carbon sources of electricity such as wind, solar, hydropower and storage technologies can reliably and affordably meet the needs of Burlington ratepayers, including low and moderate-income ratepayers; • Analyzing technologies that would significantly reduce greenhouse gas emissions in the future, including more efficient combustion; • Analyzing the possible utilization of the McNeil Site for additional energy needs including energy storage and/or thermal energy provision; • Analyzing the opportunities for expansion of innovative partnerships at McNeil such as the UVM solar research center newly located at the McNeil site; and • Analyzing the scale and types of renewable energy generation and energy storage needed if McNeil was not in service and Burlington still needed lowest-carbon emissions renewable generation that is both reliable and

2.2 Outcome

BED is looking to use the deliverable associated with this project to help shape future energy initiatives at McNeill.

3 Task Plan

3.1 Start-up Meeting

The purpose of the start-up meeting is to ensure that the project's plan, schedule, goals, objectives, activities and deliverables are aligned with BED's interests and intent, and to ensure that the respective roles and responsibilities are known, and needed information and resources are identified and available.

The agenda will include a review on the project's goals, objectives, deliverables and outcomes, process, participants, information sources, in-person meetings, stakeholders and community engagement or involvement and the project timeline. The meeting can also include an initial discussion of potential emission reduction initiatives considered for McNeil, an understanding of the role of McNeil within the BED system, a review of BED stakeholders and a review of how potential initiatives are characterized and evaluated at BED.

3.2 Establish Evaluation Criteria, Final Report Outline, Modelling Approaches and Outcomes

The interim and final reports will conform to approaches and standards guided by BED experience and interests with input from local stakeholders. Potential initiatives for mitigating carbon and other emissions will be characterized and evaluated against a standard set of criteria developed for this project. Potential initiatives will also be modelled from both engineering and financial perspectives, considering thermal and mass balances, specifies equipment and performance characteristics, and expected capital requirements, cash flows and financial returns.

3.3 Characterize the McNeil Plant

This task includes characterizing the McNeil Plant and analyzing the positive and negative impacts of the Plant. Characterizing the Plant includes establishing an understanding of the Plant in terms of systems, operating profile, efficiency, utilization rates, emissions and emissions controls, role within BED, role within ISO-NE, REC markets, and land usage profile.

This task also includes analyzing and characterizing the positive and negative impacts of the current wood chip-based energy production at McNeil.

3.4 Future Roles for McNeil and Establishing BED's Planning Context

Determining the future role and potential uses for McNeil's facilities and site. There are several planning scenarios which should be considered. The assessments to be considered and evaluated include:

1. Analyze the scale and types of renewable energy generation and energy storage needed if McNeil was not in service.
2. Analyze the possible utilization of the McNeil site for additional energy needs including energy storage and/or thermal energy provision.
3. Analyze the possible utilization of the McNeil plant for alternative energy production technologies/repowering of the existing facility/alternate fuel opportunities.
4. Analyze opportunities for innovative partnerships at the McNeil site.

3.4.1 Development of Future Scenarios

The future of the BED system will be the result of a series of decisions and multiple factors over time. These factors potentially include (1) expansion of variable renewable energy power generation in New

England including behind the meter soar and offshore wind; (2) continued cost reductions in PV; (3) continued cost and performance improvements of stationary battery energy systems; (4) increased penetration of heat pump heating systems throughout the Northeast; (5) continued increasing

penetration of battery electric vehicles; (6) expansion of the district energy network including the addition of chilled water services and looped geothermal; and (6) increasing pressures for broad carbon mitigation actions and initiatives. Any future planning for BED has likely incorporated most if not all of these trends and form the context for any decisions that are made with regards to the McNeil station.

The Velerity team will work with BED to developed one or more highly probable future scenarios, specifically incorporating the factors identified above. The team will then evaluate the implications associated with each of the potential pathways for BED including, as identified above, operating without McNeil, forecasting how McNeil could be used in the future, and identifying potential energy related uses for the McNeil site.

3.4.2 Future Without McNeil

The Velerity team will work with BED to identify the operating requirements that would need to be satisfied in the absence of the McNeil Plant, and develop optimal resource configurations to deliver the same capabilities as McNeil, considering reliability, economics, rate impacts, carbon intensity and MWh volume.

3.4.3 Potential Energy Uses for the McNeil Site

Based on the scenarios developed, the potential uses for the McNeil site will be identified. Potential may include energy storage, geothermal, expanded district energy, chilled water provisioning, efuel production, etc.

3.5 Identify, Characterize and Evaluate Potential Solutions

The project team will identify potential initiatives to increase plant efficiency and reduce stack emissions at the McNeil Plant. The options will be identified, characterized, analyzed and evaluated using the 25% and 50% reduction targets as established in the November 20, 2023 City Council Resolution.

3.5.1 Establish Characterization Categories and Screening and Evaluation Criteria

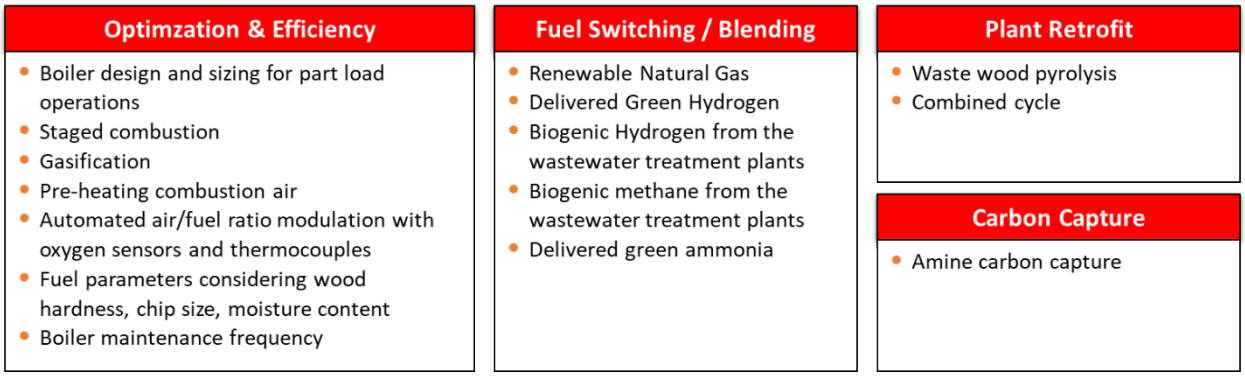
Each of the potential initiatives to reduce McNeil emissions will be screened and evaluated in two stages. The first stage will be to evaluate a broad set of opportunities and produce a shorter list for more detailed modelling and evaluation.

The potential characterization elements for screening and evaluation potentially include:

1. Scale
2. Ability to dispatch
3. Economics
4. Reliability
5. Impact on emissions
6. Efficiency
7. Impact on ratepayers
8. Capital Requirements
9. Operating cost impacts
10. Implications for BED revenues from ISO-NE wholesale markets

3.5.2 Potential Solutions

There are a range of potential initiatives that can be pursued at McNeil to reduce emissions.



3.5.3 Initial Characterization and Screening

There are a range of potential initiatives that will be evaluated. Each of the potential initiatives to reduce McNeil emissions will be screened and evaluated in two stages. The first stage involves the characterization and screening of a broad set of potential initiatives. The screening will be based on critical threshold factors, such as scale, technology readiness and economics.

3.5.4 Detailed Evaluation and Modelling

A shorter list of potential initiatives that pass the threshold requirements will be evaluated in much more detail, including technical and financial modelling.

3.6 Prepare Interim Report

An interim report will be prepared and submitted to BED sixty days after the consulting agreement is signed. The interim report will provide initial findings including a preliminary screening and evaluation of the potential emission reduction initiatives, and the identification and characterization of the most likely carbon reduction initiatives.

3.7 Prepare Final Report

The final report will be prepared and prospectively delivered one-hundred and twenty days after the consulting agreement is signed. The date the final report is delivered may be subject to the timing of the final review of a draft final report on the part of BED.

4 Deliverables

4.1 Interim Report

Velerity will prepare and provide to BED an interim report sixty days after the consulting agreement is signed.

4.2 Final Report

The final report will include the results of each of the analyses and investigations as part of this project. Velerity will work with BED to prepare an outline of the final report that conforms to the needs and interests on the part of BED and core stakeholders.

5 Management and Principal Investigators

The principal investigators for this project are Brad Bradshaw, Katherine Birnie, Charlie Krueger and Kathleen McKenna. The principal investigator for this assignment is Brad Bradshaw who will be

responsible for day-to-day activities, tasks and deliverable associated with this engagement. I

understand that BED will assign someone to provide general direction and policy decisions on behalf of BED.

There will be regular communications and updates covering project accomplishments, status, plans and challenges. The objective for frequent communications is to make sure that progress and plans are well aligned with BED's needs, interests and priorities each step of the way.

5.1.1 Donald S. Bradshaw, Jr. (Brad)

Mr. Bradshaw is the President of Velerity and leads the company's consulting engagements. Mr. Bradshaw is an experienced senior executive who has held senior level positions in consulting and clean energy companies. Mr. Bradshaw has significant experience in the energy industry.

Mr. Bradshaw has spent decades working with utility companies around the world, on growth strategies and other areas. Mr. Bradshaw has extensive experience helping utilities and companies understand and evaluate potential markets and applications of advanced energy equipment, and has experience in solar energy, energy storage, renewable natural gas and hydrogen.

Mr. Bradshaw was a Senior Consultant in Arthur D. Little's advanced energy group, advising energy companies around the world on strategy, product development and marketing. In addition, Mr. Bradshaw co-founded the Northeast Clean Energy Council (NECEC). Mr. Bradshaw majored in engineering at Dartmouth College and has an MBA in Finance from Babson College

5.1.2 Katherine Birnie

Katherine Birnie has 25 years of experience at the intersection of business and the environment, including renewable energy, land-based environmental offsets and land conservation.

Katherine is a skilled leader with deep cross-disciplinary experience in project management, business development, sales, and finance. As Senior Project Manager at Peaks Renewables (a subsidiary of natural gas utility Summit Utilities), she led hydrogen project development, focusing on green hydrogen as an industrial decarbonization application and in the natural gas distribution system. As Managing Director at Ecosystem Investment Partners, she led all commercial transactions, structuring over $320mm in environmental offset sales.

Katherine holds a BA in Biology with a concentration in Environmental Studies, cum laude, from Williams College. She also holds an MBA from the Tuck School of Business at Dartmouth. She is on the Board of the Exemplary Forest Investment Fund and the Advisory Board of the Appalachian Mountain Club.

5.1.3 Charles Kruger

Charles Krueger is an expert in the fields of chemical, process, and materials technologies primarily applied to alternative energy, energy storage, and energy efficiency. Recent projects include hydrogen materials, waste-to-energy processing, compressed air energy storage, and thermal energy storage. Mr. Krueger has particular expertise in the field of catalysis and complex chemical transformations.

Mr. Krueger was the Chief Technology Officer of Hy9 Corporation, where he oversaw technology innovation and product development including developing hydrogen separation technology for producing PEM fuel cell quality hydrogen and the HGS-M 5 kWe methanol-to-hydrogen generator for the backup power market. In addition, Mr. Krueger was the co-inventor on 9 issued US patents, and served as the primary investigator on several federally funded grants to advance hydrogen purification

technology. Mr. Krueger worked on the ammonia production model and the Sustainable Aviation Fuels business model as part of the Hydrogen Roadmap study.

Mr. Krueger has a Doctor of Philosophy (Ph.D.) in Chemical Engineering from the Massachusetts Institute of Technology (MIT), a Masters of Science in Chemical Engineering from MIT, and Bachelors Degree in Chemical Engineering from the University of Pennsylvania.

5.1.4 Kathleen McKenna

Ms. McKenna has extensive experience in the energy field, encompassing project management, HVAC design and engineering, energy control systems design and commissioning, end-user energy system analysis and modelling, energy efficiency, and demand management.

Ms. McKenna worked on the Puerto Rico Hydrogen Roadmap study, identifying and characterizing equipment and developing project energy and financial models using the NREL H2 Fast software modelling tool. Ms. McKenna also conducted technology and cost research for development of capex & opex expenditures associated with offshore wind to hydrogen to ammonia processes including: offshore wind turbines, desalination, electrolysis, air separation units.

Ms. McKenna holds a B.S. in Mechanical Engineering and is a Certified Energy Manager. Ms. McKenna is a board member of the New England Association of Energy Engineers, and is an active member of the City of Medford's Energy and Environment Committee. In addition, Ms. McKenna is also a Solar Coach for the City of Medford's state sponsored Solarize Medford program.

6 Selected Qualifications

6.1.1 Carbon Emission Reduction Plan for the Fifth Largest Wastewater Treatment Plant in the United States

Identified, characterized and evaluated several carbon reduction approaches to reduce carbon emissions by 60,000 tons per year for the fifth largest wastewater treatment plant in the United States. Evaluated the technical and economic potential for synthetic methane and methanol production as a carbon mitigation strategy for a massive wastewater treatment plant, capturing carbon from various processes in the plant, including a thermal combustion plant and native wastewater processes. Evaluated source and characterization of carbon emissions, identified potential technical solutions, characterized carbon mitigation solutions, prepared engineering designs including mass balance, thermal balance and chemical reactions, specified equipment, and prepared detailed economic and financial analyses.

6.1.2 Renewable Natural Gas and Green Hydrogen Project Development – Financial Modelling and Market Development

Conducted detailed scoping studies for multiple green hydrogen and renewable natural gas projects in the Northeastern United States. Identified host properties, characterized feedstocks, and identified off-takers for project outputs. Modified project designs to optimize financial returns. Core analysis focused on evaluating the technology and financials of a waste wood pyrolysis system for producing electricity for a major paper mill.

6.1.3 Bio-Mass-to-Energy Project - Developed Business Plan & Financials

Developed the business plan and financials for a proposed bio-mass energy project, converting food

waste into methane for electricity generation. A waste processing company did not have the expertise to prepare business plan and financials and establishing accurate pricing for multiple value streams in the business. Prepared detailed financials incorporating primary market research to establish accurate tipping fees, methane pricing for electricity generation and fees for residual soil additive.

6.1.4 Turned Around Largest District Heating/Cooling System in the United States

Developed the business strategy for the largest district energy heating and cooling system in the United States. Evaluated strategic options to expand financial performance including fuel sourcing strategies, generation system modifications, renegotiation of electricity sales contracts, and system expansion.

6.1.5 Energy Storage Company Business & Product Strategy

Worked with the CEO and senior management team to redirect company's strategy, based on a thorough assessment of market opportunities that would leverage the company's particular technology. The company's initial focus on backup power systems for telecom remote terminal units met significant market resistance. Based on my recommendation, the company repurposed their products to target the multi-billion electric grid auxiliary services market.

7 Budget and Timeline

The project as described in this proposal is expected to be complete by March 31, 2025 based on having the authority to proceed on or close to November 15, 2024, and that there are no exceptional circumstance outside of our control that impact the proposed project schedule. If there are any factors which impact the project schedule, the Velerity team will communicate those circumstances to BED. Based on the scope of work and task plan provided above, we estimate that this project will require a Total Budget of $25,000 Professional Services.

The project budget for professional hours includes any and all normal professional office expenditures associated with the project, such as copies, telephone, internet, etc. Certain aspects of the work and associated schedule may be dependent on the availability and timeliness of certain pieces of information, as well as potentially other factors. If there are any delays or changes that might impact the scope of the work, or the completeness and timeliness of the final product, those factors will be immediately brought to your attention. At this time, we do not expect there to be any challenges associated with completing the project on time and within budget.

We appreciate having the opportunity to work with the Burlington Electric Department on this important initiative.

Sincerely,

Donald S. Bradshaw, Jr.

Donald S. Bradshaw, Jr.
President
Velerity LLC

Proposal for

Forestry Assessment and Analysis for McNeil

Prepared for

Burlington Electric Department

Prepared by

John Bryant

K2QC Consulting LLC

k2qcconsulting@gmail.com

207-745-9955

901 Mann Hill Road

Holden, Maine 04429

February 18, 2025

K2QC Consulting LLC (K2QC) submits this proposal to the Burlington Electric Department (BED) to provide forestry assessment and analysis services for the McNeil Generating Station (McNeil). K2QC is a third-party firm with the capacity to address the assessment expectations and deliverables detailed in BED's PFP# 014-25C.

This would include:

1. Assessing the number and volume of whole trees produced for fuel at McNeil compared to limbs, ends, and residues procused for fuel at McNeli.
2. Assessing for whole trees, what portion were low-value roundwood and diseased or damaged trees.
3. Providong quatitative and qualitative assessment of afforestation and deforestation outcomes is areas whwre wood is harvested for McNeil and market factros that affect such outcomes.
4. Providing assessment of current wood chip procurement and forestry maangement practices at McNeil and offer BED ideas for further improvement including review of Harvest Guidelines in Appendix A and suggested audit areas for confirmation.
5. Deliver a written report that will assist in definiong future forestry practices at McNeil.
6. Ability to engage in several public hearings during the process of conducting the deliverables and final report.

K2QC provides forest management, forest operations and logistics, wood supply assessments, and organizational development expertise to landowners, forest products mills, and government agencies.

Qualifications – John Bryant

Owner, K2QC Consulting LLC since 2021
B.S. Forestry, University of Maine
Maine Licensed Forester #931
Co-owner, American Forest Management from 2010-2020
40 years' experience in Maine, New Hampshire, Vermont and New York in forestry, property management, land transactions, and SFI forest certification audits.
Employed by St. Regis Paper Company 1977-1985, Champion International Company 1985-2000, International Paper Company 2000-2006, American Forest Management 2007-2020
Member of Baxter State Park's Scientific Forest Management Area Advisory Committee

Fee Structure: Fees would be charged for services according to the following schedule.

John Bryant	$135.00 per hour
Contract Biometrician (if necessary)	$100.00 per hour
Vehicle	$0.67 per mile

Total project cost not to exceed: **$22,850.**

Travel Expenses (from Holden to Burlington, as necessary). Hourly rates and travel costs will be based upon round trip travel time from K2QC home office in Holden, Maine.

Proposal Duration: The terms of this proposal will expire September 30, 2025.

Audit Standards detailed in Appendix A (BED Harvest Policy and CPG Audit Standards) will be addressed during the project. K2QC has the experience and consulting knowledge to properly audit and assess field performance and recommend necessary improvements.

Plan to view randomly selected harvest sites during the first few months while reviewing historical delivery records to assess any out-of-compliance issues. Interim report by July 1 and final report by September 30.

Experience:

John Bryant has an extensive work history in forest management and field operations in the following technical and operational disciplines.

1. Forest management experience across Maine and New Hampshire on over 1.1MM acres of large industrial, small woodlots and timber investment properties since 1978.
2. Worked from 1996 to 2000 as land transaction manager for large industrial landowner facilitating sales and purchases of timberland to build a strategic land base serving company mills.
3. Responsible to coordinate with third party auditors to oversee an annual SFI audit on 1.1MM acre land base.
4. Lead a sales work team on 800,000-ton annual timber sales serving over 40 customers across New England and Canadian Maritime provinces assuring highest return for harvested timber, which included weekly decisions on delivering biomass residuals from field operations to energy facilities in Maine and northern New Hampshire.
5. Strong analytical and reporting skills.
6. Working knowledge of forest carbon dynamics.
7. Presented numerous forestry topics at state and professional meetings (New England Society of American Foresters, NERCOFE, University of Maine).
8. Testified at Maine legislative hearings on a variety of forestry topics and land use debates.
9. Co-chaired Maine's ATV legislative task force in 2019.
10. 40-year member of New England Society of American Foresters.
11. Licensed Maine Forester since 1988.

Insurance Requirements: K2QC Consulting can provide BED with COI for coverages in the minimum insurance requirements detailed in the BED proposal including:

1. Professional Liability ($1,000,000 each claim and in aggregate)
2. Commercial General Liability – bodily injury and property damage ($500,000 each occurrence and in aggregate)
3. Automobile liability – bodily injury and property damage ($500,000 combined single limit)
4. Employers Liability ($100,000 each accident, $100,000 each employee, and $500,000 policy limit)
5. Cyber Liability – each claim/event aggregate limit ($2,000,000 each claim and each event)

References: Provided upon request

Ebike Sharing Program of Burlington Segways for 2025

For the past two years we have operated a rack for twelve cell phone activated ebikes at College Street on the waterfront. Demand for these ebikes is strong and we learned a lot about operating this system over the past two years. We are now ready to expand our fleet to 50 ebikes.

After a second successful year of operating these ebikes on the waterfront we asked the Parks Department to put out an RFP for additional bike racks at North Beach and Oakledge Park. A substantial number of people who rented ebikes from our College Street rack over the past two years used them to access North Beach, especially in warm weather. We were the only company to submit a proposal and we have recently worked out a revenue sharing arrangement with the City for the use of these racks.

We will pay for the installation of new bike racks at Oakledge and North Beach. And we will pay the Parks Department 10% of our gross rentals for use of the bike racks. This revenue sharing arrangement is very unusual in bikeshare systems. Many bikeshares are subsidized. None of the previous bikeshare systems in Burlington (Gotcha, Bolt or Bird) paid the City anything.

We plan to deploy 12 ebikes to College Street, 10 at North Beach, 8 at Oakledge Park, 8 at racks near Ben and Jerrys on Church Street and 6 each at UVM and Champlain College this summer.

This limited point-to-point ebike sharing operation will be run out of our shop at 86 Main Street where batteries will be recharged for swapping on ebikes as necessary.

We are particularly happy that Bird pulled out of Burlington earlier this year, leaving us in a position to run a truly homegrown ebike sharing system specifically tailored to Burlington, Vermont instead. This ebike rental system is a large financial investment for us so we are pleased that we won't have any competition from one of these out-ot-state venture capital outfits for this year anyway. We are hoping that the City and CATMA will be satisfied with our more limited ebike sharing operation and not solicit competition from these outfits in future years.

If everything goes well this year with 50 ebikes it is possible for us to acquire additional ebikes to expand to locations in Winooski and S. Burlington next year. Unlike Bird, which operated a system of "dockless" ebikes that were left helter skelter about the community, our ebikes will be operated out of bike racks. Our ebikes will only be able to activate or deactivate at these geofenced bike racks. All of our ebikes are returned to a rack by the evening. They are never left about town. And they never get spray painted with graffiti.

We have ordered a whole new fleet of cell phone activated ebikes from Segway Inc. They will be branded as Burlington ebikes and serviced by burlingtonebikes.com. These ebikes are very distinctive in that they feature a cell phone holder on the handlebar that will display information about the ebike while it recharges the cell phone.

These ebikes are on a boat from China now and should arrive at our door by late April. We have contracted with OTORide, a worldwide company that provides software to run these systems. They will provide us with GPS tracking on each ebike and a dashboard that will allow us to monitor the battery level of each ebike in real time. The key to a successful ebike sharing system is swapping batteries in a timely manner. Our central location downtown allows us to swap batteries frequently.

Our concentration this year will be on managing this fleet of ebikes along the Bike Path, downtown and at the colleges. If all goes well this summer we would likely put forth a proposal to expand to Leddy Park and possibly Airport Park in Colchester, in anticipation of a PBS documentary on the nationwide rails-to-trails movement that will air in the fall this year. Portions of the documentary were shot here in Burlington, including along the Bike Path, the Causeway and the bike ferry. We anticipate even stronger demand for these ebikes along the Bike Path in the future as a wider and wider audience is introduced to our bike path system here in Burlington.

We are looking forward to working with the City of Burlington, the Church Street Marketplace, UVM, Champlain College and CATMA to bring a local homegrown limited ebike sharing system to our area.

Rick Sharp
Burlington Segways, Inc.